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Chemicals and Waste Focal Area Study

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FULL REPORT



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Chemicals and Waste Focal Area Study

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Foreword

The Chemicals and Waste Focal Area Study is the first comprehensive evaluation of the chemicals and waste focal area undertaken by the Independent Evaluation Office of the Global Environment Facility (GEF). The evaluation covers the GEF's grant funding for activities focused on persistent organic pollutants, ozone-depleting substances, mercury, and sound chemical management more generally.

The purpose of this evaluation is to assess the performance of the chemicals and waste portfolio of the GEF and provide insights and lessons for GEF-7. It is based on evidence from an analysis of the chemicals and waste portfolio, terminal evaluations of completed projects, mapping of convention guidance to the GEF-6 strategy and programming, interviews with stakeholders, and case studies.

The evaluation assesses the relevance and comparative advantage, performance, results, and lessons learned through GEF support to the issues of chemicals and waste. The evaluation finds that the GEF's chemicals and waste support has gained increasing relevance and importance with the ambitious Sustainable Development Goal targets on environmentally sound management

of chemicals. Successful chemicals and waste projects are driven by strong government ownership and private sector commitment. However, promoting sectorwide approaches and balancing hard outcome targets against activities involving reforms has been a challenge.

The findings of this evaluation were included in the Sixth Comprehensive Evaluation of the GEF (OPS6) which were presented to the GEF replenishment parties at their second meeting in October 2017. The full evaluation was presented to the GEF Council in May 2017.

Through this report, the GEF Independent Evaluation Office intends to share the lessons from the evaluation with a wider audience.



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Geeta Batra, Chief Evaluation Officer and Deputy Director of the Global Environment Facility Independent Evaluation Office (GEF IEO), led this study. The team consisted of Mark Wagner and Jessica Kyle from ICF and Sara El Choufi, Evaluation Analyst in the IEO.

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The study team would like to thank the GEF Secretariat, the GEF Agencies, the Chemicals

and Waste program and project managers, and representatives of the multilateral environmental agreements for their cooperation in collecting information. We also acknowledge the support provided by Anil Brook Sookdeo Program Manager, GEF, in responding to our requests for data and information.

The GEF IEO is grateful to all of these individuals and institutions for their contributions. Final responsibility for this report remains firmly with the Office.

Abbreviations

AGSM	artisanal and small-scale gold mining	MSP	medium-size project
APR	annual performance report	NAP	national action plan
BAT	best available techniques	NIP	national implementation plan
BEP	best environmental practices	ODS	ozone-depleting substances
CEITs	countries with economies in transition	OPS	overall performance study
COP	conference of the parties	PCB	polychlorinated biphenyl
DDT	dichloro-diphenyl-trichloroethane	PIF	project identification form
FAO	Food and Agriculture Organization of the United Nations	PMIS	Project Management Information System
FSP	full-size project	POP	persistent organic pollutant
GEF	Global Environment Facility	SAICM	Strategic Approach to International Chemicals Management
HCFC	hydrochlorofluorocarbon	SDG	Sustainable Development Goal
IEO	Independent Evaluation Office	SIDS	small island developing states
LDC	least developed country	UNDP	United Nations Development Programme
M&E	monitoring and evaluation	UNEP	United Nations Environment Programme
MIA	Minamata Convention initial assessment activity	UNIDO	United Nations Industrial Development Organization

The GEF replenishment periods are as follows: pilot phase: 1991–94; GEF-1: 1995–98; GEF-2: 1999–2002; GEF-3: 2003–06; GEF-4: 2006–10; GEF-5: 2010–14; GEF-6: 2014–18; GEF-7: 2018–22.

All dollar amounts are U.S. dollars unless otherwise indicated.

Executive summary

This study provides the first comprehensive look at the relevance, performance, and effectiveness of the Global Environment Facility's (GEF's) activities in the chemicals and waste focal area, as well as challenges and future opportunities.

The GEF's chemicals and waste focal area has evolved through the GEF-4, GEF-5, and GEF-6 periods to remain highly relevant, including expanding to cover new global priorities such as mercury and embracing synergies between chemicals issues. The transition to a single chemicals and waste focal area has been synergistic. Ambitious Sustainable Development Goal targets related to the environmentally sound management of chemicals and waste make this GEF focal area of increasing relevance and importance moving forward. Numerous reviews—including this study—have found that the focal area is coherent with the guidance of the Stockholm and Minamata Conventions for which the GEF serves as financial mechanism; and that it supports the goals of related agreements, including the Strategic Approach to International Chemicals Management, the Basel and Rotterdam Conventions, and the Montreal Protocol.

Projects in the GEF's chemicals and waste focal area have largely performed on par with projects in other focal areas, in terms of achievement of outcomes and quality of implementation and execution. Performance data indicate potential

challenges for chemicals and waste projects with regard to the sustainability of persistent organic pollutant (POP) results and the outcomes, sustainability, and quality of implementation of multicountry projects.

Chemicals and waste projects are paying increased attention to financial and institutional mechanisms for scaling up in GEF-6, but lessons learned from terminal evaluations suggest this is an area for continued diligence and innovation. The terminal evaluation review found that, overall, chemicals and waste projects have not sufficiently focused on approaches to scale up or replicate project successes, particularly at the national level. Many completed projects have demonstrated the collection and destruction of POPs and reduced environmental stress in a relatively straightforward manner, but have not succeeded in putting in place sustainable strategies and financial mechanisms to scale up those results. As the GEF's portfolio looks toward unintentional POPs, mercury, and other emerging chemicals issues, it is critical to ensure that a strategy for legacy POPs is articulated.

Promoting sectorwide approaches for chemicals and waste has proved a challenge for the GEF, given its mandate to address POPs and mercury, and not other heavy metals and toxic chemicals. Some multifocal area projects, including the Sustainable Cities Integrated Approach Pilot, have focused on solid waste management more

broadly, with benefits for climate change mitigation and other toxic substances.

As the first to attempt to comprehensively assess the results of the chemicals and waste focal area (previous studies refrained from making substantive conclusions given the small number of completed relevant projects), this study faced some difficulties. Reliable data on the aggregate impact of closed chemicals and waste projects in terms of tons of POPs, ozone-depleting substances, mercury, and other chemicals and related wastes phased out, reduced, or disposed of were not consistently available. This shortcoming in the capacity of the GEF monitoring system deserves more attention moving forward. Long implementation timelines and frequent delays in project completion have also meant that results and lessons learned are being tallied with a significant lag.

The partnership between the GEF Secretariat, the GEF Agencies, and the convention secretariats is generally seen as improved since the GEF's Fifth Overall Performance Study. However, resource scarcity in GEF-6 has highlighted some concerns about actions that contribute to an uneven playing field, including overmanagement of the GEF pipeline by the GEF Secretariat, active engagement by GEF management at the country level and perceived resulting preferential treatment, and lack of transparency in the early stages of the GEF project cycle. These concerns suggest there is still room for improvement in communications among the partnership organizations, and that such improvement may be particularly important in the context of possible continued resource scarcity and movement toward more programs and integrated approaches.

Following are the key recommendations emerging from the evaluation.

- **Strategies for scaling-up.** More attention needs to be paid during project design and implementation to considering strategies for scaling-up and, particularly, financial mechanisms to support private sector engagement and sustainability. The GEF cannot finance the collection and destruction of every ton of legacy POPs, nor can it fund the conversion of every industrial facility to cleaner production processes. A more robust theory of change is needed for how the GEF's demonstration activities will catalyze broader action and impact in the chemicals and waste focal area. This may involve the development of innovative private sector partnerships, economic instruments, and financial models, as envisioned in the GEF-6 Chemicals and Waste Focal Area Strategy under Program 1; such efforts deserve continued support in GEF-7. In particular, as the GEF chemicals and waste portfolio evolves and its focus changes, attention should be paid to ensure that remaining legacy POPs are not orphaned—especially given that cost, ownership, and other barriers are diminishing the efficacy of the demonstration effect for these projects. Different solutions will likely be required for least developed countries and small island developing states versus middle-income countries.
- **Support for reforms.** The GEF may want to consider providing more support for broad-based regulatory reform and sectorwide approaches, so as to address chemicals and waste issues more holistically.
- **Ozone-depletion work.** The GEF should not forget its ozone depletion program, which may have new relevance with the recent adoption of the Kigali Amendments to the Montreal Protocol. In the coming years, some countries with economies in transition may need support to meet these new obligations, and opportunities

are likely to arise for multifocal area collaborations with the climate change focal area, especially on energy efficiency.

- **Better monitoring practices.** Given the challenges this study faced in tallying verified results of the GEF chemicals and waste focal area, the GEF's monitoring procedures deserve more scrutiny. Tracking tools should be consistently submitted and clearly identified as annual or terminal submissions, and terminal results reported by indicator should match values in the terminal evaluation. Project proposals should consistently incorporate resources designated for monitoring and evaluation.

- **Communication.** Communication among the GEF partnership organizations is an area for continued attention. Given an evolving and expanding landscape of opportunities, it is important that all aspects of communication be transparent and collaborative and that country perspectives drive the process. A more structured set of partnership planning meetings that fosters ongoing dialogue on resource availability over the replenishment period, focus or priority among strategic objectives and program areas, and transparency of the project pipeline process would be helpful in reducing pockets of confusion.

1: Objectives, methodology, and context

1.1 Objectives

This study is the first comprehensive review of the Global Environment Facility's (GEF's) chemicals and waste focal area undertaken by the GEF Independent Evaluation Office (IEO).¹ It covers GEF grant funding for activities focused on persistent organic pollutants (POPs), ozone-depleting substances (ODS), mercury, and sound chemicals management more generally. The GEF serves as the financial mechanism for the Stockholm Convention on POPs and for the Minamata Convention on Mercury. The GEF has also assisted countries that are not eligible to receive funding through the financial mechanism for the Vienna Convention's Montreal Protocol on Substances that Deplete the Ozone Layer to meet their ODS phaseout obligations.

The purpose of this study is to provide insights and lessons for the focal area going forward into the next replenishment cycle (GEF-7), based on evidence from an analysis of the chemicals and

¹ While chemicals and waste activities have undergone review as part of other GEF IEO evaluations—and a “Study of Impacts of GEF Activities on Phase-Out of Ozone Depleting Substances” (GEF 1999) was completed in GEF-2—neither the GEF-5 chemicals focal area nor the GEF-6 focal area has undergone a comprehensive focal area study. Moreover, previous studies refrained from making substantive conclusions given the small number of completed POPs and ODS projects available for their review.

waste portfolio's projects and terminal evaluations. The objectives of the study are as follows:

- Assess the relevance of the chemicals and waste strategy to the guidance of the conventions
- Present a synthesis of chemicals and waste results and progress toward impacts
- Assess the approaches and mechanisms through which results have been achieved
- Assess the efficiency and performance of the chemicals and waste portfolio
- Identify lessons learned and scaling-up opportunities for GEF-7

1.2 Methods and scope

To meet its objectives, the chemicals and waste focal area study responded to a set of key questions defined in its terms of reference through a mixed-methods approach using both quantitative and qualitative analytical methods and tools, including

- A synthesis of the major findings of evaluations of GEF chemicals and waste activities;
- A portfolio analysis based on data from the GEF's Project Management Information System (PMIS) and the IEO's annual performance reports (APRs);

- A review of all available terminal evaluations of GEF chemicals and waste projects, focusing on progress toward impact, stakeholder engagement, private sector engagement, and country ownership;
- Six case studies to investigate progress toward impact, as well as private sector engagement, transformational change, and the value of integrated or multifocal area approaches;²
- A review of quality at entry to assess coherence between the GEF chemicals and waste focal area strategy in the GEF-6 Programming Directions and chemicals and waste projects that received at least project identification form (PIF) approval during GEF-6;
- An expert review of the coherence of the GEF-6 Chemicals and Waste Focal Area Strategy with the guidance of the conventions, using a guidance-strategy mapping exercise, as an update to the 2012 Evaluation of the GEF Focal Area Strategies (GEF IEO 2013).

Key informant interviews were also conducted with staff of the GEF Secretariat, the secretariats of the relevant conventions (Basil, Minamata, Rotterdam, and Stockholm), and GEF Agencies involved in the chemicals and waste focal area—the African

²Case studies are based on desk analysis and limited interviews with project proponents. Four closed projects were selected based on recency of project completion (no earlier than 2011); representation across different chemicals (i.e., POPs versus ODS); evidence of private sector engagement and of policy/regulatory outcomes; and representation across project size, single versus multicountry projects, lead Agencies, and regions. Because no multifocal area projects with chemicals and waste components have closed and been subject to terminal evaluations, two active multifocal area projects were selected as case studies based on maturity in terms of implementation status, single versus multicountry projects, and coverage of industrial parks and gold.

