Impact Evaluation of GEF Support to

PROTECTED AREAS

and

PROTECTED AREA SYSTEMS

HIGHLIGHTS

gef **IEO** **Independent Evaluation Office**
GLOBAL ENVIRONMENT FACILITY

GLOBAL ENVIRONMENT FACILITY
INDEPENDENT EVALUATION OFFICE

Impact Evaluation of GEF Support to Protected Areas and Protected Area Systems

HIGHLIGHTS

The contents of this publication are derived from the findings, conclusions, and recommendations of the "Impact Evaluation of GEF Support to Protected Areas and Protected Area Systems," presented at the 49th GEF Council Meeting in October 2015.

A FREE PUBLICATION

PREFACE

The Global Environment Facility (GEF) has been the major source of financial and technical support for countries seeking to conserve their biodiversity and use their biological resources in a sustainable manner. Since 1991, the GEF has, in collaboration with its Implementing Agencies—notably the United Nations Development Programme (UNDP) and the World Bank—provided $4.8 billion in grants and mobilized an additional $17.9 billion in cofinancing from public, multilateral, and private sources to 1,167 projects supporting countries in biodiversity conservation initiatives.[1] These investments have largely supported interventions in nonmarine protected areas (PAs), PA systems, and adjacent landscapes.

This evaluation assesses the impact of GEF investments in nonmarine PAs and PA systems. It defines impact, in accordance with the Development Assistance Committee of the Organisation for Economic Co-operation and Development, as the "positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended." The evaluation analyzes the extent to which the management and governance approaches supported by the GEF have led to the achievement of GEF objectives on biodiversity conservation and sustainable use. It probes into how future support can best contribute to the conservation and sustainable use of biodiversity by assessing the factors and conditions that

affect the interaction between human livelihood objectives and biodiversity objectives. It also looks at the extent to which GEF support has promoted human well-being as a key contribution to the effective management of PAs and their immediately adjacent landscapes.

When information was available, the analysis included evidence comparing supported areas with those lacking such support or receiving other types of intervention. The evaluation explored new methods and approaches to assess the impact of GEF support, several of which have been incorporated into other GEF Independent Evaluation Office evalua-

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tions. It is so far the most comprehensive global evaluation undertaken on the impact of PAs on biodiversity, in terms of the diversity of methods used and the scope of inquiry.

While the evaluation covers all relevant operations supported by the GEF through all its Agencies, the independent evaluation offices of the GEF and UNDP have undertaken this evaluation jointly.

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This is the fourth impact evaluation addressing a specific focal area undertaken by the GEF Independent Evaluation Office. For the UNDP Independent Evaluation Office, this constitutes the first impact evaluation of UNDP programming, and builds on the findings and conclusions of a thematic evaluation focused on the nexus of issues linking UNDP poverty and environmental protection support to countries. The approach paper was approved by the directors of both offices in June 2013. Field visits were conducted from April to early June 2014, but the evaluation considered secondary information collected until the end of September 2015.

The independence of the two evaluation offices precludes any general conflict of interest. Both offices adhere to evaluation policies and codes of conduct that deal with conflict of interest issues. Other specific measures taken to prevent conflict of interest include: (1) consultants responded to the joint team managing the evaluation; (2) a Technical Advisory Group was established comprised of a representative of the World Bank's Independent Evaluation Group and three biodiversity and social science experts; and (3) UNDP evaluators refrained from evaluating GEF projects in which UNDP was not involved, and GEF evaluators did not evaluate UNDP projects outside of the GEF partnership.

ACKNOWLEDGMENTS

Worldwide, the GEF supports 1,292 nonmarine protected areas, with a combined area of 2,785,350 square kilometers.

