PROGRESS TOWARDS THE CBD PROTECTED AREA MANAGEMENT EFFECTIVENESS TARGETS

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ABSTRACT

The management effectiveness of protected areas is a critically important consideration for their conservation success. Over 40 different protected area management effectiveness (PAME) data collection tools have been developed to systematically assess protected area management effectiveness. Many of these assessments have recently been collated into the Global IUCN Protected Area Management Effectiveness (PAME) database. We use the PAME database together with and the World Database on Protected Areas (WDPA) to assess current progress towards the Convention on Biological Diversity's (CBD) 2010 and 2015 targets for PAME, which call for at least 30 per cent and 60 per cent of the total area of protected areas to have been assessed in terms of management effectiveness, respectively. We show that globally 29 per cent of the area protected has been assessed and 23 per cent of countries have reached the 60 per cent target. In addition 46 per cent of countries have reached the 30 per cent target. However, analytical results show that there are biases in the type of protected area assessed; protected areas with larger areas, and protected areas designated as National Parks (IUCN category II) are much more likely to have conducted a PAME assessment. In addition there is a paucity of PAME assessments from Europe and North America, where assessments of protected area management may already be integrated into protected area planning and monitoring systems, creating a challenge for reporting to the CBD. We further discuss the potential and limitations of PAME assessments as tools for tracking and evaluating protected area management, and the need for further assessment tools to address the 'equity' elements of Target 11 of the CBD.

KEYWORDS: protected area management effectiveness, CBD, WDPA, PoWPA, assessment

INTRODUCTION

Protected areas have long been regarded as an important tool for biodiversity conservation (e.g. WCED, 1987), and are used as indicators of progress in the protection of biological diversity by a number of international agreements, including the Convention on Biological Diversity (CBD). The CBD Aichi Biodiversity Targets, agreed on by Parties to the Convention in October 2010, include the following target for protected areas: (www.cbd.int/sp/targets/):

> *By 2020, at least 17 per cent of terrestrial and inland water, and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through* ***effectively and equitably managed****, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes'.* Target 11, CBD (emphasis added).

This new Aichi target was developed from the earlier CBD Target 1.1 (set in 2003), which called for: '*at least 10 per cent of each of the world's ecological regions* [to be] *effectively conserved*'. Target 1.1, Decision VII/30, CBD

Analyses of progress towards Target 1.1 have to date tended to measure protected area coverage (Chape et al., 2005, Coad et al., 2008, Spalding et al., 2008, Coad et al., 2009a, Coad et al., 2009b, Jenkins and Joppa, 2009) and ecological representativeness (Rodrigues et al., 2004, Spalding et al., 2007, Schmitt et al., 2009, Herbert et al., 2010) facilitated by the availability of open-access global datasets on protected area locations (e.g. The World Database on Protected Areas – WDPA) and global frameworks of ecological regions and key areas for biodiversity (Olson et al., 2001, Eken et al., 2004). In terms of global protected area coverage, Parties have made significant progress towards achieving Target 1.1 for terrestrial biodiversity: over 50 per cent of terrestrial ecoregions have 10 per cent or more of their area within protected areas, although marine ecosystems are still severely under-represented (Spalding et al., 2008, Coad et al., 2009b).

However, protected area coverage alone is not a sufficient indicator for meeting global biodiversity targets. There has been a growing concern amongst protected area managers and conservation scientists that many protected areas around the world are not achieving the conservation objectives for which they were established, because of a lack of effective management (Hockings et al., 2004b, Dudley & Stolton, 2009). In response to this concern, in 2004 the CBD established the Programme of Work on Protected Areas (PoWPA) and set a preliminary global target for 30 per cent of the world's protected areas to have assessed the effectiveness of their management by 2010 (Goal 4.2, CBD PoWPA) (see Coad et al., 2009). This targeted was updated at the CBD's COP 10, when addition to introducing the call for 'effective and equitable' management of protected areas in Target 11, the CBD Aichi targets expanded the mandate for management effectiveness assessment. Inviting *"…Parties to…expand and institutionalize management effectiveness assessments to work towards* ***assessing 60 per cent of the total area of protected areas by 2015*** *using various national and regional tools and report the results into the global database on management effectiveness…"* CBD Aichi Targets, COP 10 Decision X/31, 19a (emphasis added).

Undertaking an assessment of management effectiveness allows conservation agencies to understand better their strengths and weaknesses and to adapt and improve their management regime. In some cases assessments are undertaken in response to donor requirements associated with project support for a protected area or as part of an NGO sponsored assessment and improvement project (Hockings et al., 2004a, Leverington et al., 2010b). Assessments are also undertaken in response to central government requirements to monitor and report on protected area management (e.g. NSW Audit Office, 2004, Auditor General of Queensland, 2010). In 2000, the IUCN World Commission on Protected Areas (WCPA) developed an overarching framework to guide assessment of management effectiveness that has been widely used around the world (Hockings et al., 2000, Hockings et al., 2006). According to this framework, the evaluation of management effectiveness can be carried out for a variety of reasons, including providing better management in a changing environment, effective resource allocation, improved accountability and transparency, community involvement, and promotion of protected area values.

