LESSONS LEARNED FROM 18 YEARS OF IMPLEMENTING THE MANAGEMENT EFFECTIVENESS TRACKING TOOL (METT): A PERSPECTIVE FROM THE METT DEVELOPERS AND IMPLEMENTERS

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ABSTRACT

Understanding the successes and failures of management of protected areas is vital for the conservation of global biodiversity. The Management Effectiveness Tracking Tool (METT) is a simple, questionnaire-based approach for assessing protected area management effectiveness (PAME). Since it was developed in 1999, it has become the most widely applied PAME tool, used in at least 127 countries worldwide. This paper reviews the development of the METT and how it has been implemented and adapted.

A combination of literature review on implementation and implementation experience from the original authors and key users of the METT confirms that the METT is a relatively quick and simple way of collecting information about the status and trends of management in protected areas, and provides information to help drive management improvements. As such it is suitable for protected area managers, national protected area agencies, donors, and NGOs aiming to improve area management, and as a component of national reporting to the Convention on Biological Diversity.

The paper examines issues related to METT implementation and concludes with 12 recommendations, from using the METT to verification of results, which together help ensure the tool is implemented in the most effective way and improves the credibility of PAME assessments.

Key words: Management effectiveness tracking tool, METT, PAME, protected area management effectiveness, assessment

INTRODUCTION

Protected areas are the cornerstone of global biodiversity conservation strategies (Watson et al., 2014). There is considerable evidence that well-managed protected areas are effective in reducing biodiversity loss (Gray et al., 2016; Gill et al., 2017). However not all protected areas are fulfilling their conservation objectives (Craigie et al., 2010), and recent work has identified a range of drivers of biodiversity loss in protected areas (Barnes et al., 2016). Ensuring that protected areas are managed effectively is therefore of critical importance to in situ biodiversity conservation (UNEP-WCMC, IUCN & NGS, 2018).

Experience in understanding how best to manage protected areas is constantly evolving. At the IVth International Union for Conservation of Nature (IUCN) World Parks Congress in Caracas in 1992, the protected area community recommended that IUCN develop a system for assessing the effectiveness of protected area management (Hockings et al., 2015). An international task force was established, within IUCN's World Commission on Protected Areas (WCPA), with broad regional representation. After research, field testing and consultation, in 2000, WCPA published a framework for protected area management effectiveness (PAME) providing technical guidance on the structure of and process for developing an evaluation system, together with a checklist of issues that should be measured (Hockings et al., 2000). It suggested that an evaluation should reflect three main assessment themes: i) design and planning; ii) adequacy and appropriateness of management systems and processes; and iii) delivery of objectives. Within these three themes, the WCPA framework (which was updated in 2006, Hockings et al., 2006) identifies six key elements of the protected area management cycle, which together provide the basis of a PAME assessment (Figure 1).

The concept of PAME has subsequently been enshrined in the programmes and targets of the Convention on Biological Diversity (CBD) (UNEP-WCMC, IUCN & NGS, 2018), with all parties to the Convention being called on to undertake PAME evaluations. Target 11 of the Aichi Biodiversity Targets of the CBD specifically calls for "effectively and equitably managed systems of protected areas" (CBD, 2010), and the CBD's Programme of Work on Protected Areas (PoWPA) asked 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, 2004).

One of the first PAME methodologies to be based on the WCPA framework was developed by the World Bank/ WWF Alliance for Forest Conservation and Sustainable Use (the Alliance), to evaluate their target: 50 million hectares of existing but highly threatened forest protected areas to be secured under effective management by the year 2005 (Dudley & Stolton, 1999). In 2000, the "Scoring system for process and output indicators" from Appendix II of the WCPA Framework was sent to selected World Bank task managers, who were requested to complete it for protected areas over 20,000 ha which were supported through World Bank projects. Following this, a review was undertaken of how the scorecard could be improved, with guidance on its scope and limitations, and recommendations on how the tool could be developed to encompass other elements of the WCPA framework to track progress on PAME.

