TITLE PAGE

Title

Can existing assessment tools be used to track equity in protected area management under Aichi Target 11?

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ABSTRACT

Aichi Target 11 (AT11) includes the commitment of 194 governments to equitably manage protected areas (PAs) by 2020. Here we evaluate whether existing PA Management Effectiveness (PAME) and social and governance assessment tools can be used to determine if AT11 meets equity goals. We find that PAME assessment conditions are insufficiently inclusive of relevant actors and do not satisfactorily allow for a diversity of perspectives to be expressed and accounted for, both of which are essential for equitable PA management. Furthermore, none of the analysed PAME tools fully cover multidimensional equity and thus they are inadequate for assessing progress towards equitable management in PAs. The available social and governance PA assessment tools stipulate more inclusive and participatory conditions within their guidelines, and the IUCN Governance Guidelines comprehensively capture equity dimensions in PA management, but results are not comparable across sites. We conclude that available assessment tools do not provide a reliable way to track equity in PAs at global scale. The IUCN Governance Guidelines could be adjusted to achieve this goal, providing that the information collected is made globally comparable, while ensuring transparency, accountability and room for contestation, including by communities whose livelihoods are directly implicated. Ultimately, developing and deploying globally comparable measures to evaluate equity is problematic, as the process of gathering comparable data inevitably obscures information that is highly relevant to resolving equity issues at local scales. This challenge must be met, however, if nations are to achieve and report on their success at meeting AT11 by 2020.

MAIN TEXT

1. Introduction

Aichi Biodiversity Target 11, adopted by 194 Parties to the Convention on Biological Diversity (CBD) in 2010, states that protected areas (PAs) must be managed 'effectively and equitably' by 2020 (CBD 2010a). Management effectiveness is a well-defined concept. It refers to the quality of PA management and the extent to which management goals and objectives are reached (Hockings et al. 2006). In the last two decades, a variety of Protected Area Management Effectiveness (PAME) tools have been developed. They are usually designed as surveys or questionnaires to be completed by PA managers, staff, researchers and/or community representatives (Leverington et al. 2010; Coad et al. 2015). These tools focus on factors relevant to improving PA management, such as park administration and infrastructure, staffing and finances, communication with visitors and neighbouring communities, as well as legal and institutional frameworks. Alongside the development of PAME, other tools with stronger emphasis on understanding social and governance performance of PA management have been created (see Borrini-Feyerabend et al. 2013; IUCN GLPCA Standards Group 2014; Franks and Small 2016). These social and governance tools expand PA assessments to include matters of social and procedural relevance.

In contrast to PA effectiveness, equity in PA management is an emerging concept that remains challenging to define and has scarcely been integrated into global PA assessment efforts. This is partly due to the great complexity of the concept: equity is multi-layered, as it reaches into different social and political dimensions of society. Interpretations of 'equitable management' are highly context-specific and differ according to the status and interests of a respective actor. Therefore, equity must be framed on a case-by-case basis in order to develop targeted management actions in PAs. At the same time, broad international agreement on giving equity considerations more attention in PA management results in the need for globally comparable equity assessments. This brings up a methodological challenge: on the one hand, it is necessary to have in-depth analyses at a local level to gather crucial and case-specific information. This approach, however, is likely to remove the possibility of comparing results at a global scale due to the lack of standardized methodologies and universal indicators. On the other hand, the aim to assess equity at broader scale to ensure global comparability of the results can greatly improve the compliance with pressing international conservation goals. But this, in return, decreases the level of depth and local applicability of the assessments, which results in a loss of detail and relevant information at a local scale.

Despite these challenges, the member states of the CBD are committed to demonstrating progress toward equitable PA management before the year 2020. It is widely agreed that striving towards equity is important for at least two reasons. From an instrumental point of view, there are indications that equitable and socially legitimate conservation fosters improved ecological outcomes (e.g. Chan et al. 2012; Ban et al. 2013). From a moral point of view, ensuring equitable PA management has a value in and of itself (Juffe-Bignoli et al. 2014; Schreckenberg et al. 2016). Therefore, suitable measures for measuring equity are being called for. Recently, ten indicators on multidimensional social equity have been proposed to assess equity in PA management (Zafra-Calvo et al. 2017), potentially helping to resolve some of the challenges

linked to global assessments; but these have not yet been applied across a large number of countries or PAs. The use of existing tools may provide a means to evaluate PA equity, which could potentially reduce the cost associated with the development of new tools, their deployment and the associated data collection and analysis to make the data useful.

