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Evaluation of Multiple Benefits of GEF Support

Draft Approach Paper

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Introduction

1. The Global Environment Facility (GEF) was created in 1991 to serve as a financial mechanism that would ensure the achievement of global environmental benefits in the process of countries meeting their commitments to global environmental conventions. However, given the interconnected nature of environmental issues, interventions intended to benefit one convention may also produce multiple benefits aligned with the targets of other conventions. Biodiversity projects that aim to conserve forest ecosystems, for example, are also likely to sequester CO_2 that might otherwise contribute to climate change, and also prevent further land degradation that might otherwise lead to desertification and possibly siltation of international waters. As noted in the GEF 2020 Strategy, which was endorsed by the GEF Council in October 2014, "The GEF occupies a unique space in the global financing architecture by delivering global environmental benefits across multiple domains." Through the delivery of multiple benefits, GEF also contributes to Sustainable Development Goals 2, 6, 13, and 15 related to zero hunger, clean water and sanitation, climate action, and life-sustaining forests and biodiversity.

2. Multiple benefits generated through GEF support consist of two types: the global environmental benefits (GEBs) that contribute towards achieving the strategic priorities of multiple focal areas,[1] and the local environmental and socioeconomic benefits that indirectly generate and sustain the GEBs. One way that GEF has sought to create multiple benefits in a more integrated manner is through multi-focal area (MFA) projects. These projects are funded through allocations from different global environmental conventions and/ or trust funds, and track indicators specific to each focal area.

3. With each succeeding GEF phase, the proportion of grant amounts allocated for MFA projects has approximately doubled; actual MFA grant amounts have almost tripled from US$ 357 million in GEF-4 to US$998 million in GEF-5, making it GEF's fastest-growing portfolio.[2] Yet no comprehensive evaluation has so far been done on this emerging portfolio. This evaluation aims to fill this gap. Using a mixed methods approach, the GEF Independent Evaluation Office (IEO) seeks to assess the extent to which GEF support has contributed to the generation of multiple benefits by addressing environmental issues through a multi-focal approach. The evaluation will particularly focus on the portfolio of MFA projects that target the strategic priorities of the biodiversity, climate change and land degradation focal areas, which comprise over 90% of the multi-focal area portfolio.

Background

4. The GEF policy on global environmental benefits (GEBs) states that "GEF investments are predicated on the delivery of global environmental benefits in biodiversity, climate change mitigation, international waters, land degradation and forests, and chemicals and waste. Increasingly, GEF is seeking to deliver multiple environmental benefits through integrated investments across the various dimensions of the global environment."[3] GEBs may be broadly defined as the reduction of stresses to the environment or the improvement of environmental status that has implications for the global, rather than just local or national, environment. Table 1 shows examples of GEBs that each focal area

[1] Since GEF-4, the GEF has identified strategic priorities for each focal area in lieu of operational programs as a basis for which types of project to fund. The GEF-5 focal area strategies can be found at https://www.thegef.org/gef/sites/thegef.org/files/documents/document/GEF-5_FOCAL_AREA_STRATEGIES.pdf.

[2] Based on PMIS data on projects that were at least submitted for approval but not rejected or dropped as of January 2016. This excludes umbrella programs such as the UNDP-GEF Small Grants Programme that do not implement individual projects using a multi-focal approach.

[3] This policy can be found at https://www.thegef.org/gef/GEB.

might produce, which are associated with GEBs in other focal areas. As seen in the table, management of land to reduce or prevent degradation is inherently expected to produce benefits for other focal areas in the course of improving agricultural productivity.

Table 1 Examples of global environmental benefits (GEBs) that may also benefit other focal areas.

FOCAL AREA	EXAMPLES OF CROSS-FOCAL AREA GLOBAL ENVIRONMENTAL BENEFITS
Biodiversity[4]	• Conservation of globally significant biodiversity • Sustainable use of the components of globally significant biodiversity
Climate change	• Increased use of renewable energy and decreased use of fossil energy resources • Conservation and enhanced carbon stocks in agriculture, forest, and other land use
Land degradation	• Improved provision of agro-ecosystem and forest ecosystem goods and services • Mitigated/avoided greenhouse gas emissions and increased carbon sequestration in production landscapes • Conservation and sustainable use of biodiversity in productive landscapes • Reduced pollution and siltation of international waters
International waters	• Reduced pollution load in international waters from nutrient enrichment and other land-based activities • Restored and sustained freshwater, coastal, and marine ecosystems goods and services, including globally significant biodiversity, as well as maintained capacity of natural systems to sequester carbon • Reduced vulnerability to climate variability and climate-related risks, and increased ecosystem resilience
Chemicals and waste	• Protected human health and environment through the reduction and elimination of mercury use and prevention of anthropogenic emissions and releases of mercury and mercury compounds • Reduced risks on human health and the environment through reducing and eliminating production, use and releases of Persistent Organic Pollutants and their waste • Reduced risks on human health and the environment through sound management of chemicals and waste of global concern
SFM/REDD+	• Reduction in forest loss and forest degradation • Maintenance of the range of environmental services and products derived from forests

Note: Adapted from http://www.thegef.org/gebs.

Synergies across focal areas

5. The generation of cross-focal area environmental outcomes by a single intervention has been termed in the scientific literature as *multiple benefits*, *co-benefits*, *multiple ecological services*, and *synergies*, among others (e.g. Brown et al. 2008, Koziell and Swingland 2002, Nelson et al. 2009, Wendland et al. 2010). These terms indicate how interventions intended to produce benefits for one focal area may be deliberately designed in a way that also creates positive changes in other focal areas. When discussions to fund activities for reducing emissions through deforestation and forest degradation (REDD+) began in 2005, potential synergies with the conventions on biodiversity and land degradation were immediately pointed out by scientists (e.g. Angelsen 2008). The three main areas of global

[4] In the case of Biodiversity, these are GEBs that may also be created as a result of GEBs that are generated in other focal areas.

environmental change – land, biodiversity and climate – are ecologically interlinked in a way that they are particularly suited for exploring synergies (Gisladottir and Stocking 2005).

