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Independent Evaluation

INDIA

Development of a National Implementation Plan in India as a First Step to Implement the Stockholm Convention on Persistent Organic Pollutants

UNIDO project GF/IND/07/004

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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Tables, figures, sections, pages, as well as many organisations and reports, are hyperlinked in the electronic version of this document to facilitate retrieval of information

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ACRONYMS AND ABBREVIATIONS

AIIPHH	All India Institute of Public Health and Hygiene
BAT	Best Available Techniques
BEP	Best Environmental Practices
CEE	Centre for Environmental Education
CFRI	Central Fuel Research Institute
CIB	Central Insecticides Board
CII	Confederation of Indian Industry
CII	Confederation of Indian Industry
CIL	Central Insecticides Laboratory
CLRI	Central Leather Research Institute
CMA	Cement Manufacturers' Association
COP	Conference of Parties
CPCB	Central Pollution Control Board
CPRI	Central Power Research Institute
CSE	Centre for Science and Environment
CSIR	Council of Scientific and Industrial Research
DDT	Dichlorophenyltrichlorethane
EPA	Environment Protection Agency
EPS	Environmental Protection Societies
EVA	Evaluation Unit, UNIDO HQ Vienna
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GOI	Government of India
GSPCB	Gujarat State Pollution Control Board
HCB	Hydrochlorobenzene
HIL	Hindustan Insecticides Limited
ICC	Indian Chemical Council
ICMA	Indian Chemical Manufacturers Association
ICMR	Indian Council of Medical Research
IICT	Indian Institute of Chemical Technology
ILO	International Labour Organization
IMS	Information Management System
INC	Intergovernmental Negotiating Committee
IPM	Integrated Pest Management
IT	Information Technology
ITRC	Industrial Toxicology Research Centre
KSPCB	Karnataka State Pollution Control Board
M&E	Monitoring and Evaluation
MCF	Ministry of Chemicals and Fertilizers
MDG	Millennium Development Goals
MEA	Ministry of External Affairs
MHFW	Ministry of Health and Family Welfare
MOA	Ministry of Agriculture
MOEF	Ministry of Environment and Forests
MOL	Ministry of Labour
MOUD	Ministry of Urban Development
NCL	National Chemical Laboratory
NEC	National Expert Committee
NEERI	National Environmental Engineering Research Institute
NGO	Non-Governmental Organization
NIIST	National Institute for Interdisciplinary Science and Technology
NIOH	National Institute of Occupational Health
NIP	National Implementation Plan
NMEP	National Malaria Eradication Program
NPD	National Project Director
NSC	National Steering Committee
OP	Operational Programme
PAI	Pesticides Association of India
PCBs	Polychlorinated Biphenyls

PCDD	Polychlorinated dibenzo-p-dioxin
PCDF	Polychlorinated dibenzofuran
PDF-B	Project Development Facility B (Preparatory Project)
PIC	Prior Informed Consent
PIR	Project Implementation Review
POP	Persistent Organic Pollutant
PRTR	Pollutant Release and Transfer Register
R&D	Research and Development
RENPAP	Regional Network on Safe Pesticide Production and Information for Asia and the Pacific
RRL	Regional Research Laboratory
SAIL	Steel Authority of India Limited
SHD	State Health Department
SME	Small and medium enterprise
SPCB	State Pollution Control Board
TERI	The Energy and Resources Institute
TL	Toxics Link
TNSPCB	Tamil Nadu State Pollution Control Board
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute of Training and Research
WB	World Bank
WHO	World Health Organization
WWF-India	World Wildlife Fund for Nature (India)

KEY ADMINISTRATIVE PERSONNEL AND ACRONYMS IN THE PROJECT

Administrative Position in Project	Short	Organisation
Chief of UNIDO-POPs and Chemicals Management Unit	C-MU	UNIDO, Vienna
Project Manager	PM	UNIDO, Vienna
Project Coordinator (also Technical Advisor for POPs; Regional Coordinator – RENPAP and POPs for Asia)	PC	UNIDO/RENPAP, New Delhi
Assistant Project Coordinator (also Assistant Regional Coordinator / RENPAP; NIP Editor)	APC	UNIDO/RENPAP, New Delhi
Assistant Project Coordinator	APC-1	MOEF (UN-V) , New Delhi
Assistant Project Coordinator	APC-2	MOEF (UN-V) , New Delhi
National Focal Point (for the Stockholm Convention)	NFP	Joint Secretary, HMS Division, MOEF, New Delhi
National Project Director	NPD	Director, HMS Division, MOEF, New Delhi
Consultant (responsible for NIP drafting)	ED	MOEF, based in Pune
GEF Focal Point	GEF	MOEF, New Delhi
UNIDO Representative for India & Regional Director for South Asia	UR	UNIDO, New Delhi

1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

As a Party to the Stockholm Convention on Persistent Organic Pollutants (POPs), India is required to develop a National Implementation Plan (NIP) that describes how it will implement its obligations under the Convention. To assist India with that activity, the GEF approved $3,074,700 for Project GF/IND/07/004 "*Development of a National Implementation Plan in India as a first step to implement the Stockholm Convention on Persistent Organic Pollutants (POPs)*" on 20 July 2007. UNIDO and the Ministry of Environment and Forests (MOEF) were the joint executing agencies for the Project.

The Government of India committed $6,880,000 in co-finance for the development of the NIP as well as $750,000 as '*seed money'* for the post-NIP initiatives. UNIDO also committed $200,000 in co-finance for evaluation activities. As India is one of the four largest non-industrialised Parties to the Convention, and consistent with the concept of managing and reducing potentially large quantities of POPs as soon as possible, the GEF supported the development of post-NIP projects in India during the development of the NIP rather than when it was completed. The information contained in India's NIP was also seen as important for decisions on the most appropriate post-NIP projects to address POPs.

To address the NIP project, UNIDO agreed seven contracts with six Indian government organisations as six work packages (or objectives): 1) Convention implementation infrastructure at national and state levels; 2) Measures in relation to DDT – the only POP pesticides produced and used in India; 3) Measures in relation to polychlorinated biphenyls (PCBs); 4) Measures in relation to unintentionally produced POPs; 5) Measures in relation to wastes and contaminated sites; and 6) Project management and monitoring & evaluation. The six organisations were CPCB, CPRI, HIL, MOEF, NEERI, and NIIST (see acronyms and abbreviations on page 9; and Table 1 on page 34 for objectives and contractors).

The Project on POPs in India aimed to:

- Establish inventories on POPs production, use, trade, stockpiles, wastes and contaminated sites;
- Develop strategies and action plans for the reduction and elimination of POPs;
- Assess infrastructural capacity and propose institutional arrangements, regulatory frameworks and requirements for capacity building;
- Raise stakeholder and public awareness to ensure the effective and sustainable implementation of newly proposed strategies and Action Plans;
- Build sustainable capacity sufficient to prepare the NIP and its component inventories, strategies and action plans and to fulfill ongoing reporting requirements of the Convention;
- Formulate and gain stakeholder endorsement for the NIP, including priorities and objectives with the aim of estimating the total costs and the incremental costs likely to be incurred for introduction into development and assistance planning;
- Develop and demonstrate practical and feasible methodologies for priority actions that enable India to meet its Convention obligations;
- Promote sustainable capacity at the national, state and district levels to build on the POPs inventories and enhance the management systems for POPs in a way that was attractive for future donor funding.

The Project to develop the NIP followed a PDF-B project on POPs that was completed in 2004 in which

the institutions and tasks for the NIP project were defined. The NIP Project was initially planned for two years but was granted an extension of one year until 31 December 2010.

1.2 EVALUATION METHODOLOGY

After an extension of one year the Project's planned completion date was registered by the GEF and UNIDO as 31 December 2010. Therefore, interviews and site visits to India for this Terminal Independent Evaluation were scheduled over a two week period from mid-January 2011. The evaluation team comprised of an international and a national expert. The team used quantitative and qualitative data collection methods and analyses to investigate the relevance, effectiveness, efficiency and sustainability of the Project. Initially, the Project Logical Framework was constructed by the evaluators for a desk review, as the one in the Project Document was inadequate.

The Logical Framework was used to determine the performance indicators relevant to each of the objectives agreed in the Project Document and contracts, and to determine appropriate questions to assess whether the performance indicator had been met. Thirty-eight stakeholders were interviewed, mostly in person but some by telephone when in-person interviews were not possible. Site visits were made to CPCB in New Delhi and CPRI in Bangalore. The information obtained as a result of this evaluation will also contribute towards a thematic evaluation of UNIDO's projects on POPs.

The NIP provided for the evaluation contained 700 pages comprising six chapters and four annexes. The Annexes described in detail the outputs of work undertaken by the contractors on Objectives 2, 3, 4, and 5.

In this report, the evaluators have provided quantitative information wherever possible based on the status of the outputs in the Project at the time of the evaluation. The evaluation report is as evidence-based as possible within the time available in order to substantiate the findings and, moreover, to enable practical recommendations to be proposed on the basis of these findings. The report was based on the documents available at the time which had been developed as much as possible but they were not yet final. The evaluation reported on the extent of the development of legislation but not in detail since this was not required in the Terms of Reference.

A draft report was shared with the Indian Government, who formulated own- and collected comments from different project stakeholders in India. The reactions to these comments by the evaluation team and UNIDO Evaluation Group are provided in Annex 19 of this report.

1.3 OVERALL PROJECT ASSESSMENT

The major Project outcome foreseen in the Project Document is the endorsement of the NIP by the Government of India and submission of it to the Convention. The deadline for India to submit the NIP was April 2008, as set by the Stockholm Convention. So far 95 non-industrialised Parties to the Convention have transmitted their NIPs to the Convention within an average of 6 months after the Convention's deadline. However, at the time of the evaluation in January 2011 a draft NIP had been produced and it was being reviewed. Following the review process India planned to submit the endorsed NIP to the Convention in April 2011.

Although a Final NIP had not been produced at the time of the evaluation, the Project will most likely lead to the production of a Final NIP, its endorsement by the Government of India and its submission to the Stockholm Convention Secretariat. The Project on the NIP helped to expand the knowledge on the presence and extent of POPs contamination in India. In particular, it quantified PCB contamination of electrical transformer oil, quantified unintentional emissions of POPs from four main sources, and provided estimates of the quantities of obsolete pesticide stocks. It also compiled information on the production and use of DDT for controlling vectors that cause disease and some

information on alternatives that could replace DDT. The NIP also provided information on sites contaminated with PCBs and DDT.

The work undertaken in the Project strengthened the capacity of several of the participating institutes and placed them in a good position to continue the work in the future. Some of the institutes spent funds from their own budgets for work on POPs. These Institutes stated their commitment to employing more staff and purchasing equipment for post-NIP projects. The contractor CPCB intended to invest in more laboratory equipment in 2011 that would enable further work on dioxins. In this regard, the project has had a sustainable impact.

While the NIP was being completed, the GEF agreed to fund two post-NIP projects in India and one regional project that involved India. The willingness of the GEF to fund more projects on POPs in India indicated the donor community's confidence in the work on the NIP which aimed to manage, reduce and eliminate POPs.

Despite these achievements as a result of the Project, the quality of the NIP and its Annexes was found to be rather low as it failed to use common scientific methods such as statistical analyses to assist with the development of the inventory of POPs; survey methodologies were inadequate; and there was limited information on alternatives to DDT.

The surveys did not use statistical analysis and methods to assist with extrapolations of POPs quantities from statistically-meaningful primary measured data, which would have helped in obtaining more information on the incidence of POPs in the SMEs and other sectors. Poorly-designed survey methodologies delayed the delivery of outputs which resulted in many of them being assessed as "*partly delivered*" or "*not yet delivered*".

While the NIP was the main output of the project, its quality and usefulness for achieving POPs phase-out/ reduction objectives depends on the many "contributing" outputs defined in the project document and – in more detail - in the subcontracts. The results of the sub-contracts were contained in four Annexes to the NIP. The evaluation categorised 52% of these outputs as "*not yet delivered*", 22% as "*partly delivered*" and 26% as "*delivered*". Figure 4 on page 20 summarises the status of delivery of the outputs in each of the six main objectives. Objective 1 in the Project had the largest number of outputs that were assessed as "*not yet delivered*". As a result, many of the most important outputs related to legislation were not available for review, which included identification of POPs-specific institutional responsibilities and gaps in the regulatory framework; provision of information on monitoring, enforcement, policies, strategies and institutional structures affecting POPs management; provision of a Management Information System for managing, updating and providing guidance on the use of the POPs; and provision of a website to increase the awareness of POPs and issues related to the safe handling, transport, and environmentally-sound management of POPs.

The status of the POPs inventory was difficult to assess because information on PCBs, DDT, and contaminated sites was not summarised into one or two Tables (see evaluators' compilation in Table 2 page 34 and Table 3 on page 37). The inventory consists of a low number of data points obtained over the course of the Project. For example, the NIP reports only 51 DDT samples taken from soil (seven sites) and water samples (6 sites); 12 samples for PCB-contaminated sites; and 36 for dioxins from a range of sources. Key sources of dioxins and furans were not sampled at all, such as Small and Medium Enterprises which were acknowledged in the NIP as important sources of POPs. At the time of the evaluation, 398 PCB samples had been analysed. The contaminated sites sampled for POPs were geographically limited, which eliminated the possibility of determining the applicability of the data to the whole country.

A possible reason for the limited number of samples was the GC/MS analysis method used in the Project that took a long time to analyse and report each sample. The methodology did not make use

of bio-assay methods where a single machine is capable of analysing more POPs samples in one week as the Project analysed in three years. A bioassay method can quickly, economically and efficiently build a comprehensive inventory of POPs as a basis for further post-NIP projects. In addition, the Project focused on building the inventory based on measured samples and did not accumulate as much information as possible using both measured and secondary (previously reported) information.

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The lack of a Management Information System and website is a missed opportunity in this Project as both are important elements for 'housing' the inventory data that was being developed and for creating general awareness on POPs issues. Limited awareness of POPs was one of the reasons the institutes gave for a poor response to their surveys.

A Preliminary Report was presented to stakeholders in India on the final day of the evaluation mission, which was helpful for obtaining comments on the results to that date. A similar report was provided to UNIDO several days later in Vienna.

1.4 MAIN CONCLUSIONS ON FACTORS AFFECTING PROJECT PERFORMANCE

The evaluators subsequently examined the results of the mission and identified potential causes for the Project not having performed as expected. These included external factors as well as weaknesses in the following areas: contract formulation; project management; stakeholder consultation; technical review; Institutional Strengthening; financial control and reporting; and monitoring and evaluation.

1.4.1 External factors affecting project performance

According to various studies, India has made progress toward a market-oriented economy, but economic growth has been constrained by external factors that include inadequate infrastructure, a cumbersome bureaucracy, corruption, labour market rigidities, regulatory and foreign investment controls, high fiscal deficits and double-digit inflation for food. India's focus in 2011 in on reforming the open bidding system for natural resources; the formulation of public procurement policy; and the adoption of anti-corruption legislation in the public sector.

The Project Document on the NIP also highlighted a number of external factors that could affect the delivery of the outcomes of the project. These factors included the availability of financial and human resources, whether capacity building was considered a priority, participation of stakeholders at national and state levels, management of conflict of interests, and integration of the work on POPs chemicals as part of India's developmental strategy.

There was no evidence in this Project that any of these macro-economic / infrastructural or Project-related external factors had prevented the delivery of the major outcomes in this Project. The value of UNIDO's contract with MOEF was almost $600,000 over two years, which was considered sufficient funding to engage competent and well-qualified staff to undertake work on the project objectives. UNIDO contracts with other organisations provided funding for equipment, training and staff which were also considered sufficient to undertake the analysis of POPs for the inventory. The Project managers reported they had access to key staff in the relevant ministries, suggesting that bureaucracy in this case was not hindering communications and implementation. Like India, many other large countries have central-state governance which does not hinder delivery of outcomes. The evaluation concludes that the lack of outcome delivery was related mainly to project-internal factors, particularly in relation to project management, contract formulation, implementation of objectives, awareness raising, stakeholder involvement, and monitoring & evaluation of progress.

Under the Paris Declaration, developing countries set their own strategies for poverty reduction, improve their institutions, tackle corruption and focus on results and the measurement of those results. The Accra Agenda for Action (AAA) was drawn up in 2008 and builds on the commitments agreed in the Paris Declaration. Under AAA, donors switch from reliance on prescriptive conditions about how and when aid money is spent, to conditions based on the developing country's own development objectives. In the implementation of this project, there appeared to be little focus on results and evidence of the measurement of those results, and little evidence of effort to build the capacity of the MOEF.

1.4.2 Contract formulation

The Contracts provide the legal agreement between UNIDO and the contractors in regard to outputs to be delivered within a specific time and the payment for these outputs. Problems were observed regarding the formulation of these contracts and the selection of subcontractors.

The objectives in the contracts were assigned by the Project in a way that resulted in unclear responsibilities for the contractor. For example, there were some objectives that were assigned to contractors that were not within their expertise and considered by them to be MOEF's responsibility. In contrast, MOEF understood that other contractors were responsible for completing objectives on MOEF's behalf. The same objectives were also duplicated between contracts. These examples show that contractor responsibilities were unclear and there was potential for double funding of the same objectives. One of the contracts contained typographical and payment errors, and it used unspecific text to define the obligations of the contractor, which raised questions on the legal basis of the contract.

These problems also caused delays in signing the contracts at the start of the Project. Five of the contractors did not sign the Contracts until 6-7 months after the UNIDO-GOI agreement was signed. The contract to CPRI was delayed 11 months due to discussions on price and scope. The MOEF contract was delayed 19 months because MOEF could not receive funds until HIL agreed to administer the financial arrangements on behalf of MOEF, as MOEF was not able to receive and disburse funds.

The contract to HIL was subject to further discussion as HIL is the only global producer of DDT for vector control, with a financial interest in the continued production of DDT for national and international sales. However, HIL was contracted by UNIDO and MOEF to provide a report on phasing out DDT and replacing it with alternatives. The report by HIL as a result did not maintain the required level of objectivity that would be expected from such a contract.

All of the contracts were not subjected to competitive tender to find the best organisations in India that could have undertaken the surveys on POPs and analysed samples of POPs. This was a lost opportunity to match the skills for the work at the best price.

1.4.3 Project management and supervision

The management of the Project by UNIDO and MOEF was insufficient to ensure on-time delivery of all of the deliverables. This was attributed to a number of factors, but the main one was because the Project management measured progress in the Project according to the Guidelines for the Convention on NIPs, and by comparing India's NIP with other NIPs that had been developed in the region, rather than using the Project document which is an official document approved by the GEF, UNIDO and the GOI.

The Project Managers in charge of project supervision changed about half way through the 3-year term. This lack of continuity in management from the beginning to the end of the Project, coupled with insufficient communication between the outgoing and incoming managers, was assessed as a factor that contributed to insufficient attention being paid by the PM to Project performance. There

was no Turnover Report written by the outgoing manager who was re-assigned to another UNIDO project. The opportunity was missed to identify deficiencies in the Project in a Turnover Report from one manager to another.

UNIDO training in project management is dependent on the Project Manager finding time to undertake courses on management. The workload of the Project Manager combined with travel time to visit projects in different countries left insufficient time for training.

The Project Document required MOEF to recruit and supervise local experts and to organise, in collaboration with UNIDO, the procurement and delivery of international project inputs. Approximately 13% of the funding was allocated to international experts recruited by UNIDO. The Terms of Reference for the evaluation required the evaluation team to interview a "*…sample of consultants and/or institutions that were hired by UNIDO to support the project in India…*". The consultants focused on the institutions that were involved as they were the largest consumers of the finance in the Project. Nevertheless, some incidental information was recorded on the value of these experts to the Project. Two of these experts were reported to be useful for information related mainly to the post-NIP projects. CPRI accompanied one of the experts to a ship breaking facility to see the procedures in place to contain POPs. Importantly, the institutes reported that the experts did not review each objective in the Project, but instead provided input into the drafting of the Chapters in the NIP. One or two experts were also present with other members of the management team when post-NIP projects were discussed, together with the action plans, timeframes and budget that were prepared for the POPs pesticides, DDT and a DDT specific exemption.

1.4.4 Consultation

The Project did not consult and make full use of the skills, experience and knowledge of a wide range of appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the design, implementation and review of the Project's activities. The perspectives of some stakeholders were not taken into account, particularly when some of them can be affected by decisions taken by the government and the outcome of those decisions. Stakeholders have contributed information or other resources such as awareness raising and training to Projects in general, but many were not requested in this NIP project to engage their services. There was no evidence of consultation with relevant vulnerable groups such as women and the under-educated sectors of society, which are two sectors highlighted in the Stockholm Convention as being particularly vulnerable and where consultation is required. Consultation is likely only at the end of the Project as the government seeks endorsement of the NIP. India's activities on consultation were not consistent with the requirements of the Stockholm Convention that requires consultation at all stages of the Project.

1.4.5 Technical review

A Technical Coordination Group was not established, as required in the Project Document, to review progress in completing the objectives. The National Steering Committee also had a similar mandate, but met only once shortly after the Project Document was signed, and did not review the Project progress. Instead of these bodies, the Project management assessed progress in the Project on the basis of information presented at meetings of the leaders of each contract. The review meetings were held several times a year in 2009 and 2010. They focused mainly on the technical information presented rather than the performance indicators for outputs contained in the Project Document. As a consequence, these procedures did not detect missing or incomplete deliverables.

MOEF as one of the contractors rarely presented information on progress of the work for which it was responsible at these review meetings. Therefore, there was no opportunity for the Project management to review the insufficient progress made by MOEF on the legislative aspects and many

of the outputs. The first and only Progress Report by MOEF was submitted three weeks before the Project completion date of 31 December 2010.

The Project Manager did not review the work of, and provide feedback to, the contractors in sufficient detail. The Project Manager was based in Vienna and not New Delhi, which reduced time for managing the Project "on the ground".

1.4.6 Institutional Strengthening

MOEF had funding from the Project sufficient to employ well-qualified staff to work on a range of objectives that were important for POPs reduction and management. However, MOEF appointed inexperienced but well-qualified staff for a short period of time toward the end of the contract; they did not have sufficient time to make a significant contribution to the Project. As a result, there was insufficient analysis of the legislative and policy requirements and drafting of new legislation that could assist with the management, reduction and elimination of POPs. MOEF's submitted only one Progress Report three weeks before the end of the Project which failed to meet the performance criteria in the MOEF contract.

Related to staff, MOEF left the role of Project Coordinator to UNIDO rather than maintaining this position within its own organisation, which had been the case with other projects. It will be difficult for MOEF to capture the experience gained by UNIDO's Project Coordinator. There was no evidence as a result of this Project that MOEF had been strengthened as it had not improved its focus on POPs; clarified its responsibilities, accountabilities and reporting lines; made changes to its procedures and communications; or made any changes in the deployment of human resources to better manage POPs.

As one of its responsibilities, for example, MOEF was required to submit a report to the Convention pursuant to Article 15 by the deadline of 31 July 2007. MOEF's report, as shown on the Convention website, was submitted more than two years after the Convention deadline. Part A (contact details) of the Report was completed; Part B (measures taken to implement the provisions of the Convention and on the effectiveness of such measures) stated that the NIP was under development and did not provide data on export of DDT; and Part C (progress eliminating PCBs) was not completed. Although MOEF complied with the due date of reporting by 31 October 2010 for the second round of reporting, Form B was not fully completed even though the data were available. The information supplied by India in its reports highlighted insufficient legislation on POPs in general and in particular on the management of stockpiles in a safe and environmentally sound manner. The delay and incompleteness of the reporting in the first round was improved in the second round, but incomplete reporting in both rounds suggested that India does not have a strong commitment to the reduction and management of POPs.

1.4.7 Financial control and reporting

Because there was no effective Project monitoring procedures in place, payments were made by UNIDO to the contractors that did not comply with the performance criteria in the contracts. This resulted in payments for Progress Reports that did not provide the information specified in the contracts.

The management did not enforce contractors to adhere to contracted delivery times, and did not make submission of annual financial audits a criterion of payment. Payments were delayed by 1-17 months behind the schedule defined in the contracts.

Payments were disproportionately large relative to effort and did not appear to be performance based.

The Project was successful in attracting substantial commitment to co-finance. However, there was

no information from the Government of India indicating how the co-finance of almost $7 million had been allocated. The lack of outputs that were to be funded by India using the co-finance indicated that the co-finance had not been allocated as planned.

1.4.8 Monitoring and evaluation

The Project management did not manage the Project based on performance indicators derived from the Project's Logical Framework. Work Plans were developed by most of the contractors, but they were not detailed and updated in time and did little to assist in the timely delivery of outputs.

The Project Document required UNIDO to make arrangements for annual Project Implementation Reviews (PIR) and a Mid-Term Review but they were not undertaken. Most of UNIDO's co-finance of $200,000 remained unspent as a result. Failure to implement these requirements resulted in missed opportunities to detect deficiencies during project implementation.

1.5 CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNT

The overall rating was categorised as "*unsatisfactory*" as the Project had major shortcomings in the achievement of its objectives. Further information on the "*Conclusions, recommendations and lessons learnt*" as a result of this evaluation is provided in Section 5. The following is a summary of core recommendations and lessons learnt.

UNIDO should review its procedures related to contract formulation and implementation, project management, payments for milestones in the contracts, and project monitoring and evaluation. A review of existing procedures and costs for inventory development could be useful for ensuring that the most cost-effective and efficient procedures are in place for establishing POPs inventories.

MOEF should ensure that project planning, implementation and consultation are improved using appropriate tools, committees and outreach mechanisms; and to engage suitably qualified personnel to assist with the development and implementation of legislation to manage, reduce and phase out POPs. A visit to China's Foreign Economic Cooperation Office could also assist the GOI to determine the usefulness of FECO's structure and approach for future POPs projects in India.

The GEF should consider becoming a member of key committees in order to keep abreast of progress in projects; and to put in place procedures that monitor delivery of co-finance commitments and to ensure that agreed work programmes are funded only once.

The lessons learnt highlight the importance of using well-conceptualized methodologies and carefully-selected monitoring equipment to build inventories on POPs efficiently and cost-effectively; a full time project coordinator that uses modern project management procedures to develop contracts and to monitor and review progress; performance based fund disbursement; effective document control procedures; legislative measures in place in order to make significant progress on the management, reduction and elimination of POPs; and consultation at all stages of the project that fully engages civil society and other stakeholders in projects on POPs.

2 EVALUATION OBJECTIVES, METHODOLOGY AND PROCESS

2.1 PURPOSE OF THE EVALUATION

Project GF/IND/07/004 commenced in November 2007 and was scheduled to be completed on 31 December 2010. This period included an extension of one year to the two year initial agreement. The total budget of the Project is $10,354,700 with $3,074,700 from the GEF. ANNEX 1 on page 84 contains information on the Project identification criteria and financial data.

According to the Terms of Reference (see ANNEX 2 on page 86), the evaluation had two objectives:

1) To assess the Project in terms of its relevance, effectiveness, efficiency, sustainability and impact;

2) To identify lessons and recommendations for enhancing the design and implementation of similar future projects in India and elsewhere.

In 2011, the UNIDO Evaluation Group plans to also carry out a "*Thematic Evaluation of UNIDO's POPs Projects*", including Project GF/IND/07/004. Hence, the Project evaluation team was required to provide answers relevant to questions in the TOR on the Thematic Evaluation.

The evaluation mission took place from 16 to 30 January 2011. The evaluation team consisted of Dr Tom Batchelor (UNIDO international consultant) and Dr Kurian Joseph (UNIDO national consultant). Their job descriptions for the evaluation are also contained in ANNEX 2.

2.2 SCOPE AND OBJECTIVES OF THE EVALUATION

The whole Project was assessed from its starting date in November 2007 to its scheduled completion date on 31 December 2010. The assessment included all interventions under the Project, as well as all elements of the Project's results chain from inputs, activities to outputs, outcomes and sustainability of key outcomes. The NIP consisted of six chapters and four Annexes, as shown in Figure 1.

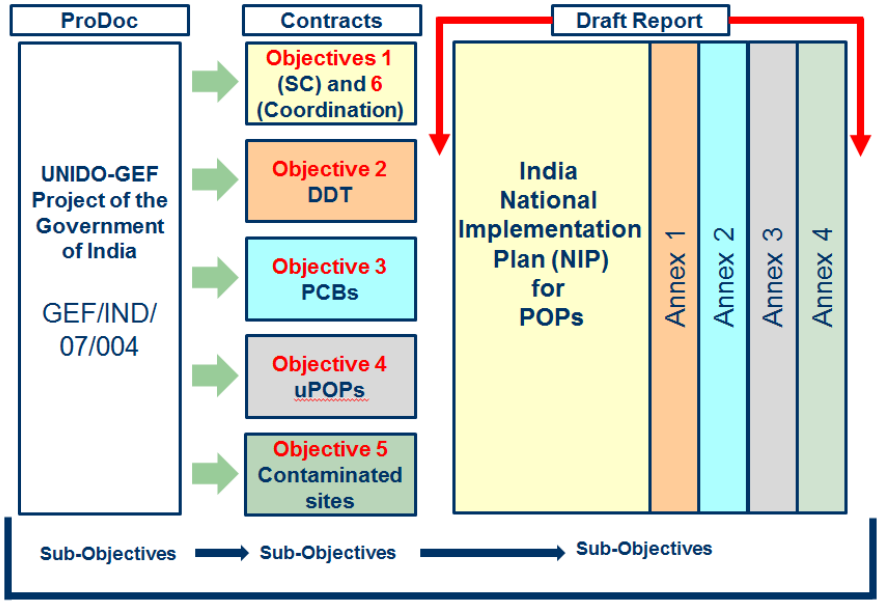

Figure 1: Relationship of the Project Document to the sub-contracts, the NIP and its Annexes containing technical information

Taking into account that NIPs are classified as 'enabling activities' by the GEF, they are not expected to produce direct impacts at the environmental level, but can only have an impact when follow-up

activities are implemented. For this reason, the evaluation did not focus on capturing and assessing the Project's impact.

2.3 EVALUATION METHODS

The evaluation consisted of a combination of desk work to review deliverables, and interviews with relevant stakeholders related to the coordination and management of the Project. The list of documents reviewed is shown on page 96 in ANNEX 3. The evaluation design used quantitative and qualitative data collection methods and analyses to investigate the relevance, effectiveness, efficiency and sustainability of the Project. The evaluation was based on factual evidence collected and analysed according to information obtained from different sources.

2.3.1 Desk review

An initial assessment was made of the draft NIP in late November 2010. It contained many unfinished sections and incomplete Annexes. The evaluators received the most recent documents for the evaluation on 1 January 2011 immediately prior to the evaluation mission in mid-January.

During the mission in India, it became evident in the interviews with the contractors responsible for information in the NIP Annexes, that documents sent by the project management to the evaluators on 1 January were 4-6 months old. More recent versions of the four Annexes were obtained for the assessment from the contractors involved in the Project. This aspect is discussed further in Section 2.4 "Limitations of the evaluation" on page 23.

Seven contracts were agreed between UNIDO and six Indian organisations and institutes for work that was grouped in 6 objectives in the Project. The objectives in the contracts were the same as those in the Project Document. In order to determine the relevant outputs that were deliverable in each objective, the evaluators constructed a Logical Framework from the objectives and sub-objectives contained in the Project. Outputs such as a report, a workshop, meeting, or text in the NIP were listed in a separate column of the Logical Framework. In cases where the output was contained in the NIP, the source of the information was recorded such as the relevant section of the NIP. This method was used to assess whether an output had been "*delivered*", "*Partly delivered*" in cases where some of the output had been addressed, and "*Not yet delivered*" in cases where evidence of the output had yet to be obtained (ANNEX 7 on page 107).

2.3.2 Interviews

The evaluation team conducted in-depth interviews with representatives of government, research institutes and authorities, associations and private sector organisations. The interviews were based on information contained in standardised, semi-structured guides and questionnaires. Quantitative assessment was also conducted using a short survey to substantiate the interview results.

Staff involved in the Project at UNIDO HQ were interviewed in Vienna on 23 and 24 November 2010, with a follow up with some staff in Vienna on 1 February 2011. Stakeholders involved in POPs and the Project were interviewed in New Delhi and Bangalore from 16 to 27 January 2011. Thirty-seven people were interviewed from 19 organisations over 9 working days. A list of personnel interviewed, their position and the interview duration is shown in ANNEX 4 on page 102.

Telephone interviews for 15-30 minutes were also conducted, as they were more convenient for the interviewee, and sometimes more feasible logistically for the evaluation, than in-person interviews. The evaluators used similar questions as the in-person interviews in order to compare and validate responses made by interviewees.

For both interviews in person and by telephone, the evaluators took notes using portable computers,

each equipped with identically-formatted interview templates. The notes were merged and reviewed after the interviews using track-change methodology, and amended where necessary. Using these methods both evaluators developed a shared and common understanding of the results of the interview.

Further documents were sometimes requested from the Project experts as a result of topics discussed in the interviews. Such documents were necessary to demonstrate key features of the Project e.g., increased expenditure from outside the Project on staff and equipment, which helped to quantify the synergistic impact of the Project.

2.3.3 Site visits

Site visits were made to the CPCB in New Delhi that had contributed toward the sampling and analysis of dioxin emissions, and to the CPRI facilities in Bangalore that had undertaken work on the analysis of PCB-contaminated oil contained in electrical equipment. The visit to CPRI was particularly useful for the discussions with four members of the team, and for seeing firsthand the laboratory equipment that had been purchased with Project funds for the PCB analyses.

2.3.4 Preliminary findings

The evaluators analysed the interview discussions and other information obtained during the evaluation mission and included the results of the analysis in a PowerPoint entitled "*Preliminary Findings of the Evaluation of India's National Implementation Plan for POPs - GEF Project GF/IND/07/004*". The topics were grouped into the main issues to be address, including: Status of deliverables in the Project; Project coordination and management; Consultation; Institutional strengthening; Financial reporting; Challenges; Lessons learnt; and Draft Evaluation Report timeline.

The evaluators' held a meeting in India on 28 January 2011 to discuss the Preliminary Findings of the evaluation assessment. About 25% of the time in the meeting was spent showing the presentation, and the remainder of the time was taken up in a discussion of the preliminary results. A list of meeting attendees at the presentation in New Delhi is provided on page 105 in ANNEX 5.

The preliminary results were discussed in a meeting before the presentation with the UNIDO Representative for India, the PC and assistant PC. The evaluators and UNIDO were unable to meet with MOEF to discuss the preliminary results due to commitments by staff at that time to other work.

The same PowerPoint as the one presented in India was also shown to UNIDO staff in Vienna on 1 February 2011. Other information relevant to UNIDO's involvement in the Project was also discussed in the Briefing with UNIDO staff. A list of meeting attendees at the presentation in Vienna is also provided in ANNEX 5.

A draft report was shared with the Indian Government, who formulated own- and collected comments from different project stakeholders in India. The reactions to these comments by the evaluation team and UNIDO Evaluation Group are provided in Annex 19 of this report.

2.4 LIMITATIONS OF THE EVALUATION

2.4.1 Limited in time

The PC and MOEF considered the timing of the Terminal Evaluation as "too early" as further effort was underway to complete work on objectives that would result in further outputs. In order to continue with the work after the closure of the Project, UNIDO submitted "*statements of extension*" from 31 December 2010 to May 2011 for several contracts that covered half of the objectives in the

Project, or equivalent to 47% of the financial value of the Contracts[1] (discussed further in Section 4.3.3 on page 35). However, even though further outputs might result as a result of this work, the finance allocated by UNIDO was sufficient for only one Terminal Evaluation. This evaluation was therefore a "snapshot" of the status of progress in the Project taken over a two week period in January 2011 (see activities and time for the evaluation in ANNEX 6).

2.4.2 Limited by available documents

The evaluators requested documents relevant to the evaluation to be sent by 1 January 2011. The evaluation team received information that stated "FINAL NIP DOCUMENT". However, interviews held with contractors two weeks later showed that more recent documents were available than those supplied to the evaluators on 1 January:

- Part B of Annex 1 on alternatives to DDT was available in December and not been supplied to the evaluators;
- Annex 2 on PCBs was available in December and an August version had been supplied to the evaluators;
- Annex 3 on unintentional POPs was available in December, but an August or September version had been supplied to the evaluators which was about half the number of pages;
- Annex 4 on measures in relation to waste and contaminated sites (DDT and PCBs) was available in early December, but an August version had been supplied to the evaluators, which was also about half the number of pages.

