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REVIEW OF GEF SUPPORT FOR TRANSFORMATIONAL CHANGE

(Prepared by the Independent Evaluation Office of the GEF)

EXECUTIVE SUMMARY

Background, Objective and Approach

1. As noted in the GEF 2020 Vision Statement, the unprecedented nature of the pressures faced by the earth's ecosystems over the coming decade means that incremental environmental strategies alone will not suffice and "compel the GEF to equip itself to promote transformational change"¹. The GEF 2020 Strategy Paper, identifies market transformation as one of the areas where a systematic effort is needed to capture lessons learned from past project experience and leverage it to provide guidance for users and scale up the GEF's impact.²
2. In response, the IEO has prepared this study. The objective is to review the GEF experience with a representative sample of operations that have generated transformational results, identify key factors in the design and implementation of these projects that have contributed to such results, and distill the lessons learned. The purpose is to help improve the identification, design and implementation of future operations aimed at supporting transformational change.
3. For the purpose of this study, transformational interventions are defined as engagements that help achieve deep, systemic, and sustainable change with large-scale impact in an area of global environmental concern. The underlying theory of change is that by strategically identifying and selecting projects that address environmental challenges of global concern and are purposely designed to support fundamental changes in – i.e., 'flip' – key economic markets or systems, GEF interventions will be more likely to cause a large-scale and sustainable impact, subject to the quality of implementation/execution and supportive contextual conditions.
4. As a first step, GEF Agencies were invited to identify recently completed and evaluated interventions, for potential inclusion in this study. From this candidates list, the study team purposively selected a sample of eight illustrative interventions to represent a diversity of GEF focal areas and responding agencies, with careful consideration to the availability and quality of evaluative evidence. The following interventions were selected through a series of iterative screenings.

¹ GEF (2012): *Time for Transformational Change: The Role of the GEF. Vision Statement by Dr. Naoko Ishii*. November 19, 2012. Washington, DC.

² GEF (2013): *GEF 2020: Strategy Paper for the Global Environment Facility*. September 4, 2013. Washington, DC.

- (a) Lighting Africa (LA)
- (b) China Renewable Energy Scale-up Program (CRESP)-Phase I
- (c) Uruguay Wind Energy Programme (UWEP)
- (d) Sanjiang Plain Wetlands Protection Project
- (e) Sustainable Land, Water, and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector Project (SLEM-U)
- (f) Namibia – Strengthening the Protected Area Systems (PAS)
- (g) Amazon Protected Areas Program (ARPA)-Phase I
- (h) Promoting Payments for Environmental Services (PES) and Related Sustainable Financing Schemes in the Danube Basin

5. Given this sample, the study team undertook a meta-evaluation based on a desk review of the final evaluation reports for these eight cases to assess the factors and circumstances that have triggered and supported transformational changes. The meta-evaluation was supplemented by the cross-case analysis, informed by the qualitative comparative analysis approach (QCA), to identify the necessary and sufficient conditions for GEF interventions to achieve transformational change.³ The study also attempted to establish which conditions make a difference in specific contexts.

Main Findings

6. What are the necessary and sufficient conditions for the achievement of sustainable transformations? The review of the evaluative evidence concluded that each of the purposely selected cases can be credited with having made an important contribution to the fundamental transformation of a system or market, thus helping address the root cause of a global environmental concern. In five of the sample cases, the transformation was fully completed, in terms of its depth, scale and sustainability. In the three remaining cases, the GEF intervention had triggered and supported a fundamental transformation, but their financial sustainability had not yet been achieved at the time of project completion, so that the transformation could only be deemed as partially completed.

7. Given the overall satisfactory outcomes of the sample interventions, the analysis focused on the commonalities and differences between fully completed and partially completed transformations. The five completed transformations all involved a fundamental change of a system. They all established a demonstration-and-replication mechanism to trigger

³ Qualitative comparative analysis is a theory-driven approach used to identify the conditions or combination of conditions that lead to specific outcomes using Boolean algebra rather than conventional statistics. Ref.: Befani, Barbara (2016): *Pathways to Change: Evaluating Development Interventions with Qualitative Comparative Analysis (QCA)*. EBA Report 2016:05.

and scale up the supported activities and reforms. Finally, all of these cases were satisfactorily implemented and executed, and were also adequately supported by the policy and economic environment.

8. The most important distinction among these five completed transformations relates to the strategy for attaining financial sustainability. In three cases, financial sustainability was achieved by harnessing market forces to drive and expand the desired environment-friendly impacts. In the two remaining cases, financial sustainability was achieved by eliciting government budgetary allocations that continue funding the programs and activities established by the project.

9. The three GEF interventions that supported market transformations – *CRESP-I*, *UWEP* and *Lighting Africa* – all focused on renewable energy and had the following factors in common:

Market-oriented objectives: Their objectives all aimed at the removal of policy and regulatory barriers to the creation or acceleration of a national or regional-scale market for renewable energy.

Private sector/market response: They all succeeded in catalyzing a strong private sector investment response that ensured the long term sustainability and continued expansion of the markets and systems targeted by the interventions.

Technological advancement: They all encouraged and benefitted from technological improvements that reduced the cost and improved the quality of the equipment – wind power systems and solar lamps – needed to competitively deliver energy services for which there was an effective demand.

10. These three interventions also differed in important ways which highlight alternative pathways to the achievement of market transformation:

- (a) *Government ownership and policy support:* *CRESP-I* and *UWEP* were fully owned by the governments which co-financed a major share of project costs, and were helped to undertake a comprehensive system reform that mainstreamed renewable energy into their national energy policy and regulatory framework. *Lighting Africa*, conversely, did not involve any government funding, and demonstrated the viability of the market by creating demand, providing market intelligence, developing a quality assurance infrastructure, facilitating access to finance, and limiting government involvement to the removal of trade barriers.
- (b) *Civil society, community and donor partnerships:* For *Lighting Africa*, consumer associations, non-governmental organizations, microfinance institutions and other social sector partners played a key role in promoting consumer awareness of solar lamps. In addition, GEF funding was supplemented by important contributions from international donor partners. For *CRESP-I* and *UWEP*, in contrast, these factors did not play a significant role.

- (c) *Pre-investment activities and intervention size: CRESP and Lighting Africa* were major interventions involving about \$40 million and nearly \$8 million of GEF funding, respectively. *UWEP*, on the other hand, was a Medium Size Project supported by a \$1 million GEF grant.

11. The two interventions that achieved financial sustainability through integration into government budgetary processes – *Sanjiang Wetlands* and *Uttarakhand SLEM* – both focused on the biodiversity and natural resource protection through the development and demonstration of sustainable livelihood approaches to improving the well-being of local communities. These were local-scale interventions characterized by having strong local government ownership and support, as evidenced by their willingness to adopt environment-friendly policies and natural resource management practices based on the results of project-supported pilots, and to continue funding and expanding the sustainable livelihood programs from their own budgets.

12. The three partially completed transformations all involved the conservation of natural resources and protection of biodiversity in environmentally sensitive or protected areas. Two of these – *Namibia PAS* and *ARPA* – supported system-wide changes on national-scale changes. The remaining case – *Danube PES* – successfully demonstrated a market change in a few pilot areas. In all three cases, however, their long term sustainability continued to depend on donor funding at the time of project completion.

Lessons going forward

13. The study found the following to be important drivers of change; this should serve as lessons going forward.

- (a) **The level of ambition.** The reviewed interventions each had ambitious objectives—explicit or implicit—in terms of aiming to trigger and support a deep, fundamental change in addressing a market distortion or systemic bottleneck that was a root cause for an environmental issue of global concern.
- (b) **Establishing an effective transformational mechanism.** All the interventions helped establish a mechanism—mainstreaming, demonstration/replication and/or catalytic—to scale-up and expand the activities supported by the intervention.
- (c) **The quality of implementation and execution.** All interventions were well implemented in terms of the quality of project design, supervision and assistance by the GEF agency, and the effectiveness of the executing agency in performing its roles and responsibilities.
- (d) **Harnessing market forces.** Three of the four cases that primarily aimed at market changes had successfully elicited a strong private sector response that ensured the achievement of a deep, financially sustainable transformation. In fact, subject to

alignment with project objectives, a strong private sector response was identified as a sufficient condition for achieving a fully completed transformation. This suggests that where there is an opportunity to harness market forces—by addressing the removal of barriers, encouraging sustainable supply and/or catalyzing potential demand—it deserves careful attention for the identification and design of an intervention.

- (e) **Size does not matter.** Last, but not least, the eight sample cases illustrate how both relatively modest GEF medium-size projects—such as UWEP and Danube PES—can be just as transformational as major, multiphase investment projects—such as CRESA and ARPA.

Recommendation

14. The GEF should consider developing and applying a framework for ex- ante assessments of projects or programs that are intended to be transformational to enhance impacts. This study has presented an example of a framework that could be applied.

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Acronyms

ADB	Asian Development Bank
BD	biodiversity focal area
CC	climate change focal area
FAO	Food and Agriculture Organization of the United Nations
FSP	full-sized project
GEF	Global Environment Facility
GW	gigawatt
IEO	Independent Evaluation Office of the GEF
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
MFA	multi-focal area
MSP	medium-sized project
PAS	protected area system
PES	payment for ecosystem services
PPG	project preparation grant
QCA	qualitative comparative analysis
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WWF	World Wildlife Fund

GEF SUPPORT FOR TRANSFORMATIONAL CHANGE

I Introduction

Background, Objective and Purpose

1. What is a transformational change?

- (a) In 2016 Uruguay generated about 33% of its total electricity needs from wind power, up from 0% in 2008.
- (b) Between 2005 and 2015, China's wind power capacity increased from 1.3 GW to 129.3 GW, producing about 3.3% of its electricity, and avoiding about 82.7 million tons/year of carbon emissions.
- (c) The management effectiveness was improved in about 98% of Namibia's protected areas, while estimated populations of lions, leopards, cheetahs and wild dogs doubled between 2004 and 2012.
- (d) About 1.3 million households in remote, off-grid areas of Africa have purchased quality-certified solar PV lanterns at market prices through a market transformation scheme supported by the Lighting Africa program
- (e) About 13 "strict protection" areas totaling 13.2 million hectares, and 30 "sustainable use" protected areas totaling 10.8 million were created with the support of the Amazon Region Protected Areas Program.

2. These are some of the transformational changes associated with GEF-supported interventions. These changes are transformational because of their relevance in addressing a global environmental concern, their deep and large scale impact, and their expected long term sustainability. In this study, the Independent Evaluation Office (IEO) reviews the GEF's past experience with a representative sample of such operations to enhance the knowledge about approaches associated with transformational change.

3. As first noted in the GEF 2020 Vision Statement, the unprecedented nature of the pressures faced by the earth's ecosystems over the coming decade means that incremental environmental strategies alone will not suffice and "compel the GEF to equip itself to promote transformational change"⁴. It further states that "GEF is uniquely positioned to catalyze the transformational change necessary to help turn around the worrisome trends in the global environment" and will need "to play a leadership role in bringing transformational change".

⁴ GEF (2012): *Time for Transformational Change: The Role of the GEF. Vision Statement by Dr. Naoko Ishii*. November 19, 2012. Washington, DC.

This will be a priority for GEF-7”⁵. In line with this priority, the GEF 2020 Strategy Paper, identifies market transformation as one of the areas where a systematic effort is needed to capture lessons learned from past project experience and leverage it to provide guidance for users and scale up the GEF’s impact.⁶

4. In response, the IEO has prepared this study on GEF’s Support for Transformational Change. The objective is to review the GEF experience with a representative sample of operations that have generated transformational results, identify key factors in the design and implementation of these projects that have contributed to such results, and distill the lessons learned. The purpose is to help improve the identification, design and implementation of future operations aimed at supporting transformational change through the framework presented.

Methodology and Approach

5. This study is designed to explore the following evaluative questions:

- (a) What are the necessary and sufficient conditions for GEF interventions to achieve transformational change?
- (b) What causal factors make a difference in the outcome?

6. For the purpose of this study, transformational interventions are defined as engagements that help achieve deep, systemic, and sustainable change with large-scale impact in an area of global environmental concern.

7. Specifically, there are four criteria that permit a differentiation between transformational interventions from engagements that are “merely” highly successful, complex or large in size⁷:

- (a) Relevance: the intervention addresses a global environmental challenge such as climate change, biodiversity loss, or land degradation.
- (b) Depth of Change: the intervention causes or supports a fundamental change in a system or market.
- (c) Scale of Change: the intervention causes or supports a full-scale impact at the local, national, or regional level.

⁵ GEF (2017): *(Draft) GEF-7 Programming Directions Framework*, January 13, 2017. Washington, DC.