The primary aim of this improved scorecard was to supply consistent data about the progress of protected area management over time. The revised scorecard was developed in response to eight specific requirements, that it be: i) capable of providing a harmonised reporting system for protected area assessment; ii) suitable for replication; iii) able to supply consistent data to allow tracking progress over time; iv) relatively quick and easy to complete by protected area staff; v) capable of providing a 'score' if required; vi) based around a system that provides four alternative text answers to each question, thereby strengthening the scoring system; vii) easily understood by non-specialists; and viii) nested within existing reporting
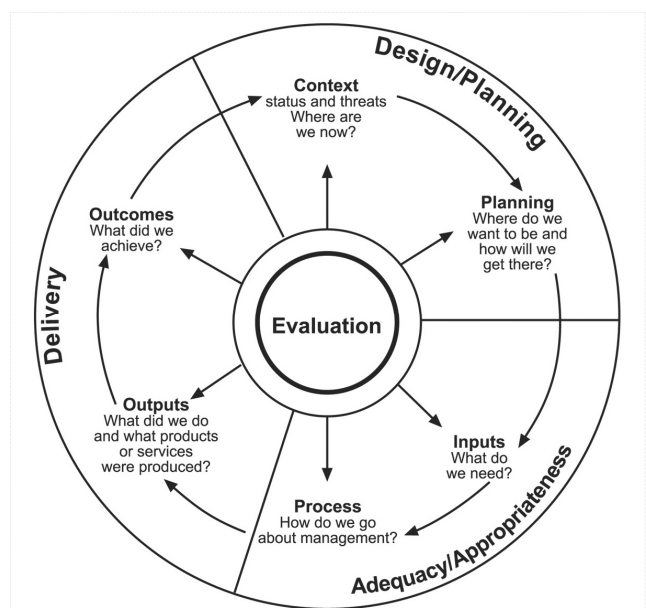

Figure 1. The WCPA Framework for PAME (Source: Hockings et al., 2006)

systems to avoid duplication of effort (Stolton et al., 2002).

As a result, a revised and more comprehensive scorecard was developed for the Alliance: the Management Effectiveness Tracking Tool or METT (Stolton et al., 2002). The METT consists of two sections: datasheets with key information on the protected area (e.g. basic facts about the area, who completed the assessment, and a threat assessment) and an assessment form containing a questionnaire with 30 questions, each with four alternative responses ranging from inadequate to adequate, with an associated score, and data fields for notes, justification of answers and steps to improve management if necessary.

Analysis of results from implementation of the 2002 version of the METT (now known as METT 1) (Dudley et al., 2004) led to further suggestions for improvement. The 2005 version (METT 2) included an improved threat assessment; a standardised list of threats based on an early iteration of the 'unified classifications of threats' developed by the Conservation Measures Partnership (CMP) (Salafsky et al., 2008). From this threat list, assessors were asked to choose the two most important threats facing the management of the protected area. WWF supported a more detailed review and revision of the METT in 2007 based on experience, best practices and the need to reflect growing interest in its use from a wide range of other institutions. This version, known as METT 3 (Stolton et al., 2007), remains the version used or adapted today. It is less orientated towards forest protected areas and suitable for use in all biomes including wetlands and marine, and all governance types of protected area, including privately protected areas and Indigenous and community conserved areas, covers a wider assessment of threats based on the CMP classification, and stresses the importance of providing narrative explanations for the score.

In the 18 years since METT 1 was published, it has become the most widely applied PAME tool globally. Uptake has been driven by a number of factors: i) it is relatively simple and cheap to use and easily adaptable to national contexts; ii) parties to the Convention on Biological Diversity have been encouraged to undertake PAME assessments; (iii) the institutional developers of the METT (the World Bank and WWF) have widely used and promoted the METT; and iv) it has been supported by the Global Environment Facility (GEF) (The METT has been mandatory for use in all projects in protected areas funded by the GEF since 2002; with

the assessment carried out at three stages of the project implementation: endorsement, midterm and completion (Swartzendruber, 2013).

Many institutions have adopted and/or adapted the METT (see Supplementary Online Material). Specific adaptations have been made by over 20 organisations and governments including Bhutan, India, Indonesia, Jamaica, Namibia, Papua New Guinea, South Africa and Zambia (Stolton & Dudley, 2016) and Myanmar (Hockings et al., 2018). Conservation NGOs, such as Conservation International, Global Wildlife Conservation, IUCN, Space for Elephants Foundation, The Nature Conservancy, Western Hemisphere Shorebird Reserve Network, Wildlife Conservation Society, Wilderness Foundation Africa and Zoological Society of London, have used and/or adapted the METT as have other funding bodies such as the Critical Ecosystem Partnership Fund, USAID and conventions including the Ramsar Convention on Wetlands (Stolton & Dudley, 2016). The World Bank developed an equivalent system for marine protected areas based on the METT (Staub & Hatziolos, 2004) and the basic structure of the METT has also been used in the development of tools such as the UNDP's Capacity Development Scorecard (Bellamy & Hill, 2010) and Financial Sustainability Scorecard (Bovarnick, 2007).