6. Maximum synergistic benefits for all three focal areas are expected specifically through reforestation, avoided deforestation and avoided degradation—all REDD+ activities—especially when targeted at sites that are vulnerable yet still responsive to intervention (Cowie et al. 2007). Using REDD+ funding to meet multiple focal area objectives has the added potential benefit of freeing up funding for other focal areas to target objectives that are still globally critical, but which are unlikely to produce benefits for other focal areas (Karousakis 2009). Dudley and Stolton (2010) provide numerous examples of how protected areas provide multiple ecosystem services as well as socioeconomic benefits.

7. In 2004, GEF's Scientific and Technical Advisory Panel (STAP) reported that GEF had moved towards recognizing interlinkages between focal areas, with the most important ones being those between climate and biodiversity, and between land and biodiversity and international waters. However, they also found that there was no systematic approach to incorporate these explicitly in project design due in part to thematic silos within institutions. They proposed to Council that taking interlinkages into account in the design of GEF projects can maximize the synergies and minimize the trade-offs, or at the very least produce no negative impacts on other focal areas.

8. Currently, GEF agencies are required at project proposal submission to specify which global environmental targets the project will be contributing to across focal areas, regardless of funding source. The GEF-6 Programming Directions, presented to the GEF Assembly in May 2014, identifies the different ways that each focal area might specifically produce benefits for or receive benefits from other focal areas. One innovation in GEF-6 is the Integrated Approach Pilots (IAPs), which were launched as a way for GEF to address drivers of environmental decline, and catalyze transformational change at higher scales. While all the IAPs are intersectoral and multi-focal in nature, the Sustainable Cities IAP in particular states one of its intended outcomes as the adoption by partners of integrated management strategies that help meet the objectives of multiple global conventions.

Evolution of GEF's multi-focal approach

9. Even as it moves towards an increasingly multi-focal approach, as of January 2016, the GEF has not adopted an explicit definition of what multiple benefits are. However, as early as April 2000, the GEF Secretariat issued official guidance on an operational program that aimed to simultaneously address concerns across focal areas, and theoretically provide multiple focal area benefits. Operational Program 12 (OP12): Integrated Ecosystem Management specifically aimed to bring synergies among the Biodiversity, Climate Change and International Waters focal areas with the Land Degradation focal area, and is considered the precursor of the GEF's current multi-focal area (MFA) programming.[5]

10. Projects approved under OP12 were required to generate as least two out of the following four types of environmental benefits: conservation or sustainable use of biodiversity, including equitable sharing of benefits from these resources; reduction of net emissions and increased storage of greenhouse gases in terrestrial and aquatic ecosystems; conservation and sustainable use of water bodies; and pollution prevention in globally important terrestrial and aquatic ecosystems. The types of

[5] Another multi-focal program introduced was Operational Program 9 (OP9): Integrated Land and Water Multiple Focal Area. While OP9 explicitly aimed to produce benefits for land, biodiversity and climate, interventions were specifically linked with transboundary water bodies, as one area of work under the International Waters focal area.

interventions funded under OP12 consisted of technical assistance (e.g. building human resource capacities for integrated management, development of policies supporting integrated management), investments (e.g. rehabilitation of ecosystems), and targeted research (e.g. development of integrated management approaches for specific contexts).

11. An important aspect of OP12 was its intention to generate not only environmental benefits at the global scale, but also socioeconomic benefits at the local scale. The OP12 guidance cites the three Rio Summit conventions[6] as calling for an integrated, intersectoral approach towards meeting convention targets, with the higher objective of achieving sustainable development. Sustainable development is typically defined as ensuring a balance of environmental protection, economic growth and social equity within and across generations (WCED 1987). The guidance explicitly stated the OP12 objective as "catalyzing widespread adoption of comprehensive ecosystem management interventions that integrate ecological, economic, and social goals to achieve multiple and cross-cutting local, national, and global benefits."[7]

12. The study on the *Role of Local Benefits in Global Environmental Programs* done in 2006 by the GEF Evaluation Office found that in many areas in which the GEF is active, local and global benefits are strongly interlinked. It recommended that where local environmental and socioeconomic benefits are an essential means to achieving and sustaining global benefits, the GEF portfolio should integrate them more strongly into its programming. GEF's STAP further emphasized the need to deliver GEBs within the context of sustainable development in its report to the GEF Assembly in May 2014 titled *Delivering Global Environment Benefits for Sustainable Development*. Among other things, it advocated for an integrated approach where "the synergy between development and environment is pursued, and the generation of multiple benefits is promoted vigorously."

13. A review of OP12 by the GEF Office of Monitoring and Evaluation (2005)[8] found that while issues such as country-drivenness and cross-sectoral management were adequately addressed, many of these multi-focal projects did not convincingly define at the outset how synergies among the different focal areas would be achieved. The review also questioned the potential for synergies in cases where having to establish baselines, measure outcomes, and achieve impacts for multiple focal areas might be beyond a project's capabilities and budget. Furthermore, it recommended that special attention be given to the balance between GEBs and local benefits, being careful to assess the "win-wins" versus the trade-offs.