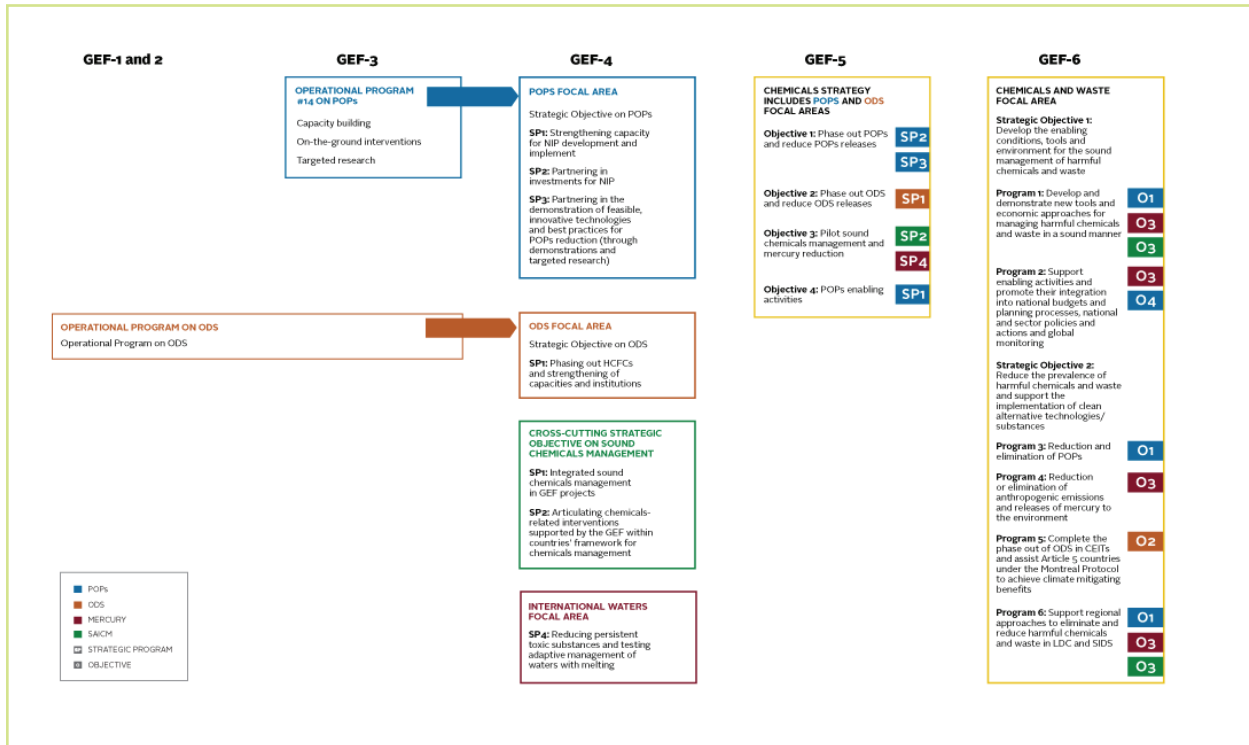
Development Bank, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization (UNIDO), and the World Bank. A full list of individuals consulted is provided in [annex A](#).

1.3 Evolution of the chemicals and waste focal area strategies

The organization of GEF support for chemicals and waste has significantly evolved since GEF-3, when a dedicated program for POPs was first introduced; ODS activities have been supported by the GEF since its first operational strategy in 1995 (figure 1.1). In GEF-4, separate focal areas for POPs and ODS were maintained, and support for sound chemicals management was made explicit for the first time through a cross-cutting strategic objective. Mercury was addressed to a limited extent by one of the strategic programs under the international waters focal area. In GEF-5, a chemicals strategy offered a unifying framework for support for the POPs and ODS focal areas, as well as for sound chemicals management and mercury. For GEF-6, the GEF Assembly created a single chemicals and waste focal area, replacing the POPs and ODS focal areas.

The GEF-6 Chemicals and Waste Focal Area Strategy addresses similar core issues as the GEF-5 strategy, in a slightly more elaborated configuration. The GEF-6 strategy shows increased attention to mercury (covered under four of its six programs), consistent with the Minamata Convention's progress toward coming into force. Program 1 puts renewed emphasis on developing and demonstrating new tools and approaches—a priority identified in GEF-4, but given reduced attention in the GEF-5 strategy. Program 6 provides new, explicit support for regional approaches in least developed countries (LDCs) and small island developing states (SIDS).

FIGURE 1.1 Evolution of GEF support for chemicals and waste



2: Findings

2.1 Analysis of GEF chemicals and waste portfolio

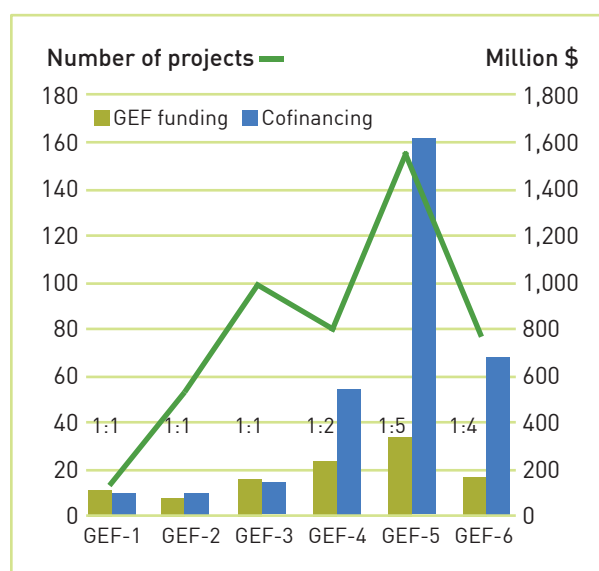
From its inception through July 20, 2016, the GEF approved \$1.1 billion in grant funding to 482 chemicals and waste projects, with an additional \$3.1 billion provided via cofinancing.¹ GEF funding for chemicals and waste has grown significantly since the pilot phase (figure 2.1). The ratio of cofinancing to GEF funding has also steadily increased across the GEF replenishment periods.

PROJECT MODALITY

By number, enabling activities represent the majority of GEF chemicals and waste projects, accounting for 56 percent of the total number of projects in the portfolio from GEF inception through July 20, 2016; full-size projects (FSPs) and medium-size projects (MSPs) account for 29 percent and 15 percent of the portfolio, respectively. By funding, FSPs have dominated, accounting for 83 percent of GEF funding to

¹ Based on GEF PMIS data as of July 20, 2016. The analysis that follows includes all projects that have received at least PIF approval and funding channeled through the former POPs and ODS focal areas. It excludes canceled and parent programs, as well as multifocal area projects with chemicals and waste components. The funding and cofinancing levels presented are the amounts indicated at project approval or endorsement.

FIGURE 2.1 Number of projects in and funding for the chemicals and waste portfolio by GEF replenishment period



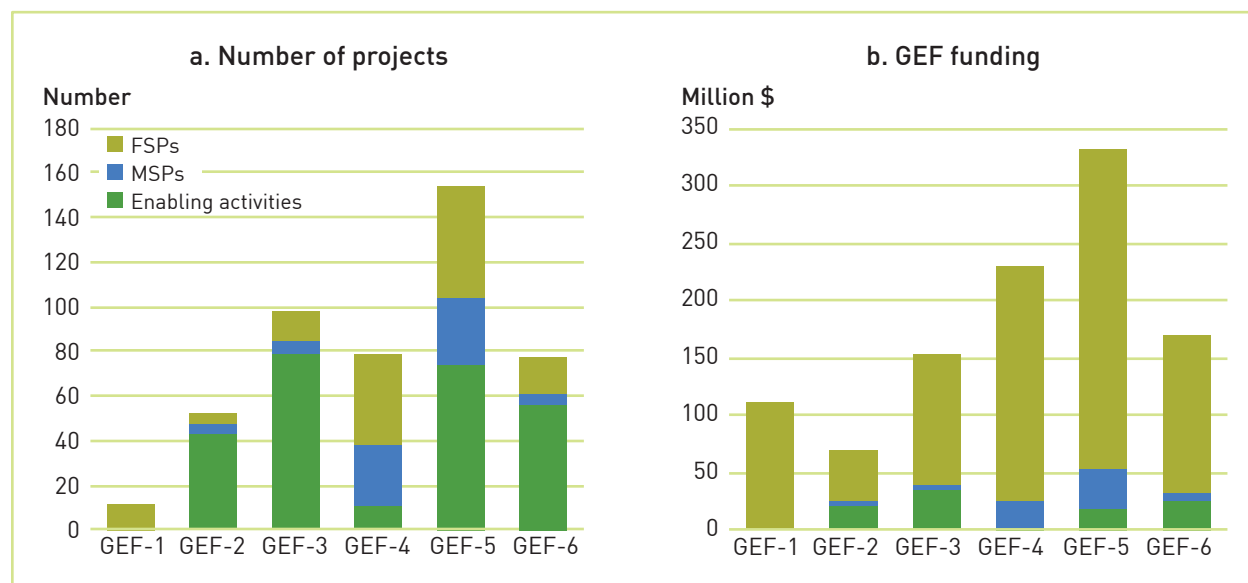
SOURCE: GEF PMIS.

NOTE: GEF funding/cofinancing ratios are presented above the funding bars.

chemicals and waste projects. Figure 2.2 shows the evolving number of projects and funding by modality across the GEF replenishment periods.

In GEF-2 and GEF-3, significant numbers of enabling activities were undertaken to support early action on implementation of the Stockholm Convention and the preparation of national implementation plans (NIPs). With the completion of the NIPs, the portfolio shifted toward implementation in GEF-4. In GEF-5, the number of enabling

FIGURE 2.2 Number of projects in and GEF funding for the chemicals and waste portfolio by project modality and GEF replenishment period



SOURCE: GEF PMIS.

activities increased again, as nearly 60 countries reviewed and updated their NIPs and 14 countries prepared their Minamata Convention initial assessments (MIAs). In GEF-6, the balance has shifted toward MIAs, with fewer countries preparing national action plans (NAPs) for mercury and updating their NIPs.

AGENCY

By number, UNIDO has implemented the largest share of projects (36 percent), given the prevalence of enabling activities in its portfolio (68 percent); it is followed by UNEP with 27 percent of the projects in the chemicals and waste portfolio. By funding, the World Bank has received the largest share of approved GEF resources (28 percent)—attributed to the dominance of FSPs in the World Bank portfolio (82 percent of projects and 98 percent of approved funding)—followed by UNIDO with 23 percent of approved resources. Figure 2.3 shows the number of chemicals and

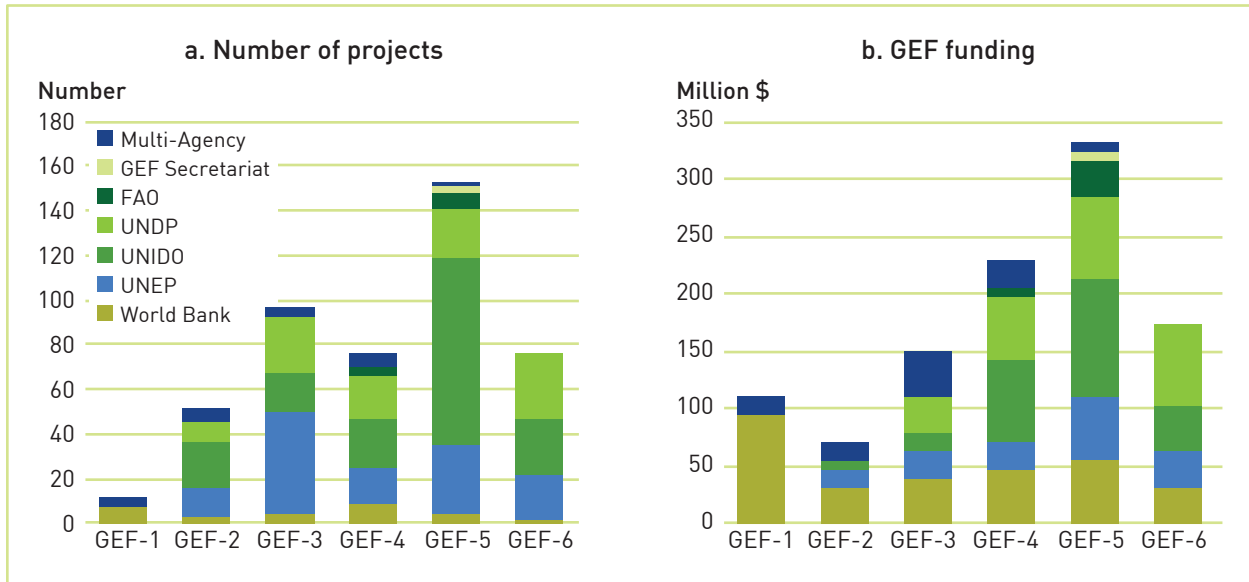
waste projects and GEF funding by Agency across the GEF replenishment periods.

In the earlier GEF replenishment periods, a number of single-country, ODS phaseout projects were conducted by multi-Agency teams (primarily UNDP-UNEP). In the later GEF replenishment periods, multi-Agency projects have tended to be regional projects—including capacity strengthening and technical assistance for implementing the NIPs in African LDCs and SIDS (UNEP-UNIDO).