Field visit during METT training, Alas Purwo National Park, Banyuwangi, Indonesia © Fiona Leverington

Over 2,500 sites have reported using the METT in the Global Database on Protected Area Management Effectiveness (GD-PAME) (UNEP-WCMC, 2019). The METT has been used in at least 127 countries around the world covering over 4.2 million km² (Stolton & Dudley, 2016), which equates to over a fifth of the world's terrestrial protected area coverage (see Figure 2). Global METT data are however not evenly distributed. The METT was initially designed to measure conservation funding impact, so its implementation was biased towards newly established protected areas and/or protected areas identified as requiring additional support to strengthen management (Nolte & Agrawal, 2012; Coad et al., 2015; Stephenson et al., 2015). More recently, it has been applied across full systems of protected areas with a focus on overall effectiveness rather than measuring impact of funding (e.g. Cowan et al., 2010; Kementerian Lingkungan Hidup dan Kehutanan, 2015; Leverington et al., 2017; Hockings et al., 2018; Lham et al., 2019).

METHODOLOGY

PAME literature includes several papers using the METT, and other PAME approaches, to assess the management effectiveness of suites of protected areas (e.g. Leverington et al., 2010; Nolte & Agrawal, 2012);

overview PAME in general (e.g. Coad et al., 2015) or report on assessments in individual countries (e.g. Zimsky et al., 2010; Zimsky et al., 2012; Carbutt & Goodman, 2013). To date, however, there has not been a global review of the METT methodology and specifically its implementation process or issues related to confidence in the results of the assessment.

This review started with a search of published and grey literature around the subject of the METT. All documents (sorted by relevance) for the phrase 'Management Effectiveness Tracking Tool' or 'METT' on the Web of Science were reviewed, as were the first 100 hits on a Google search using the same key words to pick up non-peer reviewed literature (after the first 100 listings the results had no relevance to the tracking tool or were repeats of documents already viewed). The authors of this paper all have wide-ranging experience using the METT and all contributed written materials and personal experience relating to implementation. A number of the authors of this paper (SS, ND, MH and KM) were involved in the original development of the METT, and thus archived non-published material and information collected on implementation over the last 18 years was also available in personal files. In total, 98 documents were found and included in the review (see
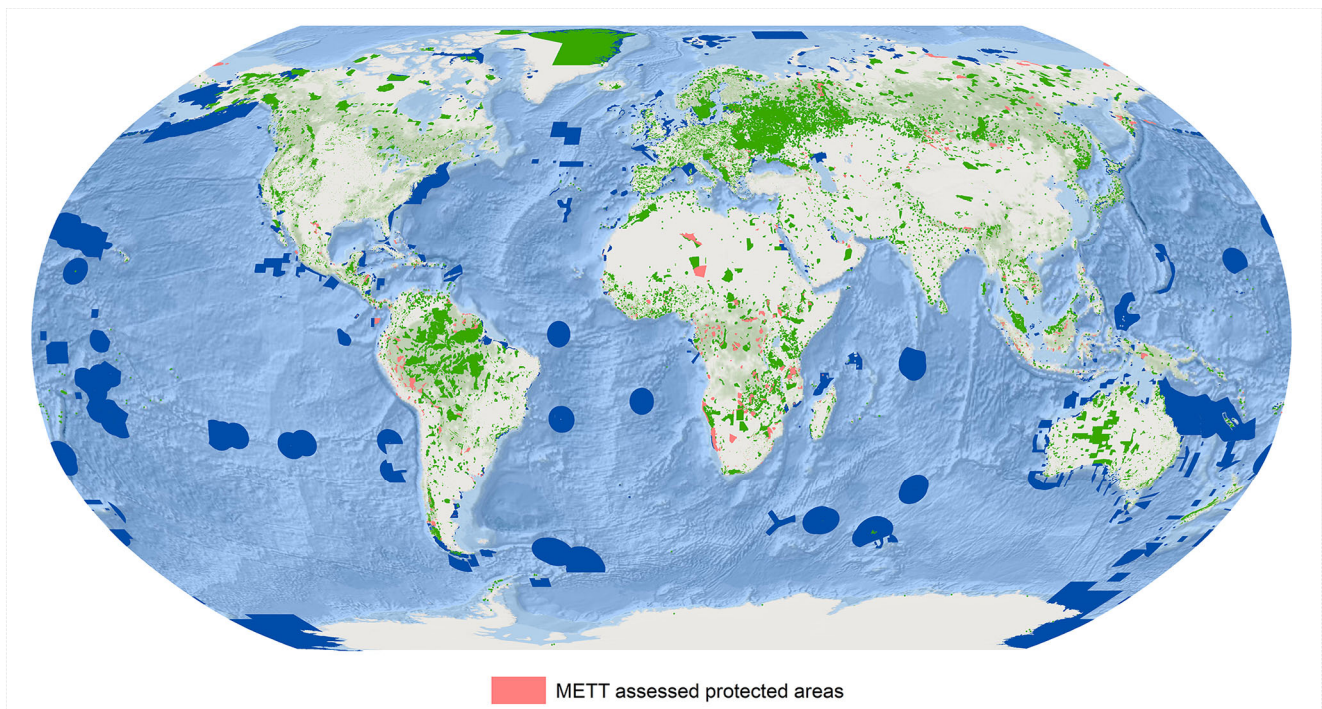

