Title

Towards an Indicator System to Assess Equitable Conservation in Protected Areas

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Abstract

Aichi Target 11 (AT11), adopted by 193 Parties to the Convention on Biological Diversity (CBD) in 2010, states that protected areas (PAs) must be equitably managed by 2020. However, significant challenges remain in terms of actual implementation of equitable management in PAs. These challenges include, among others, the lack of a standardized approach to assess and monitor social equity and the difficulty of reducing social equity to a series of metrics. This perspective addresses these challenges and it proposes a minimum set of ten indicators for assessing and monitoring the three dimensions of social equity in protected areas: recognition, procedure and distribution. The indicators target information on social equity regarding cultural identity, statutory and customary rights, knowledge diversity; free, prior and informed consent mechanisms, full participation and transparency in decision-making, access to justice, accountability over decisions, distribution of conservation burdens, and sharing of conservation benefits. The proposed indicator system is a first step in advancing an approach to facilitate our understanding of how the different dimensions of social equity are denied or recognized in PAs globally. The proposed system would be used by practitioners to mainstream social equity indicators in PAs assessments at the site level and to report to the CBD on the 'equitably managed' element of AT11.

Highlights

- Countries have less than three years to report on AT11; yet no adequate standardized metrics to assess equitably managed PAs exists.
- We elaborate ten indicators for assessing and monitoring three dimensions of social equity in PAs: recognition, procedure and distribution.
- These metrics are crucial to provide some guidance for decision-makers towards more equitable management and to help managers to address inequity in their PAs.

Keywords

Aichi Target 11, distribution, procedure, PAs managers, recognition

MAIN TEXT

1. Towards equitably managed protected areas

Protected areas (PAs hereafter) are essential to maintain biodiversity and ecosystem services but also to support human well-being (Cardinale et al. 2012). Currently, some 14.7% of terrestrial and inland waters and 10.2% of coastal and marine areas within national jurisdiction are protected (UNEP-WCMC and IUCN 2016). PA expansion has occurred simultaneously with a greater emphasis on social considerations and goals in

conservation science and practice (Mascia et al. 2003; Ban et al. 2014; Mace 2015), exemplified in the recent social-ecological approach for PAs (Miller et al. 2012; Palomo et al. 2014) and the integration of a range of diverse social data in conservation planning (Stephenson and Mascia 2014; Whitehead et al. 2014). These social considerations have also been included in conservation policies; for example within the 'equitably managed' element of the Convention of Biological Diversity (CBD) Aichi Target 11 (AT11 hereafter) on PAs. Understanding and addressing social equity in PAs is crucial to deliver conservation outcomes because inequity can threaten conservation goals (Halpern et al. 2013; Oldekop et al. 2015; Klein et al. 2015; Cetas and Yasue 2016) and raise costs (Barnes et al. 2015).

In the context of PAs, social equity is often associated with the distribution of benefits – largely financial such as tourism revenues, and burdens – such as the loss of access to land and/or natural resources within the PA. While important, distributional aspects are but one dimension of equity (Schlosberg 2007), which also contains aspects of procedure and recognition (Pascual et al. 2014; Martin et al. 2015). Procedural equity refers to how decisions are made, such as who should, or should not receive benefits and burdens, and how inclusive participation of stakeholders is ensured. It includes transparent management approaches, access to justice to solve conflicts and the participation of all stakeholders in decision making (Figueroa and Mills 2001). Recognition is linked to who can take decisions and it refers to acknowledgement and respect for social and cultural diversity as well as for the values, rights and beliefs of stakeholders. It also requires that the management of PAs considers the pre-existing uneven capacity of different stakeholders to access and influence decision making (Whyte 2011).

As inter-dependent conditions of social equity, distribution, procedure and recognition are also central dimensions for the assessment of social equity in PAs. Most efforts to assess social equity in PAs have focused on identifying the distribution of costs and the sharing of benefits (for a review see Schreckenberg et al. 2010 and de Lange et al. 2016). Procedural issues and their links with matters of recognition have received less attention (see Lockwood 2010; Borrini-Feyerabend et al. 2013; Wilkie et al. 2015; Shields et al. 2016). Furthermore, although multidimensional social equity principles in PAs have been conceptually defined (Schreckenberg et al. 2016), still the variety of methodologies and tools employed to assess the different dimensions of social equity separately (see de Lange et al. 2016 for a review), along with budget and time constraints, are key concerns for policy makers and specially those working on conservation practice.