14. When the Resource Allocation Framework (RAF)—and subsequently the System for Transparent Allocation of Resources (STAR) — was introduced in 2006, GEF transitioned from approving projects by operational program to focal area strategies. Under the new system, each country was given a specific funding envelope for the Climate Change, Biodiversity and Land Degradation focal areas. This meant that each project had to clearly show which focal area's strategic priorities it intended to address, and it would then be funded through the allocation for that focal area. Although, as discussed earlier, Land Degradation projects inherently generate multiple benefits for other focal areas, it is also the focal area

[6] The Rio Summit is the popular name of the United Nations Conference in Environment and Development (UNCED) held in Rio de Janeiro, Brazil in June 1992, which designated the GEF as the primary financial mechanism for these global conventions. The conventions adopted as a result of the Rio Summit are the Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNCCD), which form the bases for GEF's Biodiversity, Climate Change and Land Degradation focal areas, respectively.

[7] The OP12 guidance can be accessed at https://www.thegef.org/gef/sites/thegef.org/files/documents/document/OP_12_English.pdf.

[8] The GEF Independent Evaluation Office was previously known as the GEF M&E Unit, GEF Office of Monitoring and Evaluation and GEF Evaluation Office until its current name was adopted through a Council decision in 2014.

with the lowest funding allocation; in many cases, this funding is combined with Biodiversity or Climate Change interventions so as to design a larger, more comprehensive project approved as MFA. Further strengthening the case to have an MFA project, such an intervention would then have access to an additional funding envelope, the Sustainable Forest Management (SFM)/(REDD+), which was made available as an incentive in GEF-5 for countries to specifically address multi-focal forestry concerns. Similar to the Land Degradation focal area, SFM/REDD+ gives particular attention to meeting the needs of local communities, women, and forest-dependent people as necessary for achieving the objectives of all other focal areas.

15. The mid-term reviews of both the RAF (2009) and the STAR (2014) found that the new grant allocation systems had resulted in an increasing trend towards MFA projects. A sub-study done by the GEF IEO in 2013 as part of the Fifth Overall Performance Study (OPS5), however, found that there were no apparent differences in terms of performance ratings between completed single-focal area projects that had multi-focal objectives and projects that had been approved as multi-focal at the outset. When ratings were further disaggregated, a lower percentage of MFA projects were found to have a "satisfactory" or higher rating in performance and M&E compared to those approved as single-focal. The study also noted that at project entry, projects approved during GEF-2 and -3 had less developed M&E plans than those approved during GEF-5, when multi-focal projects were being approved as MFA rather than under OP12. However, while this sub-study focused on performance ratings at project completion, no in-depth evaluation has yet been done on the GEBs and local benefits generated by MFA projects.

Trade-offs in multiple benefits

16. While GEF's multi-focal approaches aim for synergies among multiple benefits, such interventions may also result in trade-offs. Trade-offs occur when increasing the benefit for one sector results in a decrease in another. Three types of trade-offs can be identified in the scientific literature and previous evaluations: 1) between environmental and socioeconomic outcomes, 2) among the objectives of the different focal areas, and 3) between global and local benefits. Cutting across these three types of trade-offs is the temporal dimension, i.e. the trade-off between short-term and long-term benefits.

17. Interventions aimed primarily at achieving environmental objectives may do so at the expense of socioeconomic benefits to both local communities and national priorities, and vice versa (e.g. Kellert et al. 2000, West et al. 2006, Vidal-Legaz et al. 2013, Lee et al. 2014). Some trade-offs may occur as a result of changes in land use or land tenure, or from restricted access to natural resources to meet conservation targets, and the stakeholder conflicts that arise from these (e.g. Adams et al. 2004, Christie 2004, West et al. 2006). Recognizing this risk, the GEF Environmental and Social Safeguards were adopted in 2011 to ensure, among others, that potential social impacts of GEF projects are identified, prevented, or at least minimized and compensated for with the early, full and effective participation of local stakeholders. Furthermore, the *Impact Evaluation of GEF Support to Protected Areas and Protected Area Systems* (2015) recommended that GEF pay attention to ensuring equitable distribution of the costs and benefits of GEF support among and within stakeholder communities, as the evaluation found that this was influenced by geographical location and socioeconomic status.

18. Attempts to develop schemes that produce multiple environmental as well as socioeconomic benefits have proven to be difficult to achieve in practice (Melo et al. 2013). Cowie et al. (2007) point out that each additional environmental objective integrated into an intervention changes the opportunity costs, which differ considerably due to site-specific soil, climate and market conditions, as well as global price changes. Opportunity costs also vary across temporal scales, where land managers

who rent versus those who own the land will have different incentives to maximize profit in the short term at the expense of enhancing soil quality over the long term, for example.

19. Trade-offs can occur not only between environmental and socioeconomic outcomes, but also among the different focal area objectives. The OP12 guidance specifically stated that funding would not be given for interventions that would create not only negative social impacts, but also negative effects on other focal areas. Some examples cited were the conversion of natural landscapes into forest plantations, and the introduction of invasive alien species. This mandate was further strengthened by the GEF Environmental and Social Safeguards, which prevents the conversion and degradation of critical habitats, and the use of chemicals identified under the Stockholm Convention in any GEF Agency's project that receives incremental funding from GEF.

20. Maximizing carbon sequestration, for example, is not compatible with maximizing biodiversity conservation, as an exotic forest monoculture would be much less diverse than a species-rich grassland that on the other hand may sequester much less carbon. Cowie et al. (2007) also raise the concern over leakage from interventions such as organic farming or conservation of native forests which, while generating benefits simultaneously for climate, biodiversity and land, would also result in lower yields per hectare, thus necessitating the conversion of biomass in other areas into arable land to sustain the level of food production. Another point they raise is the trade-off between short-term and long-term ecosystem services, such as maximizing carbon sequestration benefits in the short term through exotic forest monocultures, which eventually leads to a lack of ecological resilience and adaptation capacity in the long term.