Figure 2. Protected areas (green) with a METT assessment (red) as recorded on the Global Database on Protected Area Management Effectiveness, source UNEP-WCMC and IUCN (2019), Protected Planet: The World Database on Protected Areas (WDPA; available at: www.protectedplanet.net)/The Global Database on Protected Areas Management Effectiveness (GD-PAME, available at: pame.protectedplanet.net), August 2019, Cambridge, UK: UNEP-WCMC and IUCN.

METT training course, Banyuwangi, Indonesia © KSDAE

Supplementary Online Material for the full list). Material ranged from METT-based methodologies to reports on project use, reviews of implementation and peer reviewed papers mainly on data derived from assessments. All the available literature was reviewed, major themes identified and lessons collated, reviewed and finalised.

RESULTS

Major themes from the review (available in full in Stolton & Dudley, 2016) are discussed below.

Self-assessment

A common criticism of self-assessment by protected area practitioners (e.g. staff, NGOs, etc.) is that differences in the interpretation of the answers will create bias in the results (Cook & Hockings, 2011). Many PAME questionnaires ask for assessments to be made based on low, medium or high ratings, without explanation of the rating systems and thus the ratings given may vary substantially across assessors. The multiple-choice nature of the METT questions was developed with the aim of reducing bias. The possibility

of bias can be further reduced through capacity building of those undertaking the METT (Cook & Hockings, 2011), training assessors to standardise interpretation of indicators (Coad et al., 2015) as well as encouraging discussions among the staff filling in the questionnaire and bringing in factual information to validate the results. During the early years of dissemination and promotion, the World Bank/WWF Alliance provided a number of regional and national training workshops. The METT was also translated into several local languages to make it more accessible for use at the national level. More recently, in Bhutan, two or more management staff from each of the country's 11 protected areas were trained in workshops and staff were able to discuss draft results together and develop guidance for specific questions where needed (Lham et al., 2019) and similar training is underway in Myanmar (Hockings et al., 2018). In the Philippines, team members met several times to discuss and build common perception of the scores based on possible results prior to the field visits to review the METT results (Inciong et al., 2013). Similar processes were developed in several other countries including Zambia (Mwima, 2007) and India (Zimsky et al., 2012).

Assessing biodiversity outcomes

Assessing biodiversity outcomes is typically the most challenging aspect of PAME. Because it is designed as a relatively simple and rapid tool, the METT is not ideally suited to record the biodiversity outcomes of protected area management (e.g. Nolte & Agrawal, 2012), which usually rely on more detailed data on attributes such as occurrence and population of target species, habitat condition or other objective measures of outcomes. This limitation has always been clearly stated in the METT methodology. However, where biodiversity data are available details can be provided in the narrative sections of the METT thus supporting the assessment answers. To increase the understanding of outcome measures, the METT results can be assessed against other monitoring data (Knights et al., 2014) or adapted to focus more on outcome measures. The GEF has adapted its latest versions of the METT to include datasheets in relation to biodiversity objectives and the threat assessment. Similar adaptations were used by the Ramsar Convention in its version of the METT (Ramsar, 2015). The METT used in Papua New Guinea includes a section for assessors to nominate the primary values of their protected area, and then to use words or pictures to describe these values or benefits. A checklist was also added to help assessors consider possible benefits provided by the protected area, and the assessment of outcomes was enhanced through the evaluation of the condition and trend of the protected area values (Leverington et al., 2018).

Adapting the METT

Adaptations such as the ones noted above are not uncommon and have been encouraged to increase the veracity of the METT. Adaptation generally takes two forms: i) adding questions on issues not covered by the original tool (e.g. in relation to climate change, equity or transboundary issues) or ii) more detailed instructions to the existing questionnaire, in order to relate the METT better to local circumstances. There are advantages in ensuring that the same core questions are always included, to help facilitate comparison between assessments. The more clearly PAME questions are defined for local circumstances, the more accurate and consistent will be the responses (Hockings et al., 2015). Versions of the METT adapted with guidance for local implementation include the Carpathian Countries Protected Areas Management Effectiveness Tracking Tool version for Poland (Pap, 2012); the METT used in protected areas managed by the Zambia Wildlife Authority (METTPAZ) (Mwima, 2007); METTs in South Africa (Cowan et al., 2010), the Bhutan METT+ (Lham et al., 2019), Myanmar (My METT) (Hockings et al., 2018) and Indonesia (Kementerian Lingkungan

Hidup dan Kehutanan, 2015). See Supplementary Online Material Table 1 for more details.