Although the need for a standardized approach to operationalize assessments of social equity in PAs has been broadly acknowledged, there is a gap to connect conceptual principles of social equity to a practical indicator system on this matter. This essay seeks to fill this gap. We first describe the criteria of social equity to be measured in the context of PAs management. Then, we propose a minimum set of (ten) indicators that would, if collected, provide valuable information about the impact of PA establishment or/and management on social equity. Finally, we discuss how these indicators might be deployed to effectively track progress towards the equitable management element of the CBD 2020 Aichi Target 11.

2. Assessing social equity in PAs: What to measure?

Two initial questions guide our approach about how to assess social equity (McDermott et al. 2013): What is understood by 'equitable' PA management? And, for whom should it be equitable? First, according to the CBD (2010), PAs should not (in their establishment and management, at least) have a negative impact on local stakeholder groups. Moreover, they should contribute to a reduction of the inequities experienced by the most vulnerable local stakeholders, where possible. Second, the subjects of equity are local stakeholder groups geographically located within or near the administrative boundaries of PAs, as well as those having a relation of practice (i.e. traditional or current

claims, or common or significant uses of natural resources or interactions) with the PA (Reckwitz 2002).

We understand 'equitably' managed PAs as a dynamic process where interactions among the different dimensions of social equity (recognition, procedure and distribution) co-evolve (Figure 1). It should be noted that these dimensions are mutually non-compensable; failure to comply with one of the dimensions, cannot be compensated by extra efforts in improving the status of another dimension.

While several principles associated within each social equity dimension have been identified in the literature (Schreckenberg et al. 2016), PA practitioners and policy makers still lack clear guidance about what an equitably managed PA looks like, and what information about PAs should be gathered and monitored in the context of AT11.

Drawing on the discussions from a three days interdisciplinary workshop "Operationalizing social equity goals in protected areas: how do we track progress at global level" (February 2016), we describe the key social equity criteria which could help policy-makers and practitioners assess and track the equitable management of PAs. These social equity criteria are selected on the basis of having been already broadly conceptualized in the context of PAs, are easily translated into an indicator generally applicable to the different types of PA worldwide, and where several stakeholders involved in the management of PAs (government, private agencies, NGOs, communities) could assess and respond to using a simple questionnaire.

2.1. Recognition

Recognition has a long philosophical and political history, with roots in Hegelian ethics, critical theory and post-colonial studies (for a detailed conceptual introduction to the concept of recognition in the context of conservation see Martin et al. 2016). Described by Honneth (1996) as the 'moral grammar of social conflicts', recognition deals with respect of identity and the valorization of social and cultural differences, including gender.

Failure to account for this dimension in PA management typically occurs when some stakeholders are seen as 'inferior, excluded, wholly other, or simply invisible' (Fraser 2000). In this case, their needs are neglected or ignored, which may result in physical eviction from PAs, but also in economic or symbolic exclusion (Brockington and Igoe 2006). For example, Goldman (2011) shows how Maasai communities became 'strangers in their own land' following the appointment of the Tanzanian Land Conservation Trust over a ranch. The Trust's managerial approach ignored local Maasai history and symbolism, discredited their traditional local knowledge and disregarded local notions of authority.

We use three criteria for assessing recognition in line with the principles defined by Schreckenberg et al. (2016): recognition and respect for diverse cultural identities; recognition and respect for statutory and customary rights; and recognition and respect for different knowledge systems. First, one's culture and identity can shape their understanding of what requires or deserves conservation (Martin et al. 2016). For instance, cultural identities and religious beliefs create strong forms of attachment to sacred places and totem species, which are the oldest examples of conservation (Dudley et al. 2009). Respect of statutory and customary rights is also central; the failure to recognize local social norms and associated informal institutions for example, may lead to distrust, conflict and/or a lack of support to PA management decisions among local stakeholders groups (Brooks et al. 2012; Hicks and Cinner 2014). Additionally, for equitably managed PAs it is important to recognize local traditional knowledge, which can often improve the understanding of complex local human-nature interactions, as it enlarges and diversifies the evidence-base for conservation (Loh and Harmon 2005; Etiendem et al. 2011).