The Project management acknowledged that the most recent documents were not sent to the evaluators because they had not been approved by the MOEF on 1 January 2011. Only MOEF-approved copies of reports could be sent to the evaluators. The evaluators obtained the most recent documents from HIL, NEERI, NIIST and CPCB during the course of the interviews. Seeking and obtaining the most recent information is fundamental to all evaluations and consistent with the requirements in the Terms of Reference for the evaluation.

2.4.3 Limited by logistics

There was insufficient time in India for the evaluators to visit the NEERI laboratory at Nagpur (Maharashtra) and the NIIST laboratory at Thiruvananthapuram (Kerala), in order to see first-hand the equipment available for analyses of POPs. In lieu of the site visits, experts involved in the Project from both locations were interviewed in New Delhi in the time that became available between other UNIDO meetings that were scheduled on the same days as the evaluation.

2.4.4 Limited assessment of legislation

Due to the significant amount of work in the evaluation in the limited time available, the evaluators were requested to summarise the legislation in India without making into detailed analyses. Accordingly, this evaluation contains a summary of deficiencies in the legislation in India as it relates to POPs (Section 4.5.3 "Institutional framework and governance risks" on page 46), and the lack of progress by MOEF in addressing gaps in the legislation to address POPs in accordance with objectives in the Project (summarised in ANNEX 7 on page 107).

[1] Seven files (one for each Contract) for Project GF/IND/07/004 maintained by the Procurement Unit in the "Programme Support and General Management Division", UNIDO, Vienna. Reviewed for the evaluation on 2 February 2011.

3 COUNTRY AND PROJECT BACKGROUND

3.1 ECONOMY

The GOI reported annual GDP growth of 9.0% in 2007, 6.6% in 2008 and about 7% in 2009[2], and therefore India was reported to have survived the recent economic downturn well. India has the world's 12th largest economy--and the third largest in Asia behind Japan and China. Services, industry, and agriculture account for 54%, 29%, and 18% of GDP respectively. India is capitalizing on its large numbers of well-educated people skilled in the English language to become a major exporter of software services and software workers, but more than half of the population depends on agriculture for its livelihood.

Despite this economic progress, India has the largest number of poor people in the world. Three-quarters of the population live on $2 per day or less, but there is a large and growing middle class of more than 50 million Indians with disposable income ranging from $4,166-$20,833 per year[2].

India continues to move forward with market-oriented economic reforms that include increasingly liberal foreign investment and exchange regimes, industrial decontrol, reductions in tariffs and other trade barriers, opening and modernization of the financial sector, significant adjustments in government monetary and fiscal policies, and more safeguards for intellectual property rights.

Economic growth was reported to be constrained by inadequate infrastructure, a cumbersome bureaucracy, corruption, labour market rigidities, regulatory and foreign investment controls, high fiscal deficits and double-digit inflation for food. Reforms under consideration in 2011 include the introduction of an open bidding system for natural resources; the formulation of public procurement policy; and priority to anti-corruption cases against public servants[3].

3.2 ENVIRONMENTAL CONCERNS IN INDIA

Relevant to this Project on POPs, and consistent with growth in industrial facilities, the GOI reported that it was concerned with the generation of large quantity of hazardous waste from industries, along with the hospital waste which has been affecting public health and environment[4]. Land degradation and loss of biodiversity were also of great concern. Due mainly to increases in the number of vehicles, the air quality in cities had deteriorated and as a result there was a sharp increase in air pollution-related diseases. The availability of fresh, clean drinking water was seen as a priority issue. Mitigating against the impact of climate change and improving energy security were also regarded as major challenges.

3.3 INSTITUTIONS CONCERNED WITH POPS IN INDIA

The main authorities and institutions with mandates relevant to POPs are MOEF (and its daughter organisation the Central Pollution Control Board, CPCB), the Ministry of Health and Family Welfare (MHFW), State Health Departments, Ministry of Labour, the Department of Road Transport and Highways, the Ministry of Shipping, the Ministry of Agriculture (Central Insecticides Board and Registration Committee, Department of Agriculture and Cooperation), the Department of Chemicals and Petrochemicals, the Ministry of Chemicals and Fertilisers, the Ministries of Urban Development

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2 US Department of State: http://www.state.gov/r/pa/ei/bgn/3454.htm

3 Financial Times. 21 February 2011. India pledges to reduce graft.

4 State of the Environment Report 2009. state and trends of the environment (land, air, water, biodiversity) and five key issues - (1) Climate Change, (2) Food Security, (3) Water Security, (4) Energy Security, and (5) Managing Urbanization http://moef.nic.in/

(MOUD), the Central Board of Excise and Customs, the Ministry of Finance and the Ministry of Railways[5]. The involvement of organisations in the Project is discussed further in Section 4.6.7: "Consultation" page 60

3.4 SECTOR SPECIFIC ISSUES OF RELEVANCE TO THE PROJECT

At the beginning of the Project there were a range of sector-specific issues that were relevant to POPs. To address these issues, the Project was required to:

- Develop a concise and clear country profile, in particular the information on economic sectors closely related to POPs issues;
- Describe and assess the current situation on institutions, laws and policies relevant to POPs issues;
- Establish inventories on specific POPs chemicals listed in the Convention in 2006, including those present in contaminated sites, obsolete stocks and due to emissions from various sources;
- Develop strategies for the reduction and elimination of DDT, PCBs and unintentional POPs (dioxins and furans);
- Propose Action Plans to implement the strategies, including priorities and financial requirements, legislation and policy making, and capacity building; and
- Define the requirements for institutional strengthening and human resource development to implement the Convention at all levels.

3.5 PROJECT HISTORY AND PREVIOUS COOPERATION

The GOI decided to undertake the work on the NIP in two phases. The first phase was a PDF-B Project[6] which was considered by the GEF as an "*Enabling Activity*"[7]. It examined, *inter alia*, the institutional arrangements for the NIP development in India, defined Project Activities according to 7 Objectives (the same Objective titles as those shown in Section 1.1 on page 12), defined stakeholder participation, and examined the incremental costs and sources of finance. The second phase was to undertake this Project on the NIP, which is also considered an "*Enabling Activity*" by the GEF and is the subject of this evaluation.

3.5.1 PDF-B Project

The Industrial Toxicology Research Centre (IRTC, Lucknow) was subcontracted by UNIDO/MOEF using GEF funds to undertake a PDF-B Project that resulted in a report in 2004 that identified Enabling Activities necessary for India to develop its NIP, including the actions necessary, timeframe, likely costing, and sources of funding[8]. To undertake the work, the National Coordinator (IRTC) established an IRTC Project Team, a Steering Committee for POPs, a National Expert Committee (8 members including RENPAP), and a National Committee for Project Monitoring (7 members).

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5 ProDoc GEF/IN/07/004

6 Industrial Technology Research Centre. Project Brief. 2004. Preliminary Assessment to identify the requirements for developing a national implementation plan in India as a first step to implement the Stockholm Convention on POPs. GEF Phase B Project.

7 UNIDO ProDoc India NIP page 6. "Enabling Activities" refers to the process of a country's self-assessment of their capacity building needs, according to its priority issues for action in the context of its national environmental management and sustainable development framework.

8 ITRC. 2004. Project Brief. Preliminary Assessment to identify the requirements for developing a NIP in India as a first step to implement the Stockholm Convention on POPs. 344 pp including 8 Annexes. UNIDO/MOEF GEF-funded sub-contract.

The study covered 16 States in India representative of different geo-climatic zones and industrialised areas. Ten workshops were conducted under the direction of Associated Environmental Engineers and in association with the Confederation of Indian Industry. Five workshops discussed technical aspects with relevant stakeholders such as private sector representatives of SMEs, industrial and agricultural associations, academic institutions, testing laboratories, public institutions and Government bodies. The remaining five workshops were organized for representatives of national as well as the States and Union Territories infrastructure of Government institutions, commerce and industry, public and private testing laboratories, research institutes, enforcement entities, public health institutes, NGOs and other associations.

The PDF-B Project report also included information on DDT and its alternatives. It did not find any stockpiles of pesticides or evidence of pesticide polluted sites. The report cited publications that contained information on POP pesticides found in air, water (surface and stored underground), soil, sediment, marine contamination, food, wildlife and human tissues. Legislation and rules relevant to POPs pesticides were reviewed. Disposal of PCB contaminated equipment and oil, and emissions of dioxins and furans, were identified as threats to the environment and health that needed to be addressed. Actions to detect, monitor, manage, reduce and eliminate POPs were proposed, including those that would increase awareness and encourage public cooperation. The current NIP Project built on the work undertaken in this PDF-B Project.

3.5.2 Toxics Link report on POPs

The NGO Toxics Link produced a useful report[9] on POPs in India in 2006 as a result of the GEF-funded International POPs Elimination Project (IPEP). As IPEP supports participation in the NIP, training and awareness workshops, and public information and awareness campaigns, this report contributed useful information toward the NIP Project and offered UNIDO and MOEF an opportunity for further collaboration with civil society to improve the awareness of POPs.

The report by Toxics Link cited an FAO report that documented 3,346 tonnes of obsolete and banned stocks in stockpiles in India. The only intentionally produced POP in 2006 was DDT. Unintentional emission of POPs such as dioxins and furans were seen as a critical issue. Eliminating the risks associated with the PCB contamination of oil was considered a major challenge, since the oil was being recovered and recycled without purification. The report cited POPs contamination of the air, water, soil and food. The extent of the contamination was difficult to determine since previous work had not been organised in a systematic way. There was evidence of POPs contaminating wildlife and humans, with negative health effects.

This Toxics Link report identified key issues for further work, including actions to control illegal imports of POPs, actions to address stockpiles of obsolete pesticide stocks, the need for better legislation and enforcement, increased awareness, consultation, research, use of BAT/BEP to avoid emissions, greater use of alternatives and improved POPs monitoring. The report cited publications that contained information on POP pesticides found in air, water (surface and stored underground), soil, sediment, marine contamination, food, wildlife and human tissues.

3.6 POSITIONING OF THE PROJECT ON POPS IN INDIA

In general, India aims to strengthen its capacity to manage, reduce and eliminate toxic chemicals in an environmentally sound manner by participation and activities at the international, national, state and local levels. At the international level, the GOI acceded to the Vienna Convention in 1991 and ratified

[9] Toxics Link. 2006. Country situation on POPs in India. IPEP. 57 pp. Financial support from UNIDO, IPEN, UNEP, GEF, UNITAR and the Swiss Agency for Development.

the Basel Convention in 1992, the Stockholm Convention in 2006, and acceded to the Rotterdam Convention in 2005.

The work in India on POPs is also consistent with the goals and objectives of the Strategic Approach for International Chemicals Management (SAICM), and WSSD Johannesburg Plan of Implementation that seeks to ensure that, by the year 2020, chemicals are produced and used in ways that minimize their significant adverse impacts on the environment and human health.

4 PROJECT ASSESSMENT

4.1 DESIGN

4.1.1 Project Document

The Project Document was a well-designed, thematically-focused document that clearly laid out the intentions and objectives of the Project in a manner that was consistent with the aims of the Stockholm Convention. Each of the Project Document's six objectives was preceded by text extracted from the Stockholm Convention, which facilitated an understanding of how each set of sub-objectives related to the intent of relevant sections of the Convention.

The Project was designed to:

- Establish inventories on POPs production, use, trade, stockpiles, wastes and contaminated sites;
- Develop strategies and action plans for the reduction and elimination of POPs;
- Assess infrastructural capacity and propose institutional arrangements, regulatory frameworks and requirements for capacity building;
- Raise stakeholder and public awareness to ensure the effective and sustainable implementation of newly proposed strategies and action plans;
- Build sustainable capacity sufficient to prepare the NIP and its component inventories, strategies and action plans and to fulfil ongoing reporting requirements of the Convention;
- Formulate and gain stakeholder endorsement for the NIP, including priorities and objectives with the aim of estimating the total costs and the incremental costs likely to be incurred for introduction into development and assistance planning;
- Develop and demonstrate practical and feasible methodologies for priority actions that enable India to meet its Convention obligations;
- Promote sustainable capacity at the national, state and district levels to build on the POPs inventories and enhance the management systems for POPs in a way that was attractive for future donor funding.

The relationship of the Project Document to the sub-contracts, the NIP and its Annexes containing technical information is shown in Figure 1 above. The objectives and sub-objectives are carried through from the Project Document to the Contracts and to the draft NIP report.

4.1.2 Logical Framework

The Logical Framework in the Project Document was not sufficiently detailed for monitoring verifiable outputs. The management did not develop a new Logical Framework as the Convention's Guidelines[10] on NIPs as well as other NIPs (such as China, Nepal, Indonesia and Laos) were used instead to determine progress in the Project[11] (see Section 4.6.1).

The Project required the development of robust methodologies to find and quantify POPs, followed by well-considered strategies to determine the most cost-effective ways to manage, reduce and phase out POPs. More robust methodologies and well-considered strategies would have improved delivery

[10] "*Guidance for developing national implementation plans for the Stockholm Convention* (2005, 2006)". Contract 16001923 refers to "COP3" in 2007, but Guidance documents were produced only in COP1, COP2 and COP4

[11] UNIDO. 2011. "Preliminary Findings of the Evaluation of India's National Implementation Plan for POPs Project". Report by the evaluators of GEF Project GF/IND/07/004, New Delhi. 28 January 2011.

of outputs in the Project.

4.2 RELEVANCE

The Project is relevant to the central role of India's environmental policies and sustainable development policies, the need for attainment of Agenda 21 targets and the need to integrate the POPs issues and implementation of the NIP within the national policy of India. The GOI considered that its effort toward compliance in the Stockholm Convention would serve as a model for other developing countries[12]. The NIP was also considered relevant for deciding on the most appropriate post-NIP projects that address the management, reduction and ultimately the elimination of POPs. The relevance of the Project can also be seen in the context of:

- The Stockholm Convention;
- The GEF's Strategies and Focal Areas;
- UNIDO's Thematic Priorities;
- The Paris Declaration and Accra Agenda for Action
- India's UN Development Assistance Framework 2008-2012

4.2.1 Stockholm Convention

India as a Party to the Stockholm Convention is required to develop a NIP to demonstrate how it will implement its obligations to the Convention. India's compliance with the Stockholm Convention is considered by the GOI to have a significant and positive influence not only on India's own chemicals management regime but also on the ultimate global success of the Convention to protect human health and the environment from the threat of POPs.

4.2.2 GEF Strategies

The GEF provides financial assistance to non-industrialised countries under GEF Operational Programme Number 14 (GEF OP#14) to assist them to meet their commitments under the Stockholm Convention. The financial assistance provided by GEF OP#14 targets three main areas:

1. **Capacity Building** for inventories of stockpiles of POPs and wastes that contain POPs; strengthening and harmonization of the policy and regulatory framework for POPs management; strengthening of monitoring and enforcement capacity; developing capacity to assess technologies and management practices including BAT/BEP; developing and implementing public awareness/information/environmental education programmes; facilitating dissemination of experiences; and promoting information exchange;
2. **Targeted research** such as assessment methodologies, development of methodologies for exposure assessment; testing and demonstrating methodologies and techniques to identify and address the contaminated sites related to stockpiles and wastes; and
3. **On-the-ground interventions** that promote the transition to safe alternatives, demonstration viable and cost-effective alternatives; designing and implementing management programmes for stockpiles; identification, containment and stabilisation of wastes; destruction of wastes.

As an example of "On-the-ground interventions"**,** two post-NIP projects have been funded so far by the GEF, the first on "ESM of Medical Wastes" and the second on "ESM of PCBs"13 for a total of

[12] Draft NIP, Section 1.2.1, page 19

[13] http://www.gefonline.org/projectDetailsSQL.cfm?projID=1520: Request for CEO Endorsement (revised).

$24.1m. Both projects are for 5 years and finish in 2015. A further $10.3m has been committed by the GEF to a regional programme involving dioxins and mercury in which India participates. The status of these post-NIP projects is summarised in ANNEX 10 on page 127.

There appears to be opportunity for further NIP projects, if the success in China is used as a guide. India post-NIP projects are about 30% of the value of those obtained by China[14], considering that GEF/co-finance funding to both countries for the NIP was similar. This indicated that the benefits of the NIP Project to India show potential for financial expansion in the future.

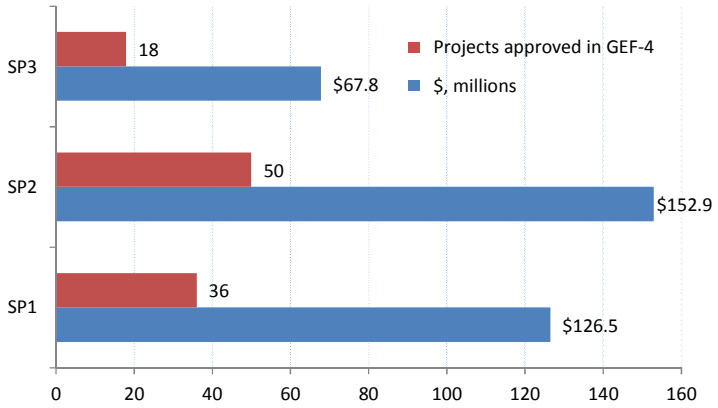
4.2.3 GEF focal areas

POPs is a key focal area for the GEF but it receives significantly less funding than climate change and biodiversity which together accounted for 63% of the GEF-4 funding.

From 2002 to end of 2008, the GEF has committed $360 million to POPs projects. This cumulative GEF POPs allocation had leveraged some $440 million in co-financing to bring the total value of the GEF POPs portfolio to $800 million[15]. In the Fourth GEF funding period[16], $358m was allocated to 59 projects on POPs[17], which was equivalent to 4.2% of total GEF funds of about $8.6b.

Figure 2 shows that up to June 2009 at least 80% of the Projects and funding had been allocated to NIP preparation and implementation projects (Strategic Programs (SP) 1 and 2); and the remainder to innovative technologies and best practice development (SP 3). In GEF-4 which ended in June 2010, there was a significant reduction in funding for the *preparation* of NIPs to funding the *implementation* of the NIPs.

Figure 2: POPs projects approved for GEF-4 by Strategic Programme



SP1: Strengthening capacity for NIP development and implementation
SP2: Partnering in investments for NIP implementation
SP3: Partnering in the demonstration of feasible, innovative technologies and best practices for POPs reduction
Source: OPS4 Full report: http://www.thegef.org/gef/node/2079 page 133

The GEF has also funded local NGOs to promote local community understanding of POPs, their sources, the extent of harm they can cause, and the kinds of measures needed to reduce and elim-

[14] China had a NIP Project/co-finance budget of $10.8m which was similar to India's $10.3m. However, China has since attracted three times more GEF funding ($78.3m) than India. As of 10 February 2011, the GEF has agreed to fund 8 post-NIP projects in China and one regional project ($0.95m).

[15] GEF. 2008. Cleaning up: Ridding the world of dangerous chemicals. www.thegef.org

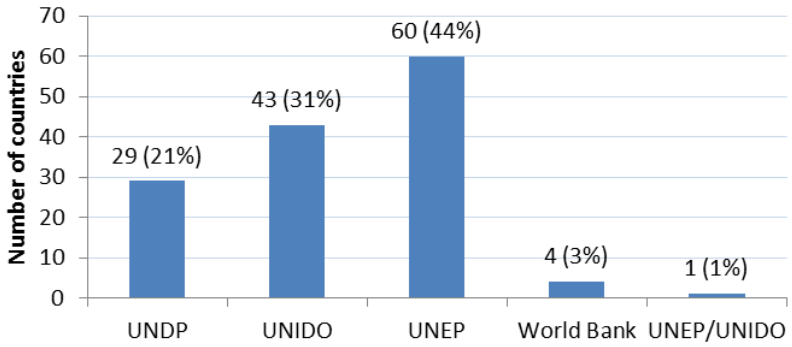
[16] GEF-4 from February 2007 to June 2010

[17] OPS4 Full report: http://www.thegef.org/gef/node/2079

inate exposure. The GEF funds NGOs through its International POPs Elimination Network (IPEN) which has more than 350 NGOs in 65 countries engaged in POPs activities. India's Toxics Link NGO is the IPEN Regional Hub for SE Asia countries. Regional Hubs coordinate and communicate with IPEN Participating Organisations in their geographic regions, and report to the Network on the regions' needs, activities and perspectives.

4.2.4 UNIDO's thematic priorities

To expand the GEF's delivery capacity in the field of POPs, the GEF added UNIDO and FAO in 2002 as GEF Executing Agencies in addition to the regional development banks and UNDP, UNEP and the World Bank. Since that time, UNIDO has become the implementing agency in 31% of these countries, which indicates that the formulation of NIPs is important for UNIDO. UNIDO has assisted the preparation of NIPs in China and India, which are two to the four largest developing countries. As of 31 October 2010, 136 countries had received funding from the GEF for the development of their initial NIP (Figure 3)[18].



Data Source: UNEP/POPs/COP.4/25 Touchdown Consulting graphic

Figure 3: Number of countries that have received funding from the GEF and assistance from implementing agencies for the development of a National Implementation Plan

UNIDO designs and implements programmes that are focused on three thematic priorities: 1) Poverty reduction through productive activities; 2) Trade capacity-building; and 3) Environment and Energy. The Environment and Energy is used by UNIDO to address Millennium Development Goals 1) Eradicate extreme poverty and hunger, 7) Environmental protection and 8) Develop a global partnership for development. UNIDO activities on POPs under the Stockholm Convention are relevant to the Millennium Development Goal No 7: "Environmental protection".

GEF had agreed to provide UNIDO with $109m for work on POPs[19] in 2010, compared to just $8m in 2005, which was about 25-30% of UNIDO's funding in total funding in 2010.

4.2.5 The Paris Declaration and Accra Agenda for Action

Under the Paris Declaration, developing countries set their own strategies for poverty reduction, improve their institutions, tackle corruption and focus on results and the measurement of those results. The Accra Agenda for Action (AAA) was drawn up in 2008 and builds on the commitments agreed in the Paris Declaration. Under AAA, donors switch from reliance on prescriptive conditions about how and when aid money is spent, to conditions based on the developing country's own development objectives. These instruments acknowledge the right of developing countries to

[18] Stockholm Convention website.
[19] Pers. Comm., Dr Mohamed Eisa, Chief POPs UNIT UNIDO Vienna HQ, 24 November 2010.

develop and manage project implementation, performance, monitoring and reporting (see Section 4.6.5 on "External factors affecting implementation" on page 56).

4.2.6 India UN Development Assistance Framework 2008-2012

The over-arching objective of UNDAF is to support the GOI during the period 2008-2012 in efforts to "*Promote social, economic and political inclusion for the most disadvantaged, especially women and girls*"[20]. In this regard, the UNDAF objective is similar to the goals of Articles 9 and 10 in the Stockholm Convention that encourage information exchange, public access to information and building of educational programmes to facilitate public participation and awareness, particularly amongst women and children who maybe most at risk.

India is strongly committed to decentralised governance by making governance systems at the State, district level and below effective, accountable and transparent in planning, implementing and monitoring the delivery of services, including environmental improvements. These are also key challenges for the GOI in the work on POPs. Community empowerment for citizens to demand their entitlements, participate in the planning process and in social audits have also been identified as priorities.

UNIDO is a partner with UNDAF in several programmes that have a crossover with activities in India's NIP Project related to the reduction and phase out of POPs. For example, UNIDO works with UNDAF to strengthen the capacities of district level officials to establish partnerships (with civil society including private sector) in the planning, implementation and review of services; to assist communities to manage (and reduce) disaster and environmentally-related risks; and to promote partnerships to meet national commitments under multilateral environmental agreements. Rather incongruously, UNDAF lists UNIDO as a partner that is involved in "*Non-environmentally related technology issues*", whereas the evaluators understand that UNIDO is involved in many environmentally related technology issues.

4.2.7 Summary of relevance

The Project on the development of the NIP is consistent with the sectoral and developmental priorities and plans of India, and India's goal of strengthening its capacity to manage, reduce and eliminate toxic chemicals in an environmentally sound manner. India is a strong participant in activities at the international level, as evidenced by the Government's accession to the Vienna Convention in 1991, ratification of the Basel Convention in 1992, the Stockholm Convention in 2006, and accession to the Rotterdam Convention in 2005.

The Project was also consistent with the goals and objectives of SAICM and the WSSD Johannesburg Plan of Implementation, and with India's steps toward devolution of its decision-making from central government to the State and other levels. And consistent with India's commitment to the Stockholm Convention which requires the submission of a NIP as evidence of how it plans to implement its obligations on POPs. The NIP Project was therefore part of a catalogue of activities that collectively aimed to minimise the adverse impact of chemicals on the environment and human health. The NIP is relevant for deciding on the most appropriate post-NIP projects that address the management, reduction and ultimately the elimination of POPs.

4.3 EFFECTIVENESS AND IMPACT

Undertaking the NIP Project is the classic example of the journey being as important as the destination. A range of outputs are deliverable on route to the final document (the NIP). The quality

[20] UNDAF. 2007. UNDAF for the period 2008-2012.

of the outputs is also important as they form the basis on which a strategy is built for the future reduction and phase out POPs. This quality of the NIP was found to be rather low in the case of the India NIP due to a range of project management problems such as poor contract formulation, selection of the applied methodologies, limited consultations that were undertaken, ineffective monitoring and evaluation, and slow progress on legislation that targeted POPs as well as a range of other issues.

4.3.1 Outputs

The outputs achieved by the Project are summarised in ANNEX 9 on page 124. The main outputs achieved were:

- A national profile was prepared;
- Current and forecast future production, distribution and use of DDT in the country and trade to and from India were prepared;
- Alternative techniques for the control and phase-out of intentionally produced POPs were investigated;
- Additional measures necessary for proper disposal of expired stocks of DDT at contaminated sites/ hotspots were identified;
- Preliminary surveys of PCBs were undertaken in many States for a preliminary inventory;
- Information was gathered on the existing control, management and replacement of PCB-containing equipment;
- Obsolete PCB-containing devices and their current storage conditions were investigated;
- Existing national institutional framework for PCB policy and management were discussed;
- Some project management staff, entrepreneurs and government officials were trained to disseminate knowledge on how POPs may be formed unintentionally under local conditions;
- Surveys were undertaken and questionnaires released to collect data and information on some sources of unintentionally produced POPs in India;
- The need for establishing national standards for the sampling and analysis of unintentionally produced POPs was discussed;
- A preliminary inventory of wastes and contaminated sites was established through questionnaires and field visits;
- Techniques that may be in use in India or elsewhere for the environmentally sound handling, collection, transport and storage of POPs wastes were evaluated;
- The most effective destruction methods were identified for dealing with typical obsolete POPs pesticides/PCBs disposal and the technical specifications for cement kilns and non-combustion technologies were discussed;
- The ability of techniques in use in India and elsewhere to destroy, irreversibly transform or otherwise dispose of POPs were discussed;
- The project activities were agreed according to an Project agreement and implementation plans established between the GOI and UNIDO;
- National experts and subcontractors were supervised as necessary to deliver project outputs; and
- An independent terminal project evaluation was undertaken according to GEF M&E procedures.

The main output is the NIP, including its endorsement by the Government of India and submission to the Stockholm Convention. However, this output had not been achieved at the time of the evaluation

assessment.

4.3.2 Quantitative assessment of Project Outputs

The only "Outcome" of this Project is a NIP endorsed by the GOI and submitted to the Convention. This outcome was not achieved at the time of the evaluation in January 2011. Seven contracts (also called "sub-contracts" by the Project management) for a total of $1,883,300 were agreed between UNIDO and six Indian organisations for work assigned in 6 objectives in the Project (Table 1).

Table 1: Assignment of contractors to objective/outcomes in the Project

Objective	Contractor	Objective / Outputs[2]	Contract Number (1600-)	Contract Agreement $
1	MOEF[1]	Convention implementation and infrastructure at national and State levels [**Legislation**]	1923	580,000
2	HIL	Measures in relation to chemicals (**DDT**) currently produced and used in India	1608	244,100
3	CPRI	Measures in relation to **PCBs**	1726	239,200
4	NEERI	Measures in relation to **uPOPs**[3]	1611	195,000
4	NIIST	Measures in relation to **uPOPs**	1612	150,000
4	CPCB	Measures in relation to **uPOPs**	1613	175,000
5	NEERI	Measures in relation to wastes and **contaminated sites**	1610	300,000
6	MOEF[1]	**Project management**, monitoring and evaluation	1923	Included in Objective 1

[1] HIL was responsible for financial administration and MOEF responsible for the objectives in 1 and 6
[2] As titled in Project Document GF/IND/07/004; [3] Unintentional POPs [emissions]

The outputs from these seven contracts were as assessed as "*delivered*", "*partly delivered*" and "*not yet delivered*" for each objective (ANNEX 7, page 107) and the results shown in Figure 4. The methods used to determine the status of the outputs is described in Section 0 beginning on page 19. Objectives and outputs that were duplicated between organisations in the contracts were only attributed to only one organisation in Figure 4. The abbreviations for each objective used in Figure 4 are described more fully in Table 1 above.

The results show that Objectives 1 (MOEF) and 5 (NEERI) contain the greatest number of outputs that were assessed as "*not yet delivered*". Table 1 shows that Objectives 1 and 5 which had the most outputs "*not yet delivered*" were the responsibility of organisations that had the highest value contracts and the most objectives to complete. The outputs "*delivered*" in the Project exceeded those that were "*yet to be delivered*" in Objectives 3, 4, and 6. Overall, about 26% of the outputs were assessed as "*delivered*", 22% "*partly delivered*" and 52% "*not yet delivered*" (Figure 4). These results were similar to those presented in the "Preliminary Evaluation Findings" by the evaluators in New Delhi and Vienna. The evaluation assessed performance in the Project according to the number of outputs "*delivered*", "*partly delivered*" and "*not yet delivered*", as distinct from "effort" which was not measured and varied according to the type of output (e.g., meetings, sampling of POPs) and its duration (days, weeks or months).

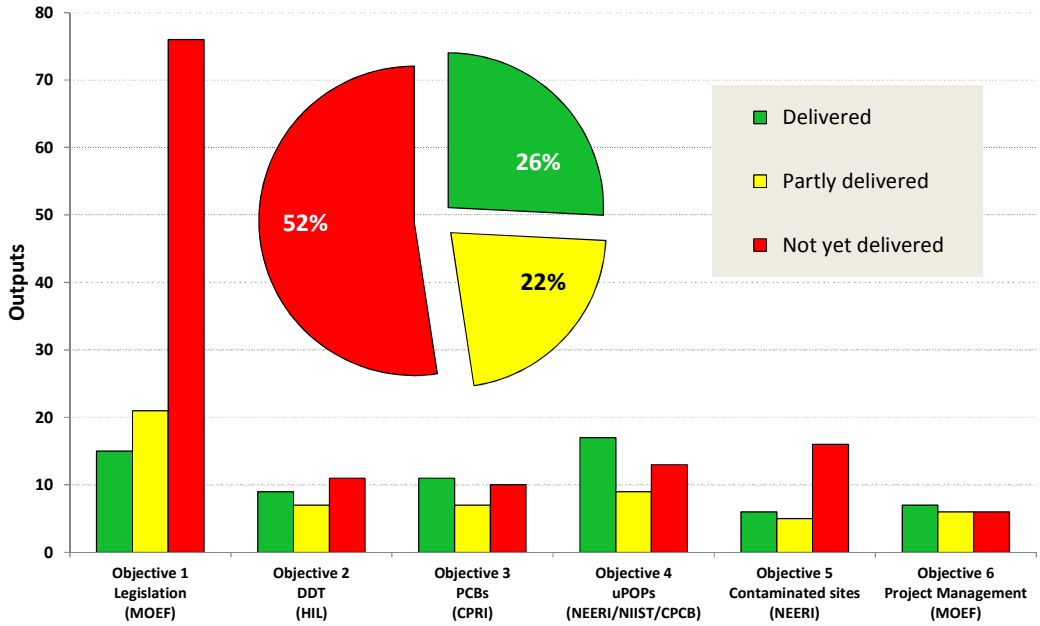


Figure 4: Assessment of Outputs delivered, partly delivered and not delivered in the Project in each of the six objectives

The reasons for the assessment of outputs as "*partly delivered*" or "n*ot yet delivered*" are provided in ANNEX 7.

The evaluators assessed the objectives and sub-objectives that led to the planned outputs as realistic and achievable, provided the work was well-directed, managed and planned. However, the lack of modern project management, monitoring and review methods prevented the Project achieving the contracted tasks in a timely manner (see Section 4.6.1 on page 50).

4.3.3 Extension of time for contracts

UNIDO had submitted "*statements of extension*" from 31 December 2010 to May 2011 for several contracts that covered half of the objectives in the Project, or equivalent to 47% of the financial value of the Contracts[21].

A *statement of extension* emailed to the contractor was considered by UNIDO as an amendment to the terms of the Contract. However, any amendment to the Contract under the terms specified in Section 5.03 requires the signature of the Chief of the Procurement Services Unit, which was not obtained. The Contract was therefore informally extended using procedures that were not within the terms of the Contract, which raised questions on the legal basis of the amendment. While this implies a risk for the project, no actual legal problems were reported.

The Contracts extended by UNIDO's *statements of extension* were:

- Contract 16001923: Objectives 1 - Convention implementation infrastructure at national and state levels, responsibility MOEF;
- Contract 16001610: Objective 5 - Measures in relation to wastes and contaminated sites, responsibility NEERI; and

[21] Seven files (one for each Contract) for Project GF/IND/07/004 maintained by the Procurement Unit in the "Programme Support and General Management Division", UNIDO, Vienna. Reviewed for the evaluation on 2 February 2011.

- Contract 16001923: Objective 6: Project management and monitoring & evaluation, responsibility MOEF.

The PC and MOEF considered the Terminal Evaluation as premature as further effort on the Project was still ongoing in order to submit outputs on objectives that were yet to be delivered.

4.3.4 Qualitative assessment of Project Outputs

The key output of the Project was a National Implementation Plan containing 6 chapters with four Annexes (see Figure 1, page 20). The evaluators provided comments on the quality of these documents in ANNEX 11: Annex 1 in the NIP on DDT; ANNEX 12: Annex 2 in the NIP on PCBs; ANNEX 13 : Annex 3 in the NIP on uPOPs; ANNEX 14: Annex 4 on waste and contaminated sites; and ANNEX 15: Chapters 1-6 in the NIP.

The NIP and its Annexes failed to use common scientific methods such as statistical analyses to assist with the development of the inventory of POPs; survey methodologies were inadequate; and there was limited information on alternatives to DDT. The quality of the NIP was reduced when these aspects were not optimised and they are discussed in the following sections.

4.3.4.1 Inventory of POPs

One of the key activities in the Project was the development of an inventory of POPs. However, the extent to which the inventory of POPs had been developed was difficult to determine, as information pertaining to the preliminary inventory was scattered throughout Chapters 1-6 and in the Annexes. The evaluators therefore constructed Table 2 from information reported in different parts of the NIP.

Table 2: Primary data for the inventory in the NIP

POP	Organisation	Primary data (number of samples)			
		Air	Soil / Ash	Water	Transformer oil
DDT	NEERI	NR	51[1]	22[4]	NR
PCB	NEERI	NR	12[2]	3[5]	NR
PCB	CPRI	NR	NR	NR	398[6]
Dioxins	NIIST/NEERI/CPCB	36[3]		NR	NR
Pesticides	Agriculture Dept	NR	NR	NR	NR

[1]Seven Tables on soil samples in Annex 4 on DDT; [2]Annex 4 p57; [3]NIP Section 3.4.1; [4]Annex 4, six Tables; [5]Annex 4 p57; [6]NIP Table 10, analysis ongoing to a maximum of about 550 samples; NR = Not relevant/not reported.

The PC and MOEF emphasised the importance of obtaining primary data (measured POPs) rather than secondary data (reported POPs). However, a review of the primary data showed relatively few samples had been collected and analysed over the three years of the Project.