The WCPA framework was developed to provide overall guidance for the evaluation of management, the selection of appropriate indicators and the analysis and application of assessment results. It has been used to develop over 40 different protected area management effectiveness (PAME) data collection tools to systematically assess protected area management effectiveness at the individual protected area level and at a national system level (Leverington et al., 2010a; also see www.wdpa.org/me).

A global study into management effectiveness evaluation was launched in late 2005 and completed in 2010 (Leverington et al., 2008, Leverington et al., 2010a, Nolte et al., 2010). The aim of the study was to obtain a global picture of protected area effectiveness and to track CBD targets and reporting needs on behalf of the international conservation community. To achieve this aim, all existing PAME assessments were collated into a single database. The resulting database has since been updated as part of a collaborative research effort between the University of Queensland and the University of Oxford, with inputs from various other NGO, government and intergovernmental partners [1]. The database contains PAME assessments from 1991 to 2012. There are likely to be recent assessments that have not yet been located and added to the PAME database, despite the authors' best efforts. However, we believe that as a result of the high level of outreach to protected area managers, donors, NGOs, government and intergovernmental partners and the wider conservation community during the Global Study, which has been

Gathering data for a management effectiveness assessment in Bwindi Impenetrable National Park and World Heritage Site in Uganda © Marc Hockings

followed with regular updates from partners such as IUCN, The World Wide Fund for Nature (WWF) and the Global Environment Facility (GEF), the majority of assessments up to 2010 are now contained in the database.

In this paper we use the updated IUCN PAME database, together with the UNEP WCMC / IUCN WDPA (IUCN & UNEP, 2012), to conduct a spatial analysis of national and global progress towards the 'effectiveness' element of Aichi Target 11 and the PoWPA. We ask specifically whether countries have achieved the CBD 60 per cent Aichi target for management effectiveness assessments of nationally designated protected areas. We then explore the protected area characteristics that significantly predict whether a protected area has been evaluated. We discuss the results in terms of the future work required to measure progress toward the CBD Aichi Target for 17 per cent of the world's protected areas to be effectively and equitably managed.

METHODS

- **Data preparation**

All spatial analyses were carried out using the ESRI ArcGIS 10.1 programme (ESRI, 2012). We used the Mollweide Equal Area projection for all analyses. Results are displayed in the Robinson projection.

- **WDPA**

We used the December 2012 version of the WDPA for analysis (IUCN & UNEP, 2012). The WDPA is provided as two separate GIS shapefiles: 'WDPA polygons' for protected areas where the boundary and shape of the protected area is known, and 'WDPA points' for protected areas where only the point location is known. Where sites only existed in the WDPA as a point location, we used the 'buffer' tool in ArcGIS to create a circular polygon of the same size as the given area of the protected area (as recorded in the WDPA), with the point location as its centroid. We then used the 'Merge' tool to add the buffered points to the existing WDPA polygon shapefile. We included protected areas with a designation status of 'adopted', 'designated', 'inscribed' and 'not reported', and excluded 'proposed' protected areas. All reserves with international designations (World Heritage, Ramsar and Man and Biosphere) were removed leaving only nationally designated reserves, as most international designations either duplicate national reserves or may not meet the requirements for full protected area status (selection of nationally designated areas has also been applied in previous analyses of protected area coverage: see Jenkins & Joppa, 2009, and Schmitt et al., 2009, among others). The final version of the WDPA for analysis contained 168,054 nationally designated protected areas, of which 12 per cent were

