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Agenda Item 5

Annual Report on Impact

(Prepared by the GEF Evaluation Office)

Recommended Council Decision

The Council, having reviewed document GEF/ME/C.45/1, "*Annual Report on Impact"*, and document GEF/ME/C.45/2, "*Management Response to the Annual Report on Impact*," notes the considerable achievements of GEF support to Climate Change Mitigation in China, India, Mexico and Russia. It notes that in several projects progress toward impact was slowed down by barriers to change that were not fully included in project design and implementation. However, it is also noted that the current portfolio of mitigation support has shifted towards tackling broader adoption in a more comprehensive way in mitigation support in GEF-5. The Council requests the Secretariat to include this emphasis and where necessary further strengthen it in the proposals for GEF-6.

Furthermore, the Council requests STAP in collaboration with GEF entities to continue its work on the improvement of the methodology of GHG emission reduction calculations, and to propose a targeted research project on this issue, placing more emphasis on improving the assessment of direct GHG emission reduction during implementation and at project completion and to enable verification of indirect GHG emission reduction.

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EXECUTIVE SUMMARY

This 7th Annual Impact Report covers the period from October 1, 2012 to September 30, 2013 and is divided into two chapters. The first chapter consists of the findings and recommendations of the Climate Change Mitigation Impact Evaluation: GEF Support to Market Change in China, India, Mexico and Russia. The findings of this evaluation also provide a basis to further assess the impacts of GEF support to climate change mitigation at a global scale, which will be taken up in the final report of OPS5, to be presented to the third replenishment meeting for GEF-6 in December, 2013. The second chapter provides information on on-going work on impact in the Office.

In the Climate Change Mitigation focal area the GEF seeks to support efforts to change markets to reduce GHG emissions of developing countries and countries with economies in transition. Major emerging market economies are especially important in terms of their climate change mitigation potential. These countries cover 40% of the global population. The evaluation focuses on the impact of completed GEF climate mitigation projects in four large emerging markets: China, India, Mexico and Russia and aimed to identify the GEF contributions to GHG emission reduction, the progress made in changing markets and the factors affecting these processes. The basis for this evaluation consists of 18 completed and fully evaluated GEF mitigation projects in China, India, Mexico and Russia. The following conclusions were reached:

1) 16 of the 18 projects assessed have resulted in significant direct GHG emission reduction of around 6 million tons of CO_2 equivalent per year. Indirect GHG emission reduction, achieved through causal links from the projects to other activities, is estimated at 10 times higher than the direct emission reduction, but could not be verified.

2) Broader adoption of technologies, approaches and strategies tested by GEF projects was observed in 17 cases and they included pathways of broader adoption identified in the GEF Theory of Change Framework.

3) Projects demonstrating high progress towards impact are those which have adopted comprehensive approaches to address market barriers and specifically targeted supportive policy frameworks.

4) Expert and stakeholder opinions on counterfactuals indicate that GEF support initiated processes toward impact in 8 projects, and that in 7 projects GEF support speeded up existing processes, whereas in 2 projects GEF's support ensured that existing processes were improved to reach international standards.

5) The methodology to measure GHG emissions and to calculate ex-post emissions reduction at project completion is not robust and contains uncertainties.

The evaluation leads to the following recommendations:

1) The current focus on interventions that tackle barriers to broader adoption in a comprehensive way should be continued and where necessary further strengthened in GEF-6.

2) The measurement of GHG emission reduction, both direct and indirect, needs to be further improved. STAP should be requested to formulate a targeted research project to ensure that over time assessments of direct and indirect GHG emission reductions can be verified.

OVERVIEW OF IMPACT EVALUATION WORK IN 2013

1. This 7th Annual Impact Report covers the period from October 1, 2012 to September 30, 2013 and is divided into two chapters. The first chapter consists of the findings and recommendations of the Climate Change Mitigation Impact Evaluation: GEF Support to Market Change in China, India, Mexico and Russia. The findings of this evaluation also provide a basis to further assess the impacts of GEF support to climate change mitigation at a global scale, which will be taken up in the final report of OPS5, to be presented to the third replenishment meeting for GEF-6 in December, 2013.

2. The second chapter reports on other activities carried out by the Evaluation Office with reference to impact evaluation for the reporting period. Included is the progress made in the biodiversity impact evaluation of GEF support to protected areas. Not included in this chapter is the substantive work that the impact evaluation team has carried out and is now finalizing to report on progress toward impact of the full portfolio of the GEF. The first report of OPS5 provided preliminary findings in this regard and the final report will contain the further analysis undertaken. Furthermore, a technical document of OPS5 will provide the detailed analysis, including methodological considerations. Both the final report and the technical document are expected to be published in November 2013.