There were few DDT primary samples overall, and in particular in the area surrounding the DDT production site where only one sample was taken. A limited number of sites sampled together with few sample per site is considered unlikely to lead to an accurate assessment of DDT contaminated sites in India. Farming areas were not sampled as DDT is banned in India, but there was numerous occasions in the report where it was implied that the ban on the use of DDT on farms was disregarded. No DDT samples were taken from farms. WWF reported in an interview that DDT had been detected in lesser fish eagles in Corbett National Park in Uttar Pradesh[22] in 1997, suggesting that DDT's use in the general environment may have continued after it was banned in 1989.

[22] The Times of India, 5 July 1997. Water contamination at Corbett hits breeding among eagles: Study.

The lack of primary data was attributed by the organisations involved in the sampling of POPs to a lack of adequate analytical capability for POPs in terms of equipment, trained staff and budgetary provisions.

Secondary data reported in the NIP was based on the quantity of obsolete stocks of DDT and other pesticides that were discovered in the course of the work carried out by NEERI and HIL, and oil contaminated with PCBs that was reported by NEERI (Table 3).

Table 3: Secondary data for the inventory in the NIP

POP	Organisation	Obsolete stocks (tonnes)			
		DDT	PCB oil	PCB-solid waste	POP Pesticides
DDT	NEERI/HIL	40.4[1]	NR	NR	NR
PCB	NEERI	NR	NR	NR	NR
PCB	CPRI	NR	3,000[2]	6,717[2]	NR
Dioxins	NIIST/NEERI/CPCB	NR	NR	NR	NR
Pesticides	Agriculture Dept	NR	NR	NR	30[3]

[1] Table 8 Annex 4, found by NEERI in 8 locations; [2] Draft NIP Sections 3.2.4.1 & 4.4.3.2; [3]NIP Section 4.4.2.2; NR = Not relevant/not reported.

The lack of secondary data was attributed by the organisations involved in the sampling of POPs to a lack of awareness of POPs by State employees and other stakeholders, which delayed any initial responses for information in surveys. Secondary information was available in a range of reports cited in the reports of the PDF-B Project (2004) and Toxics Link (2006) (See Sections 3.5.1 and3.5.2 on page 25-26). In the case of CPRI, for example, visits were made to the organisations that had transformers in order to encourage a response to the CPRI surveys on the incidence of PCBs. NEERI faced a similar situation and resorted to requesting a response under the Right to Information Act[23], and even then received only five completed responses out of 54 questionnaires sent out. The difficulty of obtaining information, under circumstances where the awareness of POPs was low, was not highlighted in the report.

In general, the draft NIP contained misleading information, anecdotal evidence, errors of omission, factual errors, typographical errors and format errors. Some statements in the NIP were unclear due to the syntax used. Some of the Figures failed to add any further information compared to the text or a Table. The report did not flow from one section to another in a logical way e.g., often results were reported before the methods used to generate the results were described. There were few improvements between successive versions of the NIP. Further detailed comments by the evaluators on Chapters 1-6 in the NIP and the Annexes are contained from ANNEX 11 to ANNEX 15.

4.3.4.2 Estimates of PCBs

Inconsistency in the treatment of data was evident within the NIP e.g., between the Annexes and Chapters 1-6, as well as between the draft NIP and post-NIP projects. For example, the quantity of PCBs estimated in transformers in the power sector was almost 3 times more in the post-NIP Full Scale Project than was documented in the NIP. The discussion between the evaluators and CPRI experts revealed that only 1,548 of the 45,000 transformers present in India were pre-1985 and contained PCBs (NIP Section 3.2.4.1). CPRI experts agreed that the remaining estimated 43,452 transformers were unlikely to contain PCBs as they were post-1985, which was the year that CPRI experts advised the evaluators of when transformers were not manufactured with PCBs. The experts

[23] Right to Information Act 2005. Gazette of India Notification No. 25 of 21 June 2005, New Delhi.

from CPRI showed a similar example of an extrapolation that was even more than the one above, and added that they were not responsible for such extrapolations (Table 4).

Table 4: Estimates of the quantity of PCBs in India in the draft NIP and in the Full Scale Project

Source	Estimated number of transformers in India	Pure PCBs in drums (tonnes)	Contaminated oil (tonnes)	Contaminated equipment (tonnes)	Total (tonnes)
1	2	3	4	5	3+4+5
Draft NIP Sections 3.2.4.1 & 4.4.3.2	45,000	120	3,000	6,717	9,837
Full Scale Project[1]	45,000		10,256	15,383	25,639

[1] GEFSEC Project ID 3775 Environmentally Sound Management and Final Disposal of PCBs in India, Table in paragraph 42 on page 11, Start Jan 2010 and close December 2014.

The extrapolations appeared to be based on misleading statements in the draft NIP and other documents that had yet to be corrected. However, because correction of these statements was not undertaken in a timely manner as part of the review process, misleading statements and data were being incorporated into other documents, notably the post-NIP projects.

4.3.4.3 Alternatives to DDT

There was limited information on alternatives to DDT for vector control, particularly on the costs of alternatives and their use in India. This may have been because HIL has a financial interest in the continued production of DDT for national and international sales, rather than in the production of alternatives. HIL's role in the Project was discussed in the only meeting of the National Steering Committee, but the results of the discussion were not included in the Minutes of the meeting. The discussion took place because HIL has a commercial interest in the production, export and distribution of DDT. As a public sector undertaking, HIL was also contracted to provide detailed information on alternatives to DDT.

ANNEX 11 on page 128 contains an assessment of HIL's contribution to the NIP on DDT and its alternatives. The project missed an opportunity to produce a report on DDT and its alternatives without concerns being raised on the contractor's ability to provide an objective report.

4.3.5 Replication effect as a result of the NIP Project

The "replication effect" is often difficult to detect. Even when detected, it can be difficult to quantify. "Replication" is defined as lessons and experiences coming out of the Project that are replicated or scaled up in the design and implementation of other projects, or replication within the Project. Replication can occur within the same or different geographic areas as well as being funded by other sources. As examples of replication, NEERI, CPRI and CPCB provided data to substantiate their expenditure from non-Project-related funds on future work on POPs (NEERI, CPCB) or to complete the Project (CPRI).

NEERI provided information on staff increases and on equipment expenditure. Over the course of 3 years, NEERI increased the number of scientists working on the Project from 4 to 16 while during this period the Project paid only for 4 technical assistants and no scientific staff (Table 5). Similarly, NEERI spent almost 20-times more on equipment than funds it received from the Project. During the three year period, staff were trained on equipment operation and maintenance, management of hazardous wastes and management of contaminated sites. The evaluators were informed that NEERI regarded

expenditure from non-Project funds on staff, equipment and training as an investment for further work on POPs after the Project is completed.

CPRI informed the evaluators that total expenditure on the Project was $900,000, which consisted of $239,200 (27% if total) provided by the Project and $660,800 (73% of total) from CPRIs own funds. CPRI expenditure on salaries, contract engineers and technical attendants was almost 11 times more than provided by the Project. Staff costs were by far the most significant expenditure.

Originally, the Project committed CPRI to undertaking surveys on PCBs 3 States, but then this was increased so more than 15 States by CPRI. CPRI was not aware of any guidance from UNIDO in the Project on the amount that could be spent in each category e.g. travel, equipment, staff.

The over-expenditure by CPRI was due mainly to CPRI's initial underestimate of the time required to complete the Project. Once CPRI had signed onto the Project, there was a strong commitment to completing the Project even if it meant subsidizing it heavily from CPRI funds. This was therefore a good example of funding that from the Project that leveraged (by 1:3) significantly higher funding from a government institute.

Table 5: Changes in staff, equipment and training at the NEERI laboratories as a result of the POPs project

Year	No. of STAFF specializing on POPs analyses		Expenditure on EQUIPMENT purchased for POPs analyses ($)			Staff training
	Project Assistants funded by the POPs project	Scientists not funded by the POPs project	Funded by the POPs project	Not funded by the POPs project	Footnote	
2007	Nil	4	Nil	65,200	1	Nil
2008	4	7	6,500	489,130	2	Two staff attended training on GC operation, maintenance and troubleshooting at Nasik, Maharashtra and CFTRI, Mysore
2009	4	12	7,600	9,500	3	One staff attended workshop on Management of Hazardous Wastes at Nagpur
2010	4	16	15,000	12,600	3	Two Scientists attended training workshop on "Assessment and Management of Contaminated Sites" at Glasgow, UK
			29,100	576,430		

[1] Toward creation of laboratory for PCB/DDT analysis; [2] Toward procurement of GC/GC MS; [3] Toward maintenance charges

CPCB said their involvement in the Project had "…*opened their eyes*…" to the potential for work on POPs. The CPCB planned to expand its activities on dioxin sampling using its own funds. From 1 April 2011, total dioxin and furan emissions from waste incinerators would be monitored for compliance with the 0.1 ng TEQ/Nm^3 over a sampling duration of 8 hours, according to standards that have been set in the Hazardous Waste Regulations[24]. The CPCB planned to spend about Rupees 28 million to collect and analyse dioxin samples in its seven laboratories in India. Therefore, the Project leveraged

[24] Emission Standards for Common Hazardous Waste Incinerators. Recently Notified Standards: CPCB website.

about 3.5 times more funding (about $612,000) in one year than was paid ($175,000) by the Project over a 3-year period. The CPCB was considered well-positioned to undertake such work as this organisation has a nationwide air-sampling network of 342 stations covering 127 cities in 26 States and 4 Union Territories[25]; and a similar network of 1019 water-quality monitoring stations in 27 States and 6 Union Territories[26] that could be used to monitor POPs contamination of water.

The institutes who are stakeholders in the Project are interested in the post-NIP projects (see Section 4.2.3 on page 30), which they saw as one of the benefits arising as out of the Project. The three Institutes and the CPCB stated their commitment to employing more staff and purchasing equipment for work on the post-NIP projects, which enhances their institutional capacity (see next section). The Institutes used supplemented the funds from the Project with other sources of funds to finance work on POPs. In this way, the Project had a synergistic impact that went beyond the Project itself which was a positive outcome.

4.3.6 Capacity building

4.3.6.1 Ministry of Environment and Forests

The Ministry had employed short-term, well-qualified but inexperienced staff toward the end of the three year project (Table 6). They were employed in the POPs Management Unit (PMU) which was established in the MOEF in 2008. The Joint Secretary of the Ministry was assigned as National Project Director (NPD) and the Director of HSMD was the National Project Coordinator (NPC).

Three of the four staff had been employed just 5-8 months before the end of the Project. They were required to work on POPs as well as other topics, according to the most pressing tasks at the time. They reported to three managers – the Joint Secretary of Hazardous Substances Management Division, the Director of HSMD, and the Project Coordinator of UNIDO/RENPAP. All three demanded work from them sometimes at the same time, which resulted in long working hours on most days of the week including on the weekend.

Table 6: Temporary staff hired by MOEF to compile and edit information related to the NIP

No.	Qualifications	Age range	Start date	End date	Position and task
1	PhD in environmental science	20-30	November 2009	December 2011	UN Volunteer; assistant Project coordinator for MOEF
2	MSc in environmental science	20-30	May 2010	December 2011	UN Volunteer; assistant Project coordinator for MOEF
3	MSc in environmental management and science	20-30	June 2010	April 2011	Draft NIP; based 1400 km SW of New Delhi in Pune
4	BSc and law degree	Early 30's	August 2010	April 2011	Drafting legal parts of NIP

The employment period for all staff had been extended at least once, which highlighted the uncertainty of employment at MOEF. One of them was located in Pune some 1400 km from New Delhi, which made it more difficult and costly to attend relevant Project meetings than if they had been based in New Delhi. The employment period for two of the staff is due to end in April 2011, while the other two are scheduled to finish in December 2011.

The level to which the institutional capacity has been developed was also evidenced by MOEF's reporting to the Convention pursuant to Article 15. The deadline for the first round of reporting was

[25] http://www.cpcb.nic.in/air.php
[26] http://www.cpcb.nic.in/water.php

31 July 2007. MOEF's report, as shown on the Convention website, was submitted more than two years after the Convention deadline. Part A (contact details) of the Report was completed; Part B (measures taken to implement the provisions of the Convention and on the effectiveness of such measures) stated that the NIP was under development and did not provide data on export of DDT; and Part C (progress eliminating PCBs) was not completed. Although MOEF complied with the due date of reporting by 31 October 2010 for the second round, Form B was not fully completed even though the data were available. The information supplied by India in its reports highlighted insufficient legislation on POPs in general and in particular on the management of stockpiles in a safe and environmentally sound manner. The lateness and incompleteness of the reporting in the first round, but improved but still incomplete reporting in the second round, also suggested that MOEF had not clearly focused on the reduction and management of POPs.

For these reasons, Institutional Strengthening of MOEF was assessed as limited, instigated too late in the Project and not sustainable. Moreover, the staff appointment conditions were inappropriate for completing many of the tasks in the Project that were contracted to MOEF.

4.4 EFFICIENCY

4.4.1 Transmission of NIP to Stockholm Convention

The GEF committed significantly more funding for the preparation of NIPs by Brazil, Russia, India and China (the BRIC countries), as they are the four largest countries where the GEF can potentially have the largest environmental impact on POPs. The GEF committed $3-5 million for NIP and post-NIP development in the BRICs compared to about $0.5m in other countries.

The GOI signed the agreement with UNIDO in November 2007 for a two year period that was scheduled to end in November 2009. However, the Project has already lasted more than three years (it was extended to 31 December 2010) but has not been completed and produced all the expected results. The GEF website currently shows the Project Status as '*Project Completion*' on 31 December 2010[27]. Other date-limited parameters related to the Project are shown in ANNEX 1 on page 84.

The Project in India has not produced results within the expected time frame for a NIP of 2 years. Ninety-five non-industrialised countries transmitted their NIP to the Stockholm Convention on average 193 days after the Stockholm Convention deadline, or just over 6 months late[28]. The Stockholm Convention expected India to transmit the NIP by the deadline of 12 April 2008[29]. India's NIP is currently 34 months or almost 3 years after the deadline for transmission. The Stockholm Convention reports that 44 countries have not submitted a NIP, including India[30].

Of the BRICs, only China has submitted the NIP to the Stockholm Convention, which was submitted on 18 April 2007 (5.3 months after the deadline). Unlike China, India has decentralized government with regional policies and structures and therefore more time could be expected for decision-making and technology transfer in India than China. On this basis, the GEF might have allowed India more time than 2-3 years to complete the NIP in order to allow additional time for India to address organizational, industrial, stakeholder participation and other issues.

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27 GEF website for GEF Project ID 1520

28 Touchdown Consulting analysis of date of transmission compared with deadline for transmission in the Stockholm Convention

29 Stockholm Convention deadline for transmission of the NIP

30 Touchdown Consulting. 19 Feb 2011. Analysis of Stockholm Convention website on NIPs transmitted and pending

4.4.2 Work Plans

Objectives and indicators that are SMART (Specific, Measurable, Aligned, Realistic/Relevant, and Time-bound) create focus, action, feedback and learning. They assist in the establishment of individual Work Plans, which also provide guidance to the Project management in performance review discussions.

The Work Plans for NEERI, NIIST, HIL and CPRI were sent to the evaluators. No Work Plans were received for CPCB and MOEF. NEERI (contaminated sites) and HIL copied the objectives from the Contract as their Work Plans, which were not SMART objectives. NEERI (uPOPs) had two Work Plans, the first shown in annual quarters spread over 2 years, and the second as one slide in PowerPoint that had time durations. None had SMART objectives or indicators. NIIST had three Work Plans, two in Excel as Gantt charts (one year and one month) and one in Word, but none of them had SMART objectives. CPRI had one Work Plan as a PowerPoint that was did not contain SMART objectives or indicators.

None of the Work Plans were assessed as useful for helping to engage focus, action, feedback and learning. None of them were extended one more year, which indicated they were not "living" documents as they were intended to be. The Work Plans were not reported to be used as a guide by the Project management in performance review discussions with these organisations. There was no Work Plan for MOEF which had financially the largest contract and the greatest number of objectives in the Project. The absence of a Work Plan for MOEF was assessed as a disadvantage as the opportunity was lost for the Project management to provide information to MOEF on progress achieving its objectives and outputs.

A Work Plan was not used as the basis for discussions between CPCB and others when CPCB was informed that their survey data on information required for the UNEP Toolkit were inadequate[31]. CPCB requested a six weeks more time to obtain more survey responses. Within this time period, the number of survey responses in the inventory was quadrupled from 172 categories surveyed to 670 on 13 June 2010. The evaluators noted that this discussion between the Project management and CPCB took place after more than 75% of the time in the Project had elapsed, and with a CPCB representative that had only been in the position for 10 days. The absence of a Work Plan for CPCB was assessed as a disadvantage as the Project management missed the opportunity to much earlier engage CPCB's focus, action and feedback on key objectives. The interventions in this case by Project management were unplanned and untimely, they were not performance based and they did not assist CPCB to remain on track with their objectives and outputs.

4.4.3 Cost-effectiveness of interventions

CPCB reported in June 2010 that almost 90% of the payments remained unspent despite having increased the number of surveys significantly (Table 7). The funds received in the first period were most likely as a result of signing the contract ($44,000) and submission of the first Progress Report ($52,800), although the total ($96,800) is less than the amount reported as received by CPCB.

Assuming the report provided by CPCB was comprehensive, it showed that CPCB expenditure was significantly less than the contracted price for the work. CPCB's contract appears to be about 93% more expensive than is required to undertake the work ($13,059/$175,000 = 7%), which indicated that the cost-effectiveness of the interventions for the GEF and donors in this case was very poor. The least cost option would have been a contract that was 90% less expensive.

[31] CPCB. 10 June. Final Report, p3. Meeting with Dr Dhua -UNIDO, Sh Dr Ramdev – UNIDO, Dr N Thacker –NEERI, Dr Anbumani NIIST , Mr Sharandeep AEE – CPCB, Ms Mita Sharma , CPCB.

Cost-effectiveness was also determined from a bottom up calculation of the cost of analysis of PCB and dioxins and furans. In 2004, the GOI recognized 84 laboratories that were accredited to analyse chemicals in air, water, and soil samples[32]. Most of them were listed as within the Council for Scientific and Industrial Research auspices (CSIR, including IRTC, NEERI and NIIST). Others were listed as within the Indian Agricultural Research Institute (IARC, 16 laboratories), and the Central Food Technology Research Institute. Ten laboratories at that time were accredited for testing pesticides and 8 for pesticide residues. Vimta Laboratories in Hyderabad, a private company accredited for testing DDT, pesticide residues, and PCBs present in water, oil and products, was also listed.

Table 7: Project fund report by CPCB (June 2010)

Contract 1613: $175,000 (Rs 70,00,000/-)[1]				
Period	**Received[2] ($)**	**Expenditure ($)**	**Balance ($)**	**Percent unspent**
2008/2009	117,899	7,780	110,119	93%
2009/2010	Nil	5,279	104,840	89%
2010/2011	Nil	Nil	104,840	89%

[1]CPCB stated that the "*Fund allotment by UNIDO was Rs 70,00,000/-* ". This equated to $175,000 at Rs 40/- per USD; [2]All figures were originally in Rupees in the CPCB's Table, but they were converted in Table 7 to $s using a conversion rate of Rs 40/- per USD, as this precisely matched the contract price of $175,000 = Rs 70,00,000/-.

The cost of dioxins and furans analysis was estimated in 2004 Project Brief PDF-B report as $600-800 per sample. By comparison, the cost of dioxin or PCB analysis in Europe is €150 to €190 (retail price) per sample for 10 to 15 day response, respectively[38]. The cost of staff time and equipment depreciation was about 50% of the retail price.

It is estimated that more than 90% of dioxins consumed by humans come from foods derived from animals. As well as considerably improving the inventory of POPs, food and feed companies in India in the future will need to ensure their products are free of contaminants such as dioxins and PCBs before putting them on to the market. Fast and cheap screening methods for monitoring for the presence of dioxins are therefore needed in order to select samples with potentially high levels of dioxins to be then analysed by a confirmatory method like HRGC/HRMS.

Over the past 15 years a large body of work has been completed on the development, application and validation of bio-analytical methods (bioassays) for the detection and relative quantification of dioxins and related compounds. The bio-assay method show a good correlation (r^2 = 0.96-0.99) between Toxic Equivalence (TEQ) and WHO-TEQ[33] (Figure 5 and Figure 6). The difference between the bioassay and GC/MS methods is much smaller than the inter-calibration tests that showed an average 12% standard deviation from the test results for 38 laboratories for PCDD/Fs[34]. The efficacy of the sample clean up prior to analysis can also create errors in analysis that are much larger than the difference in resolution between the bioassay and GC/MS methods[34]. These bioassay methods have gained widespread use and regulatory acceptance in the US, Europe and Japan (European Commission 2002; Nakano et al. 2006; US-EPA 2008)[33]. In Japan, bioassays have been used to screen residual PCBs

[32] Op cit., page 343.

[33] Hidetaka TAKIGAMI, Go SUZUKI and Shin-ichi SAKAI. 2008. Application of Bioassays for the Detection of Dioxins and Dioxin-like Compounds in Wastes and the Environment. In Interdisciplinary Studies on Environmental Chemistry—Biological Responses to Chemical Pollutants, Eds., Y. Murakami, K. Nakayama, S.-I. Kitamura, H. Iwata and S. Tanabe, pp. 87–94. TERRAPUB, 2008.

[34] UNEP. 2010. First worldwide UNEP inter-calibration study on POPs – Asia Region. UNEP. NIIST was the only laboratory in India that participated.

in stockpiled transformer oil samples even at 0.5mg/kg. Furthermore, the values were in accordance with WHO-TEQ values for PCDD/Fs and dioxin-like PCBs measured in between a series of bioassay analyses.

An EU-funded project examined the development, optimisation and validation of alternative cell-based screening methods for dioxin analysis, with the objective of finding a reliable, simple and low cost determination of dioxins and (dioxin-like) PCBs[35]. The EU project was completed in 2005 which was 2 years before the start of the Project in India.

The information and equipment for implementing a low cost dioxin and PCB screening method was available at the start of the NIP Project but instead the conventional GC/MS equipment was used in this Project. The screening equipment has been available since 1995. It has been installed in 80 laboratories in 50 countries, but none in India. The equipment was accredited in the EU for analysing dioxin and PCB samples in food and non-food products.

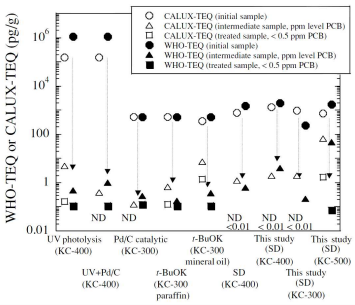

Figure 5: Comparison of PCB levels at commercial sites in Japan using bioassay (white) and GC/MS techniques (black) (Takigami *et al.* 2008)

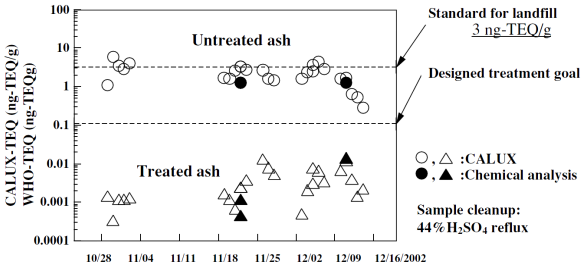

Figure 6: Comparison of dioxin monitoring at commercial landfill site in Japan using bioassay (white) and GC/MS techniques (Takigami *et al.* 2008)

If the screening method for the inventory had been used in India with GC/MS being used only for confirmation of say 2% of the samples, the cost of analysing 36 dioxin samples (the number analysed in the NIP Project[36]) would have been about 70% cheaper (Table 8). Moreover, the results would be available in 10-15 days compared to about one year to obtain the results in India using CPCB analyses.

Table 8: Total cost of dioxin and PCB analyses as quoted in the PDF-B report by India, and by BDS in the Netherlands

Type	No	Cost per sample		Total cost		Total cost[1]	
		PDF-B		PDF-B[37]		BDS[38]	
		Low $	High $	Low $	High $	Low $	High $
Dioxins	36	600	800	21,600	28,800	7,020	8,892

[1] Retail price, so actual cost is about 40-50% less; N P = Not Provided.

CPCB was paid $175,000 for the work on dioxins, which also included surveys sent to about 600 sources for data that was subsequently added to the UNEP Toolkit. The estimates of cost indicated that analysis of dioxins in this Project was not cost-effective, and that analysis of relatively few samples in this Project (36) took 52-times longer than would be expected. It appeared that the

35 EU Difference Project: http://www.dioxins.nl/Difference/objectives_diff/frameset_objectdiff.html

36 NIP Section 3.4.1: *Thirty-six samples were analysed from 14 locations…*

37 ITRC. 2004. Project Brief. Preliminary Assessment to identify the requirements for developing a NIP in India as a first step to implement the Stockholm Convention on POPs. 344 pp including 8 Annexes. UNIDO/MOEF GEF-funded sub-contract

38 BioDetectionSystems (Netherlands)

conceptualisation of the Project by UNIDO and the GOI was poor, since the methods used to accumulate data for the inventory were not the most cost-effective and efficient ones. The evaluators contacted NIIST on two occasions to clarify information on the number of samples analysed in the Project. However, NIIST did not respond to the emails.

Screening analysis based on bio-assay methods can provide rapid, high-throughput of large numbers of POPs samples. They have used to both identify samples that are contaminated and to provide an estimate of the relative contamination[39]. For example, in Belgium in 1999 more than 87% of the 2000 samples collected over a short period of time were negative. Those that were positive were confirmed by HRMS (the same equipment that is also used in India). Bio-assay methods were considered more useful since 15-50 samples of dioxin or PCBs could be analysed by one machine and reported each week, which allows an inventory to be constructed relatively quickly. In this way, more samples could be analysed in one week using a bio-detection analyser than the NIP project analysed in 3 years.

In practice, bioassays have been used to screen residual PCBs in stockpile transformer oil samples, even at 0.5 mg/kg which is the stringent PCB treatment standard for national PCB waste treatment in India and other countries. The bioassay method may offer an alternative analytical method that is less expensive and much faster than GC/MS analysis for PCDD/Fs and PCBs. It may also be useful for the analysis of new POPs added to the Convention in 2009, and for new work that for example, assesses dioxins in house dust which was reported to be comparable in Japan to levels of dioxins found in some food products[33]. Dust is a significant exposure pathway to children for dioxin-like compounds. Bioassay methods may facilitate many large-scale screening/monitoring works where the equipment and/or funds are limited, such as in many developing countries, and extend further the funding provided by the GEF to cover more work on POPs on more activities and countries. Field surveys with the bioassays have been frequently conducted to overview the pollution status in the concerned media or specify hotspots, taking advantage of “on-site” analysis by bioassays.

4.4.4 Similarity of Action Plans with work due for completion in the NIP

Chapters 4, 5 and 6 in the NIP contain Action Plans and Strategies for post-NIP proposals that total almost $300 million of requests for GEF funding for the period 2011 to 2022. Many of the Action Plans appear very similar to the work that was due to be completed in the NIP (see ANNEX 16 on page 144).

If the work described in the Action Plans is the same as the work contained in the NIP Project and it is funded by the GEF in the future, it may result in the GEF paying twice for the same work. There was also overlap of information contained in the financial estimates for future work, which results in greater expenditure estimates than if there was no overlap.

4.5 RISKS AFFECTING PROJECT OUTCOMES AND SUSTAINABILITY

The outcome from this Project is the NIP endorsed by the Government of India and submitted to the Stockholm Convention. Although this outcome has not yet been, but is likely to be delivered, there are some financial, socio-political and institutional framework /governance risks that were evaluated to determine their ability to impact on the outcomes and sustainability of the Project.

4.5.1 Financial risks

There are no financial risks that were assessed as likely to jeopardize the outcome of endorsement of the NIP by the Government of India and its submission to the Stockholm Convention. This is because

[39] Installation of a specific column in the GC allows differentiation of dioxins and PCBs

disbursements to MOEF have so far totalled $288,750 which was for signature of the contract ($131,250) on 16 September 2009 and for a short report of 21 pages ($157,500) on 22 December 2010. As the majority of the outputs in MOEF's Contract were categorised as "*not yet delivered*", these funds should be available and sufficient to deliver the outcome of endorsement of the NIP and submission to the Stockholm Convention. The funding to MOEF will be needed to upload the NIP to a website and to consult with stakeholders. Comments received would be considered by MOEF for inclusion in the NIP. Further funds of $291,250 had not been disbursed to MOEF by UNIDO by 31 December 2010.

4.5.2 Socio-political risks

In this Project, consultation with major stakeholders was limited to fewer than 20% of those listed in the Project Document (ANNEX 18). There is a requirement for the MOEF and UNIDO to consult with stakeholders on the NIP prior the NIP being endorsed by the GOI and submitted to the Stockholm Convention (see Section 4.6.7 "Consultation", page 60). There is a risk that the NGOs will not support the NIP because they had not been consulted by UNIDO and MOEF in the development of the NIP. The Project Document requires the MOEF to *hold meetings with principal stakeholders at national and state levels to introduce and gain endorsement for the NIP, its component implementation plans and priority actions*[40]. After this step, the NIP is required to be *disseminated to relevant ministries to gain their endorsement*. The lack of a working relationship between UNIDO/MOEF and other stakeholders (including relevant ministries and civil society organisations) may reduce or even eliminate stakeholder support for the NIP and its long term objectives.

4.5.3 Institutional framework and governance risks

In general, the legislation to prevent dioxin emissions was present but not enforced. Legislative and administrative measures to manage stockpiles of DDT and PCBs in an efficient and environmentally sound manner were not in place[41]. The lack of legislation and or lack of enforcement of existing legislation reduced the prospects for post-NIP projects being able to manage, reduce and eliminate POPs in an efficient and environmentally sound manner. Examples of the lack of legislative measures and enforcement of existing measures are illustrated for dioxins, DDT and PCBs.

4.5.3.1 Dioxins

Although the legislation sets a limit for total dioxin and furan emissions from waste incinerators at 0.1ng TEQ/Nm^3 over a sampling duration of 8 hours, according to standards that have been set in the Hazardous Waste Regulations[42], CPCB reported that there was no enforcement of this requirement over the period of the Project even though it came into force in June 2008. The CPCB reported that it planned to commence dioxin sampling using its own funds from 1 April 2011, which confirmed that governance to enforce the HW regulations had not been implemented.

4.5.3.2 DDT

In the Project, DDT was reported by HIL to be used for disease control according to the WHO Guidelines for DDT on the use of DDT for controlling mosquitoes. There were many examples in the NIP of this advice not being implemented in India in an environmentally sound manner, which causes health hazards to the health of all living organisms. There was a gap between theory (WHO) and practice (India's use of DDT):

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[40] Activity 1.1.1 in Output 1.2: Preparation of the NIP.

[41] Gauba, R. 16 September 2010. Report to the Stockholm Convention pursuant to Article 15. Section IV; Q15.

[42] Emission Standards for Common Hazardous Waste Incinerators. Recently Notified Standards: CPCB website.

- "*…protective clothing must be worn at all times when DDT is sprayed…*"[43], and yet the NIP reported that "*… protective measures for the workers … were not taken in most places were DDT is sprayed*"[44].
- "*All empty packaging should be returned to the supervisor for safe disposal. Never re-use empty insecticide containers. Empty insecticide containers should not be burnt or buried.*"[43]. The NIP reported that "*…empty bags were used by spray workers for their domestic use or disposed of by open burning*"[44], and "*…empty DDT bags were randomly buried into the soil and sometimes used by spray workers*"[45];
- The NIP reported that there were insufficient storage places for DDT at some locations and as a consequence DDT was being *stored in houses, hospital rooms and health care premises*[46];
- The NIP reported many examples of DDT contamination levels in water and soil samples that were in excess of the WHO limits as a result of inadequate storage, use and disposal of DDT[47].

Management of DDT entails adoption and enforcement of stringent rules and regulations to minimise the risk of DDT leakage into the environment and misuse leading to health problems, including sanctions in the event that individuals or entities are not compliant.

These examples showed that the institutional framework and governance of DDT was insufficient and not enforced and, moreover, DDT was not being used in ways that are consistent with the WHO Manual for Indoor Residual Spraying.

4.5.3.3 PCBs

Oil categorised as waste can be used as a fuel for energy recovery provided the PCB concentration is verified to be < 50 ppb[48]. Uncategorised oil or waste oil must be tested to determine if it is hazardous (> 50 ppb) or non-hazardous (<50 ppb). According to the Hazardous Waste Rules, the generation, collection, treatment, transport, storage and disposal of hazardous wastes are controlled[49].

However, as with DDT there were gaps between theory and practice for the management of PCBs. CPRI outlined many deficiencies in the legislation on PCB, including its implementation and enforcement[50]:

- Identification of hazardous waste disposal sites was a responsibility shared between the industry and the Government, whereas in the past it was solely a government responsibility;
- There were liability issues associated with site identification, which countered against such identification. Once a site had been identified, an Environmental Impact Assessment is required. The Government invited submission and a public hearing was arranged if there were any objections in the EIA;

[43] WHO. 2003. Application of Residual Sprays for Vector Control. WHO/CDS/WHOPES/GCDPP/2000.3 Rev.1
[44] NEERI. Section 12.3.1 in Annex 4: *Measures in Relation to Waste and Contaminated Sites*.
[45] NEERI. Section 12.7.1 in Annex 4: *Measures in Relation to Waste and Contaminated Sites*.
[46] NEERI. Section 12.1.2 in Annex 4: *Measures in Relation to Waste and Contaminated Sites*.
[47] NEERI. Annex 4: *Measures in Relation to Waste and Contaminated Sites*. Pages 10-60.
[48] NIP Annex 2, Section 6: Hazardous Waste Regulations, Schedule-1, Appended to rule 3(i)(a) categorized in waste 28.1 and 32.4 of HWM Amendment Rules [2000]. The concentration limit for PCBs given under Schedule-2, appended to rule 3(i)(b) categorized in class A (A16) of HWM amended rule [2000] is 50 mg/kg (50 ppb).
[49] Hazardous Waste Rules 1989 (cited from NIP Annex 2, Section 6).
[50] CPRI, Section 6.5: Need for monitoring and evaluation of PCB management strategies in India. In: Annex 2 *Development of National Implementation Plan on POPs - PCBs in India*

- The Government is responsible for compiling and publishing an inventory of PCBs as well as disposal sites, but so far the inventory has not been published and no sites have been identified;
- PCB concentrations in wastes were not being measured and monitored. Once PCB-contaminated oil is detected, there is no effective management system in place to handle it safely;
- Data on PCBs are insufficient, and data that do exist are not collated into an inventory but scattered amongst the research reports of individuals or agencies;
- The Rules and Regulations for handling hazardous waste in ship-breaking yards exist, but they are not implemented or enforced despite the requirement for all ships to be inspected for hazardous substances on arrival into the yard;
- Manufacturers of transformers and capacitors are generally unaware that untested oil contains PCBs, and there is lack of good management practices for PCBs even in the corporate sectors that under normal circumstance maintaining proper data and management of hazardous waste;
- Rules and policies have not penetrated to the grass root level, mainly because there are no government personnel to implement and enforce the Rules and Regulations on hazardous waste.

These examples from CPRI showed that there is an urgent need to strengthen the human and institutional capacity; to develop and implement awareness programmes; and to improve legislation, its implementation and enforcement at all levels to prevent contamination of the environment from dioxins, DDT and PCBs.

4.5.4 Environmental and health risks

There were no environmental or health risks that were assessed as likely to jeopardize the results of the Project.

Conversely, awareness raising activities by NGOs and other stakeholders could increase the probability of sustained work on POPs by increasing the awareness of the general public to the health risks of eating food contaminated by POPs. Multiple reports of food contaminated with dioxins occurred in 2004 (Table 9). Since that time, many 'food crises' in Europe have received widespread media attention, the most recent being in January 2011 when widespread dioxin contamination of eggs and pigs produced in Germany and Ireland was reported[51].

Table 9: Examples of POPs-contaminated food in Europe in 2004

Month	Crisis situation Country
January	Polluted eggs due to incomplete incineration nearby Belgium
March	High PCB levels in fish in France
April	Prohibition of salmon Denmark due to contamination of fish with POPs
April	Eggs contaminated with high dioxin
June	1,300 tonne of PCB-contaminated feed were distributed to 58 agrarian enterprises in Germany

[51] Financial Times. 13 January 2011. China bans imports [from Europe] over dioxin scare.

