INDEPENDENT EVALUATION DIVISION
OFFICE OF EVALUATION AND INTERNAL OVERSIGHT

Independent Terminal Evaluation

Low- and Middle-Income Countries (LMICs)

Mitigating Toxic Health Exposures in Low- and Middle-Income Countries: Global Alliance on Health and Pollution

UNIDO Project ID: 150416
EU Project ID: DCI-ENV/2015/371157

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Distr. GENERAL

ODG/EIO/IED/19/R.9

December 2019

Original: English

This evaluation was managed
by the responsible
UNIDO Project Manager with
quality assurance by the
Independent Evaluation Division

Table of Contents

Acknowledgements

This report was completed with the input of many persons. The Evaluation Team is grateful for the openness and willingness by all participants to share their experiences and opinions. A special and deserved thank you is extended to the staff at UNIDO headquarters in Vienna and to in-country representatives who arranged the meeting schedules in Brussels, Vienna, New York and the missions to Colombia, Ghana and the Philippines. . The Evaluation Team was composed of Mr. Gerhard Weihs, International Evaluation Consultant and Team Leader and Brandon McGugan, International Environment Expert on environmental pollution and contamination aspects.

This final report of 10 October 2019 contains minor edits upon feedback from the UNIDO-PE Project team communicated to the Evaluation Team on 7 October 2019 to the version submitted on 17 June 2019, which itself was a revised version of the final draft report of 3 May 2019. The main findings were presented to the Project Steering Committee on 24 June 2019. The main donor, the EU, has also reviewed the report of 17 June 2019 and no objections were raised.

Abbreviations and Acronyms

Abbreviation	Meaning
ADB	Asian Development Bank
ASGM	Artisan Small Gold Mines
DG DEVCO	Directorate-General for International Cooperation and Development
DG ENV	Directorate-General for Environment
EC	European Commission
ECN	Extended Concept Note
EU	European Union
GAHP	Global Alliance on Health and Pollution
HPAP	Health and Pollution Action Plan
IHME	Institute for Health Metrics and Evaluation
ISS	Initial Site Screening
ITE	Independent Terminal Evaluation
LMICs	Low- and Middle-Income Countries
MTR	Mid-Term Review
NTAPs	National Toxic Action Plans
PSC	Project Steering Committee
POPs	Persistent Organic Pesticides
ROM	Result-Oriented Monitoring
SDGs	Sustainable Development Goals
TOR	Terms of Reference
TSIP	Toxic Sites Investigation Program
ULAB	Used Lead-Acid Battery
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
WHO	World Health Organization

Glossary of evaluation-related terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change directly or indirectly due to an intervention.
Effectiveness	The extent to which the development intervention's objectives were achieved or are expected to be achieved.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive & negative, intended & non-intended, directly & indirectly, long term effects that represent fundamental durable change in the condition of institutions, people & their environment brought about by the Project.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intermediate States	The transitional conditions between the Project's outcomes & impacts which must be achieved in order to deliver the intended impacts.
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations.
Logframe (logical framework approach)	Management tool drawing on results-based management principles used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcomes, impacts) and their causal relationships, indicators, and assumptions that may affect project success or failure.
Outcomes	The likely or achieved short- to medium-term behavioral or systemic effects to which the Project contributes, which help to achieve its impacts.
Outputs	The products, capital goods, and services that an intervention must deliver to achieve its outcomes.
Relevance	The extent to which an intervention's objectives are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	Specific entities for whose benefit an intervention is undertaken.

Executive Summary

This report presents the findings of the Independent Terminal Evaluation (ITE) of the Multi-Donor Action *"Mitigating Toxic Health Exposures in Low- and Middle-Income Countries; Global Alliance on Health and Pollution"* (hereafter the 'Project'). The ITE was conducted in February-April 2019 and is based on documents review, internet research and interviews with key Project stakeholders including the donors, the implementing partners and technical experts. Meetings in Brussels, Vienna and New York allowed the Evaluation Team direct contact with the main Project donor (European Union), the Project Management Team (UNIDO) and the main implementing partner (Pure Earth) respectively. Thereafter, the Evaluation Team completed missions to Colombia, Ghana and the Philippines selected from the more than two dozen target countries of this global initiative in LMICs across Africa, Asia and Latin America.

The Project under review

The Project commenced in February 2016 and will end after a no-cost, six-months extension in June 2019. The project received funding of approximately €5 million via a grant agreement of the EU with UNIDO, and complementary funding of €1.25 million by USAID to Pure Earth as the main implementing partner. The project is the third EU-UNIDO-Pure Earth cooperation in this field.

Thematically, the Project addresses the nexus of health and pollution and the resultant burden of disease, which is disproportionally high in LMICs, which suffer from the consequences of largely uncontrolled environmental pollution in their poor community settings. The Project set out with the overall goal to contribute to improved health and environmental conditions of communities exposed to toxic pollution. The Project applies four change mechanisms which are: (1) awareness raising through providing scientific evidence; (2) capacity building on identifying pollution hot spots and action planning; (3) piloting and demonstration of viable and replicable solutions for toxic sites clean-ups; and (4) institution building of the Global Alliance on Health and Pollution (GAHP). This four-pronged approach represents the four output areas/pillars of the Project, which are unambiguously congruent with the core business fields of Pure Earth, which is also the GAHP Secretariat.

Because the Project's log frame omitted to present a meaningful definition, the ITE reconstructed the Project purpose as one to support the advocacy capacities of: (a) Pure Earth in the field of toxic soil pollution; and of (b) GAHP in holistically addressing the nexus of health and pollution. Both Pure Earth and the GAHP are the direct beneficiaries of the Project. UNIDO had a comparable small technical role, but was overall responsible for the Project management, reporting, monitoring and evaluation.

Overall assessment of the project

The ITE found the Project in overall 'Moderately Satisfactory'. The Project successfully exceeded all target metrics in delivering the planned outputs. However, the targets set were not considered overly ambitious and the Project was never at risk of missing them (this was also noted by the Mid-Term Review). The Project highlights included an important contribution to the landmark Lancet Report on Pollution and Health; it significantly extended the investigation of toxic sites; it provided effective support to health and pollution action planning at national levels; and it successfully supported the GAHP incorporation as a foundation according Swiss law. The Project performed less satisfactorily in terms of capacity building and providing replicable solutions. Some flaws were

identified in the Project design and consequently these affected the Project in the implementation phase.

Project design - 'Moderately Unsatisfactory'

The ITE found some incoherencies in the Project design such as the omission of a meaningful purpose of the Project, i.e. support to Pure Earth and the GAHP, although the Project was designed as a sequel to two similar predecessor projects. This clear intention was lost in the process of applying the EU grant. The Project narrative oscillates between high-policy (i.e. advocacy and awareness on the global burden of disease from environmental pollution) and small-scale humanitarian interventions at ground-level (i.e. mitigating toxic legacy pollution from small-scale/informal activities). The various funding agreements, implementing arrangements and reporting requirements have not been reconciled sufficiently, leading to a perceived 'lack of transparency' (as sentiment raised by some Project stakeholders and also noted by the Mid-Term Review of the Project) and difficulties to attribute the reported results directly to the Project. However, the Project design was sufficiently accurate to guide the implementation of activities. Overall, this resulted in an activity-oriented and a less result-based approach.

Assessment of the key features of the project in terms of relevance and ownership, efficiency, effectiveness, progress to impact, and sustainability

The ITE analyzed this complex Project operating at various levels by dividing it into its main components that reflect the key deliverables under the four Project output areas/pillars. Across the key features, the Project scores in average as follows: Relevance is almost 'Satisfactory' (4.6); Efficiency is 'Moderately Satisfactory' (4); Effectiveness is almost 'Satisfactory' (4.8); Progress to Impact is 'Satisfactory' (5); and Sustainability is 'Moderately Satisfactory' (4). However, significant differences exist between the distinct Project features, leading to an only 'Moderately Satisfactory' score in overall.

Research papers - almost 'Satisfactory'

Under Pillar 1, the Project contributed to eight research papers, which are coherent with Pure Earth's thematic focus, and also to the report of the Lancet Commission on Pollution and Health of 2017. The latter being a highly relevant research publication both in public domain and the science and policy making community. While these have been synergetic efforts, the actual attribution to the Project remains somewhat unclear. The research papers may have been taken up by the specialized scientific community; the Lancet Report was effective in influencing deliverables and policy making at a larger scale. As far as this can be desired from scientific evidence, the 'wake-up call' of the Lancet report was certainly an important contribution to an impactful way forward to the long-term goal of the Project. It is believed that efforts of strategic updates and on-going awareness raising on the topic are required to sustain the momentum. Pure Earth has informed that the GAHP is planning a next Lancet Commission within the next few years to come up with a sequel in 2021/22.

Toxic Sites Identification Program (TSIP) - 'Satisfactory'

Under Pillar 2, the Project enabled Pure Earth to build on the TSIP database. The Project was thus highly relevant for Pure Earth and ownership remains firmly with Pure Earth, but ample access to the TSIP database is given to partners around the world. A strong focus on lead pollution from ULAB

was observed, which limits the relevance in the overall Project context. More than 1,500 sites were added, whereby some 800 sites are reported attributable to the Project. Within the narrow thematic scope, effectiveness was attempted through training of local investigators and authorities. TSIP is a first concrete step to action that can deliver impact on the ground, although limited by the availability of further funding. The sustainability of TSIP is high since Pure Earth has already secured funding for its on-going program. Efforts on TSIP are considered the main business of Pure Earth which underpins the nature of the Project as a funding to Pure Earth.

The second product planned under Pillar 2 was to provide capacity building on National Toxic Action Plans (NTAPs). However, this aspect was replaced by Health and Pollution Action Plans (HPAPs) and delegated to UNIDO as lead partner (see below). It is noted that the originally planned NTAPs would have been better coherent with the other features of the Project.

Site projects - 'Moderately Unsatisfactory'

The execution of site projects under Pillar 3, i.e. to clean-up some toxic sites listed in the TSIP, showed limited coherence with the Project's intentions to produce replicable market-based and industry-led solutions. This feature was therefore considered unsatisfactory in efficiency due to consuming almost half of the total Project budget with little new information gained and a lack of clarity in allocating actual costs to each site project. Effectiveness is akin to replicability and therefore also scores low on this criterion. Since several thousand lives of people in local LMIC comminutes have likely been improved by these humanitarian interventions, impact was measurable. However, there was no lasting institutional and political sustainability achieved. Future similar projects will depend on humanitarian donor sentiments and exclusively on the success of Pure Earth to raise funds to support these interventions.

Under Pillar 3, guidance documents such as ones on lead, mercury and the TSIP were produced. These are not able to balance the shortcomings of the site projects, because little innovation is provided and their attribution to the Project is uncertain, since the lessons learned predate the current Project or are reference to Pure Earth's existing standard protocols.

Health & Pollution Action Plans (HPAPs) - 'Satisfactory'

Although not explicitly contained in the original Project description, the HPAP exercises show coherence with the Project's ambitions to address the problem holistically, thereby covering all types of pollution, through inter-agency efforts and based on scientific evidence. The HPAP process reflected the priorities of the beneficiary countries. The outputs in terms of UNIDO-designed Extended Concept Notes (ECN) attempted to create national ownership, although the transfer of ownership is still incomplete in most cases. The HPAPs were efficient and highly synergetic efforts facilitated through the 'convening power' of UNIDO. Effectiveness is given through the uptake in national policies and through the involvement of the right institutions in an inter-agency format. There is potential impact of the ECNs, if they transit to full-scale projects. There are positive signs that some ECNs will be funded by donors. And there is an initial grade of institutional and political sustainability through appointing lead-agencies and formal validation exercises.

Global Alliance on Health and Pollution (GAHP) - 'Highly Satisfactory'

On 8 May 2019, the GAHP will adopt the statutes and regulations of a GAHP Foundation under Swiss law. After, the incorporation documents will be formally submitted to the Swiss Authorities. The approval should be received within three months. The GAHP Secretariat anticipates that the

Foundation will be fully operational no later than 1 August 2019. With this, the mission of the Project under Pillar 4 will have been accomplished. This exercise was straight forward and scores high in all evaluation criteria.

Crosscutting performance criteria

The Project scored 'Satisfactory' in gender mainstreaming through its focus on marginalized populations and its indiscriminatory approach as far as under control by the Project. The M&E mechanisms applied by the Project are considered sufficient. However, monitored information could have been better utilized in reports. The Project omitted to provide a communication and visibility strategy beyond the generic requirements of the EU as element of the EU-UNIDO agreement, but the found visibility of donors and partners is still 'Moderately Satisfactory'.

Result-based Project management - 'Moderately Satisfactory'

The Project was not able to overcome the inconsistencies of the Project design. Notable shortcomings were the missed opportunities to reconcile the approaches of the two implementing partners and the late buy-in of UNIDO to take a lead role and responsibility for the Project, although this was clearly indicated in the Project documents.

Financial management - 'Moderately Unsatisfactory'

It is understood that the primary purpose of the Project was a co-financing of Pure Earth to sustain actives that were thematically well-aligned with Pure Earth's on-going global programs. In terms of the data made available and as a result of the complex nature of the Project, the ITE was not able to conveniently verify the Project's "value for money" per se. The financial management of the Project, especially in terms of efficiency, was considered below UNIDO's usual standards. This sentiment was also reflected in the opinions of the financial officers interviewed. It should be clearly noted, that no financial irregularities were identified or are suspected.

Performance of partners & stakeholders

There was a low level of identification with the Project by UNIDO, as evidenced through concerns to enter into this Project in first instance and the late buy-in as technical assistance provider only at the request of the EU. Once becoming active with the HPAPs, UNIDO gained many positive accolades through an efficient and effective performance and bolstering its reputation of having strong 'convening power' which was attested by most stakeholders. For Pure Earth, this Project was 'business-as-usual' and they made use of the funding for their standard operations; however, limited clarity with respect to the complementary funding was created. The donors played no operative role, but made a late attempt to coordinate between the EU and USAID. Other stakeholders were engaged at distinct phases of the Project, all of which presented positive positions towards the Project which helped them to better connect.

Conclusion, recommendations and lessons learned

This report substantiates the positive sentiment toward the Project echoed by most stakeholders. At the same time, reservations and sentiments such as a 'felt lack of transparency' could be evidenced. We assert that the Project was successful in progressing the health-pollution agenda further on the pathway to its long-term goal. The Project made reasonable contributions to a bigger

picture. Any attempt to view the Project in isolation and without recognition of its primary support nature to Pure Earth and the GAHP would be unjust and biased.

The Evaluation Team developed a few recommendations for the Project team: The expectations towards UNIDO in the context of the HPAP-ECNs need to be managed urgently (R1). The lessons from site projects with regard to observed shortcomings need to be better presented including distinct next steps to clean-up more TSIP sites (R2). More clarity on the extent that is attributable to the Project should be ensured (R3). A more informative and result-oriented final report should be established (R4).

Finally, a few lessons are extracted concerning deficiencies to be avoided in future projects. Better coordination in complex projects is important. Potentially, a greater impact could be achieved by 'doing less to gain more' with respect to geographical and thematic scopes. It has to be recognized that donors and beneficiary countries are not necessarily aligned in terms of priorities in each setting. Last but not least, this project has reiterated UNIDO's strong convening power, which it should leverage beyond its conventional industrial development scope, by also addressing human health aspects of industrial development. Based on the interconnectivity between the SDGs, this would be a justifiable enhancement of UNIDO's mission in assisting developing countries and protecting communities from the negative impacts of pollution from industrial development at source level.

1. Evaluation Objectives & Methodology

The UNIDO Independent Evaluation Division has appointed an Evaluation Team to conduct an Independent Terminal Evaluation (ITE) of the Project *'Mitigating Toxic Health Exposures in Low- and Middle-Income Countries: Global Alliance on Health and Pollution'* (hereafter referred to as 'the Project'). The Evaluation Team was composed of Gerhard Weihs acting as International Evaluation Consultant and Team Leader, and Brandon McGugan acting as International Environment Expert on environmental pollution and contamination aspects. Substantial support was also provided by Adot Killmeyer-Oleche of the UNIDO Independent Evaluation Division.

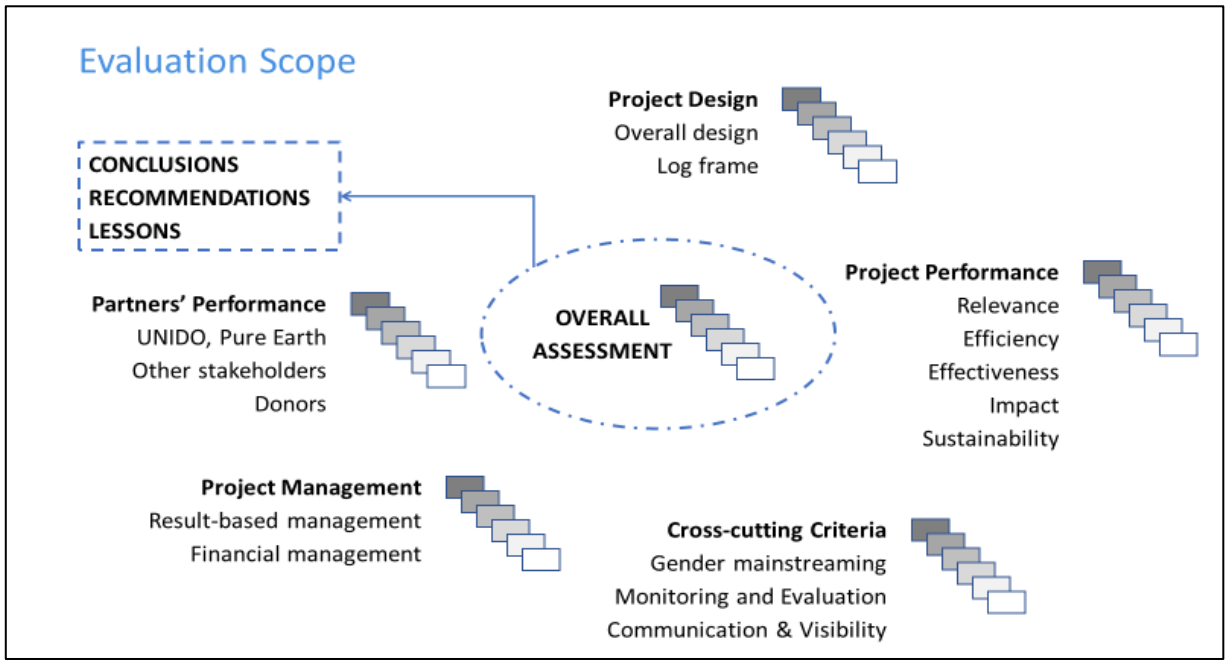
The ITE was conducted in the period from February to April 2019.

1.1 Purpose of the Evaluation

The ITE covers the entire Project scope over its full duration. The Project commenced in February 2016 and will be concluded, after a six-month no-cost extension of the originally planned end date, in mid-2019. The purpose of this evaluation was to independently assess the Project to assist UNIDO to improve the performance and results of ongoing and future programs and projects. The evaluation had two specific objectives:

1. Assess the Project performance in terms of relevance, effectiveness, efficiency, sustainability and progress towards impact; and
2. Develop a series of findings, lessons-learned and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO with an emphasis on global/regional projects and initiatives of larger size and involving multiple partners, donors and stakeholders from various countries.

The key elements of the of the Project evaluation scope are presented in the figure below.



1.2 Methodology and Process

The ITE is guided by the Terms of Reference (TOR) provided by the Independent Evaluation Division of UNIDO. The TOR provides a preliminary overview of the Project and its status. The TOR suggested a number of initial questions for the evaluation. The TOR is attached to this report (see Annex 5).

Our evaluation approach follows UNIDO's evaluation policy and the UNIDO Evaluation Manual (2018). The Evaluation Team submitted an Inception Report to UNIDO in early March 2019. The Inception Report describes a preliminary Theory of Change and the key questions, which have guided the consecutive reviews and information gathering process. The detailed assessment is based on information gained from Project documents, internet research, stakeholder meetings and interviews.

The document review covered the contractual arrangements between the EU and UNIDO, between UNIDO and Pure Earth, and a complementary grant agreement between USAID and Pure Earth. The contractual arrangements of the two predecessor projects were reviewed to gain an understanding of the Project history. Progress reports, such as the Project's Inception Report of 2016, semi-annual Progress Reports and the Annual Progress Reports of 2016, 2017 and 2018 were important sources of information. These reports are supported by output materials for distinct Project components. The minutes of the Project Steering Committee (PSC) were reviewed. The desktop research was completed with information gained from publicly available resources on the internet, such as corporate background information on UNIDO and Pure Earth. A full list of screened documents and internet sources is attached to this report (see Annex 1).

In the period from 11 to 29 March 2019, the Evaluation Team conducted stakeholder meetings and interviews. First, the team met with the European Union (EU) Task Manager in Brussels to get the main donor's view of the Project. Next, the team visited the UNIDO headquarters in Vienna to get first-hand information from the UNIDO Project Manager, her team, and the Director of the Department of Environment responsible for the Project. The visit to the headquarters of UNIDO provided the opportunity to discuss the Project with the Independent Evaluation Division and personnel from the departments of Finance, Procurement and Strategic Donor Relations. We also spoke to a senior expert responsible for the Health and Pollution Action Plan (HPAP) work in Kyrgyzstan and with the Chief Technical Adviser of the overall HPAP process via Skype.

Thereafter, the Evaluation Team travelled to New York for similar sessions with Pure Earth, the main implementing party. Discussions and interviews were held with the Project Director, the President of Pure Earth and other staff including the Chief Financial Officer, the Regional Directors for Latin America, Africa and Southeast Asia, the Director of Strategy and Development including the GAHP Secretariat and the Communication Director. Discussions were held with consultants on topics related to the TSIP and site projects, which included a Skype call with the Director of Global Policy and Planning.

On conclusion of the New York meetings, the Evaluation Team split its mission to visit three beneficiary countries of the Project. The Team Leader visited the Philippines, and the International Environment Expert visited Colombia and Ghana. The Evaluation Team members met with the in-country staff of UNIDO and Pure Earth and talked to government stakeholders with direct involvement in the country-HPAP processes and selected donor and international organisations such as officers of the EU Delegations and the ADB. Where face-

to-face meetings were not possible, the team followed up with Skype calls, for example with the WHO in the Philippines and USAID. The country missions were completed with visits to two site projects to meet with the local communities and authorities.

A full list of persons met in person or via Skype and the meeting schedule is attached to this report (see Annex 2).

The ITE referred to findings of previous reviews, a Mid-Term Review (MRT) commissioned by UNIDO and a Result-Oriented Monitoring (ROM) commissioned by the EU, both completed in March/April 2018.

The last step of the fact-finding was a debriefing session at UNIDO headquarters in Vienna, where the Evaluation Team presented the preliminary findings of the Project assessment including an initial scoring. This exercise served to test the validity of the evaluators' conclusions.

Milestones/schedule of the ITE	*Timing / Deadlines*
Initial review of Project documentary, prepare missions and complete the Inception Report	by 7 March 2019
Meeting in Brussels with DG DEVCO	11 March 2019
Meetings in Vienna with UNIDO	12-13 March 2019
Travel to and conduct meetings in New York with Pure Earth	14-18 March 2019
Field visit in Colombia	19-22 March 2019
Field visit in the Philippines	25-28 March 2019
Field visit in Ghana	26-28 March 2019
Draft Evaluation Report	thereafter
Debriefing meeting with UNIDO in Vienna	24 April 2019
Final Draft Evaluation Report	by end-April 2019; report submitted on 3 May 2019

We note that this Terminal Evaluation has limitations due to various reasons. The Project is not complete at this point and a final report, that would collate all outputs and achievements in a consistent manner, is not yet available. The available Project documentary is fragmented, and it is not always self-evident what achievements are directly attributable to the Project. There are many countries associated with the Project, and the Evaluation Team only visited three of these.

The Evaluation Team was unable to establish a solid opinion on the prudent, itemized use of the Project budget. The ITE had no mandate nor the means to conduct a financial audit.

Notwithstanding the above, the Evaluation Team established a holistic view of the Project and assessed all Project features in detail. The Evaluation Team attempted to 'reconstruct' the Project to some extent for the evaluation purpose; this however, cannot substitute a concise final report that still has to be presented by the Project team.

2. The Project under Review

This chapter 'reconstructs' the Project as following an evidence-based review exercise which enabled the Evaluation Team to better describe the Project in reality with the ambition of allowing for a better appraisal of the overall positive views of the Project expressed by most stakeholders while also presenting some of the reservations that have been articulated.

2.1 Project Scope & Background

The Project commenced in February 2016 with a planned end-date of December 2018. Following a no-cost extension, recommended by the MRT and ROM of March 2018, supported by the PSC and agreed by the donors and the Project partners, the Project will now end mid-2019.

The Project is a global initiative in LMICs in Africa, Asia and Latin America. The scope of countries varies in the Progress Reports and within the grant agreements of UNIDO with the EU and of Pure Earth with USAID. The Project's funding agreements and Progress Reports list up to 25 countries such as: Azerbaijan, Bangladesh, Bolivia, Brazil, Colombia, Ethiopia, Ghana, India, Indonesia, Jamaica, Kenya, Kyrgyzstan, Madagascar, Myanmar, Mongolia, Mozambique, Nepal, Philippines, Senegal, Tajikistan, Tanzania, Vietnam, Zambia and others including non-specified GAHP member countries. Pure Earth worked on the TSIP in all listed countries. Site demonstration projects were done in 10 countries; and HPAPs were completed in five countries

The Project is a multi-donor action and receives funding of approximately €6.125 million in total, of which €5 million or 80 % was provided by the EU through a grant agreement with UNIDO. The balance of nearly €1.125 million or 20% was provided solely by Pure Earth, sourced from complementary grant agreements, mainly from USAID and potentially other sources. The total budget is split between the two implementing parties: Pure Earth received a share of 80%, and UNIDO received 20% from the EU source. Pure Earth's own contribution (i.e. from USAID) remained entirely with Pure Earth. Until end of 2018, ±90% of the total budget was used, with financial data from Pure Earth available only until mid-2018, however. A detailed discussion of budget and expenses allocation is provided in section 3.4.2 on Financial Management.

2.1.1 History of the Project

The Project under review is the third UNIDO-Pure Earth cooperation in this thematic area. Like the current Project, the two predecessors had a strong focus on soil pollution. Environmental pollution in the fields of ambient air and water pollution have been on the global agenda since the inception of environmental protection movements and related legislation is in place in most parts of the world. However, there is little recognition of soil pollution in LMICs. The New York based NGO Pure Earth, registered as the Blacksmith Institute in 1999, has successfully and almost uniquely occupied this space through its TSIP and related advocacy and intervention work.

In 2008, Pure Earth began to create a global alliance to support the assessment and clean-up of legacy soil pollution sites in the developing world. It found support for this initiative in the EU within the Directorate-General for Environment (DG ENV). A mechanism was found to transfer funds to Pure Earth as an US-based NGO, whereby UNIDO acted as the intermediary contracting party of the EU, represented by the Directorate-General for International Cooperation and Development (DG DEVCO).

The first EU-funded project on *'Global Identification and Evaluation of Polluted Sites'* (2009-2010) formed the basis for the TSIP. This global toxic site inventory involved the training of site investigators in 40 countries, and more than 800 sites were identified as pollution hotspots. Pure Earth also was successful in attracting funding from the Asian Development Bank (ADB), which supported a similar project in the period 2010 to 2012. The second EU-funded project *'Reduction of Toxic Pollution Threatening the Environment and Health of Vulnerable Communities'* (2012-2015), implemented by the same partner grouping (UNIDO-Pure Earth), continued the previous efforts. These efforts gave momentum to the formation of the Global Alliance on Health and Pollution (GAHP), which was formed in 2012 with Pure Earth as its Secretariat.

The current third EU-funded Project is a continuation of the previous two projects with the same grouping. The main difference is that UNIDO played a more active role and the thematic scope was partly extended beyond toxic soil pollution to other environmental pollution (see below). Like the first two projects, the current Project also has an overwhelmingly strong focus on soil contamination with Pure Earth as the main and direct beneficiary of the funding.

One prominent outcome of the decade-long EU funding of Pure Earth, via UNIDO, is the growing TSIP database, a unique effort to identify and assess contaminated sites. The TSIP database stands currently at approximately 5,000 toxic sites, which is six times the number in 2010 when the first EU funded project ended. Toxic sites are considered as parcels of land that are polluted with chemicals at sufficiently high concentrations and potential exposure pathways posing significant human-health risks. These pollutants are often released by businesses operating in the informal sector, many of them artisanal or small-scale. The types of sites range from localized lead poisoning from backyard car battery recycling to mercury contamination from artisan gold mining to heavy metal contamination from mine tailings. During the current Project, the TSIP focus was narrowed down to predominately sites impacted by lead contamination from informal Used Lead Acid Battery (ULAB) recycling operations (see section 3.2.2).

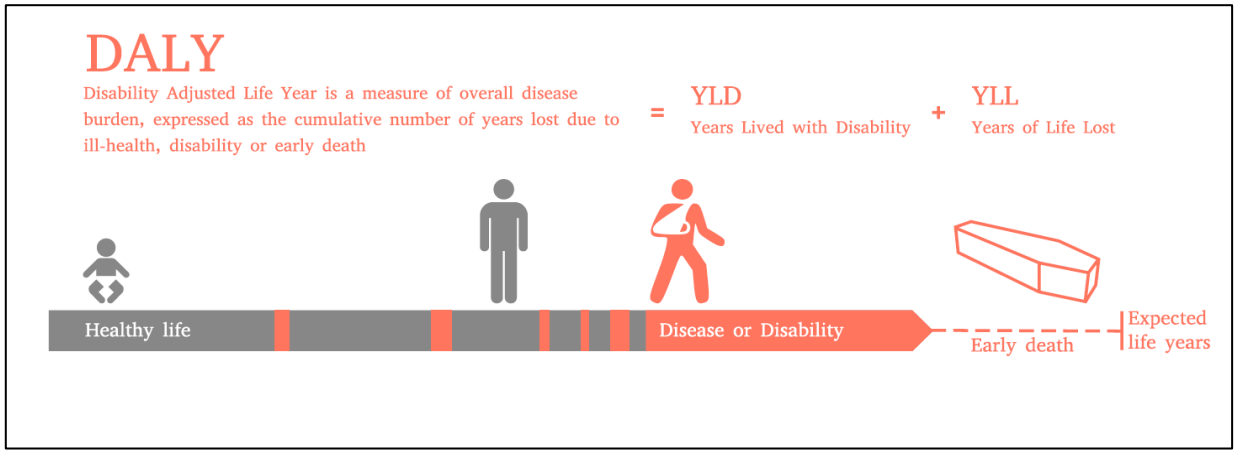
2.1.2 The nexus of health and pollution

The thematic focus of Pure Earth's advocacy work on soil contamination in LMICs was strategically framed within wider contexts through the GAHP, which was co-founded by Pure Earth. The Project rationale addresses the comprehensive nexus of health and pollution, thereby including ambient air and indoor air pollution, water pollution, waste, chemicals and soil contamination. Linking environmental pollution with health risks and the burden of disease caused by pollution is the narrative that penetrates the entire Project text. Environmental pollution, so it is argued by the Project (and the Lancet Commission on Pollution and Health), is the most threatening causes for disease and premature deaths worldwide. Although the impacts of pollution on health have always been recognized, the magnitude of the impacts has consistently been underestimated with environmental pollution

estimated to now causing 16% of all deaths globally. This means that more than one death in six worldwide is the result of environmental pollution. The burden of disease caused by pollution can be measured, for example, in Disability Adjusted Life Years (DALYs), as presented in the figure below.

The overwhelming majority (92%) of the global burden of disease from pollution affects people in LMICs. The impacts of environmental pollution are felt most acutely by communities that are poorly equipped to address the problem and recover from its impacts. Global changes of consumption and production have encouraged the growth of developing country economies without adequate pollution control and the capacity to manage negative impacts on health and the environment.

The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death. It was developed in the 1990s as a way of comparing the overall health and life expectancy of different countries. One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.



While the Project narrative holistically addresses environmental pollution and its effects on health, the majority of project resources and project work was directed to Pure Earth for activities aligned with the TSIP and associated activities. In the second half of the Project, initiatives to address the wider context of pollution and health in LMICs, through assisting national governments to develop HPAPs, was included. The HPAP was an initiative that in the interim had emerged from recommendations of a Lancet Commission on Pollution and Health (2017). At the institutional level, the nexus of health and pollution was promoted through the GAHP.

2.1.3 The Global Alliance on Health & Pollution (GAHP)

The GAHP, whose name is included in the Project title, is a key beneficiary of the Project in terms of its strengthening as an institution. The official homepage of GAHP (http://gahp.net) indicates that this alliance was formed in 2012 by Pure Earth, the World Bank, UNEP, UNDP, UNIDO, ADB, the European Commission, and Ministries of Environment and Health of several LMICs. As an Executive Board Member, UNIDO is a regular participant in GAHP activities.

GAHP envisions a world where the health of present and future generations, especially children and pregnant women, are protected from the harmful effects of toxic pollution. The advocacy and collaboration network builds demand for pollution prevention and mitigation programs that are implemented by its members. GAHP builds public, political, technical and financial support to address pollution globally, tracks pollution impact and interventions, promotes scientific research on pollution and raises awareness on the scope and impacts of all types of pollution.

In a recent update of the homepage, it says that GAHP also directly assists LMICs to prioritize and address pollution through health and pollution action planning and other development planning processes, in collaboration with its members. Along these lines, the GAHP claims to be currently the only organization operating in this space, addressing the impact of all types of pollution on health, and advocating on behalf of the many million lives lost each year because of pollution. Furthermore, unlike other organizations, GAHP is focused on health as a priority for combating pollution.

The self-description of GAHP says that in just six years the alliance has proven that it is an effective advocate, thought leader, and agent of change. GAHP ensured that all types of pollution were included in the Health Goal of the Sustainable Development Goals (as Target 3.9) and spearheaded the ground-breaking Lancet Commission Report on Pollution and Health of 2017. The homepage concludes with an implicit reference to one of the Project's output areas (see below): In order to be sustainable, GAHP must legally separate from its founder and host Pure Earth. Legal incorporation is also critical to maintaining transparency, and to ensuring its members have a real stake in its operations and activities.