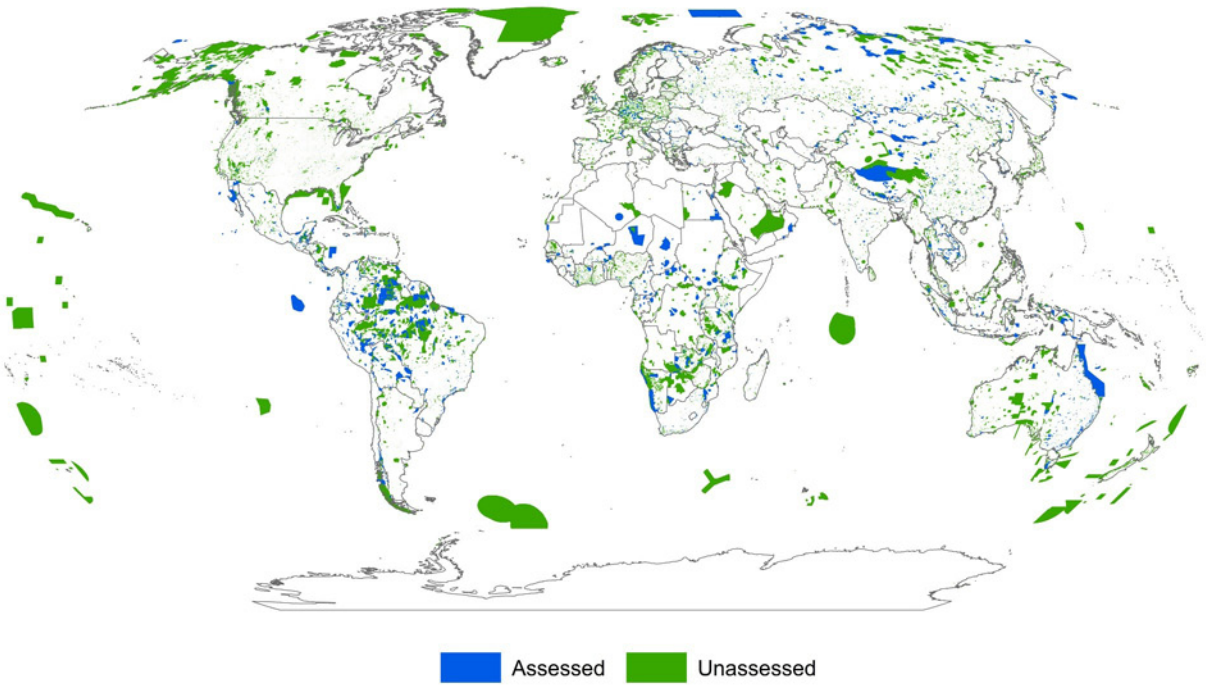

Figure 1: The location of protected areas that have conducted a PAME assessment. Marine and terrestrial nationally designated protected areas are included.

buffered points. Where detailed polygons in the 'WDPA polygon' shapefile exist, this results in large numbers of vertices in the shapefile, which can produce geoprocessing errors during analysis. To avoid these errors we used the ArcGIS 'Repair Geometry' tool to check and correct for any further geometry errors (ESRI, 2012).

- **PAME data**

Management effectiveness assessments have been systematically collated in the IUCN PAME database, which is maintained and hosted by the University of Queensland (UQ). Data held in the database includes protected area name, WDPA Unique Identifier (WDPA ID), year of assessment, methodologies, indicators and assessment tools used and, where available, assessment results. In this analysis we used all assessments entered into the IUCN PAME database up until 30th November 2012. The November 2012 version of the PAME database holds 10,501 assessments for 6,741 sites.

In the IUCN PAME database, for each PAME assessment we recorded the WDPA ID for the appropriate national protected area record in the WDPA. For those assessments where no WDPA ID existed we noted the area of the protected area in hectares, either from the original PAME assessment, or from a reputable government or NGO data source.

- **Calculating assessed area per country**

GIS overlay analyses (assessments with WDPA ID): We followed the analyses steps outlined by Bubb et al. (2008) for global protected area coverage analyses. We linked the WDPA shapefile with the list of assessed PAs, by WDPA ID, using the 'join' tool. From this, we then created a new shapefile of all assessed PAs. We used the 'dissolve' tool to dissolve all assessed protected area polygons within each country. We repeated this dissolve for the total WDPA. This resulted in two final shapefiles: one providing the total area of assessed nationally designated protected areas (for those with WDPA IDs) for each country, and a second providing the total area of all nationally designated protected areas for each country.

Assessments without WDPA ID: The area (km^2) of assessed protected areas without a WDPA ID was summed for each country, using the area of the protected area provided in the IUCN PAME database. This area was then added to the total area of protected areas assessed for each country, and the total area of protected areas for each country. In total, 232 nations were assessed, using the International Organisation for Standardisation (ISO) 3166-1 A3 list to define nations. Dependent territories were added to their parent nations. We only included countries that had protected areas