Some level of LOCAL OR NATIONAL DESIGNATION of high biodiversity value to respective country

INTERNATIONAL DESIGNATION of high biodiversity or cultural value (WWF priority area, CI biodiversity hotspot, Important Bird Area, Ramsar site, Alliance for Zero Extinction site, UNESCO World Heritage Site)
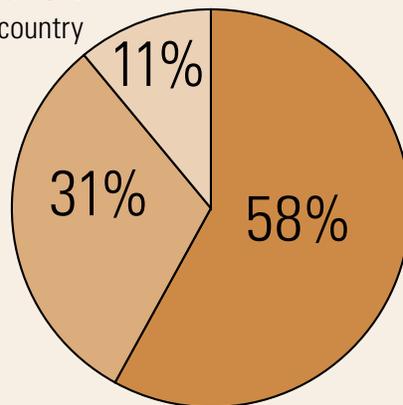
KEY BIODIVERSITY AREA, highest scientific designation of global biodiversity significance

11%

31%

58%

Over the past 24 years, the Global Environment Facility (GEF) has provided $3.4 billion in grants to 618 projects, matched by $12.0 billion in cofinancing, to help protect almost 2.8 million square kilometers of the world's nonmarine ecosystems.[2] This evaluation found that the GEF has supported 1,292 nonmarine protected areas (PAs) in 137 countries and has provided support at the PA system/subsystem level in 57 countries.[3] Of the supported PAs, 58 percent are classified as **key biodiversity areas**—the highest scientific standard for designating global biodiversity significance; the remainder have other international designations for ecological and cultural value (31 percent), or designations of local or national importance (11 percent).

WHY FUND PAs?

For over a century, PAs have formed a core component of the global conservation efforts. The past two decades have seen an extraordinary increase in the number of PAs worldwide. However, funding for PA management is often lacking or is inadequate to meet the needs—a major challenge to effective management. A global assessment of relative levels of underfunding for conservation spending suggests that 40 of the most severely underfunded countries contain 32 percent of all threatened mammalian diversity and are located near some of the world's most biologically diverse areas (Waldron et al. 2013). And, while the cost of establishing and maintaining a global PA system has been estimated at $30 billion a year, current expenditures amount to only $6.5 billion per year (CBD 2010). Moreover, PAs remain woefully underresourced, and the recent expansion in PAs globally risks widening current financial shortfalls.

Evaluand

618 projects in 137 countries

$3.4 billion
GEF FUNDING

$12 billion
COFINANCING

Medium
Large
PROJECT SIZE

Other Agencies
UNEP
World Bank
UNDP
GEF AGENCY

Pilot phase
GEF-1
GEF-2
GEF-3
GEF-4
GEF-5
GEF FUNDING BY REPLENISHMENT PHASE
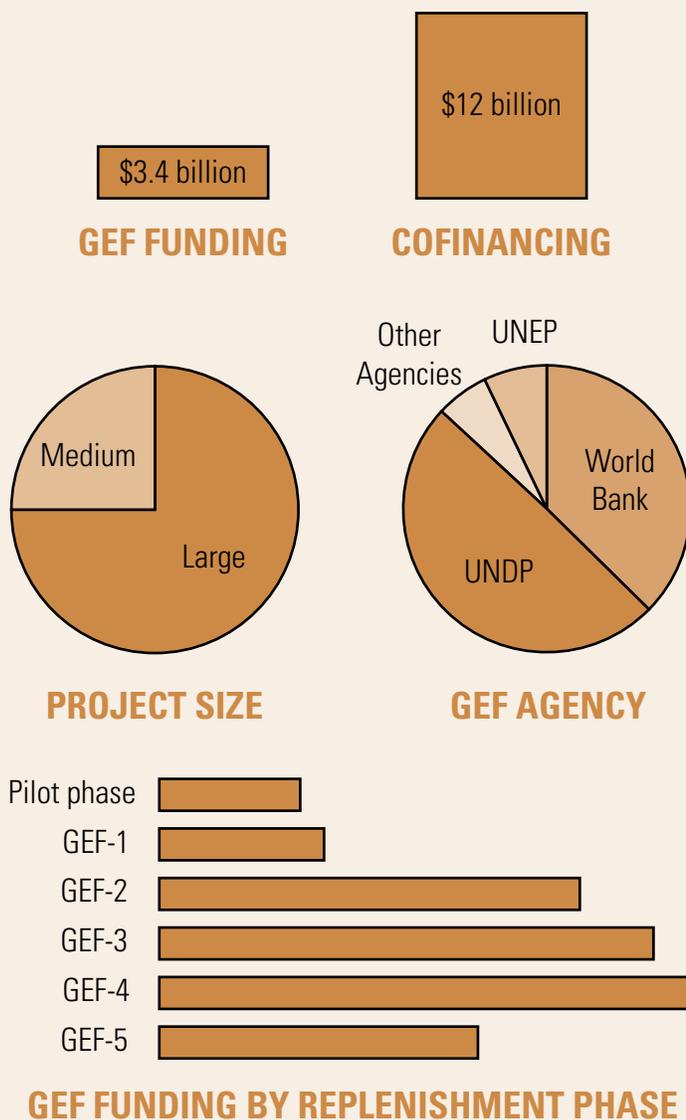
Mainstreaming biodiversity and its funding into development planning through national policy and decision-making frameworks is crucial. But just as important is to strengthen PAs through strategic expansion, effective management, and sustainable financing

