Mid-term Evaluation of the UNIDO GEF Project: Environmentally Sound Management and Disposal of Obsolete Pops Pesticides and Other POPs Wastes in China

Final Report

Final draft

March 2014

Dr. Nee Sun Choong Kwet Yive & Prof. Xinhui Liu

Evaluation Consultants

Project Number: GF/CPR/09/006

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

APR	Annual Project Report
BAT	Best available techniques
BEP	Best environmental practices
CAS	Chinese Academy of Sciences
CICG	Convention Implementation Coordinating Group
CIO	Convention Implementation Office
COP	Conference of Parties
CTA	Chief Technical Advisor
EPB	Environmental Protection Bureau
EIA	Environmental Impact Assessment
ESM	Environmental Sound Management
FECO	Foreign Economic Cooperation Office
GEF	Global Environment Facility
HWDC	Hazardous Waste Disposal Centre
IR	Inception Report
MOA	Ministry of Agriculture
MEP	Ministry of Environmental Protection
MOF	Ministry of Finance
MOH	Ministry of Health
NCG	National Coordination Group
ng	nanogram
NGOs	Non-governmental Organizations
NIP	National Implementation Plan
NHMWP	National Hazardous and Medical Waste Disposal Facility Construction Program
NTA	National Technical Advisor
PIF	Project Information Form
PIR	Project Implementation Review
PIR	Project Implementation Review
PMO	Project Management Office
POPs	Persistent Organic Pollutants
TOC	Theory of Change
TCG	Technical Coordination Group
UNIDO	United Nations Industrial Development Organization

Executive summary

A. Introduction

The Global Environment Facility (GEF) full size project (FSP) "*Environmentally Sound Management and Disposal of Obsolete POPs Pesticides and Other POPs Wastes in China*" is being implemented from 2009 – 2014 by UNIDO and nationally executed by CIO/FECO with the following financing sources:- GEF: $ 9,973,000; co-financing (cash and in kind): $ 32,100,000; Total: $ 42,073,000.

The overall objective of the project is to implement environmentally sound management and disposal of 10,000 tons of accumulated POPs pesticide wastes and 1,000 tons dioxin rich incinerator fly-ash in fulfilment of China's obligations under the Stockholm Convention. Specifically the project is set to:

(i) Strengthen the legal and regulatory framework for environmentally sound management (ESM) and disposal of POPs waste
(ii) Improve institutional capacity at all levels of POPs waste disposal management
(iii) Remove POPs pesticide wastes dioxin rich incinerator fly ash from targeted contaminated sites, and transport them to disposal unit
(iv) Dispose of wastes in an environmentally sound manner
(v) Complete qualitative environmental risk assessment (QERA) site prioritization.

B. Evaluation findings and conclusions

The major objective of this midterm evaluation is to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability and to propose a set of recommendations with a view to ongoing and future activities.

The project is highly relevant to China's National Program of Disposal Facilities Construction for Hazardous Wastes and Medical Wastes Treatment (NPDFCHWMW) that was approved in 2004. The project is playing a vital role in supporting China to meet the objectives as set in its National Implementation Plan (NIP) and is helping in complying with the Stockholm Convention.

The project is consistent with Strategic Program 1, 2 and 3 of persistent organic pollutants focal area strategy and strategic programming for GEF-4, in particular: for Strengthening Capacities for National Implementation Plan (NIP) Implementation, with the objective to strengthen and/or build the capacity required in eligible countries to implement their Stockholm Convention NIPs in a sustainable, effective and comprehensive manner, while building upon and contributing to strengthening a country's foundational capacities for sound management of chemicals more generally.

The project is also very relevant with UNIDO's mandate to support developing countries and countries with economy in transition to achieve sustainable industrial development given the

project is focusing on technological solutions to environment and health problems within Operational Program 14.

Effectiveness of the project is considered highly satisfactory. Delivery of outputs has been satisfactory. As planned, the regulatory framework has been strengthened for the sound management of obsolete POPs pesticides and wastes. Guidelines for ESM of obsolete POPs pesticides stocks and wastes have been developed and capacity has been built for the destruction of POPs and other hazardous wastes in the Hubei and Hebei provinces through significant investment of private partners (Huaxin Environment Company and Jinyu Mangrove Environmental Protection Company) to upgrade cement kilns. At midterm, 4,951.6 tons of POPs pesticides and wastes have already been packed, transported and soundly disposed of at the upgraded cement kilns. However, delays have been encountered for delivery of the mobile unit for destruction of POPs pesticides and wastes using non-combustion technology.

Involvement of the major stakeholders at midterm has been highly satisfactory. At national and provincial levels, the relevant ministries and departments (e.g. Health, Environment, EPBs, etc.) are members of steering groups. At provincial level, waste centres and private partners (cement kilns) are key partners of the project. Experts from leading academic and research Chinese institutions (e.g. Tsinghua University, CRAES, RCEES, IHEP, etc.) have been recruited to provide technical expertise or service.

The project is being efficiently executed by CIO/FECO and adequately supervised and guided by UNIDO. And at midterm, project implementation has been cost-effective owing to a number of factors including: high ownership of project, involvement and commitment of major stakeholders at all levels (national and provincial) since the preparatory phase, high level of co-funding both at central and provincial level including willingness of private companies to invest significantly to upgrade cement kilns, building on existing structures like CICG, and recruitment of high quality experts from prestigious institutions.

Chances for sustainability of the project are very high for the following reasons. China is party to the Stockholm Convention and is fully committed for its implementation. Ownership of the project is high both at national and provincial levels. A number of programs and policies have already been promulgated and adapted at provincial level. Moreover, the appropriate structures (CICG and CIO) for Stockholm Convention implementation exist and have been established in 2003 for China's NIP development. Since then, these structures have been responsible for the successful execution of several GEF funded and UNIDO implemented projects (e.g. Medical waste and SIRE projects). Finally, possibility of leveraging high level of co-financing at national and local level in China makes the project highly sustainable.

The overall rating for the project based on the evaluation findings is **Highly Satisfactory**.

C. Recommendations

As the project has reached its midterm, the following recommendations look ahead to the second phase of the project for successful implementation and execution of remaining activities so as to successfully meet the project objectives and outcomes.

i. For all identified contaminated sites including the contaminated site near the pesticide company in Hunan, it is recommended that these sites are properly safeguarded and that the population living in the vicinity be adequately informed in order to minimize / eliminate risk of exposure.
ii. For the contaminated site near the pesticide factory in Hunan, it is recommended that the project assist the local authorities to put in place a mechanism and long term strategy for the remediation of this site.
iii. For delivery of the mobile unit for which the Mechano Chemical Dechlorination (MCD) technology has been selected, a no cost two-year extension is recommended to allow for completion of activities for this output.
iv. In order to meet project objectives, it is recommended that the project should ensure that planned co-financing materialize in order to successfully undertake the remaining activities.
v. Replication activities are planned in other provinces in the second part of the project; the successful experiences and lessons should be summarized and serve as basis for project implementation for this second phase.
vi. For sustainability of project outcomes, the project should ensure that regulations and guidelines for ESM of obsolete POPs pesticides stocks and wastes and other hazardous wastes are enforced at all levels.

D. Lessons learnt

Valuable lessons emerged during the midterm evaluation that include lessons related to technical aspects as well as to overall management of the project (not arranged in any order of priority).

i. A comprehensive and strategic management mechanism and adequate involvement of a wide range of stakeholders (EPBs, high level research and academic entities, local authorities and private partners) in all important events, including preparatory phase, inception, awareness campaign, training sessions, consultation meetings at both central and regional level are the basis to achieve effective implementation of project activities.
ii. Identification and adopting measures that promote efficiency ensures successful implementation of project.
iii. The mixed form of agency execution and counterpart execution (through sub-contracts to national counterpart: CIO/FECO) is a very efficient implementation approach when adequate capacities exist at counterpart level and these include dedicated qualified staff, proper procurement and financial management system, and auditing.

I. Evaluation Background

I.1 Information on the evaluation

1. This mid-term evaluation is carried out in compliance with GEF[1] and the UNIDO[2] evaluation policies in order to promote accountability for the achievement of the project objectives through the assessment of results, effectiveness, processes and performance of stakeholders involved during project implementation. In particular, the evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNIDO, governments, the GEF and their partners.

2. This mid-evaluation will in particular, assess the efficiency and effectiveness of project implementation, and propose a set of recommendations that will allow for adaptive management in order to meet the goals and objectives of the project within the planned schedule.

3. The evaluation was undertaken from November 2013 – February 2014 by a team consisting of Dr. Nee Sun CHOONG KWET YIVE (International consultant, team leader) and Prof. Xinhui LIU (National consultant).

I.2 Scope and objectives of the evaluation

4. The evaluation followed the GEF review criteria[3] and assessed the project with emphasis on those components for which GEF funds were required. More specifically, the main objectives of this evaluation, as reported in the Terms of Reference (annex 1), is to enable the Government, counterparts, the GEF, UNIDO and other stakeholders and donors to:

(a) Verify prospects for development impact and sustainability, providing an analysis of the attainment of global environmental objectives, project objectives, delivery and completion of project outputs/activities, and outcomes/impacts based on indicators. The assessment includes re-examination of the relevance of the objectives and other elements of project design according to GEF Project Review Criteria:

- Implementation approach
- Country ownership/Driveness
- Stakeholder participation
- Sustainability
- Replication approach
- Financial planning
- Cost-effectiveness
- Monitoring and evaluation

(b) Enhance project relevance, effectiveness, efficiency and sustainability by proposing a set of recommendations with a view to ongoing and future activities.

[1] http://www.thegef.org/gef/sites/thegef.org/files/documents/TE_guidelines7-31.project document
[2] http://www.unido.org/en/resources/evaluation/evaluation-policy.html
[3] GEF guidelines for Implementing Agencies to Conduct Terminal Evaluations, May 2003

(c) Draw lessons of wider applicability for replication in other provinces of China or in other projects/countries of experience gained in this project.

5. The key question of the evaluation is whether the project has made significant and positive impact on the management of obsolete POPs pesticides and other POPs wastes in China, and thus contributing to reducing the effects of POPs on human health and the environment.

6. Some of the specific questions that the evaluation focused on are:

- So far, how is the project approach contributing towards the achievement of the development project objective "*Environmentally sound management and disposal of obsolete POPs pesticides and other POPs wastes in China*" in the participating countries?
- How successful is the project, at midterm, in strengthening the legal and regulatory framework of China for the environmentally sound management (ESM) and disposal of POPs waste?
- Is the project assisting China to improve its institutional capacity at all levels for POPs waste disposal management?
- To what extent is the project assisting China to dispose of targeted POPs pesticide waste and dioxin rich incinerator amount in environmentally sound manner?
- How successful is the project in assisting China in the qualitative environmental risk assessment (QERA) for site prioritization of contaminated sites?

I.3 Information sources and availability of information

7. In general, the availability of information for evaluation purposes was satisfactory. The project document, Project Implementation Reviews (PIRs) and reports of international consultants were made available to the evaluation by UNIDO. Specific documentation such as progress reports, national consultants' reports, reports of contracted activities, minutes of meetings, reports of workshops, and demonstration projects were made available by CIO / FECO. A substantial list of documents submitted to the evaluation team is given in annex 2. On request by the team during the field mission in China (1 – 10 December 2013), CIO/FECO provided further documentation on the latest financial status of the project and minutes of Project Steering Committee (PSC) meetings and some other documents.

I.4 Methodological remarks, limitations encountered and validity of the findings

8. As stated in the TOR (Annex 1) the evaluation team analyzed the substantial documentation submitted by UNIDO and CIO/FECO. However, it should be highlighted that a significant number of documents submitted by CIO/FECO that include minutes of meetings, reports of national contractors, contracts of national consultants amongst others were in Chinese language. However, the national consultant for this evaluation, who was a Chinese national, made a summary of the main points of those documents for the attention of

the lead consultant (not conversant with Chinese language) who was responsible to draft the evaluation report.

9. During the field mission undertaken in China (1 – 10 December 2013), the evaluation team met the main stakeholders / partners of the project and those include CIO/FECO, the main national consultants, solid waste management centres, hazardous waste treatment facilities and Environmental Protection Bureaus (EPBs) of the Hubei and Hebei provinces. An agenda of the field mission as well as a list of persons interviewed during this field mission is given in Annex 3. A presentation on the preliminary findings of the midterm assessment exercise was made to CIO/FECO on 9 December 2013.

10. The interview of the Project Manager was carried out at UNIDO Headquarters, Vienna on 17 January 2014. During that same mission, the preliminary findings of the mission in China were presented to the UNIDO Project Management and UNIDO evaluation unit on 16 January 2014. The presentations (in China and Vienna) provided opportunities for receiving feedback on the preliminary findings of the assessment that have been considered and are reflected, where appropriate, in this report.

11. Additional information on specific questions for example further details on the technical aspect and financial status of the project was also requested and obtained from CIO/FECO through frequent email communications. It should be highlighted however whilst in most cases the documents submitted to the evaluation (e.g. progress reports, PIRs, minutes of steering groups, minutes of tri-partite meetings, etc.) were in English, however most of the annexes related to these documents, and the reports of national sub-contractors and reports from provinces were in Chinese. Although the national consultant for this evaluation assisted in providing some translation in English of these documents, it would have been very helpful if a short, concise and precise summary English version the different documents were available.

II. Project Background and Overview

II.1 Project Background

12. China has urgent need of an on the ground program for managing stockpiles of obsolete POPs pesticides and associated contaminated wastes in an environmentally sound manner. China's large agricultural sector with its heavy dependence on agro-chemicals resulted in about 574,000 tons of POPs pesticides being manufactured up to 2004 when production was banned. Although POPs pesticides production has been prohibited by domestic regulations, lack of a targeted national program providing capacity building and technical assistance to manage these chemicals has resulted in significant stockpiling of obsolete POPs pesticides.

13. Based on the research and surveys conducted in conjunction with the preparation of this project, obsolete POPs pesticide and associated wastes have been identified in 44 POPs pesticide manufacturing plants and a number of distribution and end user sites. In the past, plant owners and end users have been largely unregulated and responsible for managing their

own POPs pesticides, which have resulted in stockpiles of obsolete pesticides and associated wastes, the distribution and scope of which has been unknown to central and local environmental protection agencies.

14. The absence of adequate capacity and infrastructure for environmentally sound management (ESM) and disposal of POPs pesticide wastes in China poses significant risks to human health and the environment. In most POPs pesticide manufacturing plants and end user sites, there are no storage facilities specifically designed for obsolete pesticides and pesticide wastes. Large amounts of obsolete POPs pesticides are therefore often stored in improper conditions, such as outdoor storage, simple enclosure, or open-air disposal with municipal solid waste, all of which constitute a serious threat to human health. This serious risk of environmental contamination and human exposure is further exacerbated by natural disaster, such as the flooding and earthquakes, which China has recently experienced.

15. Current practices for hazardous waste disposal have been dominated by incineration and therefore generate secondary pollution such as dioxins and furans. It is estimated that fly ash containing a high level of dioxin from incineration of hazardous wastes and medical wastes amounts to 11,000 tons per annum. Incineration plants generally dispose of this dioxin rich fly ash in open dumps or non-sanitary landfills mixed with municipal wastes, thereby increasing the potential POPs pollution risk to water resources.

16. The Chinese government acceded to the Stockholm Convention on May 23, 2001. The Tenth National People's Congress Standing Committee ratified the Stockholm Convention on June 25, 2004. Under Article 6(1) (c), China is required to manage POPs wastes in an environmentally sound manner. However, surveys and reports have shown that lack of institutional, technical, and financial capacity inhibits the sound management of obsolete POPs pesticides and associated wastes.

II.2 Regulatory Context

17. The Stockholm Convention entered into force in China on 11 November 2004. Article 6 of the Convention requires Parties to take measures to ensure that POPs wastes are handled, collected, transported, stored and disposed of in an environmentally sound manner; to identify POPs-contaminated sites; and to ensure that any remediation of contaminated sites is undertaken in an environmentally sound manner. Article 5 of the Convention requires the Parties to take measures to reduce or eliminate releases of unintentionally produced POPs in Part I from sources listed in Parts II and III of Annex C of the Convention, including reduction/elimination of dioxin releases from incineration of POPs pesticides and risks posed by dioxin-rich fly ash resulting from incineration processes.

18. China has also acceded to the Basel Convention in 1991, and will continue to adhere to its requirements controlling management of hazardous waste exports to Basel Convention countries and prohibiting exports to non-Basel countries. In implementing this project, China will also draw on Basel Convention "*Technical guidelines on environmentally sound management of persistent organic pollutants*" with respect to processes for destruction and irreversible transformation of POPs wastes in response to the request by the Open Ended Working Group of the Basel Convention in September 2007 (OEWG-VI/6).

19. According to the current hazardous waste management licensing system in China, a license must be obtained for collection, transport, and storage, and/or disposal of hazardous waste. For treatment of hazardous waste streams over 10,000 tons per year or involving transporting hazardous materials across provincial lines, central government approval by the Ministry of Environmental Protection (MEP) is required. For treatment facilities under these thresholds, provincial or municipal approval is adequate. A special MEP-issued license is also required for PCB or mercury contaminated waste or "other toxic substances highly dangerous to the environment and human health." The special license required for PCB waste management and treatment has enabled China to better control and dispose of those wastes. Prior to the implementation of the project, processing of obsolete POPs pesticide and other POPs contaminated wastes did not include a clear approval requirement for a special operating license by MEP or Local Environmental Protection Bureaus (EPBs), which constituted a barrier to the implementation of ESM in POPs pesticide waste. With the project this situation no longer prevails and a licensing system for the treatment of obsolete POPs pesticides and associated POPs contaminated wastes has been established.

20. The key laws, regulations and standards related to obsolete POPs pesticides and associated wastes (PPW) are given in Table 1 below.

Table1: Key laws, Regulations and Standards associated to PPW

Law/regulation/standard		**Issued by**	**Date of issuance**
Laws	Environmental Protection Law of China	SCNPC	December 1989
	Law of China on the Prevention and Control of Environmental Pollution Caused by Solid Waste	SCNPC	April 2005
Policies	NIP for POPs	State Council	April 2006
	Technical Policy for the Prevention and Control of Pollution Caused by HW	SEPA	December 2001
	Circular Concerning Implementation of Charging System for Disposal of Hazardous Wastes to Promote Industrialization of HW Disposal	NDRC, SEPA, MOH, MOF, MOC	April 2005
Regulations	Pesticide Management Rules	State Council	July 2001
	Regulation on Safe Use of Pesticides	MOA, MOH, etc.	October 1982
	National Catalogue of Hazardous Waste	SEPA	July 1998
	Measures for the Administration of Operating Licenses for Hazardous Waste	State Council	May 2004
	Measures for Manifest Management on Transfer of Hazardous Waste	SEPA	October 1999
	Measures for the Prevention and Control of Environment Pollution by Discarded Hazardous Chemicals	SEPA	October 2005
	National Programme for Hazardous and Medical Waste Disposal Facilities Construction	State Council	January 2004
Standards	Standard on Identification of HW	SEPA	October 2007
	Pollution Control Standard for HWI	SEPA	January 2002
	Standard for Pollution Control on Hazardous Waste Storage	SEPA	July 2002
	Standard for Pollution Control on the Safe Landfill for Hazardous Waste	SEPA	July 2002
	Technical Requirements on Engineering Construction for Safe Landfill and Disposal of HW	SEPA	January 2004

II.3 Project Objective

21. The project's overall objective was to implement environmentally sound management (ESM) and disposal of 10,000 tons of accumulated Persistent Organic Pollutants (POPs) pesticide wastes and 1,000 tons dioxin rich incinerator fly-ash in fulfilment of China's obligations under the Stockholm Convention. If not addressed, the presence of these geographically dispersed accumulations of POPs wastes constitutes a significant source and ongoing pathway risk to environmental receptors, particularly groundwater and surface water resources, with concomitant negative impact on human and ecosystem health.

22. According to the Project Document, five substantive outcomes have been developed to achieve the project objectives.

- Outcome 1: Strengthened legal and regulatory framework for environmentally sound management (ESM) and disposal of POPs waste.
- Outcome 2: Improved institutional capacities at all levels of POPs waste disposal management.
- Outcome 3: Environmentally sound disposal of targeted POPs pesticide waste and dioxin rich incinerator fly ash.
- Outcome 4: Qualitative environmental risk assessment (QERA) site prioritization.
- Outcome 5: Project management, monitoring and evaluation.