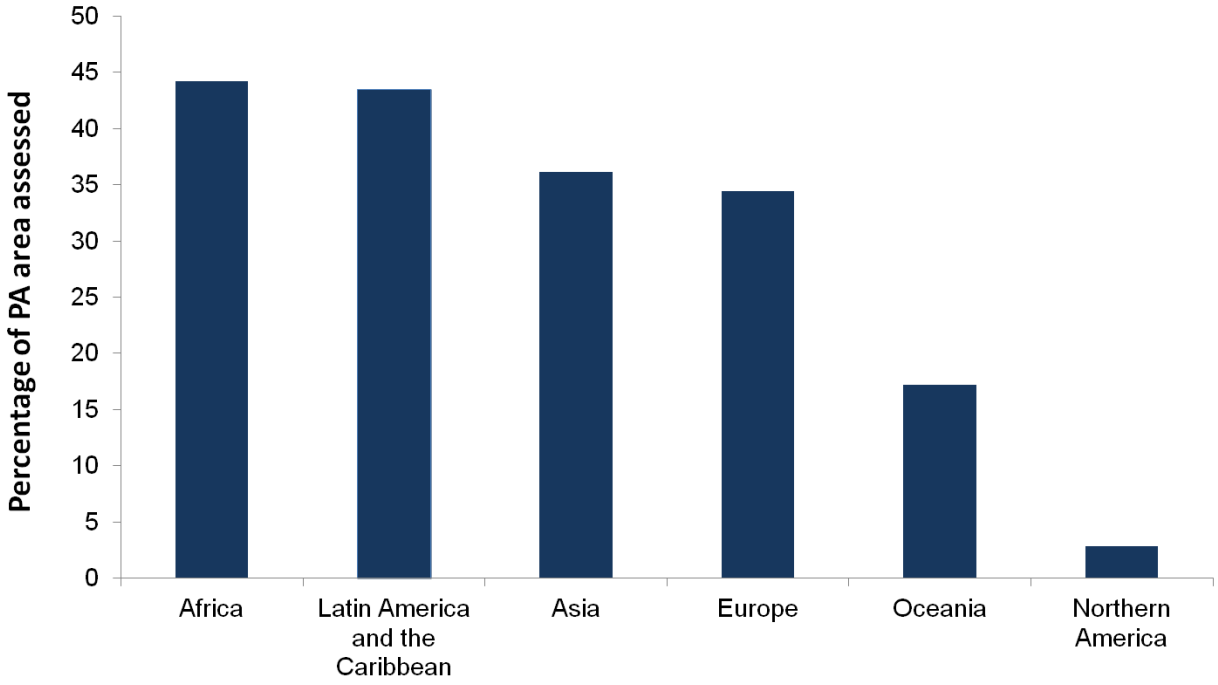

Figure 2: Regional progress towards the CBD 30 per cent and 60 per cent targets for PAME assessments. Progress is measured by the percentage of the total area of the nationally designated protected area network that has been assessed in each region.

recorded in the WDPA; Countries with no recorded protected areas were excluded from the analyses.

- **Calculating assessed area globally and per region**

Countries were grouped into regions according to the United Nations geoscheme. The area of assessed and unassessed protected areas for countries within each region was summed to find the percentage of assessed area for each region.

- **Identifying predictors of PAME assessment**

To identify which protected area characteristics significantly predict whether a PAME assessment had been carried out in a protected area, we used a generalized linear model (GLM) with a binomial error structure (i.e. multivariate logisitic regression, Pinheiro & Bates, 2000). At the level of an individual protected area we were limited in our predictors to those with characteristics that have been routinely documented by the WDPA: area (in km^2), IUCN management category and year of establishment (converted into 'age of protected area (years)' for the purposes of these analyses). We grouped IUCN categories (Dudley, 2008) into two factor levels category I – II and III – VI, to distinguish between protected areas which have been predominantly established for strict biodiversity conservation, and those which allow for some level of sustainable use and/or human intervention. These groupings have previously been used in analyses of protected area coverage (see Scharlemann et al., 2010 and Joppa & Pfaff, 2011 for examples). We included UN region and UN Human Development Index (HDI) as regional and country-level predictors.

All statistical analyses were carried out using the R statistical package (R Development Core Team, 2012). Surprisingly, given the heterogeneity of the regions analysed, the data were not overdispersed (dispersion parameter = 1) so no correction for this was necessary (Gelman & Hill, 2007).

RESULTS: GLOBAL, REGIONAL AND NATIONAL PROGRESS TOWARDS THE 60 PER CENT AICHI TARGET

Globally, 29 per cent of the area of nationally designated protected areas has been assessed for PAME. The location of assessed and unassessed protected area s is shown in Figure 1. Regionally, Africa has assessed the largest proportion by area (44 per cent). Latin America, Asia and Europe have also reached the 2010 CBD PoWPA target of 30 per cent assessed (Figure 2). Oceania has not yet met the 30 per cent target, with 17 per cent of