3. The Evaluation Office has also continued to test new evaluation methods and to generate knowledge to improve evaluation tools and methods by participating in workshops of experts, publications, web blogs and videos. It continues to participate in the United Nations Evaluation Group (UNEG) impact evaluation task force and in the Evaluation Cooperation Group (ECG) of the International Financial Institutions.

CHAPTER 1: CLIMATE CHANGE MITIGATION IMPACT EVALUATION: GEF SUPPORT TO MARKET CHANGE IN CHINA, INDIA, MEXICO AND RUSSIA

Background

4. Through its climate change focal area projects the GEF seeks to support efforts to reduce GHG emissions of developing countries and countries with economies in transition. Major emerging market economies are especially important in terms of their climate change mitigation potential. These countries cover 40% of the global population. Most of them are showing rising overall emission trends and have received a large share of the GEF funding in the past.

5. The evaluation focuses on the impact of completed GEF climate mitigation projects in four large emerging markets: China, India, Mexico and Russia. More specifically the impact evaluation has pursued following key questions:

- What have been the GEF contributions to GHG emission reduction and avoidance?

- What has been the progress made by GEF supported activities towards transforming markets for climate change mitigation?

- What are the impact pathways and factors affecting further progress towards market transformation?

6. The basis for this evaluation consists of 18 completed and fully evaluated GEF mitigation projects in India, Mexico and Russia. These projects were completed at the start of the study. They originate from earlier GEF periods up to GEF-3. To round off the picture, a selection of completed projects from China was included in the sample. The projects are listed in the full report. They cover various sectors with opportunities for renewable energy, energy efficiency and methane emission reductions, as is illustrated in Table 1.

Table 1 - Number of projects in countries and technologies/markets

	China	India	Mexico	Russia
renewables / wind	2	1	1	0
renewables / biomass or methane	0	2	1	0
renewables / solar	2	1	1	0
renewables / hydro	0	2	0	0
energy efficiency / all	0	1	0	1
energy efficiency / industry	1	0	0	0
energy efficiency / lighting	0	0	1	0
energy efficiency / buildings	0	0	0	2
transportation	2	0	1	0
Total number of projects	5	6	5	2

Note: some projects covered more than one technology, so columns add up to more than the total number of projects

7. Many projects in these countries have started in early stages of the GEF and have been completed and fully evaluated by now. As a significant number of these projects have been terminated several years ago, these projects offer an opportunity to observe post-project impacts and impact pathways. As the GEF portfolio in most of these countries span several sectors and fields of operations, the sample can be used to identify cross-country and cross-sectoral findings.

8. The evaluation included desk reviews of completed projects as well as extensive country work to assess progress towards impact since project completion as well as the relevant contextual country and global factors affecting the markets under consideration. The field work for the study took place between August 2012 and January 2013.

9. The conclusions refer mainly to large countries with emerging markets and specifically to the countries included in the review. Extrapolation of the findings beyond emerging markets would require additional triangulation. The evaluation findings are

nevertheless important to GEF given the large contributions of emerging markets to GHG emissions.

Conclusions

Conclusion 1: 16 of the 18 projects assessed have resulted in significant direct GHG emission reduction of around 6 million tons of CO_2 equivalent per year. Indirect GHG emission reduction, achieved through causal links from the projects to other activities, is estimated at 10 times higher than the direct emission reduction, but could not be verified.

10. Projects had significant direct greenhouse gas emission (GHG) reduction impact. Together the projects are avoiding around 6 million tons of carbon dioxide equivalent per year. Relative to the magnitude of the challenge of stabilizing the global atmosphere and even measured against the overall emissions of the emerging economies, all direct GHG impacts are very small.

11. However, most projects did not achieve the levels of direct GHG emissions reduction expected at project approval. Of the 16 projects that did achieve GHG emission reductions, 3 overachieved their targets (all in China) and 13 did not reach them.

12. The GHG impacts were dominated by a single project, the China TVE II (GEF #622), which alone contributed a third of the emission reductions. This project was characterized by a number of supporting factors and constellations, but also approached a unique GHG-savings opportunity: the carbon-intensive and inefficient production of construction material in heavily populated rural areas. Due to its uniqueness, the project cannot be seen as representative for GEF operations.

13. The more representative projects show a large range of GHG impacts, covering several orders of magnitude. The determining factors for the ultimate scale of the direct GHG impact are the combination of market size and specific mitigation impact of the technology, the project approach and the emission factor of the country. Other times project GHG emission objectives were not achieved because they were overambitious to start with. The lack of a standardized accounting methodology to establish targets and measure results was also a factor.