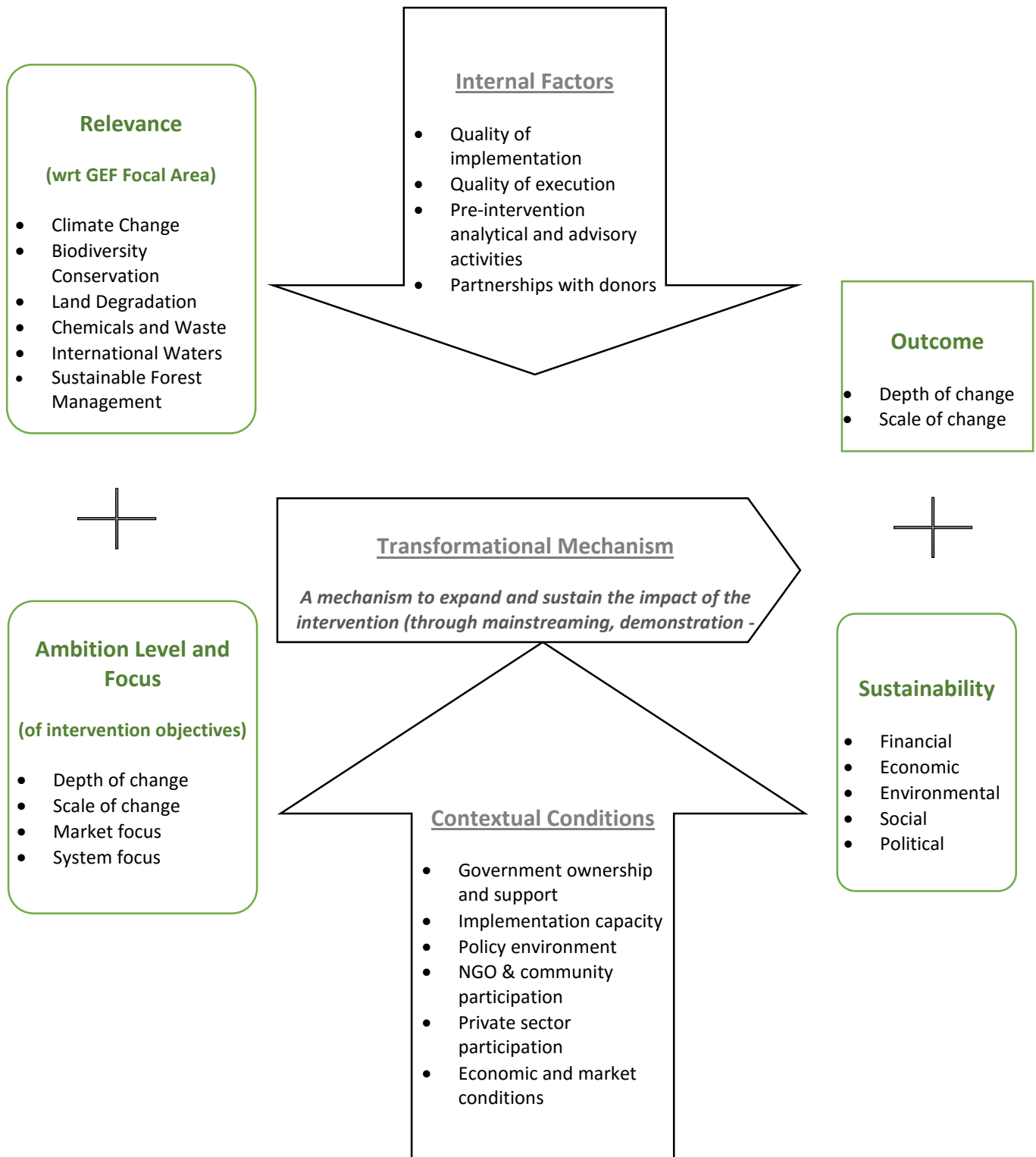
⁶ GEF (2013): *GEF 2020: Strategy Paper for the Global Environment Facility*. September 4, 2013. Washington, DC.

⁷ World Bank Group (2016). *Supporting Transformational Change for Poverty Reduction and Shared Prosperity – Lessons from the World Bank Experience*. Learning Product. Independent Evaluation Group. Washington, DC.

- (d) Sustainability: the impact is financially, economically, environmentally, socially and politically sustainable in the long term, after the intervention ends.

8. The underlying theory of change is that by strategically identifying and selecting projects that address environmental challenges of global concern and are purposely designed to support fundamental changes in – i.e., ‘flip’ – key economic markets or systems, GEF interventions will be more likely to cause a large-scale and sustainable impact, subject to the quality of implementation/execution and supportive contextual conditions. An outline of the theory of change, and the main causal conditions and indicators used for this study, is shown on Figure 1.

Figure 1: Theory of Change for GEF Transformational Interventions



9. As a first step, GEF Agencies were invited to identify recently completed and evaluated interventions (projects, programs, non-grant instruments) in line with the above criteria, for potential inclusion in this study. About 156 projects were nominated: 93 by World Bank, 45 by the United Nations Development Programme (UNDP), 14 by the United Nations Environment Programme (UNEP), 2 by the Food and Agriculture Organization (FAO) and 2 by the Asian Development Bank (ADB). From this candidates list, the study team purposively selected a sample of eight illustrative interventions to represent a diversity of GEF focal areas and responding agencies, with careful consideration to the availability and quality of evaluative evidence, particularly with respect to the scale, depth and sustainability of the transformational impacts. The following list of interventions was determined through a series of iterative screenings (the basic project data is shown in Annex I):

- (a) Lighting Africa (LA)
- (b) China Renewable Energy Scale-up Program (CRESP)-Phase I
- (c) Uruguay Wind Energy Programme (UWEP)
- (d) Sanjiang Plain Wetlands Protection Project
- (e) Sustainable Land, Water, and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector Project (SLEM-U)
- (f) Namibia – Strengthening the Protected Area Systems (PAS)
- (g) Amazon Protected Areas Program (ARPA)-Phase I
- (h) Promoting Payments for Environmental Services (PES) and Related Sustainable Financing Schemes in the Danube Basin

10. Given this sample of interventions, the study team undertook a meta-evaluation based on a desk review of the final evaluation reports to assess the factors and circumstances that have triggered and supported transformational changes. The review template used to screen and assess the sample interventions is shown in Annex II. The meta-evaluation was supplemented by the cross-case analysis, informed by the qualitative comparative analysis (QCA), to identify the necessary and sufficient conditions for GEF interventions to achieve transformational change.⁸ The study also attempted to establish which conditions make a difference in specific contexts.

11. This study has four chapters. Following this introduction, Chapter 2 briefly describes the context and design of each case, outlining the salient facts and mechanisms associated with their transformational results. Chapter 3 discusses the cross-cutting design features,

⁸ Qualitative comparative analysis is a theory-driven approach used to identify the conditions or combination of conditions that lead to specific outcomes using Boolean algebra rather than conventional statistics. Ref.: Befani, Barbara (2016): *Pathways to Change: Evaluating Development Interventions with Qualitative Comparative Analysis (QCA)*. EBA Report 2016:05.

mechanisms and contextual conditions that have helped support and sustain transformational changes. Finally, Chapter 4 identifies and discusses the necessary and sufficient for these interventions to achieve transformational outcomes and derives appropriate lessons for the GEF moving forward.

12. The study team comprised Geeta Batra (Chief Evaluation Officer), Kseniya Temnenko (Knowledge Management Officer), Andres Liebenthal and Katya Verkhovsky (consultants).

II Eight Transformational Change Stories

13. How has the GEF supported transformational changes? The eight cases selected for this study each illustrate a different context and approach where GEF support has been closely associated with a transformational change that helped address an environmental issue of global concern. This chapter will briefly describe the context and design of these cases, and outline the salient factors and mechanisms most closely associated with the transformational change, as they emerge from the evaluation reports.

Lighting Africa (LA) – Promoting Market-based Solutions to Advance Energy Access

14. About 600 million people in Africa have no access to grid electricity, a number expected to rise to about 700 million by 2030. These people rely on polluting and dangerous sources of lighting such as kerosene lamps, candles and battery-powered torches. Fuel-based lighting is generally of low quality and expensive, impeding learning and economic productivity.

15. Given advances in technology and increased competition, portable modern lighting devices have become more affordable. This created an opportunity for people living in off-grid areas to replace kerosene lamps with higher quality, safer, and more affordable modern lighting products such as solar lamps. However, despite the benefits of solar lamps, the market was not developing as quickly as expected. To understand why the solar lamp market was not developing, the GEF and IFC/World Bank funded a market appraisal in 2007, and identified six barriers inhibiting market growth:

- (a) Consumers did not trust the solar products available. Some solar lamps were already available in the market when the Lighting Africa program began, but many of these products were poorly made and did not work properly.
- (b) Consumers did not know the benefits of solar lamps, how to use them, or where to buy them. Some consumers were unaware that solar lamps existed.
- (c) Manufacturers/designers did not know consumer preferences for the design and function of a solar lamp.
- (d) Supply chain entities did not know each other. Solar lamp manufacturers entering the market to serve lower income consumers in developing countries did not have an established distribution network, and were unsure how to identify reliable distributors.

- (e) Lack of finance was a big problem. Designers/manufacturers, distributors/importers, and retailers needed finance to purchase and move products to the end users. Lower income consumers needed microloans to help with the upfront cost of purchasing a solar lamp.
- (f) Long customs processes and import tariffs on solar lamps were common concerns among manufacturers who considered importing solar lamps to African markets.

16. The Lighting Africa (LA) program was created to transform the off-grid market by removing these barriers. Its goal was to help catalyze markets for quality, affordable, clean, and safe off-grid lighting, and ultimately to create a sustainable commercial platform that would realize the vision of providing 250 million people with modern off-grid lighting by 2030. The overall approach was to demonstrate the viability of the market by providing market intelligence, developing a quality assurance infrastructure, facilitate business to business interactions, help governments address policy barriers, provide business development services, and facilitate access to finance for manufacturers, local distributors and consumers. The program received about \$22 million in donor contributions from 2007-2013. The GEF was the largest donor, providing more than one third of the funds (\$7.85 million, id. #2950).^{9 10}

17. In 2014, the final evaluation of the Lighting Africa program concluded that the program had played a crucial role in transforming the market.¹¹ The program was effective and made an impact. A few of the key accomplishments were:

- (a) Through the program's quality assurance efforts, 183 solar lamps models were tested and 66 of them received the Lighting Africa quality certification.
- (b) The program hosted 1,157 forums during its consumer education campaigns, directly reaching over 36,000 people in Kenya.
- (c) Over 680,000 LA-certified lamps were sold in Kenya, 135 percent above the Kenya program's target. Furthermore, almost two million lamps were reported to have been sold in other African countries—185 percent above the target. However, as noted in the evaluation, more work is needed to determine the extent to which these sales can be attributed to the program, since this estimate does not take into account what would have occurred with a "without program" counterfactual. On the other hand, interviews with retailers, consumers and manufacturers confirmed that Lighting Africa

⁹ World Bank (2015): *World Bank Group Support for Electricity Access, FY2000-2014 – An Independent Evaluation - Volume II: Together for Energy: How Partnership Programs Support Energy Access*. Independent Evaluation Group. Washington, 2015.

¹⁰ According to GEF's Project Management Information System (PMIS), GEF grant was \$5.4 million.

¹¹ Castalia Strategic Advisors (2014): *Evaluation of Lighting Africa Program – Final Report. Report to International Finance Corporation*. December 2014.

was a very important influence on market development, so the true impact may well have been higher.

18. The evaluation also concludes that the benefits achieved by the program are sustainable after donor funding had stopped. Basically, interviews suggest that people who have used solar lamps will continue to do so and suppliers will continue to supply. The extent to which the market transformation process itself will continue however, remains to be seen. While the program has laid the groundwork for continued market transformation through arrangements with an industry association and a Kenyan NGO to take over and continue the program activities, these organizations are still partially reliant on donor support.

19. Based on the findings of the evaluation, three main factors were instrumental for the success of the program, and their maintenance will be essential for continuing the transformation:

- (a) The first, obvious success factor was the program's operation in areas where there was proven strong demand for improved off-grid lighting solutions.
- (b) The second was having a carefully designed set of interventions which simultaneously targeted all major market barriers. Since barriers will differ from market to market, the program started with a basic program design, but tailored the components to target the specific barriers identified in the target countries.
- (c) The third was the program's focus on market transformation. The Lighting Africa programs did not fund solar lamps – it funded activities that created effective markets in which consumers spend their own money to buy solar lamps. To sustain this success factor, the ever-present temptation to spend money buying lamps for poor people will need to be resisted, while pro-market interventions – such as micro-finance to assist purchase of solar lamps – will need to be pursued vigorously.

Scaling-up China's Renewable Energy Sector

20. In the decades preceding the project, China's energy consumption and the associated carbon emissions had been rapidly increasing, and were estimated to continue growing from about 820 million tons in 2000 to 1.1 billion tons in 2010 and more than 1.8 billion tons in 2020. Recognizing that such growing environmental damages were unacceptable, the government's 11th Five Year Plan (FYP) (2006-2011) incorporated a multipronged energy reform strategy aiming to, *i.a.*, aggressively scale up renewable energy use, especially for power generation.

21. Against this background, the World Bank and the GEF worked closely with the Chinese government to develop a long-term partnership in support of the goals of the 11th FYP and increase the renewable energies' contribution to power generation in a sustainable way. The First Phase of the China Renewable Energy Scale-up Program (CRESP-I), approved in 2005, was designed as a programmatic and sector-wide intervention that integrated: (a) a GEF grant (ID#943) of \$40.2 million to support the development of the legal, regulatory, and policy framework needed to stimulate demand for renewable energy, improve its quality and reduce

its costs, and to build a strong local renewable energy equipment manufacturing industry; and (b) two Bank loans (of \$87.0 million and \$86.3 million) to support pilot investments in wind, biomass, and small hydro power in four participating provinces.¹²

22. The objectives were ambitious and aimed at major changes in the system and market for renewable energy: (a) to create a legal, regulatory, and institutional environment conducive to large-scale, renewable-based electricity generation; and (b) to demonstrate early success in large-scale, renewable energy development with participating local developers in four provinces.

23. Five years after project closing, the Project Performance Assessment Report (PPAR)¹³ concluded that CRESPI has made a substantial contribution to the transformation of China's renewable energy sector from an early piloting and demonstration stage to its development into a global leader in wind energy generation and the manufacture of wind power equipment. Thus, between 2005 and 2010, China's installed wind power capacity increased from 1.3 GW to 29.6 GW, greatly exceeding the original 11th Five Year Plan target of 10 GW. As of 2015, installed wind power capacity had reached 129.3 GW, amounting to 3.3% of China's electric power generation and equivalent to about 82.7 million tons per year of avoided carbon emissions.

24. These impacts are likely to be sustained given the government's implementation of a project-recommended tariff policy that delivers attractive financial returns to renewable energy investors, and its commitment to further increase the share of non-fossil fuels to 15% by 2020, up from 9.4% in 2010, and 12.0% in 2015.

25. Key stakeholders consulted for the PPAR credited CRESPI with a major contribution to this transformation. In their view, an instrumental role can be attributed to the tariff-related studies, which provided the knowledge and analytical underpinnings for China's replacement of a project-by-project tariff-setting and concessioning system to the development of a national tariff structure which offered attractive and predictable returns to investors, while gradually phasing-out the implicit premium over coal-fired generation. Other studies credited with essential contributions supported the clarification of the power grid's dispatching rules and established a methodology for determining the economically optimal targets for renewable energy expansion in various parts of China (based on the avoided cost of environmental damages from coal-fired power).

¹² The GEF also provided project preparation grants (PPG) for the total amount of \$1.35 million.

¹³ World Bank Group (2017). *Project Performance Assessment Report: China – First Phase of the Renewable Energy Scale-up Program and Follow-up Project to the First Phase of the China Renewable Energy Scale-up Program*. Report in preparation. Independent Evaluation Group. World Bank Group. Washington, DC.