Making implementation more effective

Experience suggests that implementation planning for the METT should include practical steps such as informing staff and stakeholders about their involvement in the assessment in a timely fashion and allowing participants the time and space to debate each question to help eliminate any bias, false perceptions or prejudice inherent in such assessments (Carbutt & Goodman, 2013). Protected area managers are found to be well placed to assess key management issues accurately (Cook & Hockings, 2011; Cook et al., 2014). However, the METT works best when a range of stakeholders/rightsholders are involved in the assessment process (e.g. Zimsky et al., 2010; Cook et al., 2014). Any bias in METT responses, even when linked to large-scale funding such as that provided by the GEF, is not believed to be a major issue when the questionnaire is completed as part of a participatory process (Zimsky et al., 2010). The accuracy of the METT score can also be dependent on identifying the correct mix of people involved in the assessment, for example, not only local staff but also staff from a regional or head office managing protected areas who may have a longer history or greater understanding of the protected area. Furthermore, as the METT comprises a broad range of assessment criteria, no single individual is likely to be well placed to answer all of the questions with 100 per cent certainty (Carbutt & Goodman, 2013). In Zambia, where the METT was completed with peer review and full stakeholder participation – including protected area managers, the private sector in the form of tour and lodge operations, and local communities living in Game Management Areas – the scores were more accurate when debate and discussion had been undertaken before a score was finalised (Zimsky et al., 2010). A review of METT use by the GEF found that higher scores were correlated with the presence of only protected area managers and staff; whereas scores were found to be 10 per cent lower when community members, NGOs and external experts were present (GEF, 2015). As a result of this, the GEF database on METT results now collects data on the number of people involved in the assessment. Data from over 300 METT assessments worldwide shows that although some assessments are still only completed by one person, 86 per cent involved more than one person, one site assessment involved 70 people and the average number of people involved is five (Stolton & Dudley, 2016). The METT datasheets allow for the type of stakeholders to be recorded (e.g. protected area staff, local stakeholders, NGO staff, etc.). Unfortunately, these check boxes are rarely completed;

making it impossible to know who has been involved in implementing the METT, which can be important if any follow-up or clarification is needed (Stolton & Dudley, 2016).

Issues related to implementation

All parts of the METT (e.g. datasheets and multiple-choice questions) are an important contribution to the assessment of PAME. There is a misconception (e.g. Mascia et al., 2014) that only the multiple-choice questions are part of the formal METT assessment process, and incomplete METTs are common (e.g. Burgess et al., 2014). A review of METT implementation in iSimangaliso Wetland Park, South Africa concludes: "Management effectiveness assessments should not be seen merely as a 'paper exercise' to meet reporting obligations. Rather, they should be undertaken objectively and with sober judgment and diligence to ensure that the effectiveness score achieved represents a realistic picture of management practices and processes, in the absence of hard quantitative data" (Carbutt & Goodman, 2013, p. 7). Procedural standards for completing the METT can help ensure its proper use (Coad et al., 2015) making the METT a useful adaptive management tool rather than just a reporting task (Zimsky et al., 2010). Indeed, for donors

assessing project implementation, one of the most useful aspects of the METT exercise is the process rather than overall score. Being able to look at individual criteria and see whether or not progress is being made on that aspect – and, if not, what can be done to improve performance – remains one of the most important purposes of the METT.

Scoring

The METT score is not designed to be seen as a 'pass' or 'fail' but as an indication of the level of effective management. Many METT studies of implementation in specific countries or across suites of protected areas report on the assessment in terms of the six elements of the WCPA Framework (e.g. see Mwima, 2007; Inciong et al., 2013; Burgess et al., 2014, etc.). Where countries or regions have assessed multiple protected areas with METT, results can be collated across multiple sites, and recommendations focus on improvements across the network or agency as well as for individual protected areas (e.g. Cowan et al., 2010; Leverington et al., 2017; Lham et al., 2019, etc.). However, if the 'next steps' section of the METT has not been adequately filled in, it is difficult to use as an adaptive management tool. The METT can also be used to improve management in a single protected area or across a whole system by

METT training, Papua New Guinea © Ann Peterson

identifying activities to improve low scoring questions and by setting targets for improvement. Target scores such as this have been set in Indonesia (see Stolton & Dudley, 2016) and in South Africa (Cowan et al., 2010).