21. Within the GEF context, a particular concern is the trade-off between global- and local-scale benefits. As previously mentioned, core to GEF's mandate[9] is the generation of GEBs through incremental funding to interventions that are within the mandate of governments and other donors to support. An evaluation of the application of the incremental cost principle in 2006 found that while incremental thinking did underpin the design of GEF projects, the identification and monitoring of GEBs were key to ensuring that this mandate was being met.

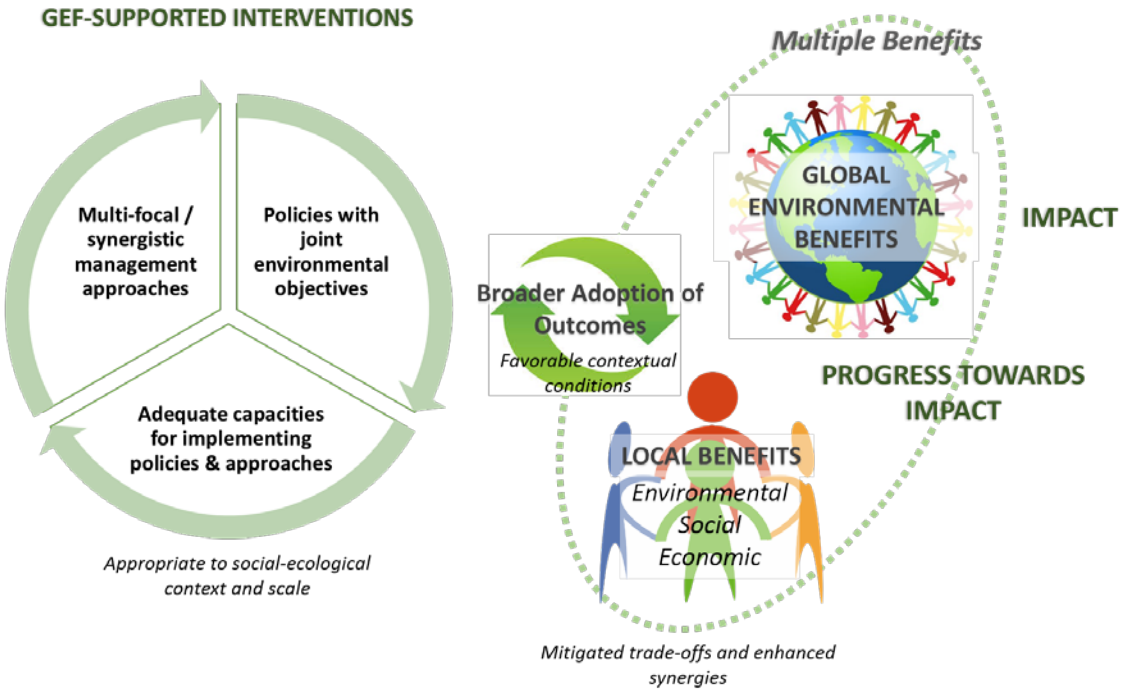
22. Trade-offs between spatial-temporal scales that involve competing ecosystem functions correspond to trade-offs among benefits to different stakeholders (Wang and Fu 2013). Even the same ecological function, such as evapotranspiration in forested areas, can have different effects at local and regional scales, where maximizing total precipitation for regional and global stakeholders would likely cause substantial decline in water supply for local stakeholders. Efforts to win the cooperation of national governments towards protecting global goods and services have the risk of giving greater attention to local benefits and less attention to the achievement of GEBs, as found in the *Impact Evaluation of GEF Support to the South China Sea and Adjacent Areas* (2012). Both local and national actors will engage in environmental conservation to the extent that they receive benefits from these interventions at their respective scales; it is therefore necessary to have mechanisms where at least some of the higher-scale environmental benefits can be channeled to the local and national levels where decisions on natural resource use are made on a regular basis (Dixon and Pagiola 2001, Perrings and Gadgil 2003).

[9] Paragraph 2 of the *Instrument for the Establishment of the Restructured Global Environment Facility* (2011) states that "The GEF shall operate, on the basis of collaboration and partnership among the Implementing Agencies, as a mechanism for international cooperation for the purpose of providing new and additional grant and concessional funding to meet the agreed incremental costs of measures to achieve agreed global environmental benefits…."

Conceptual framework

23. "Multiple benefits," as referred to in this evaluation, consist of two types of benefits: 1) the GEBs generated by an intervention that contribute towards achieving the strategic priorities of multiple focal areas, and 2) the local environmental and socioeconomic benefits that an intervention also seeks to create as a means to generate and sustain GEBs. Positive but secondary or indirect environmental and socioeconomic benefits generated by an intervention are referred to as "co-benefits." Figure 1 shows the theory of change that will be used by this evaluation in assessing the extent to which GEF support contributes to the generation of multiple benefits through multi-focal approaches, and the conditions that enable or prevent the achievement of this impact.

Figure 1 Theory of change on how GEF support contributes to the generation of multiple benefits



24. **GEF-supported interventions** that aim to produce multiple benefits typically introduce or strengthen a combination of:

- environmental management approaches that are designed to simultaneously achieve multiple environmental objectives to create synergistic benefits across focal areas and sustainable development objectives;
- policies and other governance arrangements that seek to achieve joint multiple environmental objectives while safeguarding social and economic well-being; and
- adequate human and institutional capacities to implement these policies and approaches, such as the skills and infrastructure to monitor multiple focal area indicators.

Examples of approaches that are designed to be multi-focal and potentially synergistic are sustainable agriculture, sustainable land management, sustainable forest use and protection, ecosystem- or landscape-based management, and ecosystem-based adaptation. While each GEF project may not

necessarily have all three types of interventions, over-all GEF support to a particular geographical area may contribute to all three dimensions as appropriate through different projects. These interventions must also be appropriate to the scales and the specific social-ecological system[10] that the interventions are being implemented in, as the type and extent of benefits generated by the same interventions are expected to be different depending on the context.