26. The main factors that contributed to the project's transformational impact can be summarized as follows:

- (a) The three-way integration of institutional development and capacity building, technology improvement, and investment activities in a single intervention with mutually reinforcing components created the momentum needed to pursue the regulatory reforms and overcome the resistance of established interests in the sector.
- (b) The extensive efforts by the World Bank (supported by \$1.35 million of GEF PPG grants) through workshops, study tours and studies during a multi-year preparation period were essential to achieve consensus and cohesiveness about key policy directions and reforms.
- (c) The project's experience with cost-shared sub-grants – where the grant provides 20-25% of total research and development costs – leveraged substantially greater investments by the implementing counterparts, enhanced selectivity and built ownership and commitment.
- (d) The long-term, predictable, and financially attractive price signal implemented by the Government, as recommended by project-supported studies, provided an effective stimulus for continuing and expanding investments in renewable energy.

Creating the Wind Power Market in Uruguay

27. Around the turn of the century, Uruguay's power system had been fully dependent on hydropower and imported fossil fuels. Since the country's hydropower potential was practically exhausted, imported natural gas was expected to play a major role in meeting the growth of electricity demand, estimated at about 3% annually. Gas-fueled power plants were the preferred alternative, but had the following consequences: (i) increased dependence on imported energy; (ii) transmitted impacts of international gas price fluctuations onto the national economy; and (iii) increased emissions of greenhouse gases.

28. Facing such a situation, the Government of Uruguay recognized the long term potential for the development of local energy resources – such as wind and biomass – and established the legal basis and framework for promoting them, but was faced with the following barriers, *i.a.*:

- (a) Insufficient and/or inappropriate regulations for the installation and operation of wind farms, including grid access and dispatch.
- (b) Lack of an enabling policy framework for Power Purchase Agreements (PPAs) between wind power suppliers and the national power company (UTE).
- (c) Underdevelopment of technical standards, building codes and environmental guidelines for wind energy systems.
- (d) Financially unattractive returns for private wind energy projects.

- (e) Insufficient wind energy knowledge and capacity among both public and private sector actors.
- (f) Lack of a mandate for UTE to promote and deploy wind energy systems.
- (g) Lack of financial resources and technical equipment to gather data on Uruguay's wind resources.

29. At this point, in 2007, the Uruguay Wind Energy Programme (UWEP) was launched with the objective of contributing to the elimination of the existing barriers to the development of commercially viable wind energy investments and the establishment of a 5 MW demonstration project. The project budget included \$0.95 million from GEF (id#2826), \$35,000 from UNDP, and government co-financing of \$53.7 million.¹⁴

30. The project was designed with activities expressly aimed at removing each of the identified barriers. Specifically, UWEP supported the creation of an enabling policy framework for wind energy, including regulations for construction and operation of wind farms, access and dispatch to the network, technical codes and financial incentives. It strengthened capacity and business skills to prepare and implement wind energy technology with public and private delivery models. It also addressed technological barriers through the provision of measuring equipment and the implementation of a pilot 5 MW wind power plant connected to the grid.

31. Following UWEP's closing in 2012, the Final Evaluation report¹⁵ concluded that "with the decisive participation of this project, an enabling legal and regulatory framework was established for the development of wind energy in the country. A transparent market for wind power was created and 43.45 MW have been introduced in the country through December 2013, and several projects are in development which by December 2015 are expected to total 990 MW, far exceeding project goals and converting wind power into a major energy source for the country." The directly avoided carbon emissions were estimated to have risen to 0.86 million tons of CO₂ per year in 2015, from zero in 2007.

32. As discussed in the final evaluation, the sustainability of these achievements is rated as *probable*, given the technical and institutional capacity that were developed, and the credible financial sustainability of the investments. Key determinants of the project's transformational success include the following:

- (a) The quality of the project's design, which reflected a coherent logical framework from the identification of barriers to the planning for their removal through specific activities, with appropriate institutional arrangements and implementation strategy.

¹⁴ The project was also supported by GEF project preparation grants (PPG) of \$0.50 million

¹⁵ UNDP (2103): Uruguay Wind Energy Program (UWEP) – Final Evaluation, by Humberto Rodriguez. Montevideo, June 22, 2013.

- (b) The timing of the project, at an unusual moment when the government had made a strong commitment to renewable energy, as reflected in its establishment of an enabling legal and regulatory framework and its willingness to leverage the GEF Medium Size Project by co-financing a major share of project costs.
- (c) The creation of a competitive and transparent wind energy market with a stable framework for investments and adequate tariff incentives which elicited a strong private sector response.
- (d) The project's inclusion and strengthening of a core of wind power specialists at the national power utility (UTE), who helped with the preparation of technical standards and enabled the company to positively respond to the wind energy development mandate through both its own (public) as well as private investments.

Demonstrating Biodiversity Conservation in China's Sanjiang Plain Wetlands

33. The Sanjiang Plain Wetlands in China's Heilongjiang Province comprises tracts of biologically rich wetlands and native forests. They support some 37 ecosystems, 1,000 species of plants, and 528 species of vertebrate fauna, including 23 globally threatened species. Ten of these threatened species are waterfowl, such as cranes, storks, and swans, which require extensive, undisturbed wetlands during their migration and breeding seasons. The wetlands' resources and biodiversity are under threat by human exploitation in an unsustainable manner, including hunting, egg collecting, and fishing. To halt and reverse the environmental degradation of the area, the Heilongjiang Provincial Government (HPG) was looking to manage the watersheds and wetlands in an integrated and sustainable way.

34. The Sanjiang Plain Wetlands Protection Project was launched in 2005 to protect globally significant biodiversity and promote sustainable economic development through support of integrated watershed management and conservation methods. The immediate objective was to protect the natural resources (biodiversity, water, and forests) from continued threats, promote their sustainable use through the integrated conservation and development of selected wetlands and forest areas, and improve the well-being of local communities. The project's expected impact was that the conservation status of eight globally threatened species of waterfowl in the Sanjiang Wetlands were going to be removed from the list of threatened species. The project was supported with a \$12 million grant from the GEF (id#1126), a \$15 million loan from the ADB and \$25 million of counterpart funding from the government¹⁶.

35. Following the project's completion in 2013, the Performance Evaluation Report¹⁷ concluded that the project had been effective in transforming the status of wetlands into recognized water users and part of the water allocation decision-making process for the

¹⁶ The project was also supported by GEF project preparation grants of 0.33 million.

¹⁷ ADB (2014): People's Republic of China: *Sanjiang Plain Wetlands Protection Project. Performance Evaluation Report*. Independent Evaluation PE-783. Manila, December 2015.

preparation of nature reserve master plans and the broader river basin plans. Specifically: (i) wetland water requirements were integrated into the nature reserve, watershed and water resource management plans of all six targeted nature reserves; (ii) the same wetland restoration model was adopted for six additional reserves outside the project area; and (iii) the incomes of affected households in each nature reserve had been maintained or increased through environmentally sustainable alternative livelihoods mechanisms, mainly forest resources management, forest products collection, and wetland ecotourism.

36. The outcome was inconclusive, however, with respect to the target of increasing the population of native waterfowl species by at least 10%, due to inconsistent counting methods, severe weather, or other factors. Global assessments by the International Union for the Conservation of Nature (IUCN) on these species concluded that the observed improvements in the status of these species could not to any significant degree be attributed to the project, mainly due to the transboundary migratory nature of these species, and the fact that the project had no effect on factors in other countries. On the other hand, the project's effectiveness in securing the conservation and rehabilitation of extensive wetland areas was effectively supporting a wide range of flora and fauna which in turn would encourage the future breeding of the endangered and vulnerable species the project sought to protect.

37. The evaluation report rates the long term sustainability of the project's achievements as *likely sustainable*. The provincial government and the 13 participating counties had shown strong commitment to the project and had established a special account, funded with a portion of the revenues generated from forest activities, to meet the budget requirements for nature reserve management. They have also reflected the required water allocation for wetlands preservation into the province's 11th (2006-2010) and 12th (2011-2015) Five-Year Plans. In addition, the government of China's ecological civilization policy provides a comprehensive and ongoing national-level level commitment to wetland conservation and management.

38. Based on the findings of the evaluation report, three factors emerge as the most important for the success of the project:

- (a) The project's results chain was logical. Known risks to environmental improvement projects (e.g., inadequate government ownership and inadequate scale of interventions) were effectively addressed at the design stage.
- (b) The key elements of the project had been fed into the government's planning process at an early project preparation phase, so these could be incorporated into the government development plan. This resulted in strong government leadership and ownership for the project, as indicated by its willingness to fund a major share of project costs.
- (c) The project was successful in transforming the livelihoods of the affected people from activities that caused environmental degradation to those that support nature conservation. Livelihood activities such as forest management and production, ecotourism and greenhouse vegetable cultivation continue to provide improved incomes to project-affected people.

Sustainable Land and Ecosystem Management (SLEM) in India's Uttarakhand State

39. An estimated 72% of India's population lives in rural areas with agriculture being the main, if not the only, source of livelihood. Most farmers remain poor and about 80% of the 260 million people below the poverty line live in rural areas and depend on agriculture for their livelihood. At the same time, the natural resources and ecological foundations essential for sustained agricultural productivity are rapidly degrading. The main causes of land degradation have been defined as (i) unsustainable agricultural practices, (ii) unsustainable water management, (iii) conversion of land for other uses, (iv) deforestation, (v) demographic pressure - human and livestock, (vi) frequent droughts/failures of monsoon and their link with global climate phenomena, and (vii) industrial, mining and other activities without satisfactory measures for land degradation prevention and land rehabilitation.

40. In response, the Sustainable Land and Ecosystem Management (SLEM) Program was established in 2007 by Government of India in partnership with the GEF, the World Bank, UNDP and FAO. At the heart of the GEF's support was recognition that a purely conservationist approach was not likely to work. On this basis, the program focused on finding and promoting innovative approaches that would enable diverse stakeholders opportunities to achieve both their economic interest and agreed principles of ecosystem and biodiversity conservation. The Sustainable Land, Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Water Sector (SLEM-U) Project was launched in 2009 as one of seven GEF-supported projects under the SLEM program. The project was funded with a \$7.5 million GEF grant (Id. 3471) that provided additional financing to the \$77.6 million Gramya I project –an IDA credit – begun in 2004.

41. The Implementation Completion and Results Report (ICR)¹⁸, prepared in 2014, concluded that the SLEM-U project had successfully demonstrated decentralized water management practices that had improved source sustainability, access to water and water security, and farmer livelihoods. Thus, the project had implemented: (a) participatory development of micro-watershed development plans, (b) land degradation control at the micro-watershed level, (c) reduction in pressure and dependence on the natural resource base, and (d) biodiversity conservation and management. These activities built upon and took full advantage of the earlier Gramya I project's investments and implementation capacity, but were not linked to its components.

42. Specific realized outcomes include:

- (a) In terms of enhancing climate change mitigation and resilience in the watershed ecosystem, SLEM-U had significantly scaled up alternative livelihood options that would reduce dependence on the natural resource base, such as pine needle

¹⁸ World Bank (2014): Implementation Completion and Results Report – Uttarakhand Decentralized Watershed Development Project (Gramya I). Report No: ICR2216. Washington. February 25, 2014.

briquetting and traditional water mills. Also, the project's forest plantation management and fire control training activities helped reduce fire affected areas by 61 percent.

- (b) Small and medium landholders benefitted from watershed treatment activities – land degradation control and water harvesting – which, combined with the introduction of improved rainfed and irrigated farming practices, such as the cultivation of high value crops and off-season vegetables, contributed to an average 15 percent increase in the beneficiaries' income.
- (c) Vulnerable groups – including marginal farmers, landless, women and transhumant populations – benefitted from the project's financing of alternative livelihood activities which increased their income by 30 percent on average.

43. The sustainability of these achievements is supported by the incentives built into the cost-sharing arrangements established by the project. Thus, the water user groups established by the project can be expected to maintain the water harvesting structures because they themselves are the main beneficiaries and their own investment through cost sharing. The alternative livelihood activities are highly likely to continue, as there is an effective market demand for most of the goods and works they produce – as of the closing of the project, about 90 percent had been sustained for more than two years. The continuation of project activities is also supported by a 2011 Government Order that holds the Gram Panchayats (rural local governments) accountable for the sustainability of the assets created by the project. The Order is underpinned by a MoU signed between the Uttarakhand Water Management Department and the participating local governments (Gram Panchayats). On this basis, the ICR rates the risk to development and global environment outcomes as *moderate*.

44. Based on the findings of the ICR report, the following salient factors contributed to the project's success:

- (a) The focus on participatory, community-based approaches to watershed management, which also involved substantial beneficiaries' cost-sharing, fostered local ownership and commitment, and helps ensure the long term sustainability of the assets created by the project.
- (b) The integration of cutting edge science and technology to improve the watershed treatment activities (land degradation control, natural resource conservation, water harvesting, agriculture demonstrations and agribusiness development) made an important contribution to the observed increase in farming revenues and incomes.
- (c) The project's extensive investment in strengthening the rural local governments' and water user groups' capacity in participatory decision making, planning and implementation, transparency and social accountability, financial management, procurement and safeguards, enabled these local institutions to successfully manage the massive increase in duties and resources resulting from the fiscal decentralization and community empowerment priorities promoted by the government and supported by the project.

Strengthening Namibia’s Protected Area Systems

45. Namibia’s dryland ecosystems are recognised as a globally significant repository of biodiversity, acclaimed for their species richness, habitat diversity and biological distinctiveness. For the management of this biodiversity, the country has established a three-tier system, namely State Protected Areas, Communal Conservancies and Private Reserves. There are more than twenty State Protected Areas, covering 17% of Namibia’s terrestrial area (114,000 km²), where most of the country’s biomes are represented. There are 71 communal conservancies, covering more than 132 700 km², where community groups enjoy rights over wildlife and other resources for their own development. In addition, 24 conservancies have been established on private lands, comprising around 1,000 commercial farms.

46. However, because these areas operated as a patchwork rather than as an integrated system, their conservation potential was being undermined. In addition, the improvement of PA management effectiveness had been hindered by a number of barriers: a fragmented policy framework; weak institutional capacities, weak human capacities for PA operations, incomplete bio-geographic coverage, and the absence of tested mechanisms for public -private-community partnerships. Intervention was needed to address these barriers and improve the management of the PA system as a whole.

47. Since 2004 the GEF has supported several projects, implemented almost simultaneously over a long period by the World Bank and UNDP, to improve management effectiveness of Namibia’s PA system at different levels and in different ways. See Table 1 below. They have focused on both national level processes and systems as well as support to individual PAs. At the national level, projects have supported the proclamation of new parks, policy development, improved budgeting and financial systems, human resource management systems, the concessioning system, the application of monitoring tools across the PA system, and developing approaches to coastal conservation management. At the park level, projects have supported the provision of infrastructure and equipment, the introduction of management plans and work plans, as well as engagement with park residents and/or neighbors.