14. The analysis of indirect GHG emission reduction impacts – impacts of country follow-up activities that have a causal link to the project activities but are not part of the project – has identified such impacts for 14 projects. The sum of the indirect GHG impacts is around 10 times the sum of direct impacts. Project design and delineation has had major impact on whether GHG impacts are counted as direct or indirect. For example, in the original project design of the TVE II, the replications would have been counted as indirect impacts. Through an approved change in the project design (i.e. the inclusion of a replication mechanism) these were converted into direct impacts, thus reducing the indirect impacts but enlarging the direct impacts.

15. Generally, for the indirect impacts, two different country contexts were typical: One group of projects, the demonstration projects, provided opportunities for learning about technologies. They include the India Coal Bed Methane (GEF #325), the Mexico Landfill Gas Projects (GEF #784) and the Mexico Bus Rapid Transit project (GEF #1155). Some of these projects, like the Mexico Efficient Lighting project (GEF #575) or the China TVE II (GEF #622), were able to transform significant market segments and achieve large scale impact. Others were not reaching far beyond the proof-of-concept stage (e.g. the India Coal Bed Methane project (GEF #325)). The second group are those projects, where GEF projects help channel and support a local push for sustainable energy, like the China RESP (GEF #943) and REDP (GEF #446). Thus, although the former approach is more risky both approaches can achieve large-scale impacts, as long as local preconditions are suited. The most successful project in the sample in terms of GHG impact (the China TVE II (GEF #622)) combines aspects of both approaches.

16. In addition to the GHG emission reductions, significant positive economic development impacts, job impacts, local benefits and a general awareness for the importance of climate change mitigation and energy savings has been achieved. These have been significant, although there are indications that some of the projects may also have had disadvantageous effects for some people.

Conclusion 2: Broader adoption of technologies, approaches and strategies tested by GEF projects was observed in 17 cases and they included pathways of broader adoption identified in the GEF Theory of Change Framework.

17. In previous studies as well as in the GEF Generic Theory of Change, the GEF Evaluation Office has identified five pathways for broader impact of GEF projects. All five could be traced and analyzed in this evaluation.

18. **Sustaining the outcomes and benefits of GEF investment was achieved in 13 cases**. Sustaining takes place when technologies/approaches originally supported through GEF continue to be implemented beyond actual project duration through clear budget allocations, implementing structures and institutional frameworks defined by the government and/or other project stakeholders. Most projects had technologies or approaches that were sustained. The exceptions were one of the two projects that did not include any investment (Mexico Wind (GEF #1284)) and the three projects that were first proofs-of-concept in a country (Russia Boilers (GEF #292) and China Fuel Cell Buses I and II (GEF #941 and GEF #2257). On the India Energy Efficiency (GEF #404) insufficient information on the sustaining of the individual investments could be gathered. However, as the investments were relatively small compared to the size of the challenge, and compared to the size of the emerging markets, the resulting impacts of sustaining them were also relatively small.

19. **Broader adoption trough mainstreaming was observed in many GEF projects.** Mainstreaming takes place when information, lessons, or specific results of GEF are incorporated into broader stakeholder mandates and initiatives such as laws, policies, regulations, programs. This may occur not only through governments but also in development organizations and other sectors. As mainstreaming covers a variety of

impacts of GEF projects, not all of these dimensions could be quantified in the evaluation. One form of mainstreaming taking place through energy-specific policies, a variety of such types of mainstreaming has also taken place. These include institutions that have enhanced their capacities to become knowledge centers (e.g. the Mexican Agricultural Fund FIRCO or several institutions in India). Capacity building with public institutions has taken place in 16 projects. The private sector, too, has benefited from capacity building in 12 projects. In addition, four projects have resulted in non-energy-specific policies that support climate mitigation in the fields of waste management and public transit but also in areas like rural development.