REGION

Asia, with 35 percent of approved GEF resources, accounts for the largest share of GEF funding by region, followed by Europe and Central Asia with 28 percent, Africa with 22 percent, and Latin America and the Caribbean with 11 percent. Global projects account for the remaining 4 percent of approved resources for chemicals and waste projects. The large share of GEF resources in Asia can be attributed to the allocation of

FIGURE 2.3 Number of projects in and GEF funding for the chemicals and waste portfolio by Agency and GEF replenishment period

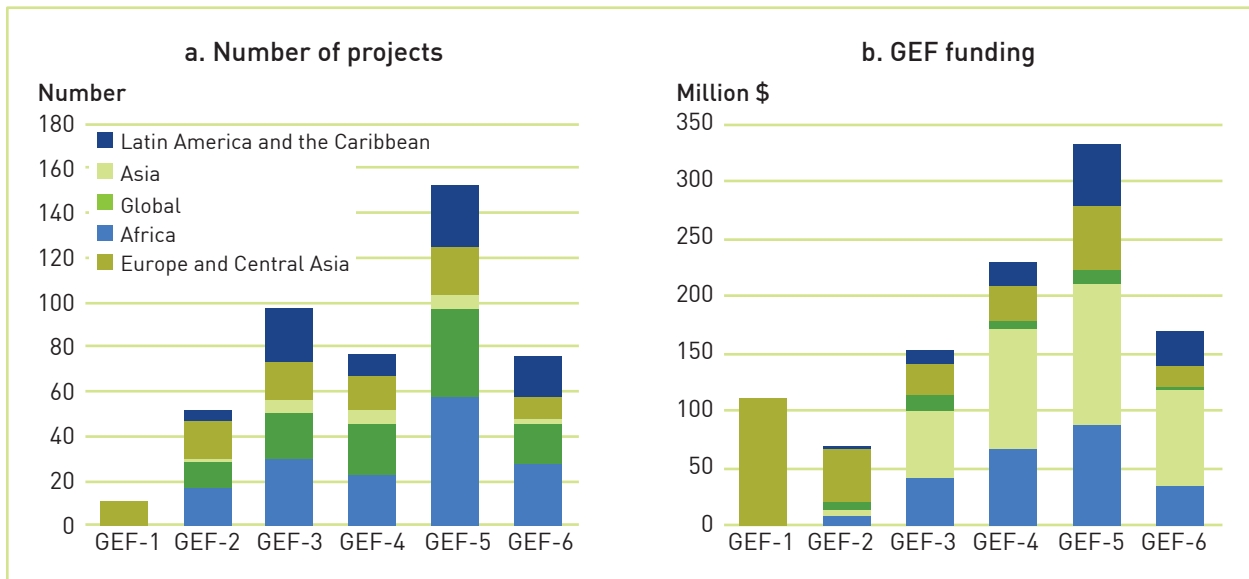


SOURCE: GEF PMIS.

projects and funding to China, representing 6 percent of projects and 25 percent of funding for single-country projects. Figure 2.4 shows the

number of projects and approved resources by region for each GEF replenishment period.

FIGURE 2.4 Number of projects in and GEF funding for the chemicals and waste portfolio by region and GEF replenishment period



SOURCE: GEF PMIS.

Approximately 30 percent of the chemicals and waste funding was allocated to multicountry projects in GEF-3, GEF-4, and GEF-5. So far in GEF-6, a slightly lower percentage of approved funding has been directed at multicountry projects (14 percent), but that balance could shift in the latter half of this GEF period.

COUNTRY CONDITIONS

Approximately 31 percent of single-country chemicals and waste projects approved since GEF inception were implemented in LDCs and SIDS. UNIDO is the GEF Agency with the highest share of single-country projects in LDCs and SIDS (46 percent), followed by UNEP with 31 percent. In terms of funding, GEF support for LDCs and SIDS has fluctuated over time, representing 10 percent of approved chemicals and waste resources in GEF-2 and GEF-3, 4 percent in GEF-4, 6 percent in GEF-5, and 4 percent thus far in GEF-6. Among single-country projects that are in LDCs and SIDS, more than half entail the development of NIPs or artisanal and small-scale gold mining (AGSM) national action plans (NAPs). Only 10 percent are actual implementation projects.

Multicountry chemicals and waste projects have also included support for LDCs and SIDS. Approximately 60 percent of multicountry projects have included support for at least one LDC and/or SIDS country. Many of these projects have specifically focused on African LDCs, accounting for more than 40 percent of multicountry chemicals and waste projects that include support for LDCs and SIDS.² In the GEF-6 Chemicals and Waste Strategy, Program 6 is dedicated to supporting regional approaches in LDCs and SIDS.

²These include UNIDO's three subregional projects providing capacity strengthening and technical assistance for NIPs implementation in African LDCs (GEF IDs 3942, 3968, and 3969).

MULTIFOCAL AREA PROJECTS

Eleven multifocal area projects with chemicals and waste components have been approved since GEF inception; nine of those projects were approved in GEF-5 and GEF-6. No multifocal area projects have been completed; four are under implementation. The proportion of chemicals and waste resources in multifocal area projects represents 7 percent of approved resources from GEF inception through July 20, 2016. The proportion of GEF funding has generally increased over the GEF periods, from 0 percent in the pilot phase through GEF-3, to 12 percent in GEF-4, 8 percent in GEF-5, and 10 percent thus far in GEF-6. Multifocal area projects account for just 2 percent of the total number of approved projects in the chemicals and waste portfolio.

COFINANCING

As shown in figure 2.1, cofinancing ratios have steadily increased for chemicals and waste activities over time, reaching a high of 1:5 in GEF-5. Recipient country governments are the largest source of cofinancing for chemicals and waste projects (40 percent), followed by the private sector (30 percent) and GEF Agencies (10 percent).³ Nongovernmental organizations, multilateral and bilateral agencies, beneficiaries, donor agencies, and others account for the remaining 20 percent. Cofinancing by government agencies, the private sector, and GEF Agencies have generally increased over the GEF replenishment periods; while cofinancing by others has remained the same or decreased over time. In-kind contributions and grants represent 73 percent of the types

³Based on PMIS data through November 9, 2016. Data represent planned cofinancing at time of appraisal, and do not include cofinancing amounts for projects that were dropped, canceled, Chief Executive Officer PIF rejected, rejected, withdrawn, or not recommended.

of cofinancing received. Loans, guarantees, and equity account for the remaining 27 percent.

Cofinancing fully materialized in 56 percent of the 54 completed chemicals and waste projects with terminal evaluations. The median project ratio of actual cofinancing to promised cofinancing was 1.02, while the average ratio was 1.59. The median project ratio of promised cofinancing to GEF grant and median project ratio of realized cofinancing to GEF grant were 1.04 and 1.07, respectively.

2.2 Review of existing evaluative evidence

This section summarizes the major findings and conclusions of previous evaluations relevant to the chemicals and waste portfolio conducted by the GEF IEO. The review focuses on evidence-based conclusions reached by these evaluations regarding results/impact and relevance to the conventions. The evaluations referenced here are the Third, Fourth, and Fifth Overall Performance Studies (OPS3, OPS4, and OPS5) of the GEF; an impact evaluation of ODS phaseout in countries with economies in transition (CEITs) completed in 2010; and the most recent (2012) of three reviews undertaken by the Stockholm Convention Secretariat of the GEF as its financial mechanism (GEF IEO 2005, 2010a, 2010b, 2014). No other stand-alone evaluations of GEF chemicals and waste activities have been conducted by the Agencies or other organizations, to the knowledge of the evaluation team. As mentioned above, the present study constitutes the first comprehensive evaluation of the chemicals and waste focal area.

2005: OPS3

OPS3 found that the GEF had been highly successful in eliminating consumption (i.e., production, exports, and imports) and emissions of

ODS in CEITs, with more than 99 percent of the agreed phaseout having been accomplished. The study recommended that the GEF continue to coordinate with the Multilateral Fund of the Montreal Protocol regarding the future phaseout of hydrochlorofluorocarbons (HCFCs) and funding eligibility issues.

OPS3 found that the GEF was responsive to the priorities of the Stockholm Convention and had made significant progress in implementing convention guidance through the funding of NIPs in more than 100 countries. Some concerns were expressed regarding the quality and consistency of the NIPs across countries. Moving toward implementation, OPS3 noted that the nature of chemicals management was likely to allow for a clear results chain, particularly if the proper steps were taken up front to identify human health and environmental baselines. Additional opportunities around cross-focal area synergies were also identified.

2010: ODS IMPACT EVALUATION AND OPS4

A GEF IEO impact evaluation and OPS4 found that GEF support for ODS phaseout in CEITs had made a contribution toward global environmental benefits. In particular, legislative and policy changes supporting ODS phaseout provided a foundation for success and ensured sustainability. Private sector commitment to ODS phaseout was a critical driver for the success of GEF investments in CEITs. The studies found that illegal trade threatened to undermine gains in ODS reduction. In addition, the national ozone units ceased to function in some CEITs after GEF support ended, which could prevent measures from being put in place to address remaining threats to the ozone layer.

OPS4 found that the GEF had been responsive to guidance from the Stockholm Convention

Conference of the Parties (COP) and was moving into the next phase of support by funding the implementation of NIPs. Because only two projects had been completed and undergone terminal evaluations at the time of OPS4, it was not possible to draw substantive conclusions. However, the study identified examples of weak support and participation by broader stakeholder groups, as well as lack of buy-in by the key industrial producer sectors.

2012: THIRD REVIEW OF THE FINANCIAL MECHANISM OF THE STOCKHOLM CONVENTION

This review found that the GEF—as the primary entity entrusted with the operation of the Stockholm Convention financial mechanism—had continued to be largely responsive to the COP by incorporating guidance into the GEF-5 chemicals strategy and in project approvals. Project approvals show that the GEF had approved resources during GEF-4 and GEF-5 for specific priorities requested in COP guidance including elimination of dichloro-diphenyl-trichloroethane (DDT), demonstration of best available techniques and best environmental practices (BAT/BEP), support of the global monitoring program, capacity development in LDCs, and NIP updates.

2014: OPS5

OPS5 found that the small number of completed POPs and ODS projects made it premature to draw focal area-specific conclusions. For information purposes, the study showed that two of nine POPs projects reviewed (13 percent), and all five ODS projects reviewed, reported reduced environmental stress. In 60 percent of the ODS projects, most or some broader adoption initiatives were implemented or adopted, compared to 11 percent for the POPs projects. OPS5 also noted that the ODS focal area had decreasing needs, whereas the new role of the GEF vis-à-vis the Minamata Convention required new resources.

3: Assessment

3.1 Relevance

The GEF's strategy and programming in chemicals and waste have been largely coherent with the relevant guidance issued by the two conventions for which the GEF serves as financial mechanism: the Stockholm Convention on POPs and the Minamata Convention on Mercury.

STOCKHOLM CONVENTION

Coherence of the focal area strategy

The GEF-6 Chemicals and Waste Focal Area Strategy is largely responsive to relevant guidance from the Stockholm Convention. A guidance-strategy mapping analysis was conducted to inform this assessment, which updates the analysis provided in GEF IEO (2012), which was prepared in support of OPS5; the detailed results of this analysis are contained in [annex B](#).

The GEF-6 Chemicals and Waste Focal Area Strategy includes support for long-standing funding priorities such as NIPs and the newer time-bound priorities agreed to at the 6th COP, including polychlorinated biphenyls (PCBs), newly listed POPs, DDT, and BAT for new sources. Support for Stockholm Convention regional centers—which was identified as a gap in the GEF-5 Chemicals Focal Area Strategy—is explicitly encouraged in the GEF-6 Strategy (box 3.1).

Some gaps and concerns were identified through consultation with the Stockholm Convention

BOX 3.1 GEF engagement with Stockholm Convention regional centers

This study identified 10 projects—9 implemented by UNEP and 1 by UNIDO—approved in GEF-5 and GEF-6 that are expected to be executed by or in partnership with Stockholm Convention regional centers. Five projects will be executed by the Africa Institute, a joint Stockholm and Basel regional center; four will be executed by the joint Stockholm and Basel regional center in Uruguay; and one will be executed by the joint Stockholm and Basel regional center for Asia and the Pacific.

Interviewees noted the potential for the centers to support regional delivery of GEF activities, but identified some challenges in this regard, with the Stockholm Convention Secretariat identifying GEF delivery through regional centers as an area for improvement. GEF Agencies reported some reluctance from recipient country governments to work with the centers, given perceived capacity limitations. In particular, mismatched or underdeveloped skills for executing GEF projects was seen as a limiting factor for engaging with regional centers. While some centers may function effectively as information providers, they may not meet the criteria for technical expertise and financial management applied by the GEF Agencies in selecting executing agencies.

Secretariat and through mapping of the GEF-6 Chemicals and Waste Focal Area Strategy to relevant guidance from the Stockholm Convention. These include the following.

- GEF support for information exchange in general and the Stockholm Convention Clearing-House Mechanism in particular was requested by COP4. CHEM-1 of the GEF-5 strategy and Program 6 of the GEF-6 strategy allow for programming on awareness raising on chemicals, although neither strategy explicitly addresses activities on information exchange mechanisms and the Clearing-House Mechanism. In its report to COP6, the GEF Secretariat (2013) noted that information generation, management, and exchange cut across all objectives and outcomes in the GEF-5 strategy, with some projects including specific information dissemination components. The report also indicated that stand-alone information exchange activities could be supported within the GEF's mandate (Objective 1, Outcome 5 of the GEF-5 strategy).
- Although the GEF-6 strategy addresses priority funding areas identified in COP guidance, it does not indicate a priority for countries that have not yet received funding to implement NIP activities, as was requested by COP5 (Decision SC-5/23). The GEF Secretariat does consider this priority in proposing projects to the annual work program, however. (See the discussion on the transparency of the project approval process in [section 3.3](#).)

Coherence of GEF-6 programming and review of quality at entry

A quality at entry mapping exercise was conducted to look at the coherence between the GEF-6 Chemicals and Waste Focal Area Strategy and the 25 chemicals and waste projects that have received at least PIF approval during GEF-6.

Overall, the strategic fit of project concepts approved in GEF-6 to the GEF-6 focal area strategy is clear, and all relevant chemicals and waste projects support one or more of the funding priorities given by the Stockholm Convention COP.