Based on the above, it becomes readily apparent that the thematic scopes of the Project and those of GAHP and of Pure Earth are by and large the same; which also is apparent from the Project's title.

2.2 Objectives & Architecture of the Project

It is also referred to our detailed assessment of the Project design (see section 3.1).

2.2.1 Overall Objective/Goal

According to the Project's logical framework (log frame), the Overall Goal of the Project is '*to contribute to improved health and environmental conditions of communities exposed to toxic pollution*'.

This overall objective refers to the anticipated, potential impact or the change that the Project intends to support. It would be achieved, according to the indicators listed in the log frame, if the total population in communities with polluted sites, exposed to toxicity, by toxic substance and other relevant parameters is lessened; and if toxic exposure, mitigated through the Project, by type of toxic substances and population exposed is reduced; in addition, if the amount of funds pledged for mitigation of toxic pollution in targeted countries by entities with some traceable association to this Project is increased.

2.2.2 Project Purpose

From the overall objective level, the Project logic jumps directly to the output level, which is represented by the four pillars of the Project (see below). A tangible purpose or specific objective of the Project is omitted, although the log frame offers a purpose formulation, which reads: *'Toxic health exposures in the Low- and Middle- Income countries are mitigated'*. This formulation does not differ substantially from the overall objective and is merely a rephrasing of it. In addition, the indicators of achievement to this redundant objective are largely redundant with the indicators of achievements of the Project's output areas.

We have reconstructed what we believe to be the intrinsic purpose of the Project based on our understanding of the Project in reality and its history. We are thus of the assertion that the following two-pronged purpose formulation fits the Project reality:

> *The purpose of the Project is to strengthen the advocacy efforts in LMICs: (a) of Pure Earth in the field of toxic soil pollution and (b) of GAHP in holistically addressing the nexus of health and pollution.*

The evidence-based indicators of achievement would be: enhanced capacity of Pure Earth to execute their advocacy work on toxic soil pollution in LMICs; and interagency processes are established to collaborate in mitigating the health risks caused by pollution in LMCIs.

We believe that this understanding of the 'real' purpose of the Project fits harmoniously with the expected outputs (see the four pillars below) and the actual achievements. It also describes sufficiently through which assumptions and cause-effect relations the Project contributed to achieve its goal (see the adjusted Theory of Change in section 2.3). In addition, it helps to understand why and how funds were distributed and ultimately why the Project was designed as it was.

2.2.3 The Four Pillars of the Project

At the output level, the Project was structured into four pillars; these are largely identical with the core business fields of Pure Earth and GAHP, which are further indicators of the intrinsic purpose of the Project. Each pillar is equipped with a set of indicators/targets, which have in fact been exceeded by the Project as our assessment shows (see chapter 3).

Pillars (output areas)	*Indicators/targets*
Pillar 1 – awareness raising: Awareness of international organizations, donor agencies and national governments about toxic pollution and its associated impacts on human health, environment and resources is improved.	• At least 5 additional members in GAHP as compared to the current status. • At least 5 GAHP members recognizing the need to undertake HPAP (Health and Pollution Action Plans (as per GAHP decision). • At least 50% GAHP members recognize TSIP as a cost-effective process for data on contaminated sites.
Pillar 2 – capacity building: National capacity is strengthened to both analyse the problem of	• At least 5 new LMICs establish active toxic sites identification programs (TSIP).

Pillars (output areas)	*Indicators/targets*
toxic pollution, and design and implement market-, industry- and society-led.	• At least 5 new LMIC have concluded HPAP processes.
Pillar 3 – demonstration: Market-based and industry-led remediation solutions at site level are demonstrated as success stories.	• Results of site projects are shared and publicized among GAHP members. • At least 50% GAHP members recognize the effectiveness and cost-efficiency (development return) of market-based and industry-led remediation solutions.
Pillar 4 – Institution building: GAHP's relevance, added value and potential regarding prevention and mitigation of toxic pollution are independently assessed.	• Discussions among GAHP members on the convenience to strengthen the capacity of GAHP as a cost effective and independent organization, as a consequence of the assessment.

This report will resume the discussion of these aspects in chapter 3 by assessing the actual Project performance.

2.2.4 Activities & Implementation Arrangements

The Project was implemented by UNIDO in collaboration with Pure Earth. The specific roles and responsibilities of UNIDO and Pure Earth were determined in the Project document by linking activities to the four Project pillars. A detailed list of responsibilities is attached to this report (see Annex 3).

UNIDO acts as the implementing agency vis-à-vis the EU and assumes overall responsibility for Project management including reporting to the EU and monitoring and evaluating of all Project activities. In addition, UNIDO played a key role in supporting the development of HPAPs (Pillar 2) and of reviewing the GAHP in the pursuit of its incorporation as independent organization (Pillar 4).

Pure Earth acted as the Project's main Executing Partner for the majority of Project activities and the production of the envisaged outputs in the domain of Pure Earth's expertise such as: conducting activities related to awareness raising (Pillar 1); TSIP (Pillar 2) and in-country site projects (Pillar 3); and supporting the GAHP as its Secretariat (Pillar 4).

In the course of the Project several other international organizations and donors such as the WHO or ADB and bilateral donors were engaged at differing levels of intensity and at distinct stages of the Project. In addition, a multitude of national and local stakeholders, researchers and consultants contributed to a complex landscape of actors, not to mention the large number of countries involved as such.

This report will resume the discussion of the activities, implementation arrangements and the roles of UNIDO and Pure Earth, other stakeholders and donors, including their perceptions of the Project (see chapter 3).

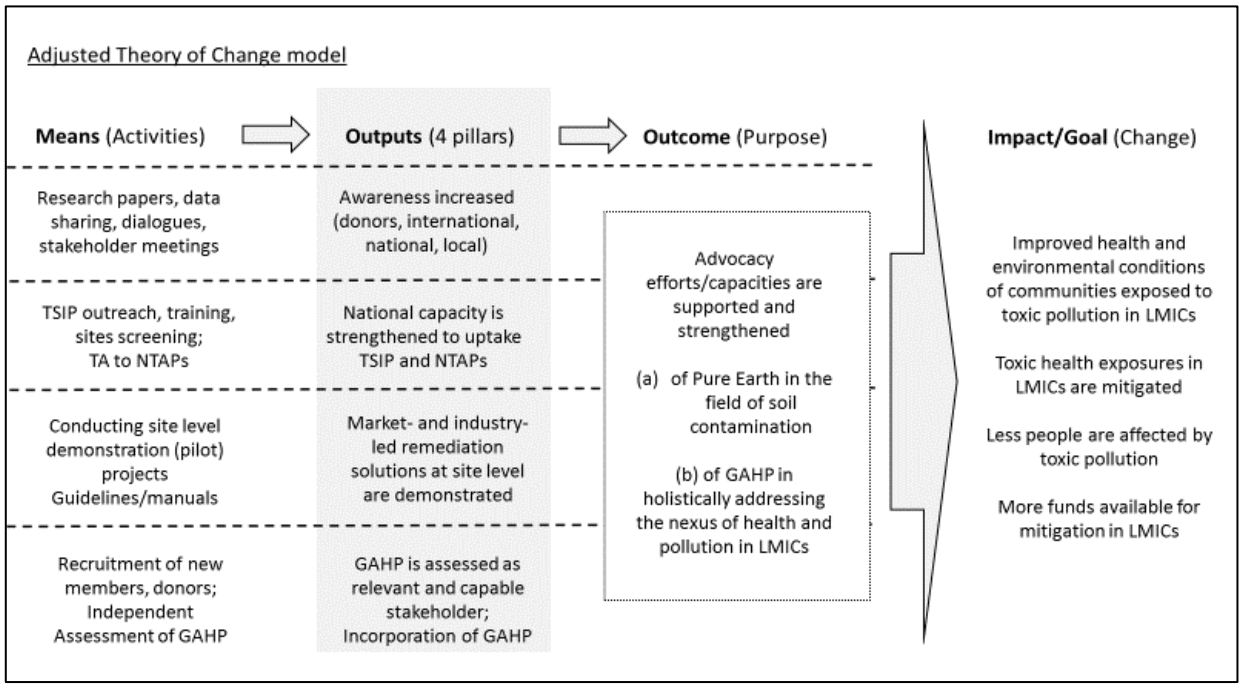
2.3 Adjusted Theory of Change

The previous sections provided a summary description of the Project. We have introduced an evidence-based Project purpose that describes the 'real nature' of the Project. This reconstructed Project purpose is to: (a) support to Pure Earth in their domain of advocacy related to mitigating toxic sites contamination; and (b) to support the GAHP in its efforts to advise, advocate and campaign on issues related to the nexus of health and pollution at international/national and donor levels and instilling interagency collaboration.

The overarching Project objective was to make a measurable contribution to improved health and environmental conditions of communities exposed to toxic pollution with a focus on LMICs. The desired change is that less people suffer from toxic health exposures in LMICs, and that more and coordinated funding is released to address this challenge.

To achieve the desired change, the Project intervention assumes that Pure Earth and GAHP are suitable players to proceed towards the goal: to advocate the Project theme and to influence international, regional, national and local decision-makers and stakeholders to take concrete action in contaminated sites remediation and pollution mitigation in overall. Strengthened advocacy-capacity of Pure Earth and GAHP would thus be the outcome required to advance towards the Project's goal.

Please note that in the diagram below, National Toxic Action Plans (NTAPs) are listed under Pillar 2, which refers to Pure Earth's ambition to mainstream this theme. At a later stage of the Project, these NTAPs were superseded by HPAPs, which have a wider thematic scope beyond the narrow focus of localised toxic sites assessment and interventions.



The Project's change model reflects the causal problems that have to be overcome in a transformative way. It is based on the following assumptions:

- The awareness of the health impacts of pollution and its long-lasting influence on affected populations (in particular those that are poor and as a result marginalized) is low. This includes awareness of the potential measures of mitigating, preventing and reducing exposures to pollution. These awareness deficiencies concern not only the

affected populations but also donors, international agencies and national governments.

- The national capacity of government agencies and civil society/non-state actors is considerably low and hinders concrete actions from being taken, for example to run Toxic Sites Identification Programs (TSIPs) and to establish national Health and Pollution Action Plans (HPAPs).
- LMICs lack both technical expertise/guidance and finance to address toxic pollution, especially at the site level.
- The GAHP needs independence from Pure Earth to effectively advocate the holistic scope of health and pollution, going beyond the narrow thematic focus of Pure Earth.

To overcome these barriers the Project refers to four change mechanisms such as: awareness raising; capacity building; piloting and demonstration; and institution building/consolidation that shall be generated by a set of Project activities.

Our detailed assessment of the Project performance (see chapter 3) will verify, if and to what extent the Project, through the assumed casual and transformational pathways, starting from the selected activities to the expected outputs, were relevant, efficient and effective to deliver on the Project's purposes. Furthermore, if these were the best way to make progress towards the long-term goal, the intended change or impact; and finally, how sustainable the benefits are that were delivered by the Project.

3. Project Assessment

This chapter addresses all evaluation criteria and questions outlined in the TOR. The subsequent chapters provide the following:

- Assessment of the Project design including the design process (see section 3.1).
- Assessment of the Project performance regarding relevance and ownership, efficiency, effectiveness, potential impact and sustainability – this along its key features such as research papers, TSIP, HPAP, site projects and the GAHP incorporation (see section 3.2).
- Assessment of cross-cutting criteria such as gender mainstreaming, monitoring and evaluation, and communication and visibility (see section 3.3).
- Assessment of the Project management in technical and financial respects (see section 3.4).
- Assessment of the performance of partners, stakeholders and donors (see section 3.5).

This will lead to our overall assessment of the Project (see section 3.6). The ITE attempted to score the investigated aspects according to the scoring system of the UNIDO Evaluation Manual (see table below).

Score		Definition*	Category
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

3.1 Project Design

Project design is an early phase where the key features, structure, criteria for success, and major deliverables of an intervention are presented. These elements are contained in the Project description documents and condensed in the Project's log frame. A summary of these elements has been provided in the previous chapter (see chapter 2).

In this chapter the ITE will try to assess the Project design regarding its coherence. How accurate was the design in guiding the implementation of activities to produce the planned outputs, and how do these outputs correspond to the Project's objectives? Have the roles of actors been sufficiently defined? Did the Project design remain valid throughout the Project or have changes been made and why? What can be learned from the actual design process and who drove it? How was the final design achieved and with what implications on the Project implementation?

Summary of findings of the MTR

In answering the questions posed above, the ITE referred to the observations and findings of the MTR. The MTR, conducted in March/April 2018, attested that the *"project logic is overall clear"* and "*the objectives, results and activities of the current project by and large converge with the structure of the predecessor projects"*. We agree with the MTR that the Project document provides a *"comprehensive overview of the problems to be addressed"* and that the *"ability to build on the achievements of prior projects"* is reflected. We also found that the Project design is *"overall clear"* when it comes to the output areas (Pillars) with combining awareness building based on data collected (Pillar 1), in-country capacity building and demonstration (Pillars 2 and 3), and with the GAHP assessment (Pillar 4) kept separate, because of the different nature of this work. We concur that the description of actual work under the Project activities was detailed and accurate.

The MTR raised some "*points of attention"* which the ITE took as a starting point of further investigations. We will address in our detailed assessment of the respective key features of the Project (TSIP, HPAP and site projects) the issues that, in the opinion of the MTR, upscaling of lessons from previous projects, *"could have been given prime focus"*; and that lessons learned from the preparation of National Toxic Action Plans (NTAPs) under the previous

project were not clearly reflected to guide the HPAP process under the current Project. In our opinion, the latter issue is also connected with flaws mentioned by the MTR regarding the designated roles of UNIDO and Pure Earth. It is noted that these issues were addressed later on by assigning the primary responsibility to undertake the HPAPs to UNIDO. This also contributed to a refining of the HPAP-approach based on the experiences of Pure Earth with similar efforts in Madagascar and Thailand with the involvement of Pure Earth's local staff.

We believe that the ITE will bring some clarity to observations of the MTR on discrepancies in budget allocations to the various project components and how these discrepancies occurred in first instance during the design process. In this context, the MTR also raised the point of complementary support, and the lack of an indication how coordination with complementary efforts would be ensured, which in our opinion has created some confusion of what is directly attributable to the Project. These discrepancies also effected on the technical and financial reporting, which this report addresses in section 3.4.

Finally, the MTR as such paved the way to the most significant modification of the Project design, which was a no-cost, six-month extension until mid-2019 to allow the Project *"to phase out in style"*.

Additional comments on the Project design

We have identified a missing link within the Project design. In our opinion the Project document jumped from the overall goal *'to contribute to improved health and environmental conditions of communities exposed to toxic pollution'* straight to the output level, represented by the four pillars. A meaningful Project purpose (specific objectives) was omitted. The purpose formulation in the log frame appears to have been inserted posthumously, thereby redundantly repeating the overall goal and borrowing indicators of achievement from the output areas. However, this specific objective does not support the Project reality. The 'real nature' of the Project and its 'real purpose' remain undefined in the formal Project documents. Therefore, the ITE tried to identify the implied purpose of the Project and to spell it out explicitly (see chapter 2).

As previously noted, once this understanding of the Project is accepted, all other elements of the Project fall into place perfectly. The four pillars of the Project are largely identical with the core business fields of Pure Earth. Through the GAHP, with Pure Earth as its Secretariat, a global interagency platform was harnessed for the Project objectives and further developed as a purpose itself. What is readily apparent from the Project documentary, namely the prominent role of the GAHP and of Pure Earth, finds a logical explanation. Both have been central at the activities, the output and the objective levels. In this spirit, the Project was designed similarly to its two predecessor projects to advance the endeavours of Pure Earth and the GAHP.

Acceptance of this intrinsic purpose of the Project should therefore invalidate criticisms of the perceived too dominant roles of Pure Earth and GAHP. However, for UNIDO, it was critical to define for itself a more proactive role in this grouping, if it wanted to go beyond the role it played in the predecessor projects, i.e. to merely be the trustee to transfer the EU fund through to Pure Earth.

Observations on the design process

The extent of coherence of the Project design becomes accessible by comparing the various documents that have been established to develop and initiate the Project. There is the original Project proposal, which was written by Pure Earth and submitted to UNIDO in October 2015. There is the official Project document, attached as Annex I, to the €5 million grant agreement of the EU with UNIDO of December 2015. There is the Contract between UNIDO and the Blacksmith Institute, 'doing business as Pure Earth', of early 2016. There is the Cooperation Agreement of Pure Earth with USAID of April 2016, which represents only one of the corresponding grant agreements, from which Pure Earth was able to source their 20% contribution of approximately €1.25 million to the total Project budget of nearly €6.25 million. There is the Inception Report produced by Pure Earth and submitted to UNIDO in May 2016.

The original proposal of Pure Earth is pivotal for the whole exercise. It follows the narrative of the two predecessor projects and outlines a Project that can be characterised as a continuation of the previous projects. The purpose of the Project is described as to encourage national, regional and international decision-makers to mainstream the issue of pollution and associated impacts on human health into development agendas; and assist decision-makers in LMICs to mitigate the impacts of pollution by improving understanding of the scope of toxic pollution in their respective countries. To these ends, the Project will focus on awareness raising and capacity building that shall deliver tangible, measurable reductions in pollution in LMICs in the long term. The proposal also unambiguously declares that the Project shall strengthen the capacity of the GAHP Secretariat, i.e. Pure Earth, to efficiently, cost-effectively, sustainably and independently manage the GAHP, and implement GAHP activities which are largely coherent with Pure Earth's activities.

The original proposal of Pure Earth eloquently introduces the nexus of health and pollution, the related problems, challenges and the state of play. The phrases, formulations and buzz words used in this proposal penetrate most future Project deliverables and appear even in the Lancet Commission on Pollution and Health report (see below, section 3.2.1) almost verbatim.

The proposal contextualises the exercise in the framework of the United Nations' Sustainable Development Goals and draws links to the priorities of various donors, including the EU. In this context, the proposal also informs that Blacksmith/Pure Earth has submitted proposals for USD1.1 million under the Global Environment Facility (GEF) VI in the Philippines, and a second project of USD1million with the Asian Development Bank. The proposal notes that the World Bank has set up a Pollution Management and Environmental Health (PMEH) program, which aims to support GAHP's TSIP program in Africa and GAHP research activities in the amount of ±USD4 million for the next three years. These sources are expected to provide the 20% co-financing of Pure Earth to the Project budget. The proposal at this stage did not yet mention the support of USAID, which became effective a few months later only (see below). From thereon, it becomes evident, that the activities pursued by this Project will not rest only on the EU funding; further, that the support is expected to be for GAHP and Pure Earth, without making much differentiation between GAHP and Pure Earth as its Secretariat. Throughout, the proposal is using the GAHP as the proxy of Pure Earth.

The original proposal of Pure Earth further clarifies the intended geographical scope of the Project with particular emphasis on least developed countries such as Bangladesh, Bolivia, Colombia, Ethiopia, Ghana, Kenya, Madagascar, Mozambique, Nepal, Senegal, Tanzania and

Zambia, as well as countries that are members of GAHP, which can explain the eventually reported wider country coverage of the Project.

Interestingly, at the output level, the original proposal lists only three components: (1) improved awareness of international organizations, donor agencies and national governments; (2) national capacity to prioritize sites for intervention and remediation, and (3) GAHP is established as an independent, effective organization.

While the listed indicators of achievement under the three output areas and the activities allocated to them are by and large coherent with the consecutive Project documents, a few differences exist. First of all, site projects did not constitute a distinct output area on its own but are summarised only as one of several elements under output area 2 to increase capacity. Secondly, HPAPs did not appear yet in the later understanding, but only as *"countries [will] have started pollution action planning processes with GAHP support"*, thereby resorting to the GAHP's pledge to establish National Toxic Action Plans (NTAPs). Overall, the proposal put a strong emphasis on Pure Earth's domain of toxic sites, when it comes to real Project action. At the same time, it uses the wider scope of health and pollution and the GAHP as an argumentative framework. No technical role of UNIDO appeared in this original proposal.

The original proposal of Pure Earth also contained a budget breakdown by using the common EU template for grant projects. The budget sums up to total eligible direct costs of €5,922,879, with the highest share of €3,659,913 (±62%) attributed to human resources. Adding to this amount 7% of administrative fees of €327,103, the total budget was estimated with €6,249,982. A finite allocation of the budget items to the three output areas was not provided; this was not required by this template.

Having received the original proposal from Pure Earth, UNIDO put together the proposal to apply for the EU funding to meet a short deadline in Brussels towards the end of 2015. The agreement between the EU and UNIDO was formally signed in December 2015 as a Multi-Donor Action under the EU External Action, with DG DEVCO as the contracting party on behalf of the EU. With its signature, the EU awarded a grant of up to maximum €5,000,000 to the action with total estimated costs of €6,248,456, which is a very minor deviation from Pure Earth's calculation. The country scope was defined as follows: Sub-Saharan Africa, Bangladesh, Bolivia, Brazil, Colombia, Ethiopia, Ghana, Kenya, Madagascar, Mozambique, Nepal, Senegal, Tanzania, Zambia, and others without further specification.

The Project description, attached to the EU-UNIDO agreement, follows the Pure Earth proposal, but provides some add-ons on EU policies and particular of UNIDO's engagement in the thematic fields close to the Project, such as efforts in Persistent Organic Pollutions (POPs) and general chemical pollution in the context of the Stockholm Convention of 2001, efforts in the field of PCBs and the promotion of Best Available Technologies (BAT); UNIDO also assists countries with the Minamata Convention on Mercury. The intention to justify UNIDO's engagement and the ambition to establish corporate identity between UNIDO's mission and this specific Project is evident. What was originally planned as an unambiguous support to strengthen the advocacy work of Pure Earth and GAHP, was phrased as a technical assistance intervention.

For reasons that could not be found, the originally three-pronged output scenario was modified to a four-pillar system with a separate and distinct new output area 3 on 'pilot projects'; the assessment of GAHP became output area 4; no changes were applied to the output areas 1 and 2.

This change came along with modifications of the budget. The EU-UNIDO agreement deviates from the format how the budget was presented by Pure Earth and clustered the budget items according to UNIDO's cost centres and, in an attempt to comply with the donor's requirements to a so-called Annex-III template of the EU. The result was a hybrid format. It provides various budget items, but also an allocation to the now four output areas. Pillar 3 was not only introduced newly, but also equipped with an enormous budget of 47% of the total budget, leaving the other three pillars with 13% (Pillar 1 for awareness and research), 31% (Pillar 2 for capacity building on TSIP and NTAP/HPAP) and 9% (Pillar 4 on GAHP assessment) of the total budget. The Evaluation Team was unable to establish what the rationale of this modification was.

The modified Project design and budget also reflects the intention of UNIDO to play, different to the Pure Earth proposal, an active role in this Project. The budget claims of UNIDO add up to about €1,000,000, which is 20% of the EU funding or 14% of the overall budget.

Based on this, UNIDO concluded a contract of about worth €4 million with Blacksmith/Pure Earth and appointed them as the main implementing partner according to the Project description annexed to the EU-UNIDO Agreement, but with modifications reflecting the budget changes. For example, while the EU-UNIDO Agreement listed M&E as a responsibility of Pure Earth, this was now entirely shifted to UNIDO. Otherwise, the responsibilities of Pure Earth, and of UNIDO, were specified as listed in Annex 3 to this report. We found that this clear-cut allocation of roles rather separated the two implementing agencies than supported collaboration. This report will come back to the responsibilities of Pure Earth and UNIDO with the detailed assessment of the Project performance provided below. It has to be mentioned that the UNIDO-Pure Earth contract also requested Pure Earth to report technical and financial progress according to the EU requirements and that Pure Earth had to secure visibility of the EU as donor according to the EU-standard.

Ultimately, Pure Earth came out of this process with a budget shortfall of several hundred thousand € compared to their own estimate, but with a reduced work load, relieved from M&E and a leading role in the NTAP/HPAP domain, and with a possibly over-budgeted output area 3 for site projects. Although this matter has been discussed between Pure Earth and UNIDO, it was decided not to change the budget again to avoid the hassle of a contract modification with the EU. This kicked off a series of challenging reporting on both sides and the feeling of a lack of transparency by those who did not know the complicated administrative background caused by the different budget templates and accounting formats of Pure Earth, UNIDO and the EU. This report will resume this topic in section 3.4.2.

It is worth to refer briefly to the Inception Report, which was compiled by Pure Earth and submitted to UNIDO in April 2016, and which lists even an output area 5, dedicated to M&E. This let's presume that the final features of the Project design and implementation arrangements took some time to trickle down to those who were in charge of implementing the Project, not to speak of 'operative outsiders' including the donors and only marginally involved departments of UNIDO. In the first annual progress report of 2016, output 5 had disappeared. Otherwise, with the Inception Report a coherent structure to report the Project's progress was established; it could be used without big modifications throughout for the consecutive reporting. This indicates that the Project design was accurate at least at the level of activities.

Finally, we briefly refer to the Cooperation Agreement of Pure Earth with USAID, which stands as an example for additional funds that Pure Earth secured for their operations and to provide

co-financing to this Project. In April 2016, USAID awarded a grant of ±USD2 million to Pure Earth to support the program 'Reducing the Threats of Toxic Chemical Pollution to Human Health in Low- and Middle-Income Countries' for the period April 2016 to September 2018.

The background, rationale and justification of this proposal resembles the EU-UNIDO proposal, however, articulating its complementarity to US efforts in this field and without mentioning a connection to the parallel EU funding. The USAID proposal is unambiguously dedicated to Pure Earth core business. The overall goal of this unsolicited proposal is to assist governments and communities heavily impacted by toxic pollution in poor countries to take locally-led action to mitigate health exposures by breaking pollution exposure pathways and preventing future toxic emissions. The proposal pursues the following objectives: (a) improve existing knowledge and gather critical data about the scope of toxic pollution and its human health impacts by expanding the Toxic Sites Identification Program (TSIP); (b) encourage national and international decision-makers to mainstream the issue of toxic pollution, chemicals and wastes and associated impacts on human health and the environment into development agendas through awareness raising, presentation of scientifically-based evidence and encouraging action; and (c) assist decision-makers and communities in five countries to mitigate the impacts of toxic pollution, chemicals and wastes on human health and the environment through training and capacity building, and provision of technical expertise and support, for specific interventions that produce measurable reductions in exposure risk.

Geographic focus of this USAID project is on several lower-income, developing countries, such as Bangladesh, Indonesia, Philippines, Vietnam, Colombia, Senegal, Myanmar, Jamaica, Mongolia, India and further not specified GAHP member countries, whereas the scope of work can vary according the needs of each country. The country scope shows some overlaps with the EU funding such as in the case of Bangladesh, Colombia and Senegal.

This complementary funding regime, which was more accurately a co-financing regime with own financial contributions of Pure Earth sourced elsewhere, was misleadingly named 'matching' funding, because no donor coordination took place or was requested by any party.

Extension of the Project

The six-months no-cost extension of the Project was granted due to the availability of unused budget (±€2 million at the end of 2017), incomplete work in some areas and the late commencement of HPAP work (late 2017/early 2018), due to the need to obtain formal endorsements by the governments in each of the targeted HPAP-countries and to enlist lead agencies and other stakeholders to join these processes. The MTR commented that the Project was lacking an exit strategy and recommended that the Project be granted more time to "phase out in style." Accordingly, the Project team could continue without substantial changes to the Project design, but with more time to ensure higher quality outputs upon Project completion. The ITE found that the Project team followed the recommendations of the MTR such as to wrap up results, improve communication, provide lessons learned and guidelines, collect feedback, facilitate engaging donors, etc. This report will refer to these aspects in the next chapters wherever it fits.

Summary assessment & scoring

Summarizing our observations of the Project design, we found a well-organized Project at the activity level that provided the Project team good guidance on what, when and how to do. The Project benefitted largely from a design that mirrors 'business-as-usual' for its main implementing agency, Pure Earth. The Project description comes with an inciteful commentary on the interconnected aspects of health and pollution that is repeatedly interspersed into most major deliverables of the Project. On the other hand, the final EU-UNIDO narrative is ambiguous regarding the Project's real purpose and does not reveal that the Project was in essence to support the GAHP, more specifically Pure Earth in its advocacy efforts, which is unambiguously conveyed in Pure Earth's initial proposal. The fact, that Pure Earth could/can raise also other funds for the same effort has not been made transparent enough in an effort of reconciling the Project activities and results at the design level. The different proposals are not sufficiently coherent, and the resulting assemblage is biased in weighting the output areas of the Project. This aspect of the Project has been a source of confusion to the Evaluation Team as well as others (including members of the Project team, the donors and UNIDO management). The design flaws have also affected the progress reporting, which in parts also lacks coherence (see section 3.4).

Considering the strengths of the Project design to guide the activities implementation versus its flaws as outlined above and the challenges to clearly understand some of the inherent ambiguities, we rate the Project design as 'Moderately Unsatisfactory' (score = 3).

3.2 Project Performance on Key Features

We have identified five major products on which the Project has delivered. These are largely coherent with the four output areas of the project, except under output 2, which unfolds into two separate products, i.e. efforts on the TSIP by Pure Earth and efforts on HPAPs lead by UNIDO in the second half of the Project.

Key features of the Project	
Research papers	Under output area 1, the Project has contributed to the establishment of several research papers and the landmark Lancet Report on Pollution and Health.
Toxic sites Investigation Program (TSIP)	Under output area 2, the TSIP work by Pure Earth was further enhanced with support of the Project. The numbers of newly identified toxic sites exceeds the targeted indicators. The TSIP exercise is also a good example of the use of complementary funding by Pure Earth.
Health and Pollution Action Plans (HPAPs)	Also, under output area 2, the original initiative of NTAPs was changed in its scope to broader HPAPs on request of the GAHP; it initially trialled in two countries (Thailand and Madagascar) by Pure Earth and then was mainstreamed by UNIDO in five further countries. In addition, a HPAP Manual was produced.
Site projects	Under output area 3, Pure Earth demonstrated standard protocols for risk-reduction or clean-up of contaminated sites in 11 cases, exceeding the targeted number of five projects. In addition, a TSIP Handbook, Mercury and Lead Guidance documents were produced.

Global Alliance on Health and Pollution (GAHP)	Under output area 4, Pure Earth as the Secretariat conducted consultations with the GAHP members and prepared the incorporation of GAHP as legal entity, based on an independent review study conducted by UNIDO.

The ITE evaluated the relevance, efficiency, effectiveness, impact and sustainability of the Project, thereby individually assessing the key features of the Project as outlined before. Each key feature is considered as a distinct product of the Project and links between the components are highlighted where applicable. Each component was, so far practicable and appropriate, assessed under the following framework.

Evaluation criteria and key questions	
Relevance and ownership	We assessed the coherence of the features/products with the overall intentions and objectives of the Project; their consistency with beneficiaries' requirements, country needs, global priorities and of partners and donors; and the level/kind of ownership of the delivered products.
Efficiency	We assessed the actual delivery against planned outputs, and how economical the conversion of resources/inputs to outputs was in terms of costs and benefits, value for money, timeliness, and synergies. We hypothetically asked, if other types of activities would possibly have delivered similar outputs more efficiently.
Effectiveness	We assessed the usefulness of outputs and deliverables for the stakeholders, and we asked, if the activities involved the right persons/institutions to drive effectiveness. We assessed the actual uptake of the Project's outputs by the target groups, for example: Has awareness increased leading to action? Has capacity increased and to what ends? How effective is the uptake of the produced HPAPs? What is the likelihood of replication of pilot/demonstration site projects? What is the status of consolidating the GAHP as a result of the Project intervention?
Impact	Impact was assessed as a measure of progress towards the long-term goal of mitigating toxic pollution exposure and improving health conditions in LMICs. What is the change/progress attributable to the Project?
Sustainability	This is a measure of the likelihood that the benefits of the Project will survive beyond the termination of the Project funding. We evaluated the dimensions of political, financial and institutional sustainability. Will the initiatives of the key Project features carry on and by what means? Is there, by any of the partners/donors, a plan for follow-up actions in the same field?

3.2.1 Research papers & awareness raising

A key measurable of the Project outputs (as per Pillar 1) was to improve awareness within international organizations, donor agencies and national governments of the associated impacts on human health caused by environmental/toxic pollution. A performance metric

agreed upon was that a least three research papers should be published in peer-reviewed journals around the Project's focus areas.

To this end Pure Earth/GAHP contributed extensively to the landmark Lancet Commission's Report on Pollution and Health published on 19 October 2017 (hereafter referred to as the 'Lancet Report') and also the publication of 16 peer-reviewed papers in lieu of the planned three. The nature and importance of these publication are discussed in the sections below

Publications in peer-reviewed scientific journals

A summary of the 16 publications is presented in Annex 4. The available data indicate that eight of the published papers were completed with traceable support of the Project, and eight more were attributed to the ongoing TSIP work of Pure Earth in overall.

In broad terms, the range of discussion topics in the publications are as follows: six of the publications are related to lead impacts; two relate to mercury at Artisan Scale Gold Mining (ASGM) sites; one is on e-Waste, and one cites the TSIP as a case study from Ghana; the remaining six papers relate to general topics on awareness and advocacy on themes central to the Project. The eight publications attributed directly to the Project refer to the EU funding, and one of these also mentions UNIDO.

For the other papers appearing in the Project's progress reports and which are related to Pure Earth's TSIP work, it is understood that most of the publications are supported through mixed funding sources. Only one of these eight publications attributed to the TSIP mentions the EU funding. Of these eight publications, six are short comment pieces, while two are full publications.

The Lancet Report on Pollution and Health

The Lancet Commission on Pollution and Health published their report in October 2017, following two years of work by Commissioners from around the world, consisting of influential leaders, researchers and practitioners in the fields of pollution management, environmental health and sustainable development. The stated overarching goal of this Lancet Commission was to "*raise global awareness of the importance of pollution, to end neglect of pollution related* disease*, and to mobilise the resources and the political will that are needed to effectively confront pollution"*. This goal is directly aligned with those of GAHP/Pure Earth and the purpose of the Project. Much of the focus in the wake of the Lancet Report's release was on the Commissions accretions on high cost of pollution in terms of lives and quality of life, economic losses and the solutions available to solve this global crisis. A GAHP Blog Special Update of 7 November 2017 indicates that the Lancet Report reached over 1.8 billion readers/viewers worldwide through various media channels.