Table 2: Summary of pathways to broader impact

Country	GEF ID	Short name	Impact rating	Sustaining	Replication	Scaling-up	Market change			
							Product quality	More and better suppliers	More demand	Cost reduction
Mexico	575	Ilumex	High	x	x	x	x	x	x	x
Mexico	1155	BRT	High	x	x	x	x	x		
China	446	CREDP	High	x	x	x	x	x		x
China	622	TVE II	High	x	x	x			x	
China	943	CRESP	High	x	x	x	x	x		x
India	325	CBM	Significant	x	x				x	
India	370	Biomethanation	Significant	x	x				x	x
India	386	Hilly Hydel	Significant	x	x	x	x	x	x	x
Mexico	784	Landfill gas	Significant	x	x	x				
India	76	Alternate Energy	Significant	x	x	x		x		x
India	112	PVMTI	Moderate	x	x	x	x	x		
Mexico	643	Agriculture	Moderate	x	x		x	x	x	
India	404	Energy Efficiency	Moderate		x				x	
Russia	1646	Education	Moderate	x	x					
China	941	FCB I	Unable to assess		x					
China	2257	FCB II	Unable to assess							
Russia	292	Boilers	Low to negligible							
Mexico	1284	Wind	Low to negligible							

Note: projects sorted top to bottom on impact ratings

20. **Replication of the technologies and approaches tested by GEF projects was observed to be taking place in relation to 15 projects.** Replication takes place when GEF-supported initiatives are reproduced or adopted at a comparable administrative or ecological scale, often in another geographical area or region. All projects that ultimately claimed large GHG impacts had replication factored in as a concern in their project design. Vice versa, if replication had been a concern in the project design, some

replication activity did take place during or after the project, if the project succeeded with its core tasks. Some projects, most notably the China TVE II (GEF #622) project, included an active replication component as an approved change after the project approval. This component in itself has been sustained after the project, ensuring that the project had not only very large direct GHG emission reduction impacts but also continued promoting industrial energy efficiency after project closure. 9 projects were experiencing replication through the private sector. These were all supported by national institutions, strategies or policies. 8 projects encountered replication through further ODA activities (GEF and non-GEF) or national budgetary support. 3 public-service oriented projects were replicated in the public sector. For 3 projects this evaluation did not link any replication to the project.

21. **Broader adoption through scaling-up was observed related to 10 projects.** Scaling up took place when, in addition to replication, broader adoption included dimensions that went beyond those initially introduced by the project. Scaling- up includes cases where GEF-supported initiatives are implemented at larger geographical scale or are expanded to include new aspects or concerns that may be political, economic, administrative or ecological in nature. In 5 projects no evidence of scaling-up was found. In 3 projects technologies or approaches for climate mitigation promoted by GEF projects were scaled up, but with no causal links to the projects (India Energy Efficiency (GEF #404), Mexico Wind (GEF #1284), Russia Boilers (GEF #292). In 10 cases evidence of scaling up of the approaches and technologies promoted by GEF projects was causally linked to the project. Where causal links could be established, they were often rooted in the capacity building activities of the projects (e.g. India Alternate Energy (GEF #76), China RESP (GEF #943), Russia Education (GEF #1646)). An interesting avenue for this was capacity building with the private sector (e.g. India Hilly Hydel (GEF #386), China REDP (GEF #446)). The four countries also played a role as regional leaders. For example: for three of the Mexican projects (Landfills (GEF #784), BRT (GEF #1155), Ilumex (GEF #575)) replication was identified with significant scale-up effects in other Latin American countries. The most important aspects for significant broader adoption through scaling up of technologies were government policies and the establishment of standards. Six projects led to government policies including renewable energy or energy efficiency and a causal link for these changes was established to the GEF projects in the evaluation. It was also found that higher levels of scale decreased attribution of causality to GEF projects as the influence of other factors and actors becomes more prominent.

22. **Broader adoption through market change was observed in relation to 13 projects.** Market change is an important pathway for broader impact. Its extreme case – market transformation – was observed in one project. The Mexico Ilumex project (GEF #575), initiated in the early 1990s, has significantly contributed to compact fluorescent light bulbs ("energy savings lamps") completely substituting the old technology: incandescent light bulbs are outlawed as of December 2003 in Mexico.

23. Market changes were found to include one or more of four different dimensions each: improved product quality; more and better suppliers; more demand; and long-term cost reduction. Each of these four dimensions also responded to different barriers.

24. Products and technologies were improved qualitatively in 8 projects and their costs sank in 7 projects. Yet in some cases even highly cost-effective technologies were difficult to introduce into the markets. Quality enhancement of local products has been observed to assist broader diffusion in several projects, but the adoption of new technologies was difficult in at least three projects when safety concerns could not be mitigated (even for technologies that were used in other geographic contexts like autonomous boilers in multistoried buildings). Introducing technical standards, enhancing the number and technical capacities of the supply chain, local production and bulk sales were assisted by global market development for sustainable energy technologies and led to reduced costs.