In this paper, we explore the potential of applying some of the existing PAME tools, as well as those developed for social and governance assessments, to determine the status of and progress towards equitable management of PAs at a global scale. Firstly, we examine the assessment conditions recommended for each tool in terms of their application of participatory and inclusive procedures. Secondly, we assess the degree to which each PAME, social and governance focused tool covers the principles of equitable PA management (from Franks et al. 2016). Finally, we place our results in the context of the needs of Aichi Target 11 and global reporting required in 2019 to inform the next decadal conservation policy meeting in 2020.

1.1 Framing equity in PA management and assessments

The challenges of assessing equity in PA management arise partly because many elements of the concept of equity are socially constructed and subjectively perceived (Pinto and McDermott 2013). Thus, perceptions of equity often depend on context and judgements concerning what is considered 'equitable' or 'fair' in each society (Martin et al. 2014).

In environmental policy and justice debates, considerations regarding equity have often been reduced to the distribution of benefits and burdens (e.g. Ikeme 2003, Fraser 2009). This conceptualization of equity in conservation has been criticized for being too narrow and for insufficiently addressing relevant political, economic and social considerations (Timko and Satterfield 2008; McDermott et al. 2013). In Aichi Target 11, equitable PA management is described as 'PAs established and managed in close collaboration with, and through equitable processes that recognize and respect the rights of indigenous and local communities, and vulnerable populations; and such costs and benefits of the areas are fairly shared' (CBD 2010b). This expands the definition to include dimensions of recognition and decision-making (procedural dimension), adding considerations of the structure and participation in management processes. Here, quantifiable measures such as stakeholder headcounts and recruitment ratios can give some indication on the management approach, but do not provide a direct measure of engagement in decision-making (Bowen et al. 2017) and cannot fully encompass the complexity of the concept. Indeed, many of the values and indicators considered relevant for equity assessments, such as the recognition of human rights of all involved actors, are not easily quantifiable and often hidden.

This makes the evaluation of equity in PA management more challenging. Significant progress has been made to develop conceptual frameworks to assess social equity in environmental and (Schlosberg 2007) ecosystem governance (Sikor et al. 2014), and PAs management (see Schreckenberg et al. 2016). Of all equity dimensions, the distribution of burdens and benefits from the establishment and management of PAs is most often assessed (de Lange et al. 2016). However, the procedural dimension of the decision-making process also needs to be taken into account, especially with regard to the accountability and transparency of the decision-making process, whose voices are included, and on what terms, including power relations and access to justice (Shields et al. 2016; Berbes-Blazquez et al. 2016). Equally important is the recognition of different local actors' ability to participate in decisions, their rights, associated formal and informal institutions, cultural identities, values, and knowledge systems (Martin et al. 2016). These three dimensions of social equity – distribution, procedure and recognition – are embedded within a fourth dimension of contextual factors (enabling conditions), i.e. the historical, social and political contexts that influence actors' ability to achieve recognition, participate in decision-making and argue for an equitable distribution of conservation benefits and burdens (Pascual et al. 2014).

2. Methods

We selected three PAME tools and three social and governance assessment tools for detailed analysis (further details in SOM 1 and 2). The selected PAME tools are broadly conceptualized rapid assessment tools (questionnaires) that can be applied to multiple PA types and settings, and use concise and universally comparable scoring systems, which makes them also potentially useful for globally comparable equity assessments. These PAME tools are applied across multiple countries and thousands of PAs by international organisations, making assessment data abundant and fairly accessible (IUCN-TILCEPA 2010; Leverington et al. 2010; Coad et al. 2015). While the selected tools reflect the landscape of existing PAME tools, they represent only a small selection of the 95 recorded PAME methodologies and can therefore only show a tendency for the potential use of these tools in equity assessments. The selected PAME tools were: the Rapid

Assessment and Prioritization of Protected Area Management (RAPPAM; Ervin 2003); the Management Effectiveness Tracking Tool (METT; Stolton et al. 2003; Stolton et al. 2007); and the Central American Protected Area System (PROARCA; Courrau 1999). While PROARCA is only used in Central America, it was selected because its flexible assessment structure qualifies it for an application beyond the region (see SOM 2).