Assessment of the Project's performance – research papers

The mandate of the ITE was not to enter into a scientific discourse of the produced research papers per se, but to assess their relevance in the Project's context, the efficiency of delivery, the effectiveness of uptake of the research by the stakeholders, the contribution to a potential impact towards the Project's goal, and the sustainability perspectives of the produced benefits. The positive scoring of this Project feature is mainly related with the Lancet Report.

Relevance and ownership – 'Satisfactory' (score = 5)

The produced research papers are coherent with the overall intentions of the Project to increase awareness on the causal links between health and pollution through scientific evidence. The eight distinct research papers directly attributable to the Project are coherent with the thematic focus of Pure Earth; they are relevant for the advocacy work of Pure Earth and the scientific community in these fields. Consequently, ownership of these papers is with Pure Earth and the authors.

The Lancet Report is largely coherent with the entire Project scope. It was seen by the donors and international organisations as a highly relevant landmark publication. Its 'wake-up-call' message, through highlighting the causal effects of environmental pollution on health and of the dimensions of the problem, underpinned the relevance of the Project subjects. That the relevance of this research was high also for the wider public is evidenced through the large media outreach upon its publication. Ownership of the Lancet Report is with Pure Earth, GAHP and the authors, but through its dissemination also with the large reader population. The Lancet Report was also relevant in influencing follow-up actions (see also effectiveness).

Efficiency – 'Moderately Satisfactory' (score = 4)

Compared to the evaluation metrics, this output has exceeded the agreed quantum of three publications with eight publications directly attributed to the Project funding, and the Lancet Report. However, the Evaluation Team could not trace how the Project funds were used to pay for the time of primary researchers and institutions for generating these outputs. This includes the Lancet Report, which is not the exclusive effort of the Project, given that the Lancet Commission commenced before the Project started. The Lancet Report is a highly synergistic effort of the GAHP and a large scientific community. The Lancet Report lists a few contributing authors that are associated with Pure Earth and UNIDO amongst dozens of others; reference to the EU funding was made only in the acknowledgement section. However, the univocal opinion of the stakeholders was that it is unlikely that these research papers including the Lancet Report would have materialised without the Project support.

Effectiveness – 'Satisfactory' (score = 5)

The Lancet Report has apparently already seeded results by influencing UN organisations' focus on the nexus of health and pollution, with the WHO increasing its focus on non-communicable pollution-related diseases.

A considerable uptake occurred in the context of the HPAP exercises. Direct country-level confirmation of this was noted in the Ghana country visits, where a WHO clean air initiative and the HPAP Technical Working Group are performing complementary activities, and the WHO has adopted some of the HPAP approaches to their initiative. Similar effects could be traced in the Philippines, again driven by the WHO and the HPAP stakeholders. Among the policy-makers, that are interested in scientific evidence, the appetite to have country-specific data was instilled, as the Lancet Report only presents global figures (see also our review of the HPAPs in section 3.2.4).

The Lancet Report narrative has penetrated consecutive formulations in scientific papers and the deliverables of this Project. The Evaluation Team tested the awareness and knowledge of the Lancet Report with the various interview partners and found a mixed level of recognition, which shows that scientific research, even if presented popularly, has limited reach to the scientific and related professional community. No specific evidence could be found for an up-take of the other research papers outside the scientific community.

Impact – 'Satisfactory' (score = 5)

Taking into account that the main intention of the Project was advocacy on the nexus of health and pollution, this Project feature made a satisfactory contribution towards the desired change; at least by alerting about the enormous dimensions of the problem and the many challenges to mitigating human exposure to health-threatening environmental conditions.

The Lancet Report widened the scope to all types of environmental pollution, including ambient air, indoor air and water pollution, toxic chemicals and soil contamination. It drew attention that the causes of environmental pollution are linked with economic activities, behaviour in public, private and at work, and the educational and income status of the affected populations. It pledges to address the problems within the framework of the UN's SDGs, calls for leadership, nationally driven and internationally supported plans and actions, interagency collaboration and inclusiveness with regards to the most affected, the poor and marginalised populations. If scientific research can potentially instil a change, the efforts of research under this Project are a satisfactory example.

Sustainability – 'Moderately Satisfactory' (score = 4)

Sentiment expressed across multiple stakeholders suggests that the publications, most notably the Lancet Report, have undoubtedly contributed to a global awareness of the Project's main topics and are likely to help mobilise further resources and funding to sustain the initiatives of Pure Earth and GAHP in the Project focus areas.

Our in-country interviews found that the Lancet Report was well received. A lasting impression of the Lancet's recommendations remains with those already well-informed and at a mid-level within state organs, which provides only an unsteady base for institutional and political sustainability. It would be safe to say that the interest and energy observed immediately after the publication of the Lancet Report has understandably diminished with on-going regional and local crisis lobbing for the stakeholders' attention. We believe that efforts of strategic updates and on-going awareness on the topic are required to keep and refresh the momentum. We have been informed by Pure Earth that GAHP is planning a next Lancet Commission on Pollution and Health within the next few years to come up with a sequel in 2021/22.

3.2.2 Toxic Sites Identification Program (TSIP)

The purpose of the Toxic Sites Identification Program (TSIP) is to quantify the approximate scope of industrial soil and water contamination in a given country. In some cases, high priority sites are targeted for interventions to mitigate the human-health risks identified. Pure Earth has been using donor funding since 2008 (see chapter 2), to develop a baseline understanding of the nature and extent of toxic soil contamination in LMICs, an appraisal which until then was mostly non-existent. The TSIP aims to assess sites in LMICs that show toxic pollution from a point-source with concentrations that can cause adverse human health impacts; and where a migration route and exposure pathway to humans is evident. The TSIP is not a comprehensive inventory of such sites; it is an effort 'to begin to understand' the scope of the problem.

Until this Project commenced in February 2016, ± 3,395 sites have been identified in over 50 countries, with more than ±2,555 sites having achieved an approved-status. These sites alone are estimated to represent a potential health risk to more than 65 million people.

Dramatically, these sites are likely representing only a fraction of the overall total. The current count of April 2019 stands at ±4,913 sites. This means that some ±1,500 sites have been added to the TSIP database during the lifetime of this Project. However only a portion of ±800 sites have been reported by Pure Earth with the Project's progress reports. Out of these, ±460 sites have reached the approved-status. The Evaluation Team have therefore presumed that the Project has contributed to ±50% of Pure Earth ongoing TSIP work.

How the TSIP works

The TSIP utilizes a rapid assessment protocol known as the Initial Site Screening (ISS) developed by Pure Earth as a simplification of established U.S. EPA site assessment approaches. To complete the ISS, Pure Earth utilizes country-based technically competent individuals that are given 2-3-day training on the ISS protocol. Government representatives are also invited to the training in a bid to also build local capacity of authorities. During the Project period, 338 persons were trained in 12 countries over 14 training events. An ISS is completed for a site over a period of 2-3 days by the trained investigators, who collect information related to the human health risks of a site. The data is then entered into an online password-protected database (www.tsipdatabase.org). Thereafter, a technical review of each site is done by staff located in Pure Earth's headquarters in New York. The sites 'approved-status' is then indicated in the database.

The TSIP database provides information of all screened sites. The software allows the user to filter the data on a broad range of indicators, e.g.: Site Name, Country Name, Province, Key Pollutant, Blacksmith Index, ISS Date, and Approval Status. Key Pollutants are provided as colour-coded legend on a desktop navigable world map. Users can zoom-in to locations and the ISS information stored to each site in background files can be viewed. The software allows to generate Excel-based reports along specific search criteria. The online TSIP database was recently updated and its functionality and user interface were upgraded with funding from the World Bank.

The figure below is a screenshot of the TSIP landing page with a high-level display of the world map and numbers of sites completed in their respective geographies for the duration of the Project.

The ISS is not intended as comprehensive assessment of human-health risks at the target site and is indicative rather than definitive. ISS is limited by several factors including cost, available analytical methods and any existing data of a contaminated site. These limitations result in geographic and thematic biases. Thus, certain pollutants or geographic areas may be overly represented in the TSIP database. Additionally, the quality of assessments varies. Users of the TSIP database are also cautioned to note the approval status of individual site entries. Sites with and "approved" status are the technically more robust, while sites in other categories are in various stages of completion.

To rank the risks of assessed sites, Pure Earth has developed the so-called 'Blacksmith Index'. This hazard ranking formula takes few key factors into account such as the scale of the pollution source, the size of the population possibly affected, and the exposure pathways. Like the TSIP in overall, this index is designed for the use in low-resource settings by local personnel with basic training. It is a tool for assessing toxic pollution sites where time, money and capacities are limited.

Pure Earth's Focus on Lead

The Evaluation Team observed that much recent TSIP work has been on the assessment of sites contaminated by lead. This is also evidenced in the published outputs of the Project; six of the nine pollutant-specific publications have focused on lead topics (see also 3.2.1). Of the sites recently added with support of the Project, ±700 are lead-polluted sites. Additionally, eight out of the 11 site projects were focused on lead-contaminated sites (see section 3.2.3).

Pure Earth's focus on lead does not lack scientific justification. The informal activities of lead recycling have accelerated with the commodity price for lead having quadrupled in recent years. The death toll of lead is currently doubling, e.g. in India. Lead poisoning already causes

the same number of deaths by diseases like HIV and twice that of malaria. There are at least 3 million deaths/per year caused by lead, lead being the number one cause of cardiovascular diseases in LMICs, according to Pure Earth.

Pure Earth's activities provide an important and pioneering contribution to create awareness of the problem. Pure Earth has become the leading proponent of the issues surrounding this pollutant. Used Lead Acid Battery (ULAB) recycling sites are used to showcase the issues around polluted sites in LMICs in general.

The Evaluation Team believes that the focus of Pure Earth on lead is also based on both the cost and convenience of assessing lead-polluted sites. Lead is relatively easily assessed with an XRF on-site. The extent of the contamination can be delineated in 1-2 days. Indoor exposure also can be assessed with relative ease, for example with dust wipes of indoor surfaces. There is no lengthy delay or need for costly laboratory analysis. Similarly, solutions can be readily demonstrated through simple small-scale interventions (see also 3.2.3 on site projects).

Apart from a few cases (e.g. lead mine tailings and some lead paint investigations) most of the ISS have focused on lead in community settings related to ULAB recycling facilities. Much like the awareness generated around mercury used in ASGM, which was influential on the formulation of the Minamata Convention, we have observed that the creation of awareness around ULAB is promoting Pure Earth's activities in this domain.

Assessment of the Project's performance – TSIP

The TSIP work is further ostensible evidence that the Project was an extension of previous projects in delivering 'more of the same', but has also allowed enhancements to the established system to be made. The ITE assessed whether there was continued relevance of TSIP for donors, partners and in-country stakeholders; how efficient the TSIP delivery was under the aspects of complementary funding; to what extent an effective uptake of the TSIP outputs took place and in what contexts; what the potential impact of TSIP is of contributing to the overall Project goal; and how sustainable TSIP as a benefit supported by the Project is. The Evaluation Team came to a mixed conclusion of this Project component due to the heavy focus of TSIP on lead.

Relevance and ownership – 'Moderately Satisfactory' (score = 4)

The TSIP is coherent with the rationale of the Project that reliable data are needed to verify the nexus of health and pollution; this in an attempt to create awareness about the dimensions of the problem and, secondly, to prepare for mitigation measures. The TSIP, as the core product of Pure Earth, is fully coherent with the Project's purpose to strengthen Pure Earth advocacy efforts. TSIP is highly valued in the absence of similar systematic efforts, and the ongoing efforts to expand the TSIP database are still relevant. Using a cross-reference of opinions that have been articulated in the course of an independent assessment of the GAHP (see section 3.2.5), most GAHP stakeholders welcome the TSIP and Pure Earth's work in this field. Overall, acceptance of the approach used in the TSIP and recognition of its value to support local governmental agencies in their efforts related to the protection of public health are considered high.

More specifically, we found evidence that the TSIP work was relevant for in-country stakeholders to identify barriers and limitations such as lack of data, capacity bottlenecks in

human resources and laboratories, inadequate, missing or dysfunctional protocols and numerical norms and standards. It was relevant to recognise the traditional poor community awareness of the risks posed by informal industrial processes that are undertaken within the community itself; and that efforts of government agencies are often missing or uncoordinated and lack the requisite of interagency cooperation to be effective. As such this component made highly relevant contributions towards addressing this situation.

However, in the evaluators' opinion, the strong focus on lead contamination is critically reducing the overall relevance of this Project component. From this angle, the TSIP component was of high relevance for Pure Earth, in occupying a niche related to their current and future operations strong focus on lead. Notwithstanding that the impacts of lead pollution are an ever increasingly important driver of health impacts in LMICs, in the context of the Project, we believe that the focus on lead has been at the expense of other toxic pollutants such as complex organic compounds and lesser-known emerging contaminants and more broadly impacts of these toxins on groundwater resources.

Notwithstanding the good work that was accomplished through a series of in-country training on the ISS and the use of local consultants to complete the work, the ownership of TSIP firmly remains with Pure Earth and there was no evidence, as far as we can tell, of ownership of such activities by local entities except within the context of some HPAP concept notes (see 3.2.4) that still require development into action along with funding and resources.

Efficiency – 'Moderately Satisfactory' (score = 4)

Efficiency of the TSIP seems to be high on first sight, with some ±1,500 sites added to the TSIP database since the Project start in 2016; some ±800 sites are reported as attributable to the Project, which is significantly more than the targeted number of 450 new sites. However, the Evaluation Team could not establish a reliable overview on an itemised Project budget use; this was not readily transparent; nor was it possible to sufficiently substantiate along which rationale sites are attributable to the EU funding, the USAID funding or other complementary funding during the Project lifetime, such as a grant from the World Bank to redesign the online TSIP database, which required to re-enter old data; or an ADB support to TSIP work in the Philippines.

The Evaluation Team requested an overview of all complementary funding to Pure Earth for their TSIP work, but we got only the global information, that the EU funding accounted approximately to ±40% to keep the TSIP work ongoing during 2016-2017. In a response to the MTR, Pure Earth wrote that the TSIP work under this Project was mostly completed in 2017, which is confusing, since the TSIP database is still growing. Into this picture fits also the observation that in-country staffs of Pure Earth were not able to differentiate from which specific funding their actual work is financed. For example, for the Philippines only 9 new TSIP sites are officially reported to UNIDO, but when the evaluators conducted a country visit, the local Pure Earth consultants mentioned ±50 sites in different cities/regions of the country.

There was no evidence that other activities around the TSIP could possibly have delivered similar or better outputs more efficiently. Despite the impressive numbers of new TSIP sites, the ITE can give an only moderate score regarding the efficiency of the TSIP work under this Project.

Effectiveness – 'Satisfactory' (score = 5)

Within the scope of the TSIP and its focus on heavy metal contamination of soil, the TSIP is a useful output, independent of the extent that is attributable to the Project. TSIP is a first step to action. It has heightened awareness on the subject, and the primary research generated by the TSIP is vital in providing the baseline for follow-up efforts. The Project itself provides evidence, either through the uptake of TSIP information in the context of country-specific HPAPs or to select sites to demonstrate clean-up options (see section 3.2.3). TSIP has delivered to highlight potential 'blind spots' of local government agencies and to prioritise areas for action. The challenge to come to tangible large-scale results on the ground remains.

We believe that effectiveness also was given through involving not only consultants but also government agencies in ISS training activities; government officers constituted ±50% of the trainees. Although they are not expected to undertake site assessments, they now have the basic knowledge of site assessment methodologies and source-pathway-receptor exposure models of the affected communities and a better appreciation of the technical resources that are required for such assessments.

Another observation from the country visits was made around the future availability of appropriately trained TSIP investigators, which was a task under the TSIP component. As the work was completed on an ad-hoc basis, in many cases, Pure Earth sourced the country staff from non-profit organisations, parastatal research institutions or independent contractors. It was noted in several cases that these experts are no longer available for participation in the TSIP work. It was also noted that some individuals at a junior level have been able to use the TSIP training and experience gained in accessing opportunities within the environmental science field, which is considered a positive contribution towards capacity building in the country. In other cases, local experts were retrained for on-demand actives following training given over five years ago. In summary, a stock of investigators is potentially available. In some geographies, additional investigators will have to be sourced and trained should renewed efforts to expand the TSIP in these countries happen.

Impact – 'Satisfactory' (score = 5)

The sites listed in the TSIP database are still only the tip of an iceberg; however, the known quantum of polluted sites underpins the extent and hazards of such toxic pollution in LCMCs. In many countries, the completed ISS' is the first of this kind.

The TSIP has the potential to move the aspect of toxic pollution one step up on the causal-transformational pathway towards mitigating exposures. The TSIP efforts have served this challenge in two ways: first to create awareness, and second to pinpoint distinct areas where to act. It is a first, but important step towards impact on the ground.

We found evidence that the TSIP has the potential to secure the attention of national and local governmental stakeholders and be influential on policy-making which is evidenced for example in some country-specific HPAP documents. The impact potential of the TSIP has however been limited to some extent by its emphasis on lead pollution from ULAB recycling operations.

Sustainability – 'Highly Satisfactory' (score = 6)

Sustainability of the TSIP is high; the TSIP has been central to Pure Earth's activities since the TSIP's inception in ±2009. The Project has helped to increase the number of sites in the database and has increased the value of this unique tool on the extent of toxic pollution in

LMICs. There are good perspectives for the further extension and growth of the database. It is actually going on. It is understood that Pure Earth will continue to seek funding to build on the TSIP and has been already successful in securing funds for the present and next few years.

3.2.3 Site Projects

Under output area 3, Pure Earth was to demonstrate market-based and industry-led remediation solutions at site level as replicable cases. It aimed to engage the stakeholders in implementing cost-effective clean-up solutions. Moreover, the collaborative work undertaken was intended to build capacity of local and national stakeholders including government agencies and NGOs deployed in field project work. Lessons learned through the field projects were to be documented in a formal report and shared with GAHP members.

These site activities can be seen as a natural extension of the TSIP work (see above section 3.2.2). Potential target sites were initially identified during assessments carried out as part of TSIP. High priority sites are flagged by both the hazard-ranking Blacksmith Index and subjective feedback from individual investigators. Those sites are then reviewed by Pure Earth staff jointly with government agencies such as provincial/national environmental authorities. Proposals were drafted as described in the Project's annual progress report of 2017.

Earlier phases of these exercises relied almost entirely on proposals submitted by country governments and local partners, with less involvement of Pure Earth or external technical advisors. These earlier proposals were tabled to the GAHP executive committee to decide on their funding. An internal review of this process found that without direct support from Pure Earth's staff/technical advisors, fewer proposals were generated from lower-income countries, with only one being generated in Africa for instance. The same review found that those proposals from lower-income countries were also generally of poorer quality.

To correct these issues, a detailed proposal template was developed for site projects. Pure Earth staff and technical advisors were substantially involved in the process, including sample collection, project design, identification of key stakeholders, and proposal drafting. Pure Earth staff were also involved in the evaluation of the proposals, following a standard evaluation format. Each proposal was ranked across a series of parameters to determine their relative feasibility and impact. Key criteria included the project's potential impact on human-health, government support and co-financing, the quality of the Project design, and the ability of the Project to be replicated elsewhere.

Twelve site projects were submitted and eight were selected for execution. A ninth (Akhtala) received dedicated funding from the Armenia Foundation and was thus also selected. In addition to these nine projects completed in 2017, two projects (Kabwe, Zambia and Sovietskoe, Kyrgyzstan), were completed already in 2016. These two projects were not subject to the proposal and review process described above; in lieu a series of compelling reasons justified the Project's involvement.

In the case of Kabwe, Zambia the EU support provided a small amount to co-finance the effort supported primarily by the Swiss NGO Terres de Hommes. This enabled a clean-up exercise in the city with a USD65 million loan of the World Bank; the precursor small site project of 2016 was essential to ensure this. In the case of Sovietskoe, the Project was compelling from a humanitarian and capacity building perspective. Given the low cost, high likelihood of

success, and impact on human health, a decision was made by Pure Earth to execute the Project without a robust review process. This amounts to a total of 11 site projects across 10 countries. The site projects are briefly summarised in the table below.

'Pilot' projects supported by the Project

Country (Location)	*Pollutant*	*Approach*
Armenia (Akhtala)	Lead from mining waste residues	Capping contamination with clean soil to mitigate the exposure pathway.
Azerbaijan (Salyan)	POPs- Abandoned pesticide storage/disposal site.	Removed material and some contaminated soil to hazardous landfill.
Bangladesh (Kathgora)	Lead - ULAB recycling	Waste materials moved to a disposal, surface soil removed and encapsulate, paths, roadways and residential yards were capped.
Colombia Malambo	Lead - ULAB recycling	On-site encapsulation of the waste, education and awareness campaigns; risk-reduction measured (including changing of some residents of mattresses).
India (Karmalichak)	Lead - ULAB recycling	Soil capping, education and awareness campaigns; and risk-reduction measures (cleaning of homes and school).
Kyrgyzstan (Naiman)	Mercury - dumped into a drainage canal.	Contaminated material excavated and moved to the nearby closed mercury mine's tailings pile.
Kyrgyzstan (Sovetskoe)	Lead contaminated soil from nearby abandoned mine tailings.	Selective removal, education and awareness campaigns; and other risk-reduction measures (ion-exchange water filters were installed in the kindergarten and boarding school).
Philippines (Pampanga)	Lead - ULAB recycling (facility, was still in operation during the Project)	Physical barrier (concrete wall) between a community the lead smelter, clean-up work in the community including the construction of a road and soil capping.
Tajikistan Saidov, Jami	POPs (Heptachlor, DDT and Lindane) from a former pesticide storage	Excavated and repackaged material and transported it to a hazardous waste facility and education and awareness programmes.
Vietnam (Man Xa and Quan Do)	Lead - ULAB recycling	*No supporting project document was found in the data provided.*
Zambia (Kabwe)	Lead from mining waste residues.	*No supporting project document was found in the data provided.* Soil capping, education and awareness campaigns; risk-reduction measures.

Eight out of the 11 projects were focused on lead-contaminated sites, mostly from ULAB recycling, two are related to POPs; and one on mercury-contamination. The table further illustrates that a limited range of technologies were applied. These methods included: consolidation of the source material within a secure local contaminant facility, soil capping, and selective excavation with on- and off-site disposal. The technical approach to the clean-up projects was not developed through this Project; it followed already established standard protocols of Pure Earth.

Pilot versus demonstration

The Project documents are ambiguous in terminology regarding the nature of these field projects; the terms 'site projects', 'pilot projects' or 'demonstration projects' are used throughout interchangeably.

By definition, a 'pilot' project, in the context of site remediation, is considered a prequel to a 'full-scale' rollout wherein the 'proof of concept' has already been completed, and the pilot serves mainly for the purpose of evaluating how the technology performs under site-specific conditions. The knowledge obtained is then used to aid the design of full-scale systems to support a range of technical and non-technical decisions. Pilot-scale projects, in relative terms, are smaller than full-scale projects and are intended for learning, to derive best practices, and to identify future scaling considerations. These can also deliver other intangible benefits around stakeholder engagement making it easier to adopt the approach at a future full-scale level.

While the site projects under Output 3 incorporate several elements described above, they are better described as field 'demonstration' projects. The interventions are firstly humanitarian efforts to stop/reduce toxic exposures at sites that pose the highest human health risks as identified in the TSIP. This is also evidenced through past practices, where GAHP decided to support a specific intervention in the presence of available funds, and not for testing a systematic approach as the Project documents suggest.

In practice, these interventions were not intended to remediate the sites, as this would require significantly more resources and time to complete. Therefore, a limited range of proven methods (see the table above) were used as rapid and low-cost techniques to address the toxic exposures without assessing costly remedial alternatives. The idea is that the demonstration will act as a catalyst for local governmental agencies to learn from these examples and deploy similar methods to other sites in their jurisdiction or country. In addition, other simple complimentary risk-reduction strategies (e.g. cleaning of indoor surfaces to remove contaminated dust) were used to reduce exposures including community awareness and education initiatives for both adults and children.

In summary, the Evaluation Team found that the approach applied by Pure Earth is a replication of existing approaches and not the piloting of new concepts with the aim to investigate their feasibility and reproducibility. Even at this primary level, the barriers to replicate these small-scale demonstration projects of Pure Earth are presumed to be high, not least, because of cost. It is noted that the reports on the site projects do not adequately describe the actual costs of the interventions. The reports list many accounts of matched contributions from various sources including from governments or other donors/stakeholders and the direct provision of resources (e.g. transport, labour, machinery for earthworks, and landfill disposal costs). However, no information is provided regarding the costs of involving external international and/or local consultants and advisors.

As such, the real cost of completing these field demonstration projects and an extrapolation for replication cannot be derived from this work. There is also no indication of the required, per Project description, market-based and industry-led angle of solutions.

Lessons from field projects

Pure Earth has attempted to extract lessons from these site projects. For example, the annual progress report of 2017 lists some lessons from Sovetskoe (Kyrgyzstan) and the annual progress report of 2018 from Karmalichak (India) and Kathgora (Bangladesh) on community education campaigns and how the projects have increased attention of lead at the state level. The summaries contained in the annual progress report 2017 presents a brief 'Challenges and Lessons Learned' section for each country. In summary, these lessons included aspects around the following examples: the slow response of authorities or protracted bureaucratic processes; poor or incomplete site data, security and personal safety risks (including crime, militia activities, illegal activities, civil unrest and unsafe road-travel); and the high cost/low capacity of in-country laboratory services to support the work.

This information would be useful to all Project stakeholders if captured in a more systematic and consolidated manner. These observations would be of interest to GAHP members and should be better summarised. This gap is, in part, closed by technical guidance documents which are discussed further below in this chapter.

Site visits

The Evaluation Team conducted some site visits in Colombia and in the Philippines. Some observations made during these two field missions are presented below. A third site visit on e-Waste in Ghana, introduced by local staff of Pure Earth, which was not directly related to this Project; therefore, it was not discussed in this evaluation.

Malambo, Colombia

We visited two sites related to the clean-up of former ULAB recycling operations. The local Pure Earth representative demonstrated, with an XRF device, how ubiquitous and high the lead contamination is throughout the area. It was noted how difficult it will be to prevent current and future lead exposure in the site setting due to a range of physical and socio-economic aspects, even though the primary source of contamination was mitigated by in-situ encapsulation. While there is full recognition of the lead problem and strong support of the Project's initiatives by the local government, there is practically no ownership of the Project by the local agencies; any future actions would need to be driven by an entity like Pure Earth. The local governments are severely resource-constrained and are not even able to resolve basic community needs like the provision of running water. Ironically, the lack of running water further exacerbates the lead exposures as there is no easy way for members of the community to adhere to hygiene levels (i.e. wash off dust), which was recommended as part of the risk-reduction methods to reduce dermal exposure and infestation. There are thousands of square metres of dust-generating surfaces and many buildings, including the school, do not have windows to prevent dust entering. On-going interventions to sustain risk-reduction measures introduced to the community via the Project's adult/child education and awareness training are required. Blood lead level (BLL) monitoring is done by the state at the request of parents but only on an *ad-hoc* basis and there is no coordinated BLL monitoring programme in place. The mother of one family presented recent (February 2019) BLL test results for her two children. While the girl's BLL was below the WHO screening level of 5 µg/dL, the boy's BLL was five-times above this level. The mother did not appear to have notion of how she should respond to the information nor have a plan to implement risk-reduction measures. This site visit underpinned the challenges posed by legacy ULAB sites.

Pampanga, Philippines

A former ULAB recycling site was visited in the Barangay San Isidro, San Simon, Pampanga, which is about 60 kilometres out of Manila. Only an empty yard was visible. All buildings have been pulled down, including a wall which was erected by the Pure Earth as an intervention to physically divide the ULAB from the living quarters of the former workers and their families. The estate was recently purchased by the neighbouring steel scrap mill, after the ULAB plant has moved out. Allegedly the ULAB facility has been set up again in township nearby. The estate is surrounded by a high concrete fence which had prevented villagers from seeing what the goings-on inside the estate have been; the local people are not outspoken and profess not have had insights on the operations. No workers were sourced from within the village, as the plant owner brought in migrant workforce and housed them (men, women and children alike) within the compound like indentured workers.

This Project is considered a failure in the eyes of the local Pure Earth consultants. It was done contrary to the conventional approach of Pure Earth, as the ULAB recycling operations were still on-going at the time of intervention. Furthermore, it was informally continuing long after a barrier wall (dividing the plant and living quarters including the children's playground) was erected, and the community was educated, blood samples taken and cooperation with the local authority was agreed. These measures showed some success, but with the operation still going on, this was only a temporary improvement. In the meanwhile, all but one of former workers and their families have left the area. The remaining worker noted that the workers have never been made aware of the hazardous nature of their work, but only how to do the work, which was extracting lead for the purpose of bullet manufacture.

This site was selected by the Department of Environment and Natural Resources to drive the operation towards legal compliance. This was a fruitless undertaking, because the plant owner was not ready to invest in the facility. Ultimately, the local authority shut the plant, however did not enforce this action, and the operations did not stop until months later when the tools and equipment were removed by the owner. There is low awareness of the local community; the health workers try to inform people, particularly pregnant women, but their primary approach is on healthy food. The local authority's current officers are new in their roles and uninformed of the site's history. Hypothetically, the site should be an excellent example for the demonstration of market-based and industry-led solutions. However, the take-over of the site by another industry was just coincidentally. The replication potential is thus not realised and the local authority appears to have no ambition to share their experiences with colleagues in the next township.

Pure Earth consultants were optimistic that work in other new areas of TSIP are progressing more positively. However, this work is beyond the scope of the Project under review.

Technical guidance documents

Under Output area 3, the Project also aimed to *"collect data and results, and extract lessons learned; create and disseminate technical guidance documents/tools on toxic pollution"*. The Project produced four such documents instead of the three planned. Three documents are related to the TSIP work, and the fourth is related to HPAP.

Assessing and Mitigating Lead Exposures at Informal Used Lead Acid Battery Recycling Sites

The document provides summaries of approaches that have been deployed globally by Pure Earth to evaluate lead impacted sites, with a focus on informal ULAB recycling operations. Given the typically resource-poor environments in which projects are executed, risk reduction alternatives are recommended that require no or minimal ongoing operation and maintenance. An advantage of these simple methods is that no special permitting from environmental authorities is likely to be required, as they do not involve the disruption or disposal of hazardous waste. Community education campaigns should always be conducted as part of a project. Site projects should aim to use simple low-cost and low-tech approaches to break the exposure pathways to protect the communities. With respect to lead, the methods proposed are relatively limited and straightforward.

This document illustrates, how stakeholders in LMICs will nonetheless face significant challenges, in implementing even the simple processes outlined in this guidance, if they lack access to quality technical and other resources. This is further compounded by the poor, inadequate, dysfunctional local governance systems. In conclusion, this guidance document reiterates some of the barriers LMICs face, as already presented in the Project proposal. These barriers remain, and the guidance document does not discernibly advance the current understanding of how even simple interventions can be replicated without continued dependence on donor funding. It is noted that the version provided to the Evaluation Team was a draft and it is unknown, if the public version has been circulated and how it was received by stakeholders.

TSIP Investigator Handbook

This document presents a comprehensive overview of the TSIP, its scope, how it works and what it aims to achieve. The guide explains the Risk Screening Model and the Pollutant-Migration-People pathway to determine human-health risks under set conditions. This model is consistent with risk-based screening approaches used internationally but is simplified to conduct rapid health risk screenings as per the ISS. The document provides a stepwise process for investigators to follow for pre-planning, site work and use of the on-line TSIP database.

It is noted that the manual reflects Pure Earth's focus on assessing heavy metals in soils. There is limited guidance on organic compounds and related quality control and quality assurance measures to ensure that the sample integrity is maintained for such pollutants. It is not evident, how this handbook is attributable to this specific Project under review since the handbook contents are fundamental to the TSIP work and the investigators' training; both are not limited to the Project and predate this Project.

Recommendations for Technical Guidance on Identification, Assessment, and Management of Mercury-Contaminated Sites

The Minamata Convention on Mercury represents a significant advance in the global effort to reduce the harmful effects of mercury pollution on public health and the environment. Based on experience gained in running the TSIP, Pure Earth created this pollutant-specific technical

guidance for stakeholders for the identification, screening, assessment, and management of mercury-contaminated sites (as articulated under Article 12 of the Convention) in LMCIs.

No substantive discussion is presented on remediation options for mercury-contaminated sites like it was done in the Lead Guidance Document. Concerning risk-reduction, the guidance covers aspects of public participation and engagement, such as communicating risks to communities and advising on risk-reduction behaviour. For example, were the exposure path is via the ingestion of fish, the information provided to the public should be signs placed at the water body and fact sheets that detail the size or species of fish to avoid and the amount of fish that can be eaten without creating unacceptable risks.

Health & Pollution Action Plans: Accelerating National Actions to Address Pollution-Related Illness

An HPAP Manual was compiled as part of output area 3. This de-contextualised allocation of this document, to an activity reported under output area 2, was not helpful to secure transparency of the Project's operations. We will resume with this guidance document below when reviewing the HPAP feature of the Project (see section 3.2.4 on HPAP). This manual was created in collaboration with many GAHP stakeholders through the HPAP working group, which met three times in 2018.

Assessment of the Project's performance – site projects

The ITE assessed the listed site projects and guidance documents regarding their relevance for the Project and its stakeholders, efficiency of implementation, the effectiveness of uptake in terms of replicability, potential impact and sustainability.

Relevance and ownership – 'Moderately Unsatisfactory' (score = 3)

This Project feature was overall coherent with the Project's rationale to demonstrate simple and low-cost solutions to mitigate health exposure to pollution that aligns with resource constraints of LMICs. However, specific details thereof are missing, because the aim to present replicable market-based and industry-led solutions was widely omitted. There is little relevance in technical terms because no new insights or innovative approaches were developed. The relevance of the site projects is limited to the affected communities, with no evidence of spill-over in terms of replication. The narrow thematic focus, mostly on lead, results in a lower relevance for the broader scope of the Project. This does not mean, however, that mitigating lead exposures is not relevant as such. Ownership remains with Pure Earth and only to a limited extent with local stakeholders.