23. Table 2 below gives all relevant information on the project including project costs and co-financing, donors, duration, implementing and executing agencies.

Table 2: Information on the Project

Project title:		Environmentally sound management and disposal of obsolete POPs pesticides and other POPs wastes in China
Project number: **GEFSEC Project ID**:		GF/CPR/08/X01: 2926
Implementing Agency: **Coordinating Agency:** **Executing Agency:**		UNIDO China, Ministry of Environmental Protection (MEP) MEP/ Foreign Economic Cooperation Office (FECO)
Planned project duration:		60 months
Start date **Actual start date**		January 2009 August 2009 (date of Inception Workshop)
Project costs ($)	**GEF grant** : Project: PPG: **Sub-Total**	 9,973,000 231,000 **10,204,000**
	Co-funding: UNIDO (in-kind): MEP (cash & in-kind): MOF (cash): Local EPBs (cash & in-kind): Pesticides owners and other private sectors (cash & in-kind): **Sub-total**	 100,000 6,400,000 3,900,000 7,400,000 14,300,000 **32,100,000**
	Total	**42,073,000 (excluding PPG)**

II.4 Project Implementation Arrangement

24. UNIDO is the GEF Implementing Agency (IA) for the project. A project team has been established at UNIDO, headquarters to assist with project implementation and execution. This team is constituted by a Project Manager (PM) supplemented by support from a consultant hired to assist in project execution and support staff on part-time basis for project administration.

25. As planned in the project document, a project management structure for the coordination and execution of the project has been established. This structure involves a number of stakeholders and groups, some of which have been established in the context of previous projects. For example, the Convention Implementation Coordinating Group (CICG), previously called National Coordination Group (NCG) for Convention Implementation was established in 2003 for China's NIP development (discussed further below). The project management structure is given in Figure 1 below.

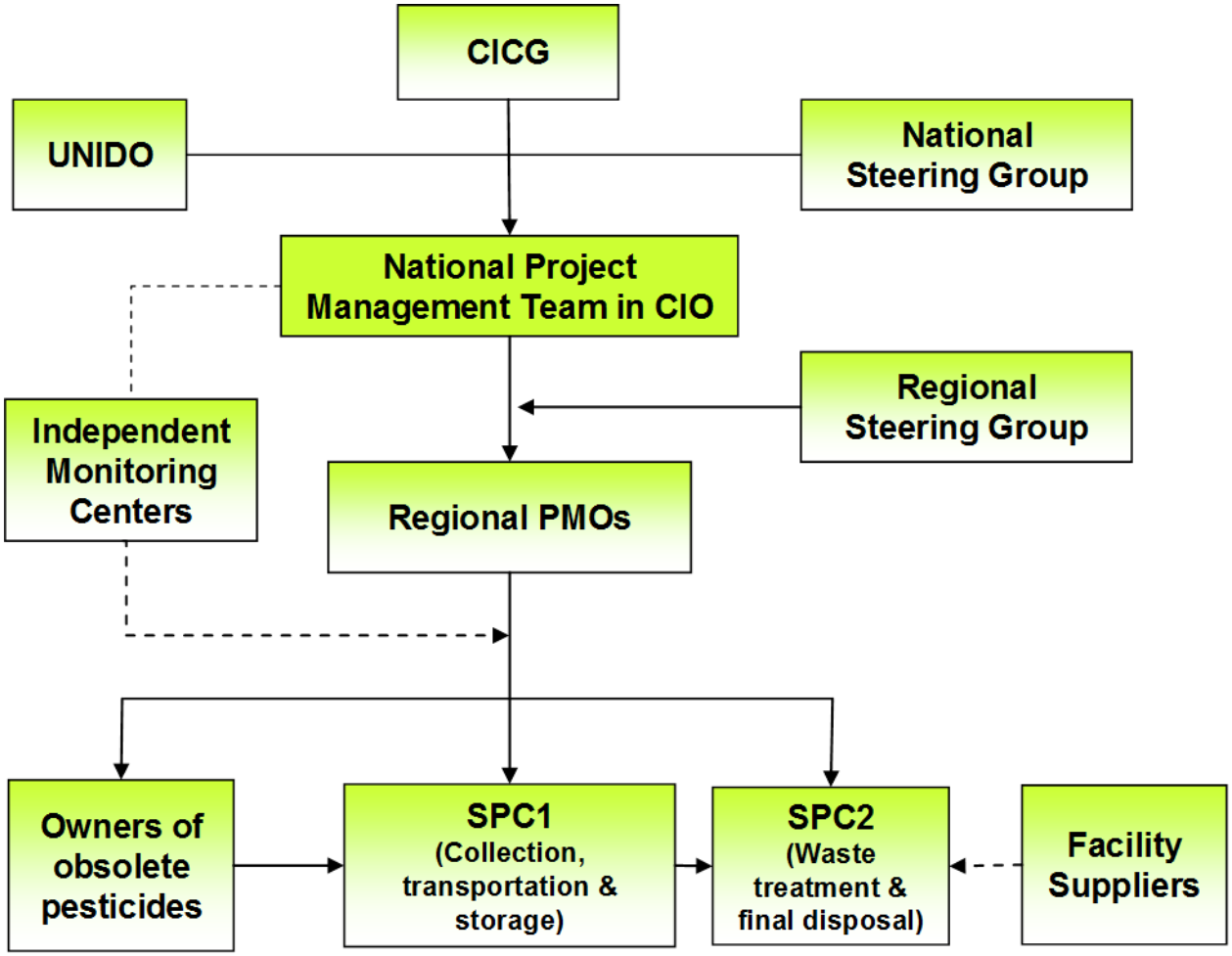


Figure 1: Project organogram[4]

[4] Figure taken from the project document

II.5 Positioning of the UNIDO project

26. The proposed project is the first one in China to directly address the issue of accumulated obsolete POPs pesticides and associated wastes. The project is directly providing for clean-up of at least 10,000 tons of these wastes, plus 1,000 tons of dioxin-rich fly ash, and is developing national capacity to identify, manage, and treat other such wastes in an environmentally sustainable manner.

27. The project is a national priority project addressing an important Stockholm Convention requirement, which it does in a highly cost-effective manner. A novel Public Private Partnership (PPP) mechanism has been introduce to mobilize resources from both the public and private sectors and is encouraging innovation.

28. Given the high risk to public health that POPs contaminated waste entails, the project is providing significant health benefits to such vulnerable populations as women and children, which international research shows are often exposed to POPs pesticide contaminants and contaminated containers at a higher incidence.

29. The project is drawing on the lessons learned from other bilateral and multilateral projects in the POPs pesticides and related areas, including in particular the Sino-German pesticides project. The project has also undertaken a number of study tours to learn from other countries. For example, for the non-combustion technology evaluation, six study / technical missions were undertaken to other countries (e.g. New Zealand) to learn / evaluate non-combustion technologies. The project has also benefited from input received from Germany and Japan at the GEF Council meeting in response to the PIF submission, from comments and technical information provided by industry experts from Germany, Italy, and the Netherlands, and from comments and other project developmental support being provided by the Netherlands Soil Partnership, the Sino-Dutch Centre for the Management and Remediation of Contaminated Land, and the International HCH & Pesticides Association.

II.6 Counterpart Organizations

30. Convention Implementation Coordination Group (CICG). China established the National NIP Development Leading Group in September 2003. This Group became the National Leading Group for Implementation of the Stockholm Convention when China ratified the Convention on 13 August 2004, which was formally approved by State Council in April 2005 and renamed the National Technical Coordination Group (TCG) for Implementation of the Stockholm Convention, or Convention Implementation Coordination Group (CICG). The role of the CICG is to provide (i) review of significant policies related to POPs management and control, (ii) guidance and coordination for POPs management activities and Convention implementation. The CICG consists of the following 13 agencies:

i) Ministry of Environmental Protection (MEP)
ii) Ministry of Foreign Affairs (MOFA)
iii) National Development and Reform Commission (NDRC)
iv) Ministry of Finance (MOF), which is the GEF Focal Point in China
v) Ministry of Commerce (MOCom)
vi) Ministry of Science and Technology (MOST)
vii) Ministry of Agriculture (MOA)
viii) Ministry of Public Health (MOH)
ix) Ministry of Housing and Urban-Rural Development (MOHURD)

x) General Administration of Customs (GAC)
xi) State Electricity Regulatory Commission (SERC)
xii) General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)
xiii) State Administration of Work Safety (SAWS)

31. Convention Implementation Office (CIO). The CIO is part of MEP and is responsible for coordinating the day-to-day management of the Stockholm Convention implementation in China. The CIO's responsibilities include: (i) provision of technical support for international negotiations and policy studies on the Stockholm Convention, (ii) provision of support for development and implementation of POPs-related policy and regulations, as well as coordination of key governmental stakeholders, (iii) mobilization of co-financing from bilateral, international, and national sources, (iv) collecting data and information, compiling reports, organizing training activities, and publishing information. The CIO will provide guidance to ensure the successful implementation of the project, including regular monitoring and enforcement inspections. As the CIO is not an independent legal entity, Foreign Economic Cooperation Office (FECO) is the national executing agency (NEA) and represents MEP and the CIO in the management and completion of contracts for project implementation.

32. National, Provincial and Municipal Steering Groups. The project has established a national steering group by drawing upon resources from related ministries or commissions in charge of development and reform, environment, health, construction, and pricing to provide the project team with political guidance and inter-ministerial coordination support. To facilitate the extensive demonstration and replication activities at provincial and municipal levels corresponding steering groups have been established. For example, Project Steering Groups constituted by relevant Departments (e.g. Health, Environment, etc.) have been established in the Hebei and Hubei provinces to facilitate the implementation of project activities.

33. A National Project Management Team (NPMT) composed of staff from MEP, FECO, CIO, NDRC and MOHURD has been established at the start of the project in 2009. A Project Manager was designated by MEP. Due to movement of personnel, the project manager changed. However, this change did not disrupt the smooth implementation of project activities[5]. The Project Management Team is responsible for the day-to-day management and execution of the project, and oversees the local project management offices. The NPMT's responsibilities include (i) assignment and supervision of project activities; (ii) recruitment of national consultants; (iii) providing guidance to local PMOs; (iv) coordination with stakeholders, donors, the IA, relevant national agencies and the private sector; (v) preparation of terms of reference (TORs) for project activities, (vi) review of project progress reports submitted by the local PMOs, (vii) supervising project procurement and financial resources in accordance with UNIDO procedures, (viii) organizing and convening project coordination stakeholder meetings, and (ix) review of project outputs.

34. A Project Expert Team (PET) has been established, and it is constituted by the National Technical Advisor (NTA), who is from the Research Centre for Eco-environmental Sciences, Chinese Academy of Sciences, and was recruited at the start of the project, and other experts (e.g. from the Institute of High Energy Physics, Chinese Academy of Science or

[5] Interview data from present and previous Project Managers

from the Chinese Research Academy of Environmental Sciences, CRAES) recruited in the context of the project, experts from other fields. According to the project document, this Project Expert Team is supposed to assist the CIO and NPMT through the following activities:

i) Introduction of successful experiences gained from foreign countries;
ii) Management and coordination of all project activities;
iii) Provision of technical support for policy framework, institutional strengthening, demonstration activities, technology selection, market promotion, awareness raising and education, results and experience dissemination, project monitoring and evaluation, replication program development, and project management;
iv) Periodic project implementation progress appraisal;
v) Support for development of training materials; and
vi) Liaison for international symposia and field research.

35. Regional Project Management Offices (PMOs) are responsible for coordination of project activities that transcend provincial boundaries. Regional PMOs are composed of staff from relevant provincial governmental agencies (e.g. Environment, Health, waste centres, etc.). In Hebei and Hubei provinces, regional PMOs have been established and in both cases, the representative of the Solid Wastes Municipal Centre was the regional project manager. The responsibilities of these PMOs include (i) management of the provincial level activities; (ii) oversight of provincial and municipal implementation; (iii) dissemination of the experience emanating from sites; (iv) coordinating treatment activities with the mobile treatment facility and base stations; (v) coordinating transportation of waste materials over provincial lines; and (vi) collecting information and preparing progress reports.

36. Private sector stakeholders and other participants are actively participating in the project, as follows:

- Waste owners have been / will be provided with technical assistance and financial support on a cost-sharing basis to adopt ESM in obsolete pesticides management and to treat existing stocks of obsolete POPs pesticides and associated wastes;
- Waste transporters and treatment and disposal facilities have been / will be provided with technical assistance and capacity building support to ensure implementation of obsolete POPs pesticide waste management requirements, and provided with targeted incentives to adopt ESM practices beyond current regulations;
- Private sector contractors selected under the PPP program to provide facilities and services are forming an integral part of the project. For example, the Huaxin Environmental Company in joint venture with Holcim has invested to upgrade a cement kiln for the destruction of PPW and other hazardous wastes
- End-users will be educated in proper pesticides management and risk minimization / avoidance, supported by new policies and programs (e.g., possible manufacturer / distributor take-back requirements) to encourage ESM practices.

III. Project Assessment

A. Design

37. The overall objective of the project is to implement environmentally sound management (ESM) and disposal of 10,000 tons of accumulated POPs pesticide wastes and 1,000 tons dioxin rich incinerator fly-ash in fulfilment of China's obligations under the Stockholm Convention.

38. The goal is realistic as some capacity for sound disposal of POPs by incineration already exists in the country and the project will build and strengthen national capacity on ESM of POPs and other hazardous wastes by interaction with the on-going National Hazardous and Medical Waste Disposal Facility Construction Program (NPDFCHWMW). Furthermore, destruction of these obsolete POPs and wastes by co-processing in cement kilns constitute another option given the very large number of cement kilns that exist across the country.

39. A participatory approach has been adopted during the preparatory phase of the project involving all the major stakeholders including major ministries like Environment and Health, leading research institutes like the Tsinghua University or institutes of the Chinese Academy of Sciences, representatives of local governments (e.g. provinces of Hubei and Hebei), and representatives of private companies (e.g. cement kilns).

40. The intervention logic (project logical framework, annex 1 of project document) proposed for the project is clear and coherent. The proposed indicators and means of verification for each of the expected outcomes to occur are adequate and the means of verification proposed are also appropriate. Similarly, all the assumptions made are realistic.

41. The timeframe provided in the project document to undertake the planned activities appears to be adequate. The names of institutions responsible for each activity given in Section C6 of the project document are also appropriate for proper implementation.

42. The activities designed for the project and described in Section C6 of the project document are adequate and are already producing the intended results and the planned outputs. The activities are also likely to drive the indented change by creating awareness at all levels.

43. For project implementation, an organogram is given in the project document as well as the roles of the key stakeholders / partners including UNIDO, stakeholders at national, provincial and local levels adequately described. For example, the roles of CIO, CICG or the PET at national level are clearly spelt out. Similarly, at provincial level, the roles of the different partners / stakeholders have been clearly defined in the project document. For example, a detailed list of responsibilities of the regional PMOs is given (see earlier Section Counterpart Organizations: para 30 – 36).

44. The rating on Project Design is **Highly Satisfactory**.

B. Relevance

B.1 Relevance to National Development and Environmental Agendas

45. The project is highly relevant to China's National Program of Disposal Facilities Construction for Hazardous Wastes and Medical Wastes Treatment (NPDFCHWMW) that was in approved in 2004. The project will interact with and influence the Program by[6]:

- Introducing life cycle management into current hazardous waste management systems, including qualitative site environmental risk assessment, waste characterization, and pre-disposal treatment involving handling, collection, packaging, labelling, transportation, and storage of stockpiled POPs pesticides;
- Mainstreaming relevant Stockholm Convention requirements for ESM of POPs stockpiles and wastes into current legal and institutional management structure;
- Expanding technology selection for destruction of stockpiled obsolete POPs pesticide waste thereby generating global environmental benefits.

46. The project will play a vital role in supporting China to meet the objectives as set in its National Implementation Plan (NIP) and thus will help in complying with the Stockholm Convention. The NIP objectives are to[7]:

- Establish a preliminary system for the environmentally sound management of POPs stockpiles and wastes by 2010;
- Complete the environmentally sound management and disposal of 30% of pesticide POPs wastes identified nationwide by 2010;
- Begin to achieve the environmentally sound management and disposal of pesticide POPs wastes across the country by 2015;
- Fulfill the environmentally sound management and disposal of identified Dioxin wastes released by key industries by 2015; and
- Update the lists of POPs wastes and POPs contaminated sites, and gradually eliminate contamination caused by them as the long-term objective.

B.2 Relevance to Target Groups

47. This project is of direct relevance to groups involved in the project from POPs wastes owners, wastes transporters to waste disposal centers / facilities. These groups that are potentially at risk, in particular, the employees of transport companies and disposal centers / facilities must be aware of the dangers posed by these hazardous wastes and the need for their proper management and disposal.

48. The project is also highly relevant to research communities and private sector as the management and disposal of POPs and hazardous wastes may constitute a major market niche as, prior to this project, limited capacity that meet international requirements (e.g. Stockholm Convention) exist in China for the sound destruction of those types of wastes. Given the significant amount of POPs wastes and contaminated sites already identified during the preparatory phases, this project constitute a good opportunity for research, development and investment in this field.

[6] Section B of PIF document
[7] Section B of PIF document

49. The different stakeholders met during the field mission confirmed the relevance of this project, and indicated the positive impact that the project has had so far. For example, the Hebei Environmental treatment facility[8] has indicated that the project helped in building their capacity to destroy POPs wastes (by co-processing during cement production in cement kiln) through guidance and technical assistance provided by leading research institutions (e.g. Tsinghua University and CRAES) contracted by the project[9]. Similarly, the Huaxin Environmental Company indicated that thanks to the technical assistance provided by the project, they have built capacity to destroy POPs wastes by co-processing in cement production (cement kiln). They also indicated that capacity of their workers have been built to deal with these type of wastes (hazardous) reducing risk of exposure. To date, Huaxin Environmental Company has destroyed 2247.39 tons of PPW coming from 16 cities of Hubei Province.

50. The officers of local Environment Protection Bureaus (EPBs) of Hebei and Hubei provinces, interviewed during field mission, also indicated that through training provided by the project, their capacity has been built for issues pertaining to the management of POPs and hazardous wastes. With the provincial policy on POPs and hazardous wastes that has been developed and promulgated in the context of the project, these EPB officers (from Hebei and Hubei provinces) indicated that monitoring of POPs and hazardous wastes and related issues form part of their routine work[10].

51. However, continued relevance will depend on enforcement of corresponding policies and legal framework for the environmentally sound management of POPs pesticides and wastes and contaminated sites at all levels (central and provincial). In that respect, it is important that implementation and enforcement of policies related to POPs wastes and other hazardous wastes should be explicitly monitored by CIO and local agencies. In particular, it is important that facilities destroying POPs and other hazardous wastes meet international requirements in terms of releases to air and other media.

B.3 Relevance to the GEF

52. As stated in the PIF document[11], the project is consistent with Strategic Program 1, 2 and 3 of persistent organic pollutants focal area strategy and strategic programming for GEF-4 respectively:

- Strengthening Capacities for National Implementation Plan (NIP) Implementation, with the objective to strengthen and/or build the capacity required in eligible countries to implement their Stockholm Convention NIPs in a sustainable, effective and comprehensive manner, while building upon and contributing to strengthening a country's foundational capacities for sound management of chemicals more generally.
- Partnering in investments needed for NIP implementation to achieve impacts in the reduction of POPs production, use and releases, and reduce the stress on human health and the environment caused by POPs, including through promoting the use of substitute products or alternative practices that prevent or reduce the generation and/or release of POPs.

[8] Sub-company of the Beijing Building Materials Group Company limited
[9] Interview data. To date, this facility has destroyed 1,425 tons of PPW coming from Hubei Province.
[10] Interview data during field mission
[11] Approved on 8 February 2008

- Meeting the future challenges that lay ahead in the implementation of the Stockholm Convention, the GEF will support projects that demonstrate and promote the replication of environmentally sound, alternative products to POPs, or the substitution of materials and processes to prevent POPs formation.

B.4 Relevance to UNIDO

53. The project is very relevant with UNIDO's mandate to support developing countries and countries with economy in transition to achieve sustainable industrial development given the project is focusing on technological solutions to environment and health problems within Operational Program 14[12]. UNIDO has also developed and implemented a large number of GEF funded NIPs and post-NIP projects and contributed to the efforts made in sound management of chemicals. This project will integrate both aspects of technology transfer and investment, which are clearly falling in the comparative advantage domain of UNIDO.