to support biodiversity conservation. If strengthened to a level where they can adequately address the variety of challenges facing them, PAs can continue to serve as pillars of conservation efforts in the 21st century.

PURPOSE AND SCOPE OF THIS EVALUATION

This evaluation assesses the impact of GEF investments in nonmarine PAs and PA systems. Nonmarine systems include terrestrial, freshwater, and coastal ecosystems; these were selected because more information was available for them for assessing changes in biodiversity over the long term.

Good GOVERNANCE + effective PA MANAGEMENT + community ENGAGEMENT = IMPROVED BIODIVERSITY

The evaluation sought to answer three broad questions:

● What have been the **impacts** and contributions of GEF support (positive or negative, intended or unintended) in biodiversity conservation in PAs and their immediately adjacent landscapes?

● What have been the **contributions** of GEF support to the broader adoption of biodiversity management measures at the country level through PAs and PA systems, and what are the key factors at play?

● Which GEF-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 PAs and their immediately adjacent landscapes?

THEORY OF CHANGE

The evaluation adopted a **theory of change** to trace the extent to which GEF support contributes to conditions that lead to improved biodiversity conservation by restoring or stopping or reducing the loss of biodiversity. This theory of change draws on recent approaches to biodiversity conservation; it assumes that **good governance**, **effective PA management**, and **community engagement** will together lead to improvements in biodiversity conservation.

● **Governance.** A robust PA governance system is in place that ensures compliance across scales, and which can influence drivers stemming from larger scales, as well as the pressures operating at the local level. Evaluating governance includes an assessment of the extent to which GEF support has helped build effective PA systems, and also considers the policies and institutional arrangements that must be put in place to address the large-scale drivers affecting biodiversity outcomes in PAs and their adjacent landscapes.

● **Management.** Adequate and appropriate capacities for PA management are in place and operational. Evaluating management looks at the extent to which GEF support has targeted PAs in zones of high biodiversity value, and has strengthened management

capacities that have ultimately resulted in improved management effectiveness.

● **Community engagement.** Local communities in or around PAs are engaged in decision making and natural resource management activities that meet conservation and livelihood goals. The effects of GEF support in this category are examined through the nature of interactions taking place between local communities and the PA.

TOOLS AND METHODS

The evaluation used a mix of quantitative, qualitative, and spatial methods in data collection and analyses. Evidence was also collected from a mix of sources, combining global data sets, field data, literature reviews, and statistical models. Broader conclusions were drawn only after comparing results from different types of evidence and methods of analysis. Through the use of mixed methods and triangulation of findings, it was possible to identify directions and patterns regarding the extent of the GEF's contribution towards biodiversity conservation, and its interaction with the larger social-ecological system.

The evaluation had three major analytical components: portfolio analysis, global analysis, and case study analysis.

● **Portfolio analysis.** A total of 618 projects in 137 countries were identified. A database of 1,292 PAs supported by the GEF was then created, which served as the reference for analyses in the other components. An analysis was conducted to assess how the GEF's approach to biodiversity conservation

and sustainable use has evolved over time through support to PAs and their adjacent landscapes. Finally, terminal evaluations of 191 projects involving nonmarine PAs and PA systems were analyzed for progress toward impact at project completion.

● **Global analysis.** Three indicators were used to measure outcomes at a global scale: forest cover, wildlife populations, and Management Effectiveness Tracking Tool (METT) scores.