Mechanisms for replication were only partly captured in the guidance documents with little new insights, thereby reiterating known problems and barriers, exemplifying the overall narrative of the Project. The lessons learned, and condensed in these guidance documents, are potentially relevant for the GAHP members and donors, which appear to have requested them. The ownership of these guidance documents is with GAHP or Pure Earth (see section 3.3.3 on visibility).

Efficiency – 'Unsatisfactory' (score = 2)

Eleven site projects were completed in lieu of the five planned which exceeds the planned metric for this output. The Project reports do not adequately provide information on the real costs of the site projects; thus, no comment can be made on the value of the investment for these interventions. This is unsatisfactory in view of the substantive budget allocated to site projects and the production of the associated guidance documents (i.e. 47% of the total Project budget).

The Evaluation Team finds that that this budget could have been used possibly better, for example to drive more innovation in the field as opposed to replicating within a system what has been already sufficiently demonstrated (and replicated). All projects and the guidance documents have been delivered in time, although some of the guidance documents are still drafts and are also not developed to similar levels of technical complexity (see Lead versus Mercury Guidance). It is not evident, why the Project was needed to compile these guidance documents which contain information from on-going work predating the current Project.

Effectiveness – 'Moderately Unsatisfactory' (score = 3)

We believe that the Project attempted to involve the right persons/institutions at ground level including the communities and local authorities. However, the development of local capacity and uptake of demonstrated solutions scores low.

Effectiveness is akin to the replicability of the demonstrated site intervention methods. This replication potential is low. These exercises did not lead to replication outside Pure Earth's sphere of influence at the autonomous level of stakeholders. Although the demonstrated solutions are low-tech and low-cost, these approaches would still require the knowledge and experience of skilled personnel to be coupled with adequate government support, leadership and external funding to generate similar positive outcomes. These requirements have been described in the guidance documents, however with a level of sophistication that will make it difficult for non-experts to follow. The Evaluation Team believes that the potential of the demonstration projects to be adopted in a broader country context and to advance to full-scale projects is low under the specific limitations within the LMICs.

An additional limitation of these site demonstration projects, in terms of usefulness to stakeholders, is the disproportionate focus on lead pollution.

Impact – 'Moderately Satisfactory (score = 4)'

We presume that humanitarian motives have been the primary driver for the site-level interventions as a continuation of the TSIP risk assessments. All demonstration projects intervened to stop toxic pollution exposures of populations at high-risk. It is likely that tens of thousands of people's health have been positively affected, which is a measurable contribution to the overall Project goal, although at a relatively small scale. We still see justification to score this Project feature higher with regard to its impact, as the important humanitarian aspect of rapid interventions to save human lives remains valid.

However, the nature of breaking exposure pathways as lasting risk-reduction measure would require ongoing follow-up efforts via a dedicated local entity, which in most cases is not in place. There are various examples presented in the Project documents, and from our observations during field visits where post-intervention results in terms of human exposure either have not been completed or the data suggests a mixture of successes within the affected

communities (e.g. Malambo, Colombia; Pampanga, Philippines; and Kathgora, Bangladesh). Considering the above, the long-term impact of these interventions is uncertain.

Sustainability – 'Unsatisfactory' (score = 2)

The clean-up interventions were designed with the purpose of systematic replication within the various countries. This is well-articulated in the Project documents. No evidence of replication was found, except the replication of methods by Pure Earth themselves. As expressed in the guidance documents and observed during country visits, the absence of political will to enforce regulatory standards and severe capacity limitations in LMICs will negatively affect the long-term sustainability of the interventions. At present, such clean-up projects will depend on humanitarian sentiments and international funding and the success of raising similar funds through GAHP and Pure Earth (mainly in the ULAB domain). No institutional or political sustainability was established.

3.2.4 Health & Pollution Action Plans (HPAP)

Under output area 2 and with UNIDO as the lead consultant, the Project has delivered in selected countries so-called Health and Pollution Action Plans (HPAPs). The HPAP product is a continuation of previous efforts aiming at National Toxic Action Plans (NTAPs). The HPAP is an initiative of GAHP and emanates from recommendations of the Lancet Committee on Pollution and Health. GAHP also received requests from several governments in LMICs to advise on strategies to address the challenges of health and pollution. HPAPs are the result of stakeholder collaborative processes on the ground that should culminate in concrete intervention proposals that can lead to action. It aims to establish pollution as a priority within national agencies and development plans. In summary, the HPAP is a process of prioritizing pollution problems and planning actionable solutions. A key strength of the HPAPs is its systematic approach to bringing together multiple agencies across a compartmentalized administrative system.

The HPAP process is described in the HPAP Manual on *'Health & Pollution Action Plans: Accelerating National Actions to Address Pollution-Related Illness*' which was, on request of GAHP, refined by UNIDO consultants on the basis of a draft National Toxic Action Plan (NTAP) Manual that Pure Earth drafted for Tanzania.

Health & Pollution Action Plans: Accelerating National Actions to Address Pollution-Related Illness

The HPAP Manual presents background to the HPAP program as an initiative of GAHP. The goals and scope of an HPAP should depend on the challenges in a given country; an HPAP may analyse the following pollution risk factors: (1) Exposures to ambient (outdoor) air pollution; (2) Exposures to household (indoor) air pollution; (3) Unsafe water and inadequate sanitation; (4) Exposures to soil pollution from heavy metals and toxic chemicals; and (5) Occupational exposures to pollution.

The HPAP Manual makes clear that HPAP is not designed to address the following types of pollution: Non-toxic urban waste; Non-toxic plastic waste on land or at sea; Naturally occurring substances released into air, water or soil through natural processes (e.g.

naturally occurring arsenic in groundwater); greenhouse gasses; tobacco smoke; noise pollution; and light pollution.

The HPAP process is flexible and can be tailored to the needs of each country, but usually includes the following steps:

Phase 1: Collection, compilation and analysis of available information on pollution health impacts and existing pollution management programs by a range of in-country Ministries, with the assistance of the Secretariat of the GAHP and GAHP Member(s).

Phase 2: Initial meeting to prioritize pollution problems, define the next steps and the roles and responsibilities of stakeholders through a participatory process.

Phase 3: Preparation of a draft HPAP describing priority pollutants, sources of pollution, health impacts, cost-effective interventions to reduce exposures, necessary resources and possible funding sources by a joint national working group with participants from the Ministries.

Phase 4: Distribution of the draft HPAP to national and international stakeholders for comment. The National Working Group integrates the comments of the stakeholders and creates a definitive HPAP. Stakeholders reconvene to support and formally validate the action plan and discuss the next steps to implement suggested actions.

Phase 5: Dissemination, promotion, fundraising, implementation, monitoring and review of the HPAP through national and international initiatives, in collaboration with the members of the GAHP, under the guidance of a joint coordination team between the Ministries of Health and Environment.

The ultimate objective of the HPAP process is to achieve real action for high-priority challenges. For instance, the top 1 to 3 priorities (see first box above) have been collectively identified by the stakeholders of most HPAP countries. The concrete outputs of the HPAP work are so-called Extended Concept Notes (ECNs), which are first elaborations of project ideas to which international or bilateral donors might be interested to contribute.

The work on HPAP commenced midway of the Project in 2017 and lasted throughout its last phase in 2018/2019. It was implemented with UNIDO in the lead, and eventually commenced after the EU had encouraged UNIDO to increase its involvement in the Project. The successful completion of HPAPs in few LMICs was also considered a suitable exit strategy for the Project. Five counties were selected by UNIDO to establish HPAPs, these included: Colombia, Ghana, Kyrgyzstan, the Philippines, and Tanzania. Through Pure Earth's previous efforts, similar activities also happened in Madagascar and Thailand.

The selection of the above five HPAP countries was a strategic decision by UNIDO project team which incorporated several practical considerations: Is the country interested and willing? Was the country already engaged in Project activities such as TSIP? Is there sufficient local support in the target country through UNIDO in-country offices or partner organisations? Are there policies or initiatives to build on? Are there synergetic initiatives? For example, USAID had an active programme in the Philippines. In Kyrgyzstan, UNIDO had done work on POPs. In Tanzania the World Bank had picked up the TSIP protocol. Ghana had a strong UNIDO and Pure Earth presence where lots of work had been done on the TSIP and the team was confident about the in-country stakeholders.

On average, the HPAP process took between one year and 18 months from inception to validation. In the following sections we provide summaries of the HPAP work in five countries. The summaries of Colombia, Ghana and the Philippines are supplemented by country visits by the Evaluation Team. The HPAPs of Kyrgyzstan and Tanzania are based on expert interviews and reports.

The efforts in Madagascar and Thailand were unfortunately not part of the evaluation scope. It is worth to note that Madagascar was the first country to validate their HPAP in November 2018. The Madagascar process was led by Pure Earth. It was perhaps the most impactful HPAP, which resulted in two fully-funded projects. The ITE expects that these and more details will be covered in the final Project report.

HPAP Colombia

The HPAP was co-lead by UNIDO and Pure Earth whose contribution was beyond their usual focus on soil contamination and managed a work stream that focused on particulate matter ($PM_{2.5}$) pollution. The HPAP work built on an existing National Inter-Sectoral Technical Commission for the Environmental Health (CONASA [1]) which was created in 2010 for *"Coordinating and guiding the design, formulation, monitoring and verification of the implementation of the Comprehensive Policy of Environmental Health".*

The assessment of the health impacts of pollution in Colombia were notably based on incomplete data from GBD studies conducted by the IHME and WHO (2016). Some data was extrapolated from the TSIP database for which Pure Earth had completed 42 investigations in 2017. The stakeholder consultations concluded that the top two ranked toxic pollutants (lead and mercury) should be excluded because interventions in lead sites would lead to a more than localised impact; in the case of mercury, already many interventions were in place. The prioritization workshop thus agreed to focus the HPAP on the following topics for which three ECNs were developed:

- ***ECN 1: $PM_{2.5}$.*** Construction of a strategy for the reduction of $PM_{2.5}$ emissions and strengthening of the technical capacities for its monitoring in areas of the country without data and the presence of industrial development zones.
- ***ECN 2: Endocrine disruptors.*** Establish a baseline (excluding pesticides) from exposure. Identify, evaluate and strengthen capacities to define national objectives, strategies and priorities.
- ***ECN 3: Food pesticide residues.*** Strengthening of food monitoring and control.

Programmes for the implementation of the Concept Notes and related budgets were developed. UNIDO is at present doing the final edits; thereafter ratification of the final Spanish versions will be done by each government stakeholder at the director level. The GAHP team then plans workshop presentations with each government stakeholder to lead a Concept Note at donor meetings to be scheduled in June/July 2019.

Based on the in-country interviews, the Project was well perceived by government stakeholders and was overall a success. Most importantly, strong awareness around the nexus

[1]CONASA is comprised of the Ministries of Agriculture and Rural Development; Health and Social Protection: Mines and Energy, Trade, Industry and Tourism: National Education, Environment: Housing and Territorial Development; Transport; National Planning Department; the Administrative Department of Science Technology and Innovation; the Institute of Hydrology, Meteorology and Environmental Studies; the National Institute of Food and Drug Surveillance; the National Institute of Health; and the Colombian Agricultural Institute.

of health and pollution was created. The HPAP has created a clear roadmap towards achieving the outputs, with a strong emphasis on stakeholder support and securing financial support. The Project appeared to be well managed and technically supported with UNIDO or Pure Earth representatives managing the Concept Notes. Similarly, each ministry designated a person to manage a Concept Note; and CONASA is well placed, as a cross-linked organisation, to drive the agenda going forward.

HPAP Ghana

The HPAP process was led by representatives of the Ministry of Environment, Science, Technology and Innovation (MESTI) and facilitated by UNIDO.

The assessment of health impacts from pollution in Ghana was reliant on data from IHME (2016). According to the GBD study, pollution contributed to 15.5% of the deaths. It was noted that IHME data are a conservative estimate. The TSIP has been implemented in Ghana since 2012 and ±230 sites in Ghana were assessed up to 2017. A 2015 study employed a statistical model to TSIP data and extrapolated that there is an estimated 1,561 to 1,944 heavy metal contaminated sites in Ghana.

In terms of national governance, the Medium-Term National Development Policy Framework (MTNDPF) is the overarching plan underpinning all national plans and strategies for the period 2018 to 2021. Therefore, the HPAP was developed to align with the MTNDPF. Through the Technical Working Group (TWG) meetings, key sources of pollution were prioritized for which three ECNs were developed:

- ***ECN 1: Pollution from Municipal Solid Waste Municipal Solid Waste.*** In Ghana, waste is typically unsegregated (both hazardous and non-hazardous); an estimated 22% is left uncollected in the urban areas and contributes to disease and local flooding.
- ***ECN 2: Resource Efficiency and Cleaner Production (RECP) in the Chemu Catchment***. The area is one of the most polluted water bodies in Ghana. Industrial and municipal wastewaters, largely untreated, are discharged into the lagoon's catchment area. Ghana has laws and regulations which in principle limit and control such discharges. Aside from the environmental impacts, these discharges also represent inefficiencies on the part of the industry. The Government has recognized that an effective RECP program would enhance industry's environmental stewardship, compliance and its productivity.
- ***ECN 3: Contaminated Site Identification and Assessment Project***. This Concept Note is to develop a government-owned national contaminated site database styled around the TSIP.

The main challenge for Ghana to reduce human health impacts from the environmental pollution is the weak institutional capacity for environmental management. This has led to ineffective enforcement of regulations; poor coordination among the responsible government institutions; poor waste management practices; inability to sustain implementation of interventions due to lacking financial and technological resources.

It is uncertain how the proposed Concept Notes will address the causal aspects of the environmental -health problems. Similarly, it was not articulated in the HPAP why the TWG excluded the soil and water impacts by downstream petroleum operations from the

prioritization exercise. It is anticipated that in LMICs impact to soil and groundwater by petroleum would by far outweigh occupational exposures.

HPAP Philippines

The HPAP in the Philippines was facilitated by UNIDO, in partnership with the WHO and in collaboration with governmental stakeholders via a pre-existing Inter-Agency Committee on Environmental Health (IACEH), established already in 1991. The HPAP process was chaired by representatives of the Department of Health (DOH) and the Department of Environment and Natural Resources (DENR). Further stakeholders were invited from the IACEH members, which comprise (beside DOH and DENR as chairs and co-chairs) a multitude of government agencies and departments such as Public Works and Highways, Interior and Local Government, Agriculture, Trade and Industry, Transportation and Communications, Science and Technology, Labour and Employment, and the Director Generals of the National Economic and Development Authority, and the Philippine Information Authority. In addition, representatives of UNICEF, ADB, EU and other international organisations and bilateral donors were invited.

The actual consultation process, the involved stakeholders and the outputs have been skilfully captured in a document *'Health & Pollution Action Plan in support of the National Environmental Health Action Plan (NEHAP) 2017-2022'*, with the disclaimer that this product was *established by a project implemented by the United Nations Industrial Development Organization (UNIDO) in partnership with the World Health Organization (WHO) and in collaboration with the Inter-Agency Committee on Environmental Health (IACEH) of the Republic of the Philippines.* The funding of the EU and USAID and the cooperation with GAHP and Pure Earth were visualised through their respective logos on the back-cover page. The document sub-title also reveals that HPAP in the Philippines serves as a supplement of an overarching plan, the NEHAP; as a kind of extension with distinct proposals for action, so expressed by the in-country stakeholders.

The Philippine HPAP document starts with forewords of the Secretary of Health and the Secretary of Environment, who praise this work as a guide for the Filipino people as the *"best way to reduce exposure, ultimately, to reduce pollution"*, and the pledge *"to put into action the key activities in the HPAP in furtherance of the Government's efforts to meet the relevant targets of the Sustainable Development Goals and Universal Health Care"*. We take this testimony as an indicator of the strong institutional anchoring and political commitment to HPAP.

The HPAP document eloquently introduces the nexus of health and pollution, thereby following the Project's overall narrative aligned with that of the Lancet Report. The document leads skilfully from the global dimensions to the Philippine situation, whereby the HPAP documents brings together, for the first time in the country's history, an overview of health and pollution data and their causal relations. The latter was qualified as one of the greatest assets of the Project, according to government stakeholders, the WHO and others. This has instilled a desire for more data, in that global figures are better complemented with solid national data.

The HPAP document presents the results of the prioritisation exercise as follows: (1) ambient air pollution, with a focus on pollution caused by motorised transport in urban areas; (2) wastewater and sanitation, with a focus on the heavily polluted Manila Bay; (3) occupational exposure; (4) indoor air pollution, with a focus on wood-fuelled stoves in rural areas; and (5) soil contamination.

It is noted that this prioritisation happened not without disputes, because the NEHAP already contained a longer list of priorities and it was necessary to reconcile the frameworks. The final agreed priority issues were thus a trade-off, which is visible by the supplementary nature of HPAP to the NEHAP. The HPAP document provides for each priority issue, pollution data derived from government statistics with the exception of priority issue 5 on soil contamination, for which no government data were available; the DENR refused to accept Pure Earth TSIP data in lieu, because those have not been authorised or verified by the authorities.

The HPAP then developed four ECNs, from the above-mentioned priority issues, whereas priority 3 on OSH was considered cross-cutting:

- ***ECN 1: Mitigating Pollution from the Transport Sector to Reduce Health Risk to People***. It proposes (i). to strengthen the capacity of the government to implement environmental laws and management plans; (ii). to conduct technical studies on vehicle inspection systems, emission standards, air quality monitoring design, health impact studies, freight operations, and management of decommissioned vehicle scrappage; (iii). to make policy recommendations and advocacy for policy adoption; (iv). to undertake monitoring and evaluation of pollution impacts and integrated management planning, and (v). information management and utilization. The lead agencies for this project are DENR and the Department of Transport in collaboration with several other agencies. We found that the driving force behind this proposal would perhaps be the agencies for transportation and industry due to their responsibilities in law enforcement in the sector.
- ***ECN 2: Mitigating Pollution in Manila Bay to Reduce Health Risks to People and Help the Recovery of the Bay's Coastal and Marine Ecosystems***. This project focuses on: (i). strengthen the capacity of the government to implement environmental laws and management plans; (ii). implementation of the Transfer of Environmentally Sound Technology (TEST) approach developed by UNIDO at industrial establishments; (iii). establishment of innovative wastewater and solid waste treatment facilities; (iv). conduct technical studies on shipping industry pollution and carrying capacity of manila bay; (v). policy recommendations and advocacy; (vi). monitoring and evaluation of pollution impacts and integrated management planning, and; and (vii). information management and utilization. The lead agency is DENR, who has already sent a formal request to UNIDO asking for assistance in setting up a full-scale project and to coordinate the donor process. Positive signals to fund this exercise come from the EU and others. UNIDO has a corporate interest in this proposal through the TEST.
- ***ECN 3: Reducing lead exposures from small-scale ULAB recycling activities***. This proposal was contributed by Pure Earth. It proposes a multi-faceted, multi-stakeholder action targeting environmental health assessments in target areas with a policy enhancement program. It should be led by the DENR in collaboration with several other entities and civil society. A response of DENR is not yet recorded. It is also unknown what the decision of Pure Earth is whether and how the proposal will be pursued. Reservations have been expressed by the Department of Labor, because preventive aspects of lead recycling operations and the occupational health of workers are not reflected in this proposal.
- ***ECN 4: Supporting the baseline knowledge and actions for the Improvement of Indoor Air Quality from Household Energy Use in Low-income Communities***. This

proposal aims to complete a study of current practices and suggests control solutions for indoor air quality. Study communities shall be selected to demonstrate these control solutions, together with interventions on improved household energy use. The improvement of air quality shall be tracked through the five-year project period. Policy recommendations on household energy use shall be made to mitigate indoor air pollution and, in some cases, shall be implemented. A possible outcome is the adoption of an aligned national indoor air quality policy. The lead agency is the DOH, who are considering to re-channel available in-house resources to this prospect.

We conclude this report on the Philippine HPAP with some additional observations. We believe that ownership of the ECNs still remains to a large extent with UNIDO responsible for their design, including the budget estimates attached to each ECN. The interviewed stakeholders were either not aware of these budget figures, nor could they explain them. In this way, the expectations were created that these are UNIDO proposals and UNIDO will continue with them. In general, we found that UNIDO did an excellent job in moderating the process, collecting data, compiling the report including designing the ECNs. The latter are sufficiently encompassing the results of stakeholder discussions, so the opinion of the agencies. ECN5 on soil contamination was designed by Pure Earth.

Critical observers such as the ADB admired how UNIDO used their strong 'convening power' to assemble actors that do not ordinarily interact with each other. Another example was that UNIDO could directly approach DENR, while engaging with DOH was facilitated by WHO.

The Philippine case also shows the astute alignment of the HPAP with existing policies and inter-agency formats. The HPAP document was formally endorsed as part of the NEHAP policy, which is a great accomplishment. We should mention that UNIDO delivered a 'bonus' output on request of DOH by drafting Implementing Guidelines for the IACEH, which operated without such guideline for almost 30 years. The guideline will be formally approved at the next IACEH meeting.

HPAP Kyrgyzstan

The HPAP consisted of a close cooperation between national, regional and local governmental institutions and UNIDO. With the lead agency being the State Agency for Environmental Protection and Forestry (SAEPF). The government of the Kyrgyz Republic has made health and environmental protection to priority areas in its Development Program for 2018-2022 and in its Development Strategy for 2018-2040.

The data collated for the HPAP, notwithstanding its limitations, suggests that air pollution is by far the most important cause for pollution-related deaths in Kyrgyzstan. Soil pollution data is limited to ULAB recycling sites and ASGM sites. It is concluded that IHME data are a conservative estimate and that the total number of pollution-related deaths is higher. The prioritization workshops thus agreed to focus the project initiatives on the following two topics for ECNs:

- ***ECN 1: Reducing harmful pollutants from transport in Bishkek.*** The focus on the transport sector was chosen since it accounts for 60-87% of outdoor air pollution in Bishkek. In the absence of comprehensive inspection and maintenance requirements,

cars can be used without restrictions regarding their safety or environmental performance.

- ***ECN 2: Upgrading water quality monitoring of Lake Issyk-Kul.*** A state-of-the-art monitoring system is the first and most fundamental building block in ensuring the protection of the lake's water quality, by providing transparent information about that quality. Such information is required for improved environmental decision making.

This HPAP appears to have highly focused project activities, a clear roadmap towards achieving the outputs and places local stakeholder ownership as a key element in ensuring sustainability. Support of various government agencies appears to have been secured and provides a good basis for collaboration with potential donors and other implementing partners. To ensure the sustainability of the proposed strategies, the Concept Notes suggest to establish a formal inter-agency working group for coordinating the implementation of the implementation plan.

HPAP Tanzania

The HPAP process in Tanzania was facilitated by UNIDO following the established five-step process as detailed in the HPAP guidance document. The process was led by the Vice President's Office - Division of Environment (VPO-DOE) in collaboration with the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC). After the initial consultations, UNIDO, in collaboration with the Lead Ministry, organized two inception meetings for the stakeholders. These brought together Government Ministries/Agencies, universities and NGOs. The meetings discussed available solutions for addressing the priority pollution issues identified in a High-Level Stakeholder Meeting and possible project proposals for collaborative action by the stakeholders.

The assessment of health impacts from pollution in Tanzania relies on 2016 data from GBD studies of IHME and the WHO. An analysis shows that 36% of deaths in 2016 are attributable to non-communicable diseases caused by pollution. Such diseases are estimated to have cost Tanzania between USD384 million and USD540 million in 2015 due to lost productivity - the equivalent of 0.8% to 1.2% of the country's 2015 Gross Domestic Product (GDP)

It was noted that local data on health impacts due to pollution is for the most parts not available; therefore Pure Earth was invited to present during the inception meeting an overview of pollution hotspots in Tanzania based on the TSIP database, noting a total of 152 sites contaminated with 91 mercury sites (57%) and 25 lead sites (18%). However, Pure Earth was not involved any further in the HPAP process.

A dedicated team of experts from the Cleaner Production Centre of Tanzania (CPCT), MUHAS and AGENDA drafted five ECNs for addressing the identified priority issues. The draft documents were presented at a Technical Working Group (TWG) Meeting in October 2018. The final draft of the HPAP approved by the technical experts' team in collaboration with the international experts at UNIDO, Vienna, will be distributed to a wider audience of national and international stakeholders for their comments. A stakeholders' validation workshop will then be organized to officially endorse and validate the ECNs and discuss the next steps toward implementing the suggested actions.

- ***ECN 1 - Outdoor Air Pollution:*** The overall objective is to reduce emissions of harmful air pollutants in four targeted cities through capacity strengthening of the relevant institutions and awareness creation in the general public on the impacts on their

health of air pollution. The project's specific objectives are as follows (i). To create public awareness on the importance of reducing the release of harmful air pollutants; (ii). To strengthen the capacities of the relevant government institutions and local authorities on understanding, analyzing and predicting air pollution trends; and (iii). to enhance the capacities of relevant government institutions on monitoring and preventing air pollution in cities and municipalities.

- ***ECN 2 - Water Pollution***: The objective of the project is to improve the health of residents in the Wami-Ruvu river basin by controlling the pollution of the basin's water sources and by promoting sustainability of water resources in the river basin. The specific objectives were to (i). strengthen water pollution prevention measures within the basin; (ii). enhance proper management of wastewater effluents; (iii) promote water use efficiency in the Wami-Ruvu River Basin; and (iv). strengthen water quality monitoring within the basin.
- ***ECN 3 - Heavy Metals from Mining Activities:*** The project intends to establish the baseline information on exposure of miners and their communities in artisanal and small-scale mining areas to heavy metals as well as to other toxic chemicals and substances. The overall objective of the project is to minimize exposure of ASG miners and their communities in the targeted locations to heavy metals and to other toxic chemicals via an intervention strategy based on four pillars: (i). establishing baseline levels of the heavy metals at pilot sites; (ii). complete and awareness and information dissemination campaign for the mining communities; (iii). complete training focused on the miners and those in the communities most closely affected on the best available alternate extraction technologies; (iv). turn lessons learned from these activities into policy recommendations and guidance documents, with a view to upscaling the project's activities to the whole country.
- ***ECN 4 - Indoor Air Pollution****:* The main objective of the project is to reduce the burden of respiratory and related morbidities among women and children through reduction of exposure to indoor air pollution. The project will focus on the chief source of this pollution, namely the combustion of solid biomass (firewood and charcoal) for domestic cooking. The specific objectives are as follows: (i) Conduct baseline and end-line assessments of cooking fuels, cooking technologies and practices as well as of the respiratory and related health effects caused by indoor air pollution in the target communities; (ii) Raise awareness and develop capacities in households and relevant institutions on indoor air quality improvement and the available options for doing this; (iii) Increase access to cleaner (low emissions) cooking technologies and fuels for rural and urban households; (iv) Upgrade housing standards with increased ventilation to reduce exposure to indoor smoke in vulnerable communities; and (v) Support the development of a policy, legal, and regulatory framework on indoor pollution control for public health and development purposes.
- **ECN 5 - Chemicals from Agriculture**: The overall project objective is to reduce the risks to human health and the environment from pesticides exposure in agriculture with a view to protecting farmers and the broader community, as well as non-target organisms. The project will work at different levels and with various stakeholders involved in the use of pesticides. In the chosen locations, the project will work on six levels(i). Biological monitoring; (ii). Assessment of pesticides residues in crops; (iii). Capacity building programmes; (iv). introduction of alternative pest control methods;

(v). Establishment of pesticides poisoning incidents reporting systems; and (vi) Monitoring and evaluation.

The project appears to be well received by stakeholders and has good country-level support. The HPAP consultation process appeared to be very robust and included a large range and diverse range of 81 stakeholders. The HPAP does not detail the initial list of pollution sources impacting human health in Tanzania, from which the final list of priorities was derived. The ECNs have clear project outputs with assigned specific roles and responsibilities.

In general, the risk analysis of the ECNs appears to be highly relevant. A good example provides ECN4 on Indoor Air Pollution which refers to existing knowledge, capacity, and available cleaner cooking options in the country. The project is to merely scale-up these capacities and not to create them. This is a simple example of 'leapfrogging' as alluded to several times in the Lancet Report: by replication of existing technologies the unnecessary costs and delays related to development processes can be avoided.

There appear to be some contradictions in ECN3 on Heavy Metals from Mining Activities, wherein the document notes that '*hazards posed by mercury to ASGM miners and their communities are already well understood, and through the Minamata Convention and the corresponding support from the GEF funding will be available to Tanzania to deal with this heavy metal. Hence, the project intends to contribute to minimizing exposure of miners and their communities to the other heavy metals and other toxics found in ASGM operations*". However much of the ECN's text remains focused on mercury used in gold mining. Other artisanal mining operations could have been included in this ECN in line with the objectives of assessing heavy metals in general. With respect to its risk to sustainability, the document does not address the miners' short-term concerns such as a perceived threat to their livelihoods by the proposed interventions.

Assessment of the Project's performance – HPAPs

The Evaluation Team reviewed multiple aspects of this exercise and concluded that the Project performed 'satisfactory' regarding the HPAP work.

Relevance and ownership – 'Satisfactory' (score = 5)

Although not yet explicitly contained in the original Project description, the HPAP exercises shows coherence with the Project's ambitions to address the problem holistically, thereby covering all types of pollution, through interagency efforts and based on scientific evidence.

The HPAPs are of high relevance for all stakeholder as from the outset. The HPAPs were only initiated in countries that requested assistance via GAHP or from UNIDO. Relevance is given to national stakeholders, donor organisations and international organizations alike, because they have been either directly involved in the HPAP consultation process or are addressed in the Concept Notes. The latter are relevant as such for the stakeholders, because they align directly with the country priorities and are linked with the long-term development agendas of the countries.

The HPAP exercises have been of high relevance for the GHAP as the initiator of these efforts in LMICs. The relevance for Pure Earth is given only in the context of Concept Notes on soil contamination, which are only a small part in a much wider scope of priorities. However, widening the scope in the last phase of the UNIDO-Pure Earth cooperation was on expense of mainstreaming the core-topic of this cooperation, i.e. soil contamination.

The HPAP exercises have also shown where the countries see their priorities, which are not necessarily the same as of donors. The level of ownership is expected to be high with the national governments, although this expectation seems not to have penetrated all stakeholders sufficiently. In many cases, UNIDO is seen as the driving force behind the HPAPs and the Concept Notes; and it seems that the transfer of ownership is incomplete. Not all HPAP countries exhibited the same level of acceptance for a range of reasons that are not attributable to the Project.

Efficiency – 'Satisfactory' (score = 5)

The Project was efficient in delivering the planned outputs with relatively small country teams, budgets and timeframes. Value for money is considered to be high. Data gathering, stakeholder engagement and driving consensus in these groupings with different political, regulatory and socio-economic frameworks was exemplarily. The HPAP process in most locations took less than 18 months to complete from inception to validation, which was an efficient and reasonable task duration to prevent shortfalls or 'project fatigue'. It is understood that all Project deliverables will be provided before the Project's extended termination date.

The HPAP delivered on a promise to be unlike than other planning processes by efficiently bringing together multiple agencies that usually do not work together closely. The convening power of UNIDO was a strong asset to manage the process efficiently. The experts that have formed the Project team were evidently highly capable to deliver high-quality work.

Effectiveness – 'Satisfactory' (score = 5)

The HPAP process was effective in producing outputs of value and usefulness to the stakeholders. The HPAP reports, in many cases for the first time, brought together health and environmental pollution data at the national levels, which provided the justifications for dedicated future policy-making. The ECNs align with the national agendas, priorities and fits with the routine work of ministries and departments and thus increase the chances of uptake. Some countries already haven taken this further to inform national policy (Colombia and Madagascar) or integrated HPAP in national policies (Philippines).

The ECNs provide road maps on the way forward with intermediate milestones to achieve the objectives. The Concept Notes also include budget estimates which may then be used for securing funding from government or donors.

The combination of strong country teams with the international support and involvement of the right local agencies was key to the success of the HPAPs. UNIDO with its expertise in policy development and providing access to government agencies complimented Pure Earth strengths as technical experts with global experience on the nexus of pollution and health.

The chances for an effective uptake of the HPAP outputs are lower in countries with weaker state institutions. Without discrimination, we found that HPAP performed best in Colombia and the Philippines. However, the Concept Notes are yet to be implemented.

Impact – 'Satisfactory' (score = 5)

With regard to progress towards the long-term goals and the objectives of the Project, it is evident that the HPAPs have advanced raising awareness on the linkage between pollution and health; bringing together the inter-agency cooperation needed to deal with the nexus of

pollution and health; by identifying capacity gaps; and by providing road maps towards the overall goal of the Project. It must be noted that the ECNs are only first steps towards impact. Many Concept Notes address the need to gather more data and other preparatory work needed towards impact. Ultimately, it will be each country's own responsibility to drive the actions to achieve impact within their boundaries. Higher quality action plans and policies will undoubtedly help drive these outcomes. Creating impact is outside the control of the Project, but the Project has increased the likelihood of impact.