54. Furthermore, UNIDO is committed to assist its developing country Member States in accordance with Article 12 of the Stockholm Convention, and UNIDO has significant past experience with environmentally sound waste management projects in China resulting the latter being UNIDO's largest recipient of technical cooperation assistance[13].

55. The rating for Relevance is **Highly Satisfactory**.

C. Effectiveness

C.1 Output delivery at midterm and attainment of objectives

56. The project (GEF funds) is directly supporting the implementation of project activities in the Hubei and Hebei provinces for demonstration purposes. Replication in other provinces (e.g. Hunan, Liaoning, Shandong, etc.) will happen in the second phase of the project. However, phasing out and destruction of POPs pesticides and wastes are also happening in other provinces or municipalities like Shandong and Jiangsu provinces, Chong Qing or Tianjin. The evaluation will therefore focus on activities happening in Hebei and Hubei provinces. However, mention of results / outcomes from other provinces / municipalities will also be made.

57. Output delivery at midterm is satisfactory. Indeed out of the 37 out 47 activities that should have been initiated in the first half of the project have been successfully completed (see Table 3 in Annex 4). The 10 remaining are on-going and well advanced. The paragraphs that follow discuss / describe the progress, attainment of objectives and impact for the different components. In particular, the discussion will focus how effective implementation has been at midterm and whether the questions set in Section 1.2 (paragraph 6) have been adequately addressed for achievement of different outcomes.

[12] Section H of PIF document
[13] Section B of project document

Outcome one: **Strengthened legal and regulatory framework for environmentally sound management (ESM) and disposal of POPs waste**

58. All the planned activities / outputs for this outcome have been successfully completed at midterm. A number of regulatory documents and standard operating procedures/guidance documents have been produced / developed that include 2 national programmes, 1 technical policy, 3 national standards, 1 provincial policy, 1 provincial technical guideline and 3 project guidance documents (see Annex D). These documents include: *Technology Policy for the Prevention and Control of Pollution Caused by Hazardous Wastes*; *Notice of the Provincial Department of Environment Protection on Strengthening the Management of Abandoned Pesticides and Pesticide Packages (E.H.B.[2012] No. 321)*; *Guidelines for Investigation and Identification of Pesticide POPs Wastes*; *Standard on Pollution prevention Caused by Hazardous Waste high temperature incineration*, *Risk assessment guidelines for contaminated sites*; *Technical Guidance for Co-processing of Wastes with Cement Kilns*; and *Measures for the Administration of Operation Permit of Hazardous Wastes*. There are indications that the policies for ESM of obsolete POPs pesticides and hazardous wastes have been enforced at provincial level. For example, the deputy director general of Hubei EPB indicated that the Hubei provincial government has specified the obligations of different stakeholders for the sound management of obsolete pesticides wastes including POPs pesticides and wastes. She also stated that the Vice Governor of Hubei province attached a very high importance on this matter[14].

59. Trainings on the identification and investigation as well as environmentally sound management and disposal of POPs wastes have been conducted in the Hebei and Hubei provinces. Training on guidelines, standards and specifications for managerial staff has also been undertaken. At midterm a total of eight training sessions targeting both managerial staff and employees/officers of relevant institutions including EPBs, waste disposal companies, transport companies, and POPs wastes owners have been undertaken in the Hubei and Hebei provinces. At least 500 managerial and monitoring staff has been trained in those two provinces. For example, an on-job training seminar for prefectural EPA directors, which was held in Beidaihe, Hebei Province on July 6, 2012, focused on the Convention implementation and the management of pesticide POPs wastes as its main theme, and introduced the overall progress of China's Convention implementation to the prefectural EPA directors. For the training of officers of EPBs, waste centers, transport companies, and disposal facilities, the guidelines developed by Chinese Research Academy of Environmental Science (CRAES) on the ESM of obsolete POPs and wastes and contaminated sites in the context of the project were used.

60. The EPB officers interviewed during field mission indicated that the training they received were very relevant to their work, and their capacity to monitor and enforce regulations on the sound management of POPs and other hazardous wastes have been built / strengthened. They also indicated that enforcement of laws regarding hazardous wastes form part of their routine work. It is worthy to note that during the final workshop held on 29 June

[14] Interview data during field mission

2012, local EPB officers of the Hubei province were rewarded officially for their good work[15].

61. The project activities were adequately promoted at national and provincial level. For example, in the Hubei province, 200 training documents/guidelines and 5000 flyers were produced and disseminated. National and local media including newspapers, radio and TV were invited to report on the project activities. In the Hubei province for the kick off workshop (held on 29 June 2011) that was attended by the Deputy Director General of FECO and Deputy Director General of Hubei EPB, newspapers, local TV and radio were invited to attend and report on the event. A number of national and provincial media including China Environment News, Hubei Daily, Hebei Daily, People's Daily Online, Chinanews.com, CNR.cn and China Economic Net reported on project activities.

Outcome 2: Improved institutional capacity at all levels of POPs waste disposal management

62. For this outcome, all the activities have been successfully completed and outputs satisfactorily delivered (see Annex D) in the Hebei and Hubei provinces. At both national and provincial level, the coordination framework established for the integrated POPs waste management is adequate. As planned in the project document, the existing national Convention Implementation Coordinating Group (CICG), established during NIP development, is coordinating activities at national level and the Project Management Office has been established within CIO. In Hubei and Hebei provinces, similar structures have been established and constituted by provincial and municipal EPBs, waste centers, wastes owners and other departments like agriculture, health. No evidence could be obtained on the involvement / participation of NGOs in project activities in those two provinces.

63. In both provinces, the Solid Waste Management Centre was nominated as provincial project manager to coordinate activities at provincial level. Those regional coordinating groups are meeting regular to review and discuss the progress of project activities. For instance, for the Hubei province, a midterm coordination meeting was held in August 2011 to review and discuss progress of work as well as difficulties encountered. For example, it was pointed out that given the remote location of some cities from the treatment facility (Huaxin cement kiln located in Wuhan) and as the transportation of hazardous wastes cannot be done at night according to existing regulations, a careful and adequate planning had to be done for transportation of these wastes for these remote locations.

64. The national policy and regulatory framework have been adapted in both provinces and a notice on the strengthening of the management of pesticide wastes was issued by the provincial EPB to all relevant stakeholders reminding them of their responsibilities regarding those types of wastes and the need to comply with existing laws and regulations pertaining to obsolete pesticides.

[15] Interview data

65. Trial tests for the destruction of POPs that started in 2008 and that lasted for two years were carried out at the Huaxin cement kiln and at the cement kiln of Hebei Jinyu Mangrove Environmental Protection Company (a member of BBMG) with the technical assistance of CRAES. The tests were successful as the dioxin emissions were found to be very low (less than 0.1 ng/nm^3) and different types of POPs including DDT were fed in the kiln. The two companies invested significantly ($ 3.7 M and $ 1.6 M respectively) to upgrade the cement kilns for POPs destruction[16].

66. As mentioned for Outcome 1, adequate awareness raising activities have been undertaken to disseminate and promote project activities both at national and provincial level. In addition to media covering mentioned earlier, other initiatives have been done, for instance 5,000 brochures were printed and distributed in Hubei province, 500 souvenirs foldable knapsack and 4500 souvenirs ball pens were produced and distributed by FECO. Hotlines have been created in the two provinces[17].

Outcome 3: Environmentally sound disposal of targeted POPs pesticide waste and dioxin rich incinerator fly ash

67. For this outcome, only 6 of the 13 planned activities have been successfully completed due to delays in the development and setting up of the mobile treatment using non-combustion technology. However, the non-completed activities are on-going and well advanced (see Annex D).

68. Of the project target figure of 10,000 tons, 4,941.6 tons of POPs pesticides wastes have already been successfully identified, packed, transport and destroyed. In the Hebei and Hubei provinces, the destruction of POPs wastes, supported by project funds, were done by co-processing in cement kilns. According to feedback gathered during field mission, the whole process for each disposal exercise has been done following ESM guidelines developed by CRAES and under the supervision of local EPB officers. Some examples of successful disposal exercises are:

- BBMG Mangrove Environmental Protection Co. Ltd. undertook the successful packing, clearing and disposal of 1,400 tons POPs wastes of Hebei Xingtai Pesticide Factory which was transported by the Beijing Xianglong Chemical Item Storage and Transportation Co. Ltd.
- Disposal of 80 tons DDT-containing sludge of the Tianjin Chemical Factory of Tianjin Bohai Chemical Co. Ltd with local government co-funding by Tianjin Hejia Veolia Environmental Services Co. Ltd, through high-temperature incineration done in compliance to international requirements in terms of dioxin emission (less than 0.1ng-TEQ/Nm^3) and with a decomposition efficiency higher than 99.9999%..
- In 2009, collection and disposal of 160 tons DDT wastes in Jiangsu Province with support of local government co-funding by the Huaxin Jinmao Cement (Suzhou) Co., Ltd using new dry process cement rotary kilns satisfying international norms (dioxin emission lower than 0.1ng-TEQ/Nm3 and decomposition efficiency higher than 99.9999%).
- Disposal of pesticide POPs wastes in Shandong Province: Concerning 2.13 tons of historically abandoned pesticide POPs wastes, Shandong Department of Environment

[16] Source of information: PIR 2013 and confirmed during interviews with the corresponding companies.
[17] Hubei Environment Hotline and Hebei Department of Environment Protection Hotline

Protection entrusted Zibo Luzhong Cement Co., Ltd. to dispose them by means of co-processing with new dry process cement rotary kiln

69. During the second phase of the project that started in 2012, an area of about 2.8 hectare contaminated with POPs pesticides located at the largest pesticide company[18] was identified in the Hunan province. Environmental sound remediation of this contaminated site is a challenge and is beyond the scope of this project according to the project manager[19]. However, the project is supporting the local authorities for undertaking a risk assessment study for this site and will also help to put in place a mechanism for the cleaning of this site that will probably take more than 20 years[20]. Although, warning signs/posts have already been put in place, it is recommended that this site be properly safeguarded and the population living in the vicinity be adequately informed about the dangers posed by this site. It is also recommended that the project assist the local authorities in developing a mechanism and long term strategy for the remediation of this site.

70. The development and setting up of a mobile unit using non-combustion technology for destruction of PPW has suffered some delay. This delay is partly due to the late signature of contract and transfer of funds between FECO and UNIDO. Indeed, the project was approved by the GEF on April 30, 2009 and it was only in July 2010 that a project execution contract (No. 16001649) was signed between FECO and UNIDO, with a total contract amount of $9,476,000. For this activity, subcontracted to RCEES, at midterm, the Mechano Chemical Dechlorination (MCD) technology has been selected amongst a number of technologies identified, and the specifications for destroying POPs wastes using this technology has been already developed. According to the sub-contractor, a further 2 years is required for the undertaking the remaining steps (bidding exercise to select service provider, design, pre-delivery and delivery of MCD unit, trial test and handing over) in order to complete this activity. As the project closure is set for August 2014, an extension of at least 18 months is needed for delivery of this output.

71. For the sound disposal of fly ash containing high levels of dioxin coming from incineration processes, the Shenyang Academy of Environmental Sciences and Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), sub-contracted for this work, has completed the preliminary investigation. Five possible and nationally available options have been identified: cement kiln, low temperature method to produce bricks, use of flyash to produce construction materials, plasma disposal technology (1500 ^{0}C) to produce glasslike material and supercritical water oxidation technology. The next step is to undertake field trial by the five identified options[21].

Outcome 4: Qualitative environmental risk assessment (QERA) site prioritization

72. For this outcome, four activities should have been initiated and outputs delivered at midterm. To date, only two of the activities have been completed and the other two have been initiated (see Annex D).

[18] This company was producing DDT and other chlorinated pesticides.
[19] Interview data during mission at Unido Headquarters in Vienna, 18 January 2014.
[20] Interview data
[21] Interview data with IHEP during field mission.

73. Based on NIP data as a starting point, the inventory of pesticide POPs contaminated sites have been undertaken across the country. Environmental safety assessments have been completed in the Hebei and Hubei provinces. As mentioned earlier, a risk assessment is being undertaken at the contaminated site located near the largest pesticide company in Hunan.

Outcome 5: Project management, monitoring and evaluation

74. In 2009, based on the existing inter-ministerial mechanism of the National Convention Implementation Coordination Group (CICG), meetings were held to notify each relevant ministry/commission the implementation of the project. At national level, an adequate mechanism for the proper administrative management and auditing of the project has been established within MEP, and a project management team for project implementation has been set up within CIO/FECO.

75. At provincial level, a project steering group was established in December 2010 and April 2011 for Hubei and Hebei provinces respectively. In both cases, these steering groups are constituted by major stakeholders including local EPBs, waste centers and treatment facilities, and chaired by the Deputy Director General of EPB of the province in both cases. The supervision, monitoring and evaluation aspect is discussed in Section F (Project coordination and monitoring).

C.2 Quality of inputs and impact

76. National experts contracted for the project came from leading and prestigious academic institutions e.g. Tsinghua University or institutions of the Chinese Academy of Sciences like RCEES, CRAES and IHEP. According to feedback gathered during the field mission, the different stakeholders interviewed confirmed the high quality expertise provided by these experts. For example, the Huaxin Environmental Company confirmed the crucial guidance and expertise of CRAES that contributed to the successful trial destruction of DDT and other POPS by co-processing in cement kiln[22]. Consequently, the Huaxin Environmental Company was able to soundly destroy[23] 2247.39 tons of POPs pesticides and wastes coming from 16 cities of the Hubei province.

77. The EPB officers and employees of waste centers also confirmed the high quality expertise and guidance provided by CRAES and RCEES during the training workshops. They also indicated that these capacity building training workshops on ESM of POPs and hazardous wastes were very relevant to their work, and contributed to increase their knowledge and strengthen their capacity[24].

78. During site visit at the Tsinghua University, the evaluators were impressed with the state-of-the-art instrumentation (e.g. HRGC/HRMS or GC/MS/MS) found in the modern dioxin laboratory of this institution. This is one of the laboratories carrying out dioxin analysis in the context of the project.

79. One the major impact of the project is the regulatory framework that has been strengthened for the sound management of obsolete POPs pesticides and wastes. There are

[23] That is meeting the Stockholm Convention requirement in terms of dioxin releases during POPs destruction.
[24] Interview data

indications that regulations and guidelines developed in the context of the project are being enforced in the two demonstration provinces (Hubei and Hebei). For example, as mentioned earlier, the EPBs of the two provinces have informed all the stakeholders through an official notice, about their responsibilities regarding ESM of obsolete pesticides (including POPs). The EPB enforcing officers interviewed confirmed that monitoring of POPs pesticides and other hazardous wastes is part of their routine work and they indicated that they undertook surprise spot checks to verify if ESM guidelines are been met by wastes owners or by companies responsible for packing and transporting hazardous wastes.

80. Another very important impact of the project is that capacity has been built for the destruction of POPs and other hazardous wastes in the Hubei and Hebei provinces. During site visits[25] at the Huaxin Environmental Company and BBMG Mangrove Environmental Protection Co. Ltd, the evaluators could note the appropriate system put in place for the transport, storage and disposal of POPs and hazardous wastes at these facilities. During these site visits, the two treatment companies confirmed that they regularly receive requests for destruction of hazardous wastes. For example, the Huaxin Environmental Company indicated that they undertook a number of pesticide destruction outside the project context e.g. disposal of 10 tons of obsolete pesticide for the local authority of Xiangyang City in October 2013; disposal of 11 tons of obsolete pesticides for the local government of Enshi city in September 2013.

C.3 Catalytic or replication effect

81. Potential for replication is very high. The implementation approach adopted for this project contains elements of replication. Indeed, in the first phase of the project, activities have been undertaken in the two demonstration provinces: Hubei and Hebei. In the actual on-going second phase, activities are being replicated in the Hunan and Jilin provinces.

82. To increase chances for successful implementation in these provinces, the project (FECO/CIO and UNIDO) should ensure that lessons learned in the Hubei and Hebei provinces should serve as basis for replication. Moreover, the project should also ensure that planned co-funding materialize and / or take actions to further leverage co-funding for implementation of activities.

83. Furthermore, given that the 12th Five-Year Plan for Implementation of International Environmental Conventions and the 12th Five-Year Plan for POPs Pollution Prevention and Control have been promulgated and implemented in 2012, it is anticipated that all the provinces, municipalities and counties across the country must comply with these plans, and must take actions for the ESM of obsolete POPs pesticides and wastes. These further highlight the potential for replication of this project.

84. Given the impact that the project is having so far, the rating on **Effectiveness** is **Highly Satisfactory**.

[25] Undertaken on 5th and 7th December 2013 respectively

D. Efficiency

85. Overall, a mixed form of agency execution and counterpart execution was applied by UNIDO for the implementation of the project: a large subcontract of GEF funds USD $9,476,000 (signed on July 2010 and representing 95.0 % of GEF funds) to the main partner FECO for implementation of national activities including recruitment of national experts and a smaller component (US$ 497,000) directly executed by UNIDO for recruitment of international experts, supervision, monitoring and evaluation.

86. The project officially started in August 2009, and noting that a sub-contract was signed between UNIDO and FECO only in July 2010, midterm would correspond to February 2012. However, the discussion will be based on the last progress report that covers the period up to 31 December 2012.

87. At 31 December 2012, of the total GEF funds ($ 7,733,343) transferred to FECO from UNIDO, a total amount of $1,908,825.5 has been spent for project implementation representing only 25% of funds available. From feedback gathered during field mission, FECO indicated that funds were transferred from UNIDO only after signature of contract (in July 2010) and this delayed the start of most activities. As can be seen from Table 3, except for Component 5 (Project management) for which 39% has been spent, at midterm the expenditures for the other components are much lower than 50 %. From GEF funds, a total of 13 sub-contracts have been signed with service providers (e.g. for disposal of POPs pesticides with Huaxin Environmental Company), national institutions (e.g. Tsinghua University or IHEP for technical assistance on dioxin analysis or technology assessment), or with provinces for capacity building.

88. According to financial audit reports, a significant amount of planned co-funding has already materialized at midterm. However, it was not possible to know whether the cofounding was in-kind or cash and it was also not possible to know the identity of counterpart providing the co-funding. Table 4 gives details about co-funding status at midterm.

Table 3: Expenditures per component as at 31 December 2012 (GEF funds only)

	Available Funds ($)	Expenditures	% spent
Component 1	718,900	107,311	15
Component 2	683,200	202,501	34
Component 3	5,643,600	1,455,140	26
Component 4	211,600	46,274	22
Component 5	250,800	97,597	39
Total	**7,508,100**	**1,908,823**	**25**

Table 4: Status of co-funding at midterm

	Expected co-funds* ($)	Co-funds materialised ($)	(%)
Component 1	4,056,889	579,803	14
Component 2	3,804,391	1,094,467	29
Component 3	30,723,721	7,681,006	25
Component 4	1,146,803	252,739	22
Component 5	1,389,990	535,578	39
Total	**41,121,794**	**10,143,595**	**25**

*According to project document

89. It can be stated that the project has been very cost effective at midterm. Indeed, two cement kilns (one in Hubei province and one in Hebei province) have been upgraded to the required Stockholm Convention standard and have the capacity to destroy POPs pesticides and other hazardous wastes. At midterm, a total of 4,951.6 tons of obsolete POPs pesticides (project target value is 10,000 tons) have already been soundly disposed of by these upgraded cement kilns. This corresponds to an avoidance of 3.25 g TEQ[26] of dioxin emission to the environment[27]. Furthermore, the regulatory framework for the ESM of PPW has been strengthened and adapted at provincial level.

90. A number of measures / factors that promoted efficiency have been identified and they include:

- Strong central government committed to implement the Stockholm Convention: The Convention Implementation Office (CIO), created since 2003 for NIP development, employs 25 permanent staff that are responsible to implement the Stockholm Convention.
- Involvement of major stakeholders at all levels (national and provincial) since the preparatory phase: All major stakeholders including provinces, wastes owners, cement kilns have been invited to participate in the preparatory phase (PIF phase). A significant amount of POPs pesticides and contaminated sites were already identified prior to the start of the project.
- High level of co-funding both at central and provincial level: GEF v/s co-funding: ratio of 1 to 3
- Building existing structures like CICG that was created since NIP development.
- Assistance of high quality experts from prestigious institutions like Tsinghua University and institutions of the Chinese Academy of Science (e.g RCEES, IHEP or CRAES). Note that dioxin laboratories of these institutions participated successfully in an international inter-calibration study organized by UNEP in 2008. As mentioned earlier the different stakeholders (e.g. Huaxin Company, local EPBs or waste companies) interviewed during the field

[26] TEQ: Toxic Equivalent, unit used to express level of dioxin in environmental releases
[27] Compared to destruction by incineration in a non ESM manner.

mission confirmed the high quality assistance they received from the national experts.