• Forest cover loss in GEF-supported PAs was compared to (1) countrywide aggregate loss which included both protected and nonprotected forest areas, (2) loss within their 10-kilometer buffer area, and (3) loss in the non-GEF PAs and their 10-km buffers within the same country and biome. Forest cover gain in GEF-supported PAs was compared to that in non-GEF supported PAs. Differences in forest loss rates before, during and after GEF support were also compared.

• The WWF's Living Planet Index (2014) data set was used to match GEF-supported PAs with wildlife monitoring time-series data covering the period from 1970 to 2010. Links between GEF interventions and biodiversity outcomes were made using information collected from project documents. A total of 88 cases of species population time-series from the Living Planet Index were matched with the objectives of 29 GEF projects implemented in 39 PAs.

• The METT instrument monitors progress toward more effective

Evaluation tools and methods

PORTFOLIO ANALYSIS

Database filtering

Terminal evaluation review

GLOBAL ANALYSIS

Principal components analysis

Mixed effects modeling

Propensity score matching

Linear regression

Remote sensing and GIS analysis

General additive modeling

CASE STUDIES

Qualitative data analysis
and synthesis

Qualitative comparative analysis

Remote sensing analysis

Literature review
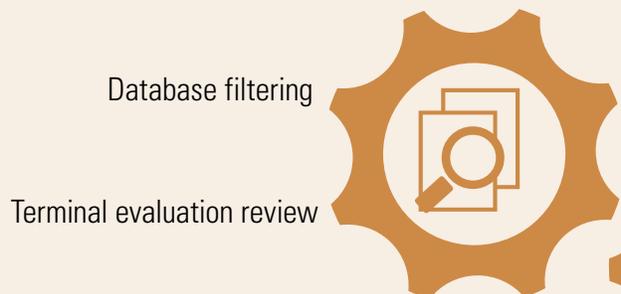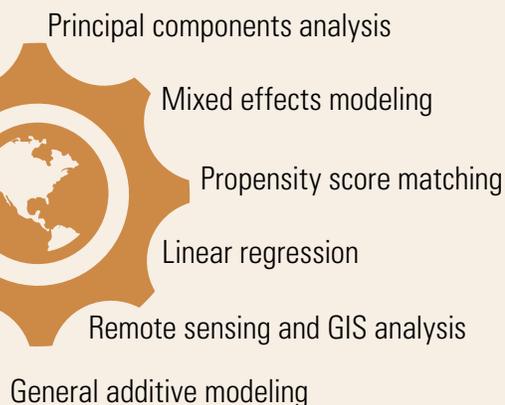
PA management over time. It consists of 32 indicators addressing aspects of PA management. A total of 2,440 METTs from 1,924 PAs in 104 countries were used to assess management effectiveness in GEF-supported PAs. To measure change in METT scores over time, 275 PAs in 75 countries with at least two METT assessments over time were analyzed.

● **Case study analysis.** Interviews and field visits were carried out in seven countries—Colombia, Indonesia, Kenya, Mexico, Namibia, Uganda, and Vietnam—across three regions, covering 17 GEF-supported PAs and 11 non-GEF PAs.

METHODOLOGICAL CHALLENGES

Assessing the impact of GEF interventions on biodiversity presents evaluative challenges stemming from multiple causal chains interacting across—often mismatched—geographic and administrative scales. Also, time lags between project implementation and responses in human behavior and natural systems make attribution of outcomes difficult. But the three main challenges in assessing impact were substantial information gaps on GEF support, limited global time-series data, and difficulties in estimating the counterfactuals.

● **Information gaps.** Information was uneven on which PAs the GEF had

Countries and sites visited for case studies

supported, for how long and when GEF support took place, and what type and extent of support was provided. In many cases, project documents did not provide the names of the supported PAs. Addressing this challenge entailed creating usable databases out of differently formatted, incomplete, and sometimes inconsistent data from various sources that needed to be standardized, validated, and matched.

● **Time-series data.** Many sites receiving GEF support are not registered in the World Database on Protected Areas. Further, even though GEF support to some PAs has been provided since 1991, forest loss and gain data are only available for the period 2001–12. The set of PAs analyzed therefore do not represent the global extent of GEF support, but rather that fitting the constraints imposed by global data sets.