Month	Crisis situation Country
November	High levels of dioxins were found in potato by-products such as potato peel, caused by Netherlands using dioxin-contaminated clay to separate low- and high-quality potatoes

PA Behnisch. 2005. Dioxins and dioxin-like PCBs – the show goes on in Europe. Food, Spring 2005.

Conversely, there have been few similar 'food scares' in developing countries because food is not routinely tested for contaminants. This may change in the future as the rapidly-growing middle class Indian population becomes more insistent on the requirements for marketing healthy food. Companies in India may be required to put in place procedures to ensure their products are free of contaminants such as dioxins and PCBs before putting them on to the market. Such demands will also put pressure on the government to implement and enforce the Rules and Regulations on hazardous waste, in order to reduce environmental and health risks, whereas at present there is little pressure on the government from NGOs and other stakeholders to do so. Toxics Link reported on their participation in a government programme that resulted in a revision of the legislation in India, and the enforcement of it, for leaded paint.

4.5.5 Country ownership

Despite these consistencies with many chemical projects in the international and national plans of India (see Section 4.2: "Relevance" on pages 29-32), the country ownership was assessed as low for MOEF and HIL, but high for CPRI, CPCB, NEERI and NIIST.

The evidence to suggest that MOEF ownership was low was evidenced by the categorisation of many of the outputs from the Project as "*yet to be delivered*"; the appointment of inexperienced, junior but well-qualified staff for a short period of time toward the end of the contract who for these reasons could not contribute significantly to the Project; the inadequate quality of MOEF's Progress Report (the only one that was found on UNIDO's files) which was submitted three weeks before the end of the Project and that failed to meet the performance criteria in the MOEF contract; contracting out the role of the Project Coordinator to UNIDO rather than maintaining this position within the MOEF; and a lack of analysis of the legislative and policy requirements that could assist with the management, reduction and elimination of POPs. There was no evidence as a result of this Project that MOEF had put in place procedures that would improve its focus on POPs; clarified its responsibilities, accountabilities and reporting lines; made changes to its procedures and communications; or made any changes in the deployment of human resources.

The evidence to suggest that the commitment and motivation was high for CPRI, CPCB, NEERI and NIIST came from the funds that these organisations had spent on the NIP Project from their own budgets and that was additional to the funds received from the Project; and the extent of their financial, staff and equipment preparation for future work on POPs. These aspects were summarised in Section 4.3.5 on page 38.

The pesticide producer HIL that contributed the information on DDT was assessed as committed and motivated to maintain, with the assistance of the Ministry of Health, the infrastructure necessary to continue the production and use of DDT, rather than to phase it out. There was little evidence in the NIP of an objective review of the alternatives and their potential to replace DDT entirely. Rather, there was evidence to show that HIL favoured the development, production and commercialisation of another chemical that was structurally similar to DDT[52].

HIL stated in an interview with the evaluators that it had no intention to phase out DDT while the

[52] Annex 1B in the NIP. Synthesis of new molecules, toxicological studies and scale up. 17 pp.

Stockholm Convention permitted its use and cost-effective alternatives were not available. Indeed, HIL state on its website: "*…the company sees a great scope in emerging as the main DDT supplier to the world as HIL is the world's largest DDT producer. Moreover, the company has more than 50 years of experience and expertise in the manufacture of DDT*"[53]. On the other hand, the Project management reported that agreement had recently been reached with the Ministry of Health for DDT to be phased out. A document in support of this agreement was not supplied to the evaluators. This agreement was not corroborated in an interview with a senior representative of the Ministry of Health that stated there were " … *no plans to phase out DDT … in the next 20 years*". The evaluators concluded that statements by the Project management on the phase out of DDT were aspirational[54], and that HIL and the Ministry of Health appeared committed and motivated to maintain the production and infrastructure associated with continued use of DDT.

4.6 PROJECT COORDINATION AND MANAGEMENT

4.6.1 Preparation and readiness

There were many indications that preparations for the Project were insufficient which reduced the readiness of the Project participants. There were delays in preparing the contracts, obtaining equipment, training staff to use the equipment, obtaining responses to the surveys, and implementing management procedures.

Four months before the start of the Project, MOEF considered switching from UNIDO to another implementing agency because of UNIDO's delay in formulating the Project[55]. UNIDO strengthened the relationship between MOEF and itself by suggesting institutes that could be involved in the Project. UNIDO also accelerated Project formulation. This suggests a lack of preparation and readiness at the beginning of the Project.

There were significant delays signing the contracts. CPCB had still not signed the contract on 23 September 2008, almost one year after the UNIDO – GOI agreement was signed. At the same time, CPRI had also not signed as it was requesting more funding. CPRI considered the funding allocated was insufficient to cover the costs of the surveys for PCBs. In October 2009, the chair of the National Steering Committee highlighted the limited time remaining to submit the NIP, and that any delay would "*…make it difficult for India to defend its position in the Stockholm Convention*"[56]. The chair urged CPRI, NIIST and CPCB to speed up their work programmes.

The MOEF contract was constructed differently to the other six contracts. It was signed on behalf of MOEF by HIL, and it was the only contract that was due to end in 2010, whereas the other six ended in 2009. MOEF's contract was delayed to September 2009 because MOEF was not able to accept and disburse funds for the Project, and additional time was needed to negotiate the terms of MOEF as a subcontractor to HIL as HIL was the signee of the Contract. This delay indicated that MOEF was not ready and prepared for the Project.

Once the Project had started in November 2007, there were delays getting equipment in place and sufficient trained staff to operate the equipment. Much of the work on the objectives did not start in

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[53] Welcome to Hindustan Insecticides Limited – a government of India enterprise.

[54] UNIDO supplied a GEF Project Identification Form to the evaluators on 8 June 2011. The PIF was signed by UNIDO on 14 February 2011, after the evaluation mission was concluded. The project addresses the possible introduction of alternatives to DDT "… *as a first step for elimination of dependency on DDT*" (PIF 'Origin of Proposal'). The project does not address phase out of DDT "*…due to its socioeconomic and political sensitivity the phasing out DDT in India should be approached in a very cautious and considerate manner*" (PIF paragraph 14).

[55] Back-to-office Mission Report, 16-25 July 2007

[56] Minutes. 23 September 2008. First Project Review of the NIP.

earnest until late 2008 and in the first part of 2009. It took more than a year after the UNIDO-India agreement was signed for counterpart resources (funding, staff, and facilities) to be in place.

The 4-year gap between the end of the PDF-B Project (2004) and the start of work in the NIP Project (2008) was a factor in reducing the awareness of POPs with key stakeholders. The Preparatory Project had organised 10 workshops, 5 of them with industry and 5 with government stakeholders. However, when the surveys were sent to stakeholders for information, CPRI and NEERI reported that additional time was needed to inform the stakeholders of POPs. This indicated that the Project should have run as a priority workshops with survey recipients as early as possible, in order to prepare them for the surveys.

There was no legislation prior to the beginning of the Project that required owners of PCB-containing equipment to declare the quantity of contaminated oil and the type of equipment. Basic information on the number of sources of dioxin-emitting industries was not available, although some of this work had commenced in the PDF-B Project. The lack of legislation coupled with a lack of basic data indicated that India was not well prepared for this project. Legislation can be put in place in less than 2 years when legislation is acknowledged as urgent[57], but up to 6 years for adoption of non-urgent legislation. Considering that the PDF-B Project finished in 2004, it would be possible to have legislation adopted during the period 2006 (most optimistic) to 2010.

MOEF and UNIDO informed the evaluators that, as the joint executing agencies, they had not prepared a Logical Framework and performance indicators. Instead, they used the Convention Guidelines on NIPs and the results of other NIP Projects in the Region to determine if progress was sufficient in India's Project. The "Guidelines on NIPs" consists of five documents[58] that provide general information that would not be useful for monitoring and evaluating the performance of contractors, in contrast to the performance criteria contained in the Logical Framework that is more detailed. In addition, the contracts between UNIDO and the institutes specified the achievement of specific performance indicators that were not found in the Convention Documents. The progress in relation to other developing country NIPs[59] may not be relevant to the work being undertaken in India, since each country may have different objectives and smaller funding allocations than India. India was one of four countries that received significantly larger funding than most other countries, consistent with the concept of managing and reducing potentially large quantities of POPs as soon as possible.

4.6.2 Contract implementation

4.6.2.1 Identification of contractors

A participatory process was used to identify potential contractors for the Project. The National Steering Committee decided that "*…all the activities would be undertaken by specialised institutes/organizations of the Government of India. Hence, there would be no need for global tendering for awarding the contracts by UNIDO*"[60]. UNIDO's Programme Support and General Management Division supported the Committee's decision. These government organisations were subsequently assigned seven[61] contracts by the National Steering Committee for a total value of $1,883,300.

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[57] MOEF Notification. 2011. Plastic Wastes (Management and Handling) Rules. SO249E.

[58] Stockholm Convention NIPs Guidance: UNEP/POPS/COP.1/2; UNEP/POPS/COP.1/INF/13; UNEP/POPS/COP.1/INF/13 Add1; UNEP/POPS/COP.2/INF/7; UNEP/POPS/NIP/GUID/DevelopingNIPs

[59] Stockholm Convention. 19 Feb 2011. NIPs from 96 developing countries.

[60] 2008-02-27 Minutes - NSC sub-comm Mtg - CGO Complex - New Delhi

[61] CPCB (1 contract), CPRI (1 contract), HIL (1 on behalf of MOEF[61], and 1 for HIL), NEERI (2 contracts), NIIST (1 contract)

As the National Steering Committee decided to not subject the contracts to competitive global tender, there was no assessment possible of the best value for money (points scored per rupee), the quality of service desired (the outputs), the quantity provided (e.g., number of States surveyed, number of samples of POPs analysed etc), and in particular, whether the work could be performed for a lower price. The savings from global tendering have been reported as "*20% on average, often higher but disputable*"[62].

The PDF-B Report cited 84 laboratories in India that were accredited to analyse chemicals in air, water, and soil samples[63]. The decision of the National Steering Committee to not tender the contracts meant that there was no opportunity for some of these laboratories to train staff to work on POPs, to upgrade equipment to undertake the work and, moreover, to bid for work on POPs in India at a competitive price that brought value to the donor community. As the contracts were not put out for competitive tender, the opportunity was missed at that stage to determine more cost-effective options from other bidders in India.

The National Steering Committee decided to engage HIL to supply information on DDT production and use in India, as well as alternatives. However, HIL is the only global producer of DDT and it therefore has a financial interest in the continued production of DDT for national and international sales, rather than in the production of alternatives that have the goal of reducing and eventually phasing out DDT. HIL's role in the Project was reported to have been discussed in the National Steering Committee, but the results of the discussion were not reported in the Minutes of the meeting.

The Project management therefore did not undertake contract tendering procedures to obtain the best value as it excluded the opportunity for entities to bid that could have undertaken the work to a higher standard and more cost-effectively. The Project management also engaged a contractor whose objectivity for a report on alternatives to intentionally produced POPs was questionable.

4.6.2.2 Lack of contract clarity

The Logical Framework approach was not used to determine the objectives in each contract. SMART[64] objectives were not developed by the contractors and, moreover, the Project Document was not used as the basis for project management (see Section 4.1 on page 28).

Objectives were assigned to contractors in a way that did not match the expertise of the contractor. For example, objectives that were within the expertise of MOEF were duplicated in other contracts; and objectives for NEERI as the leader of the uPOPs work were duplicated in contracts agreed by CPRI, CPCB and NIIST. This resulted in contractors not accepting responsibility for the objectives that were believed to be within the expertise of another contractor, even though the contractor had signed and accepted payment for completing the work associated with the objective. Examples of duplicate objectives are provided in ANNEX 8 on page 122.

Imprecise preparation of the contracts was a factor that contributed toward outputs not being delivered. One of the contracts contained differences in payment amounts between the 'back and front of the contract', which were incorrectly summed in the operative paragraph. This indicated that the contract had not been diligently reviewed by UNIDO/MOEF or the contractor. Partnership arrangements were not properly identified and the roles and responsibilities were not negotiated prior to project approval. Further comments on the quality and construction of the contracts are provided in ANNEX 8 on page 122.

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62 NSW Government. 1997. Competitive Tendering Guidelines.

63 Op cit., page 343.

64 SMART objectives are = Specific, Measurable, Achievable, Relevant, Time-bound

UNIDO's monitoring of performance in these contracts did not use modern project monitoring and management procedures. A Logical Framework was present in the Project Document, but it was not used for management of the contracts. Work Plans were initiated by some of the contractors, but they were generally inadequate (see 4.6.2.4) and not updated as the Project progressed. UNIDO did not work with the contracting institutes to assist them in the development of their Work Plans, and in updating them as a result of the technical reviews.

Two international experts were reported to be useful for information related mainly to the post-NIP projects. CPRI accompanied one of the experts to a ship breaking facility to see the procedures in place to contain POPs. Importantly, the institutes reported that the experts did not enter into an objective-by-objective review in the Project, but instead provided input into the drafting of specific Chapters in the NIP in the presence of the lead authors[65]. One or two experts were also present with other members of the management team when post-NIP projects were discussed, together with the action plans, timeframes and budget that were prepared for the POPs pesticides, DDT and a DDT specific exemption.

4.6.2.3 Inception Reports

Inception reports were submitted to UNIDO by NEERI, NIIST and CPCB. These reports were written in 2008 and submitted from September to November 2008 to UNIDO. UNIDO reviewed the Inception Reports in July 2010, almost two years after they were submitted. This time delay in providing feedback to the institutes on the Inception Reports was a lost opportunity to provide comments to the contractors on their planned approach to their work and its content. Inception Reports from MOEF, HIL and CPRI were not provided to the evaluators.

4.6.2.4 Work Plans

The evaluators found the Work Plans that had been developed in response to the contracts as variable in quality and usefulness. The Work Plans by NIIST, NEERI and HIL were assessed as useful. However, the other Work Plans were insufficiently detailed and unlikely to be of use to the organisations that developed them. There was only the first version of the Work Plans, and they had not been updated which should be the case as the Project develops and activities rarely remain as originally planned.

4.6.2.5 Payments to contractors

Payments to contractors were disproportionately large for the work in each payment. For example, the MOEF received $288,750 in total for signing the contract and for a 21 page report, which was similar to the executive summary and parts of the introduction to the NIP.

The evaluators agree with payments "up-front" to cover initial costs of establishing equipment or staff, but in this case they question the need for such large payments. The largest payment went to MOEF (through HIL) as the Ministry had the single largest contract with the most objectives to complete. However, other contractors were also paid disproportionately large payments for signing and receiving a report of the Technical Coordination Group. Although these payments were intended to be performance-based, and they were consistent with the contractual terms, the payments were disproportionately large compared to expected performance. In the context of the cost of similar work in Europe, and based on the international evaluator's experience, the financial value of the contracts for desk work and laboratory work in India in this Project was assessed as 5-6 times more than would have been paid in Europe to contractors for similar outputs.

[65] Csizer, Z. September/October 2010. BTO Technical Review and Office Report; Recommendation for Dr Szabolcs Fejes to provide input on the drafting of the NIP.

4.6.2.6 NIP editing and review

Limited time was available between February 2011[66] and submission to the Stockholm Convention in late April 2011 to consider comments from experts that contributed to NIP and by stakeholders that had not seen the NIP at all. Comments were being considered in parallel to the NIP editing process, which was assessed as an unsatisfactory design for a consultation process. It was essential to allow stakeholders to comment on a version that was as complete as possible, rather than a report that was incomplete. There were also two editors for the NIP: one based in Pune under the direction of MOEF[67], and the other based in Vienna under the direction of UNIDO/RENPAP[68]. It was not made clear to the evaluators how the editors would coordinate their editorial activities.

There are numerous versions of the NIP and its Annexes, with poor document control to distinguish the versions (See Section 4.6.1 on page 50). The stakeholders present at the report of the Preliminary Report of the Evaluation in India expressed their concern to the MOEF and UNIDO on both the processes for commenting on the draft NIP and the limited time period available to review it[11]. The consultation process for the NIP appeared to not meet the expectations of the stakeholders and the experts involved in the draft NIP.

4.6.3 Contract review

UNIDO and MOEF, as joint executing agencies in this Project[69], were responsible in the Project for establishing procedures to review progress in the contracts. They established a National Steering Committee and an Expert Technical Group to review progress in the contracts.

4.6.3.1 National Steering Committee

The National Steering Committee which met for the first time on 18 December 2007, which was about 1 month after the Project Document was signed by the GOI and UNIDO. The National Steering Committee was chaired by the MOEF, with the participation of delegates from MOEF, UNIDO/RENPAP, the Ministry of Commerce and Industry, the Ministry of Health and Welfare, the Ministry of Agriculture; the Department of Chemical and Petrochemical; the five government sub-contractors that at that stage were identified for future work on the Project's activities (CPCB, CPRI, HIL, NEERI, NIIST); the Confederation of Indian Industry; the Industrial Toxicology Research Centre; and the National Institute of Occupational Health. The Minutes of the meeting reported on the value of UNIDO/RENPAP's experience working on other country NIPs, the need to complete the India Project by November 2009, and discussed the assignment of the six objectives to MOEF, HIL, NEERI, NIIST and CPCB[70].

A Sub-Committee of National Steering Committee was reported to have been established to assess, review, advise and plan all aspects of the Project related to the implementation of the Stockholm Convention. The composition of the Sub-Committee was: Additional Secretary of MOEF – Chairperson; the five members are Additional Secretary and Financial Advisor of MOEF; Joint Secretary, HSMD, MOEF; Director of MOHFW; Director, Plant Protection, MOAC; and Director, HSMD, MOEF. The first and only meeting of this Committee was on 27 February 2008. The meeting discussed the allocation of contracts, and attached an itemised budget for the work being jointly undertaken by NEERI, NIIST and CPCB. There was no explanation provided in the Minutes for the absence of MOHFW and MOAC from the Committee; and the presence of UNIDO, CMD, HIL, NEERI,

[66] The month the Project Coordinator informed EVA by email of the launch of the NIP on a website
[67] Mrs Papiya Sarkar Pal, Pune
[68] Dr Ramdev, Assistant Project Coordinator, assigned to Vienna to edit the NIP in February 2011
[69] ANNEX 1, page 84
[70] 2007-12-18 Minutes - NSC Mtg - CGO Complex - New Delhi

CPRI and NIIST who were not members of the Committee.

As the National Steering Committee and its sub-committee met only once, the ability of the Committee to guide (steer) the Project, and to inform the stakeholders in the Project, was extremely limited. One of the stakeholders (the Ministry of Commerce) that attended the first meeting declined to meet with the evaluators in 2011 as they said the Ministry of Commerce knew nothing about POPs and the Project, which indicated that stakeholder consultation had been inadequate. The Minutes of the meeting were not fully transparent as discussions on possible conflicts of interest were reported to have taken place but were not reflected in the minutes. The National Steering Committee was assessed as lacking in mandate, poorly designed, without purpose and continuity, and operated in a way that was not transparent.

4.6.3.2 Expert Technical Group

A Technical Committee was reported by the National Steering Committee to comprise: Joint Secretary of MOEF – Chairperson; the five members are Secretary of CPCB; Industrial Advisor, DCP; Director, MOHFW; Director, Plant Protection, MOAC; and Director, HSMD, MOEF. The PC could be invited to attend meetings of the Technical Committee as a special invitee. The Technical Committee's mandate was to review the progress of the work of contractors, and to recommend payments based on the delivery as per the contracts.

However, there was no evidence that this Technical Committee had been established. The Project management reported that an Expert Technical Group had been established instead that consisted of an external expert, the PM, the PC and the Assistant PC[71]. However, the Project Manager was not a member of the Technical Group, which was rather an informal group that consisted of the Project Coordinator and leading experts from MOEF, HIL, NEERI, NIIST and CPCB[72]. The experts met periodically with the Project Coordinator to review each other's work.

Over the course of the Project CPCB, CPRI, HIL, NEERI and NIIST made presentations to the Technical Group two to three times per year on their progress on work in their contracts. However, MOEF rarely reported on progress on identifying legislative gaps, the website, the MIS and other aspects of their contract.

International technical experts met periodically with the CPRI, NEERI and NIIST experts to comment on their work while undertaking technical assessments for post-NIP projects. However, there was no evidence of a planned and detailed review of their work by such technical experts, the PC or the PM in the light of the objectives and sub-objectives in the Project. There was no evidence that government and industry representatives, and especially civil society (see Section 4.6.9.5 "Consultation" on page 67), were involved in the identification of critical problem areas and the development of technical cooperation strategies.

The review process established by the Project management was therefore less planned and formalised than originally conceived in the Project Document. When reviews were undertaken, they were insufficiently rigorous to detect deficiencies in unfinished objectives and sub-objectives. The international technical experts were not assigned for technical review of the Project (see Section 4.6.2.2). One third of the objectives in the Project under the responsibility of the MOEF were rarely reviewed by the Technical Group, in the same way that other contractors were reviewed. As a result of the lack of attention to the timeliness of completing objectives, none of organisations completed their objectives within the two year period, which was the original term of the Project (see Table 10 on page 58 which showed the "Months delayed for disbursement of funds in each contract").

[71] Project Coordinator, 20 Jan 2011
[72] Project Manager, 1 Feb 2011

4.6.4 Project Coordination

The PC accepted the position as a part time assignment as he was also Regional Project Coordinator for UNIDO/RENPAP[73]. The PC was paid from both the NIP Project and the RENPAP Trust Fund[74]. Both positions are demanding with significant travel requirements.

In the beginning of the NIP Project, the GOI regarded the PC as the main candidate for the job as the PC had assisted the GOI in developing and implementing various projects in the field of pesticides and chemicals management. The PC had also been involved in the PDF-B project, and had helped with the development of other NIP projects[73].

Now that the Project has been completed, it will be difficult for the MOEF to pass the PC's experience to other staff in the MOEF as the PC is near retirement. The GOI's decision to designate the UNIDO/RENPAP coordinator as a part-time PC for the Project reduced the prospects of capacity building within the MOEF for this role. For other projects, MOEF had engaged Project Coordinators within the Ministry, which built the capacity of MOEF for that project as well as other projects.

The decision by MOEF and UNIDO to engage a part-time PC from outside of MOEF was neither in the best interests of the Project nor of the MOEF capacity building requirements required by the Project. With the PC's personal connections to government officials related to the pesticides and his previous experience with projects on pesticide reduction, the PC would have made a good Adviser for the NIP project. The PC role, however, requires modern project management, monitoring and review skills to ensure that the contracted tasks were completed in a timely and complete manner.

4.6.5 External factors affecting implementation

Section 3.1 reported on progress made by India toward market-oriented economic reform, and noted that economic growth was constrained by external factors that included inadequate infrastructure, a cumbersome bureaucracy, corruption, labour market rigidities, regulatory and foreign investment controls, high fiscal deficits and double-digit inflation for food. India's focus in 2011 in on reforming the open bidding system for natural resources; the formulation of public procurement policy; and the adoption of anti-corruption legislation in the public sector.

The Project Document on the NIP also highlighted a number of external factors that could affect the delivery of the outcomes of the project. These factors included the availability of financial and human resources, whether capacity building was considered a priority, participation of stakeholders at national and state levels, management of conflict of interests, and integration of the work on POPs chemicals as part of India's developmental strategy.

There was no evidence in this Project that any of these macro-economic / infrastructural or Project-related external factors had prevented the delivery of the major outcomes in this Project. In this project, there appeared to be little focus on results and evidence of the measurement of those results, and little evidence of effort to build the capacity of the MOEF. The value of UNIDO's contract with MOEF was $580,000 over two years, which was considered sufficient funding to engage competent and well-qualified staff to undertake work to produce the relevant project outputs. UNIDO contracts with other organisations provided funding for equipment, training and staff which were also considered sufficient to undertake the analysis of POPs for the inventory. The Project managers reported they had access to key staff in the relevant ministries, suggesting that bureaucracy in this case was not hindering communications and implementation.

Like India, many other large countries have central-state governance which does not hinder delivery

[73] Email from UNIDO/RENPAP to C. Centeno 24 January 2011, quoting Dr Zoltan Csizer and Ms Erlinda Galvan
[74] Email from C. Centeno to Tom Batchelor 24 January 2011

of outcomes. The evaluation concludes that the lack of outcome delivery was related mainly to poor project management, particularly in relation to contract formulation, implementation of objectives, awareness raising, stakeholder involvement, and monitoring & evaluation of progress. This assessment indicates that there are many challenges faced by India to achieve the goals of the Paris Declaration and the Accra Agenda for Action (see Section 4.2.5 on page 31).

4.6.6 Financial management

4.6.6.1 Procedures for disbursement of funds

The Project management had established payment approval procedures for Progress Reports received from the contractors. These procedures consisted of an initial technical check by the National Project Director (MOEF), followed by the PC undertaking a further technical check and certifying that the documents were technically correct. The Contractors such as NEERI, NIIST, HIL and CPCB were reported to have had their own internal technical checking procedures in place to ensure that the information was complete for each milestone.

Once certified as complete, the Progress Reports were sent to the Procurement Unit in the "*Programme Support and General Management Division*" Vienna for certification and payment. The Procurement Unit required the PM to certify that "*…the supplies or services are correct and that sufficient funds are available*". Prior to payment, the Vienna-based management clarified any issues related to report content or payment with the India-based management.

In practice, however, the information required at each milestone in the contract was not present in a report when a payment was authorised, as the management considered the reports from contractors as "*work in progress*". The contractor sometimes agreed to provide more results in the next reporting period when information for a milestone had not been submitted and when prompted to do so by the Project management. However, the final content of the Progress Reports showed that in the end information was not supplied, and therefore payments were continually made by UNIDO for reports that did not meet the performance criteria in the contract.

All of the contracts provided a detailed outline for reports, and the number of pages that each report should contain, and the time that the information should be provided. None of the reports examined by the evaluators complied with these criteria, which demonstrated that payments were continually made by UNIDO for reports that did not meet the performance criteria in the contract.

Disbursement of funds was delayed by 1-17 months, depending on the contract and the payment (

Table 10). The number of months delayed increased from payment 1 to payment 4 in each contract, which showed that timeliness of reporting became more delayed as the Project progressed. Contractors CPRI and HIL submitted reports with the least delay, whereas MOEF and NEERI were the contractors that submitted reports with the longest delays. A 17-month delay in submitting a report was assessed as a significant delay in the context of a 24-month project that was later extended to 36 months.

Disbursement of funds for payments 3 and 4 for Contract 1923 was not undertaken. Similarly, disbursements of funds in payment 4 for Contracts 1610 and 1613 have not been made. Eighty percent (equivalent to $1,497,850) of the contracted funds have been disbursed, leaving 20% (equivalent to $385,450) not disbursed. The disbursements have not been made because the outputs associated with those payments have not been delivered, which in turn has delayed delivery of the NIP.

Table 10: Months delayed for disbursement of funds in each contract

Objective	Contractor	Contract Number (1600-)	Delay (months)				Average delay (months)
			Payment 1	Payment 2	Payment 3	Payment 4	
1	MOEF[1]	1923	3	17	Not Disb.	Not Disb.	10.0
2	HIL	1608	1	6	3	10	5.0
3	CPRI	1726	3	7	1	13	6.0
4	NEERI	1611	6	6	12	14	9.5
4	NIIST	1612	6	6	12	10	8.5
4	CPCB	1613	7	5	13	Not Disb.	8.3
5	NEERI	1610	2	8	14	Not Disb.	8.0
6	MOEF[1]	1923	3	17	Not Disb.	Not Disb.	10.0

[1] HIL was responsible for financial administration and MOEF responsible for the objectives in 1 and 6; Not Disb. = Not Disbursed. Contracts totalled $1,883,300.

4.6.6.2 Financial reporting by contractors

The contracts required contractors to submit 1) Annual Audit Reports and 2) Final Audited Financial Statements. Section 2.05(a) of the contracts stipulated that "*Annual Audit Reports* [shall be submitted]*, including expenses incurred during the reporting period and their compliance with the contract budget, and enclosing supporting documentation, to be submitted no later than the second week of the month following the reporting period*".

The evaluation team could not find any evidence of Annual Audit Reports being submitted to UNIDO. Reminder notifications from UNIDO to the contractor went unheeded. Funds were disbursed to the contractors by UNIDO without the Annual Audit Reports having been submitted.

The contracts also stipulated in Section 2.05(b) that "*Final Audited Financial Statements* [shall be submitted] *with respect to GEF resources received by the Contractor from UNIDO under this Contract, indicating expenses incurred during the period of the Contract and their compliance with the Contract Budget, and enclosing supporting documentation, to be submitted no later than the end of December 2009* [by December 2010 in agreement with the contract extension].

Utilisation Certificates (UCs) and Expenditure Statements (ESs) were submitted by CPCB, HIL, NEERI and NIIST. They were considered equivalent by the evaluators to the *Final Audited Financial Statements.* The balance in the account of CPCB showed $172,200 remained unspent. There was no evidence of UCs or ESs from MOEF (Contract 1923, Objectives 1 and 6) and CPRI (Contract 1726). CPCB and HIL provided information to 31 December 2010, which was the end of the Project according to GEF and UNIDO records. Provision of Final Audited Financial Statements by CPCB and HIL was satisfactory. NEERI and NIIST provided some financial information but it did not cover the term of the Project. The financial reporting by NEERI, NIIST, CPRI and MOEF was unsatisfactory.

Payments by UNIDO to the contractors, in the absence of the "Annual Audit Reports" and "Final Audited Financial Statements" being received from the contractors, conveyed to the contractors that these documents were not necessary for payment. UNIDO did not show due diligence in the management of the funds, as funds were disbursed to most of the contractors in the absence of financial reports required in the contracts.

4.6.6.3 Co-finance

The project was successful in obtaining co-finance commitments of $6,880,000 from the GOI and

$200,000 from UNIDO. According to the Project Document, a range of activities were to be funded by India's co-finance, such as the establishment of an Information Management System ($200,000), public awareness and education ($100,000), exposure risk assessment studies and modelling ($415,000), development of measures to eliminate production, use and trade of DDT ($231,800), collection of national information on the import and use of PCB and PCB-containing equipment ($736,000), development of measures to identify sites contaminated by POPs ($1,080,000), and the establishment a Technical Coordination Group in MOEF including the engagement of five institutions specialised in the field of pesticides, PCBs, dioxins and furans, monitoring and analysis of unintentionally produced POPs and legal, policy and regulations ($1,605,100) and others[75]. Many of these activities were not delivered at the time of the evaluation (see ANNEX 7, page 107), which suggested that the funds had not been used by India even as in-kind equivalence.

UNIDO intended the $200,000 "promised"[76] in co-finance to be used for project management and M&E[77]. As most of the M&E was not carried out, most of the $200,000 promised by UNIDO remained unspent (Section 4.6.10: "Monitoring and evaluation").

Co-finance contributed to about 70% of the total funding in the Project and it was therefore an important indicator of the GOI's commitment to the current and future work on POPs, as well as being necessary for achieving many of the key outputs. The GEF allocated funding to this Project with the expectation that promised financial commitments (in-kind, cash) would materialise. However, there was no information provided by the GOI that showed how much of the $6,880,000 that was promised in co-finance, as well as $750,000 as 'seed money' to identify and evaluate the potential for post-NIP projects, had been spent (see ANNEX 1 on page 84) and on which objectives.

4.6.6.4 Financial reporting by UNIDO

Financial information on the Project was provided by UNIDO that covered 13 budget items for the period 2007 to 2011 (ANNEX 17, page 147). Expenditure totalled $2,997,082 which was 97.5% of the total GEF allocation to the Project of $3,074,700. Sixty-three percent of the Project funds were disbursed on the seven contracts (Figure 7). About half of the funds were disbursed in 2009 and about a quarter disbursed each year in 2008 and 2010 (ANNEX 17). At the end of the Project, 20.8% of the funds remained committed but undisbursed, and a further 2.5% remained unspent.

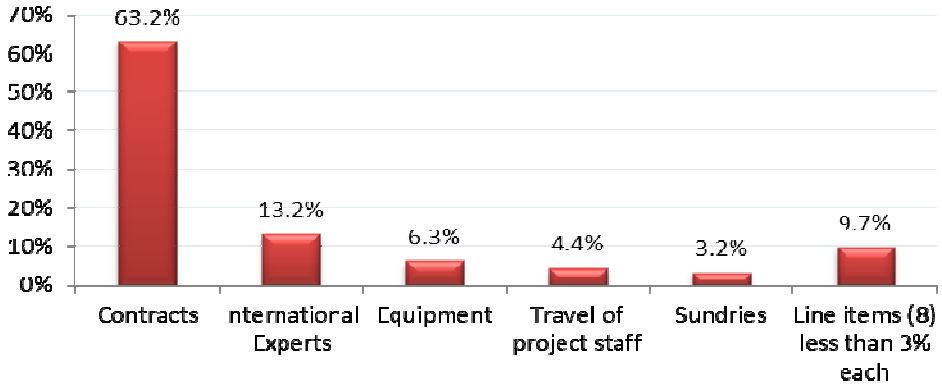

Figure 7: Allocation of funds in the Project

[75] Project Document page 56 to 60
[76] "Promised" is the term used in the Project Document
[77] Project Document page 60

4.6.7 Consultation

4.6.7.1 Stockholm Convention requirements

Many civil society organisations in India have undertaken monitoring programmes related to estimating levels of pesticides, and they have an interest in raising public awareness of environmental and health problems and potential solutions. Public ownership of schemes through active public participation is seen as vital by Parties to the Stockholm Convention, as such participation helps to reduce and phase out POPs chemicals and to develop safe alternatives. Stakeholder consultation is therefore an important aspect of the Convention compliance, particularly as India moves fully toward a market economy. UNIDO together with UNEP have implemented a global project to foster civil society involvement in SC implementation[78]. The NGO Toxics Link acted as a hub for South Asia in this project.

Article 7 of the Stockholm Convention states that Parties "*…must develop and endeavour to implement a [National Implementation] Plan for the implementation of its obligations under the Convention by consulting with national stakeholders in developing, implementing and updating Plans, and to endeavour to utilize and integrate these Plans in national sustainable development strategies*". The intent therefore is to have consultation at all stages of the Project.

The Project Document required India to "*…develop national and state policy, legal, regulatory and promotional frameworks to meet the Convention requirements*". The activities that were envisaged in this work included "*…an assessment of the opportunities for voluntary schemes to address the convention requirements, including cleaner production, ISO accreditation, eco-labelling initiatives, IPM and improved health awareness* [Output 1.3.3]". As a result of this assessment, India was required to "*…hold detailed consultations with legislative bodies and principal stakeholders to review and gain endorsement of the recommendations as a result of the assessment in the NIP* [Output 1.3.5]". The aim of the Project was to assess the role that voluntary schemes could have in assisting the GOI to implement better management procedures for POPs, and hold consultations on a range of issues with principal stakeholders as part of the process of gaining endorsement for the NIP.

Articles 9 and 10 of the Convention emphasise information exchange, public access to information and building of educational programmes facilitating public participation and awareness particularly amongst women and children who maybe most at risk. Public participation and ownership is seen as important for support of initiatives that reduce and phase out POPs chemicals. Stakeholder consultation was therefore assessed as a cornerstone of the Stockholm Convention.

4.6.7.2 Project requirements and results

The MOEF was required to establish schemes for public awareness and education in collaboration with the Ministries of Health, Agriculture, Information and Broadcasting, Human Resource Development and Department of Education and their respective development agency partners in providing informative and consultative materials to stakeholders. For example, the Agricultural Extension Network of the Ministry of Agriculture was seen as a suitable vehicle for the dissemination of awareness materials and education to farming communities. Other agencies such as FAO and NGOs could have helped MOEF to disseminate information to the target audience.

However, a website-based Information Management System or clearing house mechanism was not

[78] "Fostering Active and Effective Civil Society Participation in Preparations for Implementation of the Stockholm Convention" (GP/GLO/03/012)

established[79]. Output 1.4 required "*…a National Information Centre and determine appropriate arrangements for establishing an information network to provide public access to POPs information, consistent with Article 10 of the Convention at provincial level…*". This objective also required MOEF to provide information on the management and reduction of POPs to stakeholders in relevant industries [Output 1.4.1], health [Output 1.4.2] and State/local governments [Output 1.4.4]. These outreach activities were designed as a consultation and information tool. As these tools were missing, so too was the consultation.