- Synergies with the National Hazardous and Medical Waste Disposal Facility Construction Program that started in 2003
- Good line of communication between UNIDO and CIO/FECO: Indeed the UNIDO project manager being a former staff of FECO facilitated communication and helped in the smooth implementation of project activities[28]. The national counterparts interviewed also confirmed the good and timely guidance provided by of the UNIDO Project Manager during project execution.

91. However, as mentioned earlier (paragraph 70), the project has suffered some delays, particularly the setting up of the mobile unit using non-combustion technology for destruction of POPs pesticides, and these delays are mainly due to the delays in signature and transfer of funds between UNIDO and FECO. And as indicated (paragraph 70), an extension of 24 months is recommended to allow for completion of this component of the project (mobile unit) pending on cost implication and availability of funds.

92. Project implementation has been very cost effective up to midterm. However, delivery of mobile unit has been delayed, and for this reason a rating of **Satisfactory** is given for **Efficiency**.

E. Sustainability

a. Financial risks

93. The evaluation considers that financial risk is low for the following reasons. The project has been successful in leveraging a high level of co-funding both at national and provincial level, and at midterm a significant amount of the planned amounts have already materialized (paragraph 87). Furthermore, the environmental companies (Huaxin Environmental Company and BBMG Mangrove Company) which have invested significantly to upgrade the cement kilns to BAT level for destruction of POPs pesticides and other hazardous wastes indicated that this activity constitutes a good niche for them. They also indicated that this activity would be sustainable given that the polluter pay principle is being enforced across the country. There are already indications that this is happening as they have already got requests to dispose of POPs and other hazardous wastes not funded by the project (paragraph 80). In addition, the promulgation in July 2012 of the 12th Five-year Program for the Prevention and Control of Pollution Caused by POPs from Major Industries that mentions the "100% safe disposal of identified pesticide POPs wastes" further strengthen the belief of the environmental companies that the sound disposal of POPs and other hazardous constitute a sustainable economic activity.

b. Sociopolitical risks

94. China is party to the Stockholm Convention and is fully committed for its implementation (paragraph 89, first bullet point). Ownership of the project is high both at national and provincial levels. A number of programs and policies have already been promulgated and adapted at provincial level (paragraph 58). Awareness has been raised

[28] Interview with FECO officers and with Project manager

through involvement of major stakeholders since the early phases of the project. Some of the stakeholders (local EPBs and waste centers) were already aware of dangers posed by POPs as they were involved in other POPs projects: NIP development, Medical waste and SIRE (paragraph 94)[29]. The stakeholders (EPB officers, wastes owners, wastes centers, etc.) interviewed confirmed the relevance of the project for their work and duties. For these reasons sociopolitical risks are considered low.

c. Institutional framework and governance risks

95. As mentioned earlier, the implementation and coordination of the project is being undertaken through existing infrastructure (established since 2003) namely the CICG (paragraph 30) and the CIO (paragraph 31) where the Project Management Team is located. Since China's NIP development in 2003 those infrastructures have been responsible to implement a number of projects related to the Stockholm Convention including the two projects: "*Environmentally sustainable management of medical waste in China*" (GF/CPR/07/008) and "*Strengthening institutions, regulations and enforcement capacities for effective and efficient implementation of the national implementation plan in China (SIRE)*" (GF/CPR/07/X01).

96. Furthermore, China has been strengthening its regulatory framework since 2003 for the sound management of medical, POPs and hazardous wastes through the promulgation of programs, policies and laws that have been adapted at provincial levels and enforced by local EPBs. For example, the Stockholm Convention BAT/BEP[30] guidelines for the management of medical wastes have been adapted and included in the national 12th Five Year program and adopted at provincial level also[31]. Similarly, since the SIRE project and in synergy with the project under evaluation, convention implementation has been mainstreamed to key national and provincial departments, policies and regulations have been issued for POPs management, and the 12th five-year national and provincial plans for POPs pollution control have been promulgated (paragraph 58). For these reasons, the evaluation considers that risks related to institutional framework and governance are low.

d. Environmental risks

97. No environmental risk that can influence or jeopardize the project outcomes and future flow of project benefits has been identified, therefore this risk is considered to be low.

98. The rating on **Sustainability** is **Highly Likely**.

F. Project coordination and management

F.1 Monitoring and Evaluation design

99. The monitoring & evaluation (M & E) design followed UNIDO's standard monitoring and evaluation procedure. The evaluation considers that the plan proposed is adequate and allows for monitoring progress and impact at output level. Indeed, the project' logical framework[32] gives appropriate objectively verifiable indicators, their proper means of

[29] Interview data
[30] http://www.pops.int/documents/batbep_advance/
[31] Inclusion done during implementation of the Medical Waste Project.
[32] Annex 1 of the project document

verification and assumptions for the project objectives, outcomes and outputs. The parties responsible for each of the activity of the different outputs are also given in the project document[33]. The evaluation believes however that the logical framework could have benefited from target at midterm for indicators, and these would have certainly helped in the project implementation.

100. The logical framework is complemented by an adequate costed monitoring and evaluation plan that allows to monitoring progress at project level[34]. This plan includes: reports on impact indicators, annual and final project reports, PIRs, bi-annual steering group meetings, annual tri-partite meetings, terminal evaluation, annual financial reporting, and audits, mid and terminal evaluations; their timing and the parties responsible for each of these activities.

101. The evaluation considers that the overall approach to monitoring progress and project evaluation in terms of activities and deliverables (reports) is adequate and clearly linked to project reporting, oversight and governance. For these reasons, rating on **Monitoring and Evaluation Design** is **Highly Satisfactory**.

F.2 Monitoring & Evaluation Implementation

102. As mentioned earlier (paragraphs 74 and 75), the planned structures both at national and provincial level for project implementation were established as planned in the project document. The inception workshop to launch the project nationally was held on 20 August 2009 in Beijing. A total of 100 participants attended this workshop and these included all the major stakeholders and partners of the project. The project implementation process, work plan, deadlines for delivery of outputs as well as parties responsible to coordinate activities and monitor progress was discussed and agreed upon at the workshop. These are reflected in the inception report submitted to the evaluation.

103. According to feedback gathered during field mission in China[35], CIO/FECO confirmed that the planned tripartite meeting and steering group meetings were held during which project progress was reviewed and work-plan and next steps discussed. These are reflected in meeting reports made available to the evaluation. It should be highlighted that most of the annexes of these reports were in Chinese, only the main report was translated in English. However, the national consultant (a Chinese national) for this evaluation exercise confirmed the relevance of the annexes to the main reports. The project management also indicated that project progress reports (for 2010, 2011 and 2012) and PIRs (for 2010, 2011 and 2012) as well as annual final and audit reports were timely submitted to UNIDO. This was confirmed by UNIDO's project manager during field mission at UNIDO Head Quarters in Vienna[36].

104. At provincial level (Hubei and Hebei), monitoring to track progress was also adequately undertaken according to the members of the local steering groups interviewed during the country mission. The inception workshops were held on 29 June 2011 and on 7 September 2011 in the Hubei and Hebei respectively. Those inception workshops were held back to back with Training Courses for Environmentally Sound Management & Disposal

[33] Table given in section C.6 of the project document
[34] Section F of the project document
[35] Field mission undertaken in 1 – 9 December 2013 in China
[36] Field mission undertaken in 15 – 17 January 2014 in Vienna

Project of Obsolete POPs Wastes. It should be pointed that most of the reports pertaining to activities undertaken in the Hubei and Hebei provinces and made available to the evaluation were in Chinese. Although, the national consultant helped to provide some insights from these reports, it would have greatly facilitated the evaluation process if a short and concise summarized English version of these reports were available. The evaluation nevertheless considers that at provincial level monitoring and evaluation was done adequately. This was confirmed by FECO and the Project manager[37], and a positive of outcome of the project at provincial level is that at midterm 4,951.6 tons of POPs pesticides and wastes have already been soundly disposed of.

105. The rating for **M&E Implementation** is **Highly Satisfactory**.

F.3 Budgeting and Funding for M&E activities

106. The project budget included the costs for M&E activities. For the M&E plan proposed, the costs of all the activities have been budgeted, and the total cost reported is US$ 281,500[38]. These costs represent 2.8% of total GEF funds and seem to be slightly lower compared to other UNIDO implemented projects: 7.7% for Medical Waste project and 3.1% for the SIRE project. In general, the budgets planned for the different activities seem adequate, however for the midterm evaluation (US$ 20.600) and terminal evaluation (US$ 17,000) the budget allocations appear to be on the low side.

107. **Budgeting and Funding for M&E activities** is given a rating **Satisfactory**.

F.4 Project Management

108. As planned, the project is being implemented by UNIDO from which a project focal point was established (in 2009), and this unit, constituted by a Project Manager (PM) and supporting staff, is providing assistance in project execution. In 2012, the project manager changed due to personnel movement. This change did not disrupt the smooth implementation of the project as the actual PM, an industrial development officer of the UNIDO POPs unit, was a previous FECO officer and was involved Convention implementation when he was at FECO[39]. Moreover, having been involved in the development of the project under evaluation, the actual PM indicated that there was no problem during the takeover of the project. The PM is being assisted by a full time contractual staff (who was also a former FECO officer) recruited from project funds[40]. The PM and the contractual staff interviewed[41] indicated that there were no particular problem except for normal administrative delays for project execution.

109. At national level, the project management team, adequately staffed, was set up within CIO[42]/FECO (in 2009) from which a national project coordinator (NPC) was nominated. In 2013, the NPC changed as the previous NPC was posted at the UNIDO Country Office in

[37] Feedback gathered during field missions.
[38] Table 6 reported in Section F of project document.
[39] Interview data with PM
[40] Interview data
[41] During Vienna mission 15 – 17 January 2014
[42] 25 permanent staff work full time for CIO

Beijing[43] for one year. Although the new NPC is a relatively young officer from FECO, the proper execution and coordination of the project was not disrupted thanks an adequate handing over by the previous NPC. Moreover, although the previous NPC is currently posted at the UNIDO Beijing Office, he continues to provide assistance to the actual NPC[44]. In fact during the country evaluation mission in China, the presentation on the status of the project was made by the previous NPC.

110. The project is being adequately managed at both national and provincial levels. The roles of major stakeholders / partners were clearly defined during the inception workshop (paragraph 102). A national technical adviser (NTA) (from RCEES) was recruited at the start of the project to provide assistance to the project, and the feedback gathered from different stakeholders[45] confirms that the NTA is performing very satisfactorily. For the different outputs, the project has recruited experts coming from prestigious Chinese Research Institutions were recruited / sub-contracted to provide specialized services and / or to provide technical assistance (paragraph 76) at both national and provincial levels. For example, CRAES assisted in the training workshops organized in the Hubei and Hebei provinces (paragraph 57).

111. As planned, field visits were regular undertaken by project management (PM, NPC and technical experts). For example, they undertook field visits to the Hubei, Hebei and Hunan provinces. For the field visit undertaken in Hunan province in 2012, the PM indicated that he was impressed by the extent of the contaminated site (more than 2 hectares) of the largest pesticide company in China (previously producing DDT and other chlorinated pesticides), and the amount of work required for complete remediation of the site (that would probably take more than two decades[46]).

112. The rating on **Project Management** is **Highly Satisfactory**.

F.5 Implementation approach

113. The implementation followed the approach originally agreed upon by stakeholders and as planned in project document. CIO / FECO is directly executing project activities at national level for which a large subcontract (USD $9,476,000) has been signed in July 2010 (paragraph 85). UNIDO is managing a smaller component of GEF funds (US$ 497,000) for recruitment of international experts, supervision, monitoring and evaluation. This same approach was used for previous GEF funded projects (e.g. NIP development, medical wastes and SIRE projects) that were successfully implemented by UNIDO.

[43] In the context of a bilateral agreement, each year a FECO officer is posted at the UNIDO country office in Beijing for capacity building purposes.
[44] Interview data with actual and previous NPC.
[45] Interview with NPC, local EPB officers in Hubei and Hebei provinces and UNIDO
[46] Impression of PM gathered during Vienna mission (15 – 17 January 2014).

114. This approach is fully complying with the five fundamental principles (Ownership, Alignment, Harmonization, Results and Mutual Accountability) of the Paris Declaration[47].

- Ownership: As mentioned earlier (paragraph 94), ownership of the project is very high at both national and provincial level, and it is highly relevant as it is assisting China to meet its obligations towards the Stockholm Convention (paragraph 46).
- Alignment: The project is being nationally executed by CIO/FECO with the assistance of local experts and making use of structures established during NIP development in 2003.
- Harmonization: The project has been designed by involving the major national counterparts since the preparatory phases, and taking into consideration the needs of the country for the ESM of POPs pesticides and wastes.
- Results: The development objective of the project is to build capacity in China for the environmentally sound management and disposal of obsolete stockpile POPs pesticides, associated wastes and dioxin rich fly-ash. At midterm, the project has been successful and objectives met.
- Mutual accountability: By planning a midterm and terminal evaluation, the project design is set to promote accountability for the achievement of the project objectives through the assessment of results, effectiveness, processes and performance of stakeholders involved during project implementation.

115. The approach adopted by directly involving all the major stakeholders is set to promote ownership of the project. As mentioned, ownership is very high amongst all the stakeholders and chances for sustainability of the project is high as the risks identified that might jeopardize project outcomes are low (Sustainability section, paragraphs 93 to 98). F.

F.6 Assessment of processes affecting attainment of project results

a. Preparation and readiness

116. As discussed in Section A (**Design**, paragraphs 37 to 43), the project document contains relevant, precise and concise information to allow for building capacity in China for the ESM of obsolete POPs pesticides and wastes. The project has been developed based on the gaps (and needs necessary to fill those gaps) identified during the preparatory phases. The project objectives are clearly defined and the activities described to achieve the project outputs and outcomes are feasible and adequate. The monitoring & evaluation plan proposed is also adequate to monitor progress (Section F, paragraphs 99 – 101). All the major stakeholders / partners were fully aware and prepared at the start of the project as either they were involved since the preparatory phases (e.g. provinces, local EPBs, private partners or waste centers) or participated in previous POPs projects (e.g. local EPBs in NIP development, medical and SIRE projects). Furthermore, the project is benefitting from existing structures for project implementation (paragraph 95).

117. The rating on **Preparation and Readiness** is **Highly Satisfactory**.

b. Country ownership / drivenness

118. Country ownership is high. As mentioned earlier (paragraph 45), this project is highly relevant with to China's National Program of Disposal Facilities Construction for Hazardous

[47] http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm

Wastes and Medical Wastes Treatment. Moreover, the ESM of POPs wastes is also one of the important elements set in the National 11th Five-Year Plan on Economic and Social Development of China. Furthermore, this project is in line with existing laws, regulations, standards and policies given in Table 1 (paragraph 20). Involvement of stakeholders has been very satisfactory since the preparatory phases (paragraph 90, second bullet point). The high level of co-financing is also indicating the high ownership of the project (paragraph 90, third bullet point). The in-depth discussion on relevance to target groups (paragraphs 47 – 52) further highlights the high ownership of the project.

119. The rating on **Country ownership / drivenness** is **Highly Satisfactory**.

c. Stakeholder involvement

120. As mentioned at several places in this report, the involvement of the major stakeholders at midterm has been highly satisfactory. The stakeholders include CIO/FECO (national executing agency), relevant ministries (members of CICG); provincial and local EPBs and departments (members of local steering groups), leading national institutions (e.g. Tsinghua University and institutions of CAS recruited to provide technical expertise or service), private sectors (e.g. Huaxin Environmental Group and BBMG Mangrove Environmental Protection Co. Ltd). However, the evaluation could not find any evidence that NGOs were invited to participate in the project.

121. As mentioned earlier, adequate awareness raising activities have been undertaken to disseminate and promote project activities both at national and provincial level (paragraph 61). However, the evaluation could not find evidence whether vulnerable groups or population living near contaminated sites (e.g. near contaminated site identified near the largest pesticide company in Hunan, paragraph 69) were targeted by those awareness activities. If this is not the case, the evaluation recommends that such targeted campaigns should be undertaken to minimize risk of exposure of these populations.

122. Rating on **Stakeholder involvement** is **Satisfactory**.

d. Financial planning

123. As mentioned earlier, there were some delays in the transfer of funds from UNIDO to FECO at the start of the project due to late signature of sub-contract and this resulted in affecting delivery of mobile unit for POPs destruction (paragraph 70). However, the subsequent fund transfers have been timely, and at midterm three transfers of $ 2,060,824, $3,248,723 and $2,423,796 have been done for the years 2010, 2011 and 2012 respectively. These transfers represent a total of $ 7,733,343 (81.6%) out of the $9,476,000 of the sub-contract between UNIDO and FECO (paragraph 85).

124. At national level, the funds are being adequately managed by the FECO financial and procurement division. During interviews, the NPC indicated that this division applied existing FECO procedures for sub-contracting activities, for procurement and for the management of project funds. For example, for those activities that require a selection process, a bidding exercise was always carried out in order to identify the best sub-contractor. For payments, progress reports were always requested before disbursements of funds. As per

FECO rules, the accounts of the projects were annually audited by a certified company. Audits were carried out for 2010, 2011 and 2012[48].

125. At midterm, a significant amount ($ 11,628,412) of the planned co-financing has already materialized. However, this amount represents only 36.2 % of the planned co-financing (Table 5). The local EPBs have been particularly effective in providing the co-financing. Project management (CIO/FECO and UNIDO) should ensure that the remaining co-financing materialize in order not to jeopardize successful implementation of project activities.

126. The rating on **Financial planning** is **Satisfactory**.

Table 5: Co-financing status at midterm ($)

Sources of Co-financing[49]	Name of Co-financer	Type of Co-financing[50]	Amount Confirmed at CEO endorsement / approval	Actual Amount Materialized at Midterm	% Materialized
GEF Agency	UNIDO	In-Kind	100,000	-	0
National Government		Grant	7,750,000	503,844	6.5
Private Sector	Huaxin Environmental Protection Co.	In-Kind	16,940,000	3,701,036	31.3
Private Sector	Hebei Jinyu mangrove Environmental Protection Co	In-Kind		1,609,326	
Local EPBs			7,310,000	5,814,206	79.5
		TOTAL	32,100,000	11,628,412	36.2

(Source of table: midterm PIR)

e. UNIDO supervision and backstopping

127. UNIDO supervision of the project was done through annual progress reports submitted by CIO/FECO, annual tripartite meetings, bi-annual steering committee group meetings and field visits. As mentioned earlier (paragraph 108), the UNIDO PM changed due to movement of personnel. However, this did not have any incidence on the project supervision[51]. The PMs (previous and actual) attended all the meetings and provided guidance adequately. For example, as reported in the minutes of the third tri-partite meeting (in 2012), the PM emphasized on the need to specify on the amount of the wastes to be disposed of for 2013 and to adapt the work plan accordingly so as to meet the project objective of 10,000 tons of POPs wastes destroyed. During the same meeting, the PM

[48] BEIJING SENHEGUANG CPAS CO. LTD undertook the three audit exercises.
[49] Sources of Co-financing include: Bilateral Aid Agency(ies), Foundation, GEF Agency, Local Government, National Government, Civil Society Organization, Other Multi-lateral Agency(ies), Private Sector, Other
[50] Type of Co-financing may include: Grant, Soft Loan, Hard Loan, Guarantee, In-Kind, Other
[51] This was confirmed by CIO/FECO during interviews.

indicated that for the Hunan Pesticide Factory, the Project need: (i) to gain the active participation and coordination of local authorities (especially top local government officials) (ii) to actively communicate with the owners in order to jointly formulate the risk assessment scheme of this site through a joint study and (iii) to accelerate the risk assessment of the site.

128. Feedback gathered during country mission, the different stakeholders interviewed (CIO/FECO and national experts) highly appreciated the guidance and technical assistance provided by the two PMs and indicated that their supervision was adequate, timely and helpful. In particular, the actual PM being a Chinese National and a former FECO officer greatly facilitated communication between UNIDO and CIO/FECO.