● **Counterfactuals.** A counterfactual— or what would have happened without

GEF support—is difficult to estimate given the complexity of GEF-supported interventions and the absence of a predefined control. The difficulty in estimating counterfactuals was compounded by the lack of certainty resulting from information gaps on which PAs had received GEF support and which had not. Furthermore, spillover effects from GEF intervention sites into nonsupported areas were common, as was the lack of clear-cut "successful" and "unsuccessful" PAs. In reality, all PAs often had both more and less successful management outcomes.

The multidisciplinary mix of quantitative, qualitative, and spatial methods used by the evaluation in data collection and analysis helped mitigate these challenges. Various analyses were performed in collaboration with a wide range of national and international research institutions. A Technical Advisory Group was established to perform peer reviews, comprised of evaluation, biodiversity, and social science

BIODIVERSITY OUTCOMES

Less forest cover loss in GEF PAs

3.4% loss in buffer zone

4.5% loss in buffer zone

0.9%

GEF PA

2.3%

NON-GEF PA

In MEXICO,
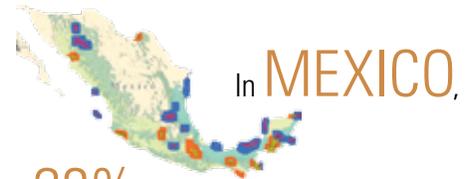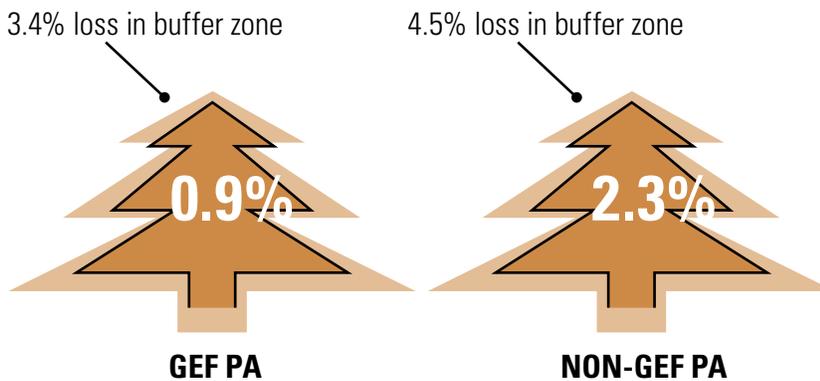
23% less forest loss in GEF PAs versus non-GEF PAs

up to 28% avoided forest loss in tropical and subtropical coniferous forest biome

Data are for 2001–12, and within the same country and biome type.

Majority of projects have positive environmental outcomes at completion

Projects at risk due to external pressures and drivers

12%

Reduction in environmental threats

45%

32%

23%

68% positive environmental outcomes

No reported positive environmental outcomes

Improvement in environmental conditions
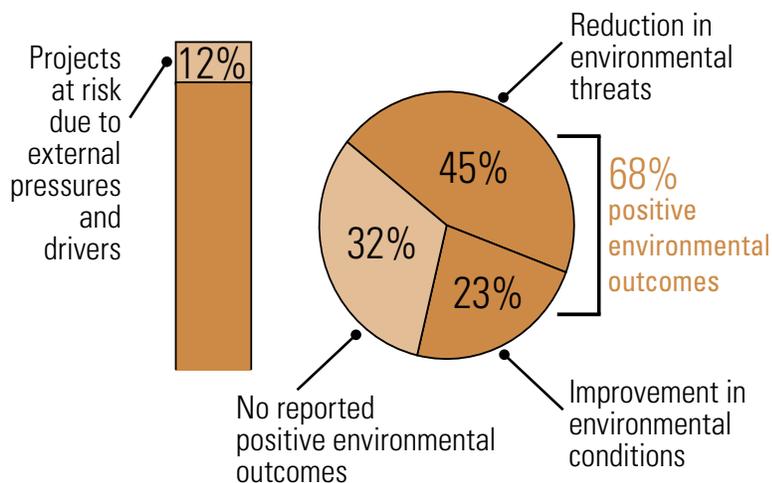
Based on terminal evaluation reviews of 191 projects.