- With regard to the **time-bound** priorities, eight approved GEF-6 chemicals and waste projects support the elimination and management of equipment containing PCBs, four support the elimination or restriction of newly listed POPs, and eight support the use of BAT for new sources.
- Three (Gabon, Montenegro, and Paraguay) of the 33 countries supported by project concepts approved in GEF-6 have **not previously received GEF funding for implementation of NIP activities**.¹
- One project concept has been approved to support **capacity building for the POPs Global Monitoring Plan** in the Pacific region.
- Six enabling activities have been approved to **review and update NIPs** in six countries (out of 56 enabling activities approved thus far in GEF-6).

Some gaps and concerns were identified through consultation with the Stockholm Convention Secretariat and through mapping of approved projects in GEF-6 to relevant guidance from the convention. These include the following.

¹In GEF-6, chemicals and waste POPs projects have been approved in Belarus, Cameroon, China, Colombia, Ecuador, Ethiopia, Fiji, Gabon, Georgia, Honduras, Jordan, Kenya, Kiribati, Madagascar, Mali, Marshall Islands, Mexico, Montenegro, Nigeria, Niue, Palau, Paraguay, the Philippines, Samoa, Senegal, Solomon Islands, Tanzania, Thailand, Tuvalu, Vanuatu, Vietnam, Zambia, and Zimbabwe.

- None of the project concepts approved in GEF-6 yet support the elimination or restriction of DDT.
- The Stockholm Convention Secretariat noted that GEF-6 programming has been coherent with the time-bound priorities, but not necessarily in an appropriately balanced way. Specifically, more emphasis on unintentional POPs and less on legacy POPs is noted. This de-emphasis may make it difficult for the GEF to meet its corporate global environmental benefits target of 80,000 tons of POPs disposed. Projects to reduce emissions of unintentional POPs also received the largest share of resources in GEF-5, targeting sectors such as municipal waste, health care waste, e-waste, and the manufacture of pulp and paper.
- The Stockholm Convention Secretariat noted that updating NIPs has not been sufficiently covered by GEF programming, including in GEF-6. Prior to COP5 (2010), the GEF funded the preparation of the initial NIPs in 138 countries, with grant funding totaling \$68 million. Signatories were required to review and update their NIPs within two years after the entry into force of the COP5 amendments listing nine additional POPs (August 2012). Since then, enabling activities to review and update NIPs have been approved in 61 countries, with grant funding totaling about \$11.5 million; initial NIPs have also been approved in four new countries.² In total, 10 countries supported by the GEF have transmitted updated NIPs addressing the new POPs to the Stockholm Convention Secretariat.

²These countries are Bosnia-Herzegovina, Maldives, Myanmar, and Namibia.

MINAMATA CONVENTION

The GEF-6 Chemicals and Waste Focal Area Strategy is responsive to guidance from the Minamata Convention, including support for enabling activities under Program 2 (MIAs and AGSM NAPs) and for early implementation activities under Program 4. Mercury activities are also supported under Programs 1 and 6. Early guidance issued to the GEF from the Minamata Convention has been quite broad, given the focus on preparing and establishing the GEF as the financial mechanism. The Minamata Convention Secretariat noted that guidance from the first COP, currently in draft form, is likely to be more specific.

Interviewees praised the GEF's support for ratification and early implementation of the Minamata Convention. In GEF-5 and GEF-6, the GEF has approved 11 NAPs in 18 countries—primarily in Africa and Latin America and the Caribbean—and 46 MIAs in 77 countries. Among these countries, 18 had accepted or ratified the convention as of October 12, 2016.³

The GEF has significantly increased its support for mercury-related initiatives in GEF-6 by allocating \$141 million to these; this is a nearly 10-fold increase over the approximately \$12.7 million it approved for 20 mercury projects (6 FSPs and 14 MSPs) during GEF-5. Of the six mercury-related GEF-6 project concepts that have been approved, two support capacity strengthening for mercury management, two support the reduction of mercury releases through the introduction of either green chemistry or BEP/BAT, and two support both capacity strengthening

³These countries are Bolivia, Botswana, Chad, China, Djibouti, Gabon, Guinea, Guyana, Lesotho, Madagascar, Mali, Mexico, Mongolia, Panama, Peru, Senegal, Swaziland, and Zambia.

and emissions reductions. Although none of the projects in the GEF-6 cohort reviewed for this study address mercury use to process gold, four gold-related MSPs were approved in GEF-5. Also, in October 2016, the GEF Council approved a global program—Global Opportunities for Long-term Development (GOLD) of the Artisanal and Small Scale Gold Mining Sector—to inform miners in Burkina Faso, Colombia, Guyana, Indonesia, Kenya, Mongolia, Peru, and the Philippines and to design and deploy ways in which they can obtain loans to switch from mercury-based extraction techniques to cleaner and more efficient ones. Regulations and policies will also be strengthened, and mercury-free mining communities will be connected to global markets and associated supply chains.

OTHER CONVENTIONS, INITIATIVES, AND FOCAL AREAS

Coordination to enhance synergies with countries' responses to multilateral environmental agreements addressing chemicals issues for which the GEF is not a financial mechanism—including the Strategic Approach to International Chemicals Management (SAICM) and the Basel and Rotterdam Conventions—began to be encouraged in GEF-4. The following discusses efforts in this regard in GEF-5 and GEF-6, along with other nonconvention-related GEF chemicals and waste initiatives.

Strategic Approach to International Chemicals Management

The SAICM has had a small funding envelope since GEF-5 for activities that address its global priorities while generating global environmental benefits. According to the SAICM Secretariat, a coherent vision for those resources has been

lacking until very recently.⁴ Instead of approving individual projects, the SAICM Secretariat is working with UNEP and UNIDO during GEF-6 to develop a strategic set-aside program as a \$12 million FSP at the global and regional levels, aiming to address emerging policy issues and benefit all countries rather than individual countries that apply to the SAICM window.

The majority of approved chemicals and waste projects in GEF-6 generally support the overall objective of the SAICM to achieve sound management of chemicals throughout their life cycle. Eleven of these projects address emerging policy issues identified by the International Conference on Chemicals Management, including chemicals in products, hazardous substance within the life cycle of electrical and electronic products, and highly hazardous pesticides. Two projects have been approved to support the promotion of green chemistry.

Basel and Rotterdam Conventions

GEF-funded activities that are relevant to the Basel and Rotterdam Conventions include those that promote environmentally sound management of POPs waste, minimization of waste to reduce emissions of unintentional POPs, and strengthening of legal and regulatory national frameworks to facilitate environmentally sound management of POPs and related waste. An initial exercise identified 36 GEF-funded activities—with grant funding totaling \$187 million with nearly \$730 million in cofinancing—that address the priorities of the Basel, Minamata, Rotterdam, and Stockholm Conventions in a joint manner.

⁴In the absence of formal guidance from the SAICM International Conference on Chemicals Management to the GEF, the GEF Secretariat has full discretion on the use of those resources.

Montreal Protocol

None of the GEF-6 project concepts reviewed indicated co-benefits or relevance for the Montreal Protocol. Interviews suggested that while collection and co-incineration of POPs and ODS may represent a significant joint opportunity, it has not yet taken hold, partly because of a lack of incentives and potential knowledge gaps. The terminal evaluation review covered in section 3.2 indicated that some methyl bromide has been collected and incinerated in conjunction with obsolete pesticides projects.

Sustainable Development Goals

Given their broad focus on chemicals and waste management, all approved chemicals and waste projects support, in some capacity, achievement of the Sustainable Development Goals (SDGs) adopted by world leaders in September 2015 as the 2030 Agenda for Sustainable Development. Most notably, the focal area projects support the achievement of Target 3.9 (“by 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination”) under Goal 3, Good Health and Well-Being; and Target 12.4 (“by 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment”) under Goal 12, Responsible Consumption and Production. Many projects may also contribute to Goal 7, Affordable and Clean Energy; Goal 9, Industry, Innovation and Infrastructure; and Goal 11, Sustainable Cities and Communities.

Other focal areas

Four chemicals and waste projects in GEF-6 are multifocal area projects; these include

cross-focal area collaborations with biodiversity, climate change, and international waters. A number of other approved chemicals and waste projects anticipate benefits for other focal areas. Specifically, six projects identify reductions of greenhouse gas emissions as an anticipated outcome.

CONTINUING RELEVANCE AND LESSONS LEARNED

The analysis of the evolution of the chemicals and waste strategy over time concludes that the focal area has evolved well through the GEF-4, GEF-5, and GEF-6 periods to expand to cover new global priorities such as mercury and to embrace synergies between chemicals issues. The approval of several integrated projects addressing multiple chemicals issues are evidence of the benefits of a consolidated chemicals and waste focal area. So far under GEF-6, three projects have been approved that target emissions reductions of both POPs and mercury. For example, an FSP in Colombia seeks to introduce BAT/BEP to reduce the release of mercury and unintentional POPs from health care waste, the processing of waste electrical and electronic equipment, secondary metal processing, and biomass burning.

The focal area has been coherent with the guidance of the conventions for which it is the financial mechanism, as well as jointly supportive of the goals of related multilateral environmental agreements, including—as discussed above—the SAICM, the Basel and Rotterdam Conventions, and the Montreal Protocol. The quality at entry review of project concepts approved thus far in GEF-6 suggests that the focal area is largely responsive to the GEF-6 Programming Directions (GEF 2014), although some rebalancing may be needed among funding priorities.

Moving into GEF-7, the chemicals and waste focal area continues to be highly relevant. It is contributing to eliminating the use of PCBs in equipment and the environmentally sound management of PCB-containing liquids and equipment; eliminating the production and use of newly listed POPs, including perfluorooctanesulfonic acid (PFOS); reducing POPs and mercury releases from production processes, e-waste, and health care waste management, and biomass burning; reducing artisanal and small-scale miners' use of mercury to process gold (the largest single global use of mercury); and supporting sustainable urban development and green growth. Ambitious SDG targets related to the environmentally sound management of chemicals and waste make the focal area of increasing relevance and importance. The recent adoption of the Kigali Amendments to the Montreal Protocol, which will substantially reduce emissions of hydrofluorocarbons (HFCs), gives new relevance to the focal area's ODS program and offers opportunities for multifocal area collaborations with climate change.

Stakeholder interviews suggested some lessons learned regarding the formulation and implementation of the GEF-6 focal area strategy that may be relevant in planning for the GEF-7 replenishment cycle.

- While some multichemical projects have been approved in GEF-6, an ongoing challenge identified by multiple interviewees is a deficiency of incentives or sometimes scope to combine chemicals-related issues to promote sector-wide approaches (e.g., to update legislation to fully address chemicals and waste, rather than just PCBs, or to address solid waste management more broadly, rather than just POPs waste). This challenge can affect the GEF's ability to scale up its interventions. Broader institutional infrastructure may be needed to

support hazardous waste or chemicals management. This challenge also can affect the GEF's ability to attract cofinancing or mainstream into larger investment projects (e.g., if cofinancers are looking at a wider scope and are unwilling to go through the GEF project cycle to obtain resources relevant to part of a larger project).

- Another challenge has been balancing hard outcome targets (tons of POPs and mercury disposed) against the importance of soft activities and outcomes, such as support for developing policy and regulatory frameworks and institutional strengthening. Many interviewees noted the lessons learned from the Montreal Protocol in terms of the value of strong regulatory regimes to support ODS phaseout and ensure that the private sector continues to implement the best practices that individual projects demonstrate. A related challenge is the trade-off required sometimes between hard outcome targets and political realities; for example, tackling the biggest problem sites to meet convention targets versus prioritizing countries that may not have yet received funding for their NIP or funding lower tonnage projects in Africa.

3.2 Results

KEY TRENDS IN PERFORMANCE

This study looked at 54 completed chemicals and waste projects with terminal evaluations, representing \$269 million in GEF funding and \$272 million in realized cofinancing. These projects include 16 ODS focal area projects and 36 POPs projects.⁵ GEF-4 projects account for the largest share of completed projects (43 percent),

⁵The remaining two projects were considered international waters focal area projects in GEF-2.

followed by GEF-3 (26 percent), GEF-2 (20 percent), GEF-1 (9 percent), and GEF-5 (2 percent).

Outcome achievement

Seventy-eight percent of the chemicals and waste projects reviewed (accounting for 81 percent of the GEF funding for this sample) have overall outcome ratings in the satisfactory range. This performance is similar to ratings reported across all focal areas in APR 2015 (GEF IEO 2017). POPs projects had slightly higher success rates (78 percent) than ODS focal area projects (75 percent). Seventy-nine percent of national projects and 80 percent of global projects have satisfactory outcomes, compared to 70 percent of regional projects. Projects executed by government agencies had stronger performance on average (82 percent satisfactory) than those executed by multilateral organizations (68 percent).⁶ Success rates were higher in Asia (91 percent) and Europe and Central Asia (79 percent), and lower in Latin America and the Caribbean (67 percent) and Africa (50 percent). Outcome ratings have improved over time; 83 percent of GEF-4 projects have satisfactory outcomes, compared to 60 percent in GEF-1. Box 3.2 presents examples of projects rated as having satisfactory outcomes that are likely to be sustained.

Figure 3.1 shows outcome ratings by lead GEF Agency.⁷ Although these data show a larger

⁶ Multilateral organizations include the United Nations Office for Project Services (UNOPS) and the United Nations Institute for Training and Research (UNITAR).

⁷ Outcome ratings for projects led by FAO and the World Bank–FAO are excluded from the analysis due to insufficient sample sizes. The sole project led by FAO (Capacity Building on Obsolete Pesticides in EECCA Countries, GEF ID 3212) had an unsatisfactory outcome, while the sole project implemented jointly by the World Bank and FAO (Africa Stockpiles Program, GEF ID 1348) had a satisfactory outcome.