129. The rating on **UNIDO supervision and backstopping** is **Highly Satisfactory**.

IV. Conclusions, Recommendations and Lessons Learnt

IV.1 Conclusions

130. The overall objective of the project is to implement environmentally sound management and disposal of 10,000 tons of accumulated POPs pesticide wastes and 1,000 tons dioxin rich incinerator fly-ash in fulfilment of China's obligations under the Stockholm Convention. Specifically the project is set to

(i) Strengthen the legal and regulatory framework for environmentally sound management (ESM) and disposal of POPs waste
(ii) Improve institutional capacity at all levels of POPs waste disposal management
(iii) Remove POPs pesticide wastes dioxin rich incinerator fly ash from targeted contaminated sites, and transport them to disposal unit
(iv) Dispose of wastes in an environmentally sound manner
(v) Complete qualitative environmental risk assessment (QERA) site prioritization.

131. The major objective of this midterm evaluation is to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability and to propose a set of recommendations with a view to ongoing and future activities.

132. The project is highly relevant to China's National Program of Disposal Facilities Construction for Hazardous Wastes and Medical Wastes Treatment (NPDFCHWMW) that was in approved in 2004. The project is playing a vital role in supporting China to meet the objectives as set in its National Implementation Plan (NIP) and is helping in complying with the Stockholm Convention.

133. The project is consistent with Strategic Program 1, 2 and 3 of persistent organic pollutants focal area strategy and strategic programming for GEF-4, in particular: for Strengthening Capacities for National Implementation Plan (NIP) Implementation, with the objective to strengthen and/or build the capacity required in eligible countries to implement their Stockholm Convention NIPs in a sustainable, effective and comprehensive manner,

while building upon and contributing to strengthening a country's foundational capacities for sound management of chemicals more generally.

134. The project is also very relevant with UNIDO's mandate to support developing countries and countries with economy in transition to achieve sustainable industrial development given the project is focusing on technological solutions to environment and health problems within Operational Program 14.

135. Effectiveness of the project is considered highly satisfactory. Delivery of outputs has been satisfactory. As planned, the regulatory framework has been strengthened for the sound management of obsolete POPs pesticides and wastes. Guidelines for ESM of obsolete POPs pesticides stocks and wastes have been developed and capacity has been built for the destruction of POPs and other hazardous wastes in the Hubei and Hebei provinces through significant investment of private partners (Huaxin Environment Company and Jinyu Mangrove Environmental Protection Company) to upgrade cements. At midterm, 4,951.6 tons of POPs pesticides and wastes have already been packed, transported and soundly disposed of at the upgraded cement kilns. However, delays have been encountered for delivery of the mobile unit for destruction of POPs pesticides and wastes using non-combustion technology.

136. Involvement of the major stakeholders at midterm has been highly satisfactory. At national and provincial levels, the relevant ministries and departments (e.g. Health, Environment, EPBs, etc.) are members of steering groups. At provincial level, waste centres and private partners (cement kilns) are key partners of the project. Experts from leading academic and research Chinese institutions (e.g. Tsinghua University, CRAES, RCEES, IHEP, etc.) have been recruited to provide technical expertise or service.

137. The project is being efficiently executed by CIO/FECO and adequately supervised and guided by UNIDO. And at midterm, project implementation has been cost-effective owing to a number of factors including: high ownership of project, involvement and commitment of major stakeholders at all levels (national and provincial) since the preparatory phase, high level of co-funding both at central and provincial level including willingness of private companies to invest significantly to upgrade cement kilns, building on existing structures like CICG, and recruitment of high quality experts from prestigious institutions.

138. Chances for sustainability of the project are very high for the following reasons. China is party to the Stockholm Convention and is fully committed for its implementation Ownership of the project is high both at national and provincial levels. A number of programs and policies have already been promulgated and adapted at provincial level. Moreover, the appropriate structures (CICG and CIO) for Stockholm Convention implementation exist and have been established in 2003 for China's NIP development. Since then, these structures have been responsible for the successful execution of several GEF funded and UNIDO implemented projects (e.g. Medical waste and SIRE projects). Finally, possibility of

leveraging high level of co-financing at national and local level in China makes the project highly sustainable.

139. Ratings for the individual criteria are given in Table 6. The **overall rating** for the project based on the evaluation findings is **Highly Satisfactory**.

Overall Assessment of Project

140. According to the TOR of this evaluation (annex 1), it is required to assess and rate the different categories of the project from Highly Satisfactory (HS) to Highly Unsatisfactory (HU). Rating for sustainability sub-criteria are as follows: Likely (L), Moderately Likely (ML), Moderately Unlikely (MU) and Unlikely (U). Table 6 below resumes the assessment of the different categories.

Table 6: Overall rating of Project

Criterion	Evaluator's Summary Comments	Evaluator's Rating
Attainment of project objectives and results (overall rating) Sub criteria (below)	At midterm there has been significant progress in implementation of activities to meet the objectives of the project, and delivery of outputs is very satisfactory	HS
Effectiveness	Effectiveness very high – High levels of co-funding mobilized, legal infrastructure strengthened, capacity built for destruction of POPs and significant of POPs already destroyed at midterm	HS
Relevance	Highly relevant to China's National Program of Disposal Facilities Construction for Hazardous Wastes and Medical Wastes Treatment, also to the priority actions/activities set in the NIP of the Stockholm Convention.	HS
Efficiency	Project is being efficiently executed by CIO/FECO and a number of cost-effective factors are contributing to it: involvement and commitment of major stakeholders, high level of co-funding and willingness of private companies to invest significantly, building on existing structures, and recruitment of high quality experts. Delays in delivery of mobile unit	S
Sustainability of Project outcomes (overall rating) Sub criteria (below)	Chances are high for sustainability given the strong central government, the high level of co- funds, and incorporation of POPs reduction and Stockholm Convention implementation in 12th five year program	L
Financial	High level of local funding likely to be available	L
Socio Political	Strong central government committed to implement the Convention	L
Institutional framework and governance	Appropriate infrastructure in place (CIO and CICG) with 25 permanent staff working for Convention implementation within CIO/FECO	L
Ecological	No environmental risk that can influence or jeopardize the project outcomes identified	L
Monitoring and Evaluation (overall rating) Sub criteria (below)	Monitoring and evaluation appropriate though Project steering committee meetings or tripartite meetings for Project Interim Review of project	HS
M&E Design	Adequately planned in project document	HS
M&E Plan Implementation (use for adaptive management)	Planned activities being undertaken for adequate M&E.	HS

Criterion	Evaluator's Summary Comments	Evaluator's Rating
Budgeting and Funding for M&E activities	Appropriately planned – Midterm evaluation being undertaken	HS
UNIDO specific ratings	UNIDO guidance and supervision adequate	HS
Quality at entry	Leading national research institutes involved	HS
implementation approach	Mixed form of execution: big-subcontract for CIO/FECO and a smaller component directly executed by UNIDO, it is proving to be effective and efficient at midterm	HS
UNIDO Supervision and backstopping	Adequate and highly appreciated by national counterparts	HS
Overall Rating	Highly relevant project, effectively and efficiently run at midterm – already visible impact at midterm	**HS**

IV.2 Recommendations

141. As the project has reached its midterm, the following recommendations look ahead to the second phase of the project for successful implementation and execution of remaining activities so as to successfully meet the project objectives and outcomes.

vii. For all identified contaminated sites including the contaminated site near the pesticide company in Hunan, it is recommended that these sites are properly safeguarded and that the population living in the vicinity be adequately informed in order to minimize / eliminate risk of exposure. (Responsible parties: CIO/FECO, EPBs, UNIDO)

viii. For the contaminated site near the pesticide factory in Hunan, it is recommended that the project assist the local authorities to put in place a mechanism and long term strategy for the remediation of this site. (Responsible parties: CIO/FECO, EPBs, UNIDO)

ix. For delivery of the mobile unit for which the Mechano Chemical Dechlorination (MCD) technology has been selected, a no cost two-year extension is recommended to allow for complete of activities for this output. (Responsible parties: CIO/FECO, UNIDO)

x. In order to meet project objectives, it is recommended the project should ensure that planned co-financing materialize in order to successfully undertake the remaining activities. (Responsible parties: CIO/FECO, UNIDO)

xi. Replication activities are planned in other provinces in the second part of the project; the successful experiences and lessons should be summarized and serve as basis for project implementation for this second phase. (Responsible parties: CIO/FECO, UNIDO)

xii. For sustainability of project outcomes, the project should ensure that regulations and guidelines for ESM of obsolete POPs pesticides stocks and wastes and other hazardous wastes are enforced at all levels. (Responsible parties: CIO/FECO, EPBs)

IV.3 Lessons learnt

142. Valuable lessons emerged during the midterm evaluation that include lessons related to technical aspects as well as to overall management of the project (not arranged in any order of priority).

i. A comprehensive and strategic management mechanism and adequate involvement of a wide range of stakeholders (EPBs, high level research and academic entities, local authorities and private partners) in all important events, including preparatory phase, inception, awareness campaign, training sessions, consultation meetings at both central and regional level are the basis to achieve effective implementation of project activities.

ii. Identification and adopting measures that promote efficiency ensures successful implementation of project.

iii. The mixed form of agency execution and counterpart execution (through sub-contracts to national counterpart: CIO/FECO) is a very efficient implementation approach when adequate capacities exist at counterpart level and these include dedicated qualified staff, proper procurement and financial management system, and auditing.

Annex A: TORs of the midterm evaluation

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATIO

Terms of Reference

Independent mid-term Evaluation of the UNIDO Projects

Project Number: GF/CPR/09/006

Environmentally Sound Management and Disposal of Obsolete Pops Pesticides and Other Pops Wastes in China

JULY 2013

CONTENTS

I. Project Background and overview

Project Background

China has urgent need of an on the ground program for managing stockpiles of obsolete POPs pesticides and associated contaminated wastes in an environmentally sound manner. China's large agricultural sector with its heavy dependence on agro-chemicals resulted in about 574,000 tons of POPs pesticides being manufactured up to 2004 when production was banned. Although POPs pesticides production has been prohibited by domestic regulations, lack of a targeted national program providing capacity building and technical assistance to manage these chemicals has resulted in significant stockpiling of obsolete POPs pesticides.

Based on the research and surveys conducted in conjunction with the preparation of this project, obsolete POPs pesticide and associated wastes have been identified in 44 POPs pesticide manufacturing plants and a number of distribution and end user sites. In the past, plant owners and end users have been largely unregulated and responsible for managing their own POPs pesticides, which have resulted in stockpiles of obsolete pesticides and associated wastes, the distribution and scope of which has been unknown to central and local environmental protection agencies.

The absence of adequate capacity and infrastructure for environmentally sound management (ESM) and disposal of POPs pesticide wastes in China poses significant risks to human health and the environment. In most POPs pesticide manufacturing plants and end user sites, there are no storage facilities specifically designed for obsolete pesticides and pesticide wastes. Large amounts of obsolete POPs pesticides are therefore often stored in improper conditions, such as outdoor storage, simple enclosure, or open-air disposal with municipal solid waste, all of which constitute a serious threat to human health. This serious risk of environmental contamination and human exposure is further exacerbated by natural disaster, such as the flooding and earthquakes, which China has recently experienced.

Current practices for hazardous waste disposal have been dominated by incineration and therefore generate secondary pollution such as dioxins and furans. It is estimated that fly ash containing a high level of dioxin from incineration of hazardous wastes and medical wastes amounts to 11,000 tons per annum. Incineration plants generally dispose of this dioxin rich fly ash in open dumps or non-sanitary landfills mixed with municipal wastes, thereby increasing the potential POPs pollution risk to water resources.

The Chinese government acceded to the Stockholm Convention on May 23, 2001. The Tenth National People's Congress Standing Committee ratified the Stockholm Convention on June 25, 2004. Under Article 6(1) (c), China is required to manage POPs wastes in an environmentally sound manner. However, surveys and reports have shown that lack of institutional, technical, and financial capacity inhibits the sound management of obsolete POPs pesticides and associated wastes.

Project Objective

The project's overall objective is to implement environmentally sound management (ESM) and disposal of 10,000 tones of accumulated POPs pesticide wastes and 1,000 tones dioxin rich incinerator fly-ash in fulfillment of China's obligations under the Stockholm Convention. If not addressed, the presence of these geographically dispersed accumulations of POPs wastes constitutes a significant source and ongoing pathway risk to environmental receptors, particularly groundwater and surface water resources, with concomitant negative impact on human and ecosystem health.

According to the Project Document, Five substantive outcomes have been developed to achieve the project objectives.

- Outcome 1 Strengthened legal and regulatory framework for environmentally sound management (ESM) and disposal of POPs waste.
- Outcome 2 Improved institutional capacity at all levels of POPs waste disposal management.
- Outcome 3 Environmentally sound disposal of targeted POPs pesticide waste and dioxin rich incinerator fly ash.
- Outcome 4 Qualitative environmental risk assessment (QERA) site prioritization.
- Outcome 5 Project management, monitoring and evaluation.

Local, Regional and Global Benefits

Obsolete POPs pesticides are a class of toxic chemicals that resists degradation, bio-accumulates and with potential for long-range transport. Their release into the environment therefore constitutes a significant risk, impacting human and ecosystems locally, regionally, and globally. Numerous studies have confirmed that exposure to DDT, HCB, and other POPs pesticides can result in cancer, reproductive impacts (such as decreased fertility and reduced sperm counts), and developmental problems such as birth defects, inability to maintain pregnancy, and lowered testosterone levels.

ESM based lifecycle management of hazardous obsolete POPs pesticides and associated wastes have not yet been achieved in China. Lax enforcement of pesticide waste management regulations and disposal facility standards have resulted in continuous increase in the amount of improperly managed POPs pesticide wastes. Most obsolete POPs pesticides are just dumped untreated on pesticide manufacturer property or in the surrounding area, or mixed with municipal wastes.

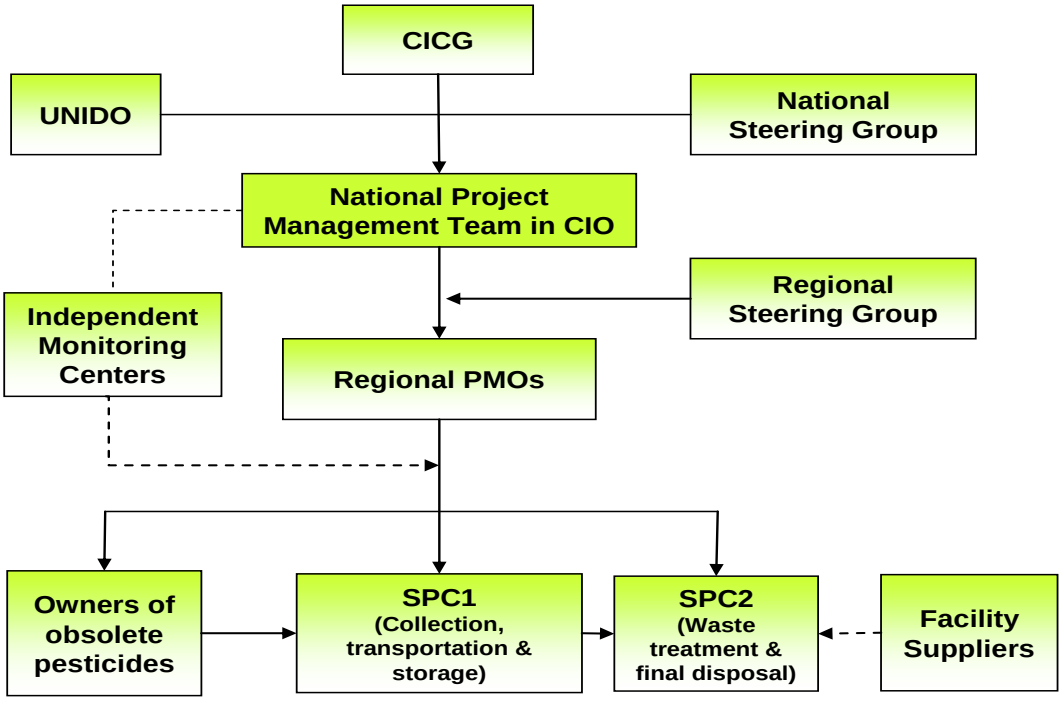
Where obsolete pesticides are collected, they are generally either disposed of in landfill isolation without measures to prevent leachate infiltration into soils and ground water, or treated in incinerators without effective pollution controls or emissions monitoring to minimize the potential for adverse environmental impacts. Many incinerators are equipped only with out-of-date APCDs that are unable to adequately control release of air pollutants such as particulate matters (PMs), PCDD/PCDFs, heavy metals (Pb, Hg and Cd), acid gases (HCl and SO2), CO, and NOx, all of which result in serious adverse impacts to worker safety, public health, and the environment.

With GEF support, the proposed project will address these issues through regulatory enhancement, capacity building, technology transfer, a novel PPP mechanism, and direct treatment of obsolete POPs pesticides and associated wastes. The combination of these approaches will not only address the immediate, high priority need to mitigate the imminent local, regional, and global environmental risk posed by the obsolete pesticides identified during the project preparation, but will also provide for the regulatory framework, institutional capacity, and technical capacity to improve management of POPs pesticides on a long-term sustainable basis, with concomitant benefits to local communities, China, the region, and the world.

In summary, the project will generate significant local, regional and global benefits, including:

- Safe disposal of a minimum of 10,000 tons of obsolete POPs pesticides and 1,000 tons of dioxin-rich fly ash, which in and of itself is of significant local, regional, and global significance.
- Avoided emissions of 8.97 gTEQ PCDD/PCDFs releases into the water and atmosphere through improved emissions control technology and direct destruction of 30.67 g TEQ of dioxins.
- Additional local, regional, and global environmental benefits accruing from long-term capacity building and regulatory reform activities.
- Innovative approaches providing a model for sustainable management of obsolete POPs pesticides and other POPs both in China and in other developing countries.

Implementation arrangements



Project Organ gram

UNIDO will be the GEF Implementing Agency (IA) for the project. A project focal point will be established within UNIDO to assist with project execution. This focal point will consist of dedicated core staff, supplemented by support from professional

and support staff colleagues on a part-time as needed basis, including in particular senior staff engaged in the management and coordination of UNIDO's POPs program. UNIDO will make these services available as part of its in-kind contribution to the project.

ESM of obsolete pesticide wastes and dioxin rich fly ash involves a wide spectrum of stakeholders both vertically and horizontally distributed throughout China's administrative framework. While the principal responsibilities will be undertaken by environmental sector stakeholders, a variety of stakeholders from other sectors will play an important role in the project. The project management structure is given below.

Convention Implementation Coordination Group (CICG). China established the National NIP Development Leading Group in September 2003. This Group became the National Leading Group for Implementation of the POP Convention when China ratified the Convention on 13 August 2004, which was formally approved by State Council in April 2005 and renamed the National Technical Coordination Group (TCG) for Implementation of the Stockholm Convention, or Convention Implementation Coordination Group (CICG). The CICG will provide (i) review of significant policies related to POPs management and control, (ii) guidance and coordination for POPs management activities and Convention implementation. The CICG consists of the following 13 agencies:

- Ministry of Environmental Protection (MEP)
- Ministry of Foreign Affairs (MOFA)
- National Development and Reform Commission (NDRC)
- Ministry of Finance (MOF), which is the GEF Focal Point in China
- Ministry of Commerce (MOCom)
- Ministry of Science and Technology (MOST)
- Ministry of Agriculture (MOA)
- Ministry of Public Health (MOH)
- Ministry of Housing and Urban-Rural Development (MOHURD)
- General Administration of Customs (GAC)
- State Electricity Regulatory Commission (SERC)
- General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)
- State Administration of Work Safety (SAWS)

UNIDO is coordinating all POPs activities of all UN, multi- and bilateral POPs activities in the country, jointly with the Ministry of Environmental Protection (MEP) through the annual Technical Coordination Group (TCG) meetings. This includes World Bank, UNDP, UNITAR, UNEP and others.

Convention Implementation Office (CIO). The CIO is part of MEP and is responsible for coordinating the day-to-day management of the Stockholm Convention implementation in China. The CIO's responsibilities include: (i) provision of technical support for international negotiations and policy studies on the Stockholm Convention, (ii) provision of support for development and implementation of POPs-related policy and regulations, as well as coordination of key governmental stakeholders, (iii)

mobilization of co-financing from bilateral, international, and national sources, (iv) collecting data and information, compiling reports, organizing training activities, and publishing information. The CIO will provide guidance to ensure the successful implementation of the project, including regular monitoring and enforcement inspections. As the CIO is not an independent legal entity, Foreign Economic Cooperation Office (FECO) will be the national executing agency (NEA) and will represent MEP and the CIO in the management and completion of contracts for project implementation.

