

ASSESSING AND IMPROVING SOCIAL EQUITY IN MARINE CONSERVATION: BACKGROUND, METHODS AND GUIDANCE ON THREE APPROACHES

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ABSTRACT

Social equity is increasingly recognised as a fundamental principle in marine conservation. Global conservation policies now contain commitments to equitable management and governance, yet practical guidance on how to understand and assess equity in marine conservation remains limited. In this methodological paper, we introduce our process for developing three conceptually grounded, practical and adaptable approaches for assessing equity in marine conservation: (1) a rapid equity assessment, (2) a stakeholders and rightsholders equity assessment, and (3) a co-produced and customised equity assessment. All three approaches emphasise the assessment process as part of an ongoing learning journey that requires continuous reflection and adaptive actions to improve social equity. The discussion identifies practical lessons and key considerations for choosing, preparing and carrying out equity assessments and for moving from assessment to action to improve social equity in marine conservation.

Keywords: Equitable governance, marine conservation, ocean equity, human dimensions, marine social science

INTRODUCTION

Marine conservation initiatives can lead to positive social impacts for coastal communities, such as economic benefits, community empowerment, and protection of culturally important species (Ban et al., 2019). Unfortunately, they have also been found to produce negative social consequences, such as displacement and evictions of Indigenous peoples and local communities, removal of access to important fishing grounds for small-scale fishers, exclusion from decision-making, and loss of rights and livelihoods (Ban et al., 2019; Gill et al., 2023). Some authors have criticised marine conservation efforts for continuing colonial and racist legacies, especially during establishment (Griffin et al., 2019; Sand, 2012). Social exclusions and negative impacts have arisen, in part, because marine conservation initiatives are often designed using natural science alone and primarily managed to achieve environmental objectives by actors external to the community context in which they are implemented, overlooking local needs and knowledge systems (Strand et al., 2024).

Considering these critiques and negative outcomes, the pursuit of social equity – which we define as fairness and justice with respect to the ways that people are recognised, treated or

impacted by conservation initiatives - must guide marine conservation (Andrachuk et al., 2025; Bennett et al., 2021). There are ethical, legal and practical reasons for advancing equity in and through marine conservation (Bennett et al., 2021). Ethically, the conservation community has an obligation to take meaningful action to do no harm and to improve the human condition for those potentially impacted by marine conservation initiatives (Newing et al., 2024; Schreckenberg et al., 2016). Legally, marine conservation initiatives must align with international and national commitments related to human rights and equity in conservation (Smallhorn-West et al., 2023). Practically, assessing and improving equity helps support conservation effectiveness, as well as the legitimacy of and support for conservation initiatives (Dawson et al., 2021; Schreckenberg et al., 2016).

Recent years have seen growing attention to the theory and practice of equitable governance in conservation (Ruano-Chamorro et al., 2022; Schreckenberg et al., 2016; Zafra-Calvo et al., 2017). Yet, few studies have explored how equity and inequity are experienced (Bennett et al., 2020; Gurney et al., 2021; Lau et al., 2021; Rauno-Chamorro et al., 2024) and there has been even less attention to how equity can be measured and monitored in the marine realm (Bennett et al., 2021,

2025; Blythe et al., in press; Hampton-Smith et al., 2024). Without ways to assess and understand equity in marine conservation, including how it is experienced by different actors, it is more challenging to foster change and improve governance and management (Bennett et al., 2025). Furthermore, the responsibility for improving equity often falls on conservation practitioners and managers – who need clear guidance on assessment and processes for improving equity.

In this methodological paper, we introduce and summarise three approaches for assessing equity in marine conservation to support learning and adaptive action by practitioners and managers. These options were designed by a working group, with feedback from an advisory group, and improved through field testing to accommodate different temporal, financial and strategic contexts. We begin by reviewing the conservation and equity literature, focusing on why equity is important, existing tools for assessing equity, and situating this work within a conceptually informed framework. We then describe the process of developing the three assessment approaches: (1) rapid equity assessment, (2) stakeholders and rightsholders equity assessment, and (3) co-produced and customised equity assessment. Finally, we discuss lessons learned during development and testing for carrying out all stages of marine equity assessments.

BACKGROUND LITERATURE REVIEW Defining equity

Equity refers to fairness in the way that people are treated in the formulation of public policies and practices, especially for people who have historically been or continue to be marginalised, devalued and excluded (Bennett et al., 2021; Österblom et al., 2020). Equity differs from equality, which assumes that all parties have equal opportunity and thus should be treated in the same way (Sikor et al., 2014). Equity helps bring attention to whether and how people are recognised, considered and included in marine conservation governance, management and decisionmaking, the distribution of social and environmental impacts, and the underlying factors that lead to equity and inequity. Assessing equity and inequity necessitates consideration, for example, of social and institutional structures that create power imbalances and maintain unfair or unequal conditions for groups of people (Singh et al., 2023).



Recognitional

The acknowledgment and incorporation of the rights, tenure, cultural identities, practices, values, visions, knowledge systems and livelihoods of local groups into conservation governance, planning, and management.

Procedural

The inclusion and effective participation of all relevant actors and groups in rule and decisionmaking for conservation policies and programs, which requires good governance practices such as transparency and accountability.

Management

The extent to which local people are able to participate in, carry out the work of, or be responsible for and have a leadership role in management activities.