25. Other observations of market change related to the stakeholders in the market: suppliers and customers. Overall, in 17 different markets, GEF projects made specific efforts to improve the capabilities of businesses that provided hardware or services to the climate-friendly technologies, and in 14 markets (12 projects) this contributed to market change. In the China REDP (GEF #446) and RESP (GEF #943), a GEF financial incentive was contingent on manufacturing quality, instigating that Chinese manufacturers had to adhere to international standards. As the GEF was the only project that focused on the quality aspect, it has contributed to the current situation where Chinese manufacturers export renewable energy equipment to many other countries, including OECD countries.

26. On the side of the customers, however, where almost all projects had identified significant barriers to the adoption of the technologies at project outset, and most projects were able to reduce these barriers, of the 18 projects only 8 were able to raise demand significantly, so that a stable market pull could develop. This already includes projects with continued support through ongoing government subsidies (as in the case of Mexico Agriculture (GEF #643) and Ilumex (GEF #575)) or other projects. This indicates that market change on the demand side as well as complete market transformation were processes that are considerably longer than the implementation period of a GEF project. The market transformation in the Ilumex case took more than 15 years. Most projects were implemented over a very long time.

27. Financing was one of the major barriers at the beginning in 14 projects. Mostly, new technologies are more expensive than established technologies, and not established enough to secure bank loans. Apart from financing demonstration installations in 13 of the 18 projects, 11 projects included specific financing components, providing subsidies, bank loans or investment guarantees. Many of these mechanisms as well as some of the technical assistance and capacity building support helped facilitate financing through banks, e.g. by helping prepare bankable project documents or providing partial loans that reduced the loan sizes for the bank loans.

Conclusion 3: Projects demonstrating high progress towards impact are those which have adopted comprehensive approaches to address market barriers and specifically targeted supportive policy frameworks.

28. As indicated in table 2, the five projects that demonstrated the highest progress towards impact have worked through multiple pathways towards impact and also tended to include the most mechanisms for market change. All projects with a "High" progress-to-impact rating have supportive policy frameworks. Broad impact through national level support policies was observed in many projects. Stated national targets did not suffice to ensure broader adoption of a technology. In all 9 projects where private sector replication was observed this was supported by national institutions, strategies or policies. In 6 projects national support policies were causally linked to the GEF support indicating that GEF support was able to influence key contextual policy conditions that favored broader adoption of technologies and market change. And some cases in which subsidies were critical, they were continued by the national government after GEF support had ended (e.g. China Renewable Energy (GEF #446), Mexico Agriculture (GEF #643)). In some projects such as China TVE II (GEF #622) co-evolution of technical standards, market development and technology development were included and the project was able to reach significant impact with that strategy. In 5 projects, similar developments were linked directly to GEF support. Often non-energy-specific legislation (safety standards, grid regulations, tariffs etc.) posed a barrier for broader adoption, and these were in some projects successfully removed (e.g. Mexico Landfill (GEF #784), whereas in other cases they were responsible for a lack of sustaining of project results: e.g. Russia Boilers (GEF #292); China FCB (GEF #943).

29. Many projects used local agencies as implementation hubs and were in a number of cases able to strengthen their role as local champions and knowledge centers. For example, the Agricultural Fund FIRCO in Mexico is now nationally recognized as an important source of information on renewable energy. The China TVE II project resulted in the creation of a technology advisory service company that continues with the support to industrial companies in energy efficiency efforts. The Indian Biomethanation and CBM projects were working with research and sector specific institutions that had good access and good credibility with the industrial enterprises that were expected to use these technologies.

30. Of particular importance for broad impact are the pathways of scaling-up and market change. These are able to leverage the most pervasive broader impacts. Mainstreaming, when enabling national policies also proved to be fundamental to broader adoption. Market change in particular has been achieved through working with the suppliers of technologies, improving product quality and lowering costs. Several markets – for renewable energy technologies and energy savings technologies – were thus significantly changed. In many cases the GEF contribution to this change was significant, although in a few cases the markets changed without traceable impact of the GEF.

Conclusion 4: Expert and stakeholder opinions on counterfactuals indicate that GEF support initiated processes toward impact in 8 projects, and that in 7 projects GEF support speeded up existing processes, whereas in 2 projects GEF's support ensured that existing processes were improved to reach international standards.

31. The evaluation established that GEF has contributed to the progress made by confirming the causal links between GEF support and the observed impacts and broader adoption. But impact and progress to broader adoption cannot be attributed to GEF alone. In most cases after GEF projects ended, broader adoption was continued, largely supported by country government and by private sector agents. Overall, the last fifteen years are showing a global trend towards more energy efficiency and more systematic use of renewable energies. The efforts of the GEF went hand in hand with this global trend, and the efforts of many other agents. In consequence, the distinction of the effects between the GEF projects and other activities or factors is somewhat blurred. This makes it harder to answer the counterfactual question: what would have happened without GEF support?