Stronger links between project objectives and species conservation = better population trends

SPECIES OUTCOME

Positive

Neutral

Negative
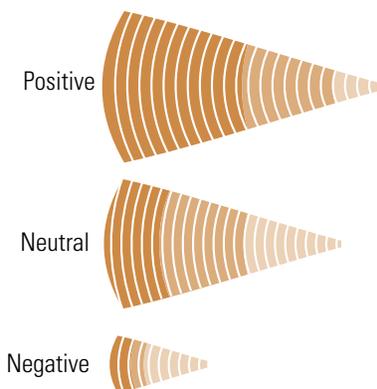
Link with project objectives:
△ Strong △ Medium △ Weak. n = 88.

MANAGEMENT AND GOVERNANCE OUTCOMES

Stronger management capacities

- Expanded staff skills
- Upgraded PA infrastructure
- Functional monitoring and reporting system
- Stable PA funding
- Increase in area under management

➜ **Improved law enforcement and compliance**

PROTECTED AREAS

Positive community engagement

- Joint law enforcement
- Ecosystem rehabilitation
- Human-wildlife conflict prevention
- Fire control

In large part due to socioeconomic benefits

➜ **Increased compliance with regulations**

Piloted innovative management approaches adopted systemwide

BROADER ADOPTION

Sustainable financing mechanisms at PA system level continue to fund individual PAs

Policy development

- Science-based
- Broad stakeholder consultation
- Benefits of PAs to communities institutionalized

Financial and human resource systems

- Transparency
- Sustainability

PROTECTED AREA SYSTEMS

New management approaches

- Increased connectivity between PAs
- Ecosystem representativeness

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experts. A Reference Group made up of GEF stakeholders working in the biodiversity focal area was convened at key stages to provide expert input along with technical feedback and verification.

CONCLUSIONS

1. Loss of global biodiversity continues at an alarming rate, driven largely by habitat loss due to multiple development pressures. Since the pilot phase, GEF strategies have increasingly **targeted** these **development pressures** beyond the PAs.

2. GEF support is contributing to biodiversity conservation by **helping lower habitat loss** in PAs as indicated by less forest cover loss in GEF-supported PAs compared to PAs not supported by the GEF. GEF-supported PAs also generally show positive trends in species populations, and reduced pressures to biodiversity at the site level.

3. GEF support has **helped build capacities** that address key factors affecting biodiversity conservation in PAs, mainly in the areas of PA management, support from local populations, and sustainable financing. Sustainable financing of PAs remains a concern.

4. GEF support is **contributing to large-scale change in biodiversity governance** in countries by investing in PA systems, including legal frameworks that increase community engagement. Through interventions at the PA level, GEF support is also helping catalyze gradual changes in governance and management approaches that help reduce biodiversity degradation.

5. While sharing important characteristics with governments and other donors, GEF support **allows adaptability and higher likelihood of broader adoption** in cases where it pays particular attention to three key elements in combination: long-term

GEF catalytic role

GEF support

Long-term engagement

Linking scales, approaches, and stakeholders

Financial sustainability

Allows continuity of interventions

Builds internal capacity

Enables adaptation to changing contexts
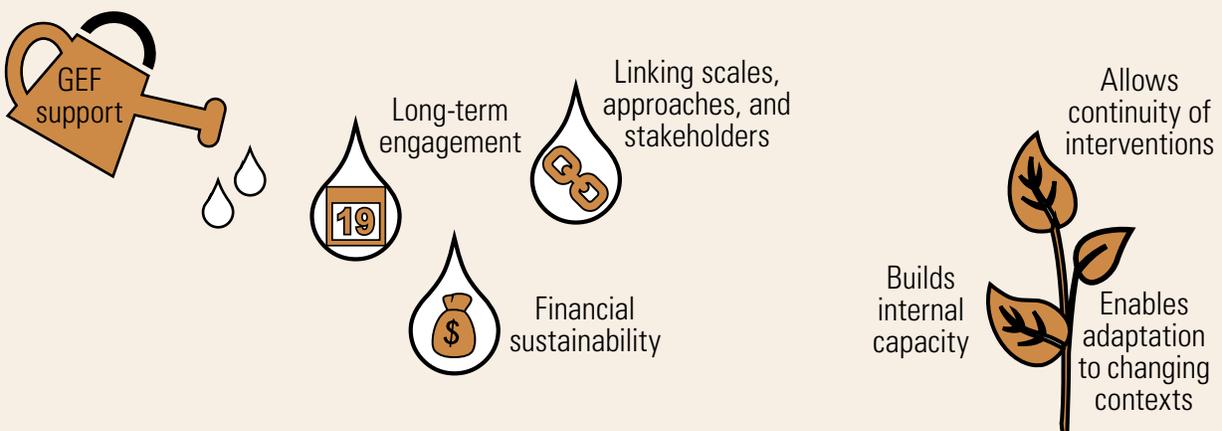
DIRECT IMPLEMENTATION BY GOVERNMENT STAFF