Environmental

The quality of the local environment and nature's contributions to people based on the effectiveness of actions taken to maintain ecological sustainability, health and productivity that people depend on for food security, livelihoods, cultural anchoring, health, and well-being.

Distributional

The level of fairness in the distribution of benefits and burdens between different groups, including current and future generations, of the outcomes of conservation actions.

Contextual and Structural

The surrounding social, economic, and political conditions that influence people's pre-existing status (in terms of wealth, social capital, assets/capabilities, and power), as well as the structures that enable or undermine people's ability to achieve recognitional, procedural, distributional, managerial, and environmental equity in conservation initiatives.

Figure 1. Framework showing the six dimensions of social equity in marine conservation, with their definitions on the right (definitions from Bennett et al., 2021, 2025)

Frameworks and dimensions of equity

Literature on equity and justice in conservation and environmental management provides a basis for investigating or assessing multiple interacting dimensions of equity (Schreckenberg et al., 2016; Zafra-Calvo et al., 2017). These literatures offer various frameworks which include various combinations of interrelated dimensions of equity, including recognitional, procedural, distributional, management, environmental and contextual or structural (see Bennett et al., 2021, 2025, and Figure 1 for definitions). This group of dimensions provides a comprehensive and cohesive framework for assessing and understanding (in) equity. Each dimension will apply in unique ways in different contexts, because how equity is experienced and understood is dependent on specific social, economic, ecological and political circumstances and dynamics (Gurney et al., 2021).

Rather than being mutually exclusive or independent, the six equity dimensions should be seen as interdependent and interactive. Marine conservation can lead to impacts within each dimension, as well as produce impacts that span across dimensions. For example, contextual and structural inequities often manifest in issues of recognitional equity. This can be seen when Indigenous peoples or other rightsholders are not recognised in national laws and are not given formal recognition during establishment of a marine conservation initiative. In turn, lack of recognition of status and rights can lead to further procedural, management and distributional inequities (Lau et al., 2021; Ruano-Chamorro et al., 2022).

Thus, contextual and structural equity helps to bring more focus on those who have been historically marginalised, thereby helping to recognise the accumulation of disadvantages and better understand how conservation initiatives may perpetuate iniquities (similar to what Singh et al. (2023) refer to as a historical justice lens).

Existing equity assessment tools and approaches

A growing number of tools and approaches have been developed for assessing equity in relation to protected areas, natural resource management, or payment for ecosystem services. A few notable frameworks and tools include: Zafra-Calvo et al. (2017) who developed a set of ten indicators for assessing and monitoring social equity in protected areas; Springer et al. (2021) who introduced a tool that can be used to assess and strengthen natural resource governance, particularly in relation to rights, equity and social justice, at multiple levels and in diverse contexts; Engen et al. (2021) who provided a survey protocol for examining perceptions of justice related to small-scale fisheries in the context of the blue economy in coastal areas; and Franks (2023) who described a tool to assess governance and equity in protected and conserved areas through workshops with key stakeholders and rightsholders. All of these approaches are geared towards site and context specific assessments.

Our review of tools and approaches for assessing equity provided several important insights that guided our process. First, existing tools and approaches use different combinations of the various dimensions of equity. While

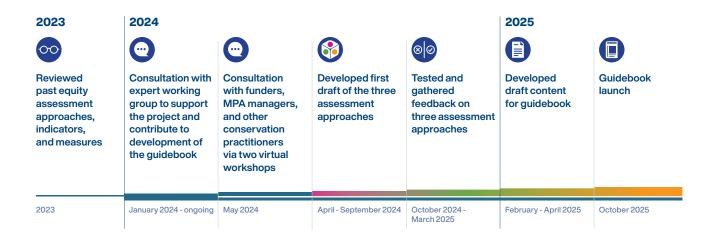


Figure 2. Steps and timeline in the development of the three assessment approaches

most emphasise recognition, procedure and distribution, there is little attention to contextual and structural equity, and no frameworks that include management and environmental equity. However, neglecting some elements (e.g. failing to pay attention to contextual and structural equity) may undermine the overall quality and depth of insights that an assessment could provide. Second, although the literature on equity in marine contexts is growing (Hampton-Smith et al., 2024), we know of no marine specific assessment frameworks and tools that speak to the full range of equity dimensions. While some frameworks are intended to be used broadly for any type of marine or terrestrial protected area (Franks, 2023; Zafra-Calvo et al., 2017), some considerations are unique in marine settings. For example, property, tenure and/or use rights may not be treated the same or receive the same level of legal recognition as in territorial contexts (Clarke & Jupiter, 2010). Differences also arise in relation to histories of resource use, relationships of communities with marine environments, and the ways that benefits and risks impact people. Third, in assessing equity it is critical to consider that equity can be understood differently in different social and cultural contexts (Gurney et al., 2021), and that the degree to which people experience equity differs by social group (Lau et al., 2021; Ruano-Chamorro et al., 2024; Singh et al., 2023). Fourth, most past tools provide and advocate for a certain approach, for example, a rapid assessment (Mahajan et al., 2024), a focus group with stakeholders (Franks, 2023), a survey of stakeholders (Engen et al., 2021) or a participatory and co-produced process (Bennett et al., 2025). Each approach comes with benefits and drawbacks, and the availability of different approaches may be necessary to meet various needs, aims and available resources and time (Franks et al., 2018).