Awareness of the Convention amongst stakeholders at national and state levels was raised through a series of ten workshops organized during the PDF-B phase[80]. Representatives from national, state and districts of all government departments viz. health, agriculture, electricity, power, municipal corporations, chemical and fertilizers as well as representatives from industry, non-governmental organizations, research and educational institutions attended the workshops held in Delhi, Vadodara, Pune, Bangalore, Hyderabad, Chandigarh, Bhopal, Kolkata, Trivandrum and Goa. The evaluation of the PDF-B project showed that consultation was a challenge for the GOI, and therefore the report recommended that more attention should be paid to consultation activities in the NIP project that followed. In general, the consultation work in the PDF-B phase was assessed as satisfactory.

The Project Document defines the main stakeholders[81] as the "*…Ministry of Environment and Forests, Ministry of Agriculture, Ministry of Health and Family Welfare, Ministry of External Affairs, Ministry of Chemicals and Fertilizers, Ministry of Urban Development, Department of Roads and Buildings, Ministry of [Road Transport and] Railways, Ministry of Water Resources, Ministry of Labour, the Central Pollution Control Board, the Department of Scientific and Industrial Research, the Chemical Group of CSIR Laboratories, the Industrial Toxicology Research Centre, and other relevant research centres/institutes as well as industrial Associations, NGOs, public and private enterprises and others*".

The evaluators summarised the activities and responsibilities for the stakeholders listed above (ANNEX 18 on page 150), as this helped to understand the reasons that they were considered as the main stakeholders in the Project Document.

These and other administrative organizations were required to perform functions under their respective jurisdictions to assist with the preparation of the NIP and to comment upon and endorse its recommendations. In order to identify and ensure the participation of key stakeholders, a preliminary directory of stakeholders was prepared as part of the PDF-B project. It was envisaged in the Project Document that the list of stakeholders would be extended[82] during the full Project to include other organisations for the development of the NIP and to ensure its effective and sustainable implementation.

Based on a review of the documentation provided by UNIDO and interviews conducted by the evaluation team, evidence was accumulated to show that consultation with the main stakeholders was with fewer than 20% of those listed in the Project Document and on page 150 in ANNEX 18. Moreover, the consultation was not ongoing over the term of the Project even though there may have been some contact originally. The evidence of limited stakeholder consultation came as a result of information obtained from several sources.

The evaluators requested an interview with personnel in the main stakeholder ministries, such as Ministry of Commerce. However, although meetings were scheduled twice with the Ministry of

[79] R. Gauba. 16 September 2010. Second round report to the Parties of the Stockholm Convention pursuant to Article 15. Section VI, Article 9, Q 27.
[80] ProDoc paragraph 164, page 49
[81] ProDoc paragraph 163, page 49
[82] ProDoc paragraph 86, page 18

Commerce, their spokesperson declined to meet with the evaluators because they said "*…the Ministry of Commerce knew nothing about the Project and POPs*". In the only meeting of the National Steering Committee[83] shortly after the Project Document was signed, the Ministry of Commerce was a participant. Ongoing and regular contact with the Project's activities was seen by the evaluators as important because of the turnover of staff that is characteristic of many organisations.

Other key government departments were also not regularly consulted, such as the Central Board of Excise and Customs, State departments that are responsible for legislation and enforcement in their territories, the Ministry of Urban Development, the Ministry of Road Transport and Highways, the Ministry of Railways, the Ministry of Water Resources, and the Ministry of Education.

Institutes and Associations were not consulted on a regular basis, such as eight CSIR laboratories, the National Institute of Oceanography, Industrial Associations (at least 4 of them), the Indian Council of Medical Research, and the All India Institute of Public Health and Hygiene. These organisations have a range of responsibilities and operations that could have added value to the Project (See ANNEX 18).

Several NGO's (see list in ANNEX 4 on page 102) reported on the lack of consultation. One of the NGOs suggested more formalised consultation through membership of the National Steering Committee[84]. The NGOs recalled that UNIDO's Project Coordinator was in the past the chairman of a pesticide company (HIL) and that such companies do not have a record of consultation with civil society.

The NIP Project seemed to be an exception to the work in India by the government that normally included the NGOs. For example, many of the NGOs reported that they had ongoing consultations with the government on a range of issues. The GOI had invited them to participate as the GOI saw that they could add value. As evidence of their involvement, one of the NGOs provided a list of ongoing consultations with the GOI on bio-medical waste management (member of the Peer and Standards review committee of CPCB), e-waste rules (invited by MOEF as a committee member to finalise the roadmap to waste management; invited to help draft the plastic waste management rules), and on chemicals & health (invited to help set standards for lead in household paints, companies declare lead-free paint, promotes global initiatives on paint that are adopted). The NGOs demonstrated that they were actively involved in other programmes with the GOI and MOEF, and they regretted that they were actively excluded by UNIDO and MOEF from participation in the POPs project.

The Project management provided reasons for limited consultation:

- The Industrial Toxicology Research Centre was not engaged in the Project even though ITRC wrote the Phase B Project on POPs, because it was reported by MOEF that the new ITRC Director wanted to focus on other issues rather than POPs.
- The focus of the Project was to obtain primary data on POPs contamination and emissions, and therefore only the sub-contractors of MOEF, NEERI, CPCB, NIIST and HIL were consulted. These organisations conducted surveys and held awareness workshops on POPs that were a form of consultation.
- Forty Awareness Workshops had been conducted by CPRI in the course of 2008 and 2009, and some training had been conducted on DDT by MOEF and HIL in relatively few

[83] 18 December 2007

[84] Toxics Link. 2006. International POPs Elimination Project. Fostering Active and Efficient Civil Society Participation in the Preparation for Implementation of the Stockholm Convention. Country Situation on Persistent Organic Pollutants (POPs) in India. Report prepared for IPEN, UNIDO, UNEP, GEF, UNITAR and the Swiss Agency for Development and Cooperation. Page 36; 57 pp

Indian States. The Project management acknowledged that these were not sufficient to significantly raise the awareness of POPs in India.

- The Project Coordinator and MOEF maintained that consultation would take place once the NIP had been approved by the MOEF and uploaded to a website for public comment. The evaluators noted that the main consultation was scheduled after the Project had been completed (February / March 2011); after the end of the one year extension (31 December 2010); and 6 weeks before the GOI had intended to submit the NIP to the Stockholm Convention.
- MOEF advised meeting participants on 28 January 2011 that experts from NEERI, NIIST, CPCB and CPRI that had contributed text to the draft NIP would have the opportunity to comment on the draft NIP at the same time as other stakeholders. The evaluators presumed this would be in February / March 2011. Consultation with experts in parallel with other organisations had become necessary because of the limited time available for consultation on the draft NIP before it is submitted to the Stockholm Convention.

Activities in the Project required the participation of a broad range of stakeholders. Inventories, for example, required enterprises, local authorities and others to provide and share information. Stakeholders' were required under the Project Document to review and endorse various stages of the development of the NIP and its Action Plan. Furthermore, activities were designed so that draft findings were to be taken into account by principal stakeholder groups, who would review and endorse them *before* being included in the NIP. MOEF was required to conduct a detailed review of the draft NIP and Action Plans with representatives of the principle stakeholder groups. As a result of this review, the MOEF was required to correct, amend and modify the draft NIP to take into account the review. Following this review, the MOEF was required to hold meetings with principal stakeholders at the national and state levels, to introduce and gain endorsement for the NIP, its Action Plans and priority actions. Following both review periods, the MOEF was required to submit the NIP to the relevant Ministries for endorsement.

The lack of consultation from the beginning of the Project was considered by the evaluators as a risk that jeopardizes adoption of the NIP. Not involving NGOs in the NIP development process has alienated NGOs, which considerably increases the risk of harsh criticism of the NIP and raises the risk that they will not be in a supportive frame of mind to endorse the NIP.

UNIDO and MOEF undertook consultations that were limited to a narrow range of stakeholders, compared to the list of stakeholders that were envisaged in the Project Document. As a result of the limited consultation, the Project was not able to fully benefit from stakeholder knowledge in locating contaminated sites and quantification of POPs; collecting and storing data on POPs; awareness raising on POPs issues through websites, industry association linkages to their members, leading to more widespread understanding of environmental and human health problems caused by POPs; innovative methods for the improved identification and management of POPs contamination through surveys; research on accelerating POPs degradation; improvements for the consideration of the GOI related to the policy, strategy, plans and regulations for reducing the impact of POPs; assistance to train workers in production, technology, labour safety, hygiene, health and environmental protection; improved customs control of POPs through profiling of equipment and nomenclature; setting, validating, monitoring, and pursuing enforcement of POPs initiatives; technological developments that could help the industry to reduce emissions of POPs; promotion of biomedical research and alignment of national health priorities; the development of economical preventatives and interventionist control measures for POPs; and other benefits listed page 150 in ANNEX 18.

As an example of the potential of the Associations to provide information on POPs, the Confederation

of Indian Industry (see ANNEX 18) has established a "*Centre of Excellence for Sustainable Development*". CII communicates with "…*thousands of members*…" by website and using a publication called "*Sustainability Tomorrow*". Industries that have registered with CII also have access to this and other CII publications as well as "*Environmental Regulations Update*". CII focuses on finding technically and economically feasible alternatives for chemicals that cause environmental and human health problems, the R&D effort required, and sensitizing its members to problem chemicals. CII and IRRC conducted national awareness raising workshops in 2002 and 2003 during the PDF-B project, in collaboration with the author of the report ITRC. However, in the current Project they were rarely consulted and as a result they were not sure about progress on the NIP.

The opportunity to reach SMEs via Associations was lost in this project, which becomes evident when the NIP reports that the effort was not made to reach out to SMEs in a country the size of India because it was "…*too difficult*…". However, the problem was not so much the "*difficulty per se*", but rather there was no methodology developed to survey a limited but statistically-relevant number of SMEs, and then to use statistics to extrapolate this information to estimate the POPs in SMEs. Such methodological developments were missing in this project, and therefore "…*difficulties*…" were seen as insurmountable.

The evaluators concluded that the Project did not consistently and methodically involve the relevant stakeholders through their participation in the Project's design, implementation, monitoring and evaluation. The Project did not consult and make use of the skills, experience and knowledge of a wide range of appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the design, implementation and review of project activities. The perspectives of stakeholders were not taken into account that would be affected by decisions, those that could be affected by the outcomes and those that could contribute information or other resources to the process. In particular, there was no evidence of consultation by MOEF with relevant vulnerable groups such as women and the under-educated sectors of society, which are two sectors highlighted in the Stockholm Convention as being particularly vulnerable. In summary, consultation was too little and too late.

4.6.7.3 Review of the draft NIP

The Project Document requires the draft NIP to be reviewed by the stakeholders prior to endorsement and submission to the Stockholm Convention. The PC described the process of review in an email[85] to the UNIDO Evaluation Group: *The MOEF will approve the NIP before deciding on the date of the Steering Committee meeting and circulating it to all the members of the Steering Committee for their examination and comments. Usually three weeks' notice is given for convening the Steering Committee meeting. After the Steering Committee's approval, the comments of the various members and ministries would be incorporated in the draft document as deemed necessary. Thereafter, this would be processed for stakeholder endorsement and large scale consultation by MOEF. This process, according to the estimate of the officials of the MOEF, would take about three months. The MOEF officials aim to submit the NIP to the Stockholm Convention well in time for the COP 5 meeting in April 2011.*

The proposed review design takes into consideration further time for comments from CPCB, CPRI, HIL, NEERI and NIIST, as the Project leaders from each organisation are members of the National Steering Committee. The MOEF stated, however, that CPCB, CPRI, HIL, NEERI and NIIST will have the opportunity to add comments at the same time that other stakeholders are providing comments,

[85] Dhua, SP. 2011. Email to Ms Thuy Thu Le (EVA, UNIDO) 8 January 2011

when the draft NIP is made public[86]. CPRI, for example, informed the evaluators that they have not seen the draft NIP that has been edited by the MOEF's editor and submitted for MOEF approval. CPRI said they wanted to make changes to the text as it was currently written, as their detailed work in the Annex needed to be summarised more clearly in the NIP. It is likely that experts from CPCB, CPRI, HIL, NEERI and NIIST would share the same view as CPRI staff.

4.6.8 Document control

Most documents were available and stored electronically by UNIDO. Some documents such as the correspondence held by Procurement were made available to the evaluators in hard copy for review only in Vienna, which was acceptable for the evaluation.

Few of the electronic files that the evaluators received from UNIDO were dated, named and stored using procedures that could identify changes to documents as a result of a new versions or updates[87]. Documents sourced from outside the Project were not distinguished from documents supplied by organisations contracted in the Project. There was no hierarchical use of folders for storing related electronic files together e.g., all the Progress Reports for a single Contract. Most of the reports did not have on the front cover the title, institute, contract number, date of report and version number. The criteria for naming a report as "*Progress*" or "*Final*" varied between the institutes e.g. NIIST did not write "*Final*" to distinguish it from previous reports even though it was the final report, whereas other contractors wrote "*Final*" on the cover page.

The procedures for identification and control of the Progress/Final Reports submitted for payment were clearly defined in each contract. However, most of the Progress Reports received for the evaluation and for payment were not named in a way that showed the relevance of the reports to the contractual requirements, and the version of the report.

It was therefore difficult for the evaluators and project management to differentiate old from newer versions of reports, and to manage reviews of the reports. This may have been another reason for older versions of the Annexes to the NIP being submitted for evaluation, rather than the most recent versions.

4.6.9 UNIDO's supervision and backstopping

4.6.9.1 Contracts

The contracts assigned work in the Project Document to individual contractors. All of the contracts contained objectives that were outside of the expertise of the contractor, and duplication of objectives between contracts. As a result, the responsibility for completing particular objectives in a contract was not accepted by the some contractors. Conversely, a contractor claimed that work by other contractors contributed toward their work, which created a misunderstanding in responsibilities between contractors. It also meant payment for work had been made to more than one contractor for the same outputs, which did meant that UNIDO was paying twice for the same work. For example:

- CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by providing legal and regulatory frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of unintentional production of POPs [1612 and 1613]

[86] Preliminary Report of the Evaluation of the NIP Project in India. New Delhi. 28 January 2011.

[87] A minor change to a single word the oldest document in a folder with other files will cause Microsoft Explorer to list it with the latest date, leading to an erroneous selection of this version as the most recent.

- CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by developing regulatory, administrative or other schemes to promote the use of BEP in new sources [1612 and 1613]
- CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by developing regulatory, administrative or other schemes to promote the use of BAT / BEP in existing sources of uPOPs [1612 and 1613]
- CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by assessing the social and economic impacts of releases of uPOPs [1612 and 1613]
- CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by developing strategies for uPOPs reduction and elimination in India [1612 and 1613]
- CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by holding meetings to raise stakeholder awareness to gain their support for the NIP [1612 and 1613]

Therefore, the contracts were not a firm footing on which to build a NIP Project (see also Section 4.6.2.2 "Lack of contract clarity" on page 52; and ANNEX 8 on page 122).

Formal agreement on the contracts took about a year for most of the contracts, which delayed the start of the two year Project significantly. UNIDO did not ensure that the contracts were legally certain with no duplicated objectives and clearly assigned responsibilities. UNIDO's ability to supervise and backstop in this Project was constrained by the poorly formulated Contracts.

4.6.9.2 Supervision

Supervision is carried out by the UNIDO Project Manager based at UNIDO HQ in Vienna. The Project Managers changed about half way through the 3-year term. This lack of continuity in management from the beginning to the end of the Project, coupled with insufficient communication between the outgoing and incoming managers, was assessed as a factor that contributed to insufficient attention being paid by the PM to Project performance. There was no Turnover Report written by the outgoing manager who was re-assigned to another UNIDO project. The opportunity was missed to identify deficiencies in the Project in a Turnover Report from one manager to another.

UNIDO training in project management is dependent on the Project Manager finding time to undertake courses on management. The workload of the Project Manager combined with travel time to visit projects in different countries left insufficient time for training.

UNIDO did not use modern project monitoring and management procedures to monitor progress in the contracts (see Section 4.6.10: "Monitoring and evaluation" on page 67).

UNIDO organised periodic reviews of the work, which consisted of the contract team leaders providing information to each other on work progress. These meeting reviewed the technical content of the information and did not check whether or not an output had been delivered. Occasionally, the meetings would be joined by the PM or a technical expert from outside of the team. These meetings did not identify problems related to deficiencies in outputs to the contractors. Independent technical review team was not established, as required in the Project Document, which led to limited and ineffective scientific monitoring of Progress Reports toward completing the objectives and deliverables. Section 4.6.6.1 "Procedures for disbursement of funds" described how Progress Reports were increasing delayed as the Project time increased.

UNIDO did not ensure that annual Project Implementation Reviews (PIRs) and a Mid-Term evaluation were undertaken (see Section 4.6.10 "Monitoring and evaluation" on page 67).

4.6.9.3 Guidance and assistance to contractors

The technical and scientific guidance by UNIDO was not adequate, which resulted in the contractors collecting insufficient primary and secondary data for the inventory on POPs. UNIDO provided funds for equipment that provided high resolution analysis of each POPs sample, rather than using bio-assay techniques that would have provided reliable, simple and low cost determinations of the presence of POPs (see Section 4.4.3: "Cost-effectiveness of interventions" on page 42).

UNIDO failed to provide guidance on statistical analysis methods and appropriate methodologies to estimate quantities of POPs in sectors that a difficult to analyse, such as the SME sector. It should have been possible to take representative samples of POPs from industries in the SME sector, and then extrapolate from relatively few but statistically-meaningful samples to estimate the quantities of POPs in this sector. However, UNIDO did not provide such guidance and did not assist the contractors to use statistics and to develop appropriate methodology.

UNIDO failed to assist its joint executing partner MOEF to undertake the work that was contracted to MOEF. MOEF occasionally presented general information to the group meeting on legislation. MOEF did not present detailed information on its work to the other contractors in the group. The first report submitted by MOEF was 17 months after the deadline in the Contract. UNIDO did not work with MOEF to examine the options for undertaking work on the objectives, such as sub-contracting work on modelling of POPs to a university in India. The lack of delivery at this stage of these outputs was attributed to insufficient staff that were sufficiently experienced to dedicate time and effort to work on legislation and policies affecting POPs. MOEF received sufficient funds to employ staff for this Project, but did not do so. UNIDO did not assist the MOEF to identify and implement solutions to promote the timely delivery of MOEF's outputs. As a result, the majority of MOEF's outputs were categorised in the evaluation as "*yet to be delivered*".

4.6.9.4 Payment procedures

UNIDO did not insist that the contractors provide all the information on each milestone that was specified in the Contracts (see Section 4.6.2.5: "Payments to contractors" on page 53). Contractors promised but did not deliver all the outputs. UNIDO disbursed funds for work that was not in accordance with the performance requirements in the contracts. The lack of diligence in this aspect by UNIDO contributed to many of the outputs not being delivered at the end of the Project.

4.6.9.5 Consultation

Civil society organisations were excluded for participation in the development of the NIP. This action reduced the ability of the Project to significantly increase the awareness of POPs, which would have assisted the contractors in their surveys (see Section 4.6.7 on page 60).

4.6.9.6 Staff continuity

The continuity of staff in UNIDO presented problems for the continuity of the Project. When the PMs changed about half way through the 3-year Project, there was no turnover report from the outgoing manager to the incoming manager. Turnover Reports are designed to highlight the strengths and weakness of the Project, thereby orientating the incoming manager to the main problems so that they can '*hit the ground running*'. The lack of a Turnover Report by the outgoing manager stopped backstopping and supervisory information being passed to the incoming manager.

4.6.10 Monitoring and evaluation

GEF-funded projects and programmes on POPs are subject to M&E. Each project is required to include impact or outcome indicators, with baseline information developed during the first year of implementation. In order to determine the value of the GEF interventions in the POPs focal area, the

GEF evaluation office uses programme-level indicators to monitor the overall performance and outcomes/impacts of activities. The GEF considers places importance on disseminating the lessons learned at the portfolio level and to exchange experiences between clusters of related projects in the POPs focal area.

The Project Document proposed an in-kind budget of $280,000 for project review, monitoring and evaluation ($130,000 from India; $150,000 from UNIDO)[88].

4.6.10.1 Annual Project Implementation Reviews and Mid-Term Evaluation

UNIDO's Vienna and the Field Office staff were required to prepare annual PIRs. The Project Document allocated a budget of $30,000 for two PIRs[89], but because the Project was extended for one more year, three PIRs would be expected. The evaluators found no evidence of any PIRs.

The Mid-Term Evaluation, which was one year after the start of the Project. The evaluators found no evidence of a Mid-Term Evaluation. The Mid-Term Evaluation was due to be completed in November 2008. It was not itemised separately as it was part of a package of activities that also included a verification workshop for inventories, strategies and action plans. The package totalled $90,000.

4.6.10.2 Terminal Evaluation

UNIDO was required to arrange an independent international Terminal Evaluation of the Project. The Parties responsible for the Terminal Evaluation were defined in the Project Document as UNIDO, the National Steering Committee and an independent international consultant. The budget for the evaluation was set as $55,000 (GEF $15,000 + GOI $15,000 + UNIDO $25,000).

The cost of the Terminal Evaluation was 65% of the budget of $55,000. Approximately $19,000 of the budget remained unspent.

4.6.10.3 M&E conclusions

According to the Project Document, M&E was to be assisted by 1) the National Steering Committee; 2) a Technical Coordination Group to oversee the implementation of the NIP Project; and 3) the establishment of a National Expert Review Group who would report to the National Steering Committee. The Project Document envisaged the National Steering Committee and the contractors using the results of PIRs and Mid-Term Evaluation to modify and improve the implementation project to improve the delivery of outputs in the Project. These committees and groups were not effective and therefore did not contribute significantly to the M&E. There was also no opportunity to use the results of the PIRs and Mid-Term Review to correct any deficiencies in the Project.

There were a number of deficiencies in the M&E implementation in this project, including ineffective review committees, a lack of modern monitoring tools, and no PIRs or Mid-Term Evaluation. The lack of most of the M&E activities meant that the majority of the M&E co-finance for these activities was not used. The M&E procedures implemented by UNIDO and MOEF in this Project were not consistent with the M&E procedures applied to other GEF projects.

[88] Project Document P60
[89] Project Document P62

4.7 SUMMARY OF ACTIVITIES, THREATS/RISKS AND OUTCOMES

This evaluation has described a range of activities that has been carried out toward the goal of the Project, which is a NIP endorsed by the GOI and submitted to the Stockholm Convention. The key activities are shown in Figure 8, together with drivers and assumptions that deliver intermediate states, threats/risks that should be mitigated if the outcome is to be achieved.

Two of these Assumptions were also Drivers: 1) That well-conducted NIP work and reporting would lead to a range of valuable post-NIP projects and 2) That commitment from the Institutes (NEERI, NIIST, CPCB and CPRI) would open up the possibility of further work on POPs. Section 4.3.5 reported limited success in the post-NIP projects, and the prospects of further work for the Institutes.

At the time of the evaluation, the Project was ongoing and some of the Outputs were "*yet to be delivered*", or they were "*partly delivered*" (see ANNEX 7 on page 107). These "*partly delivered*" outputs are equivalent to Intermediate States. For example, the NIP was "*partly delivered*" because it had not yet been approved by MOEF and endorsed by the GOI; there had been some consultation with stakeholders, but it was limited in time and addressed only some of them; some methodologies had been developed but not for all major sectors, such as the SME sector which was completely omitted as it was considered "*too difficult*"; and other Intermediate States shown in Figure 8.

There were nine threats/risks identified that could prevent the desired outcome being achieved. For example, legislation on POPs is lacking which increases the risk that investors in BEP/BAT will not want to invest in post-NIP projects in India; the NIP has not been publicised for consultation, and there is a risk of rejection by some stakeholders; and Custom checks and enforcement are weak so there is a risk that equipment containing POPs continues to be imported.

Many objectives have "*yet to be delivered*", such as a "*Management Information System*", which is required by the Project to be established by MOEF for storing inventory information on POPs. This system will manage, update and provide guidance on the use of the inventory of POPs. Creation of a website will also increase the awareness of POPs and issues related to the safe handling, transport, and environmentally-sound management of POPs. An assessment of the institutional responsibilities and gaps in the regulatory framework will help to focus effort on POPs legislation, monitoring of POPs, enforcement, policies, strategies and institutional structures affecting POPs management.

Although India was encouraged to develop post-NIP projects in parallel with the development of the NIP, the lucrative post-NIP projects may have delayed completion of the NIP and other activities described above, as almost the same staff in India were involved in the NIP and post-NIP projects. Moreover, the success with the post-NIP projects shows that they were not dependent on prior completion of the NIP.

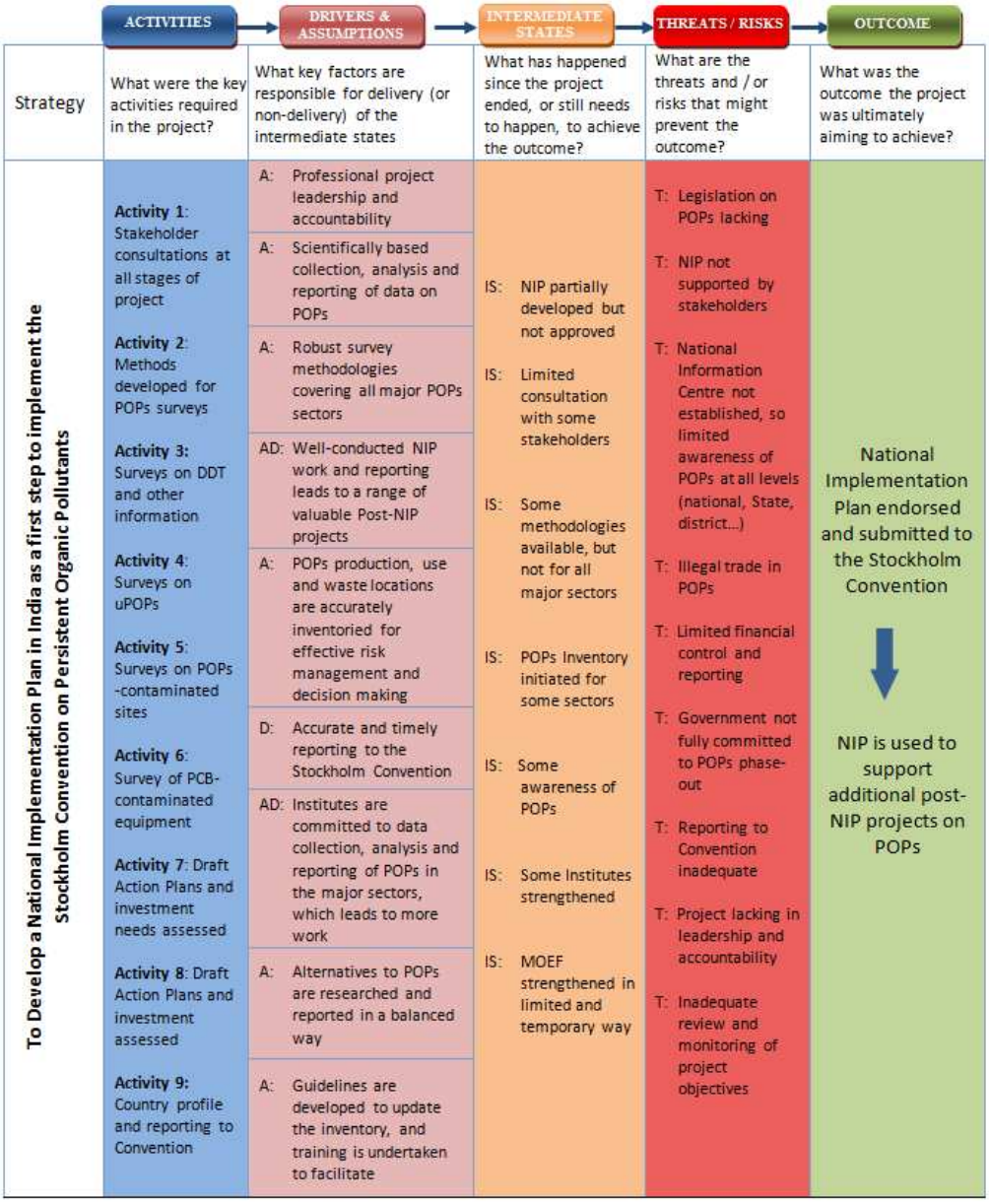

Figure 8: Summary of Activities, Drivers/Assumptions, Intermediate States, Threats/Risks that could result promote the achievement of the desired Outcome

4.8 OVERALL RATING OF PROJECT

Table 11: Overall rating of Project GEF/IND/07/004

Criterion (See Annex 2 of TOR for details)	Evaluator's Summary Comments	Evaluator's Rating
1. Project results (overall rating)		**U**
Design	The Project Document did not encourage India to explore the type of equipment that could be used for rapidly and cost-effectively analyzing POPs for the inventory (Section 4.4.3) ; the Project Document did not emphasis the use of statistics for determining POPs from a meaningful sample of sources (ANNEX 15 in "Statistical Analysis"); the Project Document did not highlight the importance of robust survey methodologies, resulting in key sectors not being sampled and simply omitted from the inventory e.g. SMEs, open burning of wastes (Section 4.6.9.3; and ANNEX 15); the Project Document did not have a sufficiently detailed Logical Framework to facilitate monitoring of evaluation of progress. These factors contributed significantly to difficulties in India compiling sufficient data on the inventory.	**U**
Relevance[90]	Relevant in the GEF operational programmes, a step toward POPs reduction and elimination, NIP development, UNIDO's thematic priorities, consistent with other assistance on governance and chemicals provided to India (Section 4.2, pages 29 to 32)	**S**
Effectiveness and impact[90]	Outputs yet to be delivered, delivered outputs of low quality, good replication impact, capacity building insufficient in MOEF, capacity building sufficient in some participating Institutes (Section 4.3, pages 32 to 41)	**MU**
Efficiency	Significant output delays, inadequate project management, work plans poorly developed and implemented, poor cost-effectiveness (Section 4.4, pages 41 to 45)	**U**
2. Ricks to the sustainability of project outcomes (overall rating)		**MU**
Financial resource risks	No financial limitations that would prevent the outcome of NIP endorsement and submission to the Stockholm Convention (Section 4.5.1, page 45)	**L**
Socio-political risks	Lack of consultation weakens prospects for NIP endorsement and long term support for activities on POPs (Section 4.5.2, page 46)	**MU**
Institutional framework and governance risks	Absent altogether or insufficient when present to influence POPs identification, management, reduction and elimination (Section 4.5.3, page 46 to 48)	**U**

[90] **Relevance** and **Effectiveness** will be considered as critical criteria. The overall rating of the Project results **may not be higher** than the lowest rating on relevance and effectiveness. Thus, to have an overall satisfactory rating for outcomes project must have at least satisfactory ratings on both **Relevance** and **Effectiveness.**

Criterion (See Annex 2 of TOR for details)	Evaluator's Summary Comments	Evaluator's Rating
Environmental risks	None that would eliminate the Project, and some that would even promote further work and put pressure on the MOEF to work on legislation (Section 4.5.4, pages 48)	**L**
3. Project coordination and management (overall rating)		**U**
M&E design	PIRs, Mid-term Evaluation and Terminal Evaluation. M&E assisted by a National Steering Committee; Technical Coordination Group and a National Expert Review Group (Section 4.6.10, page 67)	**S**
M&E Plan implementation (use for adaptive management)	Procedures for project monitoring, contract formulation, project implementation and project review (Section 4.1, pages 28 to 29). These deficiencies contributed to project delays and failure to achieve the outcome of the endorsed NIP. No PIRs, no Mid-term Evaluation, modern M&E tools not used by contractors and project manager and Project Coordinator. National Steering Committee met only once; Technical Coordination Group and a National Expert Review Group merged and not effective at M&E. Terminal evaluation undertaken. (Section 4.6.10, page 67)	**HU**
Budgeting and funding for M&E	Total budget expenditure was estimated to be $36,000 from an overall budget of $175,000. The budget for M&E was adequate but 80% remained unallocated.	**S**
4. Processes that affected the attainment of the results[91]		**U**
Preparation and readiness for project	Poorly prepared as evidenced by delays agreeing contracts, organizational delays, delays installing equipment and training staff, lack of enabling legislation (Section 0, pages 65 to 65)	**U**
Implementation approach	Poor project implementation: document control (Section 4.5.5 page 49) , contract formulation (Section 4.6.6, page 57), stakeholder consultation (Section 4.6.9.5, pages 60 to 64), technical review (Section 4.6.9, page 65), performance assessment and disbursements (Section 4.6.9.4, page 67) and financial diligence (Section 4.6.6, pages 57 to 60)	**HU**
UNIDO supervision and backstopping	Untimely and limited follow up on contracts and limited support on resources and options to encourage output delivery from some organisations (Section 4.6.9, pages 65 to 67)	**U**
OVERALL RATING		**U**

For risks that are categorised as 'financial', 'socio-political', 'Institutional framework and governance' or 'environmental', the following rating shall be provided:

Likely (L): There are no or negligible risks that affect this dimension of sustainability.

[91] GEF. 2008. Guidelines for GEF Agencies Conducting Terminal Evaluations. GEF: http://www.thegef.org/gef/node/1905

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 lowest rated dimension. For example, if a project has an “unlikely” rating in any dimension, its overall rating cannot be higher than “unlikely.”

For all other categories:

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.

5 CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNT

5.1 CONCLUSION 1: CONTRACT FORMULATION

The contracts were written in a way that created uncertain lines of responsibility; they did not address sufficiently conflict of interest and they contained mathematical and typographical errors that left their legal basis questionable. Some of the objectives from the Project Document in some contracts were outside of the expertise of the contractor, such as those on legislation which are within the competency of MOEF and not the contracted institutes. Some objectives were duplicated between contracts, which led to misunderstandings on responsibility.

There were delays in signing the contracts e.g., UNIDO's executing agency partner MOEF was not able to receive and disburse funds, which should have been a requirement for partnership. The contracts required 6-19 months for signature, because of discussions on scope, price and financial administration, which was too long given that the Project was originally 24 months and extended to 36. When formulating the contracts, the total time to complete the work failed to consider the initial time needed to agree on the specific contractors, to train staff and to purchase equipment, all of which became a major reason for the delay in delivering some of the Project outputs from the Institutes and CPCB.

HIL was responsible for reporting on the use of DDT and its alternatives. There was limited information on alternatives to DDT for vector control, particularly on the costs of alternatives and their use in India. The costs of DDT production and use were not compared on a like-for-like basis with the cost of alternatives to DDT in the NIP Report, including the expected costs of environmental amelioration for soil and water contamination as a result of the use of DDT. These and other deficiencies in HIL's section of the report may have been due to HIL's commercial interest in the continued production of DDT rather than in the implementation of alternatives that would compete and even replace DDT.

Because of these deficiencies in the contracts, they were considered to be a factor that contributed toward many of the outputs being categorised as "*not yet delivered*".

5.2 CONCLUSION 2: PROJECT MANAGEMENT

The Project's management, coordination and implementation were insufficient to ensure on-time delivery of most of the deliverables, even when 33% more time was granted to complete the Project. A number of factors contributed to this, including multiple project managers, management based in Vienna rather than in India, inadequate review of work and feedback to contractors, a lack of modern management procedures that resulted in outputs being delivered late, missing annual financial audit information when payments were approved, and poor document control. The Logical Framework in the Project Document was insufficiently detailed. The project management did not construct a more useful Logical Framework and instead used the Convention Guidelines and progress in other developing country NIPs, which were inappropriate tools to measure progress.

The procedures and equipment that were used to establish the inventory on POPs in India were not the most cost-effective and efficient at the time the Project commenced. The type of equipment purchased analysed to a high level of accuracy but took a long time to analyse each sample, which was not required when determining the presence or absence of POPs for an inventory. This approach resulted in few samples over a long period of time, and an inventory that was still classified as 'preliminary' seven years after the Preparatory Project had achieved a similar standard of inventory. To make progress on an inventory of POPs in India a more efficient approach to developing the inventory could be implemented. Bio-assay methods, for example, can analyse as many samples in

one week as the NIP Project analysed in three years. Bio-assay methods could help to quickly and efficiently build (fewer staff, less equipment cost) a comprehensive inventory of POPs as a basis for further post-NIP projects.