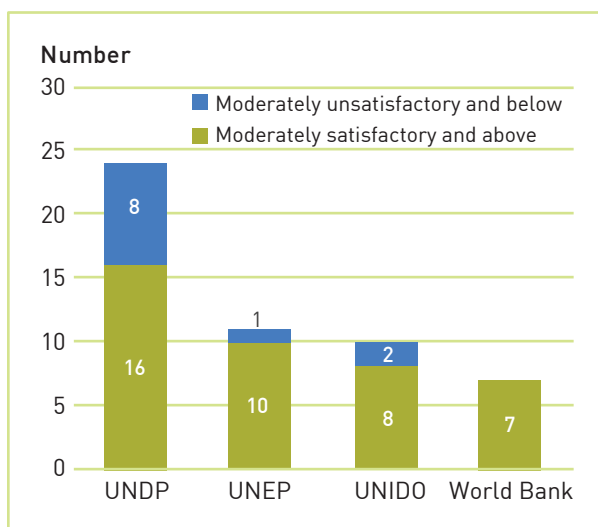
BOX 3.2 Project examples: high ratings for outcomes and sustainability

The terminal evaluation review identified the following examples of closed projects with high outcome and sustainability ratings.

- **Sustainable Management of POPs in Mauritius** (GEF ID 3205, implemented by UNDP) sent all inventoried obsolete POPs, as well as additional hazardous chemicals, for environmentally sound disposal, thus exceeding its project target and eliminating POPs from the country. The project also achieved sustainable success in switching from DDT to pyrethroids as an alternative for vector management at airports and seaports.
- **Capacity Building on Obsolete Pesticides in EECCA** (Eastern European, Caucasus, and Central Asia; GEF ID 3212, implemented by FAO) safeguarded more than 200 metric tons of obsolete pesticides in Azerbaijan, Belarus, and Georgia; it achieved more than anticipated in terms of awareness raising and capacity building on obsolete pesticide management and disposal through the implementation of micro support projects. The project was followed on by European Commission support to a regional project to dispose of obsolete pesticides, with a budget of €8.5 million in 10 countries.

share of UNDP-led projects with less satisfactory outcomes, that result is largely driven by four GEF-1 and GEF-2 ODS projects in Azerbaijan, Kazakhstan, Latvia, and Turkmenistan that were implemented jointly by UNDP and UNEP. Among GEF-3 and GEF-4 projects, the World Bank had the highest share of satisfactory outcome ratings (100 percent), followed by UNEP (83 percent), UNIDO (78 percent), and UNDP (75 percent).

FIGURE 3.1 Overall outcome ratings for chemicals and waste projects by lead GEF Agency



SOURCE: GEF PMIS.

NOTE: $n = 52$.

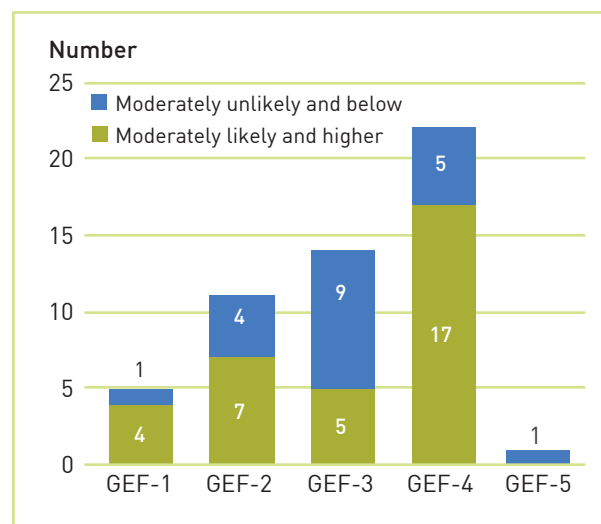
Sustainability

Sixty-two percent of the chemicals and waste projects reviewed received ratings of moderately likely and above for sustainability of outcomes; this accounted for 64 percent of GEF funding for this sample. This performance is slightly lower than ratings reported across all focal areas in APR 2015: 67 percent of projects (GEF IEO 2017). The outcomes of 75 percent of ODS focal area projects were rated as likely to be sustained, while only 57 percent of POPs projects were so rated. Seventy percent of national projects were rated as likely to have sustained outcomes, compared to 50 percent of multicountry projects. Just 30 percent of global projects have sustainability ratings of moderately likely and above. (Also see the discussion of [multicountry projects](#) later in this section.) Projects executed by national governments were rated equally likely to be sustained, on average, as those executed by multilateral organizations (63 percent).

Chemicals and waste sustainability ratings dipped significantly in GEF-3, with just a third of project outcomes considered likely to be sustained, but recovered to 77 percent in GEF-4, as shown in figure 3.2. These lower ratings in GEF-3 were primarily driven by poor ratings for project financial stability. The total amount of actual cofinancing leveraged per dollar of GEF grant for these projects (\$0.60) was lower than the amount promised at appraisal (\$1.10).

Across all GEF replenishment periods, UNEP and the World Bank had higher shares than other Agencies of projects whose sustainability was rated as moderately likely and above (73 and 71 percent, respectively). Projects implemented by UNDP and UNIDO received lower overall sustainability ratings, with 58 and 56 percent of projects with outcomes rated moderately likely and above, respectively.

FIGURE 3.2 Ratings for chemicals and waste projects on overall likelihood of sustainability by GEF replenishment period



SOURCE: GEF PMIS.

NOTE: $n = 52$.

Quality of implementation and execution

Seventy-one percent of the chemicals and waste projects reviewed received quality of implementation ratings in the satisfactory range, with a higher percentage (84 percent) of projects rated in the satisfactory range for quality of execution. This quality of execution performance is significantly higher than the ratings reported across all focal areas in APR 2015 (72 percent). Ratings on quality of implementation have improved from GEF-1, when 50 percent of projects had satisfactory quality of implementation; in GEF-4, 85 percent of projects had a satisfactory rating for implementation. Ratings on quality of execution have been relatively consistent over time. Quality of implementation ratings have been higher for POPs projects (79 percent) and lower for ODS projects (45 percent). Quality of execution ratings were also higher for POPs projects (88 percent) and lower for ODS projects (70 percent).

Fifty-seven percent of regional projects were rated moderately satisfactory or higher for implementation, compared with 72 percent for national projects and 78 percent for global projects. Overall, quality of implementation has been higher in Asia (80 percent satisfactory) and lower in Europe and Central Asia (63 percent) and Africa (67 percent). Projects executed by government agencies have slightly higher quality of implementation ratings than those implemented by multilateral agencies (71 percent versus 69 percent satisfactory), while projects executed by multilateral agencies have slightly higher quality of execution ratings than for government agencies (88 versus 82 percent satisfactory). Trends toward lower quality of implementation are largely driven by a cohort of ODS phaseout projects in the Europe and Central Asia region, approved in GEF-1 and GEF-2 and implemented jointly by UNDP and UNEP.

Lower quality of implementation ratings is also correlated with longer project implementation times. The average time from GEF Chief Executive Officer (CEO) approval or endorsement to operational completion across all chemicals and waste projects reviewed is 4.8 years. The average time from GEF approval to operational completion is 5.3 years for projects with lower implementation scores and 4.5 years for projects with higher implementation scores. Similarly, the average length of time extended beyond the planned date of completion is 1.6 years for projects with low implementation scores and 1.1 years for projects with high implementation scores.

Monitoring and evaluation design and implementation

Fifty-one percent of chemicals and waste projects reviewed have received quality of monitoring and evaluation (M&E) design ratings in the satisfactory range, with a slightly higher percentage (59 percent) of projects rated in the satisfactory range for quality of M&E implementation. This performance is similar to ratings reported across all focal areas in APR 2015. Performance on M&E design and implementation has generally improved over time. In GEF-4, 78 and 77 percent of projects received satisfactory ratings for quality of M&E design and implementation, respectively. On average, ODS projects were rated significantly lower than POPs projects on M&E design and implementation quality (31 percent and 65 percent, respectively), which also reflects the trend over time toward better M&E performance.

By GEF Agency, cumulatively since GEF-1, UNDP and the World Bank had the highest proportion of projects with shortcomings in M&E design quality, with 42 and 33 percent of projects scored in the satisfactory range, respectively. UNIDO and the World Bank had the highest proportion of projects

with shortcomings in M&E implementation quality, with 50 and 25 percent of projects scored in the satisfactory range, respectively. By executing agency type, multilateral agencies were rated significantly lower on average (37 percent satisfactory) than government agencies (56 percent) on M&E design quality.

EFFECTIVENESS

To analyze the progress of the chemicals and waste focal area toward achieving impact, this study reviewed terminal evaluations for GEF-3, GEF-4, and GEF-5 projects. Of the 36 closed projects with terminal evaluations, 34 were included in this assessment. Excluded from the analysis was one project that received a rating of highly unsatisfactory for the overall quality of the terminal evaluation and a second project for which a terminal evaluation was not made available. Of the 34 projects included in the review, 91 percent are POPs projects; the remaining 9 percent are ODS.⁸ Forty-seven percent have been implemented by UNDP, 26 percent by UNIDO, and 15 percent by UNEP. MSPs account for 59 percent of the project cohort, with FSPs making up 41 percent. The terminal evaluation review was complemented by case studies of closed projects.

Progress toward impact

Fifty-six percent of chemicals and waste projects showed evidence of environmental impact—specifically, stress reduction. Given their nature, no POPs or ODS projects showed evidence of improved environmental status.⁹ Stress reduction

was achieved primarily through disposal of PCBs and PCB-containing equipment, disposal of POPs pesticides, reduction of DDT-based production and usage, introduction of BAT/BEP to address unintentional POPs, and remediation of dioxin contaminated hotspots. The majority of projects that did not show evidence of stress reduction were focused on capacity building, strategy or guideline development, or institutional strengthening. Projects showing evidence of impact were, on average, rated higher in terms of outcomes and likelihood of sustainability. All projects showing evidence of stress reduction included a demonstration or implementation component as part of the GEF's contribution.

Reliable data on the aggregate impact of closed chemicals and waste projects in terms of tons of POPs, ODS, mercury, and other chemicals and related wastes phased out, reduced, or disposed of were not readily available, representing a significant shortcoming in the capacity of the GEF monitoring system to accurately track and report on results achieved in this focal area. GEF tracking tools were available for 21 of the 34 projects reviewed, although it was not always clear whether the tracking tool on file was an annual implementation report or a terminal report submitted upon completion. Many of the quantitative achievements reported in the tracking tool did not exactly match what was reported as achieved in the terminal evaluation, although some were reasonably close. Some tracking tools erroneously reported results from other projects in addition to the results of the relevant project. Interviews with the GEF Secretariat indicated that more attention is being paid to Agency M&E of chemicals and waste projects in GEF-6, including incorporating

⁸ Because just three projects in the cohort are ODS, results are not disaggregated by POPs versus ODS in the analysis that follows.

⁹ Stress reduction refers to the decrease, prevention, or slowdown of the degradation, destruction, or contamination of the environment. Improved

environmental status refers to positive changes in the state of the ecosystem or any of its components.

designated resources for these purposes in project proposals.

Despite these challenges, this study attempted to analyze information reported in the available tracking tools as well as in the terminal evaluations to develop preliminary estimates of the aggregate impact of the 34 closed projects reviewed. The results of this analysis are shown in table 3.1. None of the tracking tools or terminal evaluations reported specific quantities of unintentional POPs reduced or avoided as a result of BAT/BEP applied in industrial or nonindustrial sectors (either directly through the project or anticipated through replication). Among the projects reporting impacts in terms of chemicals and related wastes phased out, disposed of, or safeguarded, one was conducted in an LDC (Ghana) and one in a SIDS (Mauritius; box 3.3).

Results were achieved in many projects in terms of awareness raising, capacity building, and policy strengthening. Nearly all GEF chemicals and

waste projects have made contributions to information sharing and awareness raising as well as building institutional and stakeholder capacity for technical and environmental management of chemicals and waste (table 3.2). Three-quarters of projects have also contributed to strengthening policy and regulatory frameworks that govern POPs and ODS, and nearly two-thirds of projects have included a pilot or demonstration component. A much smaller proportion of projects focused on research, which may reflect the maturity of the legacy POPs field as well as the shift away from targeted research in GEF focal area strategies after GEF-3.

These trends illustrate the multifaceted approach that many POPs projects have taken, involving, on the one hand, efforts to build the enabling environment for continued safe management and disposal through strengthening laws, policies, and regulations for POPs management, and capacity to inventory and manage POPs, as

TABLE 3.1 Aggregated project impacts in terms of chemicals and related wastes phased out, disposed of, and safeguarded

Substance	Action	Quantity (tons)
DDT	Annual use of DDT targeted by the project and achieved	4,580
	DDT stocks disposed of in an environmentally sound manner	3,455
	DDT stocks safeguarded	5
PCB	PCB-concentrated oils disposed of	318
	PCB-contaminated oils disposed of or decontaminated	87
	PCB capacitors disposed of	1,178
	PCB-contaminated equipment and wastes disposed of ^a	14,325
	PCB oils and PCB-contaminated equipment under safe storage	670
Pesticides	Obsolete pesticides, including POPs, disposed of in an environmentally sound manner	1,745
	Obsolete pesticides safeguarded	37,217
POPs chemicals	Phased out from use following demonstration of alternative—project direct	700
	Phased out from use following demonstration of alternative—through replication	—
	Production permanently ended	450

NOTE: — = not available.

a. Includes both low- and high-concentration wastes

BOX 3.3 Case study example: achieving impact in SIDS

Achievement under the first pillar of the GEF-4 **Sustainable Management of POPs in Mauritius** project (GEF ID 3205, implemented by UNDP)—quantities of obsolete POPs pesticides and contaminated soil for final disposal—exceeded the target, with the costs of the extra quantity supported by government cofinancing. The following obsolete POPs chemicals were collected and sent for disposal in a cost-effective and environmentally sound manner:

- 138 tons of DDT
- 6.7 tons of hazardous chemicals
- 5,000 kilograms of PCB-containing oil
- 63 kilograms of Mirex, 13 liters of Dieldrin, and 13 liters of Aldrin
- 300 cubic meters of DDT-contaminated soil

In addition, the spraying of DDT at airports and seaports ceased in 2011 and was substituted with an alternative vector control management strategy. A stock of 5 metric tons of technical DDT was retained for safe storage in United Nations–approved bags as a precautionary measure in case of malaria outbreak. The results achieved through project activities have generated significant positive and sustainable impacts on the environment and human health in Mauritius and supported the government’s goal of being waste-free. Interviews indicated that new infrastructure now exists on the previously contaminated sites. The project impacts also contribute to reduced global environmental stress.