Table 1: Namibia: GEF-supported Protected Area System interventions

GEF-supported project	Project period
Integrated Ecosystem Management in Namibia through the National Conservancy Network (ICEMA) (GEF ID 1590)	2004–11
Namibia Cost Biodiversity Conservation and Management Projects I & II (NACOMA) (GEF ID 1505 & 4669)	2005-15
Strengthening the Protected Area Network (SPAN) (GEF ID 2492)	2006–12
Namibia Protected Landscape Conservation Areas Initiative (NAMPLACE) (GEF ID 3737)	2010–present
Strengthening the Capacity of the Protected Area System to Address New Management Challenges (GEF ID 4729)	2013–present

48. The sustainability of these achievements is supported by the government's decision to mainstream the reforms and programs initiated by the projects, to increase budgetary allocations for PA management, and to implement market-based instruments such as establishment of concessions and collection of park entry fees to park operations and investments. However, the government still needed to continue to mobilize additional resources from other donor organizations in support of PA management and sustain the projects' results in future.

49. As discussed in the Namibia Overview report of the Impact Evaluation of GEF Support to Protected Areas and Protected Area System¹⁹, these projects have been successful for a number of reasons:

- (a) First and foremost was the political will and support for conservation in Namibia, which has provided the backing at the highest level for the project activities. Government has been supportive of the proclamation of new PAs and has been willing to increase the overall budget of the Ministry of Environment and Tourism (MET). Project objectives and activities were not designed by external agencies and did not have to be grafted on to the Namibian PA system. The projects provided technical support for the drafting of new policies and funding for consultative meetings, but all of the policies were initiated by MET. As a result, they are fully institutionalized within MET and are being implemented.
- (b) Another important factor was the synergies between different projects. There was good cooperation between ICEMA and SPAN even to the extent that both projects shared the same policy advisor. Personnel from the ICEMA (GEF/World Bank), SPAN (GEF/UNDP), North-east Parks (KfW), WWF Namibia program, and Namibian NGOs all collaborated in providing integrated support to park management and community engagement activities.
- (c) In addition, many of the project personnel previously worked in the MET. This ensured that project managers and personnel had a good understanding of the MET, its internal politics, its systems and processes, and the context of individual parks. Several of the project personnel had also previously worked with communities adjacent to PAs supported by the projects.

¹⁹ GEF (2016): *Impact Evaluation of GEF Support to Protected Areas and Protected Area System*, Independent Evaluation Office. Washington. September 2016.

The Amazon Region Protected Areas (ARPA) Project in Brazil

50. Brazil's Legal Amazon Region occupies about 5 million km² of land, which represents the largest area of remaining tropical rain forest in the world (approximately 30 percent) and is estimated to contain carbon stores of around 120 billion tons. Because the area is still relatively intact, it is thought to exert a significant influence on regional and global climate. The Region has been classified into 23 ecoregions and supports biodiversity of global significance. Despite the Region's global importance, it is threatened by deforestation associated with economic development dominated by agriculture expansion, ranching, logging, mining and settlement policies. Poorly planned and managed economic development in the area has contributed to increasing loss of tropical forest, degradation of watersheds and overexploitation of wildlife and fisheries.

51. The Amazon Region Protected Areas Project (ARPA) was a three-phase 12-year program designed to conserve biodiversity of global importance in Brazil's Amazon Region. The Program represented an innovative initiative in promoting a public-private partnership and participatory approach at a scale that had never been attempted before in the country. It also provided the framework to bring different levels of government, civil society and financing partners together in a coordinated and collaborative effort to address and achieve project goals and objectives.

52. Phase I of the program, ARPA I, was launched in 2002 with a \$30 million GEF grant (id. 771)²⁰ with specific objectives to:

- (a) create 18 million ha in new protected areas (9 million ha of "strict protection" PAs and 9 million ha of "sustainable use" PAs);
- (b) Consolidate the management of 7 million has of existing PAs, in addition to 9 million ha of the newly created "strict protection" PAs;
- (c) Establish and operate an endowment fund to meet the recurrent costs of PAs.

53. Following the project's completion, the Implementation Completion and Results Report (ICR)²¹ concluded that ARPA I had been the most innovative and successful project currently strengthening the PAs system in the Amazon. The project had doubled the amount of Brazilian Amazon under "strict protection" – from 12 million ha in 2004 to over 25 million ha in 2009. It had also added another 10 million ha in "sustainable use" areas that met two important societal needs – conserving biodiversity and providing improved livelihoods for traditional

²⁰ The project was also supported by a GEF project preparation grant of \$0.350 million.

²¹ World Bank (2009): *Implementation Completion and Results Report – Amazon Region Protected Areas Project*, Report No.: ICR00001126. Washington. June 22, 2009.

forest dwellers. With respect to the “consolidation” of PAs, however, only about 8.5 million ha of PAs had reached an advanced stage (80% of “consolidation” criteria fulfilled) by the time the project closed in 2008, mainly due to difficulties in meeting minimum staffing requirements (a minimum of 5 staff in “strict protection” PAs). On the other hand, the project was successful in establishing an endowment fund of \$23.4 million (60% higher than the target), including \$14.5 million from GEF, 7.8 million from WWF and 1.2 million from two private enterprises.

54. At a broader level, the project had proven that effective PA creation and management can have a real impact in reducing deforestation and protecting biodiversity as well as the rights of local peoples. The project also showcased that private-public partnerships can break through long-standing bureaucratic and administrative bottlenecks by creating the operational capacity to effectively support field staff.

55. The federal and state governments provided strong support to the project by creating the protected areas and undertaking a competitive selection process for the hiring of PA staff. However, the governments faced difficulties in meeting their counterpart funding commitments for the project, which in turn affected the staffing of PAs. The ICR thus concluded that the sustainability of the project’s results was mainly due to continued support from donors and the successful establishment of an endowment fund to partially meet the recurrent cost of PAs. Even so, government contributions would continue to be necessary and, given some likelihood that the participating agencies’ budgetary challenges would continue, the risk to development outcome was rated as *moderate*.

56. Based on the ICR, the following can be highlighted among the key factors that enabled the project’s success:

- (a) The careful preparation of the project – overseen by an Advisory Committee representing the World Bank, the Ministry of Environment and WWF, and extensive involvement of local NGOs, aid agencies and social organizations in the Amazon, including indigenous peoples – which resulted in detailed guidance on the process and criteria for establishing PAs and the role of public consultation.
- (b) The availability of FUNBIO, the Brazilian Biodiversity Fund, as a partner for the project and manager of the endowment fund. It already had a successful record in implementing an earlier GEF project (id.126), and ARPA-I strengthened its capacity to enable it to manage the direct flow of resources from the endowment fund to PA managers.
- (c) The development of the *conta vinculada* (“conjoined account”) system that allowed a direct flow of resources from FUNBIO to protected area managers. This system avoided the problems often inherent in government bureaucracies while providing ready accountability through an efficient receipt-and-documentation system.

Promoting Payments for Ecosystem Services (PES) in the Danube Basin

57. According to the International Commission for the Protection of the Danube River, some 80% of the historical floodplains in the Danube basin have been lost over the last 150 years. Among the remaining 20%, the areas along the Lower Danube between Bulgaria and Romania and in the Danube Delta still possess a rich and unique biological diversity that has been lost in most other European river systems and also provide multiple ecosystem services, such as biodiversity conservation, recharging of ground water, water purification, pollution reduction, flood protection and support for socio-economic activities such as fisheries and tourism. Many of these wetlands are under pressure from navigation, infrastructure development and agriculture as the countries are increasingly integrated into the European Union and global economy. Intensification of farming in highly productive areas and abandonment of extensive farming practices in marginal ones could lead to significant biodiversity loss in both countries.

58. The Danube PES project was launched in 2009 with the objective – as clarified during the mid-term review (MTR) – “to demonstrate and promote Payment for Ecosystem Services (PES) and related financing schemes (FS) in the Danube River basin, and to other international water basins”. The project was a GEF medium-sized project (MSP) with total GEF funding of about \$1 million, co-financing of \$1.2 million from the WWF, and in-kind contributions from various partners – government agencies, NGOs, local authorities and private companies.²² The United Nations Environmental Programme (UNEP) was the GEF Implementing Agency, and the project was executed by the World Wide Fund for Nature (WWF). The project design was focused at the national levels in Bulgaria and Romania, with some outreach activities in Ukraine, Serbia and the wider Danube river basin. It also included local level activities where pilot PES schemes were to be tested and demonstrated.

59. Upon completion of the project, in 2014, the Terminal Evaluation²³ concluded that the project had been successful in eliciting the adoption of several national-level PES concepts into national fisheries policies in Romania and Bulgaria, and their testing and implementation in four pilot schemes. Specifically, the project:

- (a) Designed and introduced a pilot scheme for the sustainable management and harvesting of biomass (mainly reeds) in the Bulgaria’s Persina Nature Park, including full cost recovery from the sale of pellets and briquettes.
- (b) Working with the “Friends of the Rusenski Lom Nature Park” in Bulgaria, developed and helped implement a scheme to generate funds for the protection and

²² The project was also supported by a GEF project preparation grant \$0.025 million

²³ UNEP (2014): *Terminal Evaluation of the Project “Promoting Payments for Ecosystem Services (PES) and Related Sustainable Financing Schemes in the Danube Basin”*, by Vyara Stepanova, UNEP Evaluation Office, November 2014.

maintenance of the aesthetic value and biodiversity of the reserve from the sale of postcards and other promotional materials.

- (c) Established a Conservation and Development Fund for Romania's Maramures protected area by attracting sponsorships and donations for local guesthouses and tour operators interested in repositioning the area as an ecotourism destination.
- (d) Mobilized public funds for the implementation of policies for the maintenance of water quality and biodiversity values in the Ciocanesti area along the lower Danube in Romania. The resulting management practices had already led to improved water quality and an observed increase in the number of nesting birds.

60. Based on the financial, institutional and socio-political support elicited by the project, the evaluation report rates the sustainability of these achievements as *moderately likely*. There were good prospects for future financial commitments to sustain the project, but many of these potential resources were still unsecured, especially for the long term.

61. From the evaluation's extensive analysis of factors affecting the project's performance, the following can be singled out as key contributors to its success:

- (a) A timely and effective mid-term review (MTR) found that the project had been too ambitious in relation to its budget and timeframe. On this basis, it recommended and reached agreement on a streamlining of project objectives, a refocusing on priority areas and the cutting down of less important activities.
- (b) The decision to implement the project without direct government involvement allowed the project to proceed at a time when the relevant agencies were overwhelmed with other requirements. On the other hand, these agencies had been involved in the design and development of the project, and actively participated in capacity building and oversight activities, so that adequate institutional ownership could be established that boded well for the continued adoption, replication and upscaling of the piloted approaches.
- (c) The mix of project partners was effective and efficient, with each partner making important contributions towards different aspects. Although the project introduced a very new PES concept, the good communication and collaboration between project partners, driven by their interest in and enthusiasm for the project, was instrumental in the successful delivery of project outcomes.

III Mechanisms and Factors of Transformation

62. What will trigger and enable a transformational change? This chapter discusses cross-cutting design features, mechanisms and contextual conditions associated with the eight sample cases presented in Chapter 2 and assesses the extent that they may have helped support and sustain such transformations. Table 2 at the end of the chapter presents summary of transformational attributes and outcomes across all sample cases.

The Depth and Scale of Project Objectives

63. Did the intervention aim for a transformational change? In line with the proposed theory of change, the depth and scale of a project's objectives should be expected to be a factor for the achievement of transformational outcomes. The underlying logic is that the more ambitious the objectives in terms of the depth and scale the targeted change, the greater the likelihood that such a change could be achieved. In fact, a review of the sample interventions indicates that all of the cases aimed for a fundamental change in terms of the market or system that had been identified as the root cause of an environmental problem. In terms of scale, five of the cases aimed at regional, national or multi-country level changes, while in three cases the scale was strictly local.

64. In terms of the focus of the targeted change, three of the cases were primarily aimed to transform a market, i.e., the supply and/or demand of goods or services associated with environmental impacts of global concern. In the five remaining cases, the primary focus was on system-wide transformation, i.e., they attempted a more comprehensive approach to modify the functioning of a collection of components (market/economy, public sector, private sector, community) that interact with one another to affect the environment. Here it should be noted that these terms are not intended to be mutually exclusive, since market-focused changes tend to include system changes, and system-wide changes can affect the markets, but simply to denote their main orientation.

65. Market focus: A good illustration for the targeting of a market transformation at the country level is the *Uruguay Wind Energy Program*, which had the specific objective of contributing to the elimination of existing barriers to the development of commercially viable wind energy market in the country. This objective was underpinned with a suite of activities to support the development of a national policy and regulatory framework, knowledge transfer and capacity building for public and private investments in wind farms, and the installation of a demonstration plant. The *Lighting Africa Program* was similarly ambitious, as it aimed "to leverage the private sector to increase access to affordable modern off-grid lighting devices"²⁴ in all of Africa, beginning with Kenya and Ghana. Its expected impact was "to create a private sector-based and self-sustaining market for modern and affordable off-grid lighting projects that will directly benefit very low income households and small businesses".

66. A more modest scoping for a market-based approach is exemplified by the *Danube PES* project, whose objective was "to demonstrate and promote Payment for Ecosystem Services (PES) and related financing schemes...". This objective was to be achieved through supportive activities to develop and demonstrate models of public and private sector PES in five pilot schemes in Bulgaria and Romania, enhance the capacity of key stakeholders to implement

²⁴ IFC (2013): Advisory Services Completion – Lighting Africa – Project ID 521198.

these schemes, and increase information and awareness of PES concepts, schemes and opportunities.

67. *System focus*: A good example of an intervention that aimed at system transformation at the country level is the *Namibia PAS* program, which aimed at “increased management effectiveness of the national protected area network for biodiversity conservation”. This objective was supported by projects that supported the proclamation of new parks, policy development, improved budgeting and financial systems, human resources management systems, a concessioning system, and the application of monitoring tools across the PA system. A similar level of ambition was pursued by the *ARPA* program, which aimed “to expand and consolidate the protected areas systems in the Amazon region of Brazil”.