engagement; financial sustainability; and creation of links across multiple approaches, stakeholders, and scales.

RECOMMENDATIONS

1. **Ensure best targeting of GEF support by using geospatial technology combined with the latest scientific criteria for site selection.** The GEF must continue to pursue best methods to ensure that its support is targeted toward globally significant sites with high biodiversity values, and that support extends to more of these sites. As it has consistently demonstrated, the GEF must also continue to adopt the most rigorous scientific criteria in selecting areas for investment, integrating new and more appropriate criteria such as climate change vulnerability as they are developed.

2. **Mitigate unequal distribution of costs and benefits to local communities.** At the project level, during design and implementation, the GEF needs mechanisms to ensure that future projects reach full compliance with its social safeguards. The GEF needs to expand benefit sharing across a wider cross-section of affected local populations and better mitigate the unequal distribution of costs and benefits of PA management interventions, such as those arising from geographical and socioeconomic differences among and within communities adjacent to PAs. The aim should be to reduce local pressures on biodiversity stemming from adverse local socioeconomic conditions.

3. **Coordinate with mandates beyond environmental sectors to address large-scale drivers.** The GEF should invest more in interventions that enable dialogue and joint decision making not only among multiple stakeholders in and around PAs, but also stakeholders representing different sectors and operating at different scales, which tend to have conflicting development priorities and management objectives with regard to biodiversity conservation. At a minimum, these would be stakeholders involved in environmental protection, natural resource use, economic development, and infrastructure development; this would be especially important for those involved in mining, agriculture, energy, tourism, and security, among others.

4. **Streamline project reporting requirements.** The GEF should ensure that basic information on its support to PAs (where, what, and when) is available historically and into the future. At the same time, it needs to reduce the reporting burden on projects, countries, and Agencies by adopting a mixed methods approach to results monitoring that draws on geospatial technology, global databases, and locally gathered information. Among the specific actions that could be taken in the short term are the following:

   • Ensure that basic data on project sites and activities are included in project documents upon submission.

   • Institutionalize use of geospatial technologies for project and portfolio monitoring when applicable.

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- Measure indicators that are meaningful for global analyses and useful for local management capacities and needs.

- Establish long-term partnerships with country institutions that already have biodiversity and socioeconomic monitoring as their mandate.

- Establish partnerships with research institutes or agencies that already collect and analyze global data relevant to biodiversity.

5. **Create a program for learning what works for whom, and under what conditions.** The GEF partners should jointly develop and implement a program that will generate an evidence base drawn from mixed methods on what works, for whom, and under what conditions. In particular, the GEF should generate better knowledge on three critical areas that will enhance its support:

- Ensuring more comprehensive and equitable response to local livelihood needs that contribute to or at least do not undermine biodiversity conservation and sustainable use

- Catalyzing changes needed for large-scale biodiversity conservation and sustainable use

- Delivering support for biodiversity conservation and sustainable use in ways that produce multiple environmental and socioeconomic benefits

NOTES

1. These data are as of May 28, 2013. All dollar values reported throughout are U.S. dollars.

2. Dollar values have been adjusted for inflation at 2015 rates.

3. The PAs were identified from Management Effectiveness Tracking Tool (METT) assessments submitted as of January 2013, and from project documents that were either endorsed or approved by the GEF Chief Executive Officer (CEO) as of April 2015. They do not include PAs supported by the GEF but not registered in the World Database on Protected Areas, or not explicitly identified in project documents or METT assessments. Number of PA systems/subsystems supported is based on projects CEO-endorsed in 2008 and earlier.

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