Multiple implementation

The METT was designed to be used repeatedly at sites, allowing progress to be measured over time in relation to specific management issues (Higgins-Zogib & MacKinnon, 2006). Users confirm benefits will largely be realised when multiple assessments are conducted and can report on significant changes in management practices or local conditions (Heffernan et al., 2005; Knights et al., 2014; Geldmann et al., 2015). Data collected in the METT database indicates at least 90 countries have used the METT more than once in at least one protected area (Stolton & Dudley, 2016). A study of 722 sites that had completed at least two METT assessments tested the criticism that METT scores are not an accurate reflection of reality on the ground and open to manipulation (Geldmann et al., 2015). The study found that most repeat METT assessments produce scores that suggest improvement in management over time, as would be expected if indicative of real improvements, but that some 30 per cent experienced no change, or even declines, in overall scores. Although this does not represent definitive evidence that scores are not manipulated, it suggests that at least some of the observed changes can be attributable to actual changes affecting management effectiveness on the ground. It should however be reiterated that the impact of management at individual sites is best gauged from the changes in scores for each question, or group of questions linked to elements of the WCPA Framework rather than against the overall score.

Verification of results

A common criticism of the METT is that it relies on purely subjective responses by the management agency and partners to questions, with no field verification (e.g. Johns, 2012). One of the objectives of the METT from the onset was for a simple and quick tool, so adding verification processes will clearly impact on these objectives. However, employing external experts to participate in the evaluation process is increasingly being practised, and recommended, in a range of PAME processes (Cook & Hockings, 2011). There are many different options for verifying METT results. Verification can be part of the assessment process, by including a detailed discussion and presentation process to develop, elaborate, clarify and/or present the METT assessment findings, using interviews and discussions groups to discuss the results. Such

processes were implemented in the Philippines (Guiang & Braganza, 2014) and Zambia (Zimsky et al., 2010). Another option is to invite local or international experts who are familiar with the site to undertake a peer review of the results. For example, a detailed comparison of two assessments in Cameroon (Boumba Bek and Nki protected areas) demonstrated a rich picture of changing status and effectiveness following management interventions and support (Dudley et al., 2007). Field verification is probably the most thorough, but most expensive, form of verification. In Bhutan, field visits involving a selection of sites which had completed the Bhutan METT+ were carried out prior to finalising the results (Lham et al., 2019). Additionally, METT assessment could be complemented by using other, more detailed PAME tools.

DISCUSSION AND RECOMMENDATIONS

The METT works well as a quick and simple way of collecting information about the status and trends of management in protected areas, and it provides information that can help drive improvements in management. It is a cost-effective option that does not make unreasonable demands on people (e.g. protected area staff, community and other stakeholders) and resources, although costs can rise if more stakeholders are involved and verification processes are instituted.

A rapid self-assessment tool however is always likely to attract criticism that its implementation could be biased, with results being primarily qualitative and of limited use in understanding PAME (Cook & Hockings, 2011). The need for greater guidance has been emphasised by practitioners asking for a clear, emphatic and absolute

Meeting of protected area staff and local community representatives taking part in the METT verification process in Wangchuck Centennial National Park, Bhutan © Sue Stolton

statement on how to best apply assessment tools (Carbutt & Goodman, 2013) and noting that standardised, robust operating guidelines need to be developed and applied to improve the credibility of PAME results (Coad et al., 2015). In response to this call, the review of the use of the METT over the last 18 years has informed the development of the 12 best practices presented below, which can improve the way in which the METT is applied and hence the usefulness of the results to protected area management (Stolton & Dudley, 2016).

Carefully plan the METT implementation

1. Plan the implementation process. Review the METT questionnaire before undertaking the assessment and assess the information available to complete it. Then review capacity and pre-assessment training needs, adaptation, timing, scope and scale, verification, etc. (Carbutt & Goodman, 2013). Consideration also needs to be given to the process – for example, how and where a workshop is best conducted to maximise participation and input. Where a large-scale assessment exercise is planned, a pilot study to trial the questionnaire can be advantageous to discover any issues that need clarification.

2. Allow enough time to complete the assessment in full. A good METT cannot be completed in an hour; most questions take serious thought and often require consultation and checking back to management files. The first METT for a new site is likely to take at least a day, probably two. Subsequent repeat METTs may be quicker (Carbutt & Goodman, 2013; Knights et al., 2014).

