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Monitoring the Convention on Biological Diversity (CBD) framework using evaluation of effectiveness methods. The Italian case

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ABSTRACT

Protected areas play an important role in the preservation and implementation of bold environmental agreements, among which the 20 Aichi Targets (Strategic Plan for Biodiversity 2011–2020, COP 10), with their focus on effective management systems supporting the conservation of biodiversity and eco-system services (Aichi Biodiversity Target 11). The aim of this paper is to illustrate the MEVAP (Monitoring and EValuation of Protected Areas) methodology, Italy's contribution to the topic of evaluating the effectiveness of protected areas within the international landscape (WDPA–IUCN, *World Database on Protected Areas – Union for Conservation of Nature*). The purpose of MEVAP is to provide a periodical review procedure as part of the process to improve the management of protected areas. Its starting point is the analysis of qualitative and quantitative data pertinent to the environmental, social and economic aspects of protected areas and to their governance.

This paper illustrates the results obtained using the MEVAP method and its application to several clusters of Italian national parks. While highlighting the potential of this method, the document also proposes an initial assessment of the environmental, social and economical performance of protected areas and how performance is connected to its governance.

Underpinning the study is the need to expand the use of evaluation practices and to spur scientific debate in the direction of widely spread adaptive management methods, with a view to optimising policies and management procedures and, therefore, achieving the protection targets that must be met by protected areas through their institutions.

1. Introduction

During the course of the COP 10 convention, it was formally accepted that the Countdown 2010 targets had not been met, while further stressing the necessity of significantly reducing loss of biodiversity by improving planning and management strategies. The causes of this failure can be traced to a number of factors, among which, a lack of adequate funding, the need to implement effective and efficient management, and the difficulty of sharing the benefits of protected areas, especially with the local population.

For this reason, the decision was made to set out a Strategic Plan for Biodiversity 2011–2020, along with relative Aichi targets. A series of indicators was proposed to monitor progress (*e.g.* Balmford et al., 2005), including, for example, the coverage of protected areas, considered in general as a key tool in the protection of biodiversity (Naughton-Treves et al., 2005). It has been demonstrated, however, that establishing a protected area does not, in itself, guarantee the protection of biodiversity values (Nellemann et al., 2007), as these are, instead, achieved through correct and effective management.

One proposed solution is to go beyond the actual number and extension of protected areas worldwide and also take into account how effectively these areas are managed (Chape et al., 2005).

The effectiveness of protected area management was first evaluated at the end of the 1990s, following the evaluation framework agreed upon by the *International Union for Conservation of Nature* (IUCN) and the *World Commission on Protected Areas* (WCPA). In 2004, the *Convention on Biological Diversity* (COP 7) adopted a Programme of Work on Protected Areas (PoWPA) featuring a specific target: «*By 2010, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and transboundary protected area levels adopted and implemented by Parties*» (Convention on Biological

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Diversity, 2012). A fundamental condition of the work programme is that of *Protected Area Management Effectiveness* (PAME), as it was recognised that «*... existing systems of protected areas are neither representative of the world's eco-systems, nor do they adequately address conservation of critical habitat types, biomes and threatened species... and (that) ... insufficient financial sustainability and support, poor governance, ineffective management and insufficient participation pose fundamental barriers to achieving the protected areas objectives of the Convention on Biological Diversity*» (Convention on Biological Diversity, 2012). The aim of this paper is to describe a specific method for evaluating effectiveness, MEVAP (Monitoring and Evaluation of Protected Areas). In Italy, this method has been applied to national parks and is included in the IUCN–WCPA World Database of Protected Areas.

In the first part of the paper, we have placed this topic within the international framework, while, in the second part, we have studied the Italian context of reference. We have then described the MEVAP method, analysing the methodological approach and the experimental findings when applied to a study case. Finally, we compared this method to the main internationally-used methods of evaluating effectiveness.

2. A review of the evaluation methods

The evaluation of management effectiveness can be defined as «the assessment of how well the protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives» (Hockings et al., 2006b, p. 1). Hockings and colleagues (2006b, p. xiii) state that the assessment of management effectiveness can take place if it is based upon three main aspects: (a) design issues relating both to individual sites and to protected area systems; (b) adequacy and appropriateness of management systems and processes and, lastly, (c) delivery of the protected area targets, including the conservation of natural, aesthetic, cultural, educational and recreational heritage.

In function of the design and implementation of the evaluation process, it is also possible to use the evaluation of effectiveness for other indirect objectives, which include: sustain and permit the effective allocation of resources; promote the responsibility of stakeholders and the collective system in general (Lu et al., 2012); incentivise community involvement in promoting and enhancing the value of protected areas; and, finally, support an adaptive approach (Leverington and Hockings, 2004; Hockings et al., 2006a). In addition, systems for measuring management effectiveness can help managers and the local community to improve decision-making and management practices (Conley and Moote, 2003; Bertzky and Stoll-Kleemann, 2009).

Effectiveness evaluation systems at global level are based mainly upon the "*Management Effectiveness Evaluation Framework*" (Hockings, 2003; Hockings et al., 2006a,b). The framework is organised into *context, planning*, *inputs*, *processes, outputs* and *outcomes*, which are the basic elements of a good management cycle. The indicators follow on from here, and are based upon the above six elements, which must be selected and measured for every protected area or protected area system (Hockings et al., 2006a,b).

Currently, Leverington et al. (2010) describe a total of over 40 methods of assessment based upon the IUCN framework and this list has expanded further to include a significant number of approaches developed in Latin America (Cracco et al., 2006) and in Europe (Stolton, 2009). To date, evaluation effectiveness has been applied to more than 6.300 studies (Leverington et al., 2010) and, of these, 1864 concern European protected areas (Nolte et al., 2010).

The diversity of the methods reflects the wide range of purposes and scales pertinent to the existing evaluations. These include making evaluations about concrete measures/projects, but also about the managing bodies of individual sites or of regional/national protected area systems (Cracco et al., 2006).

Defined by WWF (Ervin, 2003), the Rapid Assessment and Prioritisation of Protected Area Management (RAPPAM) is a method that was developed from indications supplied by IUCN–WCPA and lends itself particularly well to the evaluation of protected area systems.

The *Management Effectiveness Tracking Tool (METT)*, defined by WWF and the World Bank (Stolton et al., 2007) is also based on a survey used to gather information according to the six assessment elements of the IUCN–WCPA model. METT is a tool that supports the managing bodies of protected areas, allowing them to identify priorities, needs and limitations in a process aimed at continuous improvement, which is typical of an adaptive management approach. Another more complex approach, *Enhancing our Heritage* (EoH), is a toolkit (Hockings et al., 2008) which analyses in detail all six elements of the framework. The most recent edition of this handbook was published by UNESCO in 2008. Its objective is to provide managing bodies with tested tools to develop and implement a system to monitor and evaluate protected areas. Starting from the WWF and World Bank method (Stolton et al., 2003), Quan et al. (2011) prepared a survey to assess the management effectiveness of nature reserves in China. Entering into more detail, the survey used an assessment form or scorecard with 31 indices covering four main aspects (management in general, management mechanism, management activity and management effectiveness). This evaluation system is affected both by the need to comply with legislation and the progress made towards planning and managing a protected area.

Research by Van Lavieren and Klaus (2013) is also based on the *Scorecard* method (Stolton et al., 2003, 2007; Staub and Hatziolos, 2004). Applying the method to the ROPME (*Regional Organisation for the Protection of the Marine Environment*) Sea Area situated between the Persian Gulf and the Gulf of Oman in the Arabian Sea can support the Programme of Work (PoW), as well as evaluating the effectiveness of management, and it can encourage the adoption of a Protocol of Biological Diversity to achieve the 2020 targets set out by CBD (*Convention on Biological Diversity*).

There are also other methods that do not follow the IUCN–WCPA framework approach, but are nonetheless fully incorporated among the various scientific approaches for evaluating management effectiveness that are based upon the analysis of qualitative and quantitative data for the protected areas being examined.

For example, Galindo-Pérez-de-Azpillaga et al. (2013) used indicators to study the sustainability of protected areas in Spain, starting from the Territorial Adjustment Indicator System (TAIS) (Foronda-Robles and Galindo-Pérez-de-Azpillaga, 2012).

Finally, an interesting study was carried out on biosphere reserves by Reed and Egunyu (2013), who compared the different sites being analysed with the criteria set out in the *Statutory Framework* (UNESCO, 1996) and the *Seville Strategy* (UNESCO, 1996). Several of the criteria used in the main methodologies cited in this paper are set out in Table 1.

3. Evaluation of effectiveness in the Italian context

In 2010, protected areas accounted for 12.7% of the total world surface (UNEP–WCMC, 2010) and, according to the official list published by IUCN, Europe has the highest number of protected areas in the world. There are over 43,000 sites across more than 750,000 km^2, equal to 14.63% of the land area.

In Italy, after the introduction of the Framework Law on protected areas, Law no. 394/91, the total extension of protected areas doubled and is now over 59,000 km^2, equal to around 10% of the entire Italian territory. There are over 1000 recognised protected areas with 871 being included in the Italian Ministry for the environment's official list of protected areas (24 national