68. More modestly scaled ambition, albeit still aiming at systemic change, is illustrated by the *Uttarakhand SLEM* project. Its objective was “to restore and sustain ecosystem functions and biodiversity while simultaneously enhancing income and livelihood functions, and generating lessons learned that can be up-scaled and mainstreamed at state and national levels”. While ambitious in terms of complexity, the coverage of the project was limited to selected micro-watersheds in one of India’s states. Similarly, the *Sanjiang Wetlands* project aimed at a fundamental transformation of the water and wetlands management system in one province of China. Its purpose was to establish an integrated conservation and development model to protect the natural resources of the wetlands – biodiversity, water, and forests – from continued threats, and to improve the well-being of local communities.

The Transformational Mechanism

69. What mechanism is needed to trigger and scale-up the results of the intervention? In the sample at hand, the study identified three major types: mainstreaming, demonstration/replication, and catalytic effects. In very broad terms, mainstreaming refers to the integration of the practices, policies and programs promoted by the project into those of the country and/or local jurisdictions, as appropriate. Demonstration/replication occurs when the processes or transmission channel established by the intervention continue to expand the outcome beyond the initial target area. Catalytic effects encompass externalities that go beyond the intervention, such as synergies and complementarities among different instruments and interventions that lead to impacts that are greater than the sum of the interventions. These three types are illustrated below with a few examples but, here again, it should be noted that in most cases, these mechanisms are not mutually exclusive and indeed, tended to reinforce each other.

70. *Mainstreaming*: The successful mainstreaming of environmentally-positive policies and programs is perhaps best illustrated by the *ARPA-I* project, which supported the creation and consolidation of protected areas, and the establishment of an endowment fund to meet a portion of their operational costs. Upon completion, the project had not only doubled the area of Brazilian Amazon under strict protection, but also proven to all major stakeholders, including federal and state governments, local peoples and NGOs, as well as private sector organizations and international donors, that effective PA creation and management could have a real impact

in reducing deforestation and protecting biodiversity as well as the rights of local peoples. Thus, the federal and state governments were fully committed to implementing the protected areas staffing and management plans instituted under the project, and donors and private enterprises continued to contribute to the endowment fund that covers most of the operating costs of these areas. Largely as a result, the ARPA model continued to be replicated under Phase II of the program.

71. *Demonstration and replication*: Most of the projects achieved a substantial demonstration effect, i.e., their initial impact, in terms of the practices and programs introduced by the project, were adopted and replicated in similar contexts across an expanding geographical scope. Thus, for example, the integrated watershed management and conservation model introduced by the *Sanjiang Wetlands* project was adopted by six additional reserves beyond the initial six supported by the project. Another good example is the *Lighting Africa* program, whose overall approach, initially piloted and successfully demonstrated in Kenya (albeit less successfully in Ghana) is currently being replicated in ten additional countries in Africa.

72. *Catalytic effects*: The most notable examples of a catalytic effect involved the transformation of the market or system for renewable energy development. Thus:

- (a) *CRESP-I* is credited with a substantial contribution to the transformation of China's renewable energy sector from an early piloting and demonstration stage to its development into a global leader in wind energy generation and the manufacture of wind power generation equipment. Against an original target of 10 GW of installed wind power capacity, the policy reforms, capacity building and technology improvement supported by the project had substantively and effectively catalyzed an actual capacity increase to 29.6 GW by 2010, and 129.3 GW by 2015.
- (b) Similarly, *UWEP* has decisively supported the establishment of an enabling legal and regulatory framework that catalyzed the creation of the wind energy market in Uruguay, which grew from virtually nothing in 2007 to 43.4 MW by the end of the project in 2013 and was expected to total 990 MW in 2015.
- (c) Finally, *Lighting Africa* can also be credited with having catalyzed the creation of a commercial market for quality, affordable solar lighting in Africa, that contributed to the sale of 680,000 LA-certified lamps in Kenya, and almost two million lamps in other African countries by 2014.

73. Reflecting upon these cases, which include all three renewable energy/climate change-focused projects in the sample (and none of the others), it would appear that large-scale catalytic effects are likely to be associated with technological improvements whose benefits can be captured by harnessing an effective market demand. Thus, the fact that the costs of renewable energy were declining in relation to those of conventional fossil-fueled electricity, opened up new and economically feasible market opportunities which the interventions were able to exploit, with the attendant synergistic/catalytic effects. With other types of interventions – such as those focused on biodiversity protection and land conservation – the

projects' support for cutting-edge science and technologies appears to have faced greater challenges in capturing and monetizing the attendant benefits. As a consequence, their achievement of transformational impacts appears to have relied more on establishing and mainstreaming institutional support mechanisms, with only partial reliance on market-based approaches.

Internal Factors

74. What internal factors enabled or constrained the achievement of transformational results? In line with the theory of change, aside from original intent, the effectiveness of the transformational mechanism is bound to be affected by internal and external factors surrounding its implementation. For this study, the internal factors – i.e. factors that are largely under the control of the GEF Agencies – have been grouped into four main types:

- (a) Quality of implementation: primarily covers the quality of project design, as well as the quality of supervision and assistance provided by GEF agency(-ies) to executing agencies throughout project implementation.
- (b) Quality of execution: primarily covers the effectiveness of the executing agency(-ies) in performing its roles and responsibilities.
- (c) Pre-intervention analytical activities, capacity building and related projects; and
- (d) Partnerships with international donors.

75. *Quality of implementation and execution*: Based on the final evaluation reports, the quality of implementation and execution was rated as satisfactory or better for every project in the sample. This should not be a surprise, since the sample was selected from interventions nominated by the implementing agencies to illustrate the feasibility of transformative outcomes. On this basis, the satisfactory quality of implementation and execution can be deemed to be necessary conditions for the success of transformational interventions. It is thus appropriate to highlight some of the salient features that have driven the quality of these factors, as they emerge from the review of sample cases:

- (a) A comprehensive diagnostic assessment to identify the barriers that need to be addressed to achieve the objectives of the project;
- (b) A careful project design that reflects a coherent logical framework of activities to target all of the identified barriers;
- (c) The early involvement of a strong executing agency that is ready to own the objectives of the project and is willing to exert the leadership and acquire the capacity and resources necessary to ensure their achievement; and
- (d) A willingness on all sides to learn, adjust and adapt the design, scope and management of the intervention as needed to ensure its success.

76. The review of the sample cases' experience also identified a few areas of weakness with respect to the quality of implementation and execution that deserve greater attention:

- (a) The design of the results framework needs to be realistic in terms of the limitations of the interventions. As already noted, the reported impact of *Lighting Africa* needed to take better account of what would have occurred with a “without program” counterfactual, and the impact of the *Sanjiang Wetlands* project was inconclusive due to inconsistent counting methods and lack of monitoring of, and control over, relevant transboundary factors. The original objectives and targets for the *Danube PES* project had also been too ambitious in relation to its budget and timeframe, and a mid-term review was needed to streamline and refocus them on a more realistic scope.
- (b) In several cases, the effectiveness of implementation and execution was affected by staff turnover in key positions, sometimes associated with long gaps and a loss of project specific knowledge and capacity. This points to the importance of ensuring the continuity of key personnel in making project arrangements.
- (c) A few of the projects had delayed or very slow starts due to a lack of consensus and coordination between implementing and executing agencies and other key stakeholders. This highlights the desirability of allowing adequate time and effort for preparation and consensus building ahead of the project to ensure adequate cohesiveness from the beginning of implementation.

77. Pre-intervention activities: In almost every case, GEF-funded project preparation activities and/or predecessor projects in similar areas played an important positive role in facilitating the design and preparation of the transformational interventions. As already noted:

- (a) The multi-year preparation effort for the *CRESP I* project (supported by \$1.35 million of GEF PDF grants) through workshops, study tours and policy studies was essential to achieve consensus and cohesiveness about key policy directions and reforms to be promoted by the project. The project’s design also benefitted from the experience of earlier renewable energy projects which were not as successful, but provided valuable lessons.
- (b) The *ARPA I* project benefitted from an extensive preparation effort (supported by a GEF Block B grant) and the existence of FUNBIO, the Brazilian Biodiversity Fund established under an earlier GEF project, which managed the funding for all project activities.
- (c) The formulation of the *Sanjiang Wetlands* project was also supported by a GEF PPTA grant that provided all the inputs needed to prepare the project for ADB and GEF financing.

78. Donor partnerships: In four cases, the funds provided by GEF were supplemented with important financial contributions from international donor partners, which enabled the projects to expand their scope and scale. Thus, *Lighting Africa* received contributions from 12 sources in

addition to the GEF, which contributed 36% of its \$22 million budget (from 2007-2013)²⁵. For the *Danube PES* project, the GEF contributed 42% and the WWF 48% of the total budget of \$2.3 million²⁶. In the ARPA I project, the \$84.5 million budget was funded by GEF (34%), KfW (21%), WWF (20%), the government (21%), and other local sources (2%)²⁷. The Namibia ICEMA project also benefitted from \$17.6 million of contributions from five donors.²⁸ In the remaining interventions, the GEF's support was supplemented by funding from the implementing agencies and the governments, and in one case by counterpart funding from the government alone.

External Factors

79. What external factors have enabled or constrained the achievement of transformational results? For the sake of simplicity, in face of a wide range and diversity of contextual factors that have influenced the outcome of the sample interventions, this study focused on the six most prevalent types:

- (a) Government ownership and support for the project
- (b) Implementation capacity of local institutions (other than the main executing agency)
- (c) Adequacy of the policy environment
- (d) Civil society and local community participation
- (e) Private sector participation
- (f) Economic and market conditions

80. *Government ownership and support*: Strong government ownership and support has long been regarded as important, if not essential, for project success. This was confirmed in six of the sample cases, where strong government support was identified as a major contributor to their satisfactory outcomes. Surprisingly however, the governments had only limited involvement with two of the transformative interventions:

- (a) In the *Danube PES* project, national government entities' role was limited to participating in the pre- project consultations, capacity building and oversight

²⁵ P. 9, World Bank (2015): *World Bank Group Support for Electricity Access, FY2000-2014 – An Independent Evaluation - Volume II: Together for Energy: How Partnership Programs Support Energy Access*. Independent Evaluation Group. Washington, 2015.

²⁶ P. 70. UNEP (2014): *Terminal Evaluation of the Project "Promoting Payments for Ecosystem Services (PES) and Related Sustainable Financing Schemes in the Danube Basin"*, by Vyara Stepanova, UNEP Evaluation Office, November 2014.

²⁷ P. 43. World Bank (2009): *Implementation Completion and Results Report – Amazon Region Protected Areas Project*, Report No.: ICR00001126. Washington. June 22, 2009.

²⁸ P. 2. World Bank (2012): *ICR Review – Namibia: Integrated Community-based Ecosystem Management Project*. Report No.: ICRR 13805. Washington. August 30, 2012.

activities. The low-level participation of government entities, however, actually facilitated the project implementation, as it enabled the development and implementation of PES schemes in Bulgaria and Romania without requiring institutional staff's direct involvement. It also provided sufficient flexibility for the WWF's Danube PES project team to test different development and implementation approaches for PES schemes outside the heavy governmental protocols.

- (b) The *Lighting Africa* project was specifically designed to catalyze a private-sector driven sustainable market transformation. It was not country specific and did not involve the governments except to discuss policy changes, such as the lowering of import taxes. However, even with relatively limited public policy dimensions, securing buy-in from local governments can greatly reduce risks of government's setting adverse expectations and incentives. Thus, the program's success in Kenya was facilitated by relatively good support by the government, while in Ghana, the government's focus on grid extension promises and relatively dismissive attitude to portable off-grid solar solutions likely dampened private sector interest in the market and skewed end-beneficiary expectations.

81. Local implementation capacity: The implementation capacity of local institutions can be expected to play a major role in project outcomes, especially when the activities are spread over a range of sites and local jurisdictions. Thus, the *CRESP*, *Sanjiang Wetlands*, *Namibia PAS* and *Uttarakhand SLEM* projects included targeted activities to strengthen the local institutional capacity, all of which were effective in contributing to the project's success. The *ARPA-I* project also had a highly decentralized design, focused on the creation and consolidation of protected areas management, but its initial implementation was constrained by ineffective coordination between national, state and local executing agencies. The mid-term review effectively addressed this issue by recommending the creation of multiple working groups involving all the institutional stakeholders and the development of an inter-institutional communications strategy. Finally, the *UWEP*, *Danube PES* and *Lighting Africa* projects did not involve any significant transfer of responsibility to local government entities for any of their activities.

82. Policy environment: The adequacy of the policy environment can be expected to have an important impact on the depth and scale of the reforms promoted by the projects. In two of the projects the policy framework had been supportive from the start, having purposely created an enabling environment for the transformational changes that the projects would help implement. In *Uttarakhand SLEM*, for example, the state government had already granted the GPs (local rural governments) formal legal recognition for watershed development planning and implementation, including land improvement, soil improvement, and social and farm forestry. For *ARPA I*, the legal context for the country's protected areas – including the participation of “traditional peoples” in their establishment and management – had already been established a few years earlier, in 2000, with the support of earlier World Bank and donor interventions – mainly the Pilot Program for Tropical Forest Protection in Brazil (PPG-7). *ARPA I* provided the momentum to put the concept and methodology, which required the involvement of many government agencies at all levels, into practice and, indeed to demonstrate its practicality.

83. In three of the sample cases, the interventions had a major role in helping define and implement the main policies essential for triggering and sustaining the transformational changes:

- (a) *CRESP -I* can be credited with a strong influence on the development of a supportive legal, policy, and regulatory framework for renewable energy in China. Perhaps most importantly, the project played an instrumental role by funding the analytical studies that underpinned the implementation a long-term, predictable and financially attractive price signal which provided an effective stimulus for continuing and expanding investments in renewable energy.
- (b) Similarly, *UWEP* helped Uruguay define and implement a long-term energy policy with an integrated and multidimensional view, including technical, economic, geopolitical, environmental, ethical and social factors. One of the backbones of the policy is the introduction of renewable energy (solar, wind, and biomass) and energy conservation, into the long-term energy development strategy.
- (c) *Namibia PAS* played an important role in supporting the development of new policies for Ministry of Environment and Tourism, such as the Policy on Tourism and Wildlife Concessions on State Land, the National Policy on Human-Wildlife Conflict Management, the National Policy on Community Based Natural Resource Management, and the National Policy on Protected Areas' Neighbours and Resident Communities. While all of these policies were initiated by MET, the projects provided technical support for the drafting of the policies, funding for consultative meetings and for publishing the policy documents.