2.2. Procedure

Procedure refers to the processes, strategies, instruments and mechanisms whereby authorities, such as governors and managers, pursue conservation. Equitable procedures in PA management are directly connected to conservation success (e.g. Reed 2008). Following the equity principles of Schreckenberg et al. (2016) we propose five procedural equity

criteria: effective participation of all relevant stakeholders in decision-making; transparency supported by timely access to relevant information in appropriate forms; access to justice, including an effective dispute-resolution process; accountability as clearly defined and agreed responsibilities of stakeholders; and free, prior and informed consent (FPIC) for actions that may affect local communities and indigenous people.

The existence and effective application of mechanisms for participation in decision making by local stakeholder groups is critical for enhancing socially equitable procedures in PA management (Stoll-Kleemann et al. 2010; Borrini-Feyerabend et al. 2013). Top-down conservation management procedures in any kind of management (from government to community-managed PAs), where public participation in decision-making is reduced by for instance elite-capture problems, can severely limit access to necessary natural and cultural assets within PAs, which in turn may undermine the effectiveness of conservation actions (Lund and Saito-Jensen 2013; Richmond and Kotowicz 2015). For example, in Bialowiesa National Park in Poland, enhanced control by government authorities over processes of participation in forest management has generated conflicts with local population which have undermined forest conservation (Niedziakowski et al. 2012). The effective participation of local stakeholder groups in decision-making is conditional on several issues (Sterling et al. 2017), including the nature of decisions in which stakeholders partake, and in particular how influential to conservation management they are; the information available to ensure that stakeholders are well informed of the interests, implications and possible outcomes of their decision as well as about issues of responsibility and accountability; the mechanisms that guarantee transparency; and, knowledge and access to effective dispute resolution processes. Further, equitable procedures require that participation occurs at early stages of decision making so that the nature of the decisions is meaningful and common interests between local stakeholder groups and conservation actions and plans can be identified and aligned (Silva 2015). Procedural equity in PA management also requires that local stakeholder groups are aware of who is accountable for what and in which forums procedures are deliberated. Local stakeholders groups should be able to access to mechanisms to solve conflicts in case it was necessary (De Pourcq et al. 2015). This also requires transparent mechanisms in place and an acknowledgement of the diverse capacities of local people to access, understand and make use of information about management plans and activities in PAs (Lockwood 2010).

Lastly, an important instrument for procedural equity in PA management is associated with FPIC mechanisms. FPIC is a managerial process that helps to ensure the right of local stakeholder groups to freely pursue their economic, social, and cultural development by having the opportunity to give or withhold their consent to the establishment of a PA and to changes in conservation governance that may affect them. It is not a failsafe, in that it is a process which can be manipulated by the different actors involved (Colchester and Ferrari 2007), but it is a useful minimum (Schmidt-Soltau and Brockington 2007). FPIC sustains a set of principles that define the process and mechanisms whereby groups of people are able to conduct their own independent collective decision-making on matters affecting them. It also establishes how outsiders should communicate with them about the proposed use of their land or natural resources, so that there is a fair dialogue in agreements and negotiations processes between local stakeholder groups and outsiders.

2.3. Distribution

Distribution refers to the fair distribution of burdens and benefits from the establishment or management of a PA. Fairness about distribution is largely associated with a culturally-specific idea of tolerable and morally acceptable differences in access and control over resources in society. In the PA context, it implies that people agree on the scheme for the sharing of benefits and distribution of burdens associated with conservation. There are different ways of distributing burdens and sharing benefits (Pascual et al. 2010); benefits can be equally shared among stakeholders (egalitarian); shared in a way that

contributes to the well-being of most vulnerable (maxi-min or needs-based); shared according to the costs incurred (opportunity costs); according to the level of effort put into achieving the conservation goals (effort-based); and, that which provides the greatest benefits for the greatest number of people (utilitarian). Which of them is the most appropriate for a given PA would depend on the cultural context determining stakeholders' views and preferences over what is generally understood and accepted as being a fair distribution.