The three social and governance assessment tools were selected based on their frequent application by conservation actors, along with the fact that they address equity in PA management and explicitly aim to improve equitable management under Aichi Target 11. They were therefore seen as potential alternatives to the PAME methodologies for the purpose of tracking progress towards equity in PA management. The three tools selected were: the Social Assessment of Protected Areas (SAPA; Franks and Small 2016); the IUCN Best Practice Guidelines 20 on Governance of Protected Areas (Borrini-Feyerabend et al. 2013); and the IUCN Green List of Protected and Conserved Areas (IUCN GLPCA Standards Group 2014).

On the basis of the six selected tools, we completed two analyses. First, we analysed the assessment conditions by reviewing academic and grey literature on the PAME tools to understand who participates and how PAME assessments are carried out (further details on the reviewed literature in SOM 3). The questionnaire structure, as well as time and money allocated for the assessments were also reviewed. These factors define the setting under which assessments are undertaken and thereby strongly influence their outcome (McDermott et al. 2013; Schreckenberg et al. 2016). Assessments conducted by one or few actors, in non-transparent processes and under time constraints are not likely to gather sufficient and comprehensive information. On the other hand, assessments carried out by representatives from all actors involved, in transparent and contestable processes and over a longer time span, have greater potential to record more information relevant for equity assessments, such as conflicts between parties and needs and interests of different stakeholder groups. Consequently, this analysis helped us understand the degree to which the assessment conditions align with the recognition and procedural equity principles of Franks et al. (2016). Secondly, we used the 20 equity principles of Franks et al. (2016) as a benchmark of the degree to which existing assessment tools cover the four dimensions of equity described above and their 20 principles of equity, which include among others: Recognition and respect for human rights, statutory and customary resource rights, right of Indigenous Peoples to self-determination, recognition of different identities, values, knowledge systems and institutions, full and effective participation of recognised actors in decision-making, clearly defined and agreed responsibilities of actors, access to justice, including an effective dispute-resolution process, transparency supported by timely access to relevant information in appropriate forms, Free, Prior and Informed Consent (FPIC) for actions that may affect the rights of Indigenous Peoples and local Communities, effective mitigation of any costs to Indigenous Peoples and local communities and benefits shared among relevant actors according to agreed criteria.

We scored the indicators from each tool (that is, all specific questions and statements in the PAME questionnaires evaluating PA management) against each of these equity principles in turn. This was done in two steps. First, five experts independently assessed how many equity principles were met by the tools. Indicators that clearly addressed one or several of the principles were selected and recorded in a spreadsheet matrix (see SOM 4), and the number of relevant indicators and links to equity principles were counted. Second, these results were used to compile a final scoring for each tool (see SOM 5-8 for details). The result was a matrix for each tool that records the number of times each equity principle is addressed by a tool indicator ('links'). Thus, the total number of links between a tool and the 20 equity principles was established to assess how thoroughly each tool covers the principles and which principles receive the most attention. We then assessed which of the four equity dimensions (recognition, procedure, distribution, and enabling conditions) was addressed most frequently by the tools. The greater the number of links, the better the coverage of the principles in the respective dimension. In this study, we limited this analysis to the standard versions of the tools, namely RAPPAM Standard, METT 3 and PROARCA Standard (detailed results of all analysed tool versions are found in SOM 5 and 6). To assess the potential of social and governance tools for equity assessments, we used the same analysis of assessment conditions and the same scoring of tool indicators against equity principles.

3. Results

3.1 Analysis of PAME assessment conditions

The guidelines for the analysed PAME tools recommend conducting assessments in participatory workshops with all relevant actors and over several days (Courrau 1999; Ervin 2003; Stolton and Dudley 2016).

However, in reality, workshop participants are often limited to a few people, consisting of PA managers, government officials and, in some cases, NGO employees (e.g. Goodman 2003; Lacerda 2004; Leverington et al. 2008). In addition, limited time and resource allocation are commonly observed factors that constrain the assessments, putting the robustness of the data into question (Leverington et al. 2010; Coad et al. 2015).

3.2 Overlap between PAME assessment questionnaires and equity principles

Our detailed PAME analysis showed that equity is only superficially assessed in the questionnaires. The tools were clearly not developed to assess equity. In a screening of the tools, we found that only 14.2% of the RAPPAM indicators, 18.6% of the METT indicators and 16.7% of the PROARCA indicators are concerned with social and equity matters. Furthermore, these indicators are often phrased broadly, resulting in vague and insufficient coverage of most equity principles. An example is RAPPAM indicator 10e: 'There is effective communication with local communities'. While the statement suggests that communities have access to information and are consulted, no concrete information is given on the level and mode of consultation. Therefore, no clear link to an equity principle such as transparency or FPIC can confidently be established (see Franks et al. 2016).