84. In the three remaining cases, the interventions played a modest role in strengthening the policy framework needed to support transformational change:

- (a) The *Lighting Africa* program engaged with governments to discuss policy changes – such as the lowering of import taxes – that were needed to create an enabling environment for the market for solar lamps.
- (b) The *Sanjiang Wetlands* project was able to influence policy in some ways. The required water allocation for wetlands preservation has been recognized in the 11th Five-Year Plan of the Heilongjiang province. Animal grazing and fishing were prohibited in all nature reserves in the Sanjiang Plain, except for those permitted by laws or regulations, based on proposals made by the project.
- (c) The *Danube PES* project is credited with having mainstreamed several PES concepts into national fisheries policies in Romania and Bulgaria. On the other hand, while the project coincided with the start of the process of Mapping and Assessment of Ecosystems and their Services (MAES) at EU level, and the expansion of work on the global initiative on The Economics of Ecosystems and Biodiversity (TEEB), the evaluation concluded that sufficient momentum did not yet exist to optimally propel the project from a policy standpoint.

85. Civil society and community participation: Local civil society and community organizations played a key role and made important contributions in four of the sample interventions:

- (a) For *Lighting Africa* consumer associations, non-governmental organizations, microfinance institutions and other social sector partners played a key role in promoting awareness of solar lamps. These were the most effective channels for promoting consumer awareness.
- (b) The *Namibia PAS* projects played a significant role in supporting engagement between park personnel and neighboring communities. Funding for game translocations from PAs to conservancies proved to be important catalysts for cooperation between park personnel and communities. Because the communal and private conservancies have rights to use and benefit from wildlife on their land they have a direct interest in cooperating with the protected areas that supply their wildlife.
- (c) The *Uttarakhand SLEM* had a high level of community participation in its various components, which contributed to its sustainability by increasing the likelihood that the activities will be continued after project completion. This outreach was supported by fifty-five partner agencies, including NGOs, academic institutions and the private sector, that provided overall project implementation support, social mobilization, participatory monitoring and evaluation and technical assistance.
- (d) *ARPA-I* benefitted from contributions from an extraordinarily diverse set of institutional partners. Its philosophy of balancing economic and social needs with the maintenance of biological diversity has played a major role in the Ministry of Environment's planning process and led to the engagement of many representatives of civil society as well as biologists and environmental NGOs.

86. Private sector participation: The impact of private enterprises on the effectiveness of the transformational interventions was mainly defined by the extent of their (supply-side) response to the changes created by the project. As expected, the response was strongest where market change was at the center of the interventions. Thus, *CRESP* and *UWEP* contributed to the successful transformation of the wind energy market in China and Uruguay by addressing the barriers that had constrained its development, most importantly by helping establish a feed-in power tariff that made it financially attractive for private investors to invest in wind energy. The *Lighting Africa* program helped catalyze the market by, on the one hand, creating awareness and demand for quality, affordable solar lamps and, on the other hand, stimulating the supply chain by providing market intelligence, developing a quality assurance infrastructure, helping government address policy barriers, and facilitating access to finance for manufacturers, local distributors and consumers.

87. In three additional cases, the private sector's involvement in the transformational interventions was more modest, likely due to the more limited opportunities for financial gain inherent in the nature of the projects. Thus, for example:

- (a) In the *Danube PES* project, the private sector was represented in the project's steering committee, through various consultations, and as a secondary executing agency for the fish farming pilots, but its motivation was dampened by the economic crisis, and the absence of a supportive legal and regulatory framework.
- (b) The *Namibia PAS* projects supported the establishment of partnerships between the MET and private sector stakeholders, such as the Namibia Tourism Board, private tour operators, the National Heritage Council, the Federation of Namibian Tourism Association, and the Namibia Professional Hunters Association. These stakeholders were assessed for their potential contribution to the project with their roles and responsibilities allocated in a comprehensive stakeholder involvement plan that was articulated in the Project Document.
- (c) In *ARPA-I*, private sector groups participated in technical committees and governing bodies involved in the creation and implementation of protected areas as well as the development of standards for the certification of sustainably produced and biodiversity sound products. Some of the activities were supported through public-private matching grants.

88. *Economic and market conditions*: Economic and market conditions had a diverse range of effects. As already noted, major changes in the workings of the market were at the heart of the objectives pursued by three of the interventions – *CRESP-I*, *UWEP* and *Lighting Africa* – and the market response they elicited played a major role in achieving the aimed-for transformation. In four additional cases – *ARPA-I*, *Sanjiang Wetlands*, *Uttakharand SLEM*, and *Namibia PAS* – stable economic conditions played a positive role by supporting the demand for the incremental products and services delivered by the sustainable practices and alternative livelihood options implemented by the projects. Finally, for the *Danube PES* project, an ongoing economic crisis appears to have negatively affected the private sector's motivation to become involved and limited the success of the new business and market opportunities created by the pilot schemes.

The Scale and Sustainability of Transformational Outcomes

89. To what extent have the transformational interventions achieved deep, large scale, sustainable outcomes? As already noted, all of the sample interventions aimed for a fundamental change in a market or system that had been identified as the root cause of an environmental problem. The nomination and selection process for the sample had also purposely yielded eight interventions that were deemed to have caused or supported such a change. The review of the final evaluation reports indicates that each of these interventions have been associated with deep changes in the market or system they had targeted. They differ, however, in the scale and sustainability of their transformational outcomes.

90. *Scale of the outcomes*: In five of the cases, the transformations were national or regional in scale, which greatly enhanced the reach of their impacts. Thus, for example, the *ARPA I* project is credited with helping to double the area of Brazilian Amazon under strict protection – from 12 million ha in 2004 to over 25 million ha in 2009 –. *UWEP* supported the creation of the

wind energy market in Uruguay, which supplied about 33% of its electricity needs in 2016, up from 0% in 2008. The *Namibia PAS* projects improved the management effectiveness of 98% of the country's protected areas, while estimated populations of the lion, leopard, cheetah and wild dog doubled from 2004 to 2012.

91. In three of the cases, the scale of the transformations was more modest, as they focused on specific target areas within a limited geographic range. Thus, *Sanjiang Wetlands* focused on six nature reserves in China's Heilongjiang Province. *Uttarakhand SLEM* was implemented in 20 micro-watersheds in India's Uttarakhand State. *Danube PES* established four PES schemes in selected wetland areas along the lower Danube basin. Overall, as may have been expected, the review simply found that each intervention had reached the scale intended by its objective.

92. *Sustainability of the outcomes*: While recognizing that sustainability has many aspects, the review found that these could be grouped into three major dimensions: financial, environmental and socio/political. It was also not surprising to find that, given the purposely positive criteria used for the sample selection process, the outcome could in all cases be deemed to be environmentally and socio/politically sustainable. The only significant differences emerged with respect to financial sustainability, which were rated as highly likely in five cases and moderately likely in the remaining ones.

93. A common thread among all the cases with a highly likely financial sustainability was that they had been carefully designed to harness the power of market forces and the economic self-interest of key stakeholders, each in its own way:

- (a) *CRESPI* supported a feed-in tariff for renewable energies calculated to yield a 10% FIRR for such investments. This tariff provided financial returns attractive enough to encourage state-owned and private companies to accelerate their investing in renewable energy projects. The growing investments have in turn encouraged continuing technological improvements and efficiencies in renewable energy equipment that have allowed the tariff to be gradually lowered, which in turn consolidated its social/political acceptance. While the tariff still reflects a premium in relation to coal-fired generation, the evaluation concluded that it has appropriately internalized the environmental benefits of renewable energies.
- (b) Similarly, the financial sustainability of *UWEP* is made credible by the fact that the wind power investment licenses were allocated through a competitive bidding process that guaranteed access to the grid. The resulting prices were competitive with those of fossil-fueled alternatives and have gradually declined from \$110/MWh in 2014 to a range of \$65-85/MWh, as a result of growing efficiencies and technological improvements.
- (c) For *Lighting Africa*, the evaluation concluded that basically, people who have used solar lamps will continue to do so, and suppliers will continue to supply. There are approximately eleven microfinance institutions in Kenya providing consumer finance for LA certified solar lamps. They are likely to continue providing finance since they

are making money off these loans and also seem to be taking an active role in also promoting and selling solar lamps directly.

- (d) For *Uttarakhand SLEM* the financial risks are deemed to be low due to the beneficiaries' having an incentive to maintain the water harvesting structures, because of their own investment through cost sharing. In addition, the sustainable livelihoods activities introduced by the project appear likely to be sustained, based on the marketability of the products.
- (e) For *Sanjiang Wetlands* the evaluation indicated that non-timber forest product ventures supported by the project have a FRR of 13.4%. The executing agencies are setting aside a portion of local county revenues generated from forest development activities for deposit in a special fund account to meet the financing requirements for nature reserve management. The governments' commitment to provide adequate funds for the activities supported by the project completion is also assured by these activities' inclusion in the government's Five-year Development Program.

94. The three cases for which financial sustainability was only moderately likely tended to be more highly dependent on continuing government budgetary allocations or fundraising from donors, for which prospects were positive, but not assured:

- (a) The financial sustainability of the *Namibia PAS* projects' achievements is partly supported by the government's decision to increase budgetary allocations for PA management, and to implement market-based instruments such as establishment of concessions and collection of park entry fees to park operations and investments. But it also continues to depend on the government's ability to mobilize additional resources from donors.
- (b) For *ARPA I*, the evaluation notes that, although the endowment fund managed by FUNBIO is capitalized, its revenues are not sufficient to meet the total operational costs of PAs, and the government has not budgeted for sufficient staff to manage the PA's. Thus, the sustainability of the outcomes remained dependent on the government and international donors' commitment to continued funding.
- (c) For *Danube PES*, the evaluation concluded that the long term financial sustainability of the project depended on influencing the EU and national decision makers to allocate sufficient funds to nature and water conservation activities and to recognize PES and other SF mechanisms as important tools for securing the maintenance and the restoration of the ecosystems. While there was positive evidence from participating countries in this regard, there still were certain concerns among regional stakeholders that reduced EU funding for conservation activities may hinder the long term sustainability of the projects.

95. Overall, the review of sample cases suggests that the achievement of transformational changes is a feasible goal for GEF-supported interventions, large and small. But the quality of the transformational changes can vary, depending on their sustainability. Thus, five of the sample cases – *Lighting Africa*, *CRESP*, *UWEP*, *Sanjiang Wetlands* and *Uttarakhand SLEM* – can

be deemed to have supported a fully complete transformation in terms of its depth, scale and sustainability. For the other three cases, the transformation was only partially complete.

Table 2: Transformational Attributes and Outcomes

Intervention	Ambition			Transformational Mechanism			Internal Factors				External Factors						Outcome						
	Market Focus ²⁹	System Focus ³⁰	Scale of Change	Mainstreaming ³¹	Demonstration - Replication ³²	Catalytic Effects ³³	Implementation Quality	Execution Quality	Pre-intervention Activities	Donor Partnerships	Government Ownership	Local Implementation Capacity	Policy Environment	CSO/Community Participation	Private Sector Participation	Economic/Market Conditions	Market Change	System Change	Scale of Change	Financial Sustainability	Environmental Sustainability	Social/Political Sustainability	Transformation Complete
Lighting Africa	√	√	√		√	√	√	√	√	√				√	√	√	√	√	√	√	√	√	√
CRESP-I	√	√	√	√	√	√	√	√	√		√	√	√		√	√	√	√	√	√	√	√	√
UWEP	√	√	√	√	√	√	√	√			√		√		√	√	√	√	√	√	√	√	√
Sanjiang Wet.		√			√		√	√	√		√	√	√			√		√		√	√	√	√
SLEM-U		√			√		√	√	√		√	√	√		√		√		√		√	√	√
Namibia PAS		√	√	√	√		√	√	√	√	√	√	√		√		√	√	√		√	√	
ARPA-I		√	√	√	√	√	√	√	√	√	√	√	√		√		√	√	√		√	√	
Danube PES	√				√		√	√		√											√	√	

²⁹ **Market change** – refers to market transformations that influence the supply and/or demand of goods and services in a significant way and contribute to global environmental benefits. Market change may be related to technological changes, policy and regulatory reforms, and financial instruments.

³⁰ **Systemic change** – a change in **underlying causes** of system performance that can bring about a better-functioning system. A ‘systemic’ change has three key characteristics: (i) **Scale**. Systemic changes influence and benefit a large number of people who were not directly involved in the original intervention; (ii) **Sustainability**. Systemic changes continue past the end of the intervention, without further external assistance; (iii) **Resilience**. The system can adapt to continue delivering environmental benefits as the market and external environment changes.

³¹ **Mainstreaming** – when information, lessons, or specific aspects of a GEF intervention becomes part of a stakeholder’s own initiatives, such as laws, policies, regulations and programs.

³² **Demonstration-replication effects** – interventions demonstrate the feasibility/viability of implementing a project/program, of a business model, an innovation, etc. to other market players. The intervention is then copied by other players (magnifying the direct impact of the intervention itself).

³³ **Catalytic effects** – externalities that go beyond the intervention. This may be related to synergies and complementarities among different instruments and interventions deployed. The contribution of the GEF partnership is larger than the sum of its interventions.

IV Conclusions and Lessons

Conclusions about Necessary and Sufficient Conditions

96. What are the necessary and sufficient conditions for the achievement of sustainable transformations? All nominated interventions have explicitly or implicitly aimed to support a transformational change. Each of the purposely selected cases can be credited with having made an important contribution to the fundamental transformation of a system or market, thus helping address the root cause of a global environmental concern. In five of the sample cases, based on their evaluation reports, the transformation was fully completed, in terms of its depth, scale and sustainability. In the three remaining cases, the GEF intervention has triggered and supported a fundamental transformation, but their financial sustainability had not yet been achieved at the time of project completion, so that the transformation could only be deemed as partially completed. Given the overall satisfactory outcomes of the sample interventions, it is of interest to compare and contrast the commonalities and differences between fully completed and partially completed transformations.

97. It is of interest to note that the five completed transformations all involved a fundamental change of a system, i.e., a comprehensive approach to modify the functioning of a collection of elements (legal, policy and regulatory reforms, knowledge transfer, technological innovations, capacity building, pilot investments) that interact with one another to affect the environment. All of these interventions established a demonstration-and-replication mechanism to trigger and scale up the supported activities and reforms. Finally, all of these cases were satisfactorily implemented and executed, and were also adequately supported by the policy and economic environment.

98. The most important distinction among these five completed transformations relates to the strategy for achieving financial sustainability. In three cases, financial sustainability was achieved by harnessing market forces to drive and expand the desired environment-friendly impacts. In the two remaining cases, financial sustainability was achieved by eliciting government budgetary allocations that continue funding the programs and activities established by the project.