National, Provincial and Municipal Steering Groups. The project will establish a national steering group by drawing upon resources from related ministries or commissions in charge of development and reform, environment, health, construction, and pricing to provide the project team with political guidance and inter-ministerial coordination support. To facilitate the extensive demonstration and replication activities at provincial and municipal levels, the National Steering Group will encourage and assist provincial and municipal governments in the establishment and operation of their own corresponding steering groups.

National Project Management Team (NPMT) will be composed of staff from MEP, NDRC, MOHURD and other relevant agencies. MEP will designate a coordinator/team leader. The Project Management Team will be responsible for the day-to-day management and execution of the project, and will oversee local project management offices. The NPMT's responsibilities will include (i) assignment and supervision of project activities; (ii) recruitment of national consultants; (iii) providing guidance to local PMOs; (iv) coordination with stakeholders, donors, the IA, relevant national agencies and the private sector; (v) preparation of terms of reference (TORs) for project activities, (vi) review of project progress reports submitted by the local PMOs, (vii) supervising project procurement and financial resources in accordance with UNIDO procedures, (viii) organizing and convening project coordination stakeholder meetings, and (ix) review of project outputs.

Project Expert Team (PET). The project will recruit an international Chief Technical Advisor (CTA), a National Technical Advisor (NTA), policy experts, waste management industry experts, chemists, monitoring & evaluation experts and other technical experts. These experts will form a Project Expert Team to assist the CIO and NPMT through the following activities:

- Introduction of successful experiences gained from foreign countries;
- Management and coordination of all project activities;
- Provision of technical support for policy framework, institutional strengthening, demonstration activities, technology selection, market promotion, awareness raising and education, results and experience dissemination, project monitoring and evaluation, replication program development, and project management;
- Periodic project implementation progress appraisal;
- Support for development of training materials; and
- Liaison for international symposia and field research.

Regional Project Management Offices (PMOs) will be responsible for coordination of project activities that transcend provincial boundaries. The project will involve a large number of obsolete pesticides owners, incinerator fly ash owners and dedicated treatment and disposal facilities operating across municipal and provincial lines. Extensive awareness promotion and training activities will be conducted in coordination with local officials. Implementation of new regulations will rely on local administrative agencies. Treatment of obsolete POPs pesticides and dioxin rich fly ash and disposal at provincial hazardous waste disposal centres will be regionally optimized to improve efficiencies, reduce costs, and reduce environmental risk. In addition there will be extensive demonstrations of BAT/BEP for integrated waste management that will cluster obsolete POPs pesticides, associated wastes, and incinerator fly ash generators and waste treatment and disposal facilities.

Regional PMOs will be composed of staff from relevant provincial governmental agencies. Their responsibilities will include (i) management of the provincial level activities; (ii) oversight of provincial and municipal implementation; (iii) dissemination of the experience emanating from demonstration sites; (iv) coordinating treatment activities with the mobile treatment facility and base stations; (v) coordinating transportation of waste materials over provincial lines; and (vi) collecting information and preparing progress reports. Their specific responsibilities will be defined by the NPMT supported by the PET after the inception workshop.

Private sector stakeholders and other potential project participants will be actively recruited and integrated into the project, as follows:

- Waste owners will be provided with technical assistance and financial support on a cost-sharing basis to adopt ESM in obsolete pesticides management and to treat existing stocks of obsolete POPs pesticides and associated wastes;
- Waste transporters and treatment and disposal facilities will be provided with technical assistance and capacity building support to ensure implementation of obsolete POPs pesticide waste management requirements, and provided with targeted incentives to adopt ESM practices beyond current regulations;
- Private sector contractors selected under the PPP program to provide facilities and services will form an integral part of the project;
- End-users will be educated in proper pesticides management and risk minimization/ avoidance, supported by new policies and programs (e.g., possible manufacturer/distributor take-back requirements) to encourage ESM practices.

Project progress

Since the project was launched on Aug. 20, 2009, several national and local regulations have been established and updated, including the publication of the 12th Five-Year Program for the Prevention and Control of Pollution Caused by POPs from major industries in China, the second revision of the Technology Policy for the Prevention and Control of Pollution Caused by Hazardous Wastes, the publication of management policies for abandoned POPs pesticides in Hubei Province, the compilation of

guidelines for investigation and identification of pesticide POPs wastes, the technical guidelines for co-processing of POPs wastes in four cement kilns and so on.

Also, the project directly has supported and independently promoted the investigation, collection and transportation, and disposal of pesticide POPs wastes in eight provinces including Hubei, Hunan and Hebei. Two cement kilns have been upgraded for co-processing of POPs pesticide. Totally, 4,951.6 tons POPs pesticide has been disposed in an environmental sound manner, accounting for about 97% of the total identified pesticide POPs wastes in China, during which emissions of approx. 3.25 g TEQ dioxin are avoided. The technical investigation over disposal of fly ash from waste incineration has been carried out.

By December 2012, the GEF grants with a cumulative value of $1,908,824 have been used for this Project. There are about 15 project activities performed with support of counterpart funds totally around $1,632,861. 13 consulting service contracts on GEF grants have been signed, with a total amount of approx. $1,705,177. The kick-off meeting, coordination meeting and technical seminar have been organized for eight times, with a total amount of approx. $96,810. The site visits and investigation and technical exchange activities have been carried out for nine times.

Budget Information

a) Overall Cost and Financing (including co-financing): Source: project document

Outcome/Output/Activities	GEF fund (US$)	Co-financing (US$)	Co-financing in cash (US$)			Co-financing In-kind (US$)			
			MEP	Local EPB	Private/public sectors	MEP	Local EPB	Private/public sectors	UNIDO
Outcome 1: Strengthened legal and regulatory framework for environmentally sound management (ESM) and disposal of POPs waste	852,400	1,214,500							
Output 1.1 Technological and economic policies and regulations in place for promoting environmentally sustainable management and disposal of POPs wastes	259,400	877,000				280,000	597,000		
Output 1.2 Technical standards and guidelines developed for ESM of POPs waste	593,000	337,500				319,500	18,000		
Outcome 2: Improved institutional capacity at all levels of POPs waste disposal management	924,000	1,725,000							
Output 2.1 Communication and coordination sustained between stakeholders in waste	110,000	140,000				140,000			

management and disposal									
Output 2.2 Institutional capacity enhanced for POPs waste management at local level	649,200	1,465,000					1,465,000		
Output 2.3 Public awareness on POPs activities undertaken	164,800	120,000				120,000			
Outcome 3: Environmentally sound disposal of targeted POPs pesticide waste and dioxin rich incinerator fly ash	7,063,600	27,790,000							
Output 3.1 Safe and effective collection, packaging, and transportation of POPs pesticide wastes for disposal arranged	1,102,000	2,420,000				320,000	900,000	1,200,000	
Output 3.2 Assessment of technologies for POPs waste disposal carried out	44,200	110,000				90,000			20,000
Output 3.3 Technology transfer promoted through PPP mechanisms	37,600	740,000			150,000	590,000			
Output 3.4 Construction, certification, operation, and supervision of stationary and mobile treatment facilities arranged	5,592,300	22,995,000	3,900,000	850,000	6,000,000	570,000	3,000,000	8,650,000	25,000
Output 3.5 Dioxin rich fly ash disposal implemented	271,800	1,150,000		230,000	600,000	70,000	250,000		

Output 3.6 Exploration of the feasibility to extend POPs waste disposal capacity to CFCs destruction undertaken	15,700	375,000				25,000		340,000	10,000
Outcome 4 Qualitative environmental risk assessment (QERA) site prioritization	642,500	660,000							
Output 4.1 Inventory of contaminated sites prioritized	386,300	370,000				370,000			
Output 4.2 Establishment and maintenance of an Internet-based information processing, display and dissemination system in place	256,200	290,000				290,000			
Outcome 5. Project management, monitoring and evaluation	476,500	710,500							
Output 5.1 Project management structure established	195,000	465,000				465,000			
Output 5.2 An M&E mechanism designed and implemented according to GEF M&E procedures	281,500	245,000				200,500			45,000
GRAND TOTAL CO-FINANCING	9,959,000	32,100,000	3,900,000	1,080,000	6,750,000	3,850,000	6,230,000	10,190,000	100,000

b) UNIDO budget (GEF funding excluding agency support cost):

	Total Allotment (US$)	Disbursement (US$)	Unliquidated Obligation (US$)	Uncommitted Balance (US$)
Personnel	677,460.30	233,049.33	86,035.75	358,375.22
Contracts	9,205,999.99	7,514,080.00	1,691,900.00	19.99
Training	45,000.02	37,000.43	1,667.31	6,332.28
Others	30,539.70	27,621.40	465.90	2,452.40
Total	9,959,000.01	7,811,751.16	1,780,068.96	367,179.89

Source and date of information: UNIDO SAP, July 2013

II. Objectives and scope of the evaluation

The purpose of the mid-term evaluation is to enable the Government, counterparts, the GEF, UNIDO and other stakeholders and donors to:

- Verify prospects for development impact and sustainability, providing an analysis of the attainment of global environmental objectives, project objectives, delivery and completion of project outputs/activities, and outcomes/impacts based on indicators. The assessment includes re-examination of the relevance of the objectives and other elements of project design according to the project evaluation parameters defined in chapter IV.
- Enhance project relevance, effectiveness, efficiency and sustainability by proposing a set of recommendations with a view to ongoing and future activities.
- Draw lessons of wider applicability for the replication of the experience gained in this project in other projects/countries.

The key question of the evaluation is whether the project will make a significant contribution to reducing the effects of POPs on human health and the environment.

III. Methodology

The evaluation will follow UNIDO and GEF evaluation guidelines and policies. It will be carried out as an independent in-depth evaluation using a participatory approach whereby the

UNIDO staff associated with the projects is kept informed and regularly consulted throughout the evaluation. The evaluation team leader will liaise with the UNIDO Evaluation Group (EVA) on any logistic and/or methodological issues to properly conduct the review.

The methodology will be based on the following:

1. A desk review of project documents including, but not limited to:
    a. The original project document, monitoring reports (such as progress and financial reports to UNIDO and GEF annual Project Implementation Review reports), output reports (case studies, action plans, sub-regional strategies, etc.) and relevant correspondence.
    b. Notes from the NPMT and Steering Group meetings.
    c. Other project-related material produced by the project.

2. The evaluation team will use available models of (or reconstruct if necessary) theory of change for the different types of intervention (enabling, capacity, investment, demonstration). The validity of the theory of change will be examined through specific questions in interviews and possibly through a survey of stakeholders.

3. Counterfactual information: 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.

4. Interviews with project management and technical support including Mr. Zenghyou Peng, UNIDO Project Manager, project staff in China and administrative staff associated with the project's financial administration if necessary.

5. Interviews with project partners, in particular the MOF, MOH, MEP and the entities providing co-financing as shown in Section D and E of the project document.

6. On-site observation of results achieved in demonstration projects, including interviews of actual and potential beneficiaries of improved technologies.

7. Interviews and telephone interviews with intended users for the project outputs and other stakeholders involved with this project. The evaluator shall determine whether to seek additional information and opinions from representatives of any donor agencies or other organisations.

8. Interviews with the UNIDO Country Office in China that will be visited by the evaluation team, the project's management group (FECO/MEP), and the various national and sub-regional authorities dealing with project activities as necessary. The evaluator shall also gain broader perspectives from discussions with relevant GEF Secretariat staff.

9. Other interviews, surveys or document reviews as deemed necessary by the evaluator and/or UNIDO EVA.

IV. Project Evaluation Parameters

The ratings for the parameters described in the following sub-chapters A to E will be presented in the form of a table with each of the categories rated separately and with brief justifications for the rating based on the findings of the main analysis. An overall rating for the project should also be given. The rating system to be applied is specified in Annex 5.

A. Project relevance and design

Relevance to national development and environmental agendas, recipient country commitment, and regional and international agreements. See possible evaluation questions under "country ownership/drivenness" below.

Relevance to target groups: relevance of the project's objectives, outcomes and outputs to the different target groups of the interventions (e.g. companies, civil society, beneficiaries of capacity building and training, etc.).

Relevance to the GEF and UNIDO: In retrospect, were the project's outcomes consistent with the focal areas/operational program strategies of GEF? Were they in line with the UNIDO mandate, objectives and outcomes defined in the Programme & Budget and core competencies? Ascertain the likely nature and significance of the contribution of the project outcomes to the wider portfolio of the GEF Operational Programme (OP) #14.

Is the project's design adequate to address the problems at hand? Was a participatory project identification process applied and was it instrumental in selecting problem areas and national counterparts? Does the project have a clear thematically focused development objective, the attainment of which can be determined by a set of verifiable indicators? Was the project formulated based on the logical framework approach? Was the project formulated with the participation of national counterpart and/or target beneficiaries?

B. Effectiveness: attainment of objectives and planned results (progress to date):

Assessment of project outcomes should be a priority:

- What outputs and outcomes has the project achieved so far (both qualitative and quantitative results)? Has the project generated any results that could lead to changes of the assisted institutions? Have there been any unplanned effects?.
- are the actual project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, the evaluators should assess if there were any real outcomes of the project and, if there were, determine whether these are commensurate with realistic expectations from such projects.
- To what extent have the expected outputs and outcomes been achieved or are likely to be achieved? How do the stakeholders perceive their quality? Were the targeted beneficiary groups actually reached?

- Identify the potential longer-term impacts or at least indicate the steps taken to assess these (see also below "monitoring of long term changes"). Wherever possible, evaluators should indicate how findings on impacts will be reported to the GEF in future.

.

- Catalytic or replication effects: the mid-term evaluation will describe any catalytic or replication effect of the project. If no effects are identified, the evaluation will describe the catalytic or replication actions that the project carried out. No ratings are requested for the project's catalytic role.

C. Efficiency

Was the project cost effective? Was the project the least cost option? Was project implementation delayed, and, if it was, did that affect cost effectiveness? Wherever possible, the evaluator should also compare the costs incurred and the time taken to achieve outcomes with that for similar projects.
Have the donor, UNIDO and Government/counterpart inputs been provided as planned and were adequate to meet requirements? Was the quality of UNIDO inputs and services as planned and timely?

D. Assessment of sustainability of project outcomes:

Sustainability is understood as the likelihood of continued benefits after the GEF project ends. Given the uncertainties involved, it may be difficult to have a realistic a priori assessment of sustainability of outcomes. Therefore, assessment of sustainability of outcomes will give special attention to analysis of the risks that are likely to affect the persistence of project outcomes. This assessment should explain how the risks to project outcomes will affect continuation of benefits after the GEF project ends. It will include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed:

a. **Financial risks.** Are there any financial risks that may jeopardize sustainability of project outcomes? What is the likelihood of financial and economic resources not being available once GEF assistance ends? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate the likelihood that, in future, there will be adequate financial resources for sustaining project outcomes.)
b. **Sociopolitical risks.** Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?
c. **Institutional framework and governance risks.** Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency, and required technical know-how, in place?
d. **Environmental risks.** Are there any environmental risks that may jeopardize sustainability of project outcomes? The mid-term evaluation should assess whether certain activities will

pose a threat to the sustainability of the project outcomes. For example, construction of a dam in a protected area could inundate a sizable area and thereby neutralize the biodiversity-related gains made by the project.

E. Assessment of monitoring and evaluation systems and project management:

- **M&E design.** Does the project have a sound M&E plan to monitor results and track progress towards achieving project objectives? The Evaluation will assess whether the project met the minimum requirements for the application of the Project M&E plan (see Annex 4).
- **M&E implementation.** A mid-term evaluation should verify that an M&E system was in place and facilitated timely tracking of progress toward project objectives by collecting information on chosen indicators continually throughout the project implementation period; annual project reports were complete and accurate, with well-justified ratings; the information provided by the M&E system was used during the project to improve performance and to adapt to changing needs; and projects had an M&E system in place with proper training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure.
- **Budgeting and Funding for M&E activities.** In addition to incorporating information on funding for M&E while assessing M&E design, the evaluators will determine whether M&E was sufficiently budgeted for at the project planning stage and whether M&E was funded adequately and in a timely manner during implementation.

- **Monitoring of Long-Term Changes.** The monitoring and evaluation of long-term changes is often incorporated in GEF-supported projects as a separate component and may include determination of environmental baselines; specification of indicators; and provisioning of equipment and capacity building for data gathering, analysis, and use. This section of the mid-term evaluation report will describe project actions and accomplishments toward establishing a long-term monitoring system. The review will address the following questions:
  a. Did this project contribute to the establishment of a long-term monitoring system? If it did not, should the project have included such a component?
  b. What were the accomplishments and shortcomings in establishment of this system?
  c. Is the system sustainable—that is, is it embedded in a proper institutional structure and does it have financing?
  d. Is the information generated by this system being used as originally intended?
- **Project management.** Were the national management and overall coordination mechanisms efficient and effective? Did each partner have specific roles and responsibilities from the beginning? Did each partner fulfill its role and responsibilities (e.g. providing strategic support, monitoring and reviewing performance, allocating funds, providing technical support, following up agreed/corrective actions…)? Were the UNIDO HQ based management, coordination, quality control and technical inputs efficient, timely and effective (problems identified timely and accurately; quality support provided timely and effectively; right staffing levels, continuity, skill mix and frequency of field visits…)

- **Implementation approach**[52]**.** Is the implementation approach chosen different from other implementation approaches applied by UNIDO and other agencies? Does the approach comply with the principles of the Paris Declaration? Does the approach promote local ownership and capacity building? Does the approach involve significant risks?

F. Assessment of processes affecting attainment of project results

The evaluation will consider, but need not be limited to, the following issues that may have affected project implementation and attainment of project results:

a. **Preparation and readiness.** Were the project's objectives and components clear, practicable, and feasible within its time frame? Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? Were lessons from other relevant projects properly incorporated in the project design? Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry?

b. **Country ownership/drivenness.** Was the project concept in line with the sectoral and development priorities and plans of the country—or of participating countries, in the case of multicountry projects? Are project outcomes contributing to national development priorities and plans? Were the relevant country representatives from government and civil society involved in the project? Did the recipient government maintain its financial commitment to the project? Has the government—or governments in the case of multicountry projects—approved policies or regulatory frameworks in line with the project's objectives?

c. **Stakeholder involvement.** Did the project involve the relevant stakeholders through information sharing and consultation and by seeking their participation in project design, implementation, and M&E? For example, did the project implement appropriate outreach and public awareness campaigns? Did the project consult with and make use of the skills, experience, and knowledge of the appropriate government entities, nongovernmental organizations, community groups, private sector entities, local governments, and academic institutions in the design, implementation, and evaluation of project activities? Were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process taken into account while taking decisions? Were the relevant vulnerable groups and powerful supporters and opponents of the processes properly involved?

d. **Financial planning.** Did the project have the appropriate financial controls, including reporting and planning, that allowed management to make informed decisions regarding the budget and allowed for timely flow of funds? Was there due diligence in the management of funds and financial audits? Did promised cofinancing materialize?

e. **UNIDO supervision and backstopping.** Did UNIDO staff identify problems in a timely fashion and accurately estimate their seriousness? Did UNIDO staff provide quality support and advice to the project, approve modifications in time, and restructure the project when

[52] Implementation approach refers to the concrete manifestation of cooperation between UNIDO, Government counterparts and local implementing partners. Usually POPs projects apply a combination of agency execution (direct provision of services by UNIDO) with elements of national execution through sub-contracts.

needed? Did UNIDO provide the right staffing levels, continuity, skill mix, and frequency of field visits for the project?

f. **Cofinancing and project outcomes and sustainability.** If there was a difference in the level of expected cofinancing and the cofinancing actually realized, what were the reasons for the variance? Did the extent of materialization of cofinancing affect project outcomes and/or sustainability, and, if so, in what ways and through what causal linkages?

g. **Delays and project outcomes and sustainability.** If there were delays in project implementation and completion, what were the reasons? Did the delays affect project outcomes and/or sustainability, and, if so, in what ways and through what causal linkages?

G. Specific issues with regard to the thematic evaluation of UNIDO POPs activities.

The evaluation will give special attention to issues that are of relevance beyond the scope of the project under evaluation:

- Does UNIDO apply successful approaches that are replicable in other projects?
- Does UNIDO face systemic constraints that need to be addressed?
- Do UNIDO POPs projects contribute to other UNIDO objectives, such as improved environmental performance of industry, competitiveness of industry, pro-poor growth?
- Do UNIDO POPs projects generate local (environmental) benefits? Are global and local benefits linked?