About half of the equity principles are covered by the various tools (Fig. 1 and SOM 5), with particular emphasis on the dimension of distribution (47 links; 75% of the principles covered), in particular the identification and assessment of burdens, benefits and risks (D1). The dimension of procedure is covered to some extent (23 links; 50% of the principles covered), whereas recognition and enabling conditions receive little attention (15 and 13 links respectively; each with 50% of the principles covered).

Nine principles lack representation in all tools. These are concerned with goals including respect for human rights, non-discrimination or the alignment of customary and statutory laws and norms (Fig. 1). Between the individual tools, RAPPAM has the highest coverage of equity principles, addressing nine out of the 20, which are relatively evenly distributed across the four dimensions (Fig. 1). METT covers eight principles, most of which fall under the distribution dimension (Fig. 1). PROARCA covers only four of the 20 principles, with a strong focus on the identification and assessment of burdens, benefits and risks (Fig. 1).

3.3 Comparison with social and governance assessment tools

The social and governance assessment tools analysed use more participatory approaches than the PAME methodologies, and are thus better aligned with the procedural and recognition dimensions of equity in PA management. SAPA and Governance Guidelines evaluations are carried out site-specifically, over a period of several days in or near the PA. Both tools appear to promote the participation of all relevant actors and focus on establishing effective communication and trust between assessors and key actors (Borrini-Feyerabend et al. 2013; Franks et al. 2014). Multiple evaluation tools are used for the assessments, including household surveys, focus group discussions, questionnaires and workshops. The Green List is designed for global use and standards have been recently defined (IUCN and WCPA 2016). Predefined criteria have to be addressed in each assessment through a number of generic indicators that are modified according to the local context. However, the Green List assessment is carried out by a closed group of expert volunteers, which may include community or indigenous representatives from the region (IUCN GLPCA 2016), but does not provide an open platform accessible to all relevant actors.

Our analysis showed large differences in coverage of the equity principles between the three tools (Fig. 2 and SOM 7). SAPA covers two of the 20 equity principles and the Green List covers 11, whereas the Governance Guidelines cover 19 equity principles and only lack a reference to the principle on the alignment of statutory and customary laws and norms (C3) (Fig. 2).

4. Discussion

Our analysis indicates that the existing PAME tools are not well suited for assessing equity in PA management. Similar findings were made for PAME tools as a way to measure aspects of human well-being and social development (Corrigan et al. 2017). A major shortcoming of the PAME tools is that the assessment conditions impede the inclusion of some relevant actors. PAME assessments are predominantly conducted by PA managers, government officials and NGOs. Thus, people living in or around the PAs are rarely given a direct voice (e.g. Coad et al. 2015). This defies the dimension of recognition and procedural equity, which requires equity assessments to be conducted under participatory, just and transparent circumstances. These are decisive findings since this generally nullifies the validity of the assessments with regards to equity. The limited time and resource allocation for the assessments further challenges the robustness of the data generated through this process, especially for equity considerations (Coad et al. 2015). Regardless of the coverage of equity principles by the indicators in different tools, the conditions under

which the assessments take place must also conform to the standards embodied in the equity principles for the tool to be considered applicable for assessing equity.

In addition to the assessment formats not being conducive to measuring equity in a meaningful way, none of the analysed PAME tools provide meaningful coverage of the 20 equity principles. This implies that the existing information stored in the GD-PAME cannot be used as a basis for monitoring developments in PA management equity (see also Burgess et al. 2014). Additionally, because the PAME tools use different scoring systems and indicators, the GD-PAME standardizes the data for global comparability. In doing so, however, similar tool indicators are often pooled into one of the 36 predefined GD-PAME headline indicators, such as 'tenure issues' or 'management plan' (see SOM 9 for details). This inevitably involves choices that are not immediately transparent and accessible to outsiders, thus incurring substantial information loss and violating the principle of procedural equity.

The assessment conditions featured by the social and governance tools are in better alignment with procedural equity, yet they all have different sets of limitations that prevent them from being entirely suitable tools for assessing equity and reporting at multiple scales. SAPA relies mainly on site-specific questions, designed specifically in workshops for each PA, implying that there is no guarantee of comparability across sites or for the fulfilment of any additional equity principles. The Green List fails to address relevant principles of equity in PA management, such as recognition of property rights, non-discrimination and accountability in decision-making, and it does not ensure a fully participatory assessment process. The Governance Guidelines address nearly all principles. However, these guidelines require a lengthy and costly four-phase assessment procedure over several months and draw on an extensive set of methodologies. Furthermore, the conclusions drawn from the assessments are highly site-specific and collected in the form of lengthy reports.