Contributing to the project’s success under the first pillar was strong government participation, including in the form of cofinancing. The government provided funds to UNDP to manage disposal of contaminated soil beyond the project’s scope, demonstrating its capacity and capability in addressing hazardous chemical wastes as a result of the intervention. A secondary driver of success was participation from other actors, including nongovernmental organizations and—to a more limited degree—the private sector.

The project’s second pillar was less successful. An integrated vector management strategy was piloted in several villages with the ultimate objective of national replication, and volunteers were solicited to monitor and prevent the accumulation of stagnant water. A lack of institutionalization of this program was a constraint (including a lack of ownership and uptake by the government, and the fact that the positions were volunteer and unpaid), and the program has not been scaled up.

TABLE 3.2 Areas of contribution of chemicals and waste projects

Project contribution	Number of projects	% of projects assessed
Laws, policies, regulations	26	76
Institutional capacity	32	94
Information sharing/awareness raising	33	97
Demonstration/pilots	21	62
Implementation	13	38
Management systems/strategies	14	41
Research/knowledge generation	4	12

NOTE: $n = 34$.

well as monitor and enforce regulations. On the other hand are pilot projects working directly with industry and government to demonstrate viable alternatives to POPs, and activities that help educate practitioners regarding processes and practices that lead to the release of POPs. For these projects, the logic is that demonstrated best practices cannot be sustained or scaled up without regulatory drivers and institutional support. As the analysis in the following subsection indicates, however, chemicals and waste projects have not been particularly successful at scaling up.

Broader adoption and strategies for scaling-up

Sixty-eight percent of chemicals and waste projects showed some evidence of broader adoption (table 3.3). The most common form of broader adoption was mainstreaming, primarily through the adoption and enforcement of laws and regulations focused on sound chemicals management, at both the national and local levels. About a quarter of the projects reviewed showed evidence in their terminal evaluation of scaling-up—i.e., expanding the results of GEF activities to larger geographical or administrative scales within a country. This scale-up was often achieved through successful demonstration effects.

Four projects (12 percent) showed some evidence of transforming markets; two of these projects

were complementary FSPs in China focused on DDT-based production and usage (box 3.4). Few projects showed evidence of replication—i.e., reproducing results at a comparable scale in a different geographical area or region. It is possible that terminal evaluations are conducted too early to see much evidence of this broader adoption pathway.

Overall, chemicals and waste projects have not sufficiently focused on approaches to scale up or replicate project successes. Less than a third of the project terminal evaluations mention or evaluate strategies to scale up or replicate results. Among those with discussion of scaling-up, half do not elaborate on specific strategies or identify specific instances of successful scale-up. Instead, projects seem to largely anticipate a positive regional or global demonstration effect by identifying successful elements of the project that may be appropriate for future chemicals or waste-related initiatives within neighboring countries or for South-South cooperation activities.

In particular, the terminal evaluation review suggested that projects have generally not given adequate attention to strategies for scaling-up project approaches at the national level—for example, strategies for the disposal of POPs stockpiles or PCB-containing equipment not covered by the project, or for developing or introducing financial incentives to address the safeguarding and disposal of waste not covered by the project, or for scaling-up local-scale demonstration activities.

Several GEF POPs interventions in China are exceptions and have successfully mobilized national replication programs. For example, the difocal project described in box 3.4 finalized an integrated pest management national replication program prior to project completion. Replication activities were initiated at several provincial

TABLE 3.3 Projects showing evidence of broader adoption

Type of adoption	Number of projects	% of projects assessed
Mainstreaming	20	59
Replication	2	6
Scaling-up	8	24
Market change	4	12
Total	23	68

NOTE: $n = 34$.

BOX 3.4 Case study example: mainstreaming and transforming markets to eliminate DDT in China

Collectively, two GEF projects—**Improvement of DDT-based Production of Dicofol and Introduction of Alternative Technologies including IPM [integrated pest management] for Leaf Mites Control in China** and **Alternatives to DDT Usage for the Production of Anti-fouling Paint** (GEF IDs 2629 and 2932, both implemented by UNDP) covered the two sources of China's DDT consumption—dicofol and anti-fouling paint (AFP) production—with the aim of eliminating both sources of DDT consumption and promoting alternatives. During project implementation, a national ban on the production, distribution, use, and import of DDT was issued jointly by 10 ministries; this went into effect in May 2009. In addition, regulations banning the production, sale, and use of dicofol were promulgated in three demonstration counties in 2011. The AFP project also played a part in supporting China's accession to the International Maritime Organization (IMO) Convention on the Control of Harmful Anti-Fouling Systems on Ships (adopted 2001).

The two complementary projects played a key role in ensuring that the ban on DDT would be realized. The ban helped eliminate DDT production and consumption, but created new challenges in transforming the markets and introducing viable alternatives. For dicofol, the GEF project supported the closure of two dicofol plants, environmentally sound disposal of 1,600 tons of high-risk DDT waste, and optimization of the only closed-system dicofol production facility. On the consumption side, the project demonstrated IPM technology in three counties and trained farmers in its use. These activities catalyzed other farmers not participating in the demonstration to apply IPM technologies at their own cost—in recognition that IPM increased crop output, quality, and income. Interviews indicated that the Ministry of Agriculture has mainstreamed IPM promotion into its regular budget. On AFP, the project eliminated the use of 250 metric tons/year of DDT through conversion to nontoxic and environmentally friendly alternatives. The terminal evaluation concluded that AFP manufacturers had produced AFP alternatives for a sufficiently long period, and that the project's stakeholders had been successful in creating the required markets, such that the AFP market had been transformed and the results were likely to be sustained.

Factors contributing to these successes include the Chinese government's strong commitment to eliminating DDT, as well as cooperation between the Ministries of Agriculture and Environment on the dicofol project. Private sector support was also significant on the dicofol project, as evidenced by the amount of cofinancing contributed on top of the \$6 million financed by the GEF. Dicofol plants and farmers originally committed a total of \$8.65 million in cash and in-kind contributions; by project's end, this commitment had been exceeded by \$2.54 million, largely due to in-kind contributions from farmers.

Five years after the project began, DDT and tributyltin levels in the marine environment had decreased.

locations; these were expected to expand nationwide and to cover additional crops. Factors influencing the success of this program are the availability of financial resources and technology support.

Analysis across multiple study methods (terminal evaluation review, quality at entry review, case studies, and interviews) identified several

strategies that chemicals and waste projects have used or plan to use to scale up project results, although the effectiveness of these strategies cannot be fully evaluated. The quality at entry review of projects approved in GEF-6 suggested increasing attention to approaches for scaling-up project results; among the 25 PIFs reviewed, 70 percent include description of plans for scale-up. Chemicals and waste strategies for

scaling-up include the following; box 3.5 presents lessons learned for scaling-up.

- **Preparing technical guidelines and regulations that would apply to all sector actors, rather than just those supported through demonstration activities.** The terminal evaluation review did not provide sufficient evidence on whether this approach has been successful for scaling-up.
- **Involving private sector actors as project partners and beneficiaries.** For example,

the Demonstration of Mercury Reduction and Minimization in the Production of Vinyl Chloride Monomer in China project (GEF ID 6921, implemented by UNIDO) intends to scale up calcium carbide-based vinyl chloride monomer production technologies with a mercury-free catalyst through the China Petroleum and Chemical Industry Federation and China Chlor-Alkali Industry Association. And the Environmentally Sound Management and Destruction of PCBs in Mexico: Second Phase project (GEF ID 9214, implemented by UNDP),

BOX 3.5 Lessons learned for scaling-up: case study examples

Engage financial institutions. Lack of early engagement with financial institutions was identified as a hindering factor in scaling-up pilot demonstration activities in the GEF-4 MSP Regional Plan for Introduction of BAT/BEP Strategies to Industrial Source Categories of Stockholm Convention Annex C of Article 5 in ESEA Region (GEF ID 3572, implemented by UNIDO). Although the pilot demonstrations were considered relevant and successful as stand-alone activities, loan windows were not sufficiently available to small and medium enterprises to catalyze broader adoption within and across the seven participating countries (Cambodia, China, Indonesia, Lao People's Democratic Republic, Mongolia, the Philippines, and Thailand). Attempts to engage regional and local banks during project implementation were unsuccessful. According to interviews with UNIDO, an important lesson learned is to engage financial institutions such as local banks as early as possible in the project design phase, and to keep them engaged throughout the project life cycle. Early and ongoing engagement with local banks—such as inviting them to project design and implementation meetings—will help them better understand pilot demonstrations, their successes, and the need for private sector participation.

Plan to scale up from the outset. In Sustainable Management of POPs in Mauritius (GEF ID 3205, implemented by UNDP), one of the project pillars lacked a viable strategy to scale up from pilot interventions. An integrated vector management strategy was introduced in pilot villages to reduce the risk of malaria outbreaks. Volunteers were selected in pilot villages to monitor sources of water that could be mosquito breeding sites. It became apparent that without paid positions and/or a dedicated office to formalize support project activities could not be scaled up.

Identify synergies. The objective of the GEF-5 FSP Implementation of Eco-industrial Park Initiative for Sustainable Industrial Zones in Vietnam (GEF ID 4766, implemented by UNIDO) was to improve chemicals management in industrial zones through a multifocal area approach. The project includes implementation of three eco-industrial park pilot projects in northern, central, and southern Vietnam, respectively. A key element of the project's success was in identifying synergies across companies within the pilot parks, in neighboring communities, and across the regional and national industrial community. By working together at various levels from park employees to the national industrial community, the project was able to realize benefits greater than the sum of companies optimizing their individual performance. According to UNIDO, the pilots have gained traction at the government level, which will be beneficial in scaling-up the interventions.

plans to establish a public-private partnership responsible for coordinating integrated management of PCBs as a means of sustaining and scaling-up disposal by PCB owners and maintainers.

- **Targeting eco-industrial parks and industrial zones.** This approach allows projects to work with a larger community of industries and target interventions at multiple scales, including the individual company, industry, and national levels.
- **Developing strategies or plans that serve as the foundation for future investment projects.** For example, the GEF-4 MSP Preparing for HCFC Phase Out in CEITs: Needs, Benefits and Potential Synergies with other MEAs (GEF ID 2331, implemented by UNDP), helped develop country strategies that served to mobilize a larger investment program to assist six countries with their Montreal Protocol obligations.
- **Documenting lessons learned and knowledge gained.** Some projects include specific components on promoting and disseminating project results to encourage positive demonstration effects.

A major constraint for scaling-up and the sustainability of chemicals and waste projects—and particularly clean-up of legacy POPs stockpiles and contaminated sites—is that such efforts are generally not financially attractive. Many countries where such stockpiles exist do not have the capacity to destroy those materials, and transporting them to destruction sites in other countries can be complex and costly. Under these circumstances, a GEF demonstration project may not be sufficient to catalyze further action. In other words, the barriers to broader adoption are not generally overcome by a successful demonstration. Institutional, policy, and especially

financial mechanisms are needed to sustain and expand project results.

Country ownership

The terminal evaluation review showed that all chemicals and waste projects are appropriately aligned with national priorities, policies, and strategies. Recipient country governments have provided more cofinancing to chemicals and waste projects than any other entity, including the private sector. To date, 40 percent of all cofinancing for chemicals and waste projects has been provided by government agencies. However, further analysis of terminal evaluations suggests that these conditions are not guarantees of country ownership. Among the terminal evaluations that specifically assessed country ownership (23), 74 percent of projects showed high or satisfactory country ownership; the remaining 26 percent had either mixed or low ownership.

The level of country ownership appears to have implications for sustainability and progress toward impact. Country-owned projects were rated more likely to have sustainable results on average.¹⁰ Seventy-one percent of country-owned projects showed evidence of impact (environmental stress reduction), versus just 17 percent of projects with lower ownership. Among the projects with lower ownership, four were focused on planning and capacity building, suggesting that countries may show stronger ownership of projects with more tangible outcomes.

Regional and global projects represent a larger share of projects with lower country ownership (67 percent versus 29 percent for projects with high country ownership), suggesting challenges

¹⁰ Based on a 5-point scale for overall likelihood of sustainability, projects with a higher level of country ownership had an average score of 3.2, while those with a lower level of ownership averaged 2.3.

in achieving strong country engagement in multi-country projects. Terminal evaluations for two regional projects noted that low commitment from one country partner can negatively influence progress and results for the broader project. Projects with high country ownership were also more likely to be executed by a government entity—76 percent versus 33 percent for projects with lower country ownership. Box 3.6 presents good practices for ensuring country ownership based on a case study example.