H. Specific issues with regard to the UNIDO country evaluation in China

The evaluation team will liaise with the team leader of the country evaluation (field mission planned for January 2011) and provide inputs with regard to the respective evaluation questions.

V. Evaluation Team and Timing

The evaluation team will be composed of a one international evaluation consultant acting as team leader and one national evaluation consultant (to be selected jointly by UNIDO and the Government of China).

UNIDO evaluation group will be responsible for the quality control of the evaluation process and report. It will provide inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, ensuring that the evaluation report is useful for UNIDO in terms of organisational learning (recommendations and lessons learned) and its compliance with UNIDO evaluation policy and these terms of reference.

The mid-term evaluation team will be able to provide information relevant for follow-up studies, including mid-term evaluation verification on request to the GEF partnership up to three years after completion of the mid-term evaluation.

All consultants will be contracted by UNIDO. The tasks of each team member are specified in the job descriptions attached to these terms of reference.

Members of the evaluation team must not have been directly involved in the design and/or implementation of the programme/projects.

UNIDO Field Office in China will support the evaluation team. Donor representatives from the bilateral donor representations will be briefed and debriefed.

Timing

The evaluation is scheduled to take place in the period September to December 2013. The field mission for the evaluation is scheduled for September 2013.

After the field mission, the evaluation team leader will come to UNIDO HQ for debriefing. The final version of the evaluation report will be submitted 6-8 weeks after the debriefing at the latest.

VI. REPORTING

Inception report

This Terms of Reference provides some information on the evaluation methodology but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with project mangaer(s) the International Evaluation Consultant will prepare a short inception report that will operationalize the TOR relating the evaluation questions to information on what type of and how the evidence will be collected (methodology). The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework ("evaluation matrix"); division of work between the International Evaluation Consultant and National Consultant; and a reporting timetable.

Evaluation report format and review procedures

The evaluation 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.

Evidence, findings, conclusions and recommendations should be presented in a complete and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 1.
The evaluation report shall follow the structure given in annex 1. The reporting language will be English.

Review of the Draft Report: Draft reports submitted to UNIDO Evaluation Group are shared with the corresponding Programme or Project Officer for initial review and consultation. They may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. The consultation also seeks agreement on the findings and recommendations. The evaluators will take the comments into consideration in preparing the final version of the report.

Quality Assessment of the Evaluation Report: All UNIDO evaluations are subject to quality assessments by UNIDO Evaluation Group. These apply evaluation quality assessment criteria and are used as a tool for providing structured feedback. The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality (annex 2).
The draft report will be delivered to UNIDO EVA and circulated to UNIDO staff associated with the project, including the UNIDO office in China. Any comments or responses to the draft report will be sent to UNIDO EVA for collation and onward transmission to the evaluation team leader; he/she will be advised of any necessary revisions.

Annex 1. Outline of an in-depth project evaluation report

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 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. Country and project background

- Brief country context: an overview of the economy, the environment, institutional development, demographic and other data of relevance to the project
- Sector-specific issues of concern to the project[53] and important developments during the project implementation 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 of government, other donors, private sector, etc.)
  - Counterpart 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 (see section III Evaluation Criteria and Questions). Assessment must be based on factual evidence collected and analyzed from different sources. The evaluators' assessment can be broken into the following sections:

A. Design
B. Relevance
C. Effectiveness
D. Efficiency
E. Sustainability
F. Project coordination and management

At the end of this chapter, an overall project achievement rating should be developed as required in Annex 2. The overall rating table required by the GEF should be presented here.

[53] Explicit and implicit assumptions in the logical framework of the project can provide insights into key-issues of concern (e.g. relevant legislation, enforcement capacities, government initiatives, etc.)

IV. Conclusions, Recommendations and Lessons Learnt

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. They should:

- be based on evaluation findings
- 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
- Government and/or Counterpart Organizations
- Donor

C. Lessons Learnt

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

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

Annex 2. Checklist on evaluation report quality

Report quality criteria	*UNIDO Evaluation Group Assessment notes*	*Rating*
Report Structure and quality of writing		
The report is written in clear language, correct grammar and use of evaluation terminology. The report is logically structured with clarity and coherence. It contains a concise executive summary and all other necessary elements as per TOR.		
Evaluation objective, scope and methodology		
The evaluation objective is explained and the scope defined. The methods employed are explained and appropriate for answering the evaluation questions. The evaluation report gives a complete description of stakeholder's consultation process in the evaluation. The report describes the data sources and collection methods and their limitations. The evaluation report was delivered in a timely manner so that the evaluation objective (e.g. important deadlines for presentations) was not affected.		
Evaluation object		
The logic model and/or the expected results chain (inputs, outputs and outcomes) of the object is clearly described. The key social, political, economic, demographic, and institutional factors that have a direct bearing on the object are described. The key stakeholders involved in the object implementation, including the implementing agency(s) and partners, other key stakeholders and		

their roles are described. The report identifies the implementation status of the object, including its phase of implementation and any significant changes (e.g. plans, strategies, logical frameworks) that have occurred over time and explains the implications of those changes for the evaluation.		
Findings and conclusions		
The report is consistent and the evidence is complete (covering all aspects defined in the TOR) and convincing. The report presents an assessment of relevant outcomes and achievement of project objectives. The report presents an assessment of relevant external factors (assumptions, risks, impact drivers) and how they influenced the evaluation object and the achievement of results. The report presents a sound assessment of sustainability of outcomes or it explains why this is not (yet) possible. The report analyses the budget and actual project costs. Findings respond directly to the evaluation criteria and questions detailed in the scope and objectives section of the report and are based on evidence derived from data collection and analysis methods described in the methodology section of the report. Reasons for accomplishments and failures, especially continuing constraints, are identified as much as possible. Conclusions are well substantiated by the evidence presented and are logically connected to evaluation findings. Relevant cross-cutting issues, such as gender, human rights, environment are appropriately covered.		
Recommendations and lessons learned		

The lessons and recommendations are based on the findings and conclusions presented in the report. The recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?)'. Recommendations are implementable and take resource implications into account. Lessons are readily applicable in other contexts and suggest prescriptive action.		

Rating system for quality of evaluation reports

A number rating 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 3. GEF Minimum requirements for M&E[54]

Minimum Requirement 1: Project Design of M&E

All projects will include a concrete and fully budgeted monitoring and evaluation plan by the time of work program entry for full-sized projects and CEO approval for medium-sized projects. This monitoring and evaluation plan will contain as a minimum:

- SMART indicators for project implementation, or, if no indicators are identified, an alternative plan for monitoring that will deliver reliable and valid information to management;
- SMART indicators for results (outcomes and, if applicable, impacts), and, where appropriate, indicators identified at the corporate level;
- baseline for the project, with a description of the problem to be addressed, with indicator data, or, if major baseline indicators are not identified, an alternative plan for addressing this within one year of implementation;
- identification of reviews and evaluations that will be undertaken, such as mid-term reviews or evaluations of activities; and
- organizational set-up and budgets for monitoring and evaluation.

Minimum Requirement 2: Application of Project M&E

Project monitoring and supervision will include implementation of the M&E plan, comprising:

- SMART indicators for implementation are actively used, or if not, a reasonable explanation is provided;
- SMART indicators for results are actively used, or if not, a reasonable explanation is provided;
- the baseline for the project is fully established and data compiled to review progress reviews, and evaluations are undertaken as planned; and
- the organizational set-up for M&E is operational and budgets are spent as planned.

[54] http://gefeo.org/uploadedFiles/Policies_and_Guidelines-me_policy-english.pdf

Annex 4. Overall Ratings Table

Criterion	Evaluator's Summary Comments	Evaluator's Rating
Attainment of project objectives and results (overall rating) **Sub criteria (below)**		
Effectiveness		
Relevance		
Efficiency		
Sustainability of Project outcomes (overall rating) **Sub criteria (below)**		
Financial		
Socio Political		
Institutional framework and governance		
Ecological		
Monitoring and Evaluation (overall rating) **Sub criteria (below)**		
M&E Design		
M&E Plan Implementation (use for adaptive management)		
Budgeting and Funding for M&E activities		
UNIDO specific ratings		
Quality at entry		
implementation approach		
UNIDO Supervision and backstopping		
Overall Rating		

RATING OF PROJECT OBJECTIVES AND RESULTS

- Highly Satisfactory (HS): The project had no shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Satisfactory (S): The project had minor shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Moderately Satisfactory (MS): The project had moderate shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

- Moderately Unsatisfactory (MU): The project had significant shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Unsatisfactory (U) The project had major shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Highly Unsatisfactory (HU): The project had severe shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Please note: Relevance and effectiveness will be considered as critical criteria. The overall rating of the project for achievement of objectives and results **may not be higher** than the lowest rating on either of these two criteria. Thus, to have an overall satisfactory rating for outcomes a project must have at least satisfactory ratings on both relevance and effectiveness.

RATINGS ON SUSTAINABILITY

Sustainability will be understood as the probability of continued long-term outcomes and impacts after the GEF project funding ends. The mid-term evaluation will identify and assess the key conditions or factors that are likely to contribute or undermine the persistence of benefits beyond project completion. Some of these factors might be outcomes of the project, i.e. stronger institutional capacities, legal frameworks, socio-economic incentives /or public awareness. Other factors will include contextual circumstances or developments that are not outcomes of the project but that are relevant to the sustainability of outcomes.

Rating system for sustainability sub-criteria

On each of the dimensions of sustainability of the project outcomes will be rated as follows.

- Likely (L): There are no risks affecting this dimension of sustainability.
- Moderately Likely (ML). There are moderate risks that affect this dimension of sustainability.
- Moderately Unlikely (MU): There are significant risks that affect this dimension of sustainability
- Unlikely (U): There are severe risks that affect this dimension of sustainability.

All the risk dimensions of sustainability are critical. Therefore, overall rating for sustainability will not be higher than the rating of the dimension with lowest ratings. For example, if a project has an Unlikely rating in either of the dimensions then its overall rating cannot be higher than Unlikely, regardless of whether higher ratings in other dimensions of sustainability produce a higher average.

RATINGS OF PROJECT M&E

Monitoring is a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing project with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds. Evaluation is the systematic and objective assessment of an on-going or completed project, its design, implementation and results. Project evaluation may involve the definition of appropriate standards,

the examination of performance against those standards, and an assessment of actual and expected results.

The Project monitoring and evaluation system will be rated on 'M&E Design', 'M&E Plan Implementation' and 'Budgeting and Funding for M&E activities' as follows:

- Highly Satisfactory (HS): There were no shortcomings in the project M&E system.
- Satisfactory(S): There were minor shortcomings in the project M&E system.
- Moderately Satisfactory (MS): There were moderate shortcomings in the project M&E system.
- Moderately Unsatisfactory (MU): There were significant shortcomings in the project M&E system.
- Unsatisfactory (U): There were major shortcomings in the project M&E system.
- Highly Unsatisfactory (HU): The Project had no M&E system.

"M&E plan implementation" will be considered a critical parameter for the overall assessment of the M&E system. The overall rating for the M&E systems will not be higher than the rating on "M&E plan implementation."

All other ratings will be on the GEF six point scale.

HS	= Highly Satisfactory	Excellent
S	= Satisfactory	Well above average
MS	= Moderately Satisfactory	Average
MU	= Moderately Unsatisfactory	Below Average
U	= Unsatisfactory	Poor
HU	= Highly Unsatisfactory	Very poor (Appalling)

Annex 5. Required Project Identification and Financial Data

The mid-term evaluation report should provide information on project identification, time frame, actual expenditures, and cofinancing in the following format, which is modeled after the project identification form (PIF).

I. Project Identification

GEF Project ID: *[Assigned by the GEF Secretariat at pipeline entry.]*

GEF Agency Project ID:

Countries:

Project Title: *[As per the project appraisal document submitted to the GEF.]*

GEF Agency (or Agencies):

II. Dates

Milestone	**Expected Date**	**Actual Date**
CEO Endorsement/Approval		
Agency Approval date		
Implementation start		
Midterm evaluation		
Project completion		
Mid-term evaluation completion		
Project closing		

Expected dates are as per the expectations at the point of CEO endorsement/approval.

III. Project Framework

Project Component	Activity Type	GEF Financing (in $)		Cofinancing (in $)	
		Approved	Actual	Promised	Actual
1.					
2.					
3.					

4.					
5.					
6. Project Management					
Total					

Activity types are investment, technical assistance, or scientific and technical analysis.

Promised cofinancing refers to the amount indicated at the point of CEO endorsement/approval.

IV. Cofinancing

		Project preparation		Project implementation		Total	
Source of cofinancing	Type	Expected	Actual	Expected	Actual	Expected	Actual
Host gov't contribution							
GEF Agency (ies)							
Bilateral aid agency (ies)							
Multilateral agency (ies)							
Private sector							
NGO							
Other							
Total cofinancing							

Expected amounts are those submitted by the GEF Agencies in the original project appraisal document. Co-financing types are grant, soft loan, hard loan, guarantee, in kind, or cash.

Annex 6. Job descriptions for International and National Evaluation Consultants

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Job description FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

GF/CPR/09/006

Environmentally Sound Management and Disposal of Obsolete POPs Pesticides and Other POPs Wastes in China

Title:	International Evaluation Consultant
Main Duty Station and Location:	Home based and travel to Vienna and China
Mission/s to:	China [Beijing and other cities]; Austria [Vienna] separately authorized
Start of Contract (EOD):	September 2013
End of Contract (COB):	November 2013
Number of Working Days:	33 work days spread over 3 months

ORGANIZATIONAL CONTEXT

UNIDO plays a leading role in the implementation of the Stockholm Convention on POPs. Since the Convention opened for signature in 2001, UNIDO became one of the principal agencies assisting developing and economies in transition countries to meet their obligations under the Convention.

PROJECT CONTEXT

In 2008, the project "Environmentally sound management and disposal of obsolete (Persistent Organic Pollutants (POPs) pesticides and other POPs wastes in China" was endorsed by Global Environmental Facility (GEF) under the cooperation of UNIDO and the Foreign Economic Cooperation Office (FECO), of the Environmental Protection Ministry of China. The scope of the project is to strengthen the overall management and disposal of POPs containing products and wastes, develop the methodologies for POPs waste site risk assessment, handling, clearance, collection, labelling, packaging, transportation, disposal and emergency responses and eliminate the risk of POPs to human health and the environment in China.

According to work plan of the project, an independent Mid-Term Evaluation will be undertaken during project implementation. The Mid-Term Evaluation will measure progress made towards the achievement of outcomes and will identify corrections if needed. The evaluation will focus on the effectiveness, efficiency, and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned on project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the second half of the project's term.

MAIN DUTIES	**Expected duration**	**Concrete/ measurable Outputs to be achieved**	**Location**
Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data…); determine key data to collect in the field and prepare key instruments (questionnaires, logic models…) to collect these data through interviews and/or surveys during and prior to the field missions Assess the adequacy of China's legislative and regulatory framework to phase out POPs	6 days Home base	List of detailed evaluation questions to be clarified; questionnaires/ interview guide; logic models; list of key data to collect, draft list of stakeholders to interview during the field missions Brief assessment of the adequacy of the country's legislative and regulatory framework to phase out POPs: to be verified further during the field visit	Main Duty Station and China
Briefing with the UNIDO Evaluation Group, project managers and other key	3 days Vienna	Interview notes, detailed evaluation schedule and list of stakeholders to interview	Main Duty Station

stakeholders at HQ	(including travel days)	during the field missions Division of evaluation tasks with the National Consultant	and China
Prepare inception report and discuss with UNIDO EVA	1 day	inception report	Main Duty Station and China
Conduct field mission to China	10 days (including travel days)	Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in China at the end of the missions. Agreement with the National Consultant on the structure and content of the evaluation report and the distribution of writing tasks	Main Duty Station and China
Present overall findings and recommendations to the stakeholders at UNIDO HQ (incl. travel)	1 days Vienna (en route to hombase)	Presentation slides	Main Duty Station and China
Prepare evaluation reports according to TOR and template provided by UNIDO EVA Coordinate the inputs from the National Consultant and combine with her/his own inputs into the final draft evaluation report Provide inputs to the CHINA Country Evaluation as agreed with team leader and UNIDO EVA	9 days Home base	2 Draft evaluation report Brief input report to country evaluation	Main Duty Station and China
Revise the draft project evaluation reports based on comments from UNIDO Evaluation Group and stakeholders and edit the language and form of the final version according to UNIDO standards	3 days Home base	Final evaluation report	Main Duty Station and China

TOTAL	33 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
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environmental science, chemistry, development studies or related areas

Technical and Functional Experience:

- ✓ Extensive knowledge and experience in POPs, the Stockholm Convention and environmental projects
- ✓ Knowledge and experience in the field of evaluation (of development projects)
- ✓ Experience in GEF projects and knowledge of UNIDO activities an asset
- ✓ Working experience in China 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 Evaluation Group.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Job description FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

GF/CPR/09/006

Environmentally Sound Management and Disposal of Obsolete POPs Pesticides and Other POPs Wastes in China

Title:	National Consultant
Main Duty Station and Location:	Home based, Beijing and travel in China
Mission/s to:	China [Beijing and other cities]
Start of Contract (EOD):	September 2013
End of Contract (COB):	November 2013
Number of Working Days:	30 work days spread over 3 months

ORGANIZATIONAL CONTEXT

UNIDO plays a leading role in the implementation of the Stockholm Convention on POPs. Since the Convention opened for signature in 2001, UNIDO became one of the principal agencies assisting developing and economies in transition countries to meet their obligations under the Convention.

PROJECT CONTEXT

In 2008, the project "Environmentally sound management and disposal of obsolete (Persistent Organic Pollutants (POPs) pesticides and other POPs wastes in China" was endorsed by Global Environmental Facility (GEF) under the cooperation of UNIDO and the Foreign

Economic Cooperation Office (FECO), of the Environmental Protection Ministry of China. The scope of the project is to strengthen the overall management and disposal of POPs containing products and wastes, develop the methodologies for POPs waste site risk assessment, handling, clearance, collection, labelling, packaging, transportation, disposal and emergency responses and eliminate the risk of POPs to human health and the environment in China.

According to work plan of the project, an independent Mid-Term Evaluation will be undertaken during project implementation. The Mid-Term Evaluation will measure progress made towards the achievement of outcomes and will identify corrections if needed. The evaluation will focus on the effectiveness, efficiency, and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned on project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the second half of the project's term.

The consultant will participate and contribute to the project evaluation according to the evaluation Terms of Reference. S/he will be a member of the evaluation team, work under the supervision of the International Evaluation Consultant and carry out the task assigned to him/her by the International Evaluation Consultant, including the following tasks:

MAIN DUTIES	**Expected duration**	**Concrete/ measurable Outputs to be achieved**	**Location**
Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data…) Support the project management and the China Regional Office in planning the evaluation field mission and contacting concerned organizations to prepare the evaluation programme	4 days Home base	List of detailed evaluation questions to be clarified Evaluation mission programme	Main Duty Station and China
Carry out meetings, visits and interviews of stakeholders according to the evaluation programme and facilitate the work of the evaluation team in China (including acting as interpreter) Participate in drafting the main	10 days China days	Notes, tables; information gathered on issues specified in TOR Draft conclusions and recommendations to stakeholders	Main Duty Station and China

conclusions and recommendations, and present them to stakeholders in accordance with the instructions of the International Evaluation Consultant Carry out additional interviews and/or surveys as required by evaluation team leader after his/her departure.			
Contribute to the draft report as assigned by the International Evaluation Consultant	8 days Home base	First draft of chapters on the country background and other inputs into the draft evaluation report as agreed with the International Evaluation Consultant	Main Duty Station and China
Revise the draft chapters based on comments from UNIDO Evaluation Group and stakeholders	3 days Home base	Final evaluation report	Main Duty Station and China
TOTAL	**25 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
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environmental science, chemistry, development studies or related areas

Technical and Functional Experience:

- ✓ Knowledge of and experience in Persistent Organic Pollutants
- ✓ Experience in evaluation of environmental projects
- ✓ Knowledge of GEF and UNIDO technical cooperation activities an asset.

Languages: Fluency in written and spoken English and Chinese 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 Evaluation Group.