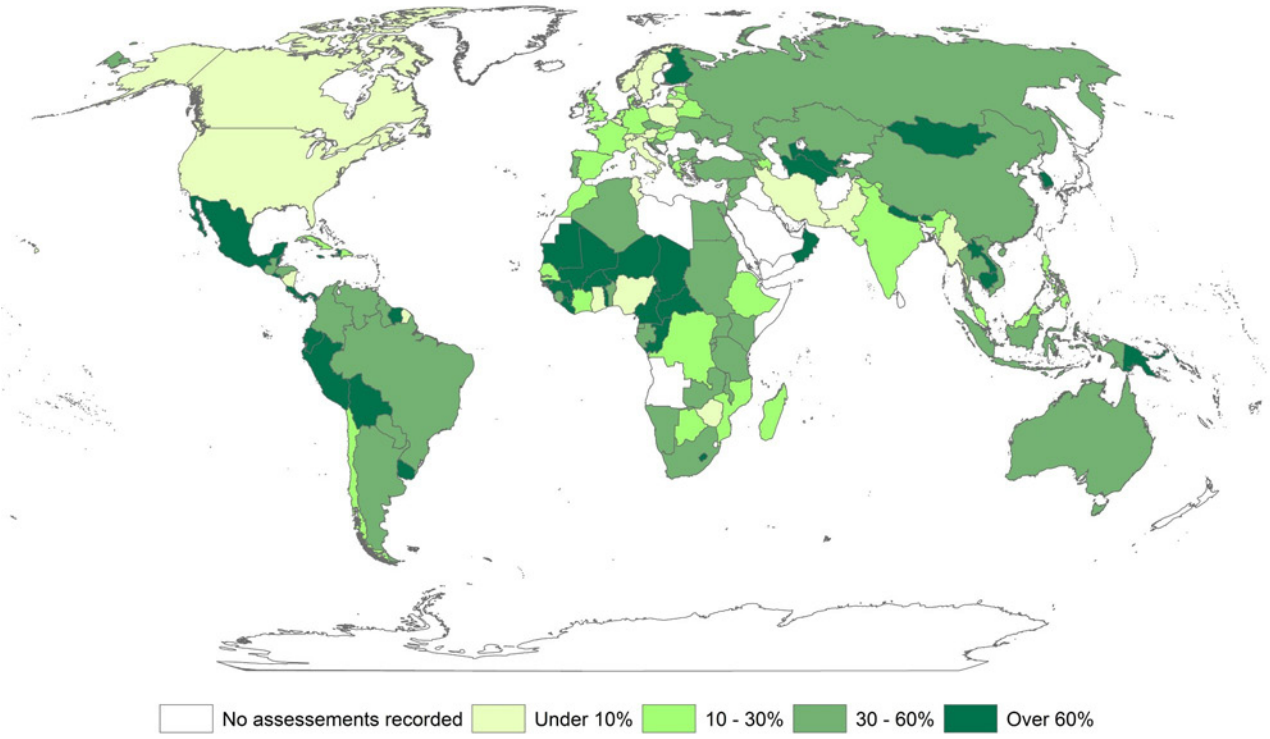

Figure 3: National progress towards the CBD 30 per cent and 60 per cent targets for PAME assessments. Progress is measured by the percentage of the total area of the nationally designated protected area network that has been assessed

the protected area assessed. Northern America has the least assessed area of all regions, with less than 3 per cent of its area assessed, according to PAME records currently held in the database.

Nationally, 46 per cent of the countries listed (90 countries in total) met the 2010 target of 30 per cent, with 23 per cent (45) already achieving the 60 per cent target of 2015 (Figures 3 and 4). However, for 52 countries (26 per cent) no assessments have been recorded in the PAME database.

PREDICTORS OF ASSESSMENT

Wald test statistics, which indicate the relative weights of the explanatory variables in the model, showed that the size of the protected area was the most significant predictor of whether an assessment had been carried out; followed by IUCN protected area management category (Table 1). Larger protected areas were significantly more likely to have conducted a PAME assessment (Figure 5 Table 1). Protected areas with an IUCN protected area management category of I - II were also significantly more likely to have been assessed than protected areas with another management category, even when controlling for area (Table 1). National Parks (category II) had the highest assessment rate, with 30 per cent of all sites assessed (Figure 6). There was also a significant effect of protected area age (year of establishment) on the probability of assessment, with younger protected areas slightly less likely to have been assessed, although the effect was very small (Table 1). Protected areas in developing countries were more likely to be assessed than those in more developed countries, the frequency of assessment declining significantly with increasing HDI scores (Table 1). However, there were significant regional biases in the results in addition to the differences in terms of development between nations. In relation to African protected areas in general, Latin American, Caribbean and Oceanian protected areas were also more likely to have carried out a management assessment with Asian, European and, especially Northern American, protected areas were less likely.

DISCUSSION

In this paper we measured progress towards the CBD 2010 and 2015 PAME targets. The results of our analyses are encouraging, suggesting that for over 23 per cent of countries the 60 per cent target for 2015 has already been achieved, according to the PAME assessments currently held in the database. A much higher proportion (46 per cent) has achieved the 30 per cent target for 2010. In addition, we continue to receive data from a

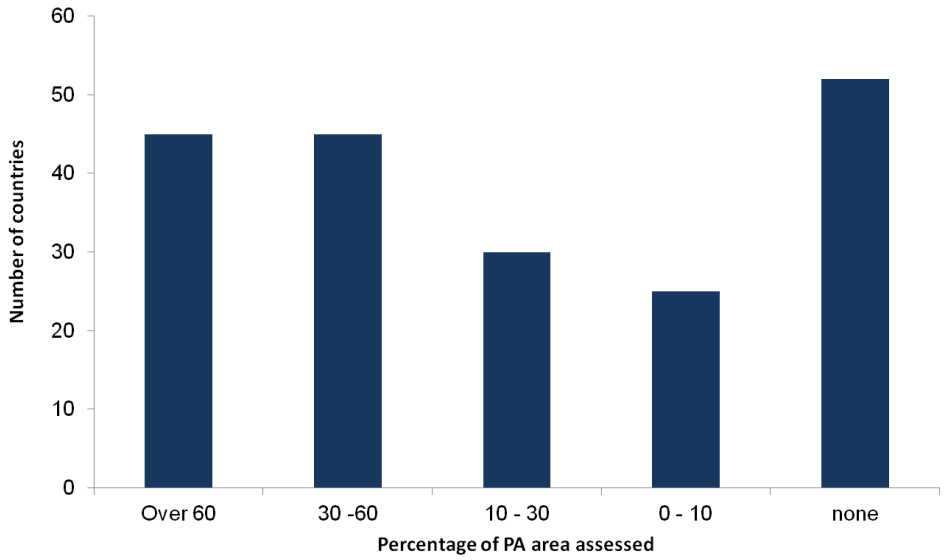

Figure 4: The number of countries reaching the CBD 30 per cent and 60 per cent targets for PAME assessments

number of sources, including regular updates from the GEF, and hence the number of assessments in now likely to be greater than that held in the November 2012 version of the PAME database.