25. GEF-supported interventions may produce both local and global benefits. **Local benefits** may be environmental (e.g. greater resilience against droughts, more regular rainfall), social (e.g. increased trust among stakeholders, improved access to natural resources), and economic (e.g. greater access to capital, diversified sources of income), and are related to concerns at any non-global scale, ranging from community well-being to national priorities. **Global environmental benefits** refer to ecosystem goods and services that have global significance, or to the environmental conditions and processes necessary to sustain these goods and services (see table 1). These involve the reduction of stress to the environment and the improvement of environmental status. Examples are protection of globally endangered species, sequestration of carbon, and balancing of the nitrogen cycle. GEBs are the *raison d'être* of GEF interventions. Local benefits are expected to contribute towards the achievement of GEBs by providing incentives and the appropriate social conditions enabling behaviors that sustain GEBs.

26. As discussed in the previous section, while multiple benefits may be generated through synergies, trade-offs may also be expected, since maximizing one benefit may not be compatible with the generation of other benefits. Due to social-ecological systems being inherently complex, synergies and trade-offs may occur in a non-linear fashion, where the addition or exclusion of a single environmental or socioeconomic objective can have cascading effects in terms of both benefits and costs. Furthermore, costs and benefits vary across spatial and temporal scales, as well as to the particular environmental, social and economic contexts of the various stakeholders. These differences therefore need to be considered when assessing the opportunities and limitations of GEF support for mitigating trade-offs and enhancing synergies across focal area priorities; among environmental, social and economic objectives; and across spatial-temporal scales. Compliance with GEF environmental and social safeguards, such as in providing socioeconomic benefits in ways that are culturally appropriate, and gender and generationally inclusive, will be an important part of this assessment.

27. The **impact** of generating global environmental benefits is achieved through the **broader adoption of outcomes** that GEF support has contributed to over time. Broader adoption may be in the form of multiple benefits being sustained within the same areas that GEF has supported, and/or the outcomes of GEF-supported interventions being replicated, scaled up, or otherwise transforming the targeted social-ecological system at various scales. The circular arrow in figure 1 indicates that this is an iterative process where—assuming that contextual conditions are favorable for this to occur—the broader the scale of adoption of outcomes, the greater the extent of global environmental benefits. However, this also indicates that the causal pathways towards achieving impact may be multiple and non-linear, thus possibly involving both positive and negative feedback loops, as well as predictable and unpredictable tipping points for transformational change. **Progress towards impact** is assessed as the extent to which outcomes are being achieved and adopted at multiple and higher scales.

[10] A social-ecological system is a term used to describe the interactions of human and environmental systems within a particular time and space. "Social" refers to all human spheres, such as economic, cultural and political systems. "Ecological" refers to all systems of non-human origin, such as biological, climate and biogeochemical systems.

Evaluation Questions and Coverage

Purpose and Objectives

28. The over-all purpose of this evaluation is to assess the effectiveness of GEF's multi-focal approach in generating multiple benefits in relation to multiple Conventions, and its relevance both to GEF's mandate and to country priorities. This will deepen the evidence on the results of GEF support and their contributions to GEBs, thus allowing current GEF programming to be adapted as appropriate for enhanced effectiveness.

29. The evaluation's main objective is to assess whether or not interventions designed to meet the strategic priorities of multiple focal areas have indeed generated multiple benefits to these focal areas. It will also assess the extent to which GEF's mandate of providing incremental value continues to be implemented in the course of shifting the programming focus towards generating multiple benefits. The evaluation will inform GEF's strategy of pursuing multiple benefits through programs and projects that are funded through multiple focal areas and trust funds.

30. Complementary to this evaluation, the IEO will be conducting several other evaluations that will be closely coordinated with this one. These include the evaluation of GEF's programmatic approaches, and strategic country-level evaluations. A real-time evaluation of the integrated approach pilots (IAPs) will also be undertaken towards the end of GEF-6. While assessing multiple benefits and IAPs, the IEO will also keep track of benefits and results in specific focal areas through a series of focal area studies to meet the reporting requirements of the Conventions. The findings of this and other evaluations will feed into the Sixth Comprehensive Evaluation of the GEF, which is a requirement for GEF's next replenishment process.

Specific questions to be answered by the evaluation

The evaluation will seek to answer four main questions:

1) To what extent has GEF support generated multiple benefits through multi-focal approaches?
2) What synergies are produced by GEF support through multi-focal approaches in terms of multiple benefits and incremental value, as well as intermediate outcomes, and what factors and conditions contribute to and prevent synergies in multiple benefits of GEF-supported interventions?
3) What trade-offs are produced by GEF support through multi-focal approaches, and what factors and conditions contribute to trade-offs in multiple benefits of GEF-supported interventions?
4) How effective has GEF been in enhancing synergies and mitigating trade-offs among multiple benefits?

Because multiple benefits also refer to local benefits, as defined in this evaluation, resilience to climate change and gender equality will be part of the assessment. Social and environmental risks posed by GEF-supported interventions to local communities will also be assessed as one of the possible ways that trade-offs are produced. Private sector and civil society engagement will be assessed at greater depth insofar as they may contribute to or hinder the generation of multiple benefits.

Scope

31. The evaluation will cover projects that explicitly address strategic priorities of multiple focal areas. As such, it will focus on the portfolio of projects that were approved under OP12 or as MFA, i.e. receiving funds from multiple focal areas and designed to meet specific strategic priorities of these focal areas (see section on Evaluation Portfolio). These include projects funded by multiple trust funds which, apart from the GEF Trust Fund, also include the Least Developed Countries Fund (LDCF), Special Climate Change Fund (SCCF), and the Nagoya Protocol Implementation Fund. The portfolio will include all such projects that have been CEO-endorsed or -approved from the pilot phase until January 2016.