Sustainability – 'Moderately Satisfactory' (score = 4)

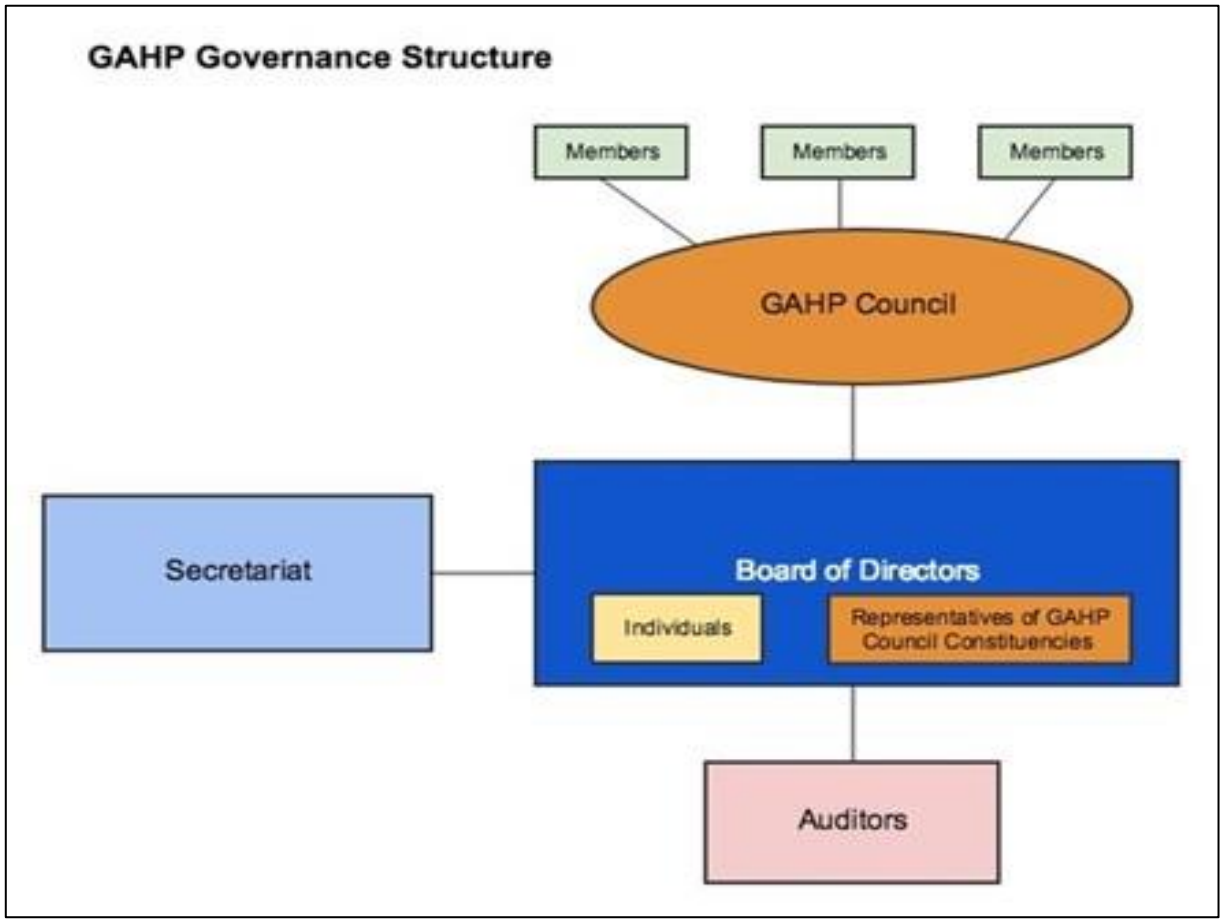
While ownership by governmental institutions in most of the HPAP countries appears to be high, the political commitment to support the outputs and take meaningful actions in many cases remains uncertain. At the moment, the project plans are pending at the Undersecretaries' or Directors' levels. Since much of the HPAP work has relied on UNIDO's technical assistance, some expectations remain that UNIDO will continue the responsibility for the HPAP results.

However, there are already some concrete plans in place to source funding for several Extended Concept Notes which looks promising. It is realistic that not all Concept Notes will it make to full-scale projects. A ratio of about 30% seems realistic. This would still be considered a positive outcome when compared to many other development interventions and a merit of the HPAPs design was to deliver more than a mere study. In Colombia, for example, the GAHP team plans workshop presentations with government stakeholders to prepare them to each lead a Concept Note at planned future donor meetings; this will improve the likelihood of funding. For some Concept Notes, donors have already expressed their interest. Similarly, in the Philippines, where one Concept Note is already in a concrete fund-raising phase and donors have already expressed their willingness to support it. For another Concept Note, possibly government's own resources will be made available. Donors in some cases are anticipating government initiatives requesting assistance and support.

In some countries, without the direct support of UNIDO/Pure Earth, it is anticipated that some government agencies may try to modify the Concept Notes to suit their competencies or to match with their agencies' responsibilities, thereby perhaps diluting the intentions and thus reducing both the potential impact and sustainability prospects.

3.2.5 Global Alliance on Health and Pollution (GAHP)

On 8 May 2019, the GAHP will adopt the statutes and regulations of a GAHP Foundation according Swiss law. After, the incorporation documents will be formally submitted to the Swiss Authorities. The approval should be received within three months. The GAHP Secretariat anticipates that the Foundation will be fully operational no later than 1 August 2019. With this, the mission of the Project under Pillar 4 will have been accomplished.



The GAHP will change from a loose collaborative platform to a legal entity, thereby maintaining its platform character through the GAHP Council (see figure above). This will allow to become or remain a member of GAHP without being liable for the GAHP as such or its operations which is the case at present. A new Board of Directors, composed of individuals and selected representatives of the Council constituencies, will be formed. Pure Earth will continue as a GAHP member the role as the GAHP Secretariat. Since a foundation under Swiss law requires a natural person as founder, the President of Pure Earth will fill this role and bring in the required basic endowment capital of 50,000 Swiss Francs; as the founder, he also will be one of the individuals on the Board of Directors. This will give Pure Earth the space to concentrate on their focus area of toxic site identification and mitigation. The many other health-pollution challenges will be taken on by other GHAP members, which is the desired outcome of Pure Earth's President. Pure Earth and GAHP will thus be legally separated which was the main intention of this Project component.

Summary of the Project's intervention to GAHP

The process to arrive at this solution was substantively supported by the Project, which had identified the need to assess the current constellation of the GAHP with the ambition to form a legal entity, if appropriate. The major motive of this endeavour was to root the GAHP on a broader ground with less reliance on Pure Earth. Since its formation in 2012, the GAHP had evolved into a growing member-body with a growing scope of health and pollution matters, by far exceeding the advocacy scope of Pure Earth. As legal entity the GAHP will be in the position to act in its own right, while currently the GAHP has to go through Pure Earth or other members to sign contracts with donors.

The scenarios of the possible future of GAHP were fuelled by an excellent *'Independent Assessment of the Global Alliance on Health and Pollution (GAHP)'*, which was commissioned by UNIDO as part of the Project in 2017. This study attested that GAHP is highly relevant for its LMIC and international members in the fields of national health, environment and wider development policies, and in carrying out in-country work such as toxic site identification and remediation or health and pollution action planning. GAHP is relevant because it applies a global lens on health and pollution and provides an interface between these agendas and their stakeholders. However, the study found that the current effectiveness of the GAHP's work is largely congruent with Pure Earth's activities and a differentiation between GAHP and Pure Earth as its driving force is difficult, although the recent efforts to move from National Toxic Action Plans (NTAPs) to wider-scope Health and Pollution Action Plans (HPAPs) show a more holistic direction of GAHP. Still, Pure Earth's toxic site identification and remediation work in partner countries were confirmed as key added value features of the GAHP. In terms of efficiency, the study made the interesting observation that LMIC stakeholders were more positive than international organisation members and stakeholders. The study presumes that LMIC stakeholders see the initiatives of GAHP are directly complementarity to primarily national initiatives, while international stakeholders are more concerned with avoiding duplication of international, regional and sub-regional initiatives. Although the GAHP as such cannot be held liable to deliver impact on the ground, the study attests the important role of the GAHP in making progress towards impact in mitigating the pollution-caused burden of disease. For example, the study was informed by a number of international organisations that the GAHP did play an important advocacy role to secure inclusion of toxic pollution in the SDGs; this achievement would have been unlikely without GAHP advocating the issue. In terms of GAHP governance, the study reports that the GAHP members are broadly satisfied with the Executive Committee, which is based on the World Bank, UNIDO, UNDP and UNEP being regularly attending Executive Board Members, and that the provision of staffing from Pure Earth for the GAHP Secretariat has brought cost-efficiency advantages to GAHP. Finally, the study concludes that albeit a growing number of members, which however do not pay a membership fee, the sustainability of the GAHP is at best a mixed perspective; this in the absence of a better formalisation and institutionalisation of the network. In summary, the review findings show that GAHP is well regarded, and there is real appreciation of the efforts it has made in advancing the pollution and health agenda, with numerous international stakeholders considering that GAHP has achieved some results in the area of advocacy and awareness-raising that they would not have thought possible at the outset.

The UNIDO-commissioned study recommended to launch a participatory strategic reflection and strategy development exercise; and that GAHP should proceed to incorporate itself as a legal entity.

The Project gave Pure Earth and UNIDO the resources, including new funding from the Swiss Agency for Development Cooperation (SDC), to initiate and coordinate the discussion of the future of the GAHP, to collect feedback and input of the members and to conduct a comparative review of other foundations such as the GAVI Alliance, the Global Fund or the World Wildlife Fund (WWF) to draw inspirations to draft the GAHP Foundation statutes and regulations. These are now in the process of endorsement by the GAHP and registration with the Swiss Authorities (see the purpose of the GAHP Foundation in the box below), with funding provided from SDC.

Purpose (Article 2 of the GAHP Statutes)

The purpose of GAHP is to reduce the impact of pollution of air, water, soil and the workplace on human health, especially in low- and middle-income countries, by:

- *Working in coordination with national and international stakeholders to assist low- and middle-income countries to prioritize and address human health and pollution related issues; and*
- *Building public, technical and financial support to address pollution globally by promoting scientific research, raising awareness and tracking progress.*

No substantial part of the activities of GAHP shall be the carrying on of propaganda, or otherwise attempting to influence legislation. GAHP shall not participate or intervene (including the publishing or distribution of statements) in any political campaign on behalf of (or in opposition to) any candidate for public office.

GAHP shall pursue exclusively charitable purposes and shall have no profit motives. No part of the net earnings of GAHP shall inure to the benefit of, or be distributable to, Board Members and other bodies or the constituencies that they represent, if any, or any director, officer, or other private person, except as provided in this Statutes.

Board Members act on a voluntary basis and can only claim compensation for their travel and other necessary expenses actually incurred in the performance of their duties. Any attendance fees may not exceed those paid for official committees. For tasks that go beyond the usual scope of a Board Member's function, a Board Member may receive appropriate compensation. Paid employees of GAHP may only sit on the Board in an advisory capacity.

Assessment of the Project's performance – GAHP incorporation

The mandate of the ITE was not to assess the GAHP as such, but the Project's performance of supporting the GAHP in going forward through its incorporation and institutionalisation. The Evaluation Team comes in all reviewed aspects of this exercise to a 'Satisfactory' to 'Highly Satisfactory' conclusion.

Relevance and ownership – 'Highly Satisfactory' (score = 6)

The exercise on GAHP is coherent with the Project's objectives per definition and the name of the Project. The Project support to the GAHP was of high relevance for its members and supporters. It helped to clarify the future of the GAHP to either carry on as loose alliance/platform with mixed perspectives or operate in a consolidated format and with a clear governance structure. The Project delivered on this question with the recommendation to incorporate the GAHP. For the donors, in particular the EU, it was an accomplishment that brought a three consecutive-projects cycle to a tangible result. The participative consultation process increased the ownership of the GAHP members through collaboratively building on the future of their alliance; including developing a clear understanding what membership requires. The exercise was relevant to address the intertwined roles of the GAHP and Pure

Earth as its Secretariat, which was seen as an issue to be resolved. As a consequence, Pure Earth's ownership of the GAHP will be reduced.

Efficiency – 'Satisfactory' (score = 5)

The project was very efficient in delivering the planned outputs and activities such as a high-quality independent assessment on the GAHP through UNIDO, the coordination of a participative stakeholder consultation process through Pure Earth. This was done with support and input from UNIDO, including a comparative assessment of similar organisations, leading to the design of statutes and regulations of a future GAHP Foundation. Given the Project extension of six-months, all deliverables will be provided before the project ends, including the formalisation through registering the GAHP foundation still to happen in May 2019. We believe that this dedicated approach of the Project was the best way to drive the protracted issue of the incorporation of GHAP to conclusion using a synergistic and collaborative effort. Due to the availability of only global figures no opinion on an itemised prudent and efficient budget use could be established; therefore, the efficiency-score is only 'Satisfactory'.

Effectiveness – 'Highly Satisfactory' (score = 6)

The Project was effective in turning outputs to real outcome. It is manifest that the Project's efforts to assess, discuss and to prepare the incorporation of the GAHP will lead to the registration of a GAHP Foundation according Swiss law. This shows ultimately the usefulness of the Project's work to the GAHP stakeholders. We believe that this was only possible, because the Project engaged the right experts and capable staff members and a multitude of GAHP members/stakeholders at national/international and donor level. The Project team ensured that all opinions were considered and addressed.

Impact – 'Satisfactory' (score = 5)

The GAHP was established as the first international alliance of its kind to respond to the threat of toxic pollution on a global scale. Through the incorporation of GAHP its influence is anticipated to increase. The diversification of the GAHP, by broadening and extending its scope beyond the focus of Pure Earth allows for more interagency efforts and co-leadership in the wider fields of health and pollution. This nexus needs strong advocacy and relentless campaigning efforts, which a foundation with a clear mission, committed members and a dedicated Board of Directors may be better equipped to pursue. In this sense and with regard to the objectives of the Project, this exercise on the GAHP has made an unquestionable contribution; it is an interim step on the long road to effectively mitigate pollution and health risks at a human level, but also an important step to make the desired change a more realistic one. It is believed that GAHP is a key instrument to pursue the envisaged change.

Sustainability – 'Highly Satisfactory' (score = 6)

Through the incorporation of the GAHP Foundation it is evident that the benefits of the Project under this component will survive beyond the termination of the Project funding. There is institutional sustainability per definition through the GAHP Foundation. The legal entity will also allow to raise, in its own right, funds from international and bilateral donors, the private sector and philanthropes. This assures better financial stability than the present situation, where the GAHP's funding of operations was largely limited by Pure Earth's fundraising

efforts. The exercise has also contributed to stabilise the political commitment to the GAHP, which seems to be largely given through an increase of membership particularly during the discussion of GAHP's future. The GAHP could gain 26 new members since this Project started in 2016. These members include many LMIC government agencies, NGOs and a long list of relevant international organisations. In addition, the GAHP received support from SDC to incorporate.

3.3 Crosscutting Performance Criteria

Under this section the ITE assessed to what extent the Project performed under several cross-cutting aspects which include: gender mainstreaming, monitoring and evaluation, and how good visibility of donors and main actors of the Project were managed. The Project performed 'Satisfactory' under these criteria, given the nature and circumstances of the Project.

3.3.1 Gender Mainstreaming

Gender mainstreaming is an internationally embraced strategy towards realising gender equality in all spheres of society. It is a condition of almost all international donor organisations in particular the EU for all projects it funds; and it is a standard requirement of all UN interventions. This shall ensure that projects are more effective through inclusiveness and that gender inequalities are not perpetuated through interventions.

The Project integrated gender perspectives in its design and in its implementation. The good intentions of the Project were to address particularly the poor, marginalised and most vulnerable populations that according to the data disproportionality suffer from the negative health impacts related to environmental pollution. There are many cases in which women and children are burdened by these impacts where they are exposed to unhealthy living and working conditions as a result of their unequal position in communities. The Project addressed these aspects in the research publications, most expressively in the Lancet Report, in prioritising contaminated sites throughout the TSIP exercises and in the wider scopes of the HPAPs. Although gender mainstreaming per se was not always explicitly mentioned, it was an implicit purpose of the Project given by its nature and context.

As far as the Project could control, we found, based on information of progress reports, a highly non-discriminatory performance of the Project in terms of the Project's staffing, engaged consultants, enrolled trainees and consulted stakeholders with women and men in balance. Any deviations from this major observation, for example dominance of men in Ghana, are a matter of traditional roles in distinct countries which the Project was not able to overcome. It has to be noted that ensuring gender equality in the target countries is not under control of the Project, but rests with national governments and the in-country stakeholders. We qualify the performance of the Project, with respect to gender mainstreaming, as 'Satisfactory' (score = 5).

3.3.2 Monitoring & evaluation

From the evolution of the Project design (see section 3.1) we understand that the explicit M&E responsibilities were moved from Pure Earth entirely to UNIDO during 2016 and with effect after the Inception Report. The Project had a number of mechanisms in addition. We have

identified four different M&E dimensions: (1) internal monitoring of the Project progress, (2) independent external reviews, (3) monitoring through the Project Steering Committee, and (4) data from the various Project components as such.

The internal monitoring efforts observed the progress of the Project in delivering the planned activities and outputs. The main instrument has been the semi-annual and annual progress reports (see also section 3.4.1 under Project Management). These reports have provided sufficient information that the Project, at least at the activities level, was on track and schedule, including delayed and accelerated implementation and explanations, if so.

The Project has been subject of external reviews. In March/April 2018, the Project was simultaneously reviewed by an MTR commissioned by UNIDO and a ROM commissioned by the EU. These are both considered as good quality reviews and were useful to the Project team and allowed practical adjustments to be made during the last phase of the Project including its six-months extension, which was recommended by the MTR/ROM reports. We found, through comments from the Project team that these recommendations were inciteful and were taken on board wherever possible. Finally, the current ITE was commissioned by UNIDO and conducted February to April 2019. Our ambition is that the current report will help to consolidate some loose ends and that our recommendations will be equally received as constructive and practicable advice. We believe that the Project was sufficiently reviewed from an independent and objective perspective.

Up to when this evaluation was carried out during March and April 2019, the Project Steering Committee (PSC) had three meetings (2016, 2017 and 2018) which endorsed the work plans and gave directions to the Project team. The PSC meetings have been important to mainstream the Project. It encouraged UNIDO to be more active as technical partner. It requested, in line with the pledges of GAHP and the Lancet Report, to widen the scope from soil contamination to a larger coverage of the theme through the HPAP efforts, and its elevation from the local to the national government levels with a wider involvement of international organisations. The PSC also addressed the issues of coherence of reporting and a lack of transparency. The PSC also saw potential for a more synergetic collaboration between UNIDO, Pure Earth and other initiatives. Finally, the PSC concluded the no-cost, six-month extension of the Project and paved the way that a related request to the donors was approved and accepted by the implementors UNIDO and Pure Earth. The PSC assembles the EC, UNIDO and Pure Earth; to the third PSC meeting in 2018, also USAID was invited to a separate session. It is noted that there was no steering mechanism in place at the country level, but other means of coordination (see particular the HPAPs).

Last but not least, the Project components would provide relevant information to monitor the results, thereby going beyond a pure activity-oriented approach. The Evaluation team hopes that such information can be further cultivated and prominently and coherently displayed in the final report (see also chapter 4 on recommendations). We provide a few examples. Under Pillar 1, information is available about the outreach of the Lancet Report. The entries to the TSIP database under Pillar 2 show substantial progress. The site projects under Pillar 3 provide distinct numbers of people who could be protected from toxic pollution exposure. The number of GAHP members has considerably increased. On another level, the HPAP reports include the results of the monitoring efforts by the Project on health and pollution in the host countries and have summarised the accomplishments of national stakeholders in these areas.

We found that the Project performed on M&E 'Satisfactory' (score = 5), minor shortcomings appear through the efforts needed to identify relevant information in progress reports and output materials.

3.3.3 Communication and Visibility

We have included these performance criteria to this review because it was a point of attention raised by the MTR/ROM reports and the PSC. We tried to identify the communication and visibility strategy of the Project. We tried to get an opinion how the internal communication performed at management level and at country level. We tried to understand, how the Project did communicate with its stakeholders in the target countries. And we looked at the matter of visibility of the Project donors.

The Project documents and implementation arrangements requested a communication and visibility strategy that complies with the EU standard requirements. This task was delegated to Pure Earth, which announced such a strategy in the Inception Report to be provided as annex to the first annual progress report of 2016. The Evaluation Team was, however, unable to identify such a document. The first annual progress report only laconically states that *"the contribution of the European Union to the effort is acknowledged in all major communications by UNIDO and Pure Earth through the project. This includes all meetings with recipient country governments, printed materials intended for distribution, the TSIP database, online materials, and most publications."*

We found evidence that the Project adhered to this requirement by and large, at least by mentioning the EU contribution in the acknowledgements of publications (see section 3.3.2 on research papers). A good example can be found on the back-cover page of the Philippine HPAP report (see image below).

The Evaluation Team could not verify, how similar visibility was ensured in workshops and training sessions. There is no obvious visibility of the EU in the TSIP database. As a general trend, we observed that visibility of the respective parties varied depending on the context.

Pure Earth visibility was high in all TSIP related matters, sometimes combined with the GAHP logo or represented directly through the GAHP. For example, the 'TSIP Handbook' puts the Pure Earth logo first, followed by UNIDO's and the EU logo. The HPAP Manual bears only the logo of GAHP, but mentions the support of the EU and USAID in the acknowledgements. The Lead Guidance document on 'Assessing and Mitigating Lead Exposures at Informal Used Lead Acid Battery Recycling Sites' bears only the Pure Earth logo. The same goes for the 'Technical Guidance on Identification, Assessment and Management of Mercury Contaminated Sites' which was established for the Secretariat of the Minamata Convention on Mercury.

UNIDO's visibility was high in the HPAP exercises which were considered to be an UNIDO/GAHP effort. In the conversations with Pure Earth, refence was continually made to the 'UNIDO-Project' and not to an EU/USAID funded initiative. This perception was also evident in the target countries, where the local consultants of Pure Earth, could not differentiate between the funding sources for their work as this accounting aspect was exclusively administered at Pure Earth's New York headquarters. Local UNIDO staff were clearly the face of UNIDO at these locations.

The visibility of GAHP at the country level was considerably low, as our interviews showed.

The communication between UNIDO and Pure Earth was satisfactory at the Project management level with regular and constructive exchange. In-country exchange happened between the top consultants of both organisations, mainly in finetuning the HPAP methodology. At the lower technical levels, exchange between UNIDO and Pure Earth was limited mainly to soil contamination aspects within the HPAP exercises.

UNIDO did a remarkable job in coordinating in-country communication related to the HPAPs and demonstrated its substantive 'convening power', thereby not only engaging with the various government stakeholders but also with international organisations such as the WHO (see section 3.2.4 on HPAP).

Pure Earth played their role in communicating with the local communities as part of their operations. In response to the MTR, Pure Earth has started to standardise a communication tool with community-based organisations, and has appointed a director to lead this aspect. This endeavour, however, is reaching beyond the current Project's duration. In facilitating exchange between the stakeholders, communication avenues through GAHP have been used. In the context of incorporating GAHP, Pure Earth provided also online surveys and opportunities to comment. Feedback on TSIP trainings was collected using Survey Monkey. The research publications have been another mode of communication, in this specific case with the scientific community. Although the Project did not operate its own website, themes and results have been communicated through the websites of both Pure Earth and GAHP.

We found that despite the fact that a formalised communication and visibility plan was never established, the Project team deployed a multitude of communication channels effectively. We believe that sufficient visibility of the donors and partners was ensured, to the extent that was feasible and practicable, and in an appropriate context. We appreciate from our assessments that this was not a straightforward task for this particular Project. In conclusion, the Evaluation Team finds that the Project performance with regard to communication and visibility is 'Moderately Satisfactory' (score = 4); moderate shortcomings relate to the missing strategy and lack of evidence to verify adherence to visibility requirements, whereby the complex context has to be respected.

3.4 Project Management

The Project documents describe the contractual scheme as *"indirect management with UNIDO"*; meaning in practice that UNIDO is implementing the action using its own Rules and Regulations (as per the Delegation Agreement between UNIDO and the EU) with Pure Earth subcontracted for the *"execution of activities as per the Terms of Reference, annexed to the Contract"*. The Project's governance structure is summarized as follows: At the top sits the PSC, which convenes the EU Task Manager on behalf of the donor and representatives of the implementing party UNIDO, and Pure Earth as the main executing party on behalf of UNIDO. At the operational level, the Project is managed by a Project Management Team consisting of the UNIDO Project Manager and the Pure Earth Project Director. The managers are supported by their in-house departments of finance and procurement/recruitment, and further experts and staff including in-country personnel.

The current UNIDO Project Manager came on board only after the Project had commenced and operated for one year, replacing the first UNIDO Project Manager in March 2017. From there, she managed this complex project in coordination with her Pure Earth counterpart, who had the advantage of being associated with the Project from its inception/design phase. The two managers met regularly, or at least by teleconference via Skype on the average bi-weekly and on demand more frequently.

At the expert level, Pure Earth referred to regional and country directors; these are supported by a team of international experts from Pure Earth's Technical Advisory Board and national experts. In the case of UNIDO, a Project Assistant was assigned from the start, and since 2017 a Health and Pollution Expert has been recruited. In the course of the HPAP work, further international and national experts were recruited. UNIDO also engaged their country offices where HPAP was active. However, the actual numbers of engaged personnel are not evident from the Project documentary provided to the Evaluation Team.

Regarding the technical Project management, no serious partner-issues were noted by the Evaluation Team, mainly because the two parties each operated in their clearly designated roles, which resulted in little potential for conflict. This process of 'working in parallel' may also explain some of the Project's incoherencies and perceived transparency issues. With regard to the financial management of the Project, a consistent narrative was heard from all Project team parties who found this aspect exceptionally complicated.

The majority of interviewees attested that "*the Project has done quite well"* and a *"good feeling"* basically exists. At the same time, the ending of the Project seems to be much desired. Taking all technical and financial aspects into account, the Evaluation Team scores the performance of the Project management as having been only 'Moderately Satisfactory' to 'Moderately Unsatisfactory'.

3.4.1 Result Based Management and Progress Reporting

The main management tool was a blueprint of all activities including a time table, which was derived from the Project description files and presented in Pure Earth's Inception report of April 2016. This blueprint remained valid throughout, except minor changes. At the stage of the Inception Report and far into the second year, the implementation was exclusively done by Pure Earth and the Project concentrated on the activities assigned to Pure Earth.

Challenging was a change of personnel, with the current Project Manager of UNIDO coming in only in March 2017. After the second PSC meeting and in coincidence with the Lancet Report in 2017, the Project gained momentum on the UNIDO parts, i.e. the HPAPs and the assessment of GAHP and its incorporation. A recommendation from the Lancet Report was to pursue national efforts on health and pollution action planning. The PSC, in addition, pushed for a solution of the GAHP future.

The management blueprint corresponds to the four Project pillars and the indicators of achievement as a measure of whether the Project was on track towards the expected outputs. It its noteworthy that the Project was never at risk of failing to meet these metrics, as the targets were not overly ambitious.

Based on this systematic, the semi-annual and annual progress reports were established. The reports were drafted by the Project Director of Pure Earth and submitted to UNIDO. The UNIDO Project Manager reviewed and made edits as required. Then, the reports were submitted to the EU Task Manager, together with interim financial reports (see next section below). The second annual progress report of 2017 and the consecutive reports show the more active role of UNIDO in this process. The reports provide more detail but no consistent narrative or coherent picture of the Project was created and the incoherencies of the Project design were continued. The progress reports provide varying figures on the country scope, TSIPs and site projects.

The following table shows that the Project performed within ranges and not on distinct figures, which poses difficulties in clearly identifying what is attributable to the Project and to which funding regime.

Progress reports 2016-2018	Targets as per design	Range of achievements
Countries of action	No exact numbers in the EU-UNIDO, Pure Earth and USAID agreements, but a list which is declared as variable and with overlaps	15 – 25 countries reported in progress reports with fluctuating numbers
Research papers	At least 3 papers published plus 2 more in progress for peer review	8 – 16 papers, and the Lancet Report
New TSIPs	EC-UNIDO-Pure Earth contracts: 150 new sites per year, 450 in total; no distinct numbers in the USAID-Pure Earth contract	>800 new sites reported, with >1,500 new sites added in total to the TSIP database since 2016
HPAPS (NTAPs)	5 LMICs request advice from GAHP, NTAPs instead of HPAPs	5 – 7 HPAPs, 5 of which are UNIDO led efforts
Site projects	At least 5 'pilot clean-up' projects	11 'demonstration' projects

GAHP members	5 new members subscribe to GAHP, baseline of members in 2016	Up to 26 new members mentioned in reports

We acknowledge the Project Management Team's effort to execute the Project along the blueprint of activities and to deliver it on time. The progress reports, however, do not afford a reviewer sufficient clarity on the Project's achievements.

Considering the inconsistencies, but also the actual efforts to manage the Project, we rank the technical management of the Project as only 'Moderately Satisfactory' (score = 4). The major shortcomings were the missed attempts to reconcile between the approaches of the two main actors UNIDO and Pure Earth and the late buy-in of UNIDO to take adequate responsibility of the Project, although this was clearly indicated in the Project documents.

3.4.2 Financial Management

The experiences of the Project management team regarding the financial management of the project has probably been one of the most challenging aspects the Project. Our interview partners both of UNIDO and Pure Earth expressed their dissatisfaction and spoke of arduous experiences with respect to administrative processes such as budgeting and expense reporting. The lack of transparency and the sense of disproportionate budget allocations, e.g. the high budget allocation for output area/Pillar 3, was also expressed by the EU Task Manager. Such deficiencies have been noted also by the MTR/ROM consultants who raised the point of the distribution of budget across the four output areas and the size of the planned budgets compared with the related low targets. The latter was, however, partly compensated by the Project exceeding these targets in most dimensions (see table before in section 3.3.1). It seems, that no systematic attempts have been made to link budgeting with actual outputs.

The ITE like the MTR/ROM before, was not able to untangle the 'Gordian knot'. This task will remain with the Project Management Team. However, we have attempted to understand the Project's budget and spending by presenting a few tables below.

The first table provides an overview of the total available budget of €6,248,456 through 80% co-financing of €5 million by the EU to UNIDO, and ±20% co-financing of €1,248,456 by Pure Earth. The table shows that by the end of 2018, 90% of the overall available budget was spent, leaving the amount of some €600,000 for the extension of the Project until mid-2019, which includes €219,242 reserved for the final payment to Pure Earth from the EU contribution. It is noted that these 2018-figures are not final, because Pure Earth did not yet report their expenses in the second half of 2018.

Overall planned budget and expenses (total of EC and Pure Earth co-financing)

Project plan/reports	Available budget (€)	Budget spent (€)	Ratio of total budget spent
Year 1 (2016)	2,125,099	1,884,734	30%
Year 2 (2017)	2,196,375	1,898,313	30%
Year 3 (2018)	1,599,772	1,558,650	25%
Indirect costs (UNIDO)	327,210	278,641	5%

Grand total	6,248,456	5,620,338	90%

The next table shows how the total available budget for direct costs of €5,921,246 (€6,248,456 minus €327,210 indirect costs of UNIDO) was allocated to the four pillars/output areas of the Project, and the actually incurred expenses until end-2018 (until mid-2018 in the case of Pure Earth) and the ratios of budget and spending per Pillar. The close matching of budget and expenses lets presume that financial reporting was done to fit the plans exactly, which is unusual, because some shifting of budget figures would have been acceptable by the donors.

Budget and expenses allocation to the Project's output areas/pillars

Project plan/reports	Available budget (€) and % of total budget	Budget spent (€) and % of total expenses
Output 1	795,638 (13.44%)	681,719 (12.76%)
Output 2	1,832,827 (30.95%)	1,768,965 (33.12%)
Output 3	2,781,741 (46.98%)	2,455,029 (45.96%)
Output 4	511,040 (8.63%)	435,984 (8.16%)
Grand total	5,921,246 (100%)	5,341,697 (100%)

The next table shows how the direct and indirect budget and expenses have been allocated/incurred by UNIDO and Pure Earth. What is readily apparent is that almost 90% of operative and directly available budget was allocated to Pure Earth, as was the expenditure. Including the indirect costs (7% of the overall budget), the budget share of UNIDO increases to 16%. It is noted that UNIDO charges all of their projects with 7% for procurement, financial management and administrative services. No other charges directly related to the project, such as for time of the Project Manager, Project Assistant, Director for Environment, and of regular UNIDO field office staff could be made in the case of this project due to insufficient funding allocated to UNIDO in the EU contribution, and USAID contribution was dedicated to tasks Pure Earth would undertake. The table also shows the relatively low budget amounts of UNIDO to conduct the HPAP exercises under Pillar 2 and the GAHP assessment under Pillar 4; this compared to the larger budgets of Pure Earth in all pillars.

Budget/expenses allocation between UNIDO/Pure Earth and output areas/pillars

Plan/reports	*UNIDO*		*Pure Earth, incl. cost sharing*[2]	
	Budget (€)	*Expenses (€)*	*Budget (€)*	*Expenses (€)*
Output 1	112,183	58,227.87	683,455	623,491
Output 2	349,183	211,118.03	1,483,644	1,557,847
Output 3	115,000	52,075.56	2,666,741	2,402,953
Output 4	98,040	90,928.10	413,000	345,056
Grand total I	674,406	412,349.56	5,246,840	4,929,347
% of total direct budget/expenses	11%	8%	89%	92%
Indirect costs	327,210	278,641.15	----	-----
Grand total II	1,001,616	690,990.71	5,246,840	4,929,347
% indirect costs included	16%	12%	84%	92%

[2]Pure Earth cost sharing as at 30 June 2018

The last table in this context provides information on the receipt of the EU grant by UNIDO and the transfers to Pure Earth up to now. The payments from UNIDO to Pure Earth followed the subcontract agreement between the two parties, which was executed without deviation. We see this as another indication of the 'real' nature of the Project as a support to Pure Earth's overall operations.

Overview of payments until end-2018

From EC to UNIDO			*From UNIDO to Pure Earth*		
Instalments	Amount (€)	Date	Based on invoices	Amount (€)	Date
First instalment	1,698,388	26/01/16	First payment	400,000	14/04/16
Second instalment	1,841,960	20/07/17	Second payment	823,442	29/07/16
Third instalment	1,391,281	16/07/18	Third payment	205,861	20/01/17
Forecast balance	68,371	20/8/18	Fourth payment	883,722	27/07/17
			Fifth payment	589,148	13/02/18
			Sixth payment	876,969	28/08/18
			Subtotal	3,779,142	End-2018
			Retainer	219,242	2019
Grand total	5,000,000		Grand total	3,998,384	

We trust that our efforts to break down budget, expenses and payments through a set of simplified tables provides a basic insight to the Project's financials. The primary sources do not yield substantively more. We note that the ITE had no means nor the mandate to conduct a financial audit.