Do it properly and do it all

3. Complete all the METT including all questions on the datasheets and narrative sections related
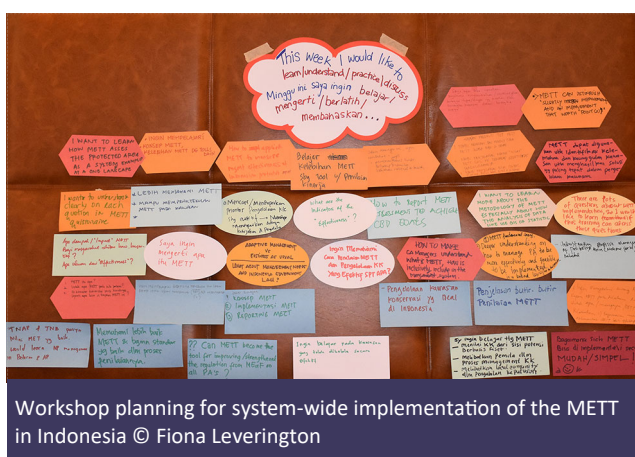
Workshop planning for system-wide implementation of the METT in Indonesia © Fiona Leverington

to the multiple-choice questions. The 'next steps' section is essential as this creates a checklist of required actions. This can be developed into management interventions and provides a baseline for checking if the findings of the METT have been implemented in follow-up assessments (Zimsky et al., 2012 Carbutt & Goodman, 2013; Knights et al., 2014; Coad et al., 2015).

4. Use quantitative data wherever available to support assessment; this is most important in the outcomes questions (Knights et al., 2014; Ramsar, 2015; Dudley et al., 2016; Leverington et al., 2018).

Adapt and translate

5. Adaptation is encouraged as the METT is a generic tool designed for global use; thus it is unlikely to fit one protected area (or system, type, etc.) perfectly. Ideally adaptations should retain the basic format of the METT and add to, rather than change, the wording (e.g. providing additional advice on interpretation for local conditions or by additional questions) (Mwima, 2007; Cowan et al., 2010; Pap, 2012; Zimsky et al., 2012; Hockings et al., 2015; Kementerian Lingkungan Hidup dan Kehutanan, 2015; Dudley et al., 2016) or add additional questions (Stolton & Dudley, 2016).

Repeat the assessment

6. Sites/networks planning to implement the METT should aim to repeat the assessments every few years; ideally the METT should be an automatic part of annual planning and assessment (Heffernan et al., 2005; Knights et al., 2014; Geldmann et al., 2015; Stolton & Dudley, 2016).

Consult and get consensus

7. The implementation, and follow-up activities, of the METT should wherever possible include a wide range of rightsholders and stakeholders to aid insight into the assessment results; including people outside the protected area management agency, such as local communities, will bring richer insights (Zimsky et al., 2010; Cook & Hockings, 2011; Carbutt & Goodman, 2013; Cook et al., 2014; Coad et al., 2015; GEF, 2015; Stolton & Dudley, 2016).

Build capacity and guidance

8. Capacity building is advisable so that all participants understand PAME and the purpose,

Meeting of protected area staff and local community representatives taking part in the METT verification process in Royal Manus National Park, Bhutan © Sue Stolton

opportunities and limitations of the METT (Cook & Hockings, 2011; Zimsky et al., 2012; Coad et al., 2015 Dudley et al., 2016).

Develop a better understanding of the METT through site/country specific advice and guidance, to help ensure METT questions are interpreted in the same way when implemented at a country/portfolio level (Mwima, 2007; Inciong et al., 2013; Lham et al., 2019).

Verify results

10. If deemed necessary develop a verification process; these can range from simple checking of completed METTs by external assessors to more detailed field verification exercises involving additional data collection (Dudley et al., 2007; Zimsky et al., 2010; Cook & Hockings, 2011; Johns, 2012; Guiang & Braganza, 2014; Lham et al., 2019). Where staff have capacity and resources, the METT can also be complemented with more detailed assessments, research, species monitoring, etc.

Implement recommendations

11. Implementation of the METT results should include adaptive management (e.g. a plan of action to address concerns, use of results in the development or revision of management plans or annual operational plans, etc.) and clearly planned communication processes (e.g. presentations and reports) to share results locally, particularly with the participants who helped complete the METT (Mwima, 2007; Inciong et al., 2013; Leverington et al., 2018).

12. Finally, data should be shared nationally or globally, for example by submitting METT data to the Global Database on Protected Area Management Effectiveness (GD-PAME) managed by UNEP-WCMC, which is mandated by the CBD to maintain the GD-PAME and use it for CBD reporting.