Table 3. The role of the GEF: counterfactual analysis

How likely is it that the activity would have taken place without the GEF?			**..but slower**		**…but not at international standards**	
Very unlikely	2	Mexico: BRT (GEF #1155), Agriculture (GEF #643)				
Not likely	6	India: Energy Efficiency (GEF #404), CBM (GEF #325), Biomethanation (GEF #370), PVMTI (GEF #112) Mexico: Ilumex (GEF #575), Wind (GEF #1284)				
Likely	5	China: FCB I+II (GEF #941 and GEF #2257), RESP (GEF #943) Mexico: Landfill gas (GEF #784) Russia: Education (GEF #1646)	4	China: FCB I+II (GEF #941 and GEF #2257), RESP (GEF #943) Mexico: Landfill gas (GEF #784)	2	China: RESP (GEF #943) Russia: Education (GEF #1646)
Very likely	4	India: Alternate Energy (GEF #76) China: TVE II (GEF #622), REDP (GEF #446) Russia: Boilers (GEF #292)	3	India: Alternate Energy (GEF #76) China: TVE II (GEF #622), REDP (GEF #446)		
N.N.	1	India: Hilly Hydel (GEF #386)				

Table 4 - What can be attributed to the GEF

Role	**Number of projects**
Catalytic: without GEF activities would not have started	8
GEF has speeded up existing progress toward impact	7
GEF has enhanced quality of the progress toward impact	2

Note: "Very unlikely" and "Not Likely" have been combined as catalytic role of the GEF

32. The markets targeted by GEF projects are unique and randomized studies are not possible. Therefore this question was addressed by posing it to diverse stakeholders and experts who were familiar with the GEF projects and with the projects' broader contextual conditions and by cross referencing these perspectives with other evidence obtained during evaluations. For 4 cases, stakeholders were of the opinion that the projects would have taken place without the GEF. In 5 cases, they felt that events would probably have taken place in any case. Nevertheless, in 7 of these 9 cases, stakeholders confirmed that the GEF's role was to significantly accelerate the movement towards more sustainable use and provision of energy. In 2 of these 9 cases, the change would have happened with less emphasis on quality due to a lack of international involvement. So, out of the 9 cases where the country stakeholders felt that change would have taken place without GEF support, in 6 cases GEF was found to have contributed to the process. In 8 other cases, stakeholder and expert opinions were that without the GEF the activities would not have taken place. In these cases, GEF can be attributed with "causing" the change (Tables 3 and 4).

33. There are multiple forms by which GEF impact took place. GEF projects resulted in actual emission reductions and thus had direct, but relatively small effect in reducing stress on global climate. Most significant and relevant to GEF's mandate was the GEF support to countries to speed up and improve the quality of approaches to change emissions behavior, support the adoption of new technologies and change markets to more sustainable forms of energy.

Conclusion 5: The methodology to measure GHG emissions and to calculate ex-post emissions reduction at project completion is not robust and contains uncertainties.

34. Partially to blame for the fact that most projects did not demonstrate the GHG impacts that were envisioned at project outset is the lack of a standardized GHG accounting methodology in the early years of the GEF. In 2008, a methodology was officially announced and it has been used in projects that have been CEO endorsed at least since then. This evaluation has not included enough of such projects, so that it is uncertain to what degree the M&E findings presented here are applicable to the projects approved since 2008.

35. The GHG accounting results for the 18 projects included in the evaluation are briefly reviewed with respect to the influence of the accounting methodology (or lack thereof). The methodology defines clear rules for GHG impact assessment based on project log frames. At least one of the projects (Mexico City Bus Rapid Transit Corridor; GEF #1155) would not have achieved any direct emission reduction impact under the stricter terms of the methodology, as the investment in itself was not part of the project, and the impacts were not counted towards the direct impacts of the project even though these would not have been feasible without the project. So, while the methodology has the benefit of clarifying the attribution of GHG impacts to project activities, the results of this attribution rule are sometimes counter-intuitive and depend on wording in the project document.

36. In several other ways, the methodology to measure results did not prove robust. Typical challenges were:

- GEF outcomes were difficult and/or expensive to measure or monitor (for example the exact energy production or utilization).
- Key parameters of the methodology, such as the national grid emission factors, have changed over time, and
- Calculations needed to make uncertain assumptions about the future such as the likely benefit period.