The financial reporting with the Annex III template of the EC resulted in some administrative complications (as reported by the financial staff involved), which was not automatically compatible with Pure Earth's accounting system nor UNIDO's cost centres. As a result, all financial data was manually extracted from the Project partners' systems and manually transposed into the Annex III template, with an added risk of transcription errors.

Pure Earth was challenged to carefully orchestrate the various funds, which is done with the software 'Fund Easy'. The USAID grant was not the only complementary grant to Pure Earth in the Project areas during 2016-2018, including the present and near future. Respective information about complementary funding and its distribution to the output areas was requested by the Evaluation Team, but was not provided by Pure Earth, however.

To use the complementary funding from the EU and any other donors efficiently, Pure Earth establishes budget plans for their core business areas overall and for projects in LMICs. These prospects are largely coherent with the Pure Earth related output areas of this Project. The geographical scopes, upon proposal of Pure Earth and in an attempt to address country priorities of the various donors vary, and overlaps are observed. Based on overall available funding, the work plans of Pure Earth are rolled out. The oversight is exclusively via Pure Earth's New York headquarters, which raises funds, agrees projects and allocates funds. The engaged staff and consultants get budgets that are not explicitly detailed on the funding sources. The local staff regularly report their expenses with supporting evidence to Pure Earth's headquarters where the expenses are categorised and accounted to the various donor budgets. The primary concerns of Pure Earth's financial reporting are to avoid double-reporting of expenses and to secure the cashflow. The Evaluation Team got the impression that these financial management concerns at Pure Earth have also impacted the technical

reporting of the Project progress, by establishing funding coherence before technical coherence.

This system is complex and has sometimes caused delays in reporting Pure Earth's actual expenses to UNIDO (currently, data are available only until mid-2018). At UNIDO, own financial data and those of Pure Earth's are logged in UNIDO's system; from there, the figures are manually inserted in the EC's Annex III template. The Evaluation Team was informed, that some 70,000 transactions are behind the few global figures that eventually appear in the financial reports to the EU.

According to UNIDO's financial department all transactions have a *"presumed innocence"* in terms of their validity. This opinion, will be formally verified through an independent external financial audit, commissioned by UNIDO and currently in the tendering phase.

The Evaluation Team could not form an opinion on the prudency and efficiency of the budget's use. For example, from the figures it is obvious that human resources are the largest portion of expenses, however we cannot judge whether this expenditure was 'value for money' *per se*. We can only assume that UNIDO had all information to secure the proper use of budget. What is evident are the significant differences between UNIDO's and Pure Earth's budget to deliver their respective parts. This can be exemplified on the cases of HPAPs under UNIDO and output area 3 on site projects and guidance documents under Pure Earth.

In the case of the HPAPs, UNIDO provided a cost breakdown of the expenses incurred per cost-item and country-specific HPAP (see table below). Although the human resources are not further detailed (units, unit costs and unit numbers), we concluded that these exercises have been completed efficiently, considering 5 HPAPs completed that include comprehensive data research and many Extended Concept Notes for follow-up actions; all of which was completed within a relatively short timeframe (i.e. one year to 18 months).

UNIDO's breakdown per budget lines of expenses (€) incurred in delivering HPAPs

Budget lines	*Colombia*	*Ghana*	*Kyrgyzstan*	*Philippines*	*Tanzania*
11 Intl. consultants	31,839	36,455	36,455	22,839	22,839
15 Consultants travel	3,909	7,517	1,991	5,335	5,058
16 HQ staff travel	2,303	177	4,108	9,763	856
17 Local consultants	48,611	23,716	16,785	37,112	32,025
30 Local workshops	1,721	13,016	7,613	8,302	21,648
51 Other direct costs	1,472	-	3,729	2,456	-
Sub-totals	89,855	80,926	70,853	85,808	82,426

Similar information on site projects and guidance documents under output area 3 was not available. In particular, Pure Earth's itemized spending of human resources for the 11 reported site projects (see section 3.2.3) remains unclear. This is unsatisfactory in view of the large budget of €2,666,741 allocated to this Project component, the major portion of which are costs for staff and consultants. No itemized information is available in the case of TSIP work or the research papers and GAHP.

We understand the primary purpose of the Project funding was a co-financing to Pure Earth to continue with their routine operations. The Evaluation Team finds the financial management aspects of the Project to be at best 'Moderately Unsatisfactory' (score = 3). This also reflects the position of the financial officers involved in the Project as expressed during

interviews with the Evaluation Team. This score considers that no irregularities have been identified or are suspected.

3.5 Performance of Partners & Stakeholders

The ITE reviewed the performance of the Project partners UNIDO (see section 3.5.1) and Pure Earth (see section 3.5.2) which was determined by the following aspects: the corporate identities of the two organisations; and the designated roles in delivering the Project. In addition, we refer to how other stakeholders perceived the performance of the two Project partners.

This chapter also provides a brief review of the roles and performances of other stakeholders such as in-country stakeholders and other organisations (see section 3.5.3). Finally, we have few remarks on the roles of the donors (see section 3.5.4). Both also refer to how other stakeholders have perceived the performance of these specific stakeholders and the donors.

It is noted that both partners, the donors, many in-country stakeholders and international organisations are members of the GAHP, which is beside Pure Earth the main direct beneficiary of this Project.

3.5.1 Performance of UNIDO

The United Nations Industrial Development Organization (UNIDO) is a specialized agency within the United Nations structure, headquartered in Vienna, Austria. The organization's primary objective is the promotion and acceleration of industrial development in developing countries and countries with economies in transition and the promotion of international industrial cooperation. UNIDO is also a member of the United Nations Development Group. The latter is a consortium of all United Nations development agencies to improve the effectiveness of UN development activities at the global, regional and country levels.

The thematic focus areas of UNIDO are in brief: poverty reduction through productive activities; trade capacity-building with regard to competitive and standards-compliant products; and energy and environment with emphasis on energy efficiency, renewable energy, resource efficiency and circular economy, sustainable consumption and production, and pollution prevention.

The environment focus provided the thematic link for UNIDO to engage with this Project. In a related context, UNIDO is assisting LMICs in the fields of chemical and toxic substances management, such as supporting countries to comply with the Stockholm Convention, Montreal Protocol or the Minamata Convention. UNIDO has conducted projects in the fields of POPs, PCBs and ozone-depleting substances, has assisted poor countries in advancing technologies at various levels from clean-technology for domestic cooking stoves to resource efficiency at large industrial installations, and many more. A notable initiative is UNIDO's program 'Transfer of Environmentally Sound Technologies (TEST)'. More recently, UNIDO's thematic contributions were aligned with the UN 2030 Agenda for Sustainable Development. The inter-related 17 SDGs provide ample room for UNIDO's engagement in many fields where connectivity to the organisation's primary thematic focus areas is given, including SDG9 on inclusive and sustainable industrialization, resilient investment and innovation.

The major services of UNIDO are technical assistance through in-house staff, in-country offices and contracted consultants. Usually, UNIDO only becomes active at the request of national governments of the UN member countries asking for assistance. The situation was different for the current Project and the unconventional nature of it dates back to 2009, where the first project with a similar donor/implementing/executing partner constellation was formed, with the current Project being the third of its type in the row. UNIDO was asked by the EU to act as conduit to enable the transfer of funding to Pure Earth. In performing this role UNIDO took on liability for the use of the funding.

The observed deficiencies of the previous projects with Pure Earth, and the lack of a technical role for UNIDO let the management hesitate to enter into a new agreement with the EU and Pure Earth. The ultimate decision to proceed was driven by two aspects. Firstly, UNIDO will play a more active technical role and part of the EU funding would this time remain with UNIDO. Secondly, it was a strategic donor relation decision; the EU was dedicated to the third phase of the Project, and had signalled to UNIDO that their continued cooperation would be valued.

We understand that the partner constellation formed was to comply with the donor requirements. However, this caused several administrative complications for the Project, as the standard procedures such as procurement and budgeting through UNIDO internal systems were truncated, since the Project was in essence a funding from the EU to Pure Earth/GAHP. We found that UNIDO were able to comply with all internal cooperate governance statutes. However, this did result in additional complexities in project management due to the unconventional or "hybrid" nature of the Project.

The partition of work between UNIDO and Pure Earth reflects the situation of almost two parallel projects with some intersections in the matters of GAHP incorporation and to some extent regarding the HPAPs. While Pure Earth continued with their traditional work, UNIDO was responsible for supervision and overall reporting and a small technical share of work. We refer to the respective proceeding sections (3.2.3 on HPAP, and 3.2.5 on the GAHP incorporation), which described the valuable contributions of UNIDO.

UNIDO's experienced senior consultants were able to mainstream and guide the HPAP processes. We found passionate and capable in-country personnel and local consultants of UNIDO to drive and coordinate the HPAP exercises and to design the reports and Extended Concept Notes.

This positive observation was further underpinned by the in-country stakeholders, who consistently articulated highly positive perceptions of UNIDO on the skilful and efficient moderation of the HPAP consultations, culminating in the expression of 'the great convening power' of UNIDO as quoted by an ADB representative. For example, UNIDO could directly engage with environmental and industrial government agencies or indirectly through WHO with the health agencies; through these avenues a multitude of agencies could be enrolled as well as the NGOs known by the local UNIDO offices. For the EU, UNIDO has reconfirmed its position as a professional and trusted partner in development aid projects.

In our opinion, UNIDO could have taken on a more active role earlier than in 2017, but this may have been limited by the small budget share of UNIDO. We believe that UNIDO could have also further facilitated mainstreaming Pure Earth's agenda in the contaminated soil domain, at least by elevating it to higher levels within the national governments. This would, however,

have required the cooperation of Pure Earth to pursue this direction (also see section 3.5.2 below).

We recognise UNIDO's reservations to engage with this Project. The strong performance of UNIDO in conducting their share of work was recognised by all stakeholders. By giving more weight to these positive observations we therefore score UNIDO's performance still as 'Moderately Satisfactory' (score = 4).

3.5.2 Performance of Pure Earth

Pure Earth (legally registered as the Blacksmith Institute), is an NGO based in New York City, founded in 1999. The NGO's mission is to identify, clean-up, and solve toxic soil pollution problems in LMICs, which is equivalent to the Project's focus on TSIP and site projects. Pure Earth own assertion is that it is currently the only significant organization of its kind working on a global scale. In short, Pure Earth conducts advocacy work on behalf of poor and marginalised populations affected by toxic pollution exposure. There was evidently no consolidated data on this kind of pollution in LMICs prior to Pure Earth starting the TSIP.

As an NGO, by definition, Pure Earth steps in where governments are presumed to fail. The business model of Pure Earth is typical for a NGOs, but Pure Earth adopts a cooperative and advisory position in its interactions with government agencies (local, national or provincial governments) from whom it must get consent from before starting interventions. This non-interfering approach is very much part of the Pure Earth's success. This is in contrast to many other well-known global NGOs operating within the environmental domain, that often become embroiled in antagonistic relationships with governments fuelled by emotive topics related to affected communities or ecosystems.

Pure Earth is the driving force behind the GAHP and represents the GAHP Secretariat. The perception of most stakeholders was that the boundaries between Pure Earth and the GAHP are fluid, which is also apparent from the original Project design. This issue has been addressed by the Project with the GAHP incorporation (see section 3.2.5). In 2015, Pure Earth/GAHP successfully advocated to include toxic pollution in the SDGs. Pure Earth was also co-initiator and co-author of the Lancet Report (see section 3.2.1). The major initiative of Pure Earth is the so-called TSIP database (see section 3.2.2), based on which some site clean-up projects (see section 3.2.3) are completed.

The work of Pure Earth is well recognised by the specialised scientific community and in LMICs' in which they have been active over the years. These activities have accelerated in the past ten years, enabled by the increasing flow of funds from various sources, including this Project and its predecessors. While the thematic scope broadened for a period, it has narrowed more recently and almost exclusively to the community health impacts from legacy ULAB recycling sites. This trend is also visible from the outputs of this Project.

We found that Pure Earth's human resources at their New York headquarters is structed across two main areas: staff to raise and manage funds and to coordinate in regions and countries; and senior technical staff. Junior to mid-level technical staff are sourced at a country level via their international network. These contract staff are given training on the ISS protocol used to expand the TSIP database (see section 3.2.2). For pollution risk-reduction and clean-up actives, Pure Earth uses standard protocols and often fly-in senior experts from

the headquarters to advise local consultants on the execution of such plans. Pure Earth depends on sourcing of new streams of funding to complete such in-country work.

Pure Earth's in-country consultants made valuable contributions to the HPAPs and Extended Concept Notes, but mostly dealt with topics related to primary research data on soil contamination; TSIP related activities; and ULAB sites.

In summary, Pure Earth was successful in using the Project to support their primary mission. We found and have provided evidence that this Project was, in first instance, tailored to support the efforts of Pure Earth, either in the TSIP or as the Secretariat of the GAHP. As such, the performance of Pure Earth in this Project is best characterised as 'business-as-usual'. We therefore rate the Pure Earth performance as 'Moderately Satisfactory'. The main shortcoming of Pure Earth was the omitted attempt to create sufficient transparency of the Project attributable outputs in the multi-donor context and itemized budget spending.

3.5.3 Other Stakeholders

The Project engaged a multitude of stakeholders at national and international levels which are referenced in the annexes of the HPAP reports. One of the merits of the Project was to drive and facilitate inter-agency collaboration and overcome the inherent 'silo-mentalities'. The extent to which this was successful has been discussed elsewhere in this document (see section 3.2.3 on HPAPs). During the country visits, the Evaluation Team found, how difficult the process of connecting these entities was in reality and how instable the established connections are. In some cases, it was difficult to meet with individuals who had actually been involved in consultations. In some cases, this was due to positional changes within the agencies or in others the induvial was preoccupied by other urgent matters. Overall, we found a sufficient, in some cases enthusiastic buy-in of national stakeholders. In the Philippines, for example, some government officers have high expectations, that the HPAP will strengthen inter-agency efforts. At the same time, expectations have been created that will require attention to derive any fruition.

The responses of international organisations such as the WHO have been positive through having gained additional partners beyond the health agencies. In general, the stakeholders appear to have been receptive of the concept, that improving health and environmental conditions requires to engage a broader range of agencies especially those with roles in managing identified sources of pollution, such as the transportation, industry, waste and sanitation sectors.

Another indication of stakeholder buy-in is the growing number of GAHP members and their participation in discussing the future of the GAHP (see section 3.2.5).

The field visits to site projects were highly enlightening to the Evaluation Team in providing first-hand observations of the dire circumstances which communities affected by toxic pollution face. We found little awareness of the communities on the risks they are exposed and little capacity to change their own situation.

Assessing other stakeholders' performance was not an explicit task of the Evaluation Team and this section was included for consistency. We conclude that the buy-in of other stakeholders was overall 'Satisfactory' (score = 5). Any shortcomings herein are not

attributable to the Project, whose efforts in bringing together a complex mix of stakeholders that traditionally are not accustomed to collaborative efforts was exemplary.

3.5.4 Role of Donors

The main donor, the EU, played only a minor role in the actual Project implementation since the EU's usual Project management role was delegated to UNIDO. We found, that the EU Task Manager played an active and valued role in the PSC; a notable contribution was to request more active engagement from UNIDO and to push for the incorporation of the GAHP which is currently in progress.

We consider it regrettable that the successful incorporation of the alliance, as requested by the EU, may likely result in the EU terminating its association with GAHP. We believe that this present sentiment is potentially the result of incomplete information on the design of the GAHP Foundation which foresees a range of membership options to allow members to remain without contravention of their respective governance statutes. Overall, the EU Task Manager was satisfied with the Project.

The MTR reported on insufficient engagement of the EU Delegations in some target countries. This was exemplified on the case of Kyrgyzstan, where this almost precipitated a diplomatic incident. This matter was also reiterated to the Evaluation Team by the EU Task Manager. During our country visits, we found a relatively low recognition of the Project at the EU Delegations, either as a result of having not been informed by their headquarters (as presumed by the EU Delegations) or as a result of incomplete communication between the EU officers at the Delegations. UNIDO evidently contacted the EU Delegations in the HPAP countries whereas Pure Earth was more autonomous.

A Skype call with the USAID Task Manager suggested that the collaboration between the donors could have been better. This at least to exchange observations on the Project. Both donors drew much information from the MTR/ROM reports that were univocally appreciated. USAID would be open to continue this kind of cooperation, but a more transparent process of matching complementary funds would be useful.

We believe that the donors played their roles 'Satisfactory' (score = 5), this within the given limitations.

3.6 Overall Assessment & Rating

Concluding chapter 3, we have provided a summary of our assessment along the evaluation criteria and features of the Project, which were discussed in detail in the sections 3.1 to 3.5. A table of the assessment scores to each evaluation criteria is displayed below.

The score shows a Project that is 'Moderately Satisfactory' overall. Major shortcomings have been observed in the Project design and consequently implementation and reporting aspects. By excluding these aspects from the scoring, the Project would score 'Satisfactory', if the observed shortcomings under output area 3 (site projects and guidance documents) would be excluded as well.

A different approach would be to weight the Project performance with referring to the budget allocation. This would dramatically lower the score due to the shortcomings under output area 3, which consumed almost half of the total Project budget.

However, any reductive process to derive simple scores for a complex project such as this remains subjective and bears the risks of biases. The Evaluation Team has prevented this risk by providing detailed reviews to each criterion to evidence the rating, as summarised below:

Summary scoring of investigated aspects

Evaluation criteria	*Score*	*Remarks in terms of the grade of satisfaction*
Project design	**3**	**Due to coherence flaws**
• Overall design	3	There were several challenges in deriving a clear understanding of the Project
• Log frame	3	A meaningful purpose of the Project is missing
Project performance	**4.5**	**Average of the key features of the Project**
• Relevance	4.6	Research papers (5); TSIP (4); Site projects (3); HPAPs (5); GAHP incorporation (6)
• Efficiency	4	Research papers (4); TSIP (4); Site projects (2); HPAPs (5); GAHP incorporation (5)
• Effectiveness	4.8	Research papers (5); TSIP (5); Site projects (3); HPAPs (5); GAHP incorporation (6)
• Impact	5	Research papers (5); TSIP (5); Site projects (4); HPAPs (5); GAHP incorporation (6)
• Sustainability	4	Research papers (4); TSIP (6); Site projects (2); HPAPs (4); GAHP incorporation (6)
Cross-cutting criteria	**4.7**	**Average score of all three assessed aspects**
• Gender mainstreaming	5	As far as this was practicable for aspects under control of the Project
• M & E	5	Several M&E mechanisms have been deployed
• Visibility	4	Missing communication and visibility strategy
Project management	**3.5**	**Flaws in technical and financial reporting**
• Result-based management	4	Activity- and not result-driven; lacking transparency
• Financial management	3	Expressing via the opinion of financial officers
Performance of actors	**4.5**	**Average**
• UNIDO	4	Reluctant buy-in, but good stakeholders' perceptions
• Pure Earth	4	Doing business as usual but with limited transparency

Evaluation criteria	*Score*	*Remarks in terms of the grade of satisfaction*
• Other stakeholders	5	Due to evident buy-in of stakeholders
• Donors	5	Not having had a strong role
Overall assessment	**4.2**	**Average of all assessed criteria**

4. Conclusions, Recommendations & Lessons Learned

This chapter provides our main conclusions of the Project based on the evidence provided in the previous chapters. We make few recommendations to the Project with the consideration that only few weeks remain until the ultimate end of this action. Finally, we provide some lessons from the Project which could be wider applicable beyond the Project.

4.1 Conclusions

We believe that this report substantiates an overall positive sentiment towards the Project expressed by most stakeholders. At the same time, there were also some reservations conveyed such as a 'perceived lack of transparency' which was an unintended consequence inherent in the Project's design.

The Project is complex and requires an in depth understanding of its sub-components to be fully appreciated in its entirety. It vacillates between narrow humanitarian interventions on soil-contamination at ULAB recycling facilities to high-level policy aspirations. In essence, the Project was a funding for the advocacy and humanitarian efforts of the NGO Pure Earth, which explains the narrow focus of most activities and their limitations. However, these narrow intentions have been framed by the narrative around the holistic ambitions of the GAHP to advocate a much wider scope of the complex nexus of health and pollution, which by far exceeds the corporate mission of Pure Earth as the main executing agency. That Pure Earth and the GAHP have been repeatedly mixed and used as proxies increased the difficulties to understand the Project from an outside perspective.

The situation was further complicated that no technical role was planned in the original proposal for UNIDO as the contracting party of the EU. The resulting final Project description, attached to the EU-UNIDO grant agreement, was an attempt to reshape the Project concept from its supportive nature for the advocacy work of Pure Earth/GAHP to one of technical assistance and interventions. Through this, the real purpose of the Project became camouflaged and the Logical Framework of the Project was disconnected from its 'real' specific objective, i.e. to strengthen the advocacy efforts of Pure Earth and the GAHP.

Another complexity was the complementary funding that Pure Earth received from USAID and other unspecified sources. The incoherencies between original proposal, contracted proposal, partner agreements, complementary funds and the Inception have not been sufficiently reconciled with their effect on the technical progress and financial reporting. The 'perceived lack of transparency' was largely the result of the multi-donor funding used by Pure Earth and their efforts to use the funds and adjust the Project progress reporting to match the financial reporting criteria and to avoid double-accounting. A simpler approach, unfortunately not available to Pure Earth would be to rather provide an overall picture of the Project's accomplishments based on consolidated funding.

While the agreed distribution of responsibilities between UNIDO and Pure Earth was sufficiently accurate to guide the activities implementation, a definition of what was directly attributable to the EU-UNIDO grant agreement is not clear. We found that the Project delivered rather within target ranges, e.g. number of countries, numbers of added TSIPs or site projects, than to distinct targets as presented in the Project description and

complementary funding regimes. The evaluation tried to address this challenge by fragmenting the large Project into its sub-components, i.e. the key products of the Project.

One evident highlight of the Project was the report of the Lancet Commission on Pollution and Health of 2017, whereas the actual contribution of the Project to this remains opaque. This is evidenced by the fact that the respective Lancet Commission was established before the Project started. The Lancet Commission's report was evidently the effort of a larger scientific community beyond the Project. The other research papers are mainly dedicated to Pure Earth's thematic domains.

The Project helped to grow Pure Earth's major product, the TSIP, with ±1,500 new entries since Project start; ±800 sites are claimed to be attributable to the Project. However, the rationale of this attribution remains opaque. In addition, a very strong focus on lead contaminated sites was observed, which reflects the present and future focus of Pure Earth. The capacity built within this context remains fragile and the uptake variable within the countries.

Ten-thousands of lives have likely been saved through humanitarian efforts of the site projects. However, without delivering on the replication objectives of the projects. Such interventions will depend on further humanitarian sentiments of donors, and no institutional capacity was built.

The efforts on HPAPs in the second half of the Project, although relatively successful, can be considered as a break and deviation from the original Project plan which did not foresee such a broadened effort. The promising results of the HPAPs are a merit of UNIDO's work in five LMICs, and Pure Earth's work in three (with Colombia overlapping responsibilities), and perhaps the strongest features/products of the Project under a technical assistance perspective. The health-pollution nexus was successfully established as a 'new' policy-domain at the national level in the target countries, however, the sustained impacts are yet to be tested.

A straight forward intervention, in line with the Project's purpose, was the successful incorporation of the GAHP based on UNIDO's assessment and Pure Earth's consultations.

Overall, the Project delivered/exceeded all targeted indicators, which explains most of the positive sentiment towards the Project. However, the initial targets set are considered by the Evaluation Team to be unambitiously low and the Project was never in jeopardy to fail on these metrics.

The peculiarities of this Project are the result of its 'follow-up' nature to two previous projects. It delivered 'more of the same', but also progress was made in terms of awareness raising, providing more scientific evidence and consolidating the GAHP as foundation. It helped Pure Earth to continue their operations, which is in major parts congruent with the designated output areas of the Project. It gave an initially reluctant UNIDO a highly visible technical role, which has undoubtedly paid dividends through an increased positive perception of the organisation's ability to connect stakeholders and provide high quality technical advisory services and strengthen its reputation in the Project host countries.

In conclusion, we assert that the Project was successful in progressing the health-pollution agenda further on the pathway to its long-term goal. Most shortcomings, including a perceived lack of transparency, are result of the Project design and the difficulties to attribute outputs to a specific funding agreement within a multi-donor setting. The Project made reasonable

contributions to a bigger picture. Any attempt to view the Project in isolation and without recognition of its primary support nature to Pure Earth and GAHP would be unjust and biased.

4.2 Recommendations

This section contains a few recommendations that could be reasonably implemented within the remaining project implementation period of two months (i.e. May and June 2019). The recommendations address the two implementing partners UNIDO and Pure Earth within their designated roles in the Project.

R1: With regard to the HPAPs, we found an incomplete transfer of ownership of the established Extended Concept Notes (ECNs), which were written by UNIDO sub-contracted consultants and by Pure Earth. These ECNs include estimate budgets based on UNIDO's and Pure Earth's experience, but without sufficient consultation with the stakeholders on this matter. This way, the perception was created at some stakeholders, that these ECNs describe future UNIDO projects. At least, the expectation was created that UNIDO will take further responsibility of the ECNs. We recommend, that these expectations be managed urgently.

R2: We found notable shortcomings related to the site projects under output area 3. It is recommended that an exercise is undertaken to establish the actual implementation costs of each site project, particularly with regard to human resources of Pure Earth and the local contribution of resources that were used to complete the projects (e.g. earth moving equipment, waste disposal costs, site labour etc). The lessons on the limitations to replicate such site projects have to be completed with the real costs to apply the standard protocols as rolled out by Pure Earth. Going beyond the Project, it would be helpful to describe a possible scenario how the more than 5,000 sites recorded in the TSIP database could be refined and further sites be prioritised for clean-up, i.e. what a replicable strategy would look like and what local resources and external expertise would be required. Since the Project has so far not fully delivered market-based and industry-led replication mechanisms, it is recommended to have such considerations at least in the final report (see also R4).

R3: To gain more clarity on the extent of what is actually attributable to the Project, it is recommended that UNIDO requests appropriate data from Pure Earth. This should be perhaps be done by referring to Pure Earth's software 'Fund Easy', which allocates funds and expenses aligned with the output areas of this Project. At least a ratio could be established on the extent of support by the Project to Pure Earth's business domains.

R4: In preparing the final report, a more informative, results-orientated and less activity-oriented format has to be found that the readers can better comprehend the Project in its entirety. The typical activity-oriented details could be moved to an annex of the final report. The main narrative should describe the Project as contribution to a bigger picture. There is no need to camouflage the reconstructed real purpose of this Project. This will allow to roll out the future perspectives of the thematic fields covered by the Project. More weight should be given both by UNIDO and Pure Earth on lessons learned, observed limitations, barriers and challenges including suggestions to move forward on the pathway to the Project's long-term goal. The ITE report contains some of these aspects, but this cannot substitute the efforts of

the Project owners to complete the Project 'in style' with an honest assessment of what would be reasonable next steps.

4.3 Lessons Learned

The last section of this report provides some lessons learned from this Project, which could be useful for stakeholders beyond the Project evaluated. The purpose is to reduce deficiencies such as observed in this Project and to build on successful aspects that could be further strengthened in the future.

Deficiencies to avoid

Some project deficiencies were identified that can be avoided to ensure more successful and better future projects. A project with an opaque or camouflaged purpose formulation can create confusion and as consequence, result in the concentration on the implementation of activities without sufficient focus on outcomes. Satisfying the corporate objectives of project partners, who are reluctant participants, will also be to the detriment of a project's overall mission. To solve such a situation, a strict separation of responsibilities will freeze the activity orientation of a project, and ignores that activities are means to an end and can be adjusted and modified if appropriate.

If new or additional priorities or challenges arise, during the project implementation, it must be flexible enough to respond to such changes while still being cognisant of the consequences of such changes and how they impact the overall project objectives. In the current case, the ambition to mainstream toxic soil pollution through so-called NTAPs was sacrificed by replacement with the HPAPs. Such unintended outcomes could be avoided by better design, i.e. to allow flexibility that also encompasses partner intentions and sentiments. Further, flexibility in budget allocation with having outcomes in the focus, would increase efficiency and effectiveness of an action. Reporting project progress on pre-determined financial figures and without reconciliation is guaranteed to drive future transparency issues. The owners/partners of a project should therefore agree on the intrinsic nature of their joint endeavour as a humanitarian, technical assistance or other type of interventions. Complex hybrid constellations should thus be avoided.

Better coordination and why less could be more

Multi-donor and multi-country or global projects are the most complicated project formats and need added layers of coordination than simpler country-specific projects. The project under review was further complicated through the above-mentioned aspects and its oscillation between humanitarian and technical assistance features. Multi-donor projects would also need early donor coordination. The available funds need to be matched and priorities have to be agreed upon by all donors in a synergistic way, which is different to complementary use of funds in order to avoid a hypothetical duplication of efforts. Consolidation is likely to yield better outcomes than delineating and expanding a project's scope along donor sentiments to avoid overlap. Multi-country projects have to consider the rationale of the geographical scope carefully. For example, LMICs are donor technical funding categories and may not fit to each unique challenges and actual development stage. The so-called South-South exchange is perhaps an efficiency consideration of donors, but the observed low readiness to exchange at this level is apparent. Less could be more, which is a

traditional proverb of UNIDO used in the resource-efficiency contexts, and also could apply to a project's resource use regards a reasonable geographical and thematic scope.

Consistency of priority setting

The experiences of the HPAPs, the varying country responses to the TSIP and opinions collected during the country visits of the Evaluation Team led to the observation that donors and beneficiary countries are not always aligned regarding priorities. There are opinions that the recognition of the health-pollution nexus may be lost amongst the competing priorities of the international donors, where climate change dominates the current discourse. It almost seems that for example the EU is projecting the huge European challenge to achieve their own ambitious climate goals on developing countries, which however fight for survival on many more basic frontiers. Poverty, education, water sanitation, waste and controlling ambient environmental pollution have been already managed in developed countries, but these severe problems remain in LMICs. Climate change remains a longer-term threat and lacks the immediacy of the other priority and felt responsibility issues in developing and low-income countries. The exclusive focus on climate change seems to be biased as it is only one of 17 SDGs, while all SDGs have strong resonance in the developing world. The Evaluation Team noted that the HPAP process was a unique approach that allowed donor projects to adequality understand national priorities and enable integration with them. The various ECNs show that the priorities differ from country to country. More of such consultative formats would perhaps be fruitful. The Project provided a good lesson how a global project can succeed by including strong national components.

Harnessing UNIDO's convening power for industrial development and health

The Project confirmed exemplarily the effective convening power of UNIDO. Although this is not a new observation, it is worth to build on this strength, including the ease with which UNIDO can align with other UN organisations such as the WHO. The established cooperation between UNIDO and the WHO could deliver more benefits, if it is further cultivated. The narrative of the Lancet Report is clear on how far the responsibilities of the various actors reach in addressing the complex nexus of health and pollution. The question is how UNIDO's capacities and competences could be harnessed for this important field with consistency to UNIDO's corporate mission. Without conflicting with UNIDO's mandate, we see a number of opportunities. First, the SDGs to which UNIDO is committed provide from each single SDG connections to the other SDGs. The connecting lines between the individual SDGs is a complex web of interdependency. Industry goals are connected with many other SDGs. The thematic focus of UNIDO on environment, such as closing the loops through a circular economy approach, increasing efficiency of resources and energy, the prevention of environmental pollution and taking responsibility of industry caused pollution, provides the logical entry points, since the ultimate end-goal of environment protection is people's health and quality of life. From this perspective, addressing health aspects as part of industrial development through environmental approaches would be a necessary approach and an appropriate

enhancement of UNIDO's mission to assist developing countries in dire need to protect communities from the negative by-products of industrial development at source level.

The Project as such, although it failed in this respect, claimed to develop market-based and industry-led solutions to remedy industry-caused environmental pollution. For example, UNIDO's TEST programme provides ample examples for this challenge.

Finally, while preventive measures to avoid new environmental pollution is important and commendable, the legacy of industrial activities and their remediation is part of responsible industry policies. Ideally, both would go hand in hand. It is believed that the nexus of health with environment will gain more attention in the future. UNIDO would have to play an active role in this context to remain a credible partner for the pursuit of the UN 2030 Agenda.

Annexes

Annex 1: List of documents reviewed and internet sources

Project contracts

- European Union Agreement with UNIDO of December 2018; also containing the original project description and budget;
- Original Project proposal of Pure Earth of October 2015;
- Communication between the EU and UNIDO on the extension of the Project until mid-2019; also including the upfront decisions of the 3rd PSC meeting;
- Contract between UNIDO and PE plus addendum (extension);
- Contract between USAID and PE
- Revised logical framework.

Project management/steering and progress reports

- Inception Report of 2016
- Annual report of 2016
- Interim Report of 2017
- Annual Report of 2017
- Interim Report of 2018
- Annual Report of 2018 (draft)
- Meeting of the PSC in 2016, 2017 and 2018 (3 meetings in total)
- List of human resources/personnel

Project outputs

- Output 1 (awareness raising): (a) Peer review papers, (b) GAPH reports, (c) Lancet Report, (d) research papers
- Output 2 (capacity building): (a) training, (b) TSIP, (c) HPAPs
- Output 3 (demonstration & pilots): (a) Clean-up proposals (as per annual report of 2017), (b) pilot projects (as per annual reports of 2017 and 2018 and summary of 2019), (c) guidance documents (to TSIP, HPAP, Minamata, lead, HPAP)
- Output 4 (GAHP consolidation): (a) GAPH review, (b) GAPH promotion

Project reviews

- MRT of 2018
- ROM of 2018

Web resource	Value
http://gahp.net/	General organizational information on the Global Alliance on Health & Pollution (GAHP) and its programmes.
https://www.pureearth.org/	General organizational of information on Pure Earth and its programmes.
http://www.contaminatedsites.org/TSIP/	General information on the Toxic Sites Identification Program (TSIP). Access granted via UNIDO.
https://www.tsipdatabase.org/	Toxic Sites Identification Program (TSIP) database.
https://www.pollution.org/	GAHP managed public TSIP resource on global pollution hotspots.
http://ghdx.healthdata.org/gbd-results-tool https://vizhub.healthdata.org/gbd-compare/	General information on the Global Burden of Disease (GBD) Results Tool and visualization tool of the GBD
https://www.who.int/	General technical information provided by the World Health Organization (WHO) including, for example, Guidelines for Drinking-water Quality
https://www.itrcweb.org/	General technical/guidance resource on remedial intervention techniques and technologies provided by Interstate Technology & Regulatory Council (ITRC)
https://frtr.gov/	General technical/guidance resource. The Federal Remediation Technology Roundtable (FRTR) provides a globally recognized remedial technology screening matrix for high-priority environmental pollutants.