There still remains a need for equity assessment guidance that: (a) encompasses a broad set of equity dimensions; (b) is tailored to the marine context; (c) offers flexibility and adaptability in the ways that equity is understood and assessed; and (d) offers flexibility and adaptability in terms of time and resources required and who leads the process. Here, we attempt to fill those gaps by developing and refining several equity assessment approaches for marine conservation.

PROCESS OF DEVELOPING THE EQUITY ASSESSMENT APPROACHES

We carried out a multiple-step process between 2023 and 2025 (Figure 2). At each stage in the process, we gained critical insights that allowed us to improve the approach and which also helped us to develop guidance for application.

First, we convened a working group of 23 international experts – researchers and practitioners – in equity and social aspects of marine conservation. Initial working group meetings (January to March 2024) were instrumental to confirm the direction of the project, while ongoing meetings and document review (April 2024 to August 2025) ensured conceptual and methodological rigour in the approaches, frameworks, methods and indicators. The working group also emphasised the importance of examining all dimensions of equity, focusing on marine contexts, and developing approaches that are adaptable to different social contexts.

Second, we sought feedback from an advisory group of marine conservation practitioners (including MPA managers, NGO staff and funders), as prospective end-users, on the scope and direction of guidance, during two virtual workshops in May 2024. This was a critical step that defined the direction of the project. Key insights included: the importance of viewing it as a learning journey to improve equity; acknowledgement of the difference that the group leading the process can make to legitimacy of outcomes; and the need for transparency throughout the process. Managers, in particular, emphasised that they are overburdened, often have limited resources, and may need different approaches depending on the context. This feedback ultimately led us to decide to develop three approaches to meet diverse needs.

Third, based on input from these two groups, we drafted three approaches for assessing equity between April and September 2024. We first identified a set of comprehensive yet pragmatic equity attributes and indicators that would be used in the assessment options. As an input to the process, we started by conducting a review of attributes and indicators of equity (see Bennett et al., 2025). These were then refined through grouping similar attributes, rewording to ensure that attributes were clear, and removal of attributes that were repetitive or not relevant. The final list of approximately 50 attributes was then developed into indicators and survey questions (Table 1), which were incorporated into survey instruments to be used in the various assessment approaches and related tools (see Supplementary Online Materials). We also produced written guidance for carrying out each of the assessments (see Discussion and Andrachuk et al., 2025).

Fourth, we field tested and sought feedback on the methods. The stakeholders and rightsholders equity assessment was field tested in two MPAs in South Africa during October and November 2024. The rapid equity assessment was field tested with managers in marine reserves in Palau and Canada between January and March 2025. The co-produced and customised assessment has not yet been field tested due to project budget and time constraints. Field testing included all phases of assessment, from confirmation of sites and the interest of local managers, carrying out surveys and interviews, writing up results reports (shared only with the assessed sites), and holding follow-up meetings to discuss potential actions and next steps. Feedback from field testing and partners confirmed the usefulness of the approaches, and led to many refinements such as the importance of including consent forms, editing the wording of questions, and adding guidance about analysis, visualisation, communication and deliberation of results.

OVERVIEW OF INDICATORS AND APPROACHES FOR ASSESSING EQUITY

The main outcomes of this project are a set of attributes and indicators for assessing equity, three approaches for assessing equity in marine contexts, and general guidance on preparing for and carrying out assessments (Andrachuk et al., 2025). Here, we review the attributes and indicators and the three assessment approaches.

Attributes and indicators for measuring social equity

For each dimension of equity, we identified relevant attributes and then developed associated indicators that would be measurable at site level (Table 1). For example, for recognitional equity we identified ten relevant attributes and indicators. One of those attributes was culture, for which we added the indicator "cultural identities, values and practices are acknowledged". The next step was to develop actual survey questions for each indicator (Supplementary Online Materials). We aimed to make the indicators and survey questions context agnostic, but we anticipate that some will need to be adjusted for specific languages, cultures and social contexts.

Presenting three approaches for assessing social equity

Here we provide an overview of each assessment approach (Figure 3). Ultimately, the choice of which assessment approach to use is context specific. Individuals or groups may select the assessment approach based on an evaluation of the value and limitations of each approach, objectives of the assessment, and available resources and capacity. Assessment approaches can be used independently, and there is potential to build from one to another. For example, a rapid assessment might be used to summarise quick and preliminary information, and then gather further support and funding to carry out a more in-depth assessment. Whenever possible, we encourage carrying out more in-depth assessments that engage a broader number of rightsholders and stakeholders to increase insights and legitimacy.

Rapid equity assessment

The rapid equity assessment involves the use of a survey with managers or other key individuals who are knowledgeable about a marine conservation initiative. The goal is to gain quick insights into a broad range of equity issues that may or may not have already been considered by leaders, and to encourage some management-level reflection on how to potentially address key issues. An assessment will typically involve a

Table 1. Attributes and indicators related to the different dimensions of social equity