The social equity criteria associated with distribution are in line with the principles proposed by Schreckenberg et al. (2016) about sharing of benefits, and mitigation of any costs to most vulnerable stakeholders. At minimum, an equitable management of PAs ought to compensate conservation burdens suffered by the most vulnerable groups, e.g., who often depend most on rights to access and use natural resources within PAs. Benefits arising from PAs are usually enjoyed at multiple scales, including global ones; whereas the burdens associated with PAs often fall predominantly on local stakeholders. Distributional equity recognises this imbalance and strives to compensate local stakeholders groups for such burdens such as opportunity costs associated with losing agricultural land or damage to crops from wildlife (Naidoo et al. 2006).

3. Monitoring social equity in PAs: How to measure progress towards more equitably managed protected areas?

To assess the criteria described above, we propose the use of a minimum set of ten indicators: cultural identity, respect for statutory and customary rights, and knowledge diversity for recognition; FPIC, effective participation in decision-making, transparency, access to justice, and accountability for procedure; and mitigation of burdens, and sharing of benefits for distribution (see the detailed list of the proposed indicators in Table 1).

We also suggest that information about these indicators be gathered in the first instance through a quick and easily accessible questionnaire. This will allow to check to what extent, for each of the social equity indicators proposed, the establishment or management of the PA is in a current state of having a negative impact on (it is inequitable), non-impact on, or reduced inequity for local stakeholders (it is equitable) (CBD, 2010). While allowing for context-specific dynamics, these three options of responses (inequitable, no impact, equitable) will make possible to compare the social equity criteria, and assess them on a global scale, to report on the CBD AT11. Additional space can be allotted for each question to enable respondents to explain the specific reasons and particular circumstances leading to their response in a given PA (the proposed questionnaire is in Table A1 of Appendix A in the online supporting information).

All ten indicators are necessarily perception-based (Bennett 2016). Ideally, this questionnaire would be administered to diverse sets of stakeholder groups. In practice, we recognise that this may not be possible due to issues of resources and time constraints in the day-to-day management of the PA, and self-assessment by managers, or NGOs and civil society networks associated with the PAs may be the only choice. While this has obvious flaws, we consider it as a useful start – and provide the basis for further tests to explore the accuracy of such social equity assessments in PAs (Cooks et al. 2010; Cvitanovic et al. 2014). This exercise might encourage a further process of integrating this self-assessment into a longer term assessment in each PA, thus incorporating all local stakeholders in a transparent process (Hill et al. 2016). By using this quick assessment based on their own perceptions about crucial criteria of social equity, PA managers could also become more aware of what steps may need to be taken to meet AT11 as they would know where intervene (Addison et al. 2016).

4. Moving forward in assessing and monitoring social equity in PAs

We believe that it is important and necessary to identify performance metrics of equitably managed PAs to facilitate the tracking of progress towards AT11 and take actions for addressing inequity where necessary. The suggested set of indicators can be seen as a first step in this direction.

The assessment of social equity in the management of PAs is fundamentally related to how people perceive their, or others', deprivation of rights, and their participation in decisions and benefits in relation to others in dynamic social, political and ecological contexts (Zackey 2007; Hübschle 2016). Further, equity perceptions at a given time depend on the pre-existing forms of inequity at play (Holmes and Cavanagh 2016). Rather than an immutable and fully objective notion of equity, the proposed approach acknowledges that assessments of social equity in relation to the management of PAs as related to AT11 are necessarily complex and dynamic. However, this should not keep us from assessing a minimum of social equity criteria that could serve to monitor progress, and promote dialogue and action towards tackling inequity in PA management (Hicks et al. 2016).

It is challenging to determine what makes a social equity indicator system to be a good and practical one (Bauler et al. 2007). At a minimum, it is reflected in its ability in recognizing and anticipating a number of constraints in terms of whether the indicator system provides adequate information on the state of social equity, the extent to which it captures reality regarding the status of social equity in a given PA, and it is meaningful to different local stakeholder groups who are directly involved in the management of a given PA.

In this sense, the set of 10 indicators does not pretend to be exhaustive, but to cover the core (minimum) principles of social equity as useful in a PA context to report on AT11. Further research could be necessary to better understand and also developing specific indicators for cross-cutting issues also indicated by Schreckenberg et al. (2016), such as those related to gender, human rights (Allendorf and Allendorf 2013; Clabots 2013; Mariki 2016) or the idea that benefits to present generations do not compromise those benefits of future generations and other broad sustainability concerns, in assessing equitably managed PA.