Statistical methods that estimate POPs in large but important industrial sectors e.g. SMEs, were not used in this project. SMEs were reported as being "*too big and too difficult*", so they were not analysed at all. There were other sectors that were similarly dismissed, and that are also important as sources of POPs. A lack of methodology should not be used as an excuse for not obtaining information on POPs from important sectors. Appropriate methodology that incorporates statistical analyses e.g. number of samples needed to overcome variation in the data, would be necessary for estimating POPs in sectors that are difficult to sample.

Document control was inadequate, which led to difficulties updating and editing documents, and in supplying the latest version of documents for the Terminal Evaluation.

5.3 CONCLUSION 3: CONSULTATION

The Stockholm Convention requires Parties to consult with stakeholders throughout the development of the NIP, including consultation with relevant ministries and civil society organizations, in order to facilitate the development, implementation and updating of NIPs.

There was evidence, however, that the consultation process in this project was limited to fewer than 20% of those listed in the Project Document and was infrequent and discontinuous. Consultation was undertaken with some key Ministries, but rarely with the Ministry of Health, many state authorities, representatives of industries and civil society organisations. This eliminated the opportunity to make use of their skills, experience and knowledge during the development of the NIP. There is a risk that the NGOs might not support the NIP because some of them felt they had not been sufficiently consulted by UNIDO and MOEF during the development of the NIP, which might reduce stakeholder support for its long term objectives. In particular, there was no evidence of consultation with women's groups and groups involved in the health of children, and that consultation was ongoing throughout the development of the NIP, which was contrary to the requirements of the Stockholm Convention.

5.4 CONCLUSION 4: TECHNICAL REVIEW

The UNIDO and MOEF procedures that were put in place to monitor and review project progress were unfocused, untimely and inadequate. MOEF did not establish purposeful committees that met on a regular basis and that produced clear meaningful reports that would have assisted in coordinating and managing the Project. The reviews did not spend time reviewing progress on each of the objectives as specified in the Project Document. Reviews of the NIP work were carried out in meetings comprising of the heads of each of the teams and the PC, making it difficult for peers to criticize each other's work. Towards the last three months of the project, at least two experts were involved in reviewing the NIP, in collaboration with the heads of each of the teams and the project management. At the time of the draft NIP evaluation, there were many outstanding issues related to the science, misleading statements, errors of omission, factual errors, typographical errors and errors of logic which collectively undermined the work that had been undertaken on the NIP by the various teams (see Annexes 11-15 for examples). Given these outstanding issues, it was difficult to determine the value of the work of the experts to improving the quality of the NIP.

The reviews of planning, progress and financial reports were infrequent and did not provide sufficient guidance on work that needed to be completed. The Committees that were established did not carry out their mandate and served little purpose. The National Steering Committee met only once at the

beginning of the Project and therefore did not 'steer' the Project. The Technical Coordination Group was not established, as required in the Project. Instead, the Project Coordinator met with leaders of the Contracts on an "*as needed*" basis. Most of the work in the Project was carried out in the last year during the extension period.

The technical reviews failed to detect that the survey methodology was inadequate to sample POPs from a range of known POPs sources widely distributed in India; they did not employ statistical analyses of the data in order to assist with estimating POPs; they did not facilitate the development of a satisfactory inventory database, even though this was one of the key outputs of the Project; and they failed to ensure that a website as part of an Information Management System was established to promote awareness and to manage the data in the inventory.

The work of MOEF was not discussed in group meetings as often as the work of the other contractors. MOEF's contract included work on legislative gaps, institutional gaps, the website and an Information Management System. The lack of a website on POPs eliminated the opportunity to improve the awareness of POPs. The lack of a review for important activities such as the website and the legislative effort in the Project could have led MOEF to consider them less important than other objectives. MOEF's only information submitted for payment was in early December 2010, which was more than one year late and 3 weeks before the end of the Project. Two further payments were not made during the term of the MOEF's contract as the information has not been provided by MOEF.

The Technical Review by external experts did not thoroughly check the Project progress and scientific integrity, and provide feedback on these aspects to the contractors. An independent technical review team was not established as required in the Project Document, which led to limited and ineffective scientific monitoring of Progress Reports toward completing the Project objectives and deliverables and the quality of the Project results.

5.5 CONCLUSION 5: INSTITUTIONAL STRENGTHENING

Institutional strengthening was one of the main outputs of the Project. This was assessed as adequate for NEERI, NIIST and CPRI, but inadequate for MOEF and CPCB.

Short-term, inexperienced but well-qualified junior level staff were employed by MOEF toward the end of this Project by the Ministry, whose institutional capacity was briefly strengthened as a result. The fact that it was brief meant also that it was not sustainable. The institutional capacity of MOEF was not sufficiently strengthened as a result of this Project. This was because the Project Coordinator was from UNIDO and not MOEF, whereas for many other Projects MOEF had its own Project Coordinators. This was a lost opportunity for building the capacity of MOEF for follow up work on POPs after the conclusion of the Project. The UNIDO Project Coordinator was engaged part-time on the Project as he was also involved in a regional project as Regional Coordinator of a pesticide reduction programme covering 16 countries. The NPD at MOEF also had other key responsibilities as part of meeting the requirements of the position in the Ministry. The Project therefore competed for the attention of the PC and the NPD amongst a range of other activities that required their attention. UNIDO failed to support MOEF as its counterpart executing agency when MOEF did not perform to the standards expected.

Strengthening of the MOEF would have increased the prospects for work being completed in the contract on Legislation, policy implementation and enforcement of POPs. In addition, a website and Management Information System may have been developed, which would have assisted MOEF to communicate and consult with stakeholders on POPs.

CPCB reported insufficient staff and equipment as dioxin samples ready for analysis had to wait in line for up to a year before they were processed, because of CPCB's existing commitments to routine

collection and analyses of samples of air and water contamination for other chemicals. CPCB staff and equipment capacity were insufficient for this project. Notably, CPCB reported that it intended to increase both staff and equipment from its own funds from 1 April 2011. Increases in staff and expenditure from their own budgets had also taken place in NEERI and CPRI.

5.6 CONCLUSION 6: FINANCE

UNIDO's executing agency partner MOEF was not able to receive and disburse funds, as it was reported that the funds would go into a common government coffer and remain difficult to claim for a particular project within the MOEF such as the one on POPs. As MOEF was not able to agree to a contract with UNIDO, the Project was charged $25,000 in administrative fees by HIL to administer financial transactions in the contract on behalf of MOEF. HIL's administrative fee paid was not good value for the Project as apart from the signature of the project it was used to disburse funds only for the transaction of a short report in the final month of the Project, at a cost of $25,000 to the Project that otherwise would have been spent on the Project.

The procedures for agreeing payments were divided between Vienna- and India-based personnel, with each having a different understanding of the sequence and steps. The result was that payments were approved for insufficient work, on the assumption by the PC and PM that the next version of the Progress Report would be more complete that the previous one. Annual audited financial reports were required for payment but were not submitted. Final audited financial reports were submitted by some but not all contractors. UNIDO did not undertake sufficient due diligence in the disbursement of funds.

Payments for one contract were made very late. For example, the second payment for MOEF for a report on the Stockholm Convention and legislative measures in India was authorised 8 days before the completion of the Project on 22 December 2010. This was because MOEF submitted the first report more than a year after it was due. The report submitted did not comply with the performance criteria in the contract. Two further payments due to MOEF were not disbursed before the Project was completed. Insufficient attention and resources used for project management, coordination and review by MOEF and UNIDO were the major causes of MOEF's inability to submit reports on time (see summary in Section 5.8.1).

The payments for the first two stages of the contracts were disproportionately large compared to the amount of work that was performed, although consistent with the terms of the contracts. The payments for the first two stages were not performance-based. UNIDO approved payments for work that did not comply with the terms of the contract, including payment for outputs that were not delivered. Audited financial reports were required from each contractor annually, yet none complied and UNIDO paid the contractor.

Some of the contracts appeared to be over-priced which suggested that more care needed to be taken in the initial costing of the contracts in order ensure value to UNIDO and the donor community. A report from one of the contractors showed that more than 90% of the funding allocated to them had been unspent, which suggested that either the Contract budget was under-utilised in the end and/or the Contract was over-priced in the beginning.

Co-finance is important in many projects as it indicates the government's commitment to a Project. Generally the larger the co-finance promised, the greater the likelihood that the institutional capacity will be sustained after the Project. Sustainability is an important criterion for the GEF and its donor community. However, normally it is possible to only estimate the value of the contribution promised because mostly the co-finance is in-kind rather than cash. In this Project, the co-finance promised was significant as it represented about 70% of the total funding in the Project.

It was not possible to determine how much of MoEF and UNIDO in-kind finance was used in the Project, as this information was not provided by the MOEF. The co-finance was important for many of the key outputs, particularly from MOEF, in the absence of GEF funds. The lack of outputs in key areas suggested that co-finance (cash or in-kind) did not materialise. The lack of information on co-finance was therefore a significant gap that prevented the evaluation determining the level of co-finance provided and the value of the co-finance to the Project.

The Action Plans proposed by India in Chapters 4, 5 and 6 in the NIP are similar to the work that has already been funded in the NIP. If this work is funded by the GEF in the future, it may result in the GEF paying twice for the same work. There was also overlap of information contained in the financial estimates for future work, which results in greater expenditure estimates than if there was not overlap.

As the same contractors are involved in NIP and post-NIP activities, the work on the post-NIP activities detracted from work on NIP activities, which could have been another reason for the delayed submission of the NIP. Although India and China received similar funding for the NIP, China has developed post-NIP projects that are three times the value in total of those developed by India. This suggested that finishing the NIP in a timely manner was important for GEF agreement on the funding of a larger number of post-NIP projects of significant financial value.

5.7 CONCLUSION 7: MONITORING AND EVALUATION

Many of the deficiencies in the Project were a result of poor project monitoring and evaluation by UNIDO and MOEF. The Project Management did not use modern management tools to monitor progress in the Project. There were no SMART objectives, and Work Plans were either rudimentary or non-existent and not updated regularly.

The management measured progress and success according to the Convention's Guidelines on NIPs, as well as on the NIPs submitted by other Parties, rather than against the objectives that were agreed in the Project Document. The Project's objectives were not monitored and reviewed in detail, resulting in more than 50% of the outputs in the Project being categorised as "*not yet delivered*" at the time of the evaluation.

Annual Project Implementation Reviews (PIRs) and a Mid-Term Evaluation that were required by the Project Document were not undertaken. Omissions of these important project monitoring tools resulted in a missed opportunity to achieve the Project results on time and improve the quality of the results.

There are many GEF-funded projects taking place in India and keeping track of them is a challenge in itself. In order to remain informed of the delivery status of projects in India, the GEF Focal Point in the MOEF advised that National Project Directors are now required to provide quarterly reports to the Focal Point on the status of GEF-funded projects being undertaken in India. However, the absence of the PIRs and the Mid-Term Evaluation for this project was not raised with the evaluators by the GEF in India.

The Committees that were established by UNIDO and MOEF to monitor and evaluate the progress of work undertaken in the contracts did not carry out its mandate and served little purpose (see Section 5.4 above).

The contractors in the Project and the UNIDO Field Office staff were insufficiently prepared for the Terminal Evaluation. This was evident when the Vienna staff from UNIDO scheduled meetings on post-NIP projects with the contractors at the same time that the evaluation assessment was being carried out on the NIP. The post-NIP meetings ran over time and reduced the evaluation time. There was a need for closer cooperation between the UNIDO technical staff and the evaluation team in

order to conduct evaluations as efficiently as possible.

5.8 RECOMMENDATIONS TO UNIDO

5.8.1 UNIDO Recommendation 1: Contract formulation and consultation

UNIDO should:

- Review existing procedures, goals and costs for inventory development and promote the most cost-effective and efficient methods, equipment and procedures for establishing POPs inventories;
- Employ statistical methodology to aid estimates of POPs prevalence in sectors that are difficult to determine such prevalence;
- Show in each contract only the objectives that are the contractor's responsibility, and ensure they are designed in consultation with the contractor, in order to reduce the time for contractors to sign;
- Undertake a review of the procedures used for contract formulation, selection of objectives, contract financial accuracy, avoiding duplication of objectives and verification procedures for confirming the accuracy and legal basis of each contract;
- Implement fully conflict of interest criteria and taking appropriate action to ensure that a proposed contractor has no business or financial interests that might call into question their ability to provide a report objectively;
- Put contracts out for competitive tender in order to get the best value for money;
- Provide training to project management staff on contract preparation and management;
- Ensure that executing partners have the ability to receive and disburse funds as a criterion of partnership;
- Accurately cost out the price of the contracts with due regard to activities proposed, as well as equipment and staffing needs;
- Ensure the time of the contract takes into consideration the time to train staff and purchase equipment; and
- Ensure that procedures are in place to engage stakeholders in the Project in ways that are fully consistent with the requirements of the Stockholm Convention.

5.8.2 UNIDO Recommendation 2: Project Management

UNIDO should:

- Undertake a systematic review of its project management procedures, including training provided to management staff for document control and project management (Logical Framework, SMART objectives, Work Plans, review committee and procedures and monitoring);
- Put in place the requirement for a Turnover Report when staff transfer within UNIDO from one post to another;
- Select executing agency partners that have a proven record of project engagement, and that are committed to the goals of the programme and the delivery of all outputs
- Establish better support procedures for partners such as MOEF by putting in place M&E review procedures to identify where assistance is needed to promote the completion of their contracted objectives in a timely manner and to a high standard;

- Locate its management staff in the country where the Project is being carried out rather than in Vienna.

5.8.3 UNIDO Recommendation 3: Financial procedures

UNIDO should ensure that:

- Funds are paid only when the performance criteria in the contract are fully met for each payment, including all financial and other documentation requirements;
- Payments are withheld until the performance criteria in the contract are fully met, or not paid at all in the event that the performance criteria in the contract are not met;
- Reports meet the quality standards defined in the contract, according to the scientific and technical reviews provided to the Project Manager; and
- Payments are based on, and proportional to, performance, scientific and technical quality and effort.

5.8.4 UNIDO Recommendation 4: Monitoring and Evaluation

UNIDO should ensure that:

- Put in place procedures to ensure that M&E requirements are completed on time, including annual Project Implementation Reviews, Mid-Term Evaluations and Terminal Evaluations;
- A document checklist to enable the contractors involved to be prepared for evaluations;
- A full-time Project Coordinator is engaged that is experienced in project management :
    - Reviews progress of all contractors on a regular basis;
    - Verifies that review committees are operational and purposeful, and provide timely and useful guidance to contractors;
    - Highlights when resources (financial, human) are insufficient to complete the objective on time,
    - Completes a summary of progress on a regular basis, including regular budget versus expenditure outputs for the Project.

5.9 RECOMMENDATIONS TO MOEF

5.9.1 MOEF Recommendation 1: Project planning, implementation and consultation

MOEF should ensure that:

- An independent technical review team is established to provide incisive and scientific / technical advice on a regular basis to contractors;
- Representatives of all the stakeholders that have an interest in POPs, including NGOs, are members of the National Steering Committee;
- The full costs of the use of DDT, including all internal costs such as the subsidy paid by the Government to produce DDT and the future costs of soil and water decontamination as a result of its off-target use, are compared with the costs of alternatives to DDT;
- Regular meetings of the Steering Committee/sub-committee are held in order to accommodate changes in the programme over time, together with concise and transparent reports of the decisions agreed in the meetings;

5.9.2 MOEF Recommendation 2: Institutional capacity

The MOEF may wish to consider:

- Engaging a full time project coordinator or manager whose position remains in MOEF after the Project is completed so that they are available for other subsequent projects on POPs;
- Developing/improving legislation on POPs, perhaps in combination with other chemical management regimes;
- Assessing the personnel requirements to generate outputs in projects as early as possible and putting in place procedures to implement staff
- All co-finance is well documented, be it-in cash or in-kind, including the amounts allocated to the different outputs and objectives of the project
- Implementing procedures to allow reception, tracking and disbursement of funds from international projects
- Building and managing a Management Information System that includes a list of contacts; information on POPs to improve awareness; guidance materials on inventory management such as input, storage, reporting and modeling of inventory data; and registries of POPs contaminated sites and obsolete stocks; and
- Undertaking a visit to the Foreign Economic Cooperation Office[92] (FECO) in the Ministry of Environment[93] in China, in order to determine the usefulness of FECO structure and approach for the management of future projects in India.

5.10 RECOMMENDATIONS TO GEF

5.10.1 GEF Recommendation 1: Procedures that determine the status of GEF-funded projects

The GEF focal point in India may wish to consider:

- Requesting copies of the annual Project Implementation Reports for each Project, as these also highlight the status of projects and challenges in completing objectives;
- Determining which projects require a Mid-Term Evaluation assessment, requesting a copy of the report when completed, and promoting completion of a MTE when this is required ;
- Becoming a member of the Steering Committee which would enable the Focal Point to be kept abreast of progress and challenges in real time in the Project, rather than after the event, which would provide more opportunity to suggest ways to improve the timeliness of projects;
- Developing a Table of reporting deadlines for each objective in a project, and requesting additional information for reports that are later than 6 months after the deadline for transmission; and
- Requiring official notification from the Implementing Agency for any extensions of time granted for a contract within a Project, as the Implementing Agency may not inform the GEF Secretariat directly.

[92] FECO was reported to have 25 personnel working on POPs. The structure that was established by FECO/SEPA to develop the NIP and to address post-NIP projects in China may be useful for future post-NIP work on POPs in India. The structure and staffing were useful for developing and submitting China's NIP to the Stockholm Convention.

[93] From 2011 o longer the State Environment Protection Agency (SEPA) but elevated to a full Ministry.

5.10.2 GEF Recommendation 2: Estimates of co-finance promised by the government for Projects

The GEF focal point in India may wish to consider:

- Requesting the National Project Directors to provide an estimate annually of the co-finance contribution that has been allocated in the previous year according to staff, equipment and other; and
- Requesting the NPD to provide an estimate of the likely impact that the co-finance expenditure can have on the sustainability of the activities of the Project after it has been completed.

5.10.3 GEF Recommendation 3: Procedures to avoid multiple payments for the same work

The GEF focal point in India may wish to consider:

- Ensuring Terminal Evaluations identify incomplete or non-delivered outputs according to the Project Document that was originally signed between the Implementing Agency and the government; and
- Discounting the requests for GEF funding that contain objectives with incomplete or non-delivered outputs from a previously funded GEF project

5.11 LESSONS LEARNT

There are many lessons to be learnt from this Project in India. Those considered most important are:

- Significant progress in inventory development requires well-conceptualized methodologies and carefully-selected POPs analysis equipment that can perform cost-effectively and rapidly;
- Contractors should be objectively selected, free of any conflict of interest and engaged in contracts at a price that ensures value to the donor community;
- A full time Project Coordinator with experience in the use of modern management tools (performance evaluation and review; contract management;) is essential for ensuring that the Project outputs are monitored and delivered in a timely manner;
- Implementing POPs projects of this magnitude through qualified national partners requires significant project management capacities and resources. This includes a full time project coordinator, sufficient time of the Project Coordinator to devote to the project (preferably in the field), and detailed contract management;
- Legally accurate contracts must be formulated using objectives contained in the Project Document that has been agreed between UNIDO and the host government, ensuring that objectives are not duplicated and that each objective is within the expertise of the contractor;
- The technical and scientific quality of documents produced as a result of the contracts need to be reviewed on a regular basis by an independent technical committee that consists of well-qualified national and international experts;
- The Project Coordinator and Project Manager must only approve disbursement of Project funds for documents that fully comply with the performance criteria agreed in the Contracts, including all financial information;
- Resourcing difficulties (finance, staff, equipment, other) associated with delayed outputs must be identified and resolved as early as possible, in order to build partnerships and a team approach that leads to overall project success ;

- Effective document control procedures must be agreed and instituted early in the Project, to facilitate tracking of different versions of the report and to correlate reporting with payment;
- Legislative measures related to POPs are required to make significant progress on the management, reduction and elimination of POPs;
- Consultation with stakeholders will increase the opportunity to make use of their skills, experience and knowledge, as well as increase awareness of POPs;
- The GEF needs to be actively involved in the technical review of the methods used, the review of the data gathered, and to ensure that funding for the future is based on new work that has not been previously funded;
- Developing and enhancing MOEF in-house expertise is essential and outsourcing of responsibilities should be avoided wherever possible; and
- UNIDO can assist contractors to be better prepared for a Terminal Evaluation, which would make the procedures for completing an assessment for the evaluation more efficient.

ANNEX 1: PROJECT IDENTIFICATION AND FINANCIAL DATA

Project Identification

GEFSEC Project ID	1520
GEF Agency Project ID	GF/IND/07/004
Country	INDIA
Project Title	Development of a National Implementation Plan in India as a first step to implement the Stockholm Convention on Persistent Organic Pollutants (POPs)
GEF Agency (or Agencies)	UNIDO
Other project executing agency	Ministry of Environment and Forests, India
Council approval date	14 June 2007
Expected Agency approval date	September 2007
Duration	2 years
GEF Focal Area	POPs
GEF Strategic Objective	SP 1 – Strengthening capacities for NIP implementation

Dates

Milestone	Expected Date[1]	Actual Date
GEF CEO Endorsement/Approval		6 September 2007
Agency Approval date	30 July 2007	20 July 2007
Implementation start	17 November 2007	17 November 2007
Midterm evaluation	August 2008	Not undertaken
Project completion	31 December 2010	Unknown[2]
Terminal evaluation completion	December 2009	30 May 2011
Project closing	August 2009	December 2010[3]

[1] Expected dates are as per the expectations at the point of CEO endorsement/approval

[2] Note on Procurement file on 25 January 2011 requested an extension to May 2011 for subcontracts 16001610 and 16001923. The other 5 contracts were granted no extension.

[1] GEF and UNIDO financial closure. Project is ongoing as at 8 February 2011

Project Framework

No.	Project Component	Activity Type[1]	GEF Financing ($)		Co-financing ($)	
					Government of India	UNIDO
			Approved	Actual[2]	Promised[3]	Promised[2]
1	Convention implementation infrastructure at national and state levels	Technical assistance	893,600	1,173,600	1,010,000	
2	Measures in relation to DDT currently being produced and used in India	Technical analysis	256,100	206,100	231,800	

No.	Project Component	Activity Type[1]	GEF Financing ($)		Co-financing ($)	
					Government of India	UNIDO
			Approved	Actual[2]	Promised[3]	Promised[2]
3	Measures in relation to PCBs	Technical analysis	275,200	254,600	883,200	
4	Measures in relation to unintentionally produced POPs	Technical analysis	724,000	708,200	237,400	
5	Measures in relation to wastes and contaminated sites	Technical analysis	685,800	740,800	2,000,000	
6	Project Management	Technical assistance	240,000	157,800	2,717,600	200,000
		TOTAL	**3,074,700**	**3,241,100**	**7,080,000**	**200,000**

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

[3] Information provided to evaluators by Project Manager 25 November 2010;

[3] Promised co-financing is the amount indicated at the point of CEO endorsement/approval.

NA = Information not yet available from the Government of India at the time of the Evaluation

Co-financing

Source of co-financing	Type[1]	Project preparation ($)		Project implementation ($)		Total ($)	
		Expected[2]	Actual	Expected	Actual	Expected	Actual
Government of India / NIP	I-K & cash	0	NA	6,880,000	In-kind	6,880,000	NA
Government of India / start Post-NIP programme[3]	I-K & cash	0	NA	750,000	In-kind	750,000	NA
UNIDO	I-K[4]	139,170	139,170	200,000	In-kind	339,170	279,170
Other[5]	NR	0	0	0	0	0	0
	Total	**139,170**	**139,170**	**7,830,000**		**7,969,170**	**279,170**

[1] Co-financing types are grant, soft loan, hard loan, guarantee, in-kind (IK), or cash

[2] Expected amounts are those submitted by the GEF Agencies in the original project appraisal document

[3] GEF note on the co-financing letter from the Government of India

[4] Project Document states support costs of $339,170 including PPG support costs. As UNIDO expected to contribute $200,000 as in-kind, PPG was therefore $139,170

[5] Other includes bilateral aid, multilateral agency, private sector, NGO or other

ANNEX 2: EVALUATION TERMS OF REFERENCE

Updated 18 October 2010

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE

Independent Evaluation of
UNIDO project GF/IND/07/004

'Development of a National Implementation Plan in India as a first step to implement the Stockholm Convention on Persistent Organic Pollutants'

I. Background

The objective of the 2001 Stockholm Convention on Persistent Organic Pollutants (POPs) is to protect human health and the environment from these pollutants. India signed the Convention in 2002 and ratified it in 2006. As a part of the Convention's conditions, the Government of India is required to develop a National Implementation Plan (NIP) to demonstrate how it intends to implement its obligations to reduce POPs. The NIP sets priorities for initiating future activities to protect human health and the environment from POPs. It provides a framework for the country to develop and implement, in a systematic and participatory way, priority policy and regulatory reform, capacity building, and investment programmes.

India invited UNIDO to act as the Global Environmental Facility's (GEF) Executing Agency to support the Government in developing the NIP and opted to undertake this work in two phases through the GEF full-project-cycle rather than the so-called 'Enabling Activities' which are often of small-size (USD 500,000) and shorter-term nature.

Project objectives. The project shares its long-term objective with that of the Stockholm Convention: to protect human health and the environment from persistent organic pollutants. Its specific purpose is to enable India to take the first steps towards implementation of the Convention. Key outcome of the project is a National Implementation Plan endorsed by the Government of India. According to the project document, its principal outputs are:

- a comprehensive NIP incorporating:
  - an assessment of the national baseline with regard to POPs chemicals incorporating preliminary inventories of POPs chemicals currently in production and use, of Polychlorinated Biphenyls (PCBs) and equipment containing PCBs, of unintentional production of POPs, of human burdens of POPs and health impacts, of research and development capabilities, and of regulatory and institutional frameworks relating to POPs and chemicals management and control;
  - management strategies, action plans and investment needs required by India to meet the obligations of the Stockholm Convention; and
  - a methodology for the identification of sites contaminated by POPs or products containing POPs;
- a Capacity Building programme proposal to meet India's long-term institutional strengthening and capacity building needs;
- management and information systems functioning at national level and instigated at state levels;
- a national information centre established and information dissemination and public awareness and education campaigns developed;
- a pilot study to investigate the exposure to POPs and their adverse effects with special emphasis on the health of women and children and other high risk groups, with the vastness on India's genetic diversity environmental genomics based molecular epidemiology for POP affects needed;
- a research study on non-POPs alternatives for vector control;
- a pilot project to develop a detailed inventory methodology for PCBs;
- a pilot capacity building programme on PCBs management;
- a demonstration of methodologies to promote the implementation of the Best Available Techniques (BAT) and the Best Environmental Practices (BEP) to reduce unintentional production of POPs in key sectors of industry.

GEF Operational Programme 14 on POPs. The project is jointly funded by the GEF, the Government of India and UNIDO. It was approved under the GEF Operational Programme 14 on POPs. The objective of the Programme is to provide assistance, on the basis of incremental costs, to developing countries and countries with economies in transition to reduce and eliminate releases of POPs into the environment. The generally expected outcomes of GEF-supported interventions on POPs include the following:

- The institutional and human resource capacity for the management of POPs is strengthened.
- The policy and regulatory framework is strengthened to facilitate environmentally sound management of POPs and other chemicals.
- There is significant improvement in the reduction of the use of POPs for disease vector control, termite control and agricultural production.
- Safe and cost-effective alternatives to POPs are available to developing countries and countries with economies in transition.
- Stockpiles of POPs are managed, and wastes that contain POPs are managed and contained or disposed of, in an environmentally safe manner.

The project started in November 2007 and is scheduled to be completed in December 2010. The project implementation was planned to follow the guidance provided by the GEF[1] and a guide by UNEP and the World Bank[2]. Its activities were grouped into six components below ('specific objectives' as mentioned in the project document).

Project budget. The total cost of the project (including support costs) is USD10.58 million with the majority of the funding coming from the Government of India. The total budget provided by the GEF to UNIDO to implement the project was around USD3.07 million, excluding agency support cost. So far, 87% of the GEF-funded budget has been committed and/or spent.

Table 1. Project overall cost and financing

	Component/Item	GEF	Government of India	UNIDO
1	Convention implementation infrastructure at national and state levels	1,173,600	1,010,000	20,000
2	Measures in relation to DDT currently being produced and used in India	206,100	231,800	30,000
3	Measures in relation to PCBs	254,600	883,200	20,000
4	Measures in relation to unintentionally produced POPs	708,200	237,400	10,000
5	Measures in relation to wastes and contaminated sites	740,800	2,000,000	50,000
6	Project management and monitoring and evaluation	157,800	2,310,100	10,000
	Sundries		207,500	
	GEF grant to develop the project document (PDF-B)	317,000		
	Total	***3,241,100***	***6,880,000***	***140,000***
	Total full project cost	**10,578,100**		

Source: Project document

[1] Initial Guidelines for Enabling Activities for the Stockholm Convention on Persistent Organic Pollutants, GEF/C.17/4, April 6 2001.
[2] Interim guidance for developing national implementation plans for the Stockholm Convention, 2004.

Table 2. GEF funding provided through UNIDO to implement the project (excluding agency support cost)

Budget Items	Budget Line	Allotment	Expenditure	Implementation (%)
Personnel	19-99	624,400	536,634	86%
Contracts*	29-99	1,908,100	1,894,300	99%
Training*	39-99	133,601	40,983	31%
Equipment	49-99	308,000	122,118	40%
Miscellaneous cost	59-99	100,599	66,379	66%
Total		**3,074,700**	**2,660,414**	**87%**

Note: *) Many training activities, especially local ones, are covered under the sub-contracts under budget item 'Contract'
Source: UNIDO INFOBASE as of 15 Sep 2010

Project implementation arrangements. UNIDO has acted as the GEF Executing Agency for the development of the NIP. UNIDO is responsible to the GEF for the overall management of the project and its funds. The Ministry of Environment and Forests (MOEF) is the national implementing agency and UNIDO assists the Ministry to carry out the project.

A National Steering Committee (NSC) was established to provide guidance to the project at the macro level, to review and comment upon projects outputs and to help disseminate project findings. The NSC is chaired by a National Project Director who is the head of the Stockholm Convention Compliance Office (SCCO) within the MOEF and responsible for overseeing the overall project implementation in the country. A part-time National Project Coordinator was recruited to take care of the day-to-day project management.

II. Purpose of the evaluation

The evaluation will be conducted in accordance with the UNIDO Evaluation Policy, the UNIDO Guidelines for the Technical Cooperation Programmes and Projects, the GEF's 2008 Guidelines for Implementing and Executing Agencies to Conduct Terminal Evaluations and in line with the project document. The purpose of this evaluation is two fold:

- Assess the project in terms of relevance, effectiveness, efficiency, sustainability and impact.
- Develop lessons and recommendations for enhancing the design and implementation of similar future projects in India and elsewhere.

In 2011, UNIDO Evaluation Group will conduct a thematic evaluation of UNIDO's POPs projects, including this project. Hence, the project evaluation team will also need to seek answers to questions of the thematic evaluation in section 4.

III. Scope and focus of the evaluation

The evaluation will cover the whole duration of the project from its starting date in November 2007 to the completion date in December 2010; all interventions under the project; and all elements of the project's results chain from inputs, activities to outputs, outcomes and sustainability of outcomes. It will address key UNIDO's and GEF's evaluation criteria such as relevance, effectiveness, efficiency and sustainability. As this project is considered as 'enabling activities' by the GEF, it is not expected to produce direct impacts at the environmental level, but can only have an impact when follow-up activities are implemented. Taking into account this philosophy and the status of the project, which is close to completion, the evaluation will not focus on capturing and assessing the project impact.

As the project document does not contain a logical framework, the evaluation team will reconstruct the project logic or the theory of change of different types of intervention (e.g. enabling activities and capacity building) and their related assumptions. The evaluation team will validate the theory of change through specific questions in interviews and possibly through a survey of stakeholders. The theory of change will be discussed in the Inception Report (see section 5 for more details) to be prepared by the International Evaluation Consultant prior to the field visit.

IV. Evaluation criteria and questions

The evaluation will examine the following aspects:

Design

- The extent to which:
  - ✓ a participatory project identification process was instrumental in selecting problem areas and national counterparts;
  - ✓ the project has a clear thematically focused development objective, the attainment of which can be determined by a set of verifiable indicators;
  - ✓ the project was formulated based on the logical framework approach;
  - ✓ the project was formulated with the participation of national counterpart and/or target beneficiaries;

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  - national counterparts;
  - ✓ the project has a clear thematically focused development objective, the attainment of w
  - can be determined by a set of verifiable indicators;
  - ✓ the project was formulated based on the logical framework approach;
  - ✓ the project was formulated with the participation of national counterpart and/or target
  - beneficiaries;
  - ✓ relevant country representatives (from government, industries and civil society) have b
  - appropriately involved and were participating in the identification of critical problem are
  - the development of technical cooperation strategies

Relevance

- The extent to which the project is relevant to the:
  - ✓ national development and environmental priorities and strategies of the Government ar
  - population of India
  - ✓ GEF's focal areas/operational programme strategies. What is the significance of the lik
  - contribution of the project's results to the wider portfolio of the GEF Operational Progra
  - 14 on POPs?
  - ✓ UNIDO's thematic priorities
  - ✓ UN Development Assistance Framework (UNDAF) for India
- Is the project's design adequate to address the problem(s) at hand? Does the project r
  relevant taking into account the changing environment? Is there a need to reformula
  project design and the log frame given changes in the country and operational context?

Effectiveness and Impact

- To what extent have the expected outputs, outcomes and long-term objectives been achie
  are likely to be achieved? Are the actual project outcomes commensurate with the orig
  modified project objectives? If the original or modified expected results are merely outputs/
  the evaluators should assess if there were any real outcomes of the project and, if there
  determine whether these are commensurate with realistic expectations from the project. H
  the stakeholders perceive the quality of the project outputs and outcomes? Were the ta
  beneficiary groups actually reached?
- What outputs and outcomes has the project achieved so far (both qualitative and quant
  results)? Has the project generated any results that could lead to changes of the as
  institutions? Have there been any unplanned effects?
- Identify the potential longer-term impacts or at least indicate the steps taken to assess
  (see also below "monitoring of long term changes"). Wherever possible, evaluators s
  indicate how findings on impacts will be reported in future.
- Describe any catalytic or replication effect of the project, both within and outside the pro
  no effects are identified, describe the catalytic or replication actions that the project c
  out[3].

Efficiency

The extent to which:

- The GEF, UNIDO and Government/counterpart inputs have been provided as planned and
  adequate to meet requirements.
- The quality of UNIDO inputs and services was as planned and timely
- The interventions were cost-effective. Was the project the least cost option?
- There was coordination with other UNIDO and other donors' projects and possible sy
  effects
- Has the project produced results (outputs and outcomes) within the expected time frame
  the project's activities in line with the schedule of activities as defined by the project tea
  annual work plans? Are the disbursements and project expenditures in line with budgets?

[3] 3 Replication approach, in the context of GEF-funded projects, is defined as lessons experiences coming out of the project that are replicated or scaled up in the design implementation of other projects, or replication within the project. Replication can have two as replication proper (lessons and experiences are replicated in different geographic area) or s up (lessons and experiences are replicated within the same geographic area but funded by sources).

Sustainability

Sustainability is understood as the likelihood of continued benefits after the 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 project ends. It will include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed:

- ***Financial risks.*** Are there any financial risks that may jeopardize sustainability of project

Sustainability

Sustainability is understood as the likelihood of continued benefits after the 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 project ends. It will include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed:

- ***Financial risks***. Are there any financial risks that may jeopardize sustainability of project outcomes? To what extent are the outcomes of the project dependent on continued financial support? What is the likelihood of financial resources not being available to sustain the project outcomes/benefits once the GEF assistance ends (resources can be from multiple sources. such as the public and private sectors, income generating activities, and market trends that support the project's objectives)? Was the project successful in identifying and leveraging co-financing?
- ***Socio-political risks***: Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the likelihood that the level of stakeholder ownership will be sufficient to sustain the project outcomes/ benefits? Do the various key stakeholders see their interest in the continued flow of the project benefits? Is there sufficient public/ stakeholder awareness in support of the project's long term objectives?
- ***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 the required systems for accountability and transparency, and the required technical know-how in place?
- ***Environmental risks***. Are there any environmental risks that may jeopardize sustainability of project outcomes? The 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.