Annex 2: List of interviewees and persons met

Location/ Date/ Institute	Name	Role
Brussels – 10 March 2019		
European Commission	Maria Pachta	EU Project Task Manager
Vienna: 11, 12, 13 March 2019		
UNIDO	Adot Killmeyer-Oleche	Senior Evaluation Officer / Independent Evaluation Division
	Stephan Sicars	Director of Department of Environment
	Nilgun Tas	Project Team - Project manager
	Chung Tran	Expert on Health and Pollution
	Susanne Styrsky	Project Team -Senior Project Assistant
	Vitali Pleskatch	Finance Officer
	Andrea Metonou	Finance Assistant
	Gillian Ocampo-Goetzlinger	Senior Procurement Assistant / Procurement Services Division
	Arno Behrens	Advisor on Health and Pollution
	Jean-Paul Landrichter	Chief, Strategic Donor Relations
	Edward Clarence Smith	Senior Advisor on Health and Pollution
New York: 15, 18 March 2019		
Pure Earth	Bret Ericson	COO
	Judith St. Fort	Regional Director (RD) Africa
	Drew McCartor - RD (remote)	S Asia Programs and HPAPs
	Richard Fuller	President
	John Keith	Technical Expert - Pilot Projects
	Lara Crampe	former Regional Director SE Asia
	Eric Fecci	CFO
	Rachael Kupka	Strategy & Development Director
	Angela Bernhardt	Communications
	Lina Hernandez (RD)	Regional Director (RD) Africa Latin America
	Petr Sharov (RD)	EECA
Columbia: 19-22 March 2019		
Ministry of Agriculture and Rural Development	Sara Zafra	Advisor International Affairs Office

Location/ Date/ Institute	Name	Role
Development and Health Group/Ministry of Health and Social Protection	David Combariza	Professional
UNIDO	Mr. Johannes Dobinger	UNIDO Representative
	Ms. Lizeth Olaya Zambrano	Consultant on Health and Pollution Professional
Ministry of Environment and Sustainable Development	Sandra Reina	Professional
UNIDO	Salua Osorio	National Consultant
Pure Earth	Ximena Rojas	TSIP Researcher
Institute of Hydrology, Meteorology and Environmental Studies	Ana Maria Hernández	Professional - Sub-directorate of Environmental Studies
	María Paula Pérez Peña	Professional - Sub-directorate of Environmental Studies
National Health Institution	Iván Sánchez	Coordinator – Risk assessment in food safety and pesticides Group
Pure Earth	Sandra Parra	TSIP Researcher
	Alfonso Rodríguez	Director Pure Earth Colombia
	Vanesa Vega	TSIP Researcher Colombia
Ghana: 25-28 March 2019		
EPA	Mr. Emmanuel Appoh	Head, Environmental Quality)/ EPA
MESTI	Mr. Oliver Boachie	Special Advisor to the Minister/ MESTI
UNIDO	Mr. Fakhruddin Azizi	Rep. (GH. & LBR.)
	Joseph Yeboah	UNIDO
EU Delegation	Juliet Dekou	Programme officer Macro Economic and Trade Section
World Health Organization	Mr. Gordon Darkuu	Programme Officer
Pure Earth	Mr. Yaw Amoyaw Osei	Country Coordinator
TSIP Research Scientist	Dr Sampson Atiemo	Ghana Atomic Energy Research Institute
UNIDO	Mr. Fakhruddin Azizi	Rep. GH. & LBR.)
	Joseph Yeboah	Health and Pollution Consultant
Agbogbloshie eWate Site	Mr. Yaw Amoyaw Osei	Pure Earth Country Coordinator
The Philippines: 25-28 March 2019		
Department of Health (DOH)	Dr. Myrna C. Cabotaje	Undersecretary of Health, Public Health Services Team
Pure Earth	Larah O. Ibanez	Executive Director, Pure Earth

Location/ Date/ Institute	Name	Role
Delegation of the European Union to the Philippines	Diana Van Daele	Programme Manager, Health Operations Section
	Giovanni Serritella	Programme Manager, Environment and Climate Change
Department of Environment and Natural Resources (DENR) with Foreign Assisted and Special Projects Service (FASPS) and Environmental Management Bureau (EMB)	Atty. Jonas R. Leones	Undersecretary for International Affairs and FASPS Programs
	Eda Soriano	FASPS
	Marianica Obmerga	FASPS
	Maritess Romena	FASPS
	Leonie Ruiz	EMB
	Maricris Laciste	EMB
	Alyanna Uy	EMB
Department of Transportation (DOT)	Elvira Medina	Assistant Secretary, Office of Commuter Affairs
	Maria Zita Antonio	Training Specialist IV, Office of Commuter Affairs
	Glenn Canouce	Training Specialist, Office of Commuter Affairs
Clean Air Asia (CAA)	Precious Benjamin	Environment Researcher
Asian Development Bank	Ye Xu	Health Specialist, Human and Social Development Division, Southeast Asia Department (Sustainable Development and Climate Change Department)
Celica Lead Compound (Pampanga local stakeholders)	Nelson Bagtas	Joint Inspection Team Leader
	Mary Grace Cuellar	RSI
	Cresencia Ramos	Barangay Health Worker
	Leticia De Leon	Barangay Health Worker
	Marife Dapito	Program Officer, Pure Earth
	Elezabeth Ompad	Program Officer, Pure Earth
	Roylan Fabro	Program Officers, Pure Earth
	Lorele Trinidad	Consultant, Pure Earth
Department of Trade and Industry (DTI)	Nestor Arcansalin	Director, Resource-Based Industries Service
	Von M. Losloso	Investment Specialist, Board of Investments
Department of Labour and Employment	Engr. Nelia Granadillos	Chief Environment Control Division, Occupational Safety and Health Canter
Additional Skype meetings 3 & 5 April 2019		
UNIDO Philippines	Tonilyn Lim	UNIDO Representative

Location/ Date/ Institute	Name	Role
UNIDO Philippines	Engr. Bonifacio Magtibay	Technical Officer, Environmental/ Occupational Health, WHO Philippines
USAID	Katherine Swanson	Agreement Officer Representative

Annex 3: Distribution of work between UNIDO and Pure Earth

Pillar 1 - Raising Awareness	
Pure Earth's Role	Working on the awareness raising at the international level and of national governments about toxic pollution and its associated impacts on human health and environment which included: refining and sharing TSIP data, providing information, capacity building and technical advice to NGOs/non-state actors, raising international awareness about the scope of toxic pollution.
Pure Earths' Specific deliverables	• At least 3 research papers published in peer-reviewed journals. • Data sharing and discussions held with relevant national government agencies in at least 15 countries over the three- year period of implementation. • At least 5 NGOs/non-state actors received information and technical advice on how to mainstream toxic pollution into their respective strategies. • At least 2 GAHP publications/reports created. • At least 5 agencies maintain on-going dialogue with GAHP. • At least 5 meetings per year held with donors/agencies. • At least 3 presentations at international meetings to publicize GAPH, pollution impacts and associated global burden of disease per year.
UNIDO Role	Monitoring results achieved by PE and using its own platforms to contribute to awareness raising.
Pillar 2 – Capacity Building	
Pure Earth's Role	Strengthening national capacity activities based on conducting TSIP training, TSIP expansion activities, supporting for development of national Health and Pollution Action Plan (HPAP)
Pure Earths' Specific deliverables	• TSIP efforts expanded to include at least 15 countries with active hotspot identification and assessment programs • At least 5 TSIP investigator-training sessions are conducted, keeping gender balance, (to the extent possible) • At least 50 new investigators are trained • At least 150 sites screened per year (450 total) and integrated into the existing TSIP database and inventories from NIPs, NAPs and MIAs
UNIDO Role	Supporting 5 selected countries to develop HPAPs, in collaboration with the Ministries of Environment and Health, and monitoring results achieved by PE.
Pillar 3 - Pilot Sites Clean-Ups	
Pure Earth's Role	Conducting site-level demonstration (pilot) projects in LMIC to break exposure pathways and preventing future toxic pollution.
Pure Earths' Specific deliverables	• At least 5 pilot sites are selected. • At least 5 site stakeholder groups are convened. • At least 5 in-depth site reviews are conducted.

	• At least five new prevention, clean-up or other intervention projects are designed in collaboration with local stakeholders and with GAHP support. • At least 5 site intervention action plans drafted. • At least five new prevention, clean-up or other intervention projects are completed. • Toxic emissions are reduced, and health and environmental impacts are mitigated at Project sites (with measurably reduced levels of health risk and contamination). • At least 3 technical guidance documents/tools (detailing good practices and lessons from previous site interventions) are produced on toxic pollution and shared with civil society and government stakeholders Monitoring results achieved by PE.
UNIDO Role	Monitoring results achieved by PE.
Pillar 4 - GAHP Institution Building/Consolidation	
Pure Earth's Role	Taking necessary actions to establish GAHP as a legal entity.
Pure Earths' Specific deliverables	• At least five new members (government agencies, NGO/non-state actor organizations) from LMIC or private sector companies join GAHP. • At least 2 donors pledge future support to health and pollution agenda as a result of GAHP's efforts.
UNIDO Role	Completing an independent assessment on GAHP's relevance and functionality and actively participating in the Executive Committee of GAHP.

Annex 4: Summary of research papers and publications

#	Title	Attribution	Main theme	Publication	Comments
1	The Global Burden of Lead Toxicity Attributable to Informal Used Lead-Acid Battery (ULAB) Sites.	Project	Lead impacts	Annals of Global Health	Full publication, with acknowledgement of EC funding
2	Estimating the Prevalence of Toxic Waste Sites in Low- and Middle-Income Countries.	Project	TSIP	Annals of Global Health	Full publication, with acknowledgement of EC funding
3	Disability Weights for Chronic Mercury Intoxication Resulting from Gold Mining Activities: Results from an Online Pairwise Comparisons Survey.	Project	Mercury/ ASGM	International Journal of Environmental Research and Public Health	Full publication, with acknowledgement of EC funding.
4	Global Burden of Disease of Mercury Used in Artisanal Small-Scale Gold Mining.	Project	Mercury / ASGM	Annals of Global Health	Full publication, with acknowledgement of EC funding and UNIDO project role.
5	Cost Effectiveness of Environmental Lead Risk Mitigation in Low- and Middle-Income Countries.	Project	Lead impacts	GeoHealth	Full publication, with acknowledgement of EC funding.
6	Improving Human Health Outcomes with a Low-Cost Intervention to Reduce Exposures from Lead Acid Battery Recycling: Dong Mai, Vietnam.	Project	Lead impacts	Environmental Research	Full publication, with acknowledgement of EC funding.
7	A Meta-Analysis of Blood Lead Levels in India and the Attributable Burden of Disease.	Project	Lead impacts	Environment International	Full publication, with acknowledgement of EC funding.
8	Assessment of the Prevalence of Lead-Based Paint Exposure Risk in Jakarta, Indonesia.	Project	Lead impacts	Science of the Total Environment	Full publication, with acknowledgement of EC funding.
9	Pollution and Non-Communicable Disease: Time to End the Neglect.	TSIP	Advocacy & Awareness	The Lancet Planetary Health	Short comment piece. No attribution to EC/UNIDO.

#	Title	Attribution	Main theme	Publication	Comments
10	Pollution and Global Health – An Agenda for Prevention.	TSIP	Advocacy & Awareness	Environmental Health Perspectives	Short comment piece. No attribution to EC/UNIDO.
11	Lead Intoxicated Children in Kabwe, Zambia.	TSIP	Lead impacts	Environmental Research	Full publication, with acknowledgement of EC funding.
12	New Initiative Aims at Expanding Global Burden of Disease Estimates for Pollution and Climate.	TSIP	Advocacy & Awareness	The Lancet Planetary Health	Short comment piece. No attribution to EC/UNIDO.
13	Tackling Air Pollution, Climate Change, and NCDS: Time to Pull Together.	TSIP	Advocacy & Awareness	The Lancet	Short comment piece. No attribution to EC/UNIDO.
14	Pollution Prevention and Climate Change Mitigation: Measuring the Health Benefits of Comprehensive Interventions.	TSIP	Advocacy & Awareness	The Lancet Planetary Health	Short comment piece. No attribution to EC/UNIDO.
15	Prevention-Intervention Strategies to Reduce Exposure to e-Waste.	TSIP	e-Waste	Reviews on Environmental Health	Short communication. No attribution to EC/UNIDO.
16	Pollution and Children's Health.	TSIP	Advocacy & Awareness	Science of the Total Environment	Full publication, with no attribution to EC/UNIDO.

Annex 5: TOR of the Terminal Evaluation

TERMS OF REFERENCE

Independent terminal evaluation

Mitigating Toxic Health Exposures in Low- and Middle-Income Countries: Global Alliance on Health and Pollution

EC Project number: DCI-ENV/2015/371157
UNIDO Project number: 150416

JANUARY 2019

Contents

I. Project background and context

Project factsheet

Project title	Mitigating Toxic Health Exposures in Low- and Middle-Income Countries: Global Alliance on Health and Pollution
UNIDO project No. and/or ID	Project No. 150416
Region	Global
Countries	• Azerbaijan • Bangladesh • Bolivia • Brazil • Colombia, HPAP country • Ghana, HPAP country • India • Indonesia • Kenya • Kyrgyzstan, HPAP country • Mongolia • Philippines, HPAP country • Senegal • Tajikistan • United Republic of Tanzania (mainland), HPAP country
Planned implementation start date	February 2016
Planned implementation end date	31 December 2018
Actual implementation start date	February 2016
Actual implementation end date	30 June 2019
Executing partner	Pure Earth
Donor	European Union/ EC DEVCO
Total project allotment (in EUR)	5,000,000, inclusive of UNIDO SC (net: 4,672,897.19)
Total co-financing at design (in EUR)	Cash: 1,248,456 (Pure Earth)
Materialized co-financing at project completion	Cash: 1,248,456 (to be confirmed) In-kind: to be estimated
Mid-term review date	01.01.2018 - 31.03.2018

(Source: Project document and UNIDO ERP)[3]

[3] Project information data throughout these TOR are to be verified during the inception phase.

2. Project context

Pollution is one of the most threatening causes for disease and premature deaths worldwide. It is observed that Low- and Middle-Income Countries (LMICs), notably least developed countries (LDCs) are the most affected countries from pollution-related diseases.

Since 2009, the European Commission—including through UNIDO[4], along with the World Bank, Asian Development Bank and other donors, have invested significant resources into improving knowledge about the scope and extent of toxic pollution in low- and middle-income countries, the prior extent of which was largely unknown. One result of this investment is the Toxic Sites Identification Program (TSIP), a unique effort to identify and assess contaminated sites executed by Blacksmith Institute/Pure Earth and the United Nations Industrial Development Organization (UNIDO). Based in part on the TSIP, researchers now estimate that toxic chemicals from industry, mining and agriculture may affect the health of as many as 200 million people worldwide. Data collection efforts have been carried out in nearly 50 countries with thousands of sites having been investigated. Key pollutants include heavy metals, pesticides, solvents, radionuclides and other toxic substances that exist at dangerous levels in drinking water, soil, air and food.

This project aims to demonstrate to governments and communities heavily impacted by pollution in LMICs, especially LDCs, *to how to take cost-effective and locally-led action to improve the health of those communities by breaking pollution exposure pathways and preventing future toxic emissions.* It also aims to strengthen the Global Alliance on Health and Pollution's (GAHP) ability to influence and enable international, regional and national decision-makers to take concrete action to address the impacts of pollution on the environment, natural resources (land, water and air) and public health. By particularly raising international level awareness of the health impacts of pollution, it expects to secure long-lasting results for affected poor and marginalized populations through mitigating, preventing and reducing exposures to pollution, and building the capacity of civil society/non state actors and government agencies to take concrete action. The project also places emphasis on implementing successful cost-effective models that have significant replication potential to a variety of pollution problems.

Accordingly, the project is expected to contribute to: "*Improved health and environmental conditions of communities exposed to toxic pollution*" (the development objective/goal).

The project also supports the objective of EU's Development policy for poverty eradication in the context of sustainable development and the EU initiatives aimed at the attainment of the 2030 Agenda for Sustainable Development with respect to the targets associated with pollution, hazardous chemicals and waste. This project coordinates with the Regulation (EU) No 233/2014 with the regard to the "Global Public Goods and Challenges" programme under the "Environment and climate change" area; section 1(c) L 77/67.

The project's scope of work falls within UNIDO's mission and focus of its support programmes. Since the mid-1990s, UNIDO have been involved in projects related to Persistent Organic Pollutants (POPs) and other chemical pollutants regulated by Stockholm Convention. Recently, with the Minamata Convention on Mercury having entered into force, UNIDO plays an important role in assisting developing countries to comply with the Convention. The objective of the Minamata Convention on Mercury is to protect human health and environment from anthropogenic emissions and releases of mercury and mercury compounds. The information and data collected from Toxic Site Identification

[4] DCI **ENV2008**.149772 TPS 1st EC funded UNIDO project and DCI **ENV2011**.261448 TPS 2nd EC funded UNIDO project

Program (TSIP) show that many sites were contaminated by pesticides and mercury (among other pollutants such as Lead, Arsenic, etc.).

LMICs need support in both technical expertise/guidance and finance to cope with toxic pollution, especially, at the site level. Thus, the project places emphasis on implementing successful and cost-effective models that have significant replication potential for a variety of pollution problems through pilots.

The majority of project activities are executed by the Blacksmith Institute/Pure Earth, hereinafter referred to as PE, (Euro 3.99+ million), under UNIDO's overall supervision[5]. UNIDO, plays a more significant role in the processes that involve the formulation of 5 Health and Pollution Action Plans (HPAPs) in collaboration with PE and the overall management and oversight of the project.

The project document foresees regular monitoring and the current terminal evaluation: along these lines, an independent mid-term review (MTR) was carried out in January - March 2018 (MTR report, March 2018), a Result-Oriented Monitoring (ROM) was done by EC in the same period.

Project implementation started in February 2016 and the initial project end date was in December 2018. The donor approved a 6-month no-cost extension on 29.11.2018 in order to implement the recommendations of MTR and ROM. Accordingly, actual implementation end date is 30 June 2019.

3. Project objective

This project aims to demonstrate to governments and communities heavily impacted by pollution in low- and middle-income countries, especially least developed countries (LDCs), take locally-led, cost-effective action to improve the health and livelihood of those communities by breaking pollution exposure pathways and preventing future toxic emissions. As such it contributes to the implementation of the recently adopted 2030 Sustainable Development Agenda and in particular Target 3.9 of the Good Health and Well-being SDG (3) as well as Target 12.4 of the Sustainable Consumption and Production SDG (12) and SDG 9: Resilient infrastructure, Inclusive and Sustainable Industrialization and Innovation. In short, the overall objective of the project is to contribute to the improved health and environmental conditions of communities exposed to toxic pollution.

The stated objectives of the project (see LogFrame) are:

Impact:

Improved health and environmental conditions of communities exposed to toxic pollution

Purpose/Objective

Toxic health exposures in the low- and middle-income countries is mitigated in support to the transformation towards an inclusive and green economy which generates safer, healthier and cleaner environment for the most vulnerable population.

The project aims to produce 4 main outputs within a three-and-a-half year (including a six month no-cost extension) implementation period to achieve the outcome of toxic health exposures in LMIC being mitigated:

[5] In the previous project (UNIDO Project ID: 100340/EC project ID: DCI-ENV/2011/261448/TPS) Blacksmith Institute has executed the whole project, with UNIDO having an oversight/reviewer role.

1. Awareness of international organizations, donor agencies and national governments about toxic pollution and its associated impacts on human health, environment and resources is improved;
2. National capacity is strengthened to both analyze the problem of toxic pollution, and design and implement market-, industry- and society-led programmes to mitigate its impacts;
3. Market-led and industry-led remediation solutions at site level are demonstrated as success stories; and
4. GAHP's relevance, added value and potential regarding prevention and mitigation of toxic pollution are independently assessed.

Detailed targets for each output and activity are provided in the logical framework revised by the project Steering Committee (Annex 1).

4. Project implementation arrangements

UNIDO is the implementing agency vis-à-vis the EC, with PE being the project's main executing partner through a UNIDO contract for the majority of project activities for the production of the envisaged outputs. UNIDO has been in charge of overall project management including reporting to EC; had a key role in supporting the development of HPAPs; and Monitoring and Evaluation (M&E) of all project activities.

PE, on the other hand, is the main executor responsible for conducting activities related to awareness raising; collaborating with UNIDO; designing and implementing TSIP as well as the country level pilot projects and supporting the Global Alliance on Health and Pollution (GAHP) as its Secretariat.

The specific roles and responsibilities of UNIDO and PE were determined in the project document by project outputs and activities, as follows:

1. **Output 1**
    - **PE:** Working on the awareness-raising at the international level and of national governments about toxic pollution and its associated impacts on human health and environment which included: refining and sharing TSIP data, providing information, capacity building and technical advice to NGOs/non-state actors, raising international awareness about the scope of toxic pollution.

      More specifically, PE's deliverables included:

        - At least 3 research papers published in peer-reviewed journals
        - Data sharing and discussions held with relevant national government agencies in at least 15 countries over the three- year period of implementation
        - At least 5 NGOs/non-state actors received information and technical advice on how to mainstream toxic pollution into their respective strategies
        - At least 2 GAHP publications/reports created
        - At least 5 agencies maintain on-going dialogue with GAHP
        - At least 5 meetings per year held with donors/agencies
        - At least 3 presentations at international meetings to publicize GAPH,

pollution impacts and associated global burden of disease per year

- UNIDO: monitoring results achieved by PE and using its own platforms to contribute to awareness raising.

2. **Output 2**

- **PE**: Strengthening national capacity activities based on conducting TSIP training, TSIP expansion activities, supporting for development of national Health and Pollution Action Plan (HPAP).

  More specifically, PE's deliverables included:

  - TSIP efforts expanded to include at least 15 countries with active hotspot identification and assessment programmes
  - At least 5 TSIP investigator-training sessions are conducted, keeping gender balance, (to the extent possible)
  - At least 50 new investigators are trained
  - At least 150 sites screened per year (450 total) and integrated into the existing TSIP database and inventories from NIPs, NAPs and MIAs

- **UNIDO:** supporting 5 selected countries to develop HPAPs, in collaboration with the Ministries of Environment and Health, and monitoring results achieved by PE.

3. **Output 3**

- **PE**: Conducting site level demonstration (pilot) projects in LMIC to break exposure pathways and preventing future toxic emissions.

  More specifically, PE's deliverables included:

  - At least 5 sites selected
  - At least 5 site stakeholder groups convened
  - At least 5 in-depth site reviews conducted
  - At least five new prevention, clean up or other intervention projects are designed in collaboration with local stakeholders and with GAHP support
  - At least 5 site intervention action plans drafted
  - At least five new prevention, clean up or other intervention projects are completed
  - Toxic emissions are reduced, and health and environmental impacts are mitigated at project sites (with measurably reduced levels of health risk and contamination)
  - At least 3 technical guidance documents/tools (detailing good practices and lessons from previous site interventions) are produced on toxic pollution and shared with civil society and government stakeholders

- **UNIDO:** monitoring results achieved by PE.

4. **Output 4**

- **PE**: Taking necessary actions to establish GAHP as a legal entity.

  More specifically, PE's deliverables included:

  - At least five new members (government agencies, NGO/non-state actor organizations) from LMIC or private sector companies join GAHP
  - At least 2 donors pledge future support to health and pollution agenda as a result of GAHP's efforts

- **UNIDO:** Carrying out an independent assessment on GAHP's relevance and functionality and actively participating in the Executive Committee of GAHP.

5. Main findings on project progress

As of January 2019, the project has contributed to the landmark **Lancet report** on the health and economic impacts of pollution globally, as well as to 16 other peer-reviewed publications instead of the planned 3; implemented 11 pilot projects instead the planned 5; identified and screened 700 sites instead of the planned 450; and is supporting the preparation of HPAPs in 7 countries instead of the planned 5.

In addition, the following main findings on the project progress were observed by the Mid-term review (MTR-UNIDO) and the Result-Oriented Monitoring (ROM-EC). They are presented by categories: Relevance, Efficiency, Effectiveness and Sustainability.

1. ***Relevance:***

   This is a complex global project which is covering many countries; has two implementing partners and different donors funding different components (e.g. USAID funding secured by PE and contributed towards the project as co-financing). Generally, the project is found highly relevant in that it is dealing with a very important thematic area/problem: toxic pollution and its health, environmental and ensuing socio-economic impacts; playing a catalytic role by raising awareness on the scale of the problem at the international level through research using evidence from data generated at the country level; seeking to mobilize interest and funding to address the problem; and combining direct support (site assessments; pilot clean-ups) and capacity building at country level.

   Some weaknesses were identified by both ROM and MTR. For instance, the project was built on the previous phases with a focus on scaling-up activities, including pilot projects for breaking exposure pathways at contaminated sites and preventing future toxic emissions. However, the number of pilot projects planned (at least 5 pilots) is small for ensuring a critical mass of different solutions are demonstrated. The HPAP covers all types of pollution, but it is complex to develop as it requires more stakeholders and coordination with existing mechanisms. Because of its complexity, the overall design has not been translated to specific designs at country level.

2. ***Efficiency:***

   The efficiency was assessed with respect to budget allocation, counterpart funding, quality and timeline of implementation and additional funding attracted.

   Some strong points were that payments were made according to schedule; there were no significant delays, except in starting HPAP processes that are related to "policy",

for which a six-month no-cost extension was proposed; and complementary funding mobilized was remarkable.

Regarding the complementary funding secured, PE secured funding from USAID (the project funded by USAID was almost identical with this project and these funds were contributed towards the activities of this project as PE sourced co-financing); the World Bank (supporting the improvement of the Initial Site Screening (ISS) protocol under its Pollution Management and Environmental Health/PMEH programme; upgrading of the database and TSIP expansion), the Alcoa Foundation and EC Delegations for clean-up projects at country level. However, this led to the reporting issues from PE on "who funds what", especially when different donors contributed to similar work. In other words, the reporting was found confusing and hampered the appropriate assessment of cost-efficiency.

3. ***Effectiveness:***

   The effectiveness of the project, as seen from both ROM and MTR report, is evaluated by outputs. Overall, large outreach of awareness particularly at the global level; large number of trained investigators; large TSIP database; HPAP processes at the policy level hence with better prospects with respect to sustainability and up-scaling; amount of additional funds mobilized by PE; guidelines developed; and a number of completed pilot projects have been achieved.

   While many results have been well obtained, some points regarding effectiveness were raised. MTR reviewer pointed out that the formal meetings to share and discuss the TSIP results with relevant government agencies were pushed forward rather than done during/immediately after site screenings. And, the country reports which will be submitted by the end of the project might slowdown the awareness building, capacity building and upscaling. The TSIP database showed a large number of sites in the "need more information" category. There were significant overlaps between GAHP and PE activities. Concerns were raised on whether HPAP activities could be completed by the end of the project cycle due to the necessity of engaging large number of stakeholders at country levels.

4. ***Sustainability:***

   From the reviewers' point of view, the project was considered as having good sustainability prospects, particularly in HPAP countries where this work would have engaged policymakers at the policy level, further use project results and come up with new project concepts for upscaling, offering prospects for sustainability; due to already increased interest in availability of additional funding for continuation of similar project activities; and opportunities for using successful results of pilot projects in further international advocacy efforts and good practice guidelines. Other aspects reviewers pointed out were that the project does not have an explicit phasing out/exit strategy (except for HPAP work including project concepts for upscaling and future sustainability). Reviews mentioned that sustainability prospects relied mostly on PE and at the level of global advocacy on health impacts of pollution, since the involvement of national stakeholders is varied across countries.

Further details can be obtained from the MTR report (March 2018) and ROM report (March 2018).

6. Budget information

Table 1. Financing plan summary

Description	**Project** (in EUR)
Co-financing[6] (in cash)	1,248,456
Financing (EC)	5,000,000
Total ($)	**6,248,456**

Source: Project document

Table 2. Financing plan summary – project component breakdown

Project outputs	**Donor** (in EUR)	**Co-financing** (in EUR)	**Total** (in EUR)
1. Raising Awareness	556,793	238,845	795,638
2. Building National Capacity	1,560,896	271,931	1,832,827
3. Site projects	2,311,673	470,068	2,781,741
4. GAHP Assessment and promotion	243,428	267,612	511,040
5. Indirect costs (7%)-UNIDO Support Costs	327,210	-	327,210
Total (in EUR)	**5,000,000**	**1,248,456**	**6,248,456**

Source: Project document

Table 3. Summary of UNIDO budget execution[7] (Grant No.: 2000003318)

ID	150416	2016	2017	2018	2019	Total Expenditures
1100	Staff & Intern Consultants	-	57,518.49	125,972.87	49,161.20	232,652.56
1500	Local travel	-	1,235.85	22,085.20	-	23,321.05
1600	Staff Travel	17,710.16	7,331.58	17,218.88	(1.08)	42,259.54
1700	Nat.Consult./Staff	-	-	114,837.33	33,702.19	148,539.52
2100	Contractual Services*	1,430,038.78	1,471,385.94	894,840.50	-	3,796,265.22
3000	Train/Fellowship/Study	-	-	43,586.27	3,376.46	46,962.73
5100	Other Direct Costs	-	-	4,855.61	-	4,855.61
Result		1,447,748.94	1,537,471.86	1,223,396.66	86,238.77	4,294,856.23
*UNIDO payments to PE						

Source: UNIDO. ERP database as of 9 January 2019

[6] Co-financing types are grant, soft loan, hard loan, guarantee, in kind, or cash.
[7] Disbursement: Expenditure, incl. commitment

II. Scope and purpose of the evaluation

The purpose of the evaluation is to independently assess the project to help UNIDO improve performance and results of ongoing and future programmes and projects. The terminal evaluation (TE) will cover the whole duration of the project from its starting date in to the estimated completion date in

The evaluation has two specific objectives:

(i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability and progress to impact; and

(ii) Develop a series of findings, **lessons** and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

III. Evaluation approach and methodology

The TE will be conducted in accordance with the UNIDO Evaluation Policy[8] UNEG Norms and Standards for evaluation and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle[9].

The evaluation will be carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the evaluation. The evaluation team leader will liaise with the UNIDO Independent Evaluation Division on the conduct of the evaluation and methodological issues.

In line with its objectives, the evaluation will have two main components. The first component focuses on an overall **assessment of performance** of the project, whereas the second one focuses on the **learning** from the successful and unsuccessful practices in project design and implementation.

The evaluation will use a theory of change approach and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change constructed by TE will identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, and drivers as well as barriers to achieve them. The learning from this analysis will be useful to feed into the design of the future projects so that the management team can effectively manage them based on results.

In those cases where baseline information for relevant indicators is not available, the evaluation team will aim at establishing a proxy-baseline through recall and secondary information.

1. Data collection methods

Following are the main instruments for data collection:

[8] UNIDO. (2018). Director General's Bulletin: Evaluation Policy (DGB/2018/08, dated 1 June 2018)
[9] UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

(a) **Desk and literature review** of documents related to the project, including but not limited to:

- The original project document, monitoring reports such as progress and financial reports, MTR, ROM report, end-of-contract report(s), country reports, publications produced by the project and as relevant, correspondence.
- Notes from meetings of committees involved in the project.

(b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussions as relevant. Key stakeholders to be interviewed include:

- UNIDO Management and staff involved in the project; and
- Representatives of donors, executing and other partners.

(c) **Field visits** to:

- Vienna HQ: two times; once during inception and once during report preparation/finalization
- Brussels: to interview EC Project Manager and team
- New York City: to interview PE staff
- One country in each of the continents the project worked in and which have not been visited before on the occasion of the MTR or ROM; namely, Colombia, Ghana and the Philippines

Field visits will focus on:

- On-site observation of results achieved by the project, including interviews of beneficiaries
- Interviews with the relevant UNIDO Country Office representatives to the extent that he/she was involved in the project, and the various national [and sub-regional] authorities, NGOs and other stakeholders dealing with project activities as necessary.

2. Key evaluation questions and criteria

The key evaluation questions are the following:

(a) What are the key drivers and barriers to achieve the long term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long term objectives?

(b) How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money?

(c) What have been the project's key results (outputs, outcomes and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent the achieved results will sustain after the completion of the project?

(d) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?

The evaluation will assess the likelihood of sustainability of the project results after the project completion. The assessment will identify key risks (e.g. in terms of financial, socio-

political, institutional and environmental risks) and explain how these risks may affect the continuation of results after the project ends. **Error! Reference source not found.** 4 below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2.

Table 4. Project rating criteria

#	Evaluation criteria	Mandatory rating
A	**Impact**	**Yes**
B	**Project design**	**Yes**
1	• Overall design	Yes
2	• Logframe	Yes
C	**Project performance**	**Yes**
1	• Relevance	Yes
2	• Effectiveness	Yes
3	• Efficiency	Yes
4	• Sustainability of benefits	Yes
D	**Cross-cutting performance criteria**	
1	• Gender mainstreaming	Yes
2	• M&E: ✓ M&E design ✓ M&E implementation	Yes
3	• Results-based Management (RBM)	Yes
E	**Performance of partners**	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Donor	Yes
F	**Overall assessment**	Yes

Performance of partners

The assessment of performance of partners will ***include*** the extent to which the partner delivered effectively and efficiently, with focus on elements that were controllable from its perspective and how well the related risks were identified and managed by the partner as well as the quality of execution in discharging its expected roles and responsibilities (e.g. appropriate use of funds, procurement and contracting of goods and services).

3. Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Division uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory).

Table 5. Project rating criteria

Score		Definition	Category
6	Highly satisfactory	Level of achievement clearly exceeds expectations and there is no shortcoming.	SATISFACTORY
5	Satisfactory	Level of achievement meets expectations (indicatively, over 80-95 per cent) and there is no or minor shortcoming.	