CONCLUSIONS AND NEXT STEPS

Given the wide use of the METT, the results of the review of implementation undertaken here and the increased use of the METT in helping countries reach Aichi Biodiversity Target 11, there is an argument to update the METT and develop a new (METT 4) version which builds on the best practices and lessons learned from the last 18 years and includes more outcomes-oriented, social and climate change questions (Stolton &

Dudley, 2016). A METT version with additional questions relating to climate change and conservation outcomes for species and habitats, together with more comprehensive guidance on how to conduct the assessment and how to rate the indicators has been produced for the German Development Bank (KfW) (Marnie Bammert, pers. comm., February, 2019). This could form the basis for METT 4 and plans are being developed to produce this in 2020. In addition, an online version of the tool, also planned for 2020, will greatly aid country implementation, eliminate the need for each separate project to develop a separate data collecting system and aid global data collection and reporting.

The focus of protected area capacity building is now moving beyond assessments towards the establishment of globally-accepted standards and, increasingly, third-party verification that these standards are being met. Conservation Assured | Tiger Standards (CA|TS) (Conservation Assured, 2019) and the IUCN Green List of Protected and Conserved Areas (IUCN, 2016) are two well-developed examples. However, these standards are either predicated on the assumption that management effectiveness assessments are being carried out as an essential part of the management process (CA|TS) or seen as an important part of management (the Green List). As the favoured 'first assessment' system, use of the METT will likely spread even further as these systems develop.

SUPPLEMENTARY ONLINE MATERIAL
1. Table 1. METT adaptations
2. Full results of the literature review

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ABOUT THE AUTHORS
Sue Stolton works mainly on issues relating to protected areas, areas of interest include management of protected areas, and in particular the assessment of management effectiveness, issues related to understanding the wider values and benefits that protected areas can provide and privately protected areas. Sue established Equilibrium Research in partnership with Nigel Dudley in 1991.

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RESUMEN

La comprensión de los éxitos y fracasos en torno a la gestión de las áreas protegidas es vital para la conservación de la biodiversidad mundial. La herramienta de seguimiento de la efectividad del manejo (METT, por sus siglas en inglés) es un método sencillo basado en un cuestionario para evaluar la efectividad de la gestión de las áreas protegidas (PAME, por sus siglas en inglés). Desde su desarrollo en 1999, se ha convertido en la herramienta más ampliamente aplicada y utilizada en al menos 127 países de todo el mundo. Este artículo examina el desarrollo de METT y cómo se ha implementado y adaptado.

Una combinación basada en una revisión bibliográfica sobre la implementación y la experiencia en materia de aplicación concreta tanto por parte de los autores originales como de los usuarios clave de METT confirma que METT es una forma relativamente rápida y sencilla de recopilar información sobre el estado y las tendencias de la gestión en áreas protegidas, y proporciona información para ayudar a impulsar mejoras en la gestión. De ahí que es apropiada para administradores de áreas protegidas, agencias nacionales de áreas protegidas, donantes, y ONG, etc., con el objetivo de mejorar la gestión de áreas protegidas y como un componente en la presentación de los informes nacionales al Convenio sobre la Diversidad Biológica.

El documento examina los problemas relacionados con la implementación de METT y concluye con 12 recomendaciones, desde el uso de METT hasta la verificación de resultados, que en conjunto ayudan a garantizar que la herramienta se implemente de la manera más eficaz y mejore la credibilidad de las evaluaciones sobre PAME.

RÉSUMÉ

Comprendre les succès et les échecs de la gestion des aires protégées est un élément crucial pour la conservation de la biodiversité mondiale. Une approche simple à ce besoin consiste en l'Outil de suivi de l'efficacité de la gestion (communément appelé METT), basé sur un questionnaire, qui permet d'évaluer l'efficacité de la gestion des aires protégées. Depuis son développement en 1999, il est devenu l'outil d'évaluation le plus répandu, utilisé dans au moins 127 pays à travers le monde. Le présent document passe en revue le développement de cet outil et la manière dont il a été mis en œuvre.

L'examen combiné d'une étude documentaire sur la mise en œuvre du METT et d'un retour d'expérience des auteurs originaux et des utilisateurs clés, nous permet de confirmer que le METT est un moyen relativement rapide et simple de recueillir des données sur l'état et les tendances de la gestion dans les aires protégées et de fournir des informations favorisant l'amélioration de la gestion. A ce titre il est bien adapté aux gestionnaires d'aires protégées, aux agences nationales des aires protégées, aux donateurs, et aux ONG, qui cherchent à faire progresser la gestion des aires protégées, et il constitue un élément important des rapports nationaux soumis à la Convention sur la diversité biologique.

Ce document examine les questions liées à la mise en œuvre du METT et se termine par 12 recommandations, allant de l'utilisation du METT à la vérification des résultats, qui visent à assurer une mise en œuvre optimale de l'outil et à renforcer ainsi la crédibilité des évaluations portant sur la gestion des aires protégées.