Annex B: List of documents transmitted to the evaluation

1. Project document
2. PIF
3. Inception report
4. Annual progress reports for 2010, 2011 and 2012
5. Audit reports for 2010, 2011 and 2012
6. Financial statements for 2010 and 2013
7. PIR reports for 2010, 2011, 2012 and 2013
8. 13 Technical reports (only 2 are in English version)
9. Report of international expert on non-combustion technology
10. 4 Monitoring reports for DDT trial destruction (all in Chinese version)
11. 9 monitoring reports from Hubei and Hebei provinces (all Chinese version)
12. 31 reports from consultants (all in Chinese)
13. Minutes of TCG and tripartite meetings
14. 9 Reports of technical symposiums (All in Chinese version)
15. Copies of all sub-contracts (all in Chinese)
16. Letters of Agreement between the project and Hubei and Hebei provinces (Chinese version)
17. TORs of sub-contract between Hubei and Hebei provinces and the project

Annex C: Schedule of interviews and list of persons interviewed

Itinerary for China mission (1 – 9 December 2014)

Date	Activities & Venue	Time	Participants	Location
1 Dec 2014	Arrival in Beijing			**Beijing**
2 Dec (Monday)	• Mid-term evaluation methodology • Project progress presentation	9:00-12:00	1）Evaluation Team 2）MEPFECO/CIO 3）NTA	**FECO/MEP**
	• Guidelines and standards for technologies **output 1.2** -Assessment Methods for Management and Disposal Capacity * High-temperature Incineration(Chen Yang) * Co-processing with Cement Kiln(Huang Qifei) **output1.2** - investigation and identification guideline for pesticide POPs waste **output 3.2** - Non incineration technology（Zhu Jianxin）	13:00-17:00	Evaluation Team+ Representatives of FECO management and Division V (POPs) + Technical experts	**FECO/MEP**
3 Dec (Tuesday)	• field visit * Tsinghua University Dioxin laboratory for **Dioxin monitoring** * Institute of High Energy Physics Chinese Academy of Sciences for **fly ash investigation and evaluation**		1）Evaluation Team；2）MEPFECO； 3）NTA; 4）relevant stakeholder	**Beijing**
4 Dec Wed.	• Interview with Hubei EPD(capacity building project) • Field visit to the previous POPs waste storage place		Evaluation Team;FECO;Hubei EPD;relevant enterprise	**Hubei province Beijing-Wuhan**
5 Dec (Thu.)	Field visit Huaxin cement plant Back to Beijing		Evaluation Team;FECO;Hubei EPD;relevant enterprise	**Hubei,Wuxue Wuhan-Beijing**
6 Dec (Fri.)	• Interview with Hebei EPD(capacity building project) • Visit Hebei Jinyu Mangrove Plant		Evaluation Team;FECO;Hebei EPD;relevant enterprise	**Hebei provience Beijing-Shijiazhuan**
7 Dec (Sat.)	Visit Hebei Xingtai pesticide factory Back to Beijing		Evaluation Team;FECO;Hebei EPD;relevant enterprise	**Hebei province Xingtai**
9 Dec Monday	Debriefing on the findings related to GEF-POPs projects at FECO	9.30 – 11.30	Evaluation Team + CIO/FECO + NTA	**MEP/FECO**

Schedule of meetings for Vienna

Date	Time	Activities	Participants	Venue
15 January 2014		Arrival in Vienna		
16 January 2014	9H00 – 12H00	Discussion / interview / request of documents	Yunrui Zhou	Vienna HQ
	13H30 – 15H30	Presentation of preliminary findings of China mission and discussion on findings	3 UNIDO evaluation officers, officers of UNIDO Stockholm Convention unit	Vienna HQ
	15H30 – 16H30	Further discussion	UNIDO Stockholm Convention unit	Vienna HQ
17 January 2014	8.45 – 10H15	Interview with PM	Dr Zhengyou Peng	Vienna HQ
	10H30 – 11H30	Discussion with UNIDO evaluation office	Johannes Dobinger	Vienna HQ

List of persons interviewed

	Name	Designation
1	Ms Ding Qiong	Head of Division V (POPs Unit) FECO
2	Zheng Peng	NPC, CIO/FECO
3	Shasha Liang	NPC, CIO/FECO
4	Dr Zhu Jianxin	Research Center for Eco-Environmental Science (RCEES), NTA, and expert for non-incineration technologies
5	Dr Chen Yang	Institute of High Energy Physics, Chinese Academy of Science, expert for high temperature incineration and fly-ash disposal technologies
6	Dr Yan Dahai	Chinese Research Academy of Environmental Science (CRAES), expert for integrated management of disposal capacity and for upgrading of cement kilns
7	Dr Tang Zhangwu	CRAES, expert to develop guidelines for ESM of obsolete POPs pesticides stocks and wastes
8	Assoc. Prof Jun Huang	Project leader, Tsinghua University
9	Yong Lu	Tsinghua University, dioxin monitoring
10	Wenchao Li	Tsinghua University, dioxin monitoring
11	Haifeng Li	Tsinghua University, dioxin monitoring
12	Chen Chaozhong	Sheyang Academy of Environmental Sciences, expert for flyash disposal technology
13	Jia Baojun	IHEP, CAS, expert for high temperature incineration and fly-ash disposal technologies
14	Wu Xiaoxia	IHEP, CAS, expert for high temperature incineration and fly-ash disposal technologies
15	Zhou Zhiyong	Director, Hubei Solid Waste Management Center
16	Wang Yunsheng	Section Manager, Hubei SWMC
17	Pan Ruixue	Hubei SWMC
18	Xiong Wei	Sales director, Huaxin Cement Ltd, Environmental Department
19	Li YongMei	Huaxin Cement Ltd
20	Zhang Jiang	Huaxin Cement Ltd
21	Zhang Jingdao	Hebei, EPB, investigator

22	Li Hongyan	Deputy Director, Hebei EPB
23	Liu Yingmin	Senior staff, Hebei EPB
24	Zhao Qian	Deputy Director Hebei SWMC
25	Wang Yuqing	Section Manager Hebei SWMC
26	Zhang Chunhui	Hebei Jinhu Hongshulin
27	Wei Guo	General Manager, Hebei Jinhu Hongshulin
28	Fu Ruide	Deputy General Manager, Hebei Jinhu Hongshulin
29	Feng Rui	Xing Tai EPB
30	Cao Yumei	SWMC, Hebei
31	Zhou Lingyun	San He EPB
32	Li Hui	Lang Fang EPB
33	Wei Liang	Hebei EPB
34	Li Yuji	Hebei EPB
35	Han Xu	Xing Tai EPB, engineer
36	Zhengyou Peng	UNIDO Stockholm Convention Unit, Project Manager
37	Yunrui Zhou	UNIDO Stockholm Convention Unit, Project Officer
38	Johannes Dobinger	UNIDO Evaluation Office
39	Javier Guarnizo	UNIDO Evaluation Office
40	Erlinda Galvan	UNIDO, Stockholm Convention Unit
41	Ganna Onysko	UNIDO GEF coordination

Annex D: Table 3 giving status of output delivery at midterm

Table 3: Status of output delivery at midterm

Activities	Status	Progress To Date	Rating
Output 1.1 Technological and economic policies and regulations in place for promoting environmentally sustainable management and disposal of POPs wastes			
1.1.1 * Develop and formulate technological and economic policies through interdepartmental coordination, awareness raising, public hearings, and NGO outreach	Completed	- 12th Five-year Program for the Prevention and Control of Pollution Caused by POPs from Major Industries in China - The second revision of the revised edition of the Technology Policy for the Prevention and Control of Pollution Caused by Hazardous Wastes was completed - Notice of the Provincial Department of Environment Protection on Strengthening the Management of Abandoned Pesticides and Pesticide Packages (E.H.B.[2012] No. 321) - 12th Five-year Work Program for Implementation plan of International Environment Conventions (for comments)	HS
1.1.2* Provide training on new technological and economic policies for managerial staff from provincial EPBs	Completed	-The trainings on the identification and investigation as well as environmentally sound management and disposal of POPs wastes are conducted, during which training sessions are held for 8 times and more than 1000 person-times participated from provincial EPBs and waste disposal Companies.	HS
1.1.3* Raise awareness of new technological and economic policies and enforcement mechanisms	Completed	- National and provincial news media such as China Environment News, Hubei Daily, Hebei Daily, and People's Daily Online, Chinanews.com, CNR.cn, China Economic Net, reported the environmentally sound disposal of POPs obsolete pesticides -A series of awareness raise campaigns organized by national and provincial level - Technical Training Reports of Hubei Province and Hebei Province	HS
Output 1.2: Technical standards and guidelines developed for ESM of POPs waste			
1.2.1* Develop and formulate guidelines, standards, and specifications	On-going	- The compilation of the Guidelines for Investigation and Identification of Pesticide POPs Wastes was completed - The compilation of the Standard on Control of Pollution Caused by Co-processing of Hazardous Wastes with Cement Kilns is open for comments - The revision of the Standard on Pollution prevention Caused by hazardous waste high temperature incineration is open for	S

		comments - Risk assessment guidelines for contaminated sites - The compilation of the Environmental Protection Technology Specifications on Co-processing of Hazardous Wastes with Cement Kilns was completed	
1.2.2* Provide training on guidelines, standards and specifications for managerial staff from provincial EPBs	Completed	- At least 500 specialized managerial and monitoring staff received training	HS
1.2.3* Develop standard operation procedures for analysis and monitoring	Completed	- The compilation of the Technical Guidance for Co-processing of Wastes with Cement Kilns is being discussed internally - The compilation of the Technical Specifications of Hubei Province on Co-processing of Hazardous Wastes with Cement Kilns was completed - Measures for the Administration of Operation Permit of Hazardous Wastes	HS
Output 2.1: Communication and coordination sustained between stakeholders in waste management and disposal			
2.1.1* Establish national, regional, and local coordination framework for integrated POPs waste management	Completed for Hebei and Hubei Provinces	- National Convention Implementation Coordination Group and Project Management Office established - Hubei and Hubei Provincial Convention Implementation Coordination Group and Project Management Office were set up	HS
2.1.2 Periodically review stakeholder recommendations and action proposals related to POPs wastes ESM	On-going	- Local coordination meetings in Hebei Province and Hubei Province to review progress	S
2.1.3Hold periodic fora for public and private stakeholders, NGOs, and the general public to promote good governance and increased effectiveness	On-going	National and provincial news media such as China Environment News, Hubei Daily, Hebei Daily, and People's Daily Online, Chinanews.com, CNR.cn, China Economic Net, reported the environmentally sound disposal of POPs obsolete pesticides -A series of awareness raise campaigns organized by national and provincial level	S
Output 2.2: Institutional capacity enhanced for POPs waste management at local level			
2.2.1* Enhance overall institutional capacity for program development	Completed	- In Hubei Province, a notice on strengthening the management of pesticide wastes was issued	S
2.2.2* Adapt and implement national policy and regulatory framework at local level	Completed	- National policy and regulatory framework adapted in Hebei and Hubei provinces	S
2.2.3* Develop trial local-level responsibility system for obsolete POPs pesticide management and disposal	Completed	- Treatment and disposal of POPs wastes was carried out either by self-financing in Tianjin, Chongqing and so on	S
2.2.4* Develop and test pricing mechanisms POPs waste disposal	Completed	-Regulation on Disposal fee of hazardous waste disposal in Hubei province	S
2.2.5* Establish and implement reporting system to collect and	Completed	- System establish within local EPBs	

analyze data on creation, transport, and treatment of POPs waste			S
2.2.6* Establish inspection and prosecution system for the discarded POPs wastes and contaminated site	Completed	Routine work of local EPB officers include inspection and monitoring for obsolete POPs pesticides and other hazardous wastes	S
2.2.7* Promote widespread local participation through increasing local input of personnel and financial resources	Completed in Hebei and Hubei provinces	Major stakeholders including various departments (e.g. EPBs, Health, Agriculture), waste centers, etc. involved at local level	S
2.2.8* Incorporate ESM principles, norms and requirements into current EIA guidelines	Completed		
2.2.9* Prepare ESM inspection manuals	Completed	Guidelines on ESM developed by CRAES	S
2.2.10* Provide training for local solid waste management centers to implement ESM	Completed in Hebei and Hubei provinces	Training was provided to waste centres in Hubei and Hebei provinces	S
Output 2.3: Public awareness on POPs activities undertaken			
2.3.1* Develop TV and other mass media programs to disseminate knowledge of POPs 2.3.2* Publish articles or reports for public education in national and local newspapers. 2.3.3* Develop and produce brochures to raise awareness regarding health and safety protection from POPs pesticide wastes and dioxin rich fly ash 2.3.4* Hold public hearings regarding POPs waste stockpile reporting, emergency response, and health and safety protection 2.3.5* Hotline established for POPs related health and safety issues	All activities for this output completed for Hebei and Hubei provinces	- Documentary TV films for management of DDT wastes in health field - Promotion films for POPs waste management trainings in Hubei Province and Hebei Province - News reports and documentary audio-visual materials with regard to the supervision over disposal of wastes in Hubei Province and Hebei Province - Relevant reports were published in People's Daily Online, China Forum of Environmental Journalists, Hubei Daily, Chutian Golden Newspaper and so on. - 5,000 brochures were printed and distributed in Hubei province -500 souvenirs foldable knapsack and 4500 souvenirs ball pens were produced and distributed by FECO - Hubei and Hubei Department of Environment Protection Hotline	S
Output 3.1 Safe and effective collection, packaging, and transportation of POPs pesticide wastes for disposal adopted			
3.1.1* Identify location, type, status of POPs pesticide wastes and associated waste matrices at targeted hot spots 3.1.2* Develop operating manual for collection, packaging, and transportation of the POPs pesticide waste	All activities for this output completed for Hebei and Hubei Provinces	- List of national pesticide POPs wastes - Guidelines for collection, packaging and transportation of pesticide POPs wastes - Working outline of Hubei and Hebei provincial solid waste centers for treatment of pesticide POPs wastes - Contract of Hubei and Hebei provincial solid waste centers for treatment of pesticide	S

3.1.3* Prepare detailed terms of reference and contracts for the provincial HWDCs according to expertise in the fields of waste management and occupational health and safety 3.1.4* Provide training to staff from the provincial HWDCs concerning the collection, packaging, and transportation of the POPs pesticide wastes 3.1.5* Collect, package, and transport POPs pesticide waste from hot spots 3.1.6* Store POPs pesticide waste safely to prevent release of POPs contaminants to the environment		POPs wastes - Collection, packaging and transportation of 4,951.6 tons POPs pesticide wastes - Temporary safe storage of 4,951.6 tons POPs pesticide wastes`. - To the date, the 97% of identified PPW were disposed by ESM. The remaining 5000 tons of PPW are being identified and to be disposed in next phase. - National list of pesticide POPs contaminated sites	
Output 3.2 Assessment of technologies for POPs waste disposal carried out			
3.2.1* Detailed feasibility study for final disposal units based on the waste type, destruction efficiency, emissions, residues, energy/material requirements, portability, state of commercialization, and site selection 3.2.2* Preparation of detailed Terms of Reference for technology selection and Request for Proposal from vendors	On-going On-going	- Completed for incineration technology (cement kiln) - Non-incineration technology assessment report done by IHEP and RCEES - Completed for incineration by cement kiln - TOR and technical specification developed (by RCEES and IHEP)	S S
Output 3.3: Technology transfer promoted through PPP mechanisms			
3.3.1* Identify potential PPP arrangements for design, construction and operation of POPs waste treatment infrastructure 3.3.2* Promote cooperative relationship among technology vendors and facility designers, constructors, and operators to achieve cost-effective options	On-going On-going	-PPP with cement kilns for incineration by co-processing (Huaxin and BBMG) - For Non-incineration technology equipment supplier seminar organized -Technical specification of Non-incineration -Completed for cement kilns -Not yet initiated for non-combustion	MS MS
Output 3.4: Construction, certification, operation and supervision of stationary and mobile treatment facilities arranged			
3.4.1* Environmental Impact Assessment (EIA) for one stationary and one mobile unit 3.4.2* Invite bids from potential vendors to transport POPs wastes and operate disposal facilities 3.4.3* Prepare disposal sites for deployment of selected technology, including construction of storage facility	On-going On-going On-going	- Facility upgraded at Huaxin Environmental Protection Engineering Co., Ltd., BBMG Mangrove Environmental Protection Technology Co., Ltd. Mobile unit: not yet initiated Stationary: Huaxin Cement and BBMG selected ; Mobile unit: Not yet initiated -Huaxin cement and BBMG invested to upgrade cement kiln; mobile unit: not yet initiated Huaxin cement and BBMG invested to	S MS MS

and commissioning of equipment 3.4.4 Installation of the stationary unit at the selected site and mobile unit at selected base stations 3.4.5* Transportation of POPs waste to the POPs treatment locations in an environmentally sound manner 3.4.6 Final disposal of POPs pesticide wastes in an environmentally sound way 3.4.7 Monitoring during facility construction and operation 3.4.8 Establishment of equipment ownership arrangements	Completed for fixed unit (cement kiln)	upgrade cement kiln; mobile unit: process not yet initiated - 4,951.6 tons pesticide wastes are safely transported to the designated sites (Hebei and Hubei provinces) - Environmentally sound disposal of 4,951.6 tons pesticide wastes by cement kilns -Monitoring done by EPB officers and technical experts for upgrading of cement kilns: mobile unit: process not yet initiated -Investment by BBMG and Huaxin for cement kilns	MS MS HS MS HS
Output 3.5: Dioxin rich fly ash disposal implemented			
3.5.1 Target province selected for non-landfill pilot disposal of dioxin rich fly ash	On-going	- The technical assessment is completed -Candidate demonstration technologies are selected -the proposal for technology demonstration is completed	S
Output 4.1: Inventory of contaminated sites prioritized			
4.1.1* Review existing national and international best practice guidelines for human health and ecological risk assessment 4.1.2* Develop a project-fit methodology, including QA/QC procedures for quantitative environmental risk assessment (QERA) 4.1.3* Train staff in provincial solid waste management centers 4.1.4 Carry out on-site surveys following removal activities, focusing on identification of exposure scenarios	Completed On-going Completed for Hebei and Hubei provinces On-going	- Inventory of pesticides POPs wastes contaminated sites was summarized. - Environmental safety assessment on the storage point of POPs wastes in Hebei and Hubei was conducted - Environmental safety assessment on some of the storage points of POPs wastes in Hubei was conducted - The site risk assessment is ongoing for pesticide plant used to produce DDT and HCH in Hunan - The site risk assessment is ongoing for a storage house holding HCH and Arsenic mixed waste in Hunan - New Zealand Visit for investigation and exchange on the management of POPs and associated chemicals and contaminated sites. During this investigation, they communicated the POPs non-incineration treatment and disposal technology assessment methodology and its main progress with relevant state ministries and research institutes, and communicated the research and application progress of MCD technologies in the restoration of	MS

		the contaminated soil with EDL.	
Output 5.1: Project management structure established			
5.1.1* Establish Project Steering Group	Completed	Existing CICG	HS
5.1.2* Establish the National Project Management Team under CIO	Completed	Team established within CIO	HS
5.1.3* Recruit Chief Technical Advisor (CTA), a National Technical Advisor (NTA), policy experts, and technical experts in POPs waste management, evaluation, and program development	Completed	NTA (From RCEES) recruited. No CTA recruited	S S
5.1.4* Establish local project management offices in target provinces	Completed	PMOs established in Hubei and Hebei provinces	
5.1.5* Hold management training classes for national and local project management staff	Completed	Training conducted in Hubei and Hebei provinces	S
Output 5.2 An M&E mechanism designed and implemented according to GEF M&E procedures			
5.2.1 & 5.2.2* Hold the Inception Workshop and Report	Completed	Inception workshop held on 20 August 2009 and attended by more than 100 participants- Report available	HS
5.2.3 Measure impact indicators on an annual basis	On-going	Discussed in annual reports	MS
5.2.4 Prepare Annual Project Reports and Project Implementation Reviews	On-going	PIRs and annual reports produced	S
5.2.5 Hold annual tripartite review meetings	On-going	Tripartite meeting held on 26 Feb 2013	S
5.2.6 Hold biannual Steering group meetings	On-going	Meeting held as planned	S
5.2.7 Carry out mid-term external evaluation	On-going	Midterm evaluation on-going	S
5.2.10 Carry out annual project financial audits	On-going	Beijing Kuntaironghe Certified Public Accountants Co., Ltd. entrusted to undertake financial audit for the third year	S S
5.2.11 Carry out biannual visits to selected field sites	On-going	Field visits undertaken by PM accompanied by PMT (CIO/FECO)	S
5.2.12* Establish a project management information system (MIS), including a project website	Completed	Project website: http://www.china-pops.org/: Seems that English version of website not working.	S