Score		Definition	Category
4	Moderately satisfactory	Level of achievement more or less meets expectations (indicatively, 60 to 80 per cent) and there are some shortcomings.	
3	Moderately unsatisfactory	Level of achievement is somewhat lower than expected (indicatively, less than 60 per cent) and there are significant shortcomings.	UNSATISFACTORY
2	Unsatisfactory	Level of achievement is substantially lower than expected and there are major shortcomings.	
1	Highly unsatisfactory	Level of achievement is negligible and there are severe shortcomings.	

IV. Evaluation process

The evaluation will be conducted from January to April 2019 (ending as soon as possible in April). The evaluation will be implemented in phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

i. Inception phase: The evaluation team will prepare the inception report providing details on the methodology for the evaluation and include an evaluation matrix with specific issues for the evaluation; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
ii. Desk review and data analysis;
iii. Interviews, survey and literature review;
iv. Country visits;
v. Data analysis and report writing.

Table 6. Tentative timelines

Timelines*	Tasks
15-31 January 2019	Desk review and writing of inception report
1st week of February -March	Briefing with UNIDO project manager and the project team based in Vienna
	Field visits to Brussels, NYC, Colombia, Ghana and the Philippines
Early 1st week of March 2019 End 3rd week of March 2019	Debriefing in Vienna on preliminary findings of the evaluation Submission of first draft evaluation report
1st week of April 2019	Internal peer review of the report by UNIDO's Independent Evaluation Division and other stakeholder comments to draft evaluation report
2nd week of April 2019	Final evaluation report

*To be finalized upon completion of contracting of ET.

V. Evaluation team composition

A staff from the UNIDO Independent Evaluation Division will be assigned as Evaluation Manager and will coordinate and provide evaluation backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager, PE staff and national project teams, if any, in countries visited will act as resource persons and provide support to the evaluation team and the IED evaluation manager.

The evaluation team will be composed of one international evaluation consultant (IEC) acting as the team leader and one international consultant who is a specialist in environment issues, particularly pollution (hereinafter called international environment expert-IEE). The evaluation team members will possess relevant strong experience and skills on evaluation and evaluation management, including gender. The evaluation consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions in annex 3 to these terms of reference.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

VI. Time schedule

The evaluation is scheduled to take place from January to April 2019.
The evaluation field missions are tentatively planned for February 2019.
The Draft Evaluation report will be submitted 2 weeks after the HQ debriefing to present preliminary findings.
The Final Evaluation report will be submitted 2 weeks after comments received.

VII. Evaluation deliverables

Inception report

This Terms of Reference (TOR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the International Evaluation Consultant (IEC)/Team Leader will prepare a short inception report that will operationalize the TOR in relation to the detailed evaluation questions and provide information on what types of and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager.

The Inception Report will focus on the following elements: preliminary project theory of change model; elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the International Evaluation Consultant/Team Leader (IEC) and the International Environment Expert (IEE); mission plan—to be drawn in collaboration with the UNIDO Project Manager, including locations to be visited in beneficiary countries, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable[10].

Evaluation report and review procedures

The draft report will be delivered to UNIDO Independent Evaluation Division (the suggested report outline is in annex 4) and circulated to UNIDO staff and other stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO Independent Evaluation Division for collation and onward transmission to the

[10] The evaluator will be provided with a Guide on how to prepare an evaluation inception report and a Guide on how to formulate lessons learned (including quality checklist) prepared by the UNIDO Independent Evaluation Division.

project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The ET will present its preliminary findings at UNIDO HQ after the field missions.

The TE report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations on lessons should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 4. The ET should submit the final version of the TE report in accordance with UNIDO Independent Evaluation Division standards.

VIII. Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Division. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Division, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as annex 5. UNIDO's Independent Evaluation Division should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (lessons learned and recommendations for future global projects) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Division, which will issue and circulate it within UNIDO together with a management response sheet, as well as submit to relevant stakeholders as required.

Annex 1: Project results framework

Revised Logical Framework

The review requested by the Steering Committee of the logical framework was conducted by comparing the detailed project description (p. 19-32) in Annex I of the European Delegation Agreement DCI-ENV/2015/371157 with the Logical Framework of the Project (p.49-55) also contained in the same Annex.

Methodologically, European Commission's "Aid Delivery Methods, Volume 1, Project Cycle Management Guidelines", March 2004 is referenced for this review, specifically Figure 24 copied from page 73 of the same, as the review aimed to incorporate minor revisions, including on the logframe jargon.

Objectives	Indicators (By end of project unless otherwise stated)	Data Sources	Assumptions/Risks
~~Impact /~~Overall Objective/Goal			
Improved health and environmental conditions of communities exposed to toxic pollution	~~At least 50% of pilot site members attribute their livelihood improvement to the site projects.~~ ~~Further indicators will be defined in the inception report.~~ Indicator above is not relevant for the stated overall objective; new indicators below are suggested: - Total population, in communities with polluted sites, exposed to toxicity, by toxic substance and other relevant parameters - Toxic exposure mitigated	- Global Burden of Disease reports - Data provided by low- and middle-income countries (LMICs) working with this project - Project reports	~~- Communities are willing to change their behavior to revert unsafe livelihood practices.~~ - ~~Benefits of the project accrue to the vulnerable at community and household levels.~~ At the overall objective level, a logical framework does not state any assumptions/risks—see EC table above—hence this box should be empty. Assumptions/risks that may influence the achievement of the overall objective, if they materialize, are stated at the

Objectives	Indicators (By end of project unless otherwise stated)	Data Sources	Assumptions/Risks
	through the project by type of toxic substances and population exposed - Amount of funds pledged for mitigation of toxic pollution in targeted countries by entities with some traceable association to this project		level below (purpose/outcome)
Purpose~~/Objective~~/Outcome			
Toxic health exposures in the Low- and Middle-Income countries are mitigated ~~in support to the transformation towards an inclusive and green economy which generates safer, healthier and cleaner environment for the most vulnerable population~~, editorial deletion is made to bring the wording in line with project description	- At least three new donor, international agencies or institutions, ~~and~~ or LMICs include pollution in their programs ~~- Increased number of entities compared to the current status, discussing or pledging financial support for pollution related activities.~~ Indicator is eliminated due to the difficulty of measurement: a broad baseline of donor and international health and pollution actors and their areas of assistance/intervention have been established through the GAHP assessment report, however, a more extensive and on-going updating of these actors' intervention plans and budgets throughout the project cycle is are out of	- List of donor agencies and their respective aid programs. - List of project assisted LMICs and ministries engaging on dialogue about pollution. - Data provided by LMICs working with this project. - GAPH Steering Committee decisions and minutes ~~- GAHP' s Incorporation documents (bylaws, statutes).~~ - ~~GAHP financial reports.~~	- High-level officials participate in meetings organized by the project - The political will to prioritize pollution persists

Objectives	Indicators (By end of project unless otherwise stated)	Data Sources	Assumptions/Risks
	the scope. A national level indicator is already provided. - At least 5 new LMICs request~~ing~~ and receive support - GAHP is strengthened to lead LMIC toxic exposure mitigation efforts with measures towards further institutionalization		
~~Expected outcomes~~/Results/Outputs			
1. Awareness of international organizations, donor agencies and national governments about toxic pollution and its associated impacts on human health, environment and resources is improved	- At least 5 additional members in GAHP as compared to the current status - At least 5 GAHP members recognizing the need to undertake ~~NTAP~~ HPAP (Health and Pollution Action Plans—as per GAHP decision) - At least 50% GAHP members recognize TSIP as ~~an approved~~ a cost-effective process for data on contaminated sites ~~and NIPs inventories as a supporting tool in this respect~~. (Deletion made to distinguish between the TSIP and NIPs, MIAs, NAPs and related inventories that are prepared as per approved processes under international conventions)	- Drafts of international/national strategies, reports or other major international publications - Data provided by LMICs working with this project	- Current attention on toxic pollution continues and is strengthened - Government agencies are cooperative - Data is compelling and motivates governments to act
2. National capacity is strengthened to both analyze the problem of toxic pollution, and design and implement market-, industry- and society-led	- Active toxic sites identification programs (TSIP) established in at least 5 new LMICs,	- Drafts of international/national strategies, reports or other	- Governments ~~can~~ are willing and able to launch national initiatives and

Objectives	Indicators (By end of project unless otherwise stated)	Data Sources	Assumptions/Risks
programmes to mitigate its impacts (~~NTAP~~ HPAP)	- At least 5 new LMICs have concluded ~~NTAP~~ HPAP processes	major international publications - Data provided by LMICs working with this project	prioritize sites and sectors of intervention - Qualified investigators are available to conduct reliable site assessments - Governments are cooperative
3. Market-led and industry-led remediation solutions at site level are demonstrated as success stories	- Results of site projects are shared and publicized among GAHP members - At least 50% GAHP members recognize the effectiveness and cost-efficiency ("development return") of market-led and industry-led remediation solutions	- GAHP reports - Interviews	- Site interventions and remediation projects are successful - GAHP members continue to cooperate to provide technical assistance for creation of guidance documents
4. GAHP's relevance, added value and potential regarding prevention and mitigation of toxic pollution are independently assessed	- ~~Assessment completed.~~ - Discussions among GAHP members on the convenience to strengthen the capacity of GAHP as (a) cost effective and independent organization, as a consequence of the assessment	- GAHP reports on strategies and work plan	There is consensus among GAHP members for strengthening GAHP' s action capacity

Activities[11]	Targets	Sources of information	Assumptions/Preconditions
1.1. Refine TSIP data, complementing it with inventories from NIPs, NAPs and MIAs, and use it for research and analysis on the scope of toxic pollution, and associated health, environmental and economic impacts	- At least 3 research papers are drafted and submitted for publication in peer-reviewed journals, and subsequently disseminated	- Article drafts; Copies of publications.	Data is clean and has been reviewed for quality and consistency
1.2. Share national data from TSIP, NIPs, NAPs and MIAs, with relevant government agencies in countries where TSIP and NIP is active	- Data sharing and discussions with relevant national government agencies are carried out in at least 15 ~~active TSIP~~ countries over the three-year period of implementation	- Meeting minutes and participant lists	Governments are receptive to data and interested and willing to address pollution problems
1.3. Provide information and technical advice to NGOs/ ~~and/or~~ non-state actors to promote mainstreaming of pollution nationally	- At least 5 NGOs/non-state actors receive information and technical advice on how to mainstream toxic pollution into their respective strategies	~~- Signed agreements/contracts with NGOs~~ - List of NGOs advised - NGO progress reports	NGOs/non-state actors are receptive to data and interested and willing to address pollution problems
1.4. Work with key partners in relevant agencies to raise international awareness about the scope of toxic pollution including organizing meetings, discussions with senior officials, and the provision of publications	- At least 2 GAHP publications/reports are created - At least 5 agencies maintain on-going dialogue with ~~whom~~ GAHP ~~has on-going dialogue~~ - At least 5 meetings per year are held with donors/agencies	- Drafts of summary reports - Progress reports	- Contact has been established with relevant agencies - Donors/agencies are cooperative
1.5. Identify relevant international events, work with organizers to shape the agenda, and prepare and present targeted presentations to publicize GAHP, pollution impacts, and associated global burden of disease as well as gender related aspects	- At least ~~5~~ 3 presentations at international meetings to publicize GAPH, pollution impacts and associated global burden of disease per year	- Progress reports, copies of presentations	GAHP presentations are relevant to be included at international events
2.1. Conduct TSIP investigator trainings and support national agencies to establish and expand TSIP activities, exploring synergies with inventories from NIPs, NAPs and MIAs.	- TSIP efforts expanded to include at least 15 countries with active hotspot identification and assessment programmes.	- Online database - Regional training	- Permission to work in certain countries may be required by some governments, but

[11] Although activities are an optional element of a logical framework, they have been detailed as part of it, including with targets (See Section V: Project description)

Activities[11]	Targets	Sources of information	Assumptions/Preconditions
	- At least 5 TSIP~~/NIPs/NAPs/MIAs~~ investigator-training sessions are conducted, keeping gender balance, (to the extent possible) - At least 50 new investigators are trained	attendance - Progress and monitoring reports	otherwise there are no specific conditions that must be met prior to commencing work - TSIP training protocols are well tested and infrastructure in place
2.2. Support national teams to identify and screen new sites and integrate the data into the existing TSIP database inventories from NIPs, NAPs and MIAs	- At least 150 sites screened per year (450 total) and integrated into the existing TSIP database and inventories from NIPs, NAPs and MIAs	- Online database - Progress reports	National teams have capacity to implement TSIP protocols
2.3. Assist decision-makers to either continue or prepare a ~~NTAP~~ HPAP, on the basis of TSIP, NIPs, NAPs and MIAs, if applicable	- At least 5 technical review workshops held ~~review per year~~ - A national ~~agency~~ team for the collection of data and information on toxic pollution is established in each country (Revision made from Agency to Team to make the target reasonable, since decisions to establish Agencies is not under the control of the project) - Needs related to internal capacity are assessed - Priority areas are identified - A plan for dealing with priority areas is defined - Technical mechanisms and needs for implementation are defined	- Workshop results - Meeting minutes - Drafts of plans	Governments are willing and able to prepare HPAPs, through an inter-ministerial and multi-stakeholder process
3.1. Select project sites for intervention.	- At least 5 sites selected ~~to reduce impacts of toxic pollution~~	- Sample results - Progress reports	- Technical experts are available - Governments willing to accept technical expertise
3.2. Organize and convene Stakeholder Groups at each selected site	- At least 5 site stakeholder groups convened	- Progress and monitoring reports	Stakeholders are willing to attend meetings

Activities[11]	Targets	Sources of information	Assumptions/Preconditions
		- Stakeholder meeting minutes	
3.3. Conduct in-depth site reviews	- At least 5 in-depth site reviews conducted	- Progress and monitoring reports	Technical experts are available
3.4. Provide technical and financial assistance to design at least five prevention, clean up, or other intervention projects in collaboration with GAHP and local stakeholders	- At least five new prevention, clean up or other intervention projects are designed in collaboration with local stakeholders and with GAHP support - At least 5 site intervention action plans drafted	- Progress and monitoring reports	Technical experts are available
3.5. Assist local stakeholders to implement site projects, including training and capacity building activities	- At least five new prevention, clean up or other intervention projects are completed	- Progress and monitoring reports	Technical experts are available; local stakeholder capacity sufficient
3.6. Design performance-based metrics for site projects and conduct follow up monitoring and evaluation at the selected sites	- Toxic emissions are reduced and health and environmental impacts are mitigated at project sites (with measurably reduced levels of health risk and contamination)	- Progress and monitoring reports	Pilot site projects are implemented to completion
3.7. Collect data and results, and extract lessons learned; create and disseminate technical guidance documents/tools on toxic pollution	- At least 3 technical guidance documents/tools (detailing good practices and lessons from previous site interventions) are produced on toxic pollution and shared with civil society and government stakeholders	- Progress and monitoring reports	Technical experts are available
4.1. Carry out an independent assessment on GAHP's relevance, added value and potential regarding prevention and mitigation of toxic pollution.	- Completed by M18	- Progress and monitoring reports	No preconditions are foreseen~~, as these are ongoing activities~~
4.2. Promote support for an independent GAHP and expand dialogue with interested/potential members to grow GAHP membership	- At least five new members (government agencies, NGO/non state actor organizations) from LMIC or private sector companies join GAHP -At least 2 donors pledge future support to	- Progress and monitoring reports	Legal/incorporation documents must be drafted, approved by GAHP members and submitted for approval by

Activities[11]	Targets	Sources of information	Assumptions/Preconditions
	health and pollution agenda as a result of GAHP's efforts		country where incorporation is to take place

Annex 2: Detailed evaluation questions

See Annex 2 of the UNIDO Evaluation Manual

Annex 3: Job descriptions

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International evaluation consultant/ team leader (IEC)
Main Duty Station and Location:	Home-based
Missions:	Inception/briefing mission to Vienna, Austria, other missions to be determined during inception period
Start of Contract (EOD):	[dd/mm/yyyy]
End of Contract (COB):	[dd/mm/yyyy]
Number of Working Days:	35 work-days spread over 3 months

ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Division (ODG/EIO/IED) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. ODG/EIO/IED is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

PROJECT CONTEXT

Pollution is one of the most threatening causes for disease and premature deaths worldwide. It is observed that Low- and Middle-Income Countries (LMICs), notably least developed countries (LDCs) are the most affected countries from pollution-related diseases.

Since 2009, the European Commission—including through UNIDO[12], along with the World Bank, Asian Development Bank and other donors, have invested significant resources into improving knowledge about the scope and extent of toxic pollution in low- and middle-income countries, the prior extent of which was largely unknown. One result of this investment is the Toxic Sites Identification Program (TSIP), a unique effort to identify and assess contaminated sites executed by Blacksmith Institute/Pure Earth and the United Nations Industrial Development Organization (UNIDO). Based in part on the TSIP, researchers now estimate that toxic chemicals from industry, mining and agriculture may affect the health of as many as 200 million people worldwide. Data collection efforts have been carried out in nearly 50 countries

[12] DCI **ENV2008**.149772 TPS 1st EC funded UNIDO project and DCI **ENV2011**.261448 TPS 2nd EC funded UNIDO project

with thousands of sites having been investigated. Key pollutants include heavy metals, pesticides, solvents, radionuclides and other toxic substances that exist at dangerous levels in drinking water, soil, air and food.

The current project aims to demonstrate to governments and communities heavily impacted by pollution in LMICs, especially LDCs, *to how to take cost-effective and locally-led action to improve the health of those communities by breaking pollution exposure pathways and preventing future toxic emissions.* It also aims to strengthen the Global Alliance on Health and Pollution's (GAHP) ability to influence and enable international, regional and national decision-makers to take concrete action to address the impacts of pollution on the environment, natural resources (land, water and air) and public health. By particularly raising international level awareness of the health impacts of pollution, it expects to secure long-lasting results for affected poor and marginalized populations through mitigating, preventing and reducing exposures to pollution, and building the capacity of civil society/non state actors and government agencies to take concrete action. The project also places emphasis on implementing successful cost-effective models that have significant replication potential to a variety of pollution problems.

The international evaluation consultant/team leader (IEC), working in collaboration with the international environment expert (IEE) will evaluate the project in accordance with the evaluation-related terms of reference (TOR). He/she will perform, inter alia, the following main tasks:

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
1. Prepare an evaluation plan, including draft list of stakeholders to be interviewed, division of task between IEC and IEE, design the evaluation questions, determine key data to collect in the field and adjust the key data collection instruments accordingly (if needed) based a desk review of project documentation	Division of evaluation tasks An adjusted table of evaluation questions, depending on country specific context A draft list of stakeholders to be interviewed during the evaluation field mission	5 days	Home-based
2. Prepare an inception report which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, detailed evaluation methodology confirmed, draft theory of change, and tentative agenda for field work	Inception report submitted to the evaluation manager	3 days	Home-based
3. Briefing with the UNIDO Independent Evaluation Division, project manager and other key stakeholders at UNIDO HQ.	Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to be interviewed and planned site	2 days	Vienna, Austria

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
	visits) submitted to evaluation and project manager		
4. Undertake evaluation field missions[13], in collaboration with the IEE to consult field project stakeholders, partners and beneficiaries to verify and complete preliminary evaluation findings from desk review and assess partners	Field missions conducted Evaluation/debriefing presentation of the evaluation's preliminary findings prepared, including draft conclusions and lessons learnt	10 days	[Name of country TBD/visited countries to be split between IEC and IEE]
5. Debriefing mission: Present preliminary findings, recommendations and lessons learnt to project stakeholders at UNIDO HQ for factual validation and comments Hold additional meetings with and obtain additional data from evaluation/project manager and other stakeholders as required	Power point presentation Feedback from stakeholders obtained and discussed Additional meetings held as required	2 days	Vienna, Austria
6. Prepare the draft evaluation report, with inputs from the IEE, and in accordance with the evaluation TOR Submit draft evaluation report to the evaluation manager for feedback and comments	Draft evaluation report submitted to evaluation manager for review and comments	8 days	Home-based
7. Revise the draft evaluation report based on comments and suggestions received through the evaluation manager and edit the language and finalize the evaluation report according to UNIDO Independent Evaluation Division standards Prepare a two pages summary of a take-away message from the evaluation	Final evaluation report submitted to evaluation manager Two pages summary take-away message from the evaluation submitted to the evaluation manager	5 days	Home-based
	TOTAL	**35 days**	

[13] The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and partners (PE, and/or country level).

REQUIRED COMPETENCIES

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced degree in environment, energy, engineering, development studies or related areas

Technical and functional experience:

- Minimum of 10 years' experience in environmental/energy project management and/or evaluation (of development projects), including social safeguards and gender.
- Experience in the evaluation of global projects and knowledge of UNIDO activities an asset.
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks.
- Working experience in developing countries

Languages: Fluency in written and spoken English is required, fluency in Spanish desirable.

Reporting and deliverables

1) At the beginning of the assignment the Consultant will submit a concise Inception Report that will outline the general methodology and presents a concept Table of Contents

2) The country assignment will have the following deliverables:

- Presentation of initial findings of the mission to key national stakeholders
- Draft report
- Final report, comprising of executive summary, findings regarding design, implementation and results, conclusions and recommendations

3) Debriefing at UNIDO HQ:

- Presentation and discussion of findings
- Concise summary and comparative analysis of the main results of the evaluation report

All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Division.

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International environment expert (IEE)
Main Duty Station and Location:	Home-based
Mission/s to:	Inception/briefing mission to Vienna, Austria, other missions to be determined during inception period
Start of Contract:	[dd/mm/yyyy]
End of Contract:	[dd/mm/yyyy]
Number of Working Days:	27 work-days spread over 3 months

ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Division (ODG/EIO/IED) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. The UNIDO Independent Evaluation Division is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

PROJECT CONTEXT

Pollution is one of the most threatening causes for disease and premature deaths worldwide. It is observed that Low- and Middle-Income Countries (LMICs), notably least developed countries (LDCs) are the most affected countries from pollution-related diseases.

Since 2009, the European Commission—including through UNIDO[14], along with the World Bank, Asian Development Bank and other donors, have invested significant resources into improving knowledge about the scope and extent of toxic pollution in low- and middle-income countries, the prior extent of which was largely unknown. One result of this investment is the Toxic Sites Identification Program (TSIP), a unique effort to identify and assess contaminated sites executed by Blacksmith Institute/Pure Earth and the United Nations Industrial Development Organization (UNIDO). Based in part on the TSIP, researchers now estimate that toxic chemicals from industry, mining and agriculture may affect the health of as many as 200 million people worldwide. Data collection efforts have been carried out in nearly 50 countries with thousands of sites having been investigated. Key pollutants include heavy metals, pesticides, solvents, radionuclides and other toxic substances that exist at dangerous levels in drinking water, soil, air and food.

The current project aims to demonstrate to governments and communities heavily impacted by pollution in LMICs, especially LDCs, *to how to take cost-effective and locally-led action to improve the health of those communities by breaking pollution exposure pathways and*

[14] DCI **ENV2008**.149772 TPS 1st EC funded UNIDO project and DCI **ENV2011**.261448 TPS 2nd EC funded UNIDO project

preventing future toxic emissions. It also aims to strengthen the Global Alliance on Health and Pollution's (GAHP) ability to influence and enable international, regional and national decision-makers to take concrete action to address the impacts of pollution on the environment, natural resources (land, water and air) and public health. By particularly raising international level awareness of the health impacts of pollution, it expects to secure long-lasting results for affected poor and marginalized populations through mitigating, preventing and reducing exposures to pollution, and building the capacity of civil society/non state actors and government agencies to take concrete action. The project also places emphasis on implementing successful cost-effective models that have significant replication potential to a variety of pollution problems.

The international environment expert (IEE), working under the guidance and in collaboration with the international evaluation consultant/team leader (IEC) will evaluate the project in accordance with the evaluation-related terms of reference (TOR). He/she will perform, inter alia, the following main tasks:

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
Desk review 1. Review and analyze project documentation (incl. gender issues, peer-reviewed publications; the Lancet report, and all other project documentation provided) and relevant country background information for countries to be visited; in cooperation with the team leader, determine key data to collect in the field and prepare key instruments (questionnaires, logic models) as required	A list of evaluation questions; questionnaires /interview guide; logic models A list of key data to be collected Input to inception report	7 days	Home-based
Inception report 2. Contribute inputs to the prepare inception report which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, detailed evaluation methodology confirmed, draft theory of change, and tentative agenda for field work	Inception report submitted to the evaluation manager	3 days	Home-based
Field missions 3. Undertake evaluation field missions[15], in collaboration with	Field missions conducted Evaluation/debriefing presentation of the	10 days	[Name of country TBD/visite

[15] The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and partners (PE, and/or country level).

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
the ICE to consult field project stakeholders, partners and beneficiaries to verify and complete preliminary evaluation findings from desk review and assess partners and prepare input towards the preliminary conclusions and lessons learnt	evaluation's preliminary findings prepared, including draft conclusions and lessons learnt		d countries to be split between IEC and IEE]
Draft evaluation report Prepare inputs and analysis to the evaluation report according to TOR and as agreed with the team leader	Inputs to the draft evaluation report submitted to evaluation team leader	4 days	Home-based
Final evaluation report and summary take-away message Contribute to the finalization of the evaluation report on basis of comments and suggestions received through the evaluation team leader Contribute to the preparation of a two pages summary of a take-away message from the evaluation	Inputs to the Final evaluation report submitted to evaluation team leader	3 days	Home-based
	TOTAL	**27 days**	

REQUIRED COMPETENCIES

Core values:
1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:
1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environmental science, engineering or other relevant discipline like developmental studies with a specialization in toxicity and pollutants.

Technical and functional experience:

- Exposure to the needs, conditions and problems in developing countries.
- Familiarity with the institutional context of the project is desirable.
- Experience in the field of environment and energy, including evaluation of development cooperation in developing countries and social safeguards and gender is an asset.

Languages: Fluency in written and spoken English is required.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Division.

Annex 4: Outline of an in-depth project evaluation report

Acknowledgement (incl. list of evaluation team members)

Abbreviations and acronyms

Glossary of evaluation-related terms

Executive summary

- Must provide a synopsis of the storyline which includes the main evaluation findings and recommendations
- Must present strengths and weaknesses of the project
- Must be self-explanatory and should be maximum 3-4 pages in length

I. Evaluation objectives, methodology and process

- Information on the evaluation: why, when, by whom, etc.
- Scope and objectives of the evaluation, main questions to be addressed
- Information sources and availability of information
- Methodological remarks, limitations encountered and validity of the findings

II. Project background

- Sector-specific issues of concern to the project and important global developments, if any, during the project implementation period (e.g. attention pollution issues received before and during the project period)
- Project summary:
    - Fact sheet of the project: including project objectives and structure, donors and counterparts, project timing and duration, project costs and co-financing
    - Brief description including history and previous cooperation
    - Project implementation arrangements and implementation modalities, institutions involved, major changes to project implementation
    - Positioning of the UNIDO project (other initiatives at the global level, by other donors, private sector, etc.)
    - Partner organization(s)

III. Project assessment

This is the key chapter of the report and should address all evaluation criteria and questions outlined in the TOR. Assessment must be based on factual evidence collected and analyzed from different sources. The evaluators' assessment can be broken into the following sections:

A. Project design

B. Implementation performance

- Ownership and relevance (Report on the relevance of project for countries and the level of beneficiaries, country ownership, stakeholder involvement)
- Effectiveness (The extent to which the development intervention's objectives, outcomes and deliverables were achieved, or are expected to be achieved, taking into account their relative importance)
- Efficiency (Report on the overall cost-benefit of the project and partners' and countries' contribution to the achievement of project objectives)
- Likelihood of sustainability of project outcomes (Report on the risks and vulnerability of the project, considering the likely effects of sociopolitical and institutional changes in partner countries, and its impact on continuation of benefits after the project ends, specifically the financial, sociopolitical, institutional framework and governance, and environmental risks)
- Project coordination and management (Report project management conditions and achievements, and partner countries commitment)
- Assessment of monitoring and evaluation systems (Report on M&E design, M&E plan implementation, and budgeting and funding for M&E activities)
- Monitoring of long-term changes
- Assessment of processes affecting achievement of project results (Report on preparation and readiness / quality at entry, financial planning, UNIDO support, co-financing, delays of project outcomes/outputs, and implementation approach)

C. Gender mainstreaming

At the end of this chapter, an overall project achievement rating should be developed as required in Table 4. The rating table should be presented here.

IV. Conclusions, recommendations and lessons learned

This chapter can be divided into three sections:

A. Conclusions

This section should include a storyline of the main evaluation conclusions related to the project's achievements and shortfalls. It is important to avoid providing a summary based on each and every evaluation criterion. The main conclusions should be cross-referenced to relevant sections of the evaluation report.

B. Recommendations

This section should be succinct and contain few key recommendations, focusing on those recommendations that could reasonably implemented ***within the remaining project implementation period—in this case, this will be 2 months (May and June 2019)***. They should:

- be based on evaluation findings

- be realistic and feasible within a project context
- indicate institution(s) responsible for implementation (addressed to a specific officer, group or entity who can act on it) and have a proposed timeline for implementation if possible
- be commensurate with the available capacities of project team and partners
- take resource requirements into account.

Recommendations should be structured by addressees:

- UNIDO
- Partners
- Donor

C. Lessons learned

- Lessons learned must be of wider applicability beyond the evaluated project but must be based on findings and conclusions of the evaluation
- For each lesson, the context from which they are derived should be briefly stated

For further guidance on the formulation and expected quality of lessons learned, please consult the guidance document on lessons learned prepared by the UNIDO Independent Evaluation Division (annex 6). The document also includes a checklist on the quality of lessons learned.

Annexes should include the evaluation TOR, list of interviewees, documents reviewed, a summary of project identification and financial data, including an updated table of expenditures to date, and other detailed quantitative information. Dissident views or management responses to the evaluation findings may later be appended in an annex.

Annex 5: Checklist on evaluation report quality

Project title:
UNIDO Project ID:

Evaluation team
Evaluation team leader:
National evaluation consultant:
Evaluation manager (IED):

Quality review done by: Date:

Report quality criteria	UNIDO Independent Evaluation Division assessment notes	Rating
A. Was the report well-structured and properly written? (Clear language, correct grammar, clear and logical structure)		
B. Was the evaluation objective clearly stated and the methodology appropriately defined?		
C. Did the report present an assessment of relevant outcomes and achievement of project objectives?		
D. Was the report consistent with the ToR and was the evidence complete and convincing?		
E. Did the report present a sound assessment of sustainability of outcomes or did it explain why this is not (yet) possible? (Including assessment of assumptions, risks and impact drivers)		
F. Did the evidence presented support the lessons and recommendations? Are these directly based on findings?		
G. Did the report include the actual project costs (total, per activity, per source)?		
H. Did the report include an assessment of the quality of both the M&E plan at entry and the system used during the implementation? Was the M&E sufficiently budgeted for during preparation and properly funded during implementation?		
I. Quality of the lessons: were lessons readily applicable in other contexts? Did they suggest prescriptive action?		
J. Quality of the recommendations: did recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?'). Can these be immediately implemented with current resources?		
K. Are the main cross-cutting issues, such as gender, human rights and environment, appropriately covered?		
L. Was the report delivered in a timely manner? (Observance of deadlines)		

Rating system for quality of evaluation reports

A rating scale of 1-6 is used for each criterion: Highly satisfactory = 6, Satisfactory = 5, Moderately satisfactory = 4, Moderately unsatisfactory = 3, Unsatisfactory = 2, Highly unsatisfactory = 1, and unable to assess = 0.

Annex 6: Guidance on integrating gender in evaluations of UNIDO projects

The UNIDO Policy on gender equality and the empowerment of women, issued initially in April 2009, and revised in March 2015 (UNIDO/DGB/(M).110/Rev.), provides the overall guidelines for establishing a gender mainstreaming strategy and action plans to guide the process of addressing gender issues in the Organization's industrial development interventions. It commits the organization that evaluations will demonstrate effective use of the UNEG guidance on evaluating from a human rights and gender equality perspective, as indicated by the Organization's meta-evaluation scores according to the UNEG Evaluation Scorecard.

In line with the UNIDO Gender Equality and Empowerment of Women Strategy, 2016-2019, all UNIDO technical assistance projects post-2015 are to be assigned a gender marker and should go through a gender mainstreaming check-list before approval. UNIDO's gender marker is in line with UN System-wide action plan (SWAP) requirements, with four categories: 0 — no attention to gender, 1 — some/limited attention to gender, 2a — significant attention to gender, 2b — gender is the principal objective[16].

Besides, Guides on Gender Mainstreaming for Inclusive and Sustainable Industrial Development (ISID) Projects in different areas of UNIDO's work have been developed and published during 2015[17], which have specific guidance on suitable outputs/activities/ indicators per technical area.

If the project design and gender analysis/existing indicators are not sufficient to allow for an accurate appraisal at the final evaluation, specific indicators could be created during the evaluation planning stage (preparing and revising the inception report) and assessed during the evaluation process. Together with the budget, the time required to adequately carry out a gender responsive evaluation will need to be taken into account. The evaluation time depends on the questions the assessment needs to answer, on how deep the analyses are requested to be, and on financial and human resources available as well as other external factors.

For terminal evaluations of projects that have been approved after 2015, evaluations should assess if the rating was correctly done at entry, if appropriate outputs/activities/indicators and monitoring were put in place during implementation and what results can be actually observed at the time of terminal evaluation (in line with UNIDO's organizational results reporting to SWAP). The Gender Mainstreaming six-point rating scale should then be used accordingly.

For projects that have **2a** or **2b ratings** at project design/entry at least one evaluation team member should have demonstrated/significant experience in evaluating GEEW projects. For other projects, evaluators are encouraged to further familiarize themselves with the key gender aspects and impacts of UNIDO projects, both through the foundation modules of "I know Gender" online course of UN Women and the UNIDO's Guides on Gender Mainstreaming ISID Projects.

[16] http://intranet.unido.org/intra/Gender_Mainstreaming_Tools_and_Guides

[17] www.unido.org/en/what-we-do/cross-cutting-issues/gender/publications.html