32. Although interventions in coastal and marine environments have great potential for generating multiple benefits as well, only land-based interventions will be assessed in this evaluation. Environmental impacts of terrestrial origin tend to have more clearly defined boundaries. Impacts of this nature are also more feasible to measure considering the currently available standardized global databases and internationally accepted methodologies, and within the evaluation time frame. Specifically, the evaluation will focus primarily on interventions that are intended to meet the three main global environment conventions on biodiversity, climate change and land degradation, where multiple benefits are most likely to be expected.

Stakeholders and Audience

33. The evaluation objectives respond to the interests of several audiences. These include the GEF Council, management and staff of the GEF Secretariat and its Agencies, donor and recipient countries, and the respective Secretariats and Parties to the GEF-relevant UN Conventions. Beyond these GEF-specific audiences, the evaluation findings will be of great interest to a wide range of agencies and organizations that seek to promote environmental protection and sustainable development using a more synergistic and integrated approach. These include bilateral and multilateral donors, NGOs, and national governments.

Evaluation Methodology

Evaluation Portfolio

34. As of January 2016, 280 OP12/MFA projects have been CEO-endorsed or -approved since the Pilot Phase, totaling US$ 1.2 billion in grants and US$ 6.8 billion in cofinancing.[11] Of these, 14 are multi-trust fund. In terms of size, 67% are full-size and 33% are medium-size, with 30% of the total reported as being completed (table 2). Four countries – Brazil, Mexico, China and India – comprise 21% of total funding and almost 10% of the total number of projects. Approximately 10% and 4% of projects are regional and global in scope, respectively. The rest are national projects implemented in 115 countries. UNDP and the World Bank have implemented the largest share in terms of both funding and number of projects (table 3).

[11] Based on PMIS data downloaded 07 January 2016. This excludes umbrella programs that are funded through allocations from different focal areas but whose individual child projects do not use a multi-focal approach. This also excludes funding sourced from multiple focal areas for general capacity-building and research activities or short-term measures. Values have not been adjusted for inflation.

Table 2 Status and distribution of full-size (FSP) and medium-size (MSP) OP12/ MFA projects

PROJECT STATUS	TOTAL NO. OF FSP	TOTAL NO. OF MSP	TOTAL NO. OF PROJECTS	TOTAL % OF PROJECTS
CEO Approved/ Endorsed	75	40	115	41%
Disbursed but cancelled	6	3	9	3%
IA Approved/ Under Implementation	59	12	71	26%
Project Closure/ Completion	47	38	85	30%
Grand Total	187	93	280	100%

Table 3 Distribution of OP12/MFA projects and grant amounts by GEF Agency

GEF AGENCY	TOTAL NO. OF PROJECTS	% TOTAL NO. OF PROJECTS	TOTAL GRANT AMOUNT	% TOTAL GRANT AMOUNT
ADB	8	2.9%	$25,534,204	2.1%
FAO	15	5.4%	$69,165,932	5.7%
IADB	7	2.5%	$57,392,674	4.8%
IFAD	10	3.6%	$37,791,444	3.1%
UNDP	113	40.4%	$292,996,981	24.3%
UNEP	38	13.6%	$134,024,482	11.1%
World Bank	89	31.8%	$587,238,805	48.8%
Grand Total	**280**	**100.0%**	**$1,204,144,522**	**100.0%**

Evaluation Design

35. Based on the conceptual framework, the evaluation will be measuring three aspects: 1) changes and trends in outcomes, 2) trade-offs and synergies in these outcomes, and 3) factors contributing to and hindering the achievement of outcomes as well as trade-offs and synergies. Outcomes to be assessed will cover environmental, socioeconomic, and enabling conditions, such as governance and management capacities that GEF support is expected to have contributed to. Since 50% of GEF's MFA portfolio has been implemented for less than five years, and is therefore expected to demonstrate only short- to medium-term outcomes, progress towards long-term impact will be assessed by looking at the extent of broader adoption of these outcomes. Outcomes will be measured at the scale of the landscape or ecosystem; some aspects of progress towards impact, particularly on enabling conditions, will also be assessed at the scale of the country as appropriate.

36. Environmental outcomes will be assessed globally, covering the entire scope of the portfolio. Socioeconomic outcomes will be assessed for specific ecological units through case studies, as global data on socioeconomic trends are not expected to be available at the scale or boundaries of the ecological unit. However, efforts will be made to also conduct this analysis globally as data become available at relevant scales. Trade-offs and synergies will be measured using counterfactual analyses where appropriate, to the extent possible. To assess GEF's contributions towards the achievement of

multiple benefits, contributions of other stakeholders and contextual conditions to the outcomes will also be assessed.

37. Information will be sourced from project documentation and evaluations, peer-reviewed literature, remotely sensed data, field visits and interviews, and any local environmental and socioeconomic monitoring data available. As several information gaps are expected, a range of quantitative and qualitative tools for both data collection and analysis will be used to approach the evaluation questions from different perspectives, thus allowing for triangulation of findings.

Evaluation Components

1. Portfolio Analysis

38. A portfolio analysis will be done of all OP12/MFA projects that have been implemented for a minimum of two years, so as to allow some outcomes to be measurable. The main objective of the portfolio analysis is to identify: 1) the geographical location of project sites, 2) the types of interventions that were implemented, including those related to governance and management capacities, and 3) any reported environmental and socioeconomic outcomes, as well as governance and capacity outcomes, for projects with available terminal evaluations. A standardized protocol will be used to extract these details from project documents; a database will be constructed to allow aggregation and analysis of results.

39. Interventions that can be expected to generate multiple benefits will be further analyzed using remote sensing and case studies, provided that the expected outcomes are measurable using available methods. The appropriate geographical units of analysis will also be determined according to the scope and type of intervention, which will be further adapted depending on the available datasets for measuring trends.