It is likely that there are context-specific elements of equity that need to be incorporated into site-specific assessments, by possibly ignoring or adding ad-hoc indicators in given PAs (e.g. ignoring the question about FPIC in non-populated PAs or adding further questions about security in PAs located in countries under civil war). It is also difficult to know to what extent measuring other criteria within each principle, or using another set of indicators to assess such social equity criteria, could generate different results. For example, what if instead of measuring access to justice as the existence of a mechanism to solve disputes in PAs, this was measured as the ability of disputes about human-wildlife conflicts be judged in court? This should be also considered in future developments of an indicator system for assessing social equity in PAs.

While we expect that different perceptions about the dimensions and criteria about social equity in PA management differ according to stakeholders' knowledge and viewpoints (Martin et al. 2014), one of the values of the proposed assessment approach is that it can also be a starting point by which these differing views could be shared in a transparent way and be used as key information for learning in a further participatory and long-term site-specific equity assessment (Bennett and Dearden 2014). In this sense, it will be crucial the harmonization of this quick assessment with site-specific social equity assessments of PAs.

Achieving equitably managed PAs is an enormous task for many of the 196 countries that have committed to achieve that by 2020. A wide recognition of the social role of PAs requires a greater willingness to engage with social equity assessments as well as the commitment of governments, policy institutions, agencies and practitioners, to implement the results. This requires a stronger evidence base of the multiple dimensions of social equity beyond distribution of benefits and costs in PA management, including procedural and recognition aspects. Having an easy and adaptable approach that could provide a basic picture of social equity to report on AT11 and to be an initial point to develop further assessments to critically contribute to foster social equity in PAs, is crucial. We believe that an extensive application of the indicator system proposed could help to

elucidate the much needed picture of the state of social equity in PAs on a global scale. Last but not least, it would also facilitate our understanding of how the different dimensions and criteria of social equity are denied or recognized; ultimately to provide some guidance for decision-makers and practitioners towards more equitably managed PAs.

5. Appendices

Appendix A; Table S1 is available online.

6. Acknowledgments

We are thankful to Adrian Martin, who provided insightful comments on the manuscript; and to Phil Franks, Kate Schreckenberg, Naomi Kingston, Heather Bingham, Murielle Misrachi, David Gill, Allison Mollon, Rob Small, Jens Friis Lund and Eneko Garmendia for their useful comments on the questionnaire in the Appendix A.

7. Role of the funding source

This work is funded by the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 659881 to N.Z-C.; and supported by a Juan de la Cierva Formación Grant from the Spanish Ministry of Economy and Competitiveness to I.P. N.Z-C. and ND.B. acknowledge the Danish National Research Foundation for funding for the Center for Macroecology, Evolution and Climate; grant number DNRF96. Funders have no role in study design, in the writing of the perspective; and in the decision to submit the perspective for publication.

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TABLES

Table 1: Indicators proposed to assess and monitor social equity in protected areas.

Equity criteria in each dimension	**Indicator**
Recognition	
Cultural identity	Cultural identities of local stakeholders groups incorporated in the management of the protected area
Statutory and customary rights	Local stakeholders groups gain or retain their rights in the establishment or management of the protected area
Knowledge diversity	Traditional knowledge systems included in the management of the protected area
Procedure	
Effective participation in decision-making	Local stakeholders groups satisfied with how decisions are taken
Transparency	Local stakeholders groups accessing information about management and planning

Access to justice	Local stakeholders groups resolving satisfactory disputes due to protected area establishment or/and management by existing mechanisms
Accountability	Local stakeholders groups knowing to whom to raise concerns for solving issues related to management actions
Free, prior and informed consent (FPIC)	A Free, Prior and Informed Consent (FPIC) obtained
Distribution	
Benefits	Households of local stakeholders groups receiving tangible benefits from management actions in a way that respects culturally accepted distributional principles
Burdens	Households of local stakeholders groups relieved of burdens through mitigation actions or comprehensively compensation of them

FIGURES

Figure 1: Dynamic equity framework showing the main social equity criteria; which ranges from the status of inequitably managed (-); to equitably managed (+), through the no impact (or when negative impacts are appropriately compensated) on local stakeholders groups. As equity dimensions co-evolve, each equity criteria with its own metric is likely to stand at different positions on the vertical over time, moving upwards and downwards at different rates in each PA context.