37. The last point alone can potentially influence the results for cumulative and indirect GHG emission reductions by orders of magnitude. The 2008 methodology has taken steps to improve this by introducing the use of benchmarks and other criteria applicable to specific types of interventions, but has not removed uncertainties when assessing completed projects. The other two sources of errors cannot be fully eliminated as long as a methodology for GHG emission accounting is required and resources for measuring and validation are limited. It needs to be kept in mind that the methodology has been designed for planning purposes, and includes assumptions about the future that might change rapidly, due to factors internal or external to the project, so that an ex-post assessment is almost bound to lead to different results, in some cases widely different. The current methodology also lacks provisions for ex-post verification.

Recommendations

Recommendation 1: The current focus on interventions that tackle barriers to broader adoption in a comprehensive way should be continued and where necessary further strengthened in GEF-6.

38. Although many of the projects demonstrated a series of activities designed to introduce new technologies, demonstrate effectiveness and tackle barriers to further adoption of these technologies, in several cases barriers were analyzed and recognized but not specifically targeted in the projects. As a result, progress toward impact was halted or was slow. Not all barriers may be within the span of control of a project, but certainly projects could take initiatives that would put these barriers on political and/or economic agenda's, or make stakeholders aware that these barriers exist. The Evaluation Office found earlier in its Focal Area Strategy work for the first report of OPS5 that a shift towards tackling broader adoption in a more comprehensive way is visible in project concepts for GEF-5.[1] This is a promising development that should continue in GEF-6.

39. Where possible this could be further strengthened by looking at design and implementation issues from the perspective of breaking down barriers and promoting broader adoption as identified in OPS5; a detailed analysis will be provided in the final report of OPS5. More sophisticated tools have become available, such as the diagnostic

[1] Technical Document 3 of OPS5: Implementation of Focal Area Strategies and Trends in Focal Area Achievements. Downloadable from http://www.thegef.org/gef/OPS5.

tool for analysis of barriers as developed by the community of practice "Climate-Eval" (see www.climate-eval.org), that can be used to identify whether a project is taking all barriers into account and setting activities in motion that could potentially ensure that these barriers are removed over time.

40. Ensuring a quicker progress toward impact is in the final analysis more important than somewhat illusive perspectives on high promised levels of indirect impact. A high level of expected indirect impact is after all an indicator of what market change or transformation may achieve, but it is the market change or transformation that should be the focus of the intervention. It is thus essential that the focus of the interventions on removing barriers through mainstreaming, replication and up-scaling to lead to market change and/or transformation – already amply demonstrated in the projects that were evaluated – is continued in GEF-6 and where possible further strengthened.

Recommendation 2: the measurement of GHG emission reduction, both direct and indirect, needs to be further improved. STAP should be requested to formulate a targeted research project to ensure that over time assessments of direct and indirect GHG emission reductions can be verified.

41. STAP has provided advice on GHG emission reduction measurement and analysis. The Secretariat has adopted new standards since the projects included in this evaluation were designed, yet uncertainties remain especially when reporting on indirect GHG emission reduction. The levels of direct reduction are impressive in themselves and to be applauded, but are potentially increased tenfold through indirect GHG emission reduction, which at the moment cannot be verified as too many assumptions and uncertainties are involved. STAP and the Secretariat should continue to work at adapting methodology to solve uncertainties, make methodologies more suitable for ex post evaluation, include verification instruments and also become more sensitive to the contextual challenges that are identified in the full report of this evaluation.

CHAPTER 2: PROGRESS ON OTHER IMPACT-RELATED WORK

Progress on Impact Evaluation of GEF Support to Biodiversity

42. GEF serves as a financial mechanism for implementing guidance from the United Nations Convention on Biological Diversity. In this capacity, it has funded more than 900 projects in over 150 countries and provided support to over 1800 protected areas through 251 projects since 1991. The Evaluation Offices of the GEF and UNDP are undertaking a joint impact evaluation of GEF support for biodiversity, assessing impact from an environmental as well as socioeconomic perspective. The intent is assess the extent to which existing strategies, programs and interventions have been able to enhance species and habitat protection and restoration, while securing livelihoods, good health, and resilience for poor people. Given the structure and maturity of the GEF biodiversity portfolio, the evaluation will focus on the contribution of GEF support to the protection of biodiversity through protected areas, also examining how projects have mainstreamed

into landscape management frameworks. The approach paper of the evaluation was approved by the Director of GEF EO and the director of UNDP EO in June 2013.

43. From the GEF perspective, this impact evaluation fits within an ongoing set of impact evaluations covering each of its focal areas. Its first phase will provide an important set of findings for the 5th Overall Performance Study of the GEF. For UNDP this constitutes the first in a set of impact evaluations of UNDP programming, and builds on the findings and conclusions of a recent thematic evaluation focused on the nexus of poverty and environmental issues in UNDP's support to countries. The bulk of UNDP's biodiversity portfolio has been implemented through GEF support.