2. Remote Sensing Analysis

40. Remote sensing analysis will be used to assess changes in environmental outcomes across the biodiversity, climate change and land degradation focal areas in the identified geographical units. As this makes use of satellite imagery, it allows a consistent and objective way of measuring changes and trends globally across the portfolio. Table 4 shows a list of GEBs, probable indicators that can be measured through remote sensing analysis, their data sources, and their corresponding spatial and temporal resolution. The most appropriate data are likely to vary by site and by type of intervention. To meet time and resource constraints, preprocessed global datasets will be used where available. Other geospatial datasets for environmental and socioeconomic indicators may also be identified later on.

Table 4 Available remote sensing datasets to measure indicators of expected environmental benefits

MULTIPLE BENEFITS	MEASURABLE INDICATORS	AVAILABLE DATASETS	RESOLUTION	TIME PERIOD & FREQUENCY
Soil productivity	Vegetation Productivity	Global Datasets derived from AVHRR , MODIS and Landsat	• 30 m (Landsat) • 250-500 m (MODIS) • AVHRR 8 km	• Every 16 days since 1972 • Daily since 2002 • Daily
	Soil moisture	GPM series	Multiple	Since 1998

	Terrain characteristics	• SRTM, GDEM • Radar • Commercial Data	• 30 m • Multiple • Multiple resolution (1-5 m)	• 2000 and 2010 • Multiple • Varied
Water quality and quantity	Turbidity, Chlorophyll estimates	• MODIS • Landsat	• 250-500 m • 30 m	• Daily since 2002 • Every 16 days since 1972
	Surface water coverage	Landsat	30 m	Every 16 days since 1972
Ecosystem cover	Forest cover loss	Landsat-derived products	30 m	Every 16 days since 1972
	Fragmentation	Landsat-based fragmentation indices	30 m	Every 16 days since 1972
Carbon sequestration	Above-ground carbon stock	MODIS + Lidar derived carbon stock data	500 m (pantropical)	2005
Resilience	Population Density	• Landscan • Nighttime lights (DMSP, VIIRS)	• 1 km • 5 km and 1 km respectively	• 1999-2012 • 1992-current
	Vulnerability Index	Site-based	varied	varied

41. The scale of analysis will be determined based on the specific types of intervention, and the precision of geocoded information. Geocoding of GEF-supported sites will be done by converting the textual location information from the portfolio analysis to geographic coordinates. Global names databases such as Geonames, Google Maps API or OpenStreet Map will be explored for this purpose. The process may be semi-automated, but given the information gaps in developing countries, some manual geocoding will have to be done. Projects with insufficient location information will be excluded from this analysis. After an initial point-based geocoding, appropriate polygon boundaries will be determined using the current datasets on ecological or administrative units vis-à-vis location information in project documents. Changes in environmental outcomes will then be assessed using the different parameters. While it is difficult to control for contextual factors, comparable sites that were not supported by GEF will be identified to the extent possible to allow an analysis of environmental outcomes at a global scale in the absence of GEF support over the same time periods. The evaluation will attempt to quantify synergies and trade-offs at this scale as feasible.

42. Moderate- and high-resolution satellite data will be used to assess general trends and identify hotspots. Commercially available, very high-resolution satellite data will be subsequently used to quantify finer-scale changes and understand the drivers at the case study sites. At the landscape level, sites with more reliable information available will be selected for comparison with sites not supported by GEF. Quasi-experimental methods such as propensity score matching may be used for this.

3. Case Study Analysis

43. Using the results of remote sensing analyses, case studies will be conducted in selected sites to allow an in-depth assessment of causal factors leading to both positive and negative observed environmental trends. More specifically, the case studies will have the following objectives:

- Verify intervention outcomes, including not only environmental changes measured through remote sensing analysis, but especially results that cannot be remotely sensed, such as those related to governance, management approaches, capacity-building, and socioeconomic conditions.
- Identify the causal pathways leading to these outcomes, including mechanisms and contextual conditions under which the interventions produce and do not produce trade-offs and synergies, with a focus on the extent of GEF's role in these pathways.
- Assess the equitability of distribution of costs and benefits to local communities created by GEF-supported interventions, and the factors influencing this.

44. Selection criteria for case studies, including the number of sites and countries to be visited, will be developed as results from the portfolio and remote sensing analyses emerge. These will primarily consist of ranked project-related, ecological and socioeconomic criteria. Since they have implemented the largest share of the MFA portfolio, and are also relevant for the concurrent GEF IEO evaluations, the most likely countries to be visited will be China, India, Brazil and Mexico. More countries may be identified once specific selection criteria are developed. Ideally, sites implementing GEF-supported interventions for at least five years (whether through single or multiple projects) will be chosen so as to allow outcomes to emerge over a longer time frame. Higher-resolution satellite images may further be obtained to determine the suitability of shortlisted sites to meet the case study objectives.

45. As a minimum, sites will be selected to allow comparison of trade-offs and synergies and their associated causal factors in the following scenarios: high achievement and low achievement of multiple benefits in sites supported by GEF, to assess combinations of factors that contribute to synergies and trade-offs; and interventions with single and multiple focal area objectives, to assess synergies and trade-offs that may occur when using multi-focal approaches, as well as GEF's incremental role in generating multiple benefits. However the existence of comparable "counterfactual" sites has yet to be determined based on the results of the portfolio analysis and the available non-GEF datasets in the selected countries and sites. A list of GEF-supported and other stakeholder interventions implemented within the selected geographical units will be compiled and verified to identify potential sites for comparison. Sites will be selected to maximize logistical and methodological synergies with the Programmatic Approaches evaluation, and to allow findings to contribute to the Strategic Country-level Evaluations to the extent feasible and appropriate. Site visits will also help calibrate and validate the findings of remote sensing analyses.