99. The three GEF interventions that supported market transformations – *CRESP-I*, *UWEP* and *Lighting Africa* – all focused on renewable energy and had the following factors in common:

- (a) *Market-oriented objectives*: Their objectives all aimed at the removal of policy and regulatory barriers to the creation or acceleration of a national or regional-scale market for renewable energy.
- (b) *Private sector/market response*: They all succeeded in catalyzing a strong private sector investment response that ensured the long term sustainability and continued expansion of the markets and systems targeted by the interventions.
- (c) *Technological advancement*: They all encouraged and benefitted from technological improvements that reduced the cost and improved the quality of the equipment –

wind power systems and solar lamps – needed to competitively deliver energy services for which there was an effective demand.

100. These three interventions also differed in important ways that highlight alternative pathways to the achievement of market transformation:

- (a) *Government ownership and policy support:* *CRESP-I* and *UWEP* were fully owned by the governments which co-financed a major share – 81% for *CRESP-I* and 98% for *UWEP* – of project costs, and were helped to undertake a comprehensive system reform that mainstreamed renewable energy into their national energy policy and regulatory framework. *Lighting Africa*, conversely, did not involve any government funding, and demonstrated the viability of the market by creating demand, providing market intelligence, developing a quality assurance infrastructure, facilitating access to finance, and limiting government involvement to the removal of trade barriers.
- (b) *Civil society, community and donor partnerships:* For *Lighting Africa*, consumer associations, non-governmental organizations, microfinance institutions and other social sector partners played a key role in promoting consumer awareness of solar lamps. In addition, GEF funding was supplemented by important contributions from international donor partners. For *CRESP-I* and *UWEP*, in contrast, these factors did not play a significant role.
- (c) *Pre-investment activities and intervention size:* *CRESP* and *Lighting Africa* were major interventions involving about \$40 million and nearly \$8 million of GEF funding, respectively, in addition to extensive preparation activities, funded by GEF PPF grants. *UWEP*, on the other hand, was a Medium Size Project supported by a \$950 thousand GEF grant, with only a modest pre-project activity.

101. The two interventions that achieved financial sustainability through integration into government budgetary processes – *Sanjiang Wetlands* and *Uttarakhand SLEM* – both focused on the biodiversity and natural resource protection through the development and demonstration of sustainable livelihood approaches to improving the well-being of local communities. These were local-scale interventions characterized by having strong local government ownership and support, as evidenced by their willingness to adopt environment-friendly policies and natural resource management practices based on the results of project-supported pilots, and to continue funding and expanding the sustainable livelihood programs from their own budgets.

102. The three partially completed transformations all involved the conservation of natural resources and protection of biodiversity in environmentally sensitive or protected areas. Two of these – Namibia PAs and ARPA – supported system-wide changes on national-scale changes. The remaining case – Danube PES – demonstrated a market change in a few pilot areas. In all three cases, their long term sustainability continued to depend on donor funding at the time of project completion.

103. In light of the many permutations of commonalities and differences that characterized the interventions that supported fully completed transformations, a cross-case analysis, informed by the qualitative comparative analysis approach (QCA), was used to identify the necessary and sufficient conditions for their successful achievement. The cross-case analysis was undertaken based on the review's findings on key attributes associated with each sample case and their outcomes, as shown in Table 2. The cross-case analysis model and application is described in Annex III. The findings can be summarized as follows – distinguishing between climate change and biodiversity/resource conservation interventions, as appropriate:

- (a) Intervention Objectives:
 - Aiming at Market Change is a *necessary* condition for climate change interventions
 - Aiming at System Change is a *necessary* condition for biodiversity/resource conservation interventions (and optional for climate change interventions)
- (b) Transformational Mechanisms
 - Support for a Demonstration/Replication mechanism or a Catalytic Effect is a *necessary* condition for all types of intervention
 - Support for a Mainstreaming mechanism is optional for all types of intervention
- (c) Internal Conditions
 - A satisfactory or better Quality of Implementation is a *necessary* condition for all types of intervention
 - A satisfactory or better Quality of Execution is a *necessary* condition for all types of intervention
- (d) External Condition
 - A Supportive Economic or Market Environment is a *necessary* condition for all types of intervention

104. In addition, the following internal and external conditions should also be considered as necessary, albeit not absolutely so, as they were not met in every case:

- (a) Pre-intervention activities played an important role in four out of five cases
- (b) Strong Government Ownership played an important role in four out of five cases
- (c) A Supportive Policy Environment played an important role in four out of five cases
- (d) Local institutional capacity played an important role in three out of five cases
- (e) Private sector involvement played an important role in three out of five cases

105. Finally, a strong Private Sector Response was identified as a *sufficient* condition for achieving a fully complete transformation. However, this condition only emerged in the context of the climate change interventions. The biodiversity/natural resource conservation interventions did not appear to be able to take advantage of market forces to the extent needed to ensure their long term financial sustainability.

Lessons going forward

106. Based on the review of the eight sample cases' experience and the identification of necessary and sufficient conditions for the achievement of transformational changes, the following lessons emerge:

- (a) *The level of ambition is important:* The reviewed interventions each had ambitious objectives – explicit or implicit - in terms of aiming to trigger and support a deep, fundamental change in addressing a market distortion or systemic bottleneck that was a root cause for an environmental issue of global concern. The analysis found that aiming at market transformation is a necessary condition for climate change interventions, and aiming at system change is a necessary condition for biodiversity/resource conservation interventions. While, given the small size of the sample, no normative conclusions can be drawn, this finding is consistent with the logic that the more ambitious the aimed-for change, the greater the likelihood that it could be achieved, subject to the necessary conditions identified below.
- (b) *Supporting the establishment of effective transformational mechanisms is important:* All of the sample interventions created and helped establish a mechanism – mainstreaming, demonstration/replication and/or catalytic – to scale-up and expand the activities supported by the intervention. The analysis found that supporting the establishment of a demonstration/replication mechanism or a catalytic effect is a necessary condition for all types of interventions. On this basis, it can be concluded that the design and implementation of a transformational mechanism deserves careful attention from the early preparation stages of the intervention.
- (c) *The quality of implementation and execution are important:* All of the sample interventions were well implemented in terms of the quality of project design, supervision and assistance by the GEF agency, and the effectiveness of the executing agency in performing its roles and responsibilities. On this basis, the satisfactory quality of implementation and execution can be regarded as necessary conditions for the achievement of transformational change.
- (d) *Harnessing market forces is important:* Three of the four cases that primarily aimed at market changes had successfully elicited a strong private sector response that ensured the achievement of a deep, financially sustainable transformation. In fact, subject to alignment with project objectives, a strong private sector response was identified as a sufficient condition for achieving a fully completed transformation. This suggests that where there is an opportunity to harness market forces – by addressing the removal of barriers, encouraging sustainable supply and/or catalyzing potential demand – it deserves careful attention for the identification and design of an intervention.
- (e) *Size is not important:* Last, but not least, the eight sample cases illustrate how both relatively modest GEF Medium Sized Projects – such as *UWEP* and *Danube PES* – can be just as transformational as major, multi-phase investment projects – such as *CRESP* and *ARPA*.

Recommendation

107. The GEF should consider developing and applying a framework for ex-ante assessments of projects or programs that are intended to be transformational to enhance impacts. This paper has presented an example of a framework that could be applied.

ANNEX I: LIST OF CASES SELECTED FOR THE STUDY

Short Case Name	GEF ID	Project Title	GEF Agency	Focal Area	Size	Country	Year of CEO Approval/ Endorsement	Year of Project Completion	GEF PPG(s) (USD mln.)	GEF Grant (excluding PPGs) (USD mln.)	Cofinancing (USD mln.)
Lighting Africa	2950	Lighting the "Bottom of the Pyramid"	World Bank/IFC	CC	FSP	Ghana, Kenya	2007	2013*	.**	7.85*	14.09*
CRESP	943	Renewable Energy Scale Up Program (CRESP), Phase 1	World Bank	CC	FSP	China	2005	2012****	1.35	40.22	400.37
UWEP	2826	Uruguay Wind Energy Programme (UWEP)	UNDP	CC	MSP	Uruguay	2007	2011	.05	.95	53.78
Sanjiang Wetlands	1126	Sanjiang Plain Wetlands Protection Project	ADB	BD	FSP	China	2005	2013	.33	12.14	40.37
SLEM-U	3471	SLEM/CPP: Sustainable Land Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector	World Bank	MFA	FSP	India	2009	2013	.	7.49	106.89
Namibia-PAS	1590	Integrated Community-Based Ecosystem Management Project (ICEMA)	World Bank	MFA	FSP	Namibia	2004	2011	.295	7.1	24.35
Namibia-PAS	1505	Namib Coast Biodiversity Conservation and Management (NACOMA)	World Bank	BD	FSP	Namibia	2005	2012**	.335**	4.9**	23.84**
Namibia-PAS	4669	Namibian Coast Conservation and Management Project (NACOMA), Phase II	World Bank		FSP	Namibia	2012	2015**	.**	1.925**	5.87**
Namibia-PAS	2492	Strengthening the Protected Area Network (SPAN)	UNDP	BD	FSP	Namibia	2006	2012	.35	8.2	38.44
Namibia-PAS	3737	Namibia Protected Landscape Conservation Areas Initiative (NAM PLACE)	UNDP	BD	FSP	Namibia	2010	2016**	.1**	4.5**	16.24**
Namibia-PAS	4729	Strengthening the Capacity of the Protected Area System to Address New Management Challenges	UNDP	BD	FSP	Namibia	2013	2018***	.1**	4.**	14.5**
ARPA	771	Amazon Region Protected Areas Program (ARPA)	World Bank	BD	FSP	Brazil	2002	2008	.35	30.	55.38
Danube PES	2806	Promoting Payments for Environmental Services (PES) and Related Sustainable Financing Schemes in the Danube Basin	UNEP	BD	MSP	Bulgaria, Romania	2009	2014	.025	.96	2.94

Source: Unless stated otherwise, project dates and financial figures are based on the GEF IEO Annual Performance Report Dataset, May 2016.

* Source: World Bank (2015): World Bank Group Support for Electricity Access, FY2000-2014-An Independent Evaluation – Volume II: Together for Energy: How Partnership Programs Support Energy Access. Independent Evaluation Group. Washington, DC, 2015, Appendix A, pp. 70-71

** Source: GEF Project Management Information System (PMIS), retrieved on April 19, 2017

*** Source: UNDP (2016). Strengthening the Capacity of the Protected Area System to Address New Management Challenges. Project Implementation Review (PIR).

****Source: UNDP (2013). Uruguay Wind Energy Program (UWEP) – Final Evaluation by Humberto Rodriguez.

ANNEX II: TEMPLATE FOR REVIEW OF GEF TRANSFORMATIONAL INTERVENTIONS

A transformational intervention refers to a GEF-supported activity (a project, program, integrated approach pilot, or non-grant instrument) that supports the achievement of a deep, systemic, and sustainable change with large-scale impact in an area of global environmental concern.

Name of Transformational Intervention: _____

1. Transformational Intervention identification and rationale for review

1.1 Briefly identify and describe the GEF-supported activity or cluster of activities that were part of the proposed transformational intervention:

Intervention name/ GEF ID(s) *.	
Recipient Country(ies)	
GEF Grant size/other funding/sources	
Date of approval/closing	
Implementing agency	
Executing agency(ies)	
Other related (complementary/ predecessor/ follow-up) interventions	
Sources of evaluative information for this intervention	

*If a cluster of GEF-supported interventions jointly help achieve transformational change, list them together and answer the following questions with reference to the entire cluster of GEF interventions.

1.2 Rationale for inclusion in desk review sample: briefly explain why this intervention was selected for inclusion in the review sample, with reference to the following criteria:

Selection Criterion	Yes/No
Relevance: The intervention addressed a major driver of environmental degradation	
Depth of change: The intervention aimed to cause a fundamental change in a system or market identified as a root cause of an environmental concern	
Scale of change: The intervention caused a local, regional, national, or multi-country impact that changed the trajectory of an indicator relevant to a GEF focal area	
Sustainability: The intervention’s impact is financially, economically, and environmentally sustainable in the long term, following the conclusion of the GEF intervention(s).	
Evaluative Evidence: Evaluative information is available to document the above results and their linkage to GEF intervention(s).	

1.3 Relevance for GEF Focal Area

Focal area/Strategy/Initiative	Indicate the GEF Focal Area(s) which the intervention has addressed (<i>all that apply</i>)
Climate Change	
Biodiversity Conservation	
Chemicals and Waste	
Land Degradation (Desertification and Deforestation)	
International Waters	
Sustainable Forest Management	
Integrated Approach Pilots	

2. Ambition - Depth and Scale of aimed-for change

Identify the focus of the qualitative change the intervention(s) aimed to support, and rate depth and scale of the aimed-for change(s):

Type of change	Depth*	Explanation and key indicators (if available)	Scale**
Market focus ³⁴ (indicate the “market”)			
System focus ³⁵ (indicate the “system”)			
Other types of qualitative change			
*Depth: 1=No Significant change, 2=Modest change, 3=Major change, 4=Fundamental change, NA= not applicable, NOP=No Opinion Possible **Scale: 1=Local, 2=Regional, 3=Country-wide, 4=Multi-country			

³⁴ **Market change** – refers to market transformations that influence the supply and/or demand of goods and services in a significant way and contribute to global environmental benefits. Market change may be related to technological changes, policy and regulatory reforms, and financial instruments.

³⁵ **Systemic change** – a change in **underlying causes** of system performance that can bring about a better-functioning system. A ‘system’ is a collection of components (market/economy, public sector, private sector, community) that interact with one another to function as a whole (to increase or decrease pressure on the environment).

3. Transformational Mechanism

Discuss which of the following mechanisms/transmission channels were triggered and/or supported by the intervention(s) (*all that apply*) and rate their relative importance for driving the achievement of transformational change:

Mechanism/transmission channel	Rating*	Explanation and key indicators (if available)
Mainstreaming ³⁶		
Demonstration/Replication ³⁷		
Catalytic effects ³⁸		
Other types of transformational mechanism		
*Rating scale: 1=No significant role, 2=Minor role, 3=Major role, 4=Critical role, NOP=No Opinion Possible		

³⁶ **Mainstreaming** – when information, lessons, or specific aspects of a GEF intervention becomes part of a stakeholder’s own initiatives, such as laws, policies, regulations and programs.

³⁷ **Demonstration/replication** – interventions demonstrate the feasibility/viability of implementing a project/program, of a business model, an innovation, etc. to other market players. The intervention is then copied by other players (magnifying the direct impact of the intervention itself).