Dimensions of	Related attributes	Example descriptions of indicators	
social equity			
Recognitional	Stakeholders and rightsholders	All relevant rightsholder and stakeholder groups are recognised	
	Human rights	Basic human rights are respected	
	Tenure and access rights	Marine use, tenure, and access rights are recognised and incorporated	
	Resource users	Resource users are recognised as rightsholders	
	Small-scale fishers' rights	Small-scale fishers' rights are respected	
	Indigenous recognition	Indigenous peoples are recognised as rightsholders	
	Indigenous rights	Indigenous rights are respected	
	Culture	Cultural identities, values and practices are acknowledged	
	Groups experiencing marginalisation	Consideration is given for people who receive fewer opportunities	
	Indigenous and local knowledge	Value of Indigenous and local knowledge are acknowledged	
Procedural	Local participation	Local people are able to participate and provide feedback	
	Representation of stakeholders and rightsholders	Stakeholders and rightsholders have representation and influence on decisions	
	Effective participation processes	Processes are in place to enable local people to influence decisions	
	Information about decisions	Information about decision-making is easy to access	
	Raising concerns	Stakeholders and rightsholders are able to raise concerns about management	
	Dispute resolution (management)	Satisfactory processes to resolve disputes with managers	
	Dispute resolution (stakeholders/rightsholders)	Satisfactory processes to resolve disputes with other stakeholders/rightsholders	
	Free, prior and informed consent	Decisions are made after free, prior and informed consent	
Management	Local authority for management	Local groups share or hold management authority	
	Local agency in management	Local groups have agency to carry out management activities	
	Local employment in management	Local people are employed in management (staff) roles	
	Local representation in leadership	Local people are represented in leadership roles	
	Sufficient funding	Sufficient funding to support local participation in management	
	Secure funding	Secure funding to support local participation in management	
	Fair enforcement	Enforcement of marine conservation initiative rules is fair for all people	

Dimensions of social equity	Related attributes	Example descriptions of indicators	
Environmental	Location of conservation initiative	Marine conservation initiative is in a good location to produce environmental benefits	
	Management capacity	Adequate management capacity to support environmental goals	
	Effective management (environment)	Management plans are effective for achieving environmental goals	
	Environmental improvements	Marine conservation initiative has led to environmental improvements	
	Stakeholders and rightsholders benefits	Stakeholders and rightsholders benefit from environmental improvements	
Distributional	Positive impacts for local people	Marine conservation initiative has been positive for local people	
	Effective management (social)	Management has been effective at achieving social goals	
	Positive livelihood and economic impacts	Livelihood and economic impacts have been positive	
	Distribution of livelihood and economic opportunities	Livelihood and economic opportunities are shared fairly	
	Positive social impacts	Social impacts have been positive	
	Distribution of benefits and opportunities	Social benefits and opportunities are shared fairly	
	Distribution of negative impacts	Negative impacts (risks, burdens) are shared fairly	
	Understanding of impacts on local people	Engagement or studies are in place to understand material and non-material impacts on local people	
	Programmes to increase positive impacts	Programmes and efforts are in place to help increase positive impacts	
	Support for people experiencing marginalisation	Support is delivered for people who are most in need	
Contextual and structural	Basic needs for local people	People living near the marine conservation initiative are able to meet basic needs	
	Reliable coastal livelihoods	Coastal livelihoods provide a steady and reliable income	
	Political views	Political views do not prevent groups from being involved in and benefiting from the marine conservation initiative	
	Social norms	Social norms do not prevent groups from being involved in and benefiting from the marine conservation initiative	
	Colonisation	Colonisation does not have ongoing impacts on local people	
	Support for marine livelihoods	Laws and policies support people who rely on the ocean	
	Environmental changes	Environmental changes do not negatively impact local people	
	Recognition of customary resource users	Laws and policies recognise customary resource users	
	Recognition of Indigenous peoples	Laws and policies recognise Indigenous peoples	
	Support for equitable marine conservation planning	National policy supports equitable marine conservation initiative planning	
	Law enforcement treats all people fairly	The law treats all people near the marine conservation initiative fairly	

	RAPID EQUITY ASSESSMENT	STAKEHOLDERS AND RIGHTSHOLDERS EQUITY ASSESSMENT	CO-PRODUCED AND CUSTOMISED EQUITY ASSESSMENT
Value of approach	Quick insights into key equity issues based on reflections from a small group of managers	Increasing awareness of equity issues through engagement of stakeholders and rightsholders	In-depth insights into equity based on a reflexive and adaptive approach that is co-designed with stakeholders and rightsholders
Participants Participants	Managers and/or key experts with knowledge of the marine conservation initiative(s)	Representatives from all stakeholder and rightsholder groups	Managers, key experts with knowledge of the marine conservation initiative(s), representatives from stakeholder and rightsholder groups
Methods	Surveys with key informants	Surveys with stakeholder and rightsholder groups representatives	Co-production workshops, surveys, focus groups
Time required for participants	Introductory meeting with all participants (1 hour), one-on-one survey with each participant (1-2 hours), debrief and follow-up meeting with all participants (1-2 hours)	Introductory meeting with managers (1 hour), surveys with stakeholder and rightsholder group representatives (1-2 hours each), debrief and follow-up meeting with managers and other key actors (1-2 hours)	Series of meetings, workshops, surveys, and focus groups over 3-6 weeks (or longer)
Use this approach if	Local time, capacity and funding for assessments is very limited but local managers or practitioners still need or want insights on equity issues.	Managers have capacity to participate and there is support for engaging stakeholders and rightsholders about equity issues	There is sufficient expertise on assessment team, managers are fully engaged, and stakeholders and rightsholders are fully engaged
Limitations	Not designed for capturing perspectives or concerns directly from stakeholders and rightsholders	Based on a limited number of people's perspectives	Requires larger budget and commitment to a longer process

Figure 3. Overview and features of each assessment approach (Andrachuk et al., 2025)

series of short meetings: (1) an initial meeting to confirm the purpose of the assessment, gain consent for participation, and gather background information about the marine conservation initiative; (2) a second round of meetings to carry out a structured survey focused on questions related to the six dimensions of equity; and (3) a follow-up meeting to discuss results and potential next steps for action. Each question in the survey tool for the rapid assessment includes quantitative responses on a four-point scale ('absent' to 'fully implemented') and encourages a qualitative explanation for each score.