However, progress towards the targets is not evenly spread across the globe. Africa has the highest percentage area assessed, with many countries in West and Central Africa reaching the 60 per cent target. This is to a large extent due to the strong efforts of IUCN in that region through the PAPACO project [2] (Leverington et al., 2010b), which has collated and conducted evaluations as part of a targeted programme. Latin America and Asia have also assessed a large proportion of their total protected areas by area. Additionally, protected areas were more likely to be assessed if they were from

Table 1: Parameter estimates of a Generalized Linear Model (GLM) with binomial error structure, showing the significant predictors of whether an individual protected area has conducted a management effectiveness assessment

Predictor Variables (minimal model)	Estimate	S.E.	z	p
Intercept	-2.42	0.19	-12.82	<0.001
Ln (protected area in km^2)	0.96	0.02	48.62	<0.001
Protected area IUCN Category I - II	1.62	0.04	38.55	<0.001
Protected area age (years)	0.01	0.00	10.65	<0.001
Country Human Development Index	-2.35	0.30	-7.87	<0.001
Region:				
Asia	-0.82	0.11	-7.61	<0.001
Europe	-1.48	0.14	-10.68	<0.001
Latin America and the Caribbean	0.77	0.12	6.57	<0.001
Northern America	-3.64	0.25	-14.43	<0.001
Oceania	1.04	0.15	6.77	<0.001

Notes: N = 168,054, of which 4,922 protected areas (with WDPA ID) had a management effectiveness assessment. Reference level for UN Region is Africa, and for IUCN category is III – VI. Note that all these predictors were highly significant in the full model (p-values very close to zero), therefore no model selection step was required (Pinheiro & Bates, 2000), z values are Wald test scores showing the degree of association between the predictor and the probability of having had a management assessment (= square roots of $\chi 2$ statistics).

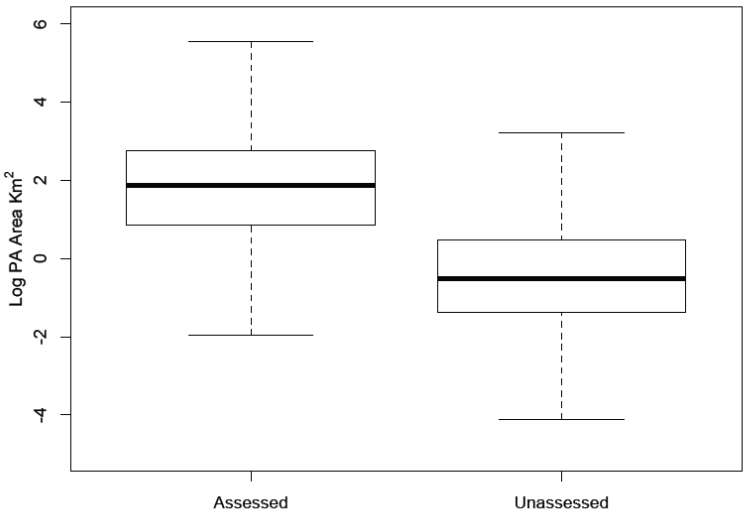

Figure 5: Boxplot showing the median area (and IQ range) of assessed and unassessed protected areas. Median area of assessed protected areas = 74.7 km^2, median area of unassessed protected areas = 0.30 km^2

countries with a lower HDI score. The role of many large donor organizations, which predominantly work in developing countries, in carrying out PAME assessments (Belokurov and Besancon, 2009) could partly explain this geographic bias in reported assessments. For example, all protected area targeting projects funded by the GEF since 2004 have been required to complete the Management Effectiveness Tracking Tool (METT) (Stolton et al., 2007) at least three times for each targeted protected area. As the single largest source of finance for biodiversity and ecosystem management globally, the GEF makes a significant impact in achieving PAME targets through this reporting requirement in partner developing and in-transition countries; more than 300 protected areas in approximately 100 countries around the world are currently required to regularly complete METTs in line with the GEF reporting requirement.

Our results also show that only few assessments on PAME have been undertaken for protected areas in North America and Western Europe, despite a dedicated effort, particularly for Europe (Nolte et al., 2010) to bring together all PAME information. This may not imply that these countries do not evaluate the effectiveness of their protected area networks; they may already have systematic assessments of effectiveness as part of their internal protected area monitoring systems, independent from the IUCN or donor networks. Even where these data exist in North America and Europe, they may not be available through IUCN or UNEP WCMC networks and this creates a challenge for a seamless reporting to the CBD via these intergovernmental organizations. For example, at a national level, Canada undertakes assessments through their State of the Parks systems and, where available, these assessments are included in the PAME database.