Project coordination and management

The extent to which:

- The national management and overall coordination mechanisms have been efficient and effective. Did each partner have assigned 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…)?
- The UNIDO HQ and Filed Office based management, coordination, monitoring, quality control and technical inputs have been 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…)
- Assessment of implementation approach[4]: Is the project's implementation approach different from the usual modality of UNIDO and other agencies? What are the advantages and disadvantages of the project approach? Does it comply with the principles of the Paris Declaration? How can it promote local ownership and capacity building? Any innovative approaches or best practices that can be identified? What are the potential risks?
- Monitoring and evaluation (M&E) assessment: Monitoring and self-evaluation were carried out effectively, based on indicators for outputs, outcomes and impacts. Is there any annual work plans? Was any steering or advisory mechanism put in place? Did reporting and performance review take place regularly?
  - ✓ ***M&E design.*** Does the project have a sound M&E plan to monitor and track progress towards achieving project results? The Evaluation will assess whether the project met the minimum requirements for the application of the Project M&E plan (see Annex 1).
  - ✓ ***M&E implementation.*** The 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

[4] 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

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 evaluation report will describe project actions and accomplishments toward establishing a long-term monitoring system. The review will address the following questions:
  - 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?
  - What were the accomplishments and shortcomings in establishment of this system?
  - Is the system sustainable—that is, is it embedded in a proper institutional structure and does it have financing?
  - Is the information generated by this system being used as originally intended?

Processes that affected attainment of project results[5]

Among other factors, when relevant, the evaluation will consider a number of issues affecting project implementation and attainment of project results. The assessment of these issues can be integrated into the analyses of project design, relevance, effectiveness, efficiency, sustainability and management as the evaluators find them fit (it is not necessary to have a separate chapter on these aspects in the evaluation report).

- ***Preparation and readiness***. Were the project's objectives and components clear, practicable and feasible within its timeframe? Were the capacities of executing institution and 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 the 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?
- ***Country ownership, commitment and motivation***. Was the project concept in line with the sectoral and development priorities and plans of the country? 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 approved policies or regulatory frameworks been in line with the project's objectives?
- ***Stakeholder involvement***. Did the project involve the relevant stakeholders through information-sharing, consultation and by seeking their participation in the project's design, implementation, and monitoring and evaluation? For example, did the project implement appropriate outreach and public awareness campaigns? Did the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the design, implementation and review of project activities? Were perspectives of those that would be affected by decisions, those that could affect the outcomes and those that could contribute information or other resources to the process taken into account while taking decisions? Were the relevant vulnerable groups and the powerful, the supporters and the opponents, of the processes properly involved?
- ***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 co-financing materialize?
- ***UNIDO's supervision and backstopping***. Did UNIDO staff identify problems in a timely fashion and accurately estimate its seriousness? Did UNIDO staff provide quality support and advice to the project, approved modifications in time and restructured the project when needed? Did UNIDO provide the right staffing levels, continuity, skill mix, and frequency of field visits for the project?

[5] Extracted from the GEF's 2008 Guidelines for Implementing and Executing Agencies to Conduct Terminal Evaluations.

- ***Co-financing and Project Outcomes and Sustainability***. If there was a difference in the of expected co-financing and actual co-financing, then what were the reasons for the vari Did the extent of materialization of co-financing affect the project's outcomes sustainability, and if it did then in what ways and through what causal linkages?
- ***Delays and Project Outcomes and Sustainability***. If there were delays in p implementation and completion, then what were the reasons? Did the delay affect the pr outcomes and/or sustainability, and if it did then in what ways and through what linkages?

The evaluation team will rate the project performance as required by the GEF. The ratings will be

- ***Co-financing and Project Outcomes and Sustainability***. If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for the variance? Did the extent of materialization of co-financing affect the project's outcomes and/or sustainability, and if it did then in what ways and through what causal linkages?
- ***Delays and Project Outcomes and Sustainability***. If there were delays in project implementation and completion, then what were the reasons? Did the delay affect the project's outcomes and/or sustainability, and if it did then in what ways and through what causal linkages?

The evaluation team will rate the project performance as required by the GEF. The ratings will be given to four criteria: Project Results, Sustainability, Monitoring and Evaluation, and UNIDO related issues as specified in Annex 2. The ratings will be presented in 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 the same annex. As per the GEF's requirements, the report should also provide information on project identification, time frame, actual expenditures, and co-financing in the format in Annex 2, which is modelled after the GEF's project identification form (PIF).

Broader issues to be covered by the UNIDO POPs thematic evaluation[6]:

The evaluation team will give special attention to a set of questions to be addressed by the POPs thematic evaluation, many of which have been included in section 4 of this project evaluation terms of reference.

- What has UNIDO done to reduce the production, use and release of POPs?
- How relevant have the UNIDO's POPs projects been to the environmental strategies of the supported countries, to the POPs strategies of the GEF and to the thematic priorities of UNIDO?
- How effective has the overall UNIDO's POPs portfolio been in phasing out POPs? How well has the portfolio performed? What are the key results across the supported countries?
- 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?
- Did UNIDO POPs projects have unintended environmental, economic or social effects?
- How efficiently have the POPs project been implemented? How have the projects been implemented differently from UNIDO's non-POPs projects? What are the key advantages and disadvantages of this implementation approach?
- What lessons can be derived for future POPs projects? What drives project performance?
- Which are the approaches applied by UNIDO that can be replicable in other projects?
- What are the systemic constraints that UNIDO has faced in implementing these POPs projects that might need to be addressed?

To make summary and comparable assessment of each project included in the thematic evaluation, the evaluation will use the following set of questions:

Key questions	Evidence
What was the situation at the end of the project?	For NIP development projects (enabling activities) • Has the NIP been endorsed officially by the Government? • Has the NIP been submitted to the Stockholm Convention? For capacity building projects • Are appropriate legislative and regulatory frameworks in place? • Have clear responsibilities and roles (administrative and enforcement) in NIP implementation been assigned and is there appropriate institutional capacity manage implementation? For demonstration projects • Have demonstrations been successful?[7]
What has happened since the project ended, or still needs to happen, to achieve impacts? What are the project outcomes and impacts, if any?	• Any post-NIP projects focusing on POPs phase-out prepared/approved for the country? (by any development agencies) • Legislative and regulatory framework in place for the management of POPs and chemical more generally in the country? Any laws/policies passed? • Administrative capacity, including chemicals management administration, within the central government strengthened and sustainable? • Enforcement capacity strengthened and sustainable? • Any POPs phased out from use and production? • Any POPs destroyed in an environmentally sound manner? • What are feasible and effective environmentally sound alternative products, practices, techniques or processes to POPs (such as DDT for disease vector control and termaticides) that lead to reduced environmental and health risks?
What are the key factors responsible for the achievement (or non-achievement) of the project outcomes? What are the threats?	• Commitment of the Government to phase out POPs consumption and production • Availability of alternative products, practices, technologies or processes • Systemic, institutional and individual capacities are maintained to address POPs • Effective monitoring and reporting on POPs • Legal and policy framework on POPs

[6] The set of questions will be updated in November when the TOR of the thematic evaluation is finalized
[7] See: "POPs focal area strategy and strategic programming for GEF-4" in particular the indicators listed for demonstration projects

V. Evaluation methodology

The evaluation will follow UNIDO and GEF evaluation guidelines and policies. It will be carried out as an independent terminal evaluation using a participatory approach whereby the UNIDO staff associated with the project are kept informed and regularly consulted throughout the evaluation. The project evaluation team will liaise with the UNIDO Evaluation Group on any logistic and/or methodological issues to properly conduct the exercise.

The evaluation team will be required to use different methods to ensure that data gathering and analysis deliver evidence-based qualitative and quantitative assessment based on diverse materials: from desk studies, literature review, statistical analysis to individual interviews, focus group meetings, surveys and direct observation. This approach will not only enable the evaluation to assess causality through quantitative means but also to provide reasons why certain results were achieved or not. The concrete mixed methodological approach will be described in the inception report.

The evaluation will encompass the following steps:

Desk review and interviews at UNIDO HQ

The evaluation team will review and analyze available documents related to the project: the original project document, monitoring reports (e.g. progress and financial reports to UNIDO and GEF annual Project Implementation Review reports), outputs reports (NIP, inventories, action plans, sub-regional strategies, and technical reports from consultants/subcontractors…) and relevant correspondence. Relevant documents from the Government of India and other development organizations will also be consulted. Interviews with the project manager and the Chief of UNIDO POPs Unit will be conducted at UNIDO HQ in Vienna.

Inception report

This Terms of Reference provides some information on the evaluation methodology but this should not be regarded as exhaustive. The International Evaluation Consultant will prepare a short Inception Report that will operationalize the TOR. The report will describe how the evaluation is to be carried out, bringing refinements, specificity and elaboration to the TOR. It will be discussed with and approved by the responsible Evaluation Officer. 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; division of work between the International Evaluation Consultant and National Consultant; and a reporting timetable[8].

Field visits and interviews

The evaluation team will:

[8] The International Evaluation Consultant will be provided a Guide on how to prepare an evaluation inception report prepared by the UNIDO Evaluation Group.

- Visit project sites in India (New Delhi and Bangalore) to carry out in-depth interviews with representatives of all stakeholder groups (government counterparts (both at national and state levels), GEF Focal Point, supported institutions, enterprises, investors, private sector representatives; etc) and visit some specialized institutions that have been the project sub-contractors/implementers in New Delhi and Bangalore.

- Interview project staff and partners (various national and state authorities dealing with the project), other stakeholders, and a sample of consultants and/or institutions that were hired by UNIDO to support the project in India. The evaluator shall determine whether to seek additional information and opinions from representatives of any donor agencies or other organizations.

For each type of the interviews, the evaluation team will develop their ideas for the coverage and interview guidelines will be used to capture the information required. Field interviews can take place either in the form of focus-group discussions or one-to-one consultations.

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.

Reporting

The draft report will be delivered to UNIDO EVA (the suggested report outline is in Annex 3) and circulated to UNIDO staff and national stakeholders associated with the project, including the UNIDO office in India for factual validation and comments. Any comments or responses to the draft report will be sent to UNIDO EVA for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, the evaluation team will prepare the final report.

The evaluation team will present its preliminary findings to the local stakeholders at the end of the field visit and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at HQ after the field visit.

The length of the Final Report should be around 30-35 pages excluding Annexes, with a 3-page executive summary in English.

Quality Assessment of the Evaluation Report: All UNIDO evaluations are subject to quality assessments by UNIDO Evaluation Group. Quality control is exercised in different ways throughout the evaluation process (briefing of consultants on EVA methodology and process, review of inception report and evaluation report by EVA). The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality (Annex 4). The applied evaluation quality assessment criteria are used as a tool to provide structured feedback.

VI. Evaluation team and timetable

The evaluation team will include: 1) an International Evaluation Consultant, preferably with knowledge of POPs, international environmental treaties and issues and 2) a National Consultant with knowledge and experience in the field of POPs and environmental issues. The profiles and duties of the international and national consultants are specified in the job descriptions in Annex 5 attached to this TOR.

All members of the evaluation team must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the project under evaluation. This principle is underlined in the UNIDO Evaluation Policy: "*For independent evaluations, the members of an evaluation team must not have been directly responsible for the policy-setting, design or overall management of the subject of evaluation (nor expect to be so in the near future)*". The consultants 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.

The project management and UNIDO Regional Office in India, and the project management in Vienna will provide support to the field mission.

The evaluation is scheduled to take place in January 2011. The Draft Report will be submitted to UNIDO within one month of the completion of the field mission / mission briefing to EVA.. After taking account EVA's comments, the draft report will be submitted to the Government of India for comment. A Final Report will be submitted 30 May 2011.

Timetable

#	Evaluation activities/deliveries	Due date	Responsibility
1	Preparatory phase (preparation of TOR, identification of evaluation team members, communication to stakeholders, finalisation of contracts, desk reviews ...)	14-Nov	ODG/EVA/evaluation team/Project Manager an project staff/India Regional Office
2	Preparing draft Inception Report	19-Nov	International Evaluation Consultant
3	Initial interviews in Vienna and finalization of Inception Report	Week 22 Nov	International Evaluation Consultant /ODG/EVA/P Project Manager
4	Evaluation field mission	16-30 Jan	Evaluation team
5	Synthesis wrap-up meeting in New Delhi	28-Jan	Team/Gov/UNIDO/Partners
6	Presentation of preliminary findings in Vienna	1 and 2 Feb	International Evaluation Consultant/ODG/EVA/ P Project Manager
7	Draft evaluation report	1-Mar	Evaluation team
8	Comment on the draft evaluation report by ODG/EVA	15-Mar	ODG/EVA
9	1st Revision of the evaluation report	20-Mar	Evaluation team
10	Comment on the draft evaluation report by stakeholders	10-Apr	UNIDO PTC Project Manager, project staff, Government stakeholders
11	Revision of the evaluation report	16-Apr	Evaluation team leader
12	Peer-review of the evaluation report by EVA	23-Apr	ODG/EVA
13	Finalise the evaluation report	25-Apr	Evaluation team leader
14	Issuance of final evaluation report	30-May	ODG/EVA

Annex 1. GEF Minimum Requirements for M&E [9]

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.

[9] The GEF Monitoring and Evaluation Policy, 2006.

Annex 2. Overall Rating Table (as required by GEF) [10]

Criterion	Evaluator's Summary Comments	Evaluator's
1. Project results (overall rating)		
Sub criteria (below)		
Relevance		
Effectiveness		
Efficiency		
2. Sustainability of project outcomes (overall rating)		
Sub criteria (below)		
Financial resources		
Socio political		
Institutional framework and governance		
Environmental		
3. 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		
4. UNIDO specific ratings		
Quality at entry		
Implementation approach		
UNIDO supervision and backstopping		
OVERALL RATING		

1. Rating of project 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 results **may not be higher** than the lowest rating on relevance and effectiveness. Thus, to have an overall satisfactory rating for outcomes project must have at least satisfactory ratings on both relevance and effectiveness.

2. Ratings of Sustainability of Project Outcomes

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

- Likely (L): There are no or negligible risks that affect this dimension of sustainability.
- Moderately Likely (ML): There are moderate risks that affect this dimension of sustainability.

[10] Extracted from the GEF's 'Guidelines for Implementing and Executing Agencies to Conduct Terminal Evaluations', 2008.

- 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.

3. Ratings of M&E

- 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.

3. Ratings of M&E

Project monitoring and evaluation systems will be rated as follows on quality of M&E design and quality of M&E implementation:

- 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.

The overall rating of M&E during project implementation will be solely based on the quality of M&E plan implementation. The ratings on quality at entry of M&E design and sufficiency of funding both during planning and implementation stages will be used as explanatory variables.

Required Project Identification and Financial Data

The terminal evaluation report should provide information on project identification, time frame, actual expenditures, and co-financing in the following format, which is modelled 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		
Terminal 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 $)		Co-financing (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 co-financing refers to the amount indicated at the point of CEO endorsement/approval.

IV. Co-financing

		Project preparation		Project Implementation		Total	
Source of co-financing	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 co-financing							

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 3. 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[11] 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

[11] 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.)

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.

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 4. Checklist on evaluation report quality

Rating system for quality of evaluation reports
A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately

Report quality criteria	UNIDO Evaluation Group Assessment notes	Rating
(a) Did the report present an assessment of relevant outcomes and achievement of project me objectives?		
(b) Were the report consistent and the evidence complete and convincing?		
(c) Did the report present a sound assessment of sustainability of outcomes or did it explain why this is not (yet) possible?		
(d) Did the evidence presented support the lessons and recommendations?		
(e) Did the report include the actual project costs (total and per component or project)?		
(f) Quality of the lessons: Were lessons readily applicable in other contexts? Did they suggest prescriptive action?		
(g) Quality of the recommendations: Did recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?)'. Can they be implemented?		
(h) Was the report well written? (Clear language and correct grammar)		
(i) Were all evaluation aspects specified in the TOR adequately addressed?		
(j) Was the report delivered in a timely manner?		

Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1, and unable to assess = 0.

Annex 5. Job descriptions

Independent Evaluation of UNIDO project GF/IND/07/004
'Development of a National Implementation Plan in India as a first step to implement the Stockholm Convention on Persistent Organic Pollutants'

Job Description

Post title	International Evaluation Consultant
Duration	46 work days spread over 3 months
Start date	15 November 2011
Duty station	Home based and travel to Vienna and India (New Delhi and Bangalore)

Duties

The consultant will carry out the project evaluation according to the evaluation Terms of Reference. S/he will be a member of the evaluation team and will be responsible for preparing the final draft evaluation report, according to the standards of the UNIDO Evaluation Group. S/he will perform the following tasks:

Main duties	Duration/ location	Deliverables
Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data…) Prepare Inception Report to 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 India's legislative and regulatory framework to phase out POPs	8 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 Draft inception report 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
Briefing with the UNIDO Evaluation Group, project managers and other key stakeholders at HQ	2 days Vienna (including travel days)	Interview questions, detailed evaluation schedule and list of stakeholders to interview during the field missions Inception Report
Conduct field mission to India in November 2010 (New Delhi and Bangalore)	16 days (including travel days)	Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in India 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
Present overall findings and recommendations to the stakeholders at UNIDO HQ (incl. travel)	2 days Vienna	Presentation slides
Prepare chapters of the draft evaluation report, as agree with the National Consultant Coordinate the inputs from the National Consultant and combine with her/his own inputs into the final draft evaluation report	12 days Home base	Chapters of the draft evaluation report and final draft evaluation report agreed among the team members. The draft evaluation report should also include the brief assessment of the adequacy of the country's legislative and regulatory framework to phase out POPs and address the issues to be cover by the thematic POPs evaluation.
Revise the draft evaluation report based on comments from UNIDO Evaluation Group and stakeholders and edit the language and form of the final version according to UNIDO standards	2 days Home base	Draft Evaluation Report that is update each time to take into account 1) Initial comments from EVA; then 2) Stakeholder comments; then 3) Final comments from EVA Final Evaluation Report
TOTAL	**42 days**	

Qualifications and skills:

- ✓ Advanced degree in environmental science, chemistry, development studies or related areas
- ✓ ***Extensive knowledge and experience in POPs, the Stockholm Convention and environmental projects***
- ✓ ***Extensive knowledge and experience in the field of evaluation (of development projects)***
- ✓ Experience in GEF and Montreal Protocol projects and knowledge of UNIDO activities an asset
- ✓ Working experience in India an asset.

Language: English

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

Independent Evaluation of UNIDO project GF/IND/07/004

'Development of a National Implementation Plan in India as a first step to implement the Stockholm Convention on Persistent Organic Pollutants'

Job Description

Post title	National Consultant
Duration	25 work days
Started date	November 2010
Duty station	Home based, New Delhi and Bangalore

Duties

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	Duration/ location	Deliverables
Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data…) Support the project management and the India Regional Office in planning the evaluation field mission, organizing meetings and preparing the evaluation programme Support the International Evaluation Consultant in drafting Inception Report	4 days Home base	List of detailed evaluation questions to be clarifie Evaluation mission programme Inputs to Inception Report
Carry out meetings, visits and interviews of stakeholders according to the evaluation programme and facilitate the work of the evaluation team in India (including acting as interpreter) Participate in drafting the main conclusions and recommendations, and present them to stakeholders in accordance with the instructions of the International Evaluation Consultant	14 days New Delhi and Bangalore (including travel days)	Notes, tables; information gathered on issues sp in TOR Draft conclusions and recommendations to stake
Contribute to the draft report as assigned by the International Evaluation Consultant	7 days Home base	First draft of chapters on the country background other inputs into the draft evaluation report as ag with the International Evaluation Consultant
Revise the draft chapters based on comments from UNIDO Evaluation Group and stakeholders	1 days Home base	Final evaluation report
TOTAL	**26 days**	

Qualifications:

- ✓ Advanced degree in environmental science, chemistry, development studies or related areas
- ✓ ***Knowledge of and experience in Persistent Organic Pollutants***
- ✓ Experience in evaluation of environmental projects
- ✓ Experience in organizing meetings and interpreting
- ✓ Knowledge of GEF and UNIDO technical cooperation activities an asset.

Language: English and Hindi (written and oral)

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.

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ANNEX 3: DOCUMENTS REVIEWED

BASEL CONVENTION

2010-11-03 Technical guidelines for the ESM of wastes consisting of, containing or contaminated with DDT

2010-11-03 Technical guidelines for the ESM of wastes consisting of, containing or contaminated with PCBs, PCTs or PBBs

2010-11-03 Technical guidelines for the ESM of the full and partial dismantling of ships

2010-11-03 Technical Guidelines on Incineration on Land (D10)

2010-11-03 Technical guidelines on the ESM of wastes consisting of pesticides

2010-11-03 Technical guidelines on the ESM of wastes containing or contaminated with uPCDD/Fs, HCB or PCBs

2010-11-03 Technical Guidelines on the ESM of Biomedical and Healthcare Wastes (Y1; Y3)

Updated general technical guidelines for the EMS of wastes consisting of, containing or contaminated with POPs

GEF

2000-05-09 Addressing the Global Threat Of Persistent Organic Pollutants GEF_C15_Inf.14

2000-09-28 Draft Elements of An Op. Program For Reducing and Eliminating Releases Of POPs GEF.C.16.06

2001-04-06 Initial guidelines for enabling activities for the SC on POPs GEF-C--17-4

2002-07-16 PDF-B Doc revised

2004-05 STAP - The Use of Bio-indicators, Biomarkers and Analytical Methods for the POPs C.23.Inf_.18

2005-03-04 GEF activities in support of the implementation of the SC - Ops for advancing global Mgmt of chems

2006-02-17 Report of the GEF's activities in the SC on POPs

2007-10 GEF-4 POPs Strategy GEF_4_strategy_POP_Oct_2007

2009-01-30 Report of the GEF to the 4th meeting of the COP of the SC

2009-05-04 GEF report on its support for projects relevant to the implementation of the SAICM

2009-05 The second session of the International Conference on Chemicals Management

2009-06-05 Cleaning-up and ridding the world of dangerous chemicals

2009-07 POPs Tracking Tool

2009-10-12 GEF - 5th Meeting of the POPs Review Committee

2009 GEF Persistent Organic Pollutants Fact Sheet

2010-01-03 Integrated POPs Management Project - Dioxins and Furans, PCB and Contaminated Sites Mgmt

2010-01-10 GEF5-POPs-Strategy

2010-01-21 Integrated Solid Waste Management

2010-02-02 GEF - Cleaning Up in Cuba

2010-02-02 GEF - PCBs in Former Soviet Republics

2010-02-17 GEF BBL_ How the GEF can be complementary to the CDM

2010-03-24 Integrated POPs Management Project - Dioxins and Furans, PCB and Contaminated Sites Mgmt

2010-04-20 Best Practices for PCB Management in the Mining Sector of South America

2010-05-03 Camb., Indonesia, Laos, Mongolia, Philippines, Thailand - BAT-BEP Fossil Fuel-fired & ind Boilers POPs

2010-05-03 GEF - ESM and Disposal of PCBs

2010-05-21 Less Burnt for a Clean Earth - Minimization of Dioxin Emission from Open Burning Sources

2010-06-01 ESM and Disposal of PCBs

2010-07-21 Global Healthcare Waste Project

2010-07-27 GEF - China workshop on new POPs

2010-07-27 GEF - Termiticides in China

2010-07-27 GEF - The Africa Stockpiles Programme

2010-08-09 PCB Management and Disposal Project Nigeria

2010-08-11 ESM and Disposal of POPs Pesticides and PCBs

2010-09-07 GEF - POPs Portfolio Management Tracking Tool - V.3.2 Aug 2010

2010-09-08 GEF - Nigeria - PCB Management and Disposal Project

2010-09-08 Nigeria PCB Management Project

2010-09-15 Demonstration of a Regional Approach to EMS of PCB Liquid Wastes and Transformers

2010-09-27 GEF - BBL on Global Mercury Cycling - Sources, Impacts, and Solutions

2010-10-26 POPs - Regional - DSSA Demonstrating and Scaling Up Sust Alts to DDT in S Caucasus and Central Asia
2010-04-06 OPS4_Full Report_Final

CPCB

CPCB list CPCB Zonal Offices laboratories
CPCB list recognised laboratories excl private
CPCBDirectory-23-11-10

PROJECTS

India (GEF: NIP-POPs)

0. 1520 Details of NIP Project
1. 2002-07-16 PDF-B Document (Revised)
2. 2007-03-22 Executive Summary
5. 2007-08-30 Request for CEO Endorsement (revised)
6. 2007-08-28 Project Appraisal Document (CEO Endorsement - Rev)
3. [Not downloadable] Project Document for WP (Revised)
4. [Not downloadable] Executive Summary (Revised)

India (GEF: PCB phase out)

0. Details of PCB destruction
1. 2008-10-03 PIF Document (Revised)
2. 2009-11-25 PPG Document (Revised)
3. 11-21-2008 STAP Review
4. 2009-11-25 Request for CEO Endorsement (revised)
5. 2009-11-25 Project Document (CEO Endorsement - Rev)

2010-01 ESM and final disposal of PCBs in India

ESM of PCBs in India

India (GEF: ESM of medical waste)

0. 3808 Details of project
1. 2008-09-11 PPG Document (Revised) [Req for Proj Prep Grant MEDWASTE]
2. 2010-04-29 ID3803 Proj ID Form (PIF) Revised
3. 2010-05-12 132415 STAP Review

India (GTZ: Waste Management Karnataka)
2010-11-03 GTZ Karnataka Hazardous waste management project

GOI ENVIRONMENT

2009 State of Environment Report, MOEF India
MOEF NEAC 2009-10 description

MEDIA

2010-02-04 GEF funds $14m PO of PCBs in India
2010-07 Endosulfan - global and Indian evidence CSL site
2010-10 POP, and we opt out (CSL)
2010-12-10 Ship breaking Bangladesh

UNDAF

2007-05 UNDAF-2008-2012

NIPs

2007-04 China

STAP

Bio-indicators Suitable for Monitoring POPs in Developing Countries by Shinsuke Tanabe and Annamalai Subramanian
Bio-indicators suitable for developing countries, A. Subramanian_criteria and S. Tanabe
Criteria for the use of bio-indicators and recommendations, Subramanian
Environmental Prognostics - Biomarkers, Modelling and Explanatory Frameworks for Harmful Effects of Chemicals GEF and POPs
Japanese Activities in Environmental Monitoring of POPs, Shibata, NIES, Japan

The use of analytical methods in environmental monitoring and surveillance - Derek Muir, Canada
The use of biomarkers in environmental monitoring - a review by Prof.Paul Lam, Hong Kong
The effectiveness evaluation of the SC on POPs

STOCKHOLM CONVENTION

Country profile

2010-11-03 India States Map

Country reports

2010-11-03 India - National Report Pursuant Article 15 - Part A
2010-11-03 India - National Report Pursuant Article 15 - Part B
2010-11-03 India - National Report Pursuant Article 15 - Part C
2010-11-03 National Reports 1 and 2nd round closure dates
2010-11-03 Switzerland - National Report Pursuant Article 15 - Part A
2010-11-03 Switzerland - National Report Pursuant Article 15 - Part B
2010-11-03 Switzerland - National Report Pursuant Article 15 - Part C
2010-11-03 List of 1st Round Reports by Party

DDT

2000-3 Rev.1 Manual for IRS
2001-3 Insecticides for IRS
2006-11-12 Indoor Residual Spraying
2006 State Order for DDT manufacture and conditions
2006-09-15 WHO gives indoor use of DDT a clean bill of health for controlling malaria
2007 Govt Env Mgt Plan VectorBorne Disease
2007 The use of DDT for vector control
2010-10-03 WHO _ Vector control of malaria
2010-11-03 DDT Notification Form – India
2010-11-03 DDT register
2010-11-03 Expired Specific Exemptions

NIPs

2004-01-31 NIPs guidance interim COP.1-INF-13 2004
2005-01-25 Development of guidance to assist countries in the preparation of NIPs COP.1-12
2005-05-11 Possible text for inclusion in the interim guidance for developing NIPs COP.1-INF-13-Add1
2005-05 Guidance for the review and updating of NIPs COP.1-SC-1-12-Annex
2006-01-30 Guidance for developing NIPs COP.2-INF-7
2006-05 Elaborated process of reviewing and updating NIPs COP.2-SC-2-7-Annex
2007-03-08 NIPs draft guide soc-econ assessment [and stakeholders] COP.3-INF-8
2009-04-07 Draft guidance on action plan costs, including incr costs and action plans for POPs COP.4-INF-11
2010-10-09 NIPs guidance documents - website overview
2010-10 NIPs Overview on website

PCBs

2010-01 PEN 1st Advisory Comm Mtg
2010-11-03 PCBs – Overview
2010-11-03 PEN FAQ
2010-11-03 Pen Magazine first article will be Inventories of PCBs – the place to start
2010-11-03 Programme for the Regional training workshops on PCBs and POPs wastes

POPs

2009-02-18 Ppt presentation – Unknown author - Stockholm convention on POPs
2010-03 UNEP - Draft Guide (53pp) - Info collection of new POPs
2010-10-09 List of POPs substances
2010-11-02 Nine new POPs in 2009.pdf

UNIDO

BTO Reports

2007-07-16-25 BTOMR - NIP for CEO endorsement - New Delhi - Peng, Galvan, Dhua, Ramdev
2007-11-25 - 2007-12-01 BTOMR TORs for subcontracts - New Delhi – Galvan
2008-02-22 BTOMR - Chandigah Haz waste – Ramdev
2008-06-29 to 2008-07-06 BTOMR - Bangalore (med waste) and NEERI Nagpur – Ramdev
2008-07 BTOMR - Medical wastes - Bangalore – Dhua
2008-08-21-27 BTOMR - NEERI Nagpur - Dhua Ramdev
2009-10-17-28 BTOMR - Vendors Workshop - Med Waste - NIP - Bangalore – Centeno
2010-05-03-24 BTOMR - Med Waste - Bangalore – Dhua
2010-08-23-27 BTOMR - Contaminated Sites Training - NEERI Nagpur - Strathclyde Univ and Juwarkar
2010-09-11 - 2010-10-02 BTOMR - NIP review - Bangalore, Delhi, Nagpur – Csizer
2010-09-24 - 2010-10-02 BTOMR - NIP review - Nagpur, Bangalore, Delhi – Centeno
2010-09-24 - 2010-10-02 BTOMR – Rev. inventory of D&Fs - NIIST, NEERI and CPCB – Centeno

Tour reports

2008-08-08 Tour Report - NIP meeting - NEERI Nagpur – Naidu
2009-04-27-28 Tour Report - PCBs awareness - Lignite Corporation - Neyvelii – Naidu
2009-07-16-17 Tour Report - PCBs awareness, how to identify - Lodhi Estate, New Delhi - Dwarakanath and Naidu
2009-08-5-6 Tour Report - PCBs awareness - Andhra Pradesh Power - Hyderabad - Dwarakanath and Naidu
2009-09-16-18 Tour Report - PCBs awareness at MSETCL - Maharashtra Naidu
2009-12-09-11 Tour Report - PCBs West Bengal Pollution Control Board - Kolkata West Bengal – Dwarakanath
2010-03-22 Tour Report - PCB ESM and disposal preso to NSC meeting - Dwarakanath and Naidu
2010-05-31 to 8 June -Tour Report - PCBs Sail (Durgapur, Burnpur, Bokaro and Rourkela) and Orissa – Naidu
2010-06-29 to 07-01 Tour Report - PCBs Gujarat – Naidu
2010-07-28-31 Tour Report - PCBs awareness - Bhavanagar and Alang – Naidu

Other reports

2008-12 Personal report of coordinator -RENPAP - 2pp- (Annexes missing)

Evaluation general

2006-03 International Centre for the Advancement of Manufacturing Technology
2007-05 Country Service Framework_India
2010-02 Activities of the Evaluation Group
2010-04 Thematic evaluation of ITPO Network
2010-07 Review of UNIDO MP projects

Inception reports

2010-04-26 UNIDO Inception report guidance
2008-09 Inception Report - NEERI Dioxins and furans
2008-09 Inception Report - NEERI Waste and contaminated sites
2008-09 Inception Report- CSIR Dioxins and furans
2008-11 Inception Report - CPC Dioxins and furans
2010-07-12 India_Inventory_PCB_Review
2010-07-13 India_Inventory POPs-Contaminated Sites_Review
2010-07-15 India_Inventory_Dioxins_Szabolcs Fejes_Review

Minutes of meetings

2007-12-18 Minutes - NSC Mtg - CGO Complex - New Delhi
2008-02-27 Minutes - NSC Mtg - CGO Complex - New Delhi
2008-07-3-4 Minutes - Dioxins and Furans - NEERI Nagpur
2008-08-28 Minutes - Brainstroming - Contaminated Sites Dioxins and Furans - NEERI Nagpur
2008-09-23 Minutes - First Project Review of the NIP - CGO complex, New Delhi
2008-11-18 Minutes - Dioxins and Furans - NEERI Nagpur
2009-02-21-22 A - Minutes of meeting on NIP brainstorming session - CPRI Bangalore
2009-02-21-22 B - Agenda - NIP brainstorming session - CPRI Bangalore
2009-02-21-22 C - List of Delegates - NIP brainstorming session - CPRI Bangalore
2009-04-17 Minutes - PCBs - CPRI Bangalore

2010-02-09 Minutes - PCBs - CPRI Bangalore

2010-03-07 Minutes - PCBs - CPRI Bangalore

2010-08-26 Minutes - PCB Vendors Meeting - CPRI-UNIDO-RENPAP - RENPAP Conf Hall

Preparatory PDF-B report

2004 GFIND07004 PREPPHASE REP 2004 APPENDIX 2 PCB

2004 GFIND07004 PREPPHASE REP 2004 APPENDIX 3 DIOXINS

2004 GFIND07004 PREPPHASE REP 2004 APPENDIX 4 MANAGEMENT OF POPS

2004 GFIND07004 PREPPHASE REP 2004 APPENDIX 5 STAKEHOLDERS

2004 GFIND07004 PREPPHASE REP 2004 APPENDIX 6 LAB CAPACITY

2004 GFIND07004 PREPPHASE REP 2004 CONTENTS AND ANNEX 1 TO 5 AND APPENDIX 1

NIP India

2007-08-30 GEF-UNIDO 07004 PROJDOC for NIP

2010-12-23 Annex-1 [1608 DDT, 207-285, 79 pp] to NIP with photos added by TB

2010-12-23 Annex-1 [1608 DDT] to NIP without photos

2010-12-23 ANNEXURE 1-A [1608 DDT, 284-328, 45 pp]

2010-12-23 ANNEXURE 1-B [1608 DDT 17 pp] Project Proposal - Prof GD Yadav, ICT, Mumbai

2010-12-23 V1 ANNEX 2 CPRI [1726 PCBs] 46 pp Obj 3

2010-12-24 NIPdraft-1 (22 12 2010) rev renpap

2011-01-17 V2 ANNEX 2 CPRI [1726 PCBs] 83 pp 15 Sep 10 (given to us by CPRI) Obj 3

ANNEX - 3 V1 NEERI and NIIST uPOPs TO NIP [1612 Obj 4 D&F pp 374-408 total 35pp] Ambu July 2010 ANNEX - 3 V2 NEERI and NIIST uPOPs TO NIP [1612 Obj 4 D&F 86 pp no page numbers] Dec 2010 Ambu and Thacker

ANNEX - 4 V1 NEERI - DDT & PCBs [1610 Objective 5, 66pp Waste and Contaminated Sites]

ANNEX - 4 V2 NEERI - DDT & PCBs [16001610 Objective 5, 15 pp Waste and Contaminated Sites] Dec 2010 AJ

ANNEX - 4 V2 NEERI - DDT & PCBs [16001610 Objective 5, 193 pp Waste and Contaminated Sites] Dec 2010 AJ

PCBs

2008-12-15 Ppt - VV Pattanshetti - PCB's

2009-02-11 Mandate letter from MOEF to have PCBs and PCB-containing equipment registered

2009-02-18 Ppt - Unknown presenter - Data Collection - PCB Inventory Form

2009-02-20 Ppt - Asha Juwarker - Measures in Relation to PCB Wastes and Contaminated Sites

2009-02-20 Ppt - Sabine Bowers - Alts for PCBs - M&I Materials (UK) - Ester Transformer Fluids replace PCBs

2009-11-02 Ppt - CJ Naidu - Measures in Relation to PCB's

Publications and PowerPoints

2009-07-12 Paper - Thacker - Dioxins and furans in industries and processes using chlorine base chemicals - Paper for Dioxin Conf 2009 Beijing

2010-06-15 Awareness Brochure - Dioxins - NIIST- Malayalam 2pp

2010-06-15 Awareness Brochure - Dioxins - NIIST- Tamil 2pp

2010-06-15 Awareness Brochure - Dioxins - NIIST- Telugu 2pp

2010-06-15 Awareness Brochure - Dioxins -NIIST- English 2pp

2010-06-15 Awareness Brochure - Dioxins -NIIST- Hindi 2pp

2010-10-01 Paper - Thacker - Dioxin Releases in Waste Incinerations and Thermal Processes - Bull Env Cont Tox

2010-10-2010 Ppt - Ambu Munusamy - RC-Dioxins - Team Dioxin NIIST-CSIR

2010-10-2010 Ppt - most likely Ambu Munusamy - RC-Dioxins - Team Dioxin NIIST-CSIR

2010-XX-XX Paper - KS Thushara - Levels of PCDDs and Furans in food of animal origin - Team Dioxin NIIST

2010-XX-XX Paper - Thacker – D&F in Waste Incinerations and Thermal Processes - Dioxin Conf 2010 San Antonio

XXXX - Ppt Ambu Munusamy - Dioxin Toolkit, Art 5, Annex III-C - Team Dioxin NIIST-CSIR

XXXX Ppt Author unknown - Dioxin and Furans PBDE, PFOA PFOS PCB - Workshop material - Team Dioxin NIIST

Subcontract TORs

16001608 TOR Output 2.1 - HIL - DDT $244100

16001610 TOR Outputs 5.1 and 5.2 - NEERI Develop and implement strategies to identify PCB waste $300000

16001611 TOR Output 4.1 - NEERI – W&cent - Reduction of POPs emissions & eliminate sources of POPs $195000

16001612 TOR Output 4.1 - NIIST Southern - Reduction of POPs emissions & eliminate sources of POPs $150000

16001613 TOR Output 4.1 - CPCB N&E - Reduction of POPs emissions and eliminate sources of POPs $176000
16001726 TOR Output 3.1, 3.2, 3.3 - CPRI - PCB national inventory, methodology, disposal strategy etc $229200
16001923 TOR Outputs 1.1 - 1.5 + 6.2 - MOEF Nat Monitor system+IMS+NIP+Legal+Info exchange etc $580000

UNIDO POPs website

2010-11-03 Alternatives to POPs
2010-11-03 BAT_BEP Forums
2010-11-03 Contaminated Sites Forums
2010-11-03 e-learning
2010-11-03 GEF Executing Agencies
2010-11-03 Nine new POPs
2010-11-03 Non-Combustion Forums
2010-11-03 POPs facts and figures
2010-11-03 Post NIPs
2010-11-03 RENPAP Forums
2010-11-03 Sources & Elimination
2010-11-03 What are POPs

Chemical conventions

Pesticides

Workshops - Training

2010-08-23-27 Page 1 Training (external) Naryan - Methods for assessment of remediation of POPs sites
2010-08-23-27 Page 2 Training (external) Naryan - Methods for assessment of remediation of POPs sites
Date unknown - Training Programe on DDT and alternatives
Training Programe on DDT (UNIDO ppt)

Workshops - Awareness

2008-11-18 Awareness Workshop general photos
2008-11-18 Awareness Workshop photos
2008-11-18 Awareness Workshop photos of Drs Ramdev, Chakrabarti and Thacker
2008-11-21 Awareness Workshop POPs – NIIST
2008-11-21 Awareness Workshop POPs - Photos – NIIST
2010-09-30 Summary of Awareness Workshop locations (N=43) - 23 Jan 09 to 30 Sep 10

UNITAR

1996 Guidance: Preparing a National Profile to Assess the National Infrastructure for Management of Chemicals
2000-11 Guidance Document for EPER Implementation - European Commission
2003 Guidance Preparing-Updating a National Profile as Part of a SC NIP, Companion Guidance Note
2005-04-11 Developing a Gantt and PERT Chart, Draft Training Manual
2005-04 POPs and UNITAR
2005 Ppt Decision Trees to assist with the Implementation of the Stockholm Convention, Draft Interactive
2006-03-21 Action Plan Skills Building for 15 Least Dev Countries to assist with NIP Development
2008-07-14 National Chemical Management Profile for India
2009-03 Decision Trees to assist with the Implementation of the Stockholm Convention
2009-04 GUIDANCE ON ACTION PLAN DEVELOPMENT FOR SOUND CHEMICALS MANAGEMENT

ANNEX 4: LIST OF INTERVIEWEES

Interviews with conducted with 37 personnel in 19 organisations over 9 working days (from Sunday 16 January to Thursday 27 January 2011 (excluding 26 January national holiday). Further information on each organisation can be obtained from the hyperlink.