The rapid equity assessment is best employed when there are strict limitations on budget, capacity or time. However, we caution that results may be biased, it will not provide insights into the diversity of stakeholders' and rightsholders' perspectives, and perceived legitimacy of results may be low. Nonetheless, it can provide a useful snapshot or initial assessment.

Stakeholders and rightsholders equity assessment

The stakeholders and rightsholders equity assessment involves surveying stakeholders and rightsholders about their perceptions related to equity and inequity. This option was designed to provide relatively fast insights into equity while gathering a wider range of perspectives. An assessment begins with initial meetings with managers to confirm the purpose of the assessment, gather background information about the marine conservation initiative, and conduct an actor mapping exercise to identify all stakeholders and rightsholders. The mapping exercise will be used to select people and organisations who will be invited to participate in the assessment. A stakeholders and rightsholders equity assessment tool includes survey questions that use a five-point scale from -2 (strongly disagree) to +2 (strongly agree) to capture both negative and positive responses. Quantitative responses can be supported with qualitative descriptions of the rationales for scores to provide more context.

While the benefit of this approach is understanding diverse perspectives, this approach can still be limited by which groups are engaged. The results of the assessment will be dependent on the skills and ability of an assessment team to identify all actor groups and effectively report on the range of perspectives.

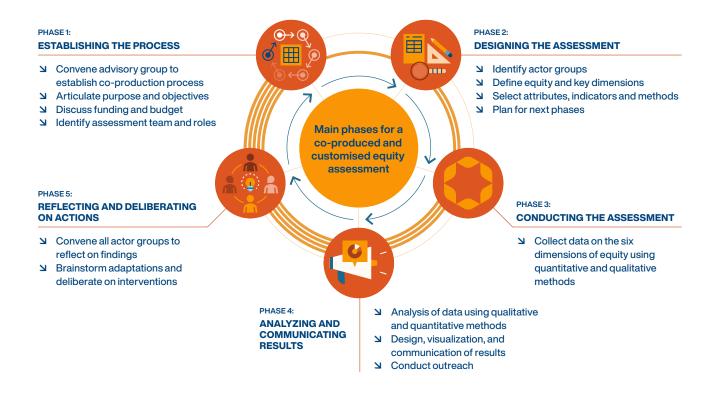


Figure 4. Main phases for a co-produced and customised equity assessment

Co-produced and customised equity assessment

The co-produced and customised equity assessment offers a comprehensive yet flexible approach for assessing equity. It involves an inclusive process to confirm relevant equity indicators, assessment methods, and analyses. This option places emphasis on the process of designing and implementing an assessment. A coproduced and customised equity assessment will require team members to be very experienced with facilitation and assessment methods. It will also require a greater commitment of resources and time (months). The assessment involves a series of five phases (Figure 4), that require assessment teams and partners to engage in co-design and reflection. The co-produced and customised approach provides opportunities for all managers, stakeholders and rightsholders to raise additional questions and bring context-specific insights into an assessment, such as adapting or adjusting attributes and indicators to better reflect local realities.

DISCUSSION

We saw a need for equity assessment guidance that is tailored for marine conservation contexts, encompasses a broad set of equity dimensions, and offers flexibility and adaptability in the ways that equity is understood and assessed, and in terms of time and resources required. Existing frameworks and tools have many strengths but do not meet these needs. In this paper, we present a set of indicators and three approaches that can be tailored to differing goals, funding and capacity. Through the process of developing and testing the assessment approaches, we also identified numerous lessons or practical considerations that we discuss here to provide further guidance for prospective assessment teams and researchers (Figure 5).



CHOOSING AN ASSESSMENT OPTION

- Consider for whom and by whom the assessment is being done
- J Identify potential for a coproduced process
- Understand both strengths and limitations of each type of equity assessment
- Evaluate feasibility



PREPARING FOR AN ASSESSMENT

- Evaluate skills and capacities of the assessment team
- Review ethics
- Discuss data ownership, sharing, and control
- Maintain flexibility and tailor to context
- Plan for logistical factors
- Foster appreciation for diverse knowledge systems



CARRYING OUT AN ASSESSMENT

- Employ principles for community engagement
- ☑ Include desk-based research
- Understand local history and context
- ldentify and recruit assessment participants
- Analyse and visualise results



MOVING FROM ASSESSMENT TO ACTION

- Communicate results to endusers and participants
- Deliberate on results and select actions
- Commit to actions and ongoing learning

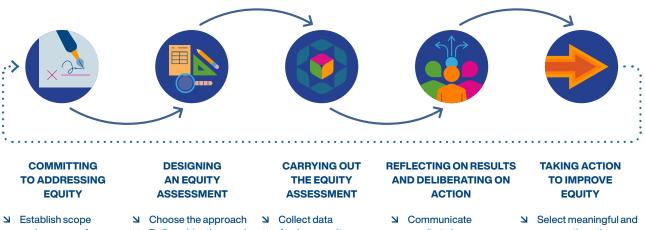
Figure 5. Key considerations to consider when carrying out an equity assessment