These analyses did not consider the different organizations undertaking PAME assessments, but this topic warrants further investigation. Although many PAME assessments may be carried out on a protected area-by-protected area basis, in some countries assessments have been integrated into regional and national management of protected area systems (for example, NSW DEC, 2005). The case of Australia, which as a country has achieved the 30 per cent target (Figure 1), clearly shows a regional difference in assessments, with eastern Australia accounting for the majority of Australian assessments (of which the Great Barrier Reef assessment accounts for a significant area). In Victoria, New South Wales and Queensland, PAME assessments have been adopted as a planning tool for state protected area management and are conducted every few years.

As well as a geographical bias, we also found a bias in the type of protected area being assessed. National Parks were much more likely to have been assessed (30 per cent of protected areas assessed) than those with another IUCN management category (1 – 7 per cent of protected areas assessed). Protected areas with a larger area were also more likely to have been assessed. This bias towards larger protected areas and National Parks is not surprising; National Parks could be described as the

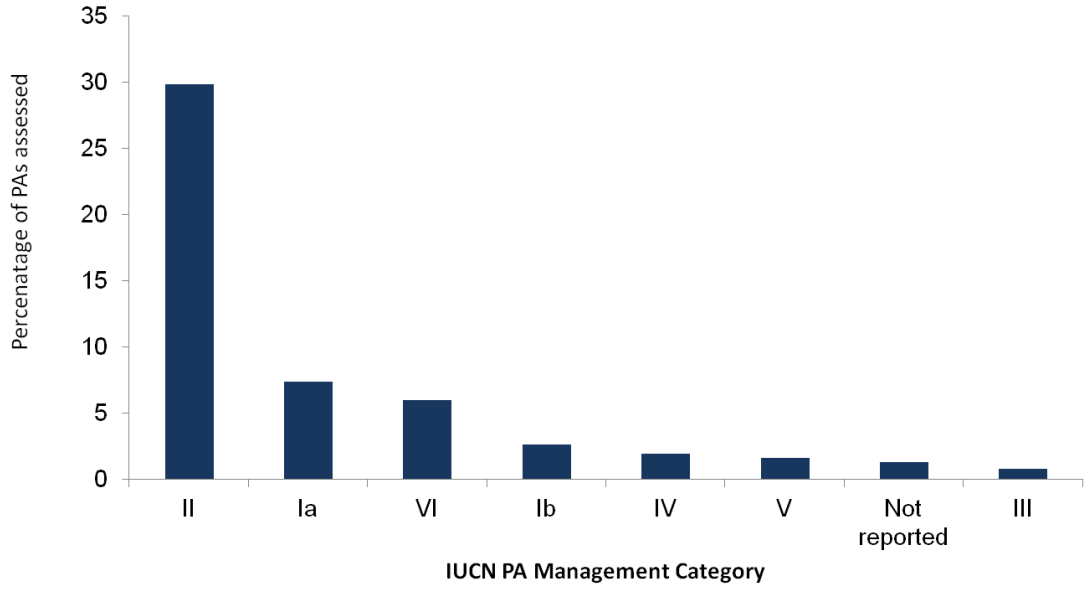

Figure 6: The percentage of protected areas that have undertaken a PAME assessment, by IUCN management category

'charismatic mega fauna' of protected areas. They are often designated for their high biodiversity value or spectacular landscapes, but also for their recreation and/or spiritual value, and are therefore likely to attract more funding and attention (and more likely to have monitoring and assessment structures in place, or have been given funding which requires a PAME assessment to be completed) than smaller areas with less emphasis on visitation and tourism. Older protected areas were also slightly more likely to have been assessed. This effect is possibly driven by the low rate of assessment in very recently designated protected areas, in which protected area management is more likely to be in the preliminary stages and management effectiveness assessments may not yet be a priority, and/or the time lag between an assessment being completed and its entry into the PAME database.

Target 11 of the CBD's Aichi targets calls for 'effectively managed' protected areas and protected area networks to be conserved. PAME evaluations, although not designed as a tool for collecting scientific data, may provide the first global-scale sample of data on protected area providing data for over 6,700 protected areas on core management inputs, context, process, outputs and outcomes. However, most PAME assessments were not primarily designed to track CBD target progress, but rather as a tool to help protected area managers start the process of adaptive management at a site and system level. Most of the assessments are completed by protected area managers, and this may introduce reporting biases. In addition, as these analyses show, the current sample of assessed protected areas is strongly biased towards large protected areas and National Parks. Some or all of these limitations in the data can be overcome; however, they must be considered when using PAME assessments to track progress towards international biodiversity targets.

The PAME database, and the kind of information it contains, is valuable, but not in itself sufficient, for tracking CBD Target 11. To address the "equity" element of the Target 11, there is an urgent need for more detailed and systematic assessment of the social and governance aspects of protected area management. IUCN and others are currently working to improve both the social indicators of management effectiveness and to create additional tools for the social assessment of protected areas (IUCN TILCEPA, 2010). Information on biodiversity outcomes is captured, in part, in management effectiveness assessments but will be better informed by the work of the IUCN WCPA-SSC Task Force on Biodiversity Outcomes of Protected Areas [3]. With these initiatives currently in the design stages, the time is ripe for a discussion within the wider conservation community as to how we evaluate protected area management at local, regional and global levels, what we are hoping to achieve with these evaluations, and which tools might help us best achieve our aims.