Organisation	Name	Topic (time)	Designation
In-person interviews			
Ministry of Environment and Forests (MOEF), New Delhi	Dr Chhanda Chowdhury	POPs legislation, project administration and reporting (1.5h)	National Project Director POPs & Director, Hazardous Substances Management Division
	Dr Ashwani Sharma	Activities in project (1h)	Assistant Project Coordinator
	Dr Rajeev Mishra		Assistant Project Coordinator
	Mr Hem Pande	GEF role and activities (1h)	Joint Secretary - GEF Focal Point
	Ms Nayanika Singh		Consultant - GEF Focal Point
United Nations Industrial Development Organisation (UNIDO), New Delhi	Ms Ayumi Fujino	UNIDO role and activities (2h:35m in 3 sessions)	UNIDO Representative for India & Regional Director for South Asia
	Ms Tonilyn Lim		Industrial Development Officer, Energy specialist
	Mr Vinay Vij	Meeting schedules & finance	Administrative Officer
UNIDO / Regional Network on Safe Pesticide Production and Information for Asia and the Pacific (RENPAP), New Delhi	Dr SP Dhua	NIP, Project coordination (4h over 3 sessions)	Regional Coordinator – RENPAP and POPs for Asia
	Dr YP Ramdev		Assistant Regional Coordinator
Hindustan Insecticides Limited (HIL), New Delhi	Dr T Basu	DDT (3h)	Assistant Public Information Officer & Deputy Manager (product development)
Central Power Research Institute (CPRI), Dielectric Materials Division, Bangalore	Dr C Jayarama Naidu	PCB-contaminated oil, equipment and sites (8h:30m in 3 sessions over 2 days)	Joint Director, DMD
	Dr K Dwarakanath		Additional Director (Retired), DMD and Chief Vigilance Officer
	Mr P Thomas		Joint Director, DMD
	Ms S Vijaya Kumari		Joint Director and Head, DMD
National Environmental	Dr Sathish R Wate	Administration	Director

Organisation	Name	Topic (time)	Designation
Engineering Research Institute (NEERI), Nagpur but interviewed in New Delhi	Dr Asha Juwarkar	PCB, DDT and dioxin contamination (3h in two interviews over 2 days)	Scientist G and Head, Environmental Biotechnology Division
	Dr Neeta Thacker		Deputy Director and Head, Analytical Instruments Division
National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram but interviewed in New Delhi	Dr Anbu Munusamy		Scientist and Dioxin Research Unit Chief
Central Pollution Control Board (CPCB), New Delhi	Ms Mita Sharma	Dioxin emissions (2h)	Senior Environmental Engineer
	Mr Sharandeep Singh		Scientist B
Steel Authority of India Limited (SAIL), New Delhi	Dr Meenakshi Kakkar	PCBs and environmental management policies (1h)	Deputy General Manager, Environment Management Division
	Mr Suneel Singhal		Assistant Manger
The Energy and Resources Institute (TERI), New Delhi	Dr Suneel Pandey	POPs (1h)	Fellow
	Mr Ankur Garg		Research Associate
Toxics Link, New Delhi	Dr Ravi Agarwal	POPs (1h)	Director
	Dr Satish Sinha		Associate Director
World Wide Fund for Nature India (WWF-India), New Delhi	Mr Ravi Singh	Pollutant impact on wildlife, especially DDT (1h)	Secretary General & CEO
	Dr Nitin Kaushal		Senior Manager, water resources, policy and hydropower
Telephone interviews (15-30 minutes)			
Cement Manufacturers' Association, New Delhi	Dr SP Gosh	Role of industry in POPs destruction	Secretariat General, Energy-Power-Technical Environment Group
Indian Chemical Council (ICC), Mumbai	Mr S Ganesan	POPs awareness and industry activities	Vice President, Excel Crop Care Ltd & Chairman of International Treaties Expert Committee
Confederation of Indian Industry (CII), New Delhi	Dr Suman Majundar	POPs awareness and industry activities	Centre of Excellence for Sustainable Development
Karnataka State Pollution Control Board	Dr H Lakshmi Kanth	POPs awareness and state activities	Regional Officer
Gujarat State Pollution	Mr AV Shah	POPs awareness	Regional Officer

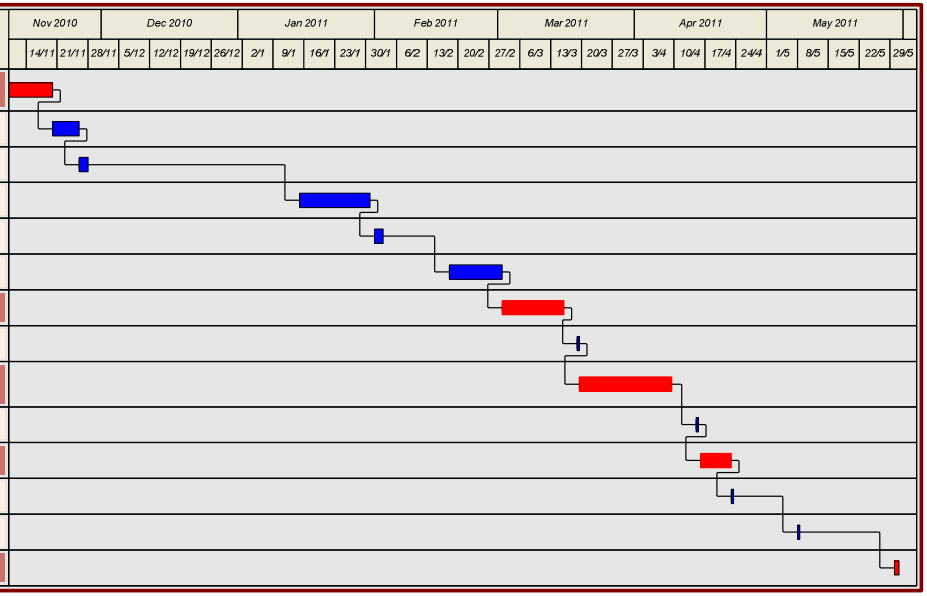
Organisation	Name	Topic (time)	Designation
Control Board		and state activities	
Tamil Nadu State Pollution Control Board	T Jayakumar Ethiraj Mr R Kumar	POPs awareness and state activities	Joint Chief Environmental Engineers
Ministry of Health & Family Welfare, New Delhi	Dr RS Sharma	DDT and public health	Joint Director, National Vector Borne Disease Control Programme (NVBDCP)
Courtesy visits (10-15 minutes)			
Central Power Research Institute (CPRI), Bangalore	Dr N Murugesan	POPs project and NIP	Director General
Central Pollution Control Board (CPCB), New Delhi	Prof SP Gautam Mr JS Kamyotra	POPs project and NIP	Chairman Member Secretary

ANNEX 5: PARTICIPANTS AT MEETINGS TO DISCUSS THE PRELIMINARY FINDINGS OF THE EVALUATION

Date: Fri 28 Jan	**Time: 15:00 – 17:00**
Presenters	• Dr Kurian Joseph, National Consultant, UNIDO (Evaluation) • Dr Tom Batchelor, International Consultant-UNIDO (Evaluation)
Venue:	**UNIDO Field Office, UN House, Lodhi Road, NEW DELHI**
Participants	• Dr Chhanda Chowdhury, National Project Director, MOEF • Dr Ashwani Sharma, Assistant Project Coordinator, MOEF • Mr Sundar Ramanathan, Deputy Director, HSM Division, MOEF • Ms Nayanika Singh, Consultant- GEF Focal Point • Ms Ayumi Fujino, UNIDO Representative for India and Regional Director for South Asia • Dr SP Dhua, RENPAP / Project Coordinator POPs • Dr YP Ramdev, RENPAP / Assistant Project Coordinator POPs • Dr C Jayarama Naidu, Joint Director, CPRI • Dr Mita Sharma, Senior Environmental Engineer, CPCB • Dr (Ms) M Kakkar, Deputy General Manager, SAIL • Dr Suneel Pandey, Fellow, TERI • Dr Anjana Pant, Director, WWF
Date: Tues 2 Feb	**Time: 14:00 – 16:00**
Presenter	• Dr Tom Batchelor, International Consultant-UNIDO (Evaluation)
Organisation:	**UNIDO HQ VIENNA: Presentation of Preliminary Findings**
Attendees:	• Dr Mohamed Eisa, Chief of UNIDO-POPs and Chemicals Management Unit • Mr Georgios ANESTIS, UNIDO GEF Coordinator • Ms Carmela CENTENO, Project Manager POPs India • Mr Heinz LEUENBERGER, Director of UNIDO Energy and Cleaner Production • Ms Margareta de GOYS, Director of UNIDO EVA • Mr Johannes DOBINGER, UNIDO EVA • Ms Thuy Thu Le, UNIDO EVA • Apologies: Mr Peter LOEWE, UNIDO EVA • Apologies: Mr PENG, Ex-Project Manager POPs India

ANNEX 6: DURATION OF ACTIVITIES IN THE EVALUATION

ID	Deliverable	Responsibility	Start	Finish	Duration
1	TOR preparation, team identification, comm. with SHs, contract finalised	ODG, EVA, Eval Team, P-M and staff, India Reg. office	10/11/2010	19/11/2010	10d
2	Draft Inception Report	IEC	20/11/2010	25/11/2010	6d
3	Present and finalise Inception Report	IEC/ODG/EVA/PTC-PM	26/11/2010	27/11/2010	2d
4	Mission, India briefing 28-Jan, compile India comments 29 Jan, travel to EU	IEC/NEC	15/01/2011	30/01/2011	16d
5	Travel and briefing in Vienna	IEC/ODG/EVA/PTC-PM	01/02/2011	02/02/2011	2d
6	Write and submit Draft Report	IEC/NEC	18/02/2011	01/03/2011	12d
7	Submit comments on report	ODG/EVA	02/03/2011	15/03/2011	14d
8	Revise the Draft Report	IEC/NEC	19/03/2011	19/03/2011	.5d
9	Stakeholder review of Draft Report	PTC-PM, project staff, stakeholders	19/03/2011	09/04/2011	21d
10	Incorporate stakeholder comments	IEC	15/04/2011	15/04/2011	.5d
11	EVA review of Draft Report	ODG/EVA	16/04/2011	22/04/2011	7d
12	Incorporate EVA comments	IEC	23/04/2011	23/04/2011	.5d
13	Finalise and submit Final Report	IEC	08/05/2011	08/05/2011	.5d
14	Issue Final Report	ODG/EVA	30/05/2011	30/05/2011	1d



ODG = ; EVA = Evaluation Office; PTC-PM = NEC = National Evaluation Consultant; IEC = International Evaluation Consultant

2011	Action
28 January	Preliminary Findings of Evaluation (New Delhi)
1 February	Preliminary Findings of Evaluation (Vienna)
28 February	End of validation period for information provided in evaluation
1 March	Draft Evaluation Report sent to UNIDO
15 March	End of revisions by UNIDO on draft
19 March	Sent to India for comments on draft Evaluation Report
15 April	End of revisions by India
22 April	UNIDO review of draft Evaluation Report
30 May	UNIDO submits final Evaluation Report to GOI

ANNEX 7: OUTCOMES DELIVERED, PARTLY DELIVERED AND NOT YET DELIVERED

Contractor	HIL	Number:	1608	Topic:	DDT	Objective:	2	Annex:	1

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	61,025	28/05/2008	Signature of contract		1	1					
2	73,230	22/01/2009	Report 1 of the first meeting of the Technical Coordination Group		1	1					
			Annual Audit Report of expenditure vs budget		1			1	Did not submit Audited Annual Financial Report	1	
3	61,025	22/12/2009	Report 2 detailing the establishment of the following activities [see next column "Project Document number"]	2.1.1 Establish inventories on production, distribution, use and international trade	6	3	2	1	Did not prepare a detailed report on the retrieval and collection of data on DDT levels in different compartments over the years, in order to find the trend in the change and develop mathematical modelling for future scenario	2	
				2.1.1 Establish inventories on production, distribution, use and international trade	1	1					
				2.2.1 Establish national inventory of stockpiles	5	2	2	1	Did not identify additional measures necessary for the safe, efficient and environmentally sound management of stockpiles	3	
				2.2.2 Develop guidelines for the management of stockpiles	6		1	5	Did not identify and make proposals to overcome barriers to effective working of current and proposed management measures	4	
									Did not hold stakeholder workshop to review and endorse proposals to overcome barriers to effective working of current and proposed management measures	5	
									Did not prepare recommendations for inclusion in the NIP and in the regulatory framework	6	
									Did not hold stakeholder workshop to review and endorse recommendations	7	NC
									Did not prepare recommendations for inclusion in the NIP and in the regulatory framework	8	NC
				2.1.2 Develop reduction and phase-out strategies							
				2.1.2 Develop reduction and phase-out strategies	1		1				
				2.1.2 Develop reduction	1			1	Did not assess public awareness and participation	9	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
				and phase-out strategies					opportunities and make recommendations prepared to increase awareness and participation		
				2.1.2 Develop reduction and phase-out strategies	1			1	Did not assess monitoring and R&D capacity	10	
				2.1.3 Build capacity within the national focal point	3		1	2	Did not establish an Information Management System (IMS) for the intentionally produced POPs within MOEF	11	NC 73, 74
			Annual Audit Report of expenditure vs budget		1			1	Did not submit Audited Annual Financial Report	12	
4	48,820	08/10/2010	Final Completion Report detailing the Inventory, findings and NIP recommendations of the Project and acceptance by UNIDO	As above							
			Annual Audit Report of expenditure vs budget		1			1	Did not submit Audited Annual Financial Report	13	
			Final Audited Financial Statement		1	1					
TOTAL	244,100				30	9	7	14			

Contractor	CPRI	Number:	1726	Topic:	PCBs	Objective:	3	Annex:	2

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	35,880	05/01/2009	Signature of contract		1	1					
2	167,440	30/07/2009	A Report 1 of the 2nd meeting of the Technical Coordination Group		1	1					
			Annual Audit Report of exp vs bud		1			1	Did not submit Audited Annual Financial Report	14	
3	23,920	20/11/2009	Report 2 detailing the establishment of the following activities:	3.1.1 Collect national information on production, import and use of PCBs and PCB-containing equipment	5	2	3	0			
				3.2.1 Develop and test a detailed inventory methodology for PCBs	15	6	3	6	Did not prepare Guidelines for an inventory on PCBs	15	
									Training information not prepared on the use of the PCB inventory	16	
									Did not investigate in a systematic and planned way the storage conditions of PCB-containing devices [Alang shipyard]	17	
									Did not develop a timetable for PCB-containing equipment replacement	18	
									Did not develop a timetable for storing PCB-containing equipment safely	19	
									Did not prepare a Management Information System to hold inventory data and replacement timetables	20	NC 73, 74
				3.3.1 Establish pilot training programme	3	1	1	1	Did not undertake a study tour on PCB management	21	
				3.3.2 Develop a national PCBs training programme	1	0	0	1	Did not develop a proposal for a permanent sustainable training programme to address PCB identification, inventorisation, analysis and disposal	22	
4	11,960	16/12/2010	Final Completion Report detailing the inventory, findings, and NIP recommendations of the Project	As above							
			Annual Audit Report of expenditure vs budget		1			1	Did not submit Audited Annual Financial Report	23	
			Final Audited Financial Statement		1			1	Did not submit Final Audited Financial Statement	24	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
TOTAL	239,200				29	11	7	11			

Contractor	NEERI	Number:	1611	Topic:	uPOPs	Objective:	4	Annex:	3

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	48,750	04/06/2008	Signature of contract		1	1					
2	58,500	26/02/2009	Report 1 of the Technical Coordination Group (Inception Report) covering the activities detailed in paragraph VII of the TOR (Annex D to 16001610)								
				Annual Audit Report of expenditure vs budget	1			1	Did not submit Audited Annual Financial Report	25	
3	48,750	12/08/2010	Report 2 detailing the establishment of the following activities:	4.1.1 Develop inventories of sources and estimates of releases	3	3					
				4.1.3 Evaluate and develop relevant policies, laws and promotional schemes	5	1	1	3	Did not develop legal and regulatory frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of uPOPs	26	
									Did not develop regulatory, administrative or other schemes to promote the use of BEP in new sources	27	
									Did not develop regulatory, administrative or other schemes to promote the use of BAT / BEP in existing sources of uPOPs	28	
				4.1.4 Formulate strategies and action plan for the control of unintentionally produced POPs	5		2	3	Did not assess the social and economic impacts of releases of uPOPs	29	
									Did not develop strategies for uPOPs reduction and elimination	30	
									Did not hold meetings to raise stakeholder awareness to gain their support for the NIP	31	
				Annual Audit Report of expenditure vs budget	1	1					
4	39,000	28/01/2011	Final Completion Report detailing								

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
			the inventory, findings, and NIP recommendations of the Project								
				Final Audited Financial Statement	1			1	Did not submit Final Audited Financial Statement	32	
TOTAL	195,000				17	6	3	8			

Contractor	NIIST	Number:	1612	Topic:	uPOPs	Objective:	4	Annex:	3

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	37,500		Signature of contract		1	1					
2	45,000		Report 1 of the Technical Coordination Group								
				Annual Audit Report of expenditure vs budget	1			1	Did not submit Audited Annual Financial Report	33	
3	37,500		Report 2 detailing the establishment of the following activities:	4.1.1 Develop inventories of sources and estimates of releases	3	3					
				4.1.3 Evaluate and develop relevant policies, laws and promotional schemes	5	1	1	3	Did not develop legal and regulatory frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of unintentional production of POPs.	34	NC 26
									Did not develop regulatory, administrative or other schemes to promote the use of BEP in <u>new</u> sources	35	NC 27
									Did not develop regulatory, administrative or other schemes to promote the use of BAT / BEP in <u>existing</u> sources of uPOPs	36	NC 28
				4.1.4 Formulate strategies and action plan for the control of unintentionally produced POPs	5		2	3	Did not assess the social and economic impacts of releases of uPOPs	37	NC 29
									Did not develop strategies for uPOPs reduction and elimination in India	38	NC 30
									Did not hold meetings to raise stakeholder awareness to gain their support for the NIP	39	NC 31

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
				Annual Audit Report of expenditure vs budget	1			1	Did not submit Audited Annual Financial Report	40	
4	30,000		Final Completion Report detailing the inventory, findings, and NIP recommendations of the Project								
				Final Audited Financial Statement	1			1	Did not submit Final Audited Financial Statement	41	
TOTAL	150,000				17	5	3	9			

Contractor	CPCB	Number:	1613	Topic:	uPOPs	Objective:	4	Annex:	3

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	44,000		Signature of contract		1	1					
2	52,800		Report 1 of the Technical Coordination Group (Inception Report) covering the activities detailed in paragraph VII of the TOR (Annex D to 16001610)								
				Annual Audit Report of expenditure vs budget	1			1	Did not submit Audited Annual Financial Report	42	
3	44,000		Report 2 detailing the establishment of the following activities:	4.1.1 Develop inventories of sources and estimates of releases	3	3					
				4.1.3 Evaluate and develop relevant policies, laws and promotional schemes	5	1	1	3	Did not develop legal and regulatory frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of unintentional production of POPs.	43	NC 26
									Did not develop regulatory, administrative or other schemes to promote the use of BEP in new sources	44	NC 27
									Did not develop regulatory, administrative or other schemes to promote the use of BAT / BEP in existing sources of uPOPs	45	NC 28
				4.1.4 Formulate strategies and action plan for the control of unintentionally produced POPs	5		2	3	Did not assess the social and economic impacts of releases of uPOPs	46	NC 29
									Did not develop strategies for uPOPs reduction and elimination in India	47	NC 30
									Did not hold meetings to raise stakeholder awareness to gain their support for the NIP	48	NC 31
				Annual Audit Report of expenditure vs budget	1	1					
4	34,200		Final Completion Report detailing the inventory, findings, and NIP recommendations of the Project								
				Final Audited Financial Statement	1			1	Did not submit Final Audited Financial Statement	49	
TOTAL	175,000				17	6	3	8			

Contractor	NEERI	Number:	1610	Topic:	PCB/DDT	Objective:	5	Annex:	4

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	75,000	03/06/2008	Signature of contract								
2	90,000	09/02/2009	Inception Report of the TCG								
3	75,000	07/05/2010	Inventory Report of the TCG	5.1.1 Develop and implement strategies to locate and characterise wastes	7	1	2	4	Did not conduct training on inventory techniques for officials, investigators and key stakeholders likely to hold wastes	50	
									Did not establish, within the overall POPs Management Information System, data management routines to identify, hold, display and report direct and other inventory data	51	NC 72, 73
									Did not test data management routines to identify, hold, display and report direct and other inventory data through pilot investigations in selected areas	52	
									There was no proposal in the NIP to make monitoring of POPs mandatory for all surveys on air and water quality in and around waste sites and other potential hotspots	53	
			Annual Audit Report of expenditure vs budget		1			1	Did not submit Audited Annual Financial Report	54	
4	60,000	See letter	Final Report detailing the inventory of the following activities, findings and NIP recommendations of the Project	5.1.2 Develop methodologies for the sound management of products and articles in use and wastes	6	1	2	3	Strategies described for the appropriate use, treatment and disposal of DDT/POPs (Annex 4, Section 14, p454) were not reported to be tested for their appropriateness in controlling wastes, as set out in Article 6 of the Convention. In addition, additional recommendations to ensure compliance were not made, where these may have become necessary	55	
									There was no report of an assessment in the NIP of the appropriateness of environmentally sound handling, collection, transport and storage techniques for PCB-contaminated equipment and wastes being applied in a wide application in the Indian context; and no recommendations as a result of the assessment	56	
									A review meeting was not held to examine and endorse the recommendations [in Annex 4] and [to examine and endorse] a national implementation strategy based on agreed priorities	57	NC 77
				5.1.3 Develop strategies for the appropriate disposal of POPs	7	1	0	6	There were no recommendations in the NIP as a result of Objectives 1 and 2 relating to the disposal of POPs materials and wastes. As there were no recommendations, it was not possible for them to be tested for compliance with Article 6 of the Stockholm Convention	58	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
									Annex 4 described the availability of these techniques in India. However, the appropriateness of these techniques in India was not discussed	59	
									There was no examination of the additional costs involved in the introduction of appropriate disposal techniques	60	
									Recommendations were not put forward for the implementation in India of appropriate disposal techniques or the modification of existing techniques to comply with the Convention. As there were no recommendations proposed, it was not possible for them to be tested for compliance with Article 6 of the Stockholm Convention	61	
									A national expert review meeting was not held to examine and endorse the recommendations [in Annex 4] and [to examine and endorse] a national implementation strategy based on agreed priorities for the implementation of appropriate disposal techniques or the modification of existing techniques to comply with the Convention	62	
									R&D was not reported in the NIP as having been conducted to determine the cost-effectiveness of technology that could be used in India for the safe disposal of POPs stockpiles/POPs-containing wastes	63	
				5.1.5 Prepare and disseminate training and awareness raising materials and technical guidance for the management of POPs wastes	2	0	1	1	Training and information meetings were not held to disseminate information and guidance to national and provincial officials and key stakeholders that possess POPs wastes requiring, or likely to require, disposal or who operate disposal facilities	64	
				5.2.1 Develop strategy for the identification of contaminated sites	4	2	0	2	Preliminary investigations to refine the inventory methodology were not conducted in selected States through field characterization and interviews with relevant authorities	65	
			Annual Audit Report of expenditure vs budget		1	1			Did not submit Audited Annual Financial Report	66	
			Final Audited Financial Statement		1			1	Did not submit Final Audited Financial Statement	67	
TOTAL	300,000				29	6	5	18			

Contractor	MOEF (via HIL)	Number:	1923	Topic:	Convention / Management	Objective:	1&6	Location:	NIP

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
1	131,250	16/09/2009	Signature of contract								
2	157,500	22/12/2010	Formal Report of Technical Coordination Group								
				Annual Audit Report of expenditure vs budget	1			1	Did not submit Audited Annual Financial Report	68	
3	157,500	TBS	Final Reports detailing establishment of the following activities	1.1.1 Establish national management system	4	1	3	0		69	
				1.1.2 Establish Information Management System (IMS)	8	1	1	6	There was no evidence in the NIP that the existing IT architecture within MOEF had been examined	70	
									There was no evidence that the inventory and reporting requirements of the Convention had been determined. The Convention shows that India has reported once since ratification, and Part C of the Reporting Form was not completed.	71	
									There was no evidence that MOEF determined the existing data holdings relevant to POPs within other government departments and non-government institutions	72	
									There was no evidence of the IMS, and therefore no exchange was possible. In addition, there was no evidence that demonstrated cooperation between institutions gathering information that may be relevant to the reporting requirements of the Convention	73	
									There was no evidence of the IMS and therefore there was no reason for MOEF to recruit staff and train them to operate IMS	74	
									There was no evidence that a data management infrastructure had been established by MOEF to input, store, model and report national and state information, in formats compatible with Convention requirements	75	
				1.2.1 Draft National Implementation Plan	3	1	2	0			
				1.2.2 Review and endorse National Implementation Plan	6	0	1	5	The Draft NIP had not been corrected, amended and modified to take into account any review recommendations of international and national experts and representatives of principal stakeholder groups	76	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
									Meetings were not held with principal stakeholders at national and state levels to introduce and gain endorsement for the NIP, its component implementation plans and priority actions	77	
									The draft NIP was not disseminated to relevant ministries to gain its endorsement	78	
									The draft NIP was not corrected, amended and modified to take into consideration the recommendations from these ministries	79	
									The NIP was not submitted to the Government for endorsement following consultation	80	
				1.3.1 Establish regulatory requirements in relation to national sustainable development policies, national environmental protection plans, country assistance strategies, state laws and administrative regulations	4	0	0	4	There was no evidence in the NIP of recommendations that had been integrated into national sustainable development policies, national environmental protection plans and country assistance strategies	81	
									There was no evidence of results and recommendations integrated with regard to state laws and administrative regulations	82	
									There was no evidence of recommendations examined for consistency, conformity with Convention requirements and Government policies, plans and laws	83	
									There was no evidence of recommendations for conformity examined with other multilateral environmental agreements	84	
				1.3.2 Establish regulatory requirements in relation to national and state administrative rules, standards and guidelines	2	0	0	2	There was no evidence of the results and recommendations integrated from Objectives 2 to 5 with regard to national and state administrative rules, standards and guidelines	85	
									There was no evidence of the recommendations examined for consistency and conformity with the Convention requirements	86	
				1.3.3 Assess opportunities for voluntary promotions schemes to address the Convention requirements	2	0	0	2	There was no evidence of an assessment of opportunities to encourage industry compliance with Convention objectives and obligations through market-led voluntary approaches such as Cleaner Production, ISO accreditation or eco-labelling	87	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
									There was no evidence of an assessment of opportunities to encourage voluntary compliance with Convention objectives and obligations amongst users of POPs chemicals through the take-up, for example, of integrated pest management and improved health awareness	88	
				1.3.4 Undertake socio-economic impact study	1	0	0	1	There was no evidence of a study to assess the costs and benefits of proposed actions to facilitate the consideration of proposals by legislative bodies on the social and economic impact of (a) the continuing use of POPs chemicals; and (b) the possible regulatory requirements and voluntary schemes	89	
				1.3.5 Provide recommendations and gain endorsement for them	4	0	0	4	There was no evidence that recommendations and cost-benefit analyses had been provided to relevant legislative bodies	90	
									There was no evidence of detailed consultations held with legislative bodies and principal stakeholders to review and gain endorsement for inclusion of the recommendations in the NIP	91	
									There was no evidence of recommendations presented to MOEF who would in turn present the same legislative bodies to facilitate legal drafting	92	
									There was no evidence of institutional strengthening and capacity building implications of recommended actions at national and state level assessed for integration with the Capacity Building Programme proposal	93	
				1.4.1 Establish National Information Centre	3	0	0	3	There was no evidence of national and state level requirements reviewed for the provision of information to stakeholders, including the public	94	
									There was no evidence of a national information centre established within MOEF and appropriate arrangements determined for establishing an information network providing public access to POPs information consistent with Article 10 of the Convention at provincial level	95	
									There was no evidence of an Internet presence [website] established for the purpose of disseminating information related to the objectives of the Stockholm Convention and related multinational chemicals management agreements	96	
				1.4.2 Increase public awareness of POPs issues related to agriculture	3	0	2	1	There was no evidence of programmes and materials developed for enterprises licensed to produce POPs chemicals, to use POPs chemicals in product formulations, and to distribute these chemicals and products to promote improved and safer manufacturing, handling and progressive transfer to	97	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
									effective and environmentally sound alternatives		
				1.4.3 Increase industry and public awareness of uPOPs	3	0	1	2	There was no evidence of an examination by MOEF of examples of best practice in other countries for methodologies useful to India	98	
									There was no evidence of the development of appropriate awareness raising programmes and materials for delivery in conjunction with schemes to promote the improved performance of industry	99	
				1.4.4 Increase national and local government, municipalities, industry and public awareness of POPs issues related to waste management	2	0	0	2	There was no evidence of a determination of appropriate educational schemes to raise the awareness of administrations, industry and the public to the hazards posed by the inappropriate disposal of wastes comprising POPs or products containing POPs, being conducted with the assistance of national and local government, municipalities, relevant ministries and their development partners	100	
									There was no evidence of appropriate awareness raising programmes and materials were devised that can be delivered in conjunction with schemes to promote environmentally sound waste management in conjunction with Activity 1.5	101	
				1.5.1 Undertake an exposure risk assessment study of POPs	7	0	1	6	There was no evidence of POPs exposure studied and their effect on high-risk groups such as women and children	102	
									There was no evidence of an Expert Workshop held to review the information collected and to select the study sites, design investigation methodologies and establish the sampling cohort	103	
									There was no evidence of Methodology Training conducted for field teams related to a study on the exposure to POPs	104	
									There was no evidence of information collected through health and clinical examinations of population cohort, field investigations of levels of pesticides and PCB in the environment – water, soil and food in the pilot area, and monitoring and analysis of samples	105	
									There was no evidence of a preliminary assessment report prepared of the health impacts posed by POPs to guide future actions	106	
									There was no evidence of studies undertaken on environmental fate and exposure pathways of uPOPs under Indian conditions, including photochemical degradation	107	
				1.5.2 Develop R&D and monitoring strategies to	2	0	0	2	There was no evidence of an examination of national research and development facilities capable of undertaking specific	108	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
				support the Convention implementation					research programmes as well as systematic and regular investigations into POPs production, use, trade, release, disposal, environmental occurrence and impact and provision of recommendations for institutional strengthening and capacity building to meet India's requirements under the Convention for monitoring and reporting information		
									There was no evidence of the recommendations from the subcontracts being used to strengthen national R&D programmes that would lead to (a) leading to improved methodologies for preparing regular POPs inventories (b) leading to improved techniques for production, management and disposal of POPs and products containing POPs and alternative environmentally sound products and practices, removing barriers to POPs elimination, (c) providing testing information on new industrial chemicals and pesticides to ensure compliance with Article 3 paragraph 3 and Annexes D, E and F of the Convention, (d) leading to the determination of release limit values, to improved disposal techniques, and to improved methodologies for the identification and characterization of land contaminated by POPs to ensure compliance, in particular, