IMPACT EVALUATION OF GEF SUPPORT TO PROTECTED AREAS AND PROTECTED AREA SYSTEMS: PHASE 2

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Background and Objectives

1.   This evaluation has as its main objective to assess the impact of GEF support to biodiversity conservation through support to protected areas (PAs) and PA systems. It will evaluate the extent to which GEF strategies, programs and interventions have been able to enhance and protect species and habitats, and to enhance capacities for biodiversity conservation through PAs.

2.   The independent evaluation offices of the GEF and UNDP are jointly undertaking this impact evaluation. From the GEF EO perspective, this impact evaluation fits within an ongoing set of impact evaluations covering each of its focal areas. For the UNDP EO, this constitutes the first in a set of impact evaluations of UNDP programming, and builds on the findings and conclusions of a recent thematic evaluation focused on the nexus of issues linking UNDP poverty and environmental protection support to countries. UNDP has been an implementing partner of the GEF since its inception in 1991, and has been the lead implementing agency in 50 percent of GEF biodiversity projects[1]. GEF funding constitutes the single largest earmarked source of income for UNDP, contributing approximately $286 million per year, 50 percent of the UNDP budget for environmental programming and projects.

3.   As it focuses on impacts, this evaluation logically analyzes the long-term contributions of GEF projects supporting PAs towards protecting and restoring species and habitats. It therefore builds its evidence base from completed projects and those that have been underway for at least five years. Most of the projects to be analyzed were designed prior to the establishment of the GEF-5 Biodiversity Strategies; however, the evaluation results are expected to be highly relevant to current programming, given the continuity of GEF protected areas support throughout the history of the programme. The evaluation will assess the extent to which key elements of the GEF-5 Biodiversity Strategy Objective 1 (improving the sustainability of PA systems) that have been implemented in earlier projects are contributing to the achievement of impact, and are important to retain in future strategies.

4.   Similarly, the evaluation is expected to provide important insights for current and future UNDP support on PA management, within the UNDP Strategic Plan 2013 – 2017. Of particular note, Outcome 2 of the UNDP Strategic Plan envisions helping countries achieve a situation where "growth is inclusive and sustainable, incorporating productive capacities that create livelihoods for the poor and excluded". Areas of work under the UNDP Strategic Plan include developing mechanisms to simultaneously achieve economic, social and environmental gains. Support activities are expected to include conservation of natural resources and biodiversity

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[1] Based on GEF Project Management Information System (PMIS) data downloaded on 28 May 2013 covering biodiversity projects approved, under implementation and completed. The rest of the projects have been implemented by the World Bank (25%), UNEP (20%) and other agencies (5%).

and creation of livelihoods based on management and rehabilitation of ecosystem services, including in indigenous and community conserved areas. Recognizing these aims for UNDP, the evaluation has been designed to assess the socioeconomic impacts of, and factors affecting, GEF-supported approaches and interventions to PA management.

5.   The evaluation seeks to answer three main questions:

1) What have been the impacts and contributions of GEF and/or UNDP support (positive or negative, intended or unintended) in biodiversity conservation in protected areas and their immediately adjacent landscapes?

2) What have been the contributions of GEF and/or UNDP support to the broader adoption of biodiversity management measures at the country level through protected areas and protected area systems, and what are the key factors at play?

3) Which GEF- and/or UNDP-supported approaches and contextual conditions, especially those affecting human well-being, are most significant in enabling and hindering the achievement of biodiversity management objectives in protected areas and their immediately adjacent landscapes?

6.   Phase 1 of the evaluation has provided an initial analysis of the impacts of GEF support. So far, the evaluation has assessed the extent to which GEF interventions are associated with positive changes in species population trends and METT scores in protected areas. This initial analysis validated the evaluation approach. While the results were inconclusive due to data gaps, the analysis showed that a quasi-experimental approach is feasible, and that much of the missing data can be found. . It is also clear that limitations such as data gaps that will remain, and diverse ways in which data was collected, will also require use of multiple methods and triangulation to draw reliable conclusions.

7.   The extent of broader adoption of GEF-supported approaches that bring about environmental and social impact across a subset of the BD portfolio, including factors contributing to these results, have also been analyzed. This analysis has been carried out through a review of the terminal evaluations of GEF projects with major PA components. In addition, an assessment was done to assess the Protected Areas Management Effectiveness Tracking Tools (METTs) available in the GEF METT repositories to identify gaps, and to consider the extent to which arrangements for monitoring environmental impacts were in place during project implementation and at project completion. The findings of the analysis on the availability of METTs and monitoring arrangements for impact at project completion were reported as part of the GEF EO's Fifth Over-all Performance Study in November 2013.

8.   While still aiming to answer the first evaluation question, Phase 2 will provide more in-depth analyses of factors contributing to or hindering positive impacts in PAs as indicated in the second and third questions. These will be done by looking at correlations between biodiversity-related results and factors at the level of the global portfolio, the country, and the PA. Phase 2 will consist of three components to answer these questions through different analytical approaches, and to integrate these different streams of information into cohesive findings.

9.   The implementation of Phase 2 will be jointly managed by the GEF IEO and UNDP EO, with technical support provided by the IUCN WCPA-SSC Joint Task Force on Biodiversity and Protected Areas and by other experts for specific activities, and support from a Reference Group and a Technical Advisory Group (TAG) on both strategic and technical concerns relevant to project information, conservation science and evaluation methods. The Reference Group is composed of members of the GEF Biodiversity Task Force—of which biodiversity specialists of all GEF Agencies are members—and other relevant GEF stakeholders. The TAG is composed of six senior-level conservation scientists and evaluators.

Methodology

COMPONENT 1: ANALYSIS OF FACTORS OF PROTECTED AREA SUCCESS THROUGH GLOBAL DATABASES

10.   Phase 2 of the evaluation will use methods and data to support a strong inference of GEF/UNDP project impacts. Building on the analysis done in Phase 1, interactions among contextual (including threat) information, changes in METT scores (using both the aggregated scores and scores for individual key indicators), species population trends (using Living Planet Index and bird atlas data), and changes in habitat cover (using remotely sensed data) will be analyzed.

11.   Meta-analysis, non-parametric statistics, mixed outcomes modelling, and other appropriate methods will be used to identify predictors and their relative importance to PA success. Counterfactual datasets will be constructed for population time-series, METT scores and habitat change for similar sites matched to GEF-supported PAs based on locally appropriate matching criteria. Existing data bases of the IUCN WCPA-SSC Joint Task Force on Biodiversity and Protected Areas will be used as a source to construct counterfactual data sets. Interpretations of the results will take into account baseline management conditions and species/ habitat characteristics that may affect the maximum possible extent of change in these metrics. Caveats for each method of analysis and data source (especially on the representativeness of PAs included) will be documented. A brief consideration of the analyses to be carried out is as follows:

   a. **Management Effectiveness Tracking Tool (METT) data**: Phase 1 worked with a small METT subset. The second phase commences with the development of an enhanced database of up to 2500 METTs from GEF projects. This database, when completed, will be meshed with a similarly structured central database of all known METT assessments worldwide (several thousand METTs, mostly from non-GEF supported sites). This compilation will drive a robust consideration of the changes in management effectiveness at GEF-supported PAs. It will also enable counterfactual analysis against the METTs of non-GEF supported sites with similar attributes.
   b. **Wildlife abundance change:** (Population Time Series) In Phase 1, 27 sites (31 time series) with sufficient population time series data were available to allow a before/after impact evaluation. Based on project documentation, a substantial number of sites identify "implementing biodiversity monitoring" as a key goal of the GEF/UNDP

investment, and data is likely to be available on site, offline, and in local languages. Existing time series data will therefore be augmented by a) contacting site staff directly at these sites that reported species population monitoring in terminal evaluations, and b) matching the additional 2500 METTS with the Living Planet Index.

c. **Habitat change**: Data from remote sensing instruments (e.g. satellite data such as LANDSAT, NVDI [Normalized Vegetation Difference Index], MODIS, and higher resolution datasets where available in non-forested environments) provide a useful and robust way of evaluating changes in habitat coverage. The most appropriate data are likely to vary by site. The team will select the optimal, most cost-effective datasets that can be used to estimate rates of anthropogenic habitat conversion (e.g. deforestation) in PAs and in selected counterfactual areas. Habitat change analysis will be conducted for a broad cross-section of the sites with GEF/UNDP involvement. Options for using pre-processed spatial data sets to minimize costs, allow for global comparison, and maximize the number of sites covered are being considered.

d. **Qualitative biodiversity change estimates**: Several recent studies (Oestreicher et al. 2009; Laurance et al. 2012; McBride et al. 2012) have used estimates of biodiversity change elicited from semi-structured interviews with site-specific experts. This method will be considered for sites with GEF/UNDP field involvement (estimated at 18 sites) to create an additional measure of biodiversity change over the project period.

e. **Socioeconomic engagement across the portfolio**: A portfolio analysis of completed projects in the OPS4 and OPS5 cohorts will be carried out to consider the evidence presented on intended activities and results relating to socioeconomic impact. These include, inter alia, support measures designed to increase local community engagement, promote jobs and improve livelihoods, and enhance local infrastructure.

f. **Threats and other contextual information**: The team will collect contextual information and estimates of threat levels through a number of sources. One data source will be remotely sensed data products that relate to anthropogenic development around sites e.g. roads, night-lights. Another source will be questionnaire data based on interviews with site managers and local experts. These interviews will be carried out remotely (by telephone and email) for sites that are not visited under component 3 (below). The third type of data will be broad scale socioeconomic and biogeographical information e.g. GDP, education levels, ecoregion. The threat and contextual data will be used to explore the possible predictors of project impacts. Threat reduction, e.g. reduced anthropogenic development within a project site, may also be used as a measure of project impact if project objectives are suitable. The team will also have access to the Birdlife International Data on threats for all of the world's Important Bird Areas.
PA budget and staffing data for individual PAs are likely to be one of the predictive factors driving project outcomes. A questionnaire will be disseminated to collect data from PA agencies and managers on budget and staffing. Responses will also be solicited from key informants within the World Commission on Protected Areas and GEF/UNDP project managers. Surveys will be delivered by telephone and email interviews with relevant park staff for those sites that are not included in the planned field visits (see component 2 below).

COMPONENT 2: ANALYSIS OF SOCIAL-ECOLOGICAL INTERACTIONS THROUGH FIELD STUDIES

12.   The second component will consist of an in-depth analysis of contextual and project-related factors, conditions and processes contributing to impact at two scales: the protected area and the country. This will be done primarily through information-gathering in the field, supplemented by desk reviews. At the scale of the PA, the evaluation will focus on factors and conditions that enable and hinder biodiversity conservation and sustainable livelihoods to be mutually reinforcing. This includes identifying areas of mutual benefit, trade-offs and losses for biodiversity conservation and human welfare, especially through the status and impact of alternative livelihoods supported by GEF projects. At the scale of the country, the evaluation will assess the extent to which GEF support to biodiversity initiatives has contributed to progress towards impact and actual changes in biodiversity indicators. It will look at the totality of GEF support over time and will largely focus on the role of GEF within the country's historical, governance and socioeconomic context. Information on biodiversity monitoring at the PA and country levels will also be collected on an opportunistic basis where available.

13.   Based on an analysis of the distribution of biodiversity projects across countries, field visits will be done in three regions: Africa, Asia and Latin America. Two countries in each region will be visited (see Table 1 for list of selected countries). Countries for case studies were selected according to criteria developed by the evaluation team and the Reference Group[2]. These criteria are:

   a) presence of species or ecosystems within the country with high global biodiversity significance;
   b) importance of biodiversity to local economies (whether directly or indirectly);
   c) stability of country, where access is possible and relatively safe;
   d) existence of protected areas without GEF support; and
   e) long-term and extensive GEF engagement--as shown by a high number of completed GEF-supported biodiversity projects and high amount of GEF investment--to allow for the assessment of cumulative impacts over time.

14.   In each country, four PAs will be selected. One PA each that are considered to have high and low levels of achievement, and that both have received GEF support will be visited for the in-depth analysis of factors contributing to or hindering their success. In addition, two comparable PAs that have not received GEF support (i.e., supported entirely by the government) will also be visited. Thus, a total of 24 PAs in 6 countries will be visited. As much as possible, PAs of similar ecosystems/ biomes, size, age and IUCN category will be chosen across

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[2] In addition, it was agreed that countries meeting these criteria that were already overburdened by GEF and/or UNDP evaluations and/or overstudied by other institutions would not be selected. Final country selection was also made with consideration to the number of UNDP projects (completed and ongoing) implemented in the country to ensure adequate representation among implementing agencies.

countries. The selection of the four PAs to be assessed during field visits will be based primarily on the expert opinion of project management staff in GEF agencies and national governments.

Table 1. List of countries selected for site visits

Region	Country	Closed FSP/MSP related to terrestrial PAs/ PA systems	Total GEF Grant Amount for Complete FSP/MSP (US$ M)
LAC	Mexico	10	96.21
	Colombia	6	27.23
Asia	Indonesia	4	17.74
	Vietnam	5	9.63
AFR	Kenya	5	9.51
	Uganda	4	14.75

*FSP—Full-Size Project / MSP—Medium-Size project

15.   The field visits will seek to verify the extent of impact and broader adoption of GEF-supported approaches that have taken place in the PAs and countries, and to identify factors associated with these results. Some of the recurrent contextual and project-related factors contributing to and hindering both ecological and social success in protected areas have been identified through a review of scientific literature and the analyses of the terminal evaluations of projects conducted in Phase 1, as well as frameworks used in previous evaluations. Other factors are expected to be identified during the field visits. The extent to which these factors are present will be assessed at the PA and country levels. Protocols to collect both quantitative and qualitative data will be developed for this. Among the factors that will be assessed are GDP, governance structure, PA budget and staff allocations, types of GEF support (e.g. equipment provided, number of persons trained, management plan developed), duration and amount of GEF support, and the model of community engagement used. Special attention will be given to the strategies and techniques in which projects have addressed community engagement (e.g. ownership stakes, local hiring, training, infrastructure support, insurance/ payment for lost livestock, veterinary support, boundary commercial businesses), and if possible the extent of GEF support to these activities. This includes identifying innovative inclusive approaches that are already being used or could be considered by GEF implementing agencies. Results of these activities will also be assessed.

16.   The field visits will seek to assess the extent of improvements in biodiversity as well as social and economic effects of GEF support, such as limitations on development for local people, revenue generated by new activities, sustainability of benefits, access to health services, etc. Attention will also be given to the extent to which projects have supported national priorities, such as increase in foreign revenue tied to ecotourism, and improvements in landscape management. In-country consultants will be hired to provide local perspectives to the analysis. Contracting and field visits will be done with the recommendations and assistance of the Reference Group, GEF national focal points, and UNDP and World Bank Country Offices.

17.   The analysis of combinations of factors correlated with the level of PA success will be done using fuzzy-set Qualitative Comparative Analysis (fsQCA)[3]. In this regard, the development of field protocols as well as the analysis of data will be undertaken with support from the Institute of Development Studies. QCA is a method that allows the drawing of causal inferences on the basis of a small number of cases (5 to 50) using deterministic rather than probabilistic mathematics. In-depth knowledge of context is necessary for each case, which makes QCA ideal for analysing case studies. Through this method, the extent to which the geographical region is a factor affecting outcomes can also be assessed as the inclusion of cases representing different conditions and contextual factors provides a built-in counterfactual. As a way to triangulate the results of QCA and other qualitative analyses, appropriate statistical methods will also be explored to analyze the dataset that will be developed from the case studies.

COMPONENT 3: DATA SYNTHESIS AND ANALYSIS

18.   Data gathered from the two previous components on ecological and social impacts, broader adoption, and factors affecting the success of protected areas will be compared and tested for correlations and interactions using several statistical modelling techniques, multivariate non-parametric tests, and fsQCA to triangulate the results. Qualitative information obtained from field studies and desk reviews will also be used in conjunction with the results of these quantitative analyses to develop a holistic picture of country and PA contexts, and the types of support, mechanisms and processes by which GEF is able to contribute to biodiversity impacts under different conditions, at various scales of intervention.

Implementation Roles

Below is a rough list of the tasks for Phase 2 and how they will be divided among the different teams.

Table 2. Distribution of tasks for Phase 2 implementation

COMPONENT	GEF & UNDP EOs	Joint IUCN Task Force	Reference Group	TAG
COMPONENT 1: ANALYSIS OF FACTORS OF PROTECTED AREA SUCCESS THROUGH GLOBAL DATABASES	• Liaison with Agencies/ Project Management staff in obtaining additional species/ habitat monitoring and contextual data • Review of TEs/ Portfolio analysis	• Phone and online surveys • Population abundance time-series meta-analysis (pattern analysis and mixed effects models) • Habitat change analysis (remotely sensed data) • Multiple outcomes modelling	• Expert opinion on methodologies • Assistance in accessing additional species/ habitat monitoring and contextual data • Assistance in accessing missing TES	• Expert opinion on methodologies

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[3] Ragin, Charles C., Kriss A. Drass and Sean Davey. 2006. *Fuzzy-Set/Qualitative Comparative Analysis 2.0.* Tucson, Arizona: Department of Sociology, University of Arizona.

		• Literature compilation on individual Pas • METT score analysis		
COMPONENT 2: ANALYSIS OF SOCIAL-ECOLOGICAL INTERACTIONS THROUGH FIELD STUDIES	• Development of field protocols • Country and site selection • Desk reviews • Field visits • QCA and other analyses from case studies	• Expert opinion on country and site selection • Literature compilation on individual PAs • Support to field studies according to fit (expertise/ language), timing and need of EOs	• Expert opinion on country and site selection • Support to field studies according to fit (expertise) and need of EOs	• Expert opinion on field protocols and sampling design
COMPONENT 3: DATA SYNTHESIS AND ANALYSIS	• Integration of datasets • Analysis of interactions of datasets	• Expert opinion on interpretation of results	• Expert opinion on interpretation of results	• Expert opinion on interpretation of results

Timeline

Below is a rough timeline of activities in Phase 2 in 2014.

Table 3. Timeline of Phase 2 implementation

ACTIVITY	PERIOD
Development of field protocols Selection of sites Scheduling of visits --------------- Collection of supplemental data for global databases and portfolio review	***January-March***
Analysis of METTs and global databases	***January -May***
Field visits Remote sensing analysis	***March -May***
Analysis, Synthesis and Report-writing	***June-August***
Circulation of draft report and revision	***September***
Submission of final evaluation report	***Last week of September to GEF Council and UNDP Executive Board***
Presentation at GEF Council Meeting	***November***

Presentation at World Parks Congress	
Presentation at UNDP Executive Board Meeting	*January 2015*