Stakeholder engagement

A wide range of stakeholders have been involved in chemicals and waste projects, including national and subnational government agencies and authorities, civil society organizations, private sector entities, and research and educational entities. These stakeholders have been engaged in myriad ways—as executing agencies, cofinancers, project partners, and beneficiaries of capacity building and technology transfer.

BOX 3.6 Morocco: good practices for ensuring country ownership

Country ownership was ensured in the GEF-4 FSP Safe Management and Disposal of PCBs, Pillar I (GEF ID 3082, implemented by UNDP), through the following good practices:

- Designation of an executing agency of the project within the Moroccan Ministry for the Environment, which supported institutional integration
- Significant cofinancing provided by the Moroccan government, both in cash and in kind (through the project management unit staff)
- Measures by the Ministry for the Environment to integrate project activities within its own planning process

Most terminal evaluations found stakeholder engagement to be sufficient—i.e., involving stakeholder groups is appropriate for achieving project objectives. Project case studies suggest that broad and meaningful engagement of stakeholders can contribute to successful outcomes (box 3.7). Approximately 10 percent of terminal evaluations (4 of 34 projects reviewed) identified lack of stakeholder involvement as a factor detracting from results achievement.

Below are findings on stakeholder engagement by major stakeholder group.

- **Government.** National government agencies were involved in all projects, and subnational government entities were also engaged in a quarter of projects (primarily those with

BOX 3.7 Morocco: engaging the private sector for PCB management

The main objective of the Safe Management and Disposal of PCBs, Pillar I project described in box 3.6 was to improve capabilities for safe management of PCB oils and PCB-containing equipment at all stages of the management cycle. To this end, the project engaged private sector entities with PCBs or PCB-containing equipment in their possession, including large utility and transformer service companies. During the project, these companies were trained to manage PCB-containing equipment throughout operation, maintenance, and decommissioning phases. A synthesis report on regional workshops on PCB management technical trainings indicated that PCB holders in general were willing to translate the gained capacities into practice. At the end of the project, 27 private sector actors in Morocco adopted a PCB management plan, exceeding the indicator target of 25 plans. The high number of PCB management plans adopted will help support safe management of PCBs by private actors after project close.

demonstration or pilot activities that required the involvement of local authorities). Government-executed projects are the dominant approach for chemicals and waste projects, constituting 77 percent of approved projects.

- **Civil society organizations.** More than half of projects with terminal evaluations engaged civil society organizations, primarily to support outreach (e.g., disseminating information to raise awareness among broader audiences) or as beneficiaries (e.g., training participants). In a few projects, they participated on the project steering committee. No clear patterns emerged in terms of which projects engaged civil society organizations and which did not—including by implementing or executing agency, GEF replenishment period, or project focus. Less than 1 percent of GEF projects have been executed by civil society organizations.
- **Private sector.** Most projects engaged the private sector in some capacity. Less than 20 percent of terminal evaluations provided no evidence of private sector engagement; these were primarily global and regional projects focused on capacity building for NIP development and implementation and to prepare CEITs for ODS phaseout. A more detailed assessment of private sector engagement follows in the next subsection.

Private sector engagement

As noted above, more than 80 percent of chemicals and waste projects with terminal evaluations engaged the private sector in some manner. Thirty-four percent of all chemicals and waste projects have been cofinanced by the private sector. Of this cofinancing, 36 percent has been in the form of grants, and 37 percent has been in-kind contributions (the remaining 27 percent has been in the form of other contribution types). The GEF's ODS portfolio has been characterized

by strong private sector engagement from project design through implementation; a GEF IEO (2010a) impact evaluation found that private engagement was a strong driver of success. GEF Agencies view the private sector as a core constituency for chemicals and waste projects and important to their sustainability.

The types of private sector entities engaged generally vary based on the project focus, but primarily are larger national and multinational corporations. For example, PCB management projects typically engage private (and public) PCB holders, primarily large electricity companies with PCB-containing transformers and capacitors, as well as waste management companies to handle safe dismantling, temporary storage, transportation, and disposal. Projects focused on unintentional POPs production involve industrial actors, including pulp and paper manufacturers, iron and steel producers, and cement kilns, as well as the health care industry (medical waste).

For POPs pesticides projects, CropLife International—a global association of multinational pesticide producers, including BASF, Bayer, Dow AgroSciences, DuPont, FMC, Monsanto, Sumitomo Chemical, and Syngenta—has been a frequent partner and cofinancer based on corporate stewardship principles. In some countries, chemicals and waste projects have also engaged DDT producers. In the ODS focal area, private sector actors have included equipment manufacturers (e.g., foam blowing, air conditioning, and refrigeration equipment), chemical manufacturers and importers, and air conditioning and refrigeration equipment servicing companies. The terminal evaluation review offered little evidence of chemicals and waste projects engaging with financial institutions.

Capacity building has been the dominant mode of engagement for private actors, based on review of

terminal evaluations in the chemicals and waste portfolio, with about three-quarters of projects providing capacity building for the private sector. For example, private companies are often trained on safe and sustainable handling of chemicals. Such capacity-building assistance is sometimes provided in combination with direct support (40 percent of projects). Projects providing direct support (e.g., technology upgrades) to the private sector include those in which the GEF funds demonstration and implementation activities—predominately PCB, DDT, and unintentional POP projects.

Interviews and desk analysis identified the following lessons learned regarding the engagement of the private sector in the chemicals and waste portfolio.

- **Importance of “soft” activities.** In many countries, capacity building and policies are needed to ensure that the government can effectively oversee the private sector. Similarly, awareness raising and training among private sector actors—particularly PCB holders—has been shown to be an important driver of success.
- **Careful management of industry partnerships.** Because many chemicals and waste projects have multiple components—and often include both policy and implementation activities—the engagement of private sector actors must be carefully managed and sometimes segmented. Several GEF Agencies mentioned the importance of maintaining distance from large or multinational industry players with regard to policy or enforcement work in order to maintain credibility and objectivity in advising government clients. Private actors receive legitimization through working with the GEF and its Agencies and are often keen to influence the regulatory playing field. At the same time, consulting with national and

smaller-scale industries on regulations can provide practical insights on nomenclature and constraints related to their applicability in field situations.

- **Challenges engaging small-scale and informal sector actors.** Building awareness among and gaining the commitment of small-scale industries and small- and medium-size PCB holders has been a challenge in chemicals and waste projects. Constrained financial and human resources limit smaller enterprises’ ability to participate; at the same time, their smaller quantities of PCB-containing equipment do not create a strong incentive for Agencies to target them, given the quantitative disposal targets for the chemicals and waste portfolio.
- **Financial models and sustainability.** Terminal evaluations provide little evidence of developing financial mechanisms to ensure continued engagement of private sector actors. Few chemicals and waste projects generate revenues for the private sector—apart from disposal or waste management companies—suggesting that more work needs to be done in this area. Program 1 of the GEF-6 focal area strategy recognizes this need, allowing support for development and demonstration of private sector partnerships, economics instruments, and financing models that can achieve large scale and long-term investment, as well as the development of frameworks for cost recovery from the private sector for environmental clean-up.

Gender considerations

Design of all of the chemicals and waste projects with terminal evaluations predated the adoption of the GEF’s policy on mainstreaming gender, and more than 60 percent of the terminal evaluations reviewed for this study do not address gender.

Eight projects (or about a quarter of all chemicals and waste projects with terminal evaluations) showed evidence of considering gender issues in design and/or implementation to varying extents. Four of these eight projects focused on equal opportunities for women and men to benefit from training activities organized by the project. For example, in the difocal project in China, the large majority of the demonstration crop farmers were female; training activities thus benefited female farmers. Another project in China, Demonstration of Alternatives to Chlordane and Mirex in Termite Control (GEF ID 2359) conducted a social assessment for a chlordane and Mirex producer to determine gender-disaggregated impacts of factory closure and develop mitigation plans.

Terminal evaluations suggest that more education and awareness may be needed regarding the relevance and importance of gender in chemicals and waste projects. None of the terminal evaluations included lessons learned related to gender considerations, and several evaluators opined that gender was irrelevant. Interviews with GEF Agencies suggest increased attention to and learning around gender issues in recent years.

Multicountry projects

Compared to single-country projects, multicountry projects show a lower rate of stress reduction (15 percent) and broader adoption (less than 40 percent for mainstreaming and 15 percent for scaling-up). This finding partly reflects the fact that many multicountry projects have focused on capacity building, strategy development, and civil society participation, which may be seen as precursors to achieving impact. The terminal evaluation performance ratings also suggest that sustainability is a particular challenge for multicountry projects.

Agency interviews suggested that a key contributing factor is the difficulty associated with

embedding supranational project management and structures in countries with varying geographic, sociopolitical, and other individual circumstances. Another lesson learned is that narrower programming on a specific topic or sector is helpful when several countries are involved. Implementing regional projects across countries with diverse needs, priorities, and country contexts has proven a significant challenge for some chemicals and waste projects, as the case study examples in box 3.8 illustrate.

Multifocal area projects

Multifocal area approaches offer significant potential to increase the effectiveness and efficiency of chemicals and waste project delivery (box 3.9), particularly given concerns about diminishing resources. The GEF's new role as the financial mechanism for the Minamata Convention offers additional opportunities for mercury projects to address connected issues, particularly related to international waters and climate change.

Implementation experience in the GEF is limited, however, with just 11 multifocal area projects with chemicals and waste components approved since GEF inception—and none yet completed. These projects have focused primarily on collaborations with international waters and climate change, including three projects on energy efficient lighting and safe disposal of mercury, two on industrial zones, two on environmental management of bodies of water, and one on ASGM and minimizing mercury releases to international waters.

As previous GEF IEO evaluations—including OPS5—have pointed out, some institutional disincentives and challenges remain for pursuing multifocal area projects. Agencies continue to raise concerns related to the burden of tracking tool reporting requirements for multifocal area

BOX 3.8 Implementing regional projects: case study examples

Differing country capabilities and circumstances can translate into different rates of project implementation and cause delays or issues in overall project progress. For example, in the GEF-4 MSP **Preparing for HCFC Phase out in CEITs: Needs, Benefits and Potential Synergies with other MEAs** (GEF ID 2331, implemented by UNDP, UNEP, and UNIDO), the technical and institutional needs and priorities of the participating countries were not compatible. The unstable institutional context in Ukraine, for example, affected the rate of project implementation and delayed certain activities such as completion of HCFC surveys.

Similarly, in another GEF-4 MSP, **Regional Plan for Introduction of BAT/BEP Strategies to Industrial Source Categories of Stockholm Convention Annex C of Article 5 in ESEA Region** (GEF ID 3572, implemented by UNIDO), more developed countries (e.g., China and Thailand) led dioxin trainings for less developed countries in the region (e.g., Cambodia, Indonesia, and Lao People's Democratic Republic). The trainings were considered an important output of the project, demonstrating a willingness of more developed countries to take on a leadership role and enabling South-South learning exchange. However, when participants returned to their respective countries, difficulties were reported in finding commonalities in applying what they learned within the local context.

projects. While the Stockholm and Minamata Convention Secretariats have expressed support for multifocal area projects as a means of increasing the impact and cost efficiency of chemicals and waste projects, they also emphasized the need to ensure coherence with the core mandates and priorities of the conventions.

BOX 3.9 Lessons learned for multifocal area projects

A key lesson learned for chemicals and waste multifocal projects is that design should be driven by the theory of change and natural connections across focal areas. UNIDO's **Implementing Integrated Measures for Minimizing Mercury Releases from Artisanal Gold Mining** project (GEF ID 4799) was originally conceived as a chemicals and waste project in Ecuador. During the design process, the project team discovered transboundary and multifocal area implications, since the AGSM community in Ecuador discharges mercury into a river basin that flows into Peru. International waters funding was added to the project to enable environmental monitoring in the basin. Working in a small geographical area enabled the project to put more emphasis on building relationships between the countries, authorities, and miners—contributing to project success. According to interviews with UNIDO, this project also illustrates the critical importance of formalizing and building—and sustaining—a strong enabling environment to support miners.

UNIDO's **Implementation of Eco-industrial Park Initiative for Sustainable Industrial Zones in Vietnam** project (GEF ID 4766) similarly illustrates the value of a sound conceptual foundation for involving multiple focal areas. This project was designed from an industrial and resource efficiency perspective, focused on water, energy, and raw materials; and includes funding from the chemicals and waste, international waters, and climate change focal areas. The project's multifocal area nature enables it to address synergies in industrial upgrades, such as boilers which are both energy intensive and produce unintentional POPs that are discharged to air and waterways.

Agencies identified the combining of chemicals and waste funds with those from focal areas with System for the Transparent Allocation

of Resources (STAR) allocations as a particular challenge for multifocal area projects with chemicals and waste components. Planning timelines are part of this issue. STAR allocations for each focal area are often planned early in each replenishment period, and Agencies noted that chemicals and waste opportunities are not always raised during these early national planning discussions. Consequently, by the time chemicals and waste opportunities are identified that could be synergistic with other focal areas, the STAR allocations are already programmed.

3.3 Emerging issues for the GEF partnership

Interviews conducted for this study identified several recurring themes with regard to the GEF partnership in the chemicals and waste focal area.

Agencies and convention secretariats noted improvements in the partnership with the GEF Secretariat since OPS5, including increased communication and clearer guidance. In GEF-6, the GEF Secretariat has been guiding the use of resources more strongly, including more upstream consultation with Agencies and countries to identify viable concepts. Some Agencies welcome this stronger management as a means of limiting time spent on developing concepts that may not be approved.