Choosing an assessment approach

Each equity assessment approach has inherent strengths and limitations. Selection of which approach to use should include consideration of how an assessment team's funding and capacity align with their goals and those of local managers, stakeholders and rightsholders. It is important to consider who is conducting an assessment, and how this will influence the process. The methods presented here are intended for different groups to use, including managers, researchers, NGO staff or other stakeholders. Yet, there are numerous issues of representation, bias and accountability that can arise, depending on who is leading and involved in an assessment. Powerful individuals may be able to influence who benefits (or not) from marine conservation initiatives, and they can also steer how equity is defined and assessed within an assessment process (Singh et al., 2023). For example, NGOs are often guided by organisational priorities or are beholden to funders or other institutions outside of local communities. Therefore, assessment teams need to document and be aware of their own position in relation to managers and other decision-makers, rightsholders and stakeholders. Engaging an independent assessor might help to ensure that inequities are not ignored or further entrenched through an assessment. While not always possible, consideration should be given to the potential for a co-produced process, where relationships between an equity assessment team and other stakeholders and rightsholders are based on joint decision-making and insight generation (Bennett et al., 2025; Wyborn et al., 2019; Zurba et al., 2022).

Preparing an equity assessment

Prior to conducting an equity assessment, there are a number of ways that assessment teams can prepare. First, teams should evaluate their team's skills and capacities and hire additional support for social science or local interpretation and relationship building if needed. Second, all team members should carefully reflect on and discuss standard ethical practices and local norms and cultural expectations. These can include ensuring confidentiality for assessment participants, use of informed consent, and ensuring that an assessment does not cause harm. Third, practices for data ownership, sharing and control need to be established in consultation with local communities or organisations. Fourth, all assessment tools and protocols should be tested and refined to ensure that they are locally appropriate (e.g. with respect to language and customs) and understandable. Fifth, fieldwork plans should be established with respect to meeting locations, contact information, communication tools and travel needs. Sixth, team leaders should ensure that all team members appreciate the importance of diverse knowledge systems and multiple perspectives, including Indigenous knowledge and local knowledge, with possibly livelihood and gender-differentiated knowledge among them (Brondízio et al., 2021; Smith, 2021). Training and planning that includes these considerations can help ensure that team members are prepared once an assessment begins.



- and purpose of assessment
- Confirm interest in assessing equity and commitment to learning and action
- Define objectives and attributes
- Confirm understanding of indicators and methods
- Analyse results
- results to key audiences to enable learning and inform decision-making
- Collaboratively evaluate meaning of results
- Deliberate on potential actions
- pragmatic actions
- Implement actions
- Commit to continual cycle of monitoring, evaluating, learning and adapting

Figure 6. Key steps in developing an equity assessment and moving from assessment to action to improve social equity

Carrying out an equity assessment

Carrying out an assessment includes engagement of conservation initiative leaders and community members (ideally early and collaboratively), data collection, and analysis of results. Approaching an assessment with humility, respect for all stakeholders and rightsholders, and commitment to learning are all good practices (Franks, 2023). Respect for participants includes being transparent about goals, methods, and how their information will be used (Reid et al., 2022). Regardless of which assessment approach is used, desk-based research can be an important source of information about governance contexts, economic and political history, management plans, and other social dimensions that intersect with marine conservation initiative policy and management. Following completion of all surveys and other data collection, the analysis, visualisation and presentation sharing of results are critical for moving towards actions and changes. A key point from an equity perspective is that results should be disaggregated by group and intersecting identities (Singh et al., 2023). When these steps include participation of assessment participants, there are greater opportunities for verification of results and ensuring that outcomes are presented in ways that are locally appropriate.

Moving from assessment to action to improve equity

Data collection and analysis are not the beginning or the end of the process (Figure 6). After analysis and visualisation of results, it is important to: (1) communicate, support learning, and inform decision-making; (2) set up forums for deliberation and selection of potential actions; (3) ensure that actors are able to implement those actions; and (4) commit to ongoing cycles of monitoring, evaluation, re-learning and adapting to respond to evolving conditions (Bennett et al., 2025). Communication of results can include written reports as well as presentations and community forums. Results should then be interpreted with stakeholders, rightsholders, managers, and other leaders and decision-makers, and facilitated processes can be used to deliberate on and select actions and next steps to improve equity in marine conservation governance and management. Examples of potential actions to improve equity are provided in Andrachuk et al. (2025). However, in some contexts, where local people may have suffered significant inequities, such as exclusions, social harms, and human rights violations, as a result of the implementation and management of a marine conservation initiative, substantial efforts may need to be made to make amends for past wrongs through remedial action (e.g. compensation or structural readjustment) and degazettement may even need to be considered. Moreover, the most equitable and effective actions are ones that build on local knowledge and expertise, are grounded in local social and governance contexts, and gain the support of local communities (Fariss et al., 2023).

CONCLUSIONS

While many marine conservation initiatives embed visions of equity into their goals, there is insufficient attention and resources directed to turning those visions into action. We have introduced a set of assessment options that are aimed to support the planning, implementation and ongoing management of conservation initiatives in ways that encourage reflection, learning and improvement. These assessment options build from the extensive literature on equity, yet also recognise that a single pre-defined, rigid assessment protocol would be antithetical to the central premise of recognising diversity and addressing past and current injustices in widely varying social-ecological contexts. Elevating the needs and interests of groups who have been negatively impacted by conservation, and the roles and contributions of those who are often informed rather than influential, requires a learning-based approach and commitment to change.