NOTES

[1] Some records in the dataset were provided on the basis that they were only used for global analyses and access to site data is restricted. For information on the database, contact Marc Hockings at m.hockings@uq.edu.au

[2] For more information see: http://cms.iucn.org/fr/papaco/

[3] For more information see: http://www.iucn.org/about/work/programmes/gpap_home/gpap_biodiversity/gpap_wcpabiodiv/gpap_pabiodiv/

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RESUMEN

La eficacia de la gestión de áreas protegidas es una consideración de importancia crítica para el éxito de los esfuerzos de conservación. Se han desarrollado más de 40 instrumentos de recolección de datos relacionados con la eficacia de la gestión de áreas protegidas (PAME) para la evaluación sistemática de la eficacia de la gestión de áreas protegidas. Muchas de estas evaluaciones han sido recogidas recientemente en la base de datos mundial sobre la Efectividad del Manejo de las Áreas Protegidas de la UICN (PAME). Utilizamos la base de datos de PAME junto con la Base de Datos Mundial de Áreas Protegidas (WDPA) para evaluar el progreso actual hacia las metas sobre PAME para 2010 y 2015 del Convenio sobre la Diversidad Biológica (CDB), que requieren que al menos el 30 y el 60 por ciento, respectivamente, de la superficie total de áreas protegidas haya sido evaluada en términos de efectividad de la gestión. Señalamos que a nivel mundial el 29 por ciento de las áreas protegidas han sido evaluadas y el 23 por ciento de los países han alcanzado la meta del 60 por ciento. Además, el 46 por ciento de los países han alcanzado la meta del 30 por ciento. Sin embargo, los resultados analíticos reflejan la existencia de sesgos en torno al tipo de áreas protegidas evaluadas; las áreas protegidas con áreas más grandes y las áreas protegidas designadas como Parques Nacionales (Categoría II de la UICN) tienen mayor probabilidad de haber realizado una evaluación de PAME. Por otra parte, hay pocas evaluaciones de PAME de Europa y América del Norte, donde las evaluaciones sobre la gestión de áreas protegidas pueden estar ya integradas en los sistemas de planificación y monitoreo de áreas protegidas, lo que dificulta el suministro de información al CDB. También analizamos con detenimiento las posibilidades y limitaciones de las evaluaciones de PAME como instrumentos para el seguimiento y la evaluación de la gestión de áreas protegidas, y la necesidad de nuevos instrumentos de evaluación para abordar los aspectos relativos a la "equidad" de la meta 11 del CDB.

RÉSUMÉ

Pour garantir le succès de la conservation des aires protégées, il est extrêmement important de prendre en compte l'efficacité de leur gestion. Plus de 40 outils différents de collecte de données sur l'efficacité de la gestion des aires protégées ont été élaborés pour évaluer de façon systématique cette dernière. Un grand nombre de ces évaluations ont récemment été réunies dans la base de données mondiale de l'UICN sur l'efficacité de la gestion des aires protégées (PAME). Nous avons utilisé la base de données PAME ainsi que la Base de Données Mondiale sur les Aires Protégées (WDPA) pour évaluer les progrès réalisés quant aux objectifs de la Convention sur la diversité biologique pour 2010 et 2015 sur l'efficacité de la gestion des aires protégées. Selon ces objectifs, au moins 30 et 60 pour cent respectivement de la superficie totale des aires protégées doivent être évalués en termes d'efficacité de leur gestion. Nous démontrons ainsi que, à l'échelle mondiale, 29 pour cent des aires protégées ont été évaluées, et 23 pour sont des pays ont atteint l'objectif de 60 pour cent. En outre, 46 pour cent des pays ont atteint l'objectif de 30 pour cent. Cependant, les résultats analytiques montrent certaines limites – notamment dans le type d'aire protégée évaluée. Les aires protégées les plus vastes, ainsi que les aires protégées classées Parc National (catégorie II de l'UICN) sont beaucoup plus susceptibles d'avoir mené une évaluation PAME. En outre, on observe un déficit d'évaluations PAME provenant d'Europe et d'Amérique du nord, ce qui s'explique probablement par le fait que les évaluations sur la gestion des aires protégées sont déjà intégrées dans des systèmes de planification et de suivi des aires protégées – et il est donc plus compliqué de demander à ces acteurs de faire état de la situation auprès de la Convention sur la diversité biologique. Enfin, nous examinons le potentiel et les limites des évaluations PAME en tant qu'outils de suivi et d'évaluation des aires protégées, et étudions l'importance de mettre en place d'autres outils d'évaluation pour aborder les éléments liés à l'équité mentionnés dans l'Objectif 11 de la Convention sur la diversité biologique.