These changes have not been not received without some friction, however. Some Agencies and convention secretariat staff felt that the GEF Secretariat may at times be overmanaging the pipeline—for example, approaching a specific Agency to demonstrate a specific activity in a specific country, rather than letting the needs flow from the countries through the Agencies and to GEF Secretariat, or selecting countries that may need support the most. While the actions of the

GEF Secretariat do not go beyond its mandate, they may contribute to perceptions of an uneven playing field. Similar concerns were voiced about the increasingly active engagement of the GEF Secretariat at the country level, related to the GEF Secretariat's reorganization into regional teams. Agencies felt that GEF management has occasionally made promises at the country level that have led to the development and inclusion of specific activities in the work program. In the context of reduced resource availability in GEF-6, these actions have been perceived as preferential treatment.

Interviews revealed some concerns about the transparency of the GEF project cycle for chemicals and waste activities. These concerns are amplified by the scarce resources—and hence increased competition—for chemicals and waste projects during GEF-6. During the first stages of project development—from first contact to project concept submission—Stockholm Convention Secretariat staff expressed concern about the political consequences of Agency processes for filtering requests and deciding which projects to take up. Some countries have complained to the convention secretariat that they cannot access the GEF or that some aspects of their priorities have not been taken up. On the other hand, it is the role of the Agencies in the GEF partnership to help determine what country needs are consistent with the Chemicals and Waste Focal Area Strategy and offer global environmental benefits and incremental costs that might be funded by the GEF, as well as to determine whether such needs are within an Agency's technical expertise and comparative advantage. Between project submission and work program inclusion, several Agencies felt that the criteria for determining which projects were or were not included were insufficiently clear.

4: Concluding remarks and recommendations

This study provides the first comprehensive look at the relevance, performance, and effectiveness of the GEF's activities in the chemicals and waste focal area, as well as challenges and future opportunities. The study was based on a review of the evolution of the GEF chemicals and waste strategies over time; analyses of the portfolio, terminal evaluations, and project concepts approved in GEF-6; a review of the existing evaluative evidence; and interviews with 20 stakeholders from the GEF Secretariat, the GEF Agencies, the convention secretariats, and managers of GEF projects. The following concluding remarks are based on this evidence and analysis.

- **The chemicals and waste focal area of the GEF has evolved through the GEF-4, GEF-5, and GEF-6 periods to remain highly relevant, including expanding to cover new global priorities such as mercury and embracing synergies between chemicals issues.** The transition to a single chemicals and waste focal area has been synergistic. Ambitious SDG targets related to the environmentally sound management of chemicals and waste make the focal area of increasing relevance and importance moving forward. Numerous reviews—including this study—have found that the focal area is coherent with the guidance of the Stockholm and Minamata Conventions for which the GEF serves as financial mechanism, as well as supportive of the goals of related

agreements, including the SAICM, the Basel and Rotterdam Conventions, and the Montreal Protocol.

- **Projects in the GEF's chemicals and waste focal area have largely performed on par with projects in other focal areas in terms of achievement of outcomes and quality of implementation and execution.** Performance data indicate potential challenges for chemicals and waste projects with regard to the sustainability of POPs results and the outcomes, sustainability, and quality of implementation of multicountry projects.
- **The terminal evaluation review found that, overall, chemicals and waste projects have not sufficiently focused on approaches to scale up or replicate project successes, particularly at the national level.** Many projects have demonstrated the collection and destruction of POPs and reduced environmental stress in a relatively straightforward manner, but have not succeeded in setting in place sustainable strategies and financial mechanisms to scale up those results. As the GEF's portfolio evolves toward unintentional POPs, mercury, and other emerging chemicals issues, it is still critical to ensure that a strategy for legacy POPs is articulated.
- **As the first to attempt to comprehensively assess the results of the chemicals and waste focal area, this study faced some difficulties.**

Reliable data on the aggregate impact of closed chemicals and waste projects in terms of tons of POPs, ODS, mercury, and other chemicals and related wastes phased out, reduced, or disposed of were not consistently available. This shortcoming in the capacity of the GEF monitoring system deserves more attention moving forward. Long implementation timelines and frequent delays in project completion have also meant that results and lessons learned are being tallied with a significant lag.

- **The partnership between the GEF Secretariat, the GEF Agencies, and the convention secretariats is generally seen as improved since OPS5.** However, resource scarcity in GEF-6 has highlighted some concerns about actions that contribute to an uneven playing field, including “overmanagement” of the GEF pipeline by the GEF Secretariat, active engagement by GEF management at the country level and a perceived resulting preferential treatment, and a lack of transparency in the early stages of the GEF project cycle.

Addressing the following issues through the formulation and implementation of the chemicals and waste focal area strategy in GEF-7, as well as through internal policy reforms, could improve the performance and results of this focal area.

- More attention needs to be paid during project design and implementation to considering **sectorwide approaches, strategies for scaling-up, and—particularly—financial mechanisms to support private sector engagement and sustainability.** The GEF cannot finance the collection and destruction of every ton of legacy POPs, nor can it fund the conversion of every industrial facility to cleaner production processes. A more robust theory of change is needed for how the GEF’s demonstration activities will catalyze broader action and impact in the chemicals and waste focal area. This may involve the development of innovative private sector partnerships, economic instruments, and financial models, as envisioned in the GEF-6 Chemicals and Waste Focal Area Strategy under Program 1; such efforts deserve continued support in GEF-7. In particular, as the GEF chemicals and waste portfolio evolves and its focus changes, attention should be paid to ensure that remaining legacy POPs are not orphaned—especially given that cost, ownership, and other barriers are diminishing the efficacy of the demonstration effect for these projects. Different solutions will likely be required for LDCs and SIDS versus middle-income countries.
- The GEF should also not forget its **ozone-depletion program**, which has been given new relevance with the recent adoption of the Kigali Amendments to the Montreal Protocol. CEITs will need support to meet these new obligations, and opportunities are likely to arise for multifocal area collaborations with the climate change focal area.
- Given the challenges this study faced in tallying the verified results of the GEF chemicals and waste focal area, the GEF’s **monitoring procedures** deserve more scrutiny. Tracking tools should be consistently submitted and clearly identified as annual or terminal submissions, and terminal results reported by indicator should match values in the terminal evaluation. Project proposals should consistently incorporate resources designated for M&E.
- **Communication** among the GEF partnership organizations is an area for continued attention. Given an evolving and expanding landscape of opportunities, it is important that all aspects of communication be transparent and collaborative, and that country

perspectives drive the process. To this end, a more structured set of partnership planning meetings that fosters ongoing dialogue on resource availability over the replenishment period, focus or priority among strategic

objectives and program areas, and transparency of the project pipeline process would be helpful in reducing pockets of confusion.

Annex A: Stakeholders interviewed

Francesca Battistelli, African Development Bank, GEF Coordination Unit

Carmela Centeno, United Nations Industrial Development Organization

Ayanleh Daher, African Development Bank, GEF Coordination Unit

Jacob Duer, Secretariat of the Strategic Approach to International Chemicals Management; Interim Secretariat of the Minamata Convention on Mercury

Etienne Gonin, United Nations Development Programme

Herman Gonzalez, Food and Agriculture Organization of the United Nations, GEF Coordination Unit

Carolina Gonzalez-Mueller, United Nations Industrial Development Organization

Laurent Granier, World Bank

Kevin Help, United Nations Environment Programme

William Kwan, United Nations Development Programme

Frank Moser, Secretariat of the Basel, Rotterdam and Stockholm Conventions

Elisabeth Mueller, United Nations Industrial Development Organization

Anil Sookdeo, GEF Secretariat

Jerome Stucki, United Nations Industrial Development Organization

Maksim Surkov, United Nations Development Programme

Evelyn Swain, GEF Secretariat

Richard Thompson, Food and Agriculture Organization of the United Nations, GEF Coordination Unit

Klaus Tyrkko, United Nations Industrial Development Organization

Hilda van der Veen, United Nations Development Programme

Jacques Van Engel, United Nations Development Programme

Annex B: Guidance-strategy mapping

This study conducted a full review of guidance from the Stockholm Convention Conference of the Parties and guidance issued by the Conference of the Plenipotentiaries to the Minamata Convention on Mercury to assess the coherence of the GEF-6 Chemicals and Waste Focal Area Strategy with that guidance. This assessment updates the analysis of convention guidance provided in support of OPS5 (GEF IEO 2012).

In keeping with the method of the previous analysis, only convention guidance issued before the GEF-6 Programming Directions went into effect on May 22, 2014, was included (i.e., guidance through COP-6 of the Stockholm Convention, and guidance from the Conference of Plenipotentiaries in October 2013). Guidance on GEF operational issues is addressed through channels other than the focal area strategies and were therefore not included in the analysis.

Guidance topic	No. of items	Coverage in GEF-6 focal area strategy
Stockholm Convention COP Guidance		
National implementation plans Request to support the regular review and updating of national reporting and NIPs Request to give priority to countries that have not yet received funding for implementation of activities in NIPs	8	GEF support for development and update of NIPs including in Program 2 Completion of NIP updates included in results framework as Outcome 2.3 No explicit prioritization for countries that have not yet received funding for implementation of activities in NIPs
DDT Request to prioritize programming for the elimination of the production and use of DDT Request to support capacity for sound management and appropriate monitoring of DDT use in disease vector control as well as the development and promotion of cost-effective alternatives to DDT	7	GEF support for elimination of production and use of DDT provided under Program 3; strategy cites specific convention guidance on DDT Also under Program 3, the GEF may also support introduction of alternatives to DDT for vector control Tons of DDT disposed included in corporate-level indicator

Guidance topic	No. of items	Coverage in GEF-6 focal area strategy
<p>Regional centers</p> <p>Requests to give consideration to the proposals developed by nominated Stockholm Convention regional centers in the context of GEF support for the delivery of technical assistance on a regional basis and to prioritize such support to those centers situated in developing countries and CEITs</p> <p>Invitation to able entities to provide financial support to enable regional centers to implement their work plan</p>	6	Use of regional centers as executing agencies or providers of technical assistance encouraged in Annex I, particularly in regional projects where centers would have a comparative advantage
<p>Capacity building for global monitoring and effectiveness evaluation</p> <p>Requests to incorporate activities and provide financial support for capacity building related to the Global Monitoring Plan and effectiveness evaluation</p>	6	<p>Program 2 will “support global monitoring that help[s] to measure the effectiveness of the Conventions to which the GEF is the financial mechanism”</p> <p>Strengthening of global monitoring for POPs included in the results framework under Outcome 2.4</p>
<p>BAT/BEP</p> <p>Request to incorporate BAT/BEP and demonstration as one of the priorities for providing GEF support</p> <p>Request to provide funding to use BAT/BEP to support reduction of unintentional releases of POPs</p> <p>Request to prioritize programming for use of BAT for new sources in the categories listed in Part II of Annex C, and to facilitate technical assistance and technology transfer in this regard</p>	4	<p>Demonstration of new technologies, based on BAT/BEP guidance, encouraged under Program 1</p> <p>Use of BAT for new sources supported under Program 3; strategy cites specific convention guidance on BAT</p>
<p>Newly listed chemicals</p> <p>Requests to support activities in respect of newly listed chemicals (including endosulfan) and to include such chemicals when updating NIPs</p>	3	GEF support for elimination or restriction of production and use of newly listed POPs included under Program 3; strategy cites specific convention guidance on newly listed POPs
<p>PCBs and PCB elimination network</p> <p>Request to provide financial support for country-driven training and capacity-building activities related to activities of the PCB elimination network</p> <p>Request to prioritize programming for elimination of use of PCBs in equipment by 2025 and environmentally sound waste management of liquids containing and equipment contaminated with PCBs, as soon as possible and no later than 2028</p>	2	<p>GEF support to eliminate PCBs in equipment by 2025 and for environmentally sound management of liquids containing and equipment contaminated with PCBs as soon as possible and no later than 2028, provided under Program 3; strategy cites specific convention guidance on PCBs</p> <p>Tons of PCBs disposed included in corporate-level indicator</p>
<p>Time-bound priorities</p> <p>Request to prioritize programming in specific areas from 2014 to 2017, including PCBs, newly listed POPs, DDT, and BAT for new sources</p>	1	Program 3 addresses the specific deadlines for time-bound priority areas; strategy cites specific convention guidance (SC-6/20)

Guidance topic	No. of items	Coverage in GEF-6 focal area strategy
<p>Information exchange/Clearing-House Mechanism</p> <p>Request to provide the financial resources necessary to carry out projects aimed at improving information exchange at the regional and national levels and to set up Clearing-House Mechanism nodes</p>	1	<p>Support for regional cooperative action and regional approaches provided under Program 6 for LDCs and SIDS</p> <p>Mechanisms for information exchange or a Clearing-House Mechanism are not explicitly elaborated in the GEF-6 focal area strategy</p> <p>No outcomes related to information exchange</p>
Guidance from the Minamata Convention		
<p>Invitation to support developing countries and CEITs that are signatories to the convention in undertaking activities, particularly enabling activities, to facilitate early implementation and ratification of the convention</p>	1	<p>Support for enabling activities—specifically MIAs and AGSM NAPs—provided under Program 2</p> <p>Program 4 focuses on early implementation of mercury reduction projects</p> <p>Mercury activities also supported under Programs 1 and 6</p> <p>Phaseout and reduction of mercury included in the results framework as an expected impact</p>

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