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REFERENCES

- Andrachuk, M., Bennett, N. J., Blythe, J., Claudet, J., Dawson, N., Finkbeiner, E., ... Villasante, S. (2025). *Guidebook for Assessing and Improving Social Equity in Marine Conservation*. Gland, Switzerland: IUCN. https://portals.iucn.org/library/node/52587
- Ban, N. C., Gurney, G. G., Marshall, N. A., Whitney, C. K., Mills, M., Gelcich, S., ... Breslow, S. J. (2019). Well-being outcomes of marine protected areas. *Nature Sustainability*, *2*(6), 524–532.
- Bennett, N. J., Calò, A., Di Franco, A., Niccolini, F., Marzo, D., Domina, I., ... Guidetti, P. (2020). Social equity and marine protected areas: Perceptions of small-scale fishermen in the Mediterranean Sea. *Biological Conservation*, 244, 108531.
- Bennett, N. J., Katz, L., Yadao-Evans, W., Ahmadia, G. N., Atkinson, S., Ban, N. C., ... Wilhelm, A. (2021). Advancing social equity in and through marine conservation. *Frontiers* in Marine Science, 8, 711538.
- Bennett, N. J., Relano, V., Roumbedakis, K., Blythe, J., Andrachuk, M., Claudet, J., ... Villasante, S. (2025). Ocean equity: From assessment to action to improve social equity in ocean governance. *Frontiers in Marine Science, 12*, 1473382.
- Blythe J. L., Gill, D., Ban, N., Epstein, G., Gurney, G. G., Jupiter, S., ... Villasante, S. (in press). The Ocean Equity Index: a framework to assess equity in ocean initiatives, projects, and policies. *Nature*.

- Brondízio, E. S., Aumeeruddy-Thomas, Y., Bates, P., Carino, J., Fernández-Llamazares, Á., Ferrari, M. F., ... Samakov, A. (2021). Locally based, regionally manifested, and globally relevant: Indigenous and local knowledge, values, and practices for nature. *Annual Review of Environment and Resources*, 46(1), 481–509.
- Clarke, P., & Jupiter, S. D. (2010). Law, custom and community-based natural resource management in Kubulau District (Fiji). Environmental Conservation, 37(1), 98–106.
- Dawson, N., Coolsaet, B., Sterling, E., Loveridge, R., Gross-Camp, N., Wongbusarakum, S., ... Rosado-May, F. (2021). The role of Indigenous peoples and local communities in effective and equitable conservation. *Ecology and Society*, 26(3).
- Engen, S., Hausner, V. H., Gurney, G. G., Broderstad, E. G., Keller, R., Lundberg, A. K., ... Fauchald, P. (2021). Blue justice: A survey for eliciting perceptions of environmental justice among coastal planners and small-scale fishers in Northern Norway. PLOS ONE, 16(5), e0251467.
- Fariss, B., DeMello, N., Powlen, K. A., Latimer, C. E., Masuda, Y., & Kennedy, C. M. (2023). Catalyzing success in communitybased conservation. *Conservation Biology*, 37(1), e13973.
- Franks, P. (2023). Site-Level Assessment of Governance and Equity (SAGE) for Protected and Conserved Areas: Manual for SAGE Facilitators. IIED.
- Franks, P., Booker, F., & Roe, D. (2018). Understanding and assessing equity in protected area conservation: A matter of governance, rights, social impacts and human wellbeing. IIED.
- Gill, D. A., Blythe, J., Bennett, N., Evans, L., Brown, K., Turner, R. A., ... Muthiga, N. A. (2023). Triple exposure: Reducing negative impacts of climate change, blue growth, and conservation on coastal communities. *One Earth*, 6(2), 118–130.
- Griffin, C. J., Jones, R., & Robertson, I. J. M. (Eds.). (2019). Moral ecologies: Histories of conservation, dispossession and resistance. Springer.
- Gurney, G. G., Mangubhai, S., Fox, M., Kim, M. K., & Agrawal, A. (2021). Equity in environmental governance: Perceived fairness of distributional justice principles in marine comanagement. *Environmental Science & Policy, 124*, 23–32.
- Hampton-Smith, M., Gurney, G. G., & Cinner, J. E. (2024). A systematic review of equity perceptions and outcomes in marine conservation. *Biological Conservation*, 289, 110395.
- Lau, J. D., Gurney, G. G., & Cinner, J. (2021). Environmental justice in coastal systems: Perspectives from communities confronting change. *Global Environmental Change*, 66, 102208.
- Mahajan, S. L., Obiene, S., Ojwang, L., Olwero, N., Valdivia, A., Wosu, A., ... Ahmadia, G. (2024). Introducing Elinor for monitoring the governance and management of area-based conservation. *Conservation Biology*, 38(2), e14213.
- Newing, H., Prado, A. A., Brittain, S., Doyle, C., Kenrick, J., Koné, L., ... Tugendhat, H. (2024). *Conservation and human rights: An introduction*. Oxford: ICCS and Forest Peoples Programme.
- Österblom, H., Wabnitz, C. C., Tladi, D., Allison, E. H., Arnaud-Haond, S., Bebbington, J., ... Selim, S. A. (2020). *Towards Ocean Equity.* Washington, DC: World Resources Institute.
- Reid, A. J., Young, N., Hinch, S. G., & Cooke, S. J. (2022). Learning from Indigenous knowledge holders on the state and future of wild Pacific salmon. *Facets*, 7(1), 718–740.
- Ruano-Chamorro, C., Gurney, G. G., & Cinner, J. E. (2022). Advancing procedural justice in conservation. *Conservation Letters*, 15(3), e12861.
- Ruano-Chamorro, C., Gurney, G. G., Mangubhai, S., Fox, M., Lau, J., Naisilisili, W., ... Cinner, J. E. (2024). Perceived equity in marine management and conservation: Exploring gender intersectionality in Fiji. *Biological Conservation*, 296, 110692.