46. Trade-offs and synergies to be assessed will include those between socioeconomic and environmental outcomes, local and global benefits, short-term and long-term outcomes, and benefits across focal areas. Socioeconomic changes to be assessed will include the following parameters to the extent that reliable data is available: income and access to capital; access to natural resources; access to basic services; health, safety/vulnerability and security; gender equality; and social capital. The IEO will explore a collaboration with STAP on the piloting of socioeconomic assessment tools for GEF-supported interventions. Field-acquired data may be used in conjunction with GIS analysis to test the hypothesis that geographical location of communities affects access to benefits and weight of costs.

47. Data collection during field visits will be done using digital tools such as mobile devices and web forms where appropriate to increase the efficiency and accuracy of data collection and analysis. This will allow different types of data (audio, video, photo, quantitative and qualitative) to be systematically uploaded in a single database. The analytical approach to be used for field-sourced information will be detailed later on as the range and depth of available data is determined; this will include a mix of

methods that are both systematic and theory-based, such as realist synthesis, contribution analysis, process-tracing and qualitative comparative analysis (QCA).

Strengths and limitations

48. The reliability and validity of these analyses depend on the accuracy and availability of spatial and temporal information in the GEF PMIS and in global datasets. The portfolio that the evaluation looks at can only include projects that have available documentation in PMIS. Errors in PMIS data may result in misclassification of projects in the portfolio. These will be mitigated through in-depth analysis of project documents, communication with GEF Agencies, and field verification.

49. Remote sensing and case study analyses are dependent on location information being available in project documents and, in some cases, on the specific geographical boundaries of the project sites being available. The portfolio analysis will compile maps and geographical coordinates from project documents; however, alternative methods for determining the site boundaries may have to be explored. Other available datasets that can be used for delineating boundaries of ecological units are global terrestrial ecoregions from WWF and HydroBASINS data. The reliability and accuracy of data from interviews and focus group discussions will be increased through the collection of objectively verifiable information from multiple independent sources (e.g. local monitoring data, ocular inspection) whenever possible.

50. A challenge that is foreseen is the identification of sites that are similar in ecological unit, contextual conditions, type of intervention, etc. that can serve to estimate the counterfactual for GEF's impacts and outcomes. The lack of data on non-GEF-supported sites is often an obstacle to conducting such analyses. The evaluation team will identify acceptable alternatives for estimating the counterfactual or ruling out alternative explanations for outcomes to address this gap. To mitigate the varied quality in data sources, conclusions will be drawn only for the appropriate spatial and temporal scales, as determined by the highest resolution of available project, remote sensing and field data.

Quality Assurance

51. A Reference Group comprised of representatives from the GEF Secretariat, STAP and GEF Agencies will be convened to provide expert opinion and information, as well as technical feedback and verification at key points of the evaluation. This will ensure that the evaluation findings will be useful to its direct stakeholders. A Peer Review Panel comprised of leading experts in the natural and social sciences, and in evaluation methods will also be formed. Their role is to advise throughout the evaluation process primarily on the soundness of the evaluation approach, and on the implementation of the methodology.

Expected Outreach Strategy

52. Presentations of the draft approach paper, preliminary findings and draft evaluation report will be made to the Reference Group and the Peer Review Panel to solicit feedback, identify gaps, help facilitate access to information, and verify emerging assumptions. The final approach paper and evaluation report will be posted on the GEF IEO website after approval by Council, where an online forum will allow stakeholders beyond the Reference Group to provide feedback during and after the evaluation. Opportunities to give feedback through social media, email and phone will also be provided. When feasible, the evaluation will also be presented at workshops where evaluation and environmental

experts may provide inputs to the substantive and methodological aspects of the evaluation during its implementation. These activities will allow the evaluation to adapt to emerging information and needs of different types of stakeholders.

53. Updates on the evaluation process will be shared through the GEF IEO's evaluation networks, and broadcast on social media, such as Twitter, YouTube and blogs. The expected audience for these other media will be other evaluation offices, stakeholders in countries visited for case studies, academic researchers, and other international development organizations, among others. BBLs, workshops and other appropriate fora may be organized to stimulate more in-depth discussion of specific evaluation conclusions and recommendations with the relevant stakeholders, such as the GEF Secretariat, Agencies and certain countries, as requested.

54. The completed evaluation will be presented to a more public audience—such as through webinars, interactive and downloadable online media (e.g. infographics), the GEF IEO newsletter, peer-reviewed journal articles, evaluation conferences, and events related to the global environment—to allow wide dissemination of both evaluation findings and methodology to whomever may find it useful. Specific opportunities for dissemination and their timeline will be identified later on. The summary of the evaluation will be translated into the official UN languages, and the languages of the countries that will be selected for the case studies, as needed.

Resources

55. The evaluation will start in the latter half of FY16 and is expected to be reported to Council in June 2017. Table 5 shows the evaluation timeline.

Table 5 Timeline of evaluation

PERIOD	ACTIVITY
March to April 2016	Portfolio Analysis
May to July 2016	Remote Sensing Analyses
May to July 2016	Preparation for Case Studies
July to October 2016	Field Visits and Case Study Analyses
November to December 2016	Triangulation of Findings
January to March 2017	Synthesis of Findings and Report-Writing
March 2017	Circulation of final draft
April 2017	Revision of final report
June 2017	Presentation to Council

56. The evaluation will be conducted by a team led by a Senior Evaluation Officer from the IEO with oversight from the Chief Evaluation Officer and Director of the IEO. The team will include IEO staff, and both junior and senior short-term consultants that possess skills relevant to carrying out the identified methods.

Annexes

A. References

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B. Evaluation Design Matrix

(to follow)