³⁸ **Catalytic effects** – externalities that go beyond the intervention. This may be related to synergies and complementarities among different instruments and interventions deployed. The contribution of the GEF partnership is larger than the sum of its interventions.

4. Internal Factors

Which factors under the control of (i.e., internal) to the GEF's implementing and executing agencies have had a positive or negative effect in enabling the success of the transformational intervention?

Implementing/Executing Agency Input	Explanation and key indicators (if available)	Rating*
Quality of implementation (quality of project design, supervision and assistance provided by GEF Agency)		
Quality of execution (effectiveness of executing agency in performing its roles and responsibilities)		
Pre-intervention activities		
Donor Partnership(s)		
Other internal factor(s) (explain)		
*Scale: 1=Negative effect, 2=No significant effect, 3=Modest positive effect, 4=Major positive effect, NOP=No Opinion Possible		

5. External Factors

Which factors outside the control of (i.e., external to) the GEF's implementing and executing agencies have had a positive or negative effect in enabling the success of the transformational intervention?

External factor	Explanation and key indicators (if available)	Rating*
Government ownership		
Local implementation capacity		
Policy environment		
NGO/Community participation		
Private sector participation		

Economic and market conditions		
Other external factor(s) (explain)		
*Scale: 1=Negative effect, 2=No significant effect, 3=Modest positive effect, 4=Major positive effect, NOP=No Opinion Possible		

6. Outcome – Depth and Scale

Discuss and rate the extent to which the aimed-for qualitative changes and the aimed-for scale of change were achieved.

Type of change	Depth*	Explanation and key indicators (if available)	Scale**
Market change (indicate the “market”)			
Systemic change (indicate the “system”)			
Other types of qualitative change			
*Depth: 1=No Significant change, 2=Modest change, 3=Major change, 4=Fundamental change, NA= not applicable, NOP=No Opinion Possible			
**Scale: 1=Local, 2=Regional, 3=Country-wide, 4=Multi-country			

7. Outcome - Sustainability

Discuss and rate the likelihood that the results of the GEF-supported intervention(s) will be sustained following the conclusion of the intervention(s).

	Rating*	Explanation and key indicators (if available)
Financial		
Economic		
Environmental		
Social/Political		

*Scale: 1=Unlikely, 2=Somewhat Unlikely, 3= Somewhat Likely, 4=Very Likely, NOP=No Opinion Possible

8. Emerging Conclusions

Reflecting upon your entries for questions 2 to 7, what were the main mechanisms and factors through which the GEF's interventions succeeded in supporting a transformational change? Identify and explain below, as applicable:

8.1: Internal factors and mechanisms under the control of GEF and its implementing and executing agencies:

8.2: External factors and mechanisms beyond the control of GEF and its implementing and executing agencies:

9. Results measurement

Discuss the extent to which the GEF's evaluation methodologies and systems sufficiently capture the results of the transformational interventions. Note shortcomings of the current M&E system and availability of evaluative evidence, and suggestions for better capturing the impacts.

10. Emerging Lessons

What lessons emerge about the main factors to be considered for a GEF-supported intervention to achieve a transformational impact? Consider issues related to the selection, design/structuring, and organization of this intervention. Which lessons can be drawn about the effectiveness of the different mechanisms/transmission channels used for triggering and supporting transformational changes? What lessons can we learn about different approaches, sequencing, and complementarities of instruments?

11. Questions for follow-up:

Please indicate the areas/questions where additional research, interviews and/or field visits would be desirable to deepen the understanding of the key enablers and constraints for the achievement of transformational changes, their attribution to GEF-supported interventions, and validate the emerging conclusions and lessons.

ANNEX III: NOTE ON THE CROSS-CASE ANALYSIS APPROACH INFORMED BY QCA

Introduction and Model Specification

The study used a cross-case analysis in combination with a meta-evaluation to assess the conditions and combinations of conditions that have contributed to transformational change. The cross-case analysis was informed by elements of the qualitative comparative analysis (QCA). The QCA is a theory-based approach for systematic cross-case comparison to draw causal inferences using Boolean algebra rather than conventional statistics³⁹. The QCA was used as an approach to inform the formulation of the theory of change and to refine criteria for the cross-case analysis. The QCA was also partially used as a data analysis technique.

As a first step, the study defined the criteria of “transformational change” and the theory of change of transformation based on the literature⁴⁰, presented in Chapter 1 of this report.

The theory of change provided a basis for specification of the cross-case analysis model to pursue the evaluative questions. As the next step, the template, shown in Annex II, was developed and specified questions for the case review.

Selection process

The GEF Agencies were invited to identify recently completed and evaluated interventions (projects, groups of projects, programs, non-grant instruments) in line with the criteria of the transformational change. There were 155 projects nominated: 93 by the World Bank, 45 by the United Nations Development Programme (UNDP), 14 by the United Nations Environment Programme (UNEP), 2 by the Food and Agriculture Organization of the United Nations (FAO), and 2 by the Asian Development Bank (ADB). This candidate list was screened for availability of terminal evaluations and highest outcome and sustainability ratings. Based on this screening, 49 projects grouped into 30 cases were selected for the first review round.

The study team reviewed evaluation reports of the selected projects on the key criteria: relevance, depth of change, scale of change, sustainability, as well as availability of evaluative information to document the transformational changes and their linkage to the GEF interventions. Based on this initial review, the study team selected 13 cases comprising of 29 projects for more in-depth review.

At this stage, the full list of questions, specified in the template was applied for review of transformational interventions. The team reviewed terminal evaluation reports, and other available evaluative information. As a result of this in-depth document review, 8 cases comprising of 13 projects were selected for the study. The cases were selected to represent a

³⁹ Befani, Barbara (2016), Op.cit.

⁴⁰ E.g. World Bank Group (2016), Op.cit.

diversity of GEF focal areas and responding GEF Agencies, with careful consideration to the availability and quality of evaluative evidence, particularly with respect to the scale, depth, and sustainability of the transformational changes.

Meta-evaluation

Given this sample of cases, the study team undertook a meta-evaluation based on a desk review of the final evaluation reports, and other evaluation documents prepared by IEO of the GEF and Independent Evaluation Offices of the GEF Agencies, including impact evaluations, country level evaluations, relevant thematic evaluations, project performance assessment reports, project performance evaluation reports (See Annex IV).

Data calibration for QCA

After a careful review of the meta-evaluation results, the ratings from the review template were translated into fuzzy-set scores for the analysis, ranging from “1” (full membership score, equivalent to rating of “4” in the template), to “0” (full non-membership score, equivalent to rating of “1” in the template). The cross-over point, where there is neither full membership nor full non-membership, was set at “0.5”. For example, if an intervention did not aim for market transformation, then its fuzzy-set membership score is “0”. If market transformation was a key focus in the design of an initiative, then its fuzzy-membership score for the market change ambition is “1”. The fuzzy set scores are presented in the table below.

Data analysis

The study used fsQCA3.0 software and a visual analysis to assess necessary and sufficient conditions for GEF interventions to achieve transformational change. The results were triangulated with in-depth review of cases.

Fuzzy set scores of transformational attributes and outcomes

Intervention	Ambition			Transformational Mechanism			Internal Factors				External Factors						Outcome						
	Market Focus	System Focus	Scale of Change	Mainstreaming	Demonstration - Replication	Catalytic Effects	Implementation Quality	Execution Quality	Pre-intervention Activities	Donor Partnerships	Government Ownership	Local Implementation Capacity	Policy Environment	CSO/Community Participation	Private Sector Participation	Economic/Market Conditions	Market Change	System Change	Scale of Change	Financial Sustainability	Environmental Sust.	Social/Political Sust.	Transformation Complete
Lighting Africa	1	0.75	1	0.25	1	1	1	0.75	1	1	0.25	0.25	0.25	1	1	1	1	0.75	1	1	1	1	1
CRESP-I	1	1	1	0.75	1	1	1	1	1	0.25	1	1	1	0.25	1	1	1	1	1	1	1	1	1
UWEP	1	0.75	1	0.75	0.75	1	1	1	0.25	0.25	1	0.25	1	0.25	1	1	1	1	1	1	1	1	1
Sanjiang Wet.	0	0.75	0.25	0.25	1	0.25	1	1	1	0.25	1	1	0.75	0.25	0	0.75	0.25	0.75	0.25	1	1	1	1
SLEM-U	0	0.75	0.25	0.25	0.75	0.25	0.75	1	1	0.25	1	1	1	1	0	0.75	0	0.75	0.25	1	1	1	1
Namibia PAS	0.25	1	1	0.75	0.75	0.25	1	1	0.75	1	1	1	1	1	0.25	0.75	0.25	0.75	1	0.25	1	1	0
ARPA-I	0	1	1	1	0.75	0.75	1	1	1	1	1	0.75	1	1	0.25	0.75	0	0.75	1	0.25	1	1	0
Danube PES	0.75	0.25	0.25	0.25	0.75	0.25	1	1	0.25	0.75	0.25	0.25	0.25	0.25	0	0	0.25	0.25	0.25	0.25	1	1	0

ANNEX IV: EVALUATIONS USED AND OTHER DOCUMENTS REVIEWED

Lighting Africa:

Castalia Strategic Advisors. 2014. Evaluation of Lighting Africa Program – Final Report. Report to International Finance Corporation.

Dalberg. 2011. Mid-Term Evaluation of IFC/World Bank Lighting Africa Project – Final Evaluation Report.

IFC (International Finance Corporation). 2013. Advisory Services Completion – Lighting Africa – Project ID 521198.

World Bank. Independent Evaluation Group. 2015. World Bank Group Support to Electricity Access, FY2000 - 2014 – An Independent Evaluation. Washington, DC.

World Bank. Independent Evaluation Group. 2015. World Bank Group Support to Electricity Access, FY2000 – 2014 – An Independent Evaluation – Volume II: Together for Energy: How Partnership Programs Support Energy Access. Washington, DC.

CRESP I:

World Bank. Independent Evaluation Group. 2014. ICR Review - Renewable Energy Scale-up Program (CRESP). Report Number: ICRR14359.

World Bank. 2012. Implementation Completion and Results Report (ICR) – The First Phase of the Renewable Energy Scale-Up Program and the Follow-Up to the First Phase of the China Renewable Energy Scale-Up Program. Report No: ICR00002077.

World Bank Group. Independent Evaluation Group. 2017. Project Performance Assessment Report: China – First Phase of the Renewable Energy Scale-Up Program and Follow-Up Project to the First Phase of the China Renewable Energy Scale-Up Program. Report in Preparation. Washington, DC.

UWEP:

UNDP (United Nations Development Programme). 2013. Uruguay Wind Energy Program (UWEP) – Final Evaluation, by Humberto Rodriguez. Montevideo.

UNDP. Independent Evaluation Office. 2015. Assessment of Development Results. Evaluation of UNDP Contribution: Uruguay.

Sanjiang Wetlands:

ADB (Asian Development Bank). 2013. People’s Republic of China: Sanjiang Plain Wetlands

Protection Project. Completion Report.

ADB. 2014. People's Republic of China: Sanjiang Plain Wetlands Protection Project. Validation Report.

ADB. Independent Evaluation. 2015. People's Republic of China: Sanjiang Plain Wetlands Protection Project. Performance Evaluation Report.

SLEM-U:

GEF IEO (Independent Evaluation Office of the Global Environment Facility). 2015. Sustainable Land Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector. Terminal Evaluation Review.

World Bank. 2014. Implementation Completion and Results Report – Uttarakhand Decentralized Watershed Development Project (Gramya I). Report No: ICR2216.

Namibia PAS:

GEF IEO. 2014. Namibia Overview – Unpublished Case Study by Brian Jones for the Impact Evaluation of the GEF Support to Protected Areas and Protected Area Systems.

GEF IEO. 2016. Impact Evaluation of GEF Support to Protected Areas and Protected Area Systems. Evaluation Report №104. Washington, DC.

UNDP. 2012. Strengthening the Protected Area Network. Final Evaluation - Final Report, by Oliver Chapeyama.

UNDP. 2014. Namibia Protected Landscape Conservation Areas Initiative (NAM-PLACE). Mid-Term Evaluation, Volume I.

World Bank. 2011. Implementation Completion and Results Report – Integrated Community-Based Ecosystem Management Project. Report No: ICR00002045.

World Bank. Independent Evaluation Group. 2012. ICR Review – Integrated Community-Based Ecosystem Management. Report Number: ICRR13805.

World Bank. 2016. Implementation Completion and Results Report – Namibian Coastal Conservation and Management Project. Report No: ICR00003819.

ARPA I:

Aligning Visions. 2009. Independent Evaluation of the ARPA Project. Amazon Region Protected Areas Phase 1: 2004 – 2008, by Paquita Bath, Aligning Visions.

Soares-Filho, Britaldo Silveira. 2016. Role of Amazon Protected Areas, Especially the

Conservation Units Supported by ARPA, in Reducing Deforestation. Rio de Janeiro: Funbio.

World Bank. 2004. Implementation Completion Report – Brazilian Biodiversity Fun Project – FUNBIO. Report No: 30189, Washington, DC.

World Bank. 2009. Implementation Completion and Results Report – Amazon Region Protected Areas Project, Report № ICR00001126. Washington, DC.

World Bank. 2009. Implementation Completion Report – National Biodiversity Project – PROBIO. Report No: 36542, Washington, DC.

Danube PES:

UNEP Evaluation Office. 2012. “Promoting Payments for Ecosystem Services (PES) and Related Sustainable Financing Scheme in the Danube Basin”. Mid-Term Review. Final Report by Nigel Varty.

UNEP. Evaluation Office. 2014. Terminal Evaluation of the Project “Promoting Payments for Ecosystem Services (PES) and Related Sustainable Financing Scheme in the Danube Basin”, by Vyara Stepanova.

Other Documents:

Befani, Barbara. 2016. Pathways to Change: Evaluating Development Interventions with Qualitative Comparative Analysis (QCA). EBA Report.

GEF. 2012. Time for Transformational Change: The Role of the GEF. Vision Statement by Dr. Naoko Ishii, Washington, DC.

GEF. 2013. GEF 2020: Strategy Paper for the Global Environment Facility, Washington, DC.

GEF. 2017. (Draft). GEF-7 Programming Directions Framework. January 13, 2017. Washington, DC.

World Bank Group. Independent Evaluation Group. 2016. Supporting Transformational Change for Poverty Reduction and Shared Prosperity – Lessons from the World Bank Experience. Learning Product. Washington, DC.