- Sand, P. H. (2012). Fortress conservation trumps human rights? The "marine protected area" in the Chagos Archipelago. *Journal of Environment & Development*, 21(1), 36–39.
- Schreckenberg, K., Franks, P., Martin, A., & Lang, B. (2016).
 Unpacking equity for protected area conservation. *PARKS*, 22(2). 11–26.
- Sikor, T., Martin, A., Fisher, J., & He, J. (2014). Toward an empirical analysis of justice in ecosystem governance. *Conservation Letters*, 7(6), 524–532.
- Singh, G. G., Keefer, J., & Ota, Y. (2023). An inequity assessment framework for planning coastal and marine conservation and development interventions. Frontiers in Marine Science. 10. 1256500.
- Smallhorn-West, P., Allison, E., Gurney, G., Karnad, D., Kretser, H., Lobo, A. S., ... Peckham, S. H. (2023). Why human rights matter for marine conservation. *Frontiers in Marine Science*, 10, 1089154.
- Smith, L. T. (2021). Decolonizing Methodologies: Research and Indigenous Peoples. Bloomsbury.
- Springer, J., Campese, J., & Nakangu, B. (2021). The Natural Resource Governance Framework Improving governance for equitable and effective conservation. IUCN.

- Strand, M., Retter, G. B., Khan, M., Frid, A., Hudson, M., Leonard, K., ... Rakotondrazafy, V. (2024). *Co-producing Sustainable Ocean Plans with Indigenous and Traditional Knowledge Holders*. World Resources Institute.
- Wyborn, C., Datta, A., Montana, J., Ryan, M., Leith, P., Chaffin, B., ... Van Kerkhoff, L. (2019). Co-producing sustainability: Reordering the governance of science, policy, and practice. *Annual Review of Environment and Resources*, 44(1), 319–346
- Zafra-Calvo, N., Pascual, U., Brockington, D., Coolsaet, B., Cortes-Vazquez, J. A., Gross-Camp, N., ... Burgess, N. D. (2017). Towards an indicator system to assess equitable management in protected areas. *Biological Conservation*, 211, 134–141.
- Zurba, M., Petriello, M. A., Madge, C., McCarney, P., Bishop, B., McBeth, S., ... Bailey, M. (2022). Learning from knowledge co-production research and practice in the twenty-first century: Global lessons and what they mean for collaborative research in Nunatsiavut. Sustainability Science, 17(2), 449–467.

RESUMEN

La equidad social se reconoce cada vez más como un principio fundamental en la conservación marina. Las políticas de conservación globales ahora incluyen compromisos con la gestión y la gobernanza equitativas, pero las orientaciones prácticas sobre cómo entender y evaluar la equidad en la conservación marina siguen siendo limitadas. En este documento metodológico, presentamos nuestro proceso para desarrollar tres enfoques conceptualmente fundamentados, prácticos y adaptables para evaluar la equidad en la conservación marina: (1) una evaluación rápida de la equidad, (2) una evaluación de la equidad de las partes interesadas y los titulares de derechos, y (3) una evaluación de la equidad coproducida y personalizada. Los tres enfoques hacen hincapié en el proceso de evaluación como parte de un viaje de aprendizaje continuo que requiere una reflexión constante y acciones adaptativas para mejorar la equidad social. El debate identifica lecciones prácticas y consideraciones clave para elegir, preparar y llevar a cabo evaluaciones de equidad y para pasar de la evaluación a la acción con el fin de mejorar la equidad social en la conservación marina.

RÉSUMÉ

L'équité sociale est de plus en plus reconnue comme un principe fondamental de la conservation marine. Les politiques mondiales de conservation contiennent désormais des engagements en faveur d'une gestion et d'une gouvernance équitables, mais les conseils pratiques sur la manière de comprendre et d'évaluer l'équité dans la conservation marine restent limités. Dans cet article méthodologique, nous présentons notre processus d'élaboration de trois approches conceptuellement fondées, pratiques et adaptables pour évaluer l'équité dans la conservation marine : (1) une évaluation rapide de l'équité, (2) une évaluation de l'équité par les parties prenantes et les détenteurs de droits, et (3) une évaluation de l'équité coproduite et personnalisée. Ces trois approches mettent l'accent sur le processus d'évaluation dans le cadre d'un parcours d'apprentissage continu qui nécessite une réflexion permanente et des actions adaptatives afin d'améliorer l'équité sociale. La discussion identifie des enseignements pratiques et des considérations clés pour choisir, préparer et réaliser des évaluations de l'équité, et pour passer de l'évaluation à l'action afin d'améliorer l'équité sociale dans la conservation marine.