Nonetheless, we view the Governance Guidelines to be well suited for individual, site-specific assessments of equity in PA management and suggest adjustments in order to enable tracking developments at the global scale. To meet global reporting requirements, the Governance Guidelines assessment results should be transformed into scores or include responses based on a Likert scale to be comparable across PAs. This transformation process must be done in a manner that gives local actors voice and control over the resulting indicator values. Moreover, the process must be thoroughly documented in a transparent manner and provide public access to the full assessment reports. Meeting the requirements of Aichi Target 11 to capture complex and highly dynamic equity information in concise indicators will be challenging and costly. Given the resources needed to implement global equity assessments that translate local information to the global scale, meeting this ambition will require much more funding than is currently allocated to PA assessments. Furthermore, appropriate tools have to be developed and applied to assess equitably managed PAs at multiple scales.

Given the links between equitable management and improved social and ecological outcomes (Oldekop et al. 2016), assessing equity in PA management is critical. Considering that benefits arising from PAs are usually enjoyed at multiple scales, whereas the burdens associated with PAs often fall predominantly on local actors (Barnes et al. 2016), it is also a question of moral responsibility for PA management to assess and improve equity within and around its borders. To do so, we need to move swiftly towards using appropriate assessment tools and tracking mechanisms to improve PA equity, alongside management effectiveness, locally and globally.

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FIGURES

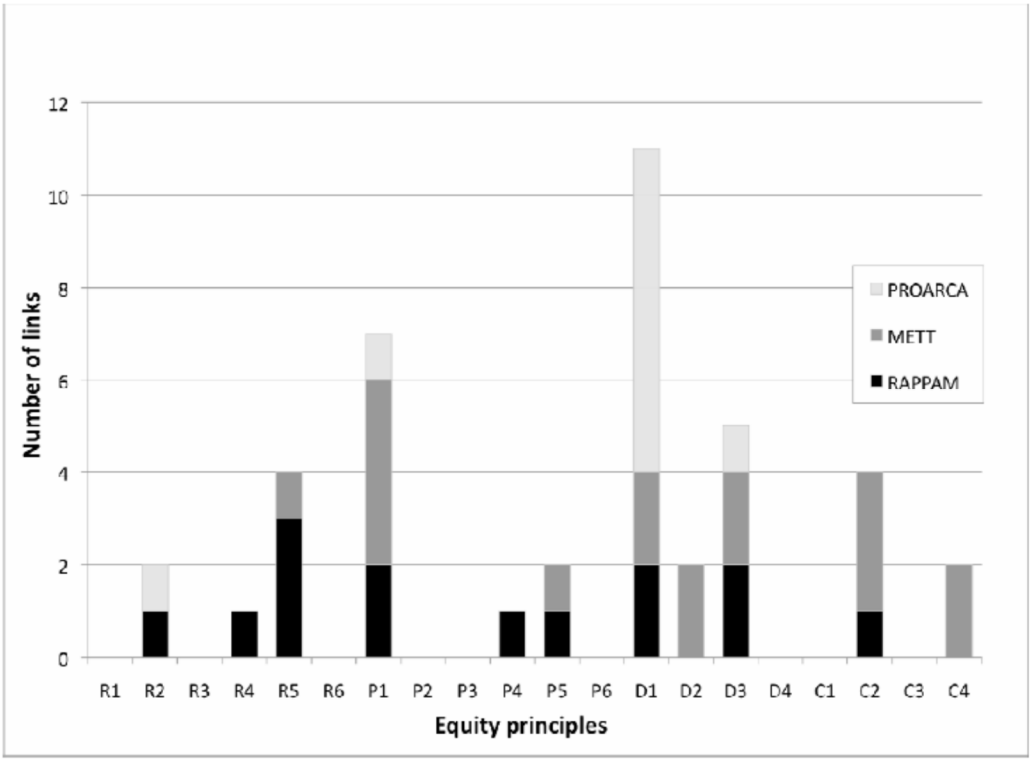

Figure 1: Number of links between Protected Areas Management Effectiveness (PAME) tools indicators and the 20 equity principles within the four dimensions of equity (for equity principles see Franks et al. 2016).