44. The evaluation addresses the following main questions:

- What have been the impacts and contributions of GEF and/or UNDP support (positive or negative, intended or unintended) in biodiversity conservation in protected areas and their immediately adjacent landscapes?
- What have been the contributions of GEF and/or UNDP support to the broader adoption of biodiversity management measures at the country level through protected areas and protected area systems, and what are the key factors at play?
- Which GEF-supported approaches and contextual conditions, especially those affecting human well-being, are most significant in enabling and hindering the achievement of biodiversity management objectives in protected areas and their immediately adjacent landscapes?

45. The evaluation is composed of two phases. The first phase, which is currently drawing to a close, has focused on assessing biodiversity parameters before and after GEF support took place. This includes an assessment of the chains of causality between the objectives and outcomes of GEF projects and changes in biodiversity parameters in specific protected areas. Findings from this phase will be included in the final OPS5 report that will be presented to the third GEF Replenishment Meeting in December 2013. This evaluation is taking place in collaboration with the World Commission on Protected Areas and the Species Survival Commission (WCPA-SSC) of IUCN Joint Task Force who are providing the evaluation access to the most complete global datasets of species population time series in protected areas and Management Effectiveness Tracking Tools (METTs).

46. Building on specific issues and methodological frameworks developed in Phase 1, Phase 2 will include an in-depth analysis of the factors and conditions contributing to impact, particularly focusing on the assessment of the factors enabling biodiversity conservation and sustainable livelihoods to be mutually reinforcing. This phase will also identify areas of mutual benefit, trade-offs and losses for biodiversity conservation and human welfare, and examine the factors that contribute to these different scenarios. The status and impact of alternative livelihoods supported by GEF and/or UNDP projects will

be given particular attention. During this phase the evaluation will also further assess the extent to which biodiversity outcomes at the local scale may be attributed to GEF support through the identification of counterfactuals. It will further refine the assessment of impact by comparing different strategies for community engagement, and also comparing against sites that have not received GEF support. The findings of this evaluation relevant to the GEF will be presented at the GEF Council Meeting in November 2014 by the GEF Evaluation Office, and the findings relevant for UNDP will be presented at the UNDP Executive Board Meeting in January 2015 by the Evaluation Office of UNDP.

Assessment of Arrangements to Measure Environmental Impact at Project Completion

47. Evaluating the impact of GEF support to a large extent relies on the availability of data that allows the measurement of changes in the environment. However, as evidenced by several field visits, data are often not collected or compiled in a way that makes them accessible for use and analysis, or are not collected at all. The quality of information that is available to assess the impact of GEF support on stress reduction and environmental status depends to a large extent on the quality of M&E arrangements integrated into project design, and the extent to which these are implemented and remain functional after GEF support ends.

48. The 2012 Annual Impact Report included a report on the evaluation of M&E arrangements at project design. Since then the Office carried out a review of arrangements to measure impact at project completion. This review aims to assess the extent to which arrangements were in place to monitor and report environmental impact during project implementation and at project completion. The likelihood of monitoring arrangements being implemented after project completion is assessed based on the availability of permanent institutions that had the mandate and capacity to conduct environmental monitoring, as well as the mechanisms for the use and reporting of data collected.

49. A separate review on the submission and use of Management Effectiveness Tracking Tools (METTs) by GEF projects providing support to protected areas is undertaken as an input into OPS5. The results of these reviews will be combined with an earlier review on reliability, feasibility and practicality of the arrangements and sufficiency of resources for impact monitoring in project design. These reviews will be included in the final OPS5 report.

Mainstreaming of Impact Evaluation

50. The Evaluation Office continues to mainstream impact-related considerations across its other evaluation streams. This year other efforts on impact evaluation concentrated on producing impact-related evidence for OPS5.

51. The Office held a webinar on the Impact Evaluation of GEF Support in the South China Sea and Adjacent Areas, and presented the results of this evaluation at the STAP knowledge exchange workshop on regional organizations and international waters. The

Office also contributed to publications relevant to impact evaluation, started a blog on impact evaluation approaches, and produced a video for the website of the Office explaining GEF's approach to impact evaluation.

52. The Evaluation Office continued to reflect on its experience and to generate and share knowledge to improve evaluation tools and methods in impact evaluation. This was done through ongoing participation in the United Nations Evaluation Group (UNEG) impact evaluation task force and Evaluation Cooperation Group (ECG), and through participation in workshops and collaborative work with the Institute for Development Studies (IDS).