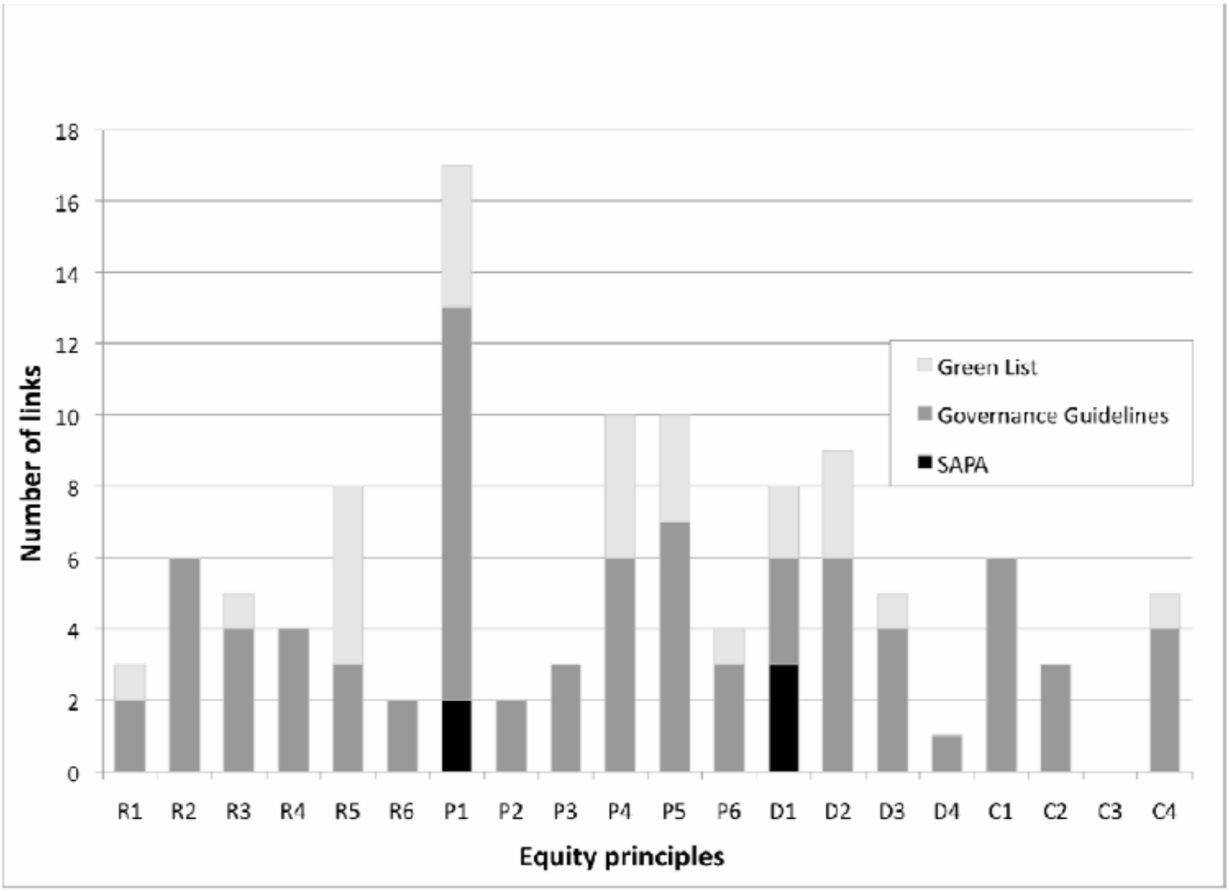

Figure 2: Number of equity principles of Franks et al. (2016) addressed by tool indicators in Social Assessment of Protected Areas (SAPA), the Governance Guidelines and the Green List.

SUPPLEMENTARY MATERIAL (SOM)

Supplementary material 1: Selection process of PAME tools
Supplementary material 2: Details of the analysed PAME and social and governance assessment tools
Supplementary material 3: Reviewed literature for analysis of assessment conditions
Supplementary material 4: Detailed scoring method, incl. scoring exercise
Supplementary material 5: Detailed analysis results for PAME: sum-up table and scoring matrices for RAPPAM, METT and PROARCA
Supplementary material 6: Equity-related indicators in RAPPAM, METT and PROARCA
Supplementary material 7: Detailed analysis results for social and governance tools: sum-up table and scoring matrices for SAPA, the Governance Guidelines and the Green List
Supplementary material 8: Equity-related indicators in SAPA, the Governance Guidelines and the Green List
Supplementary material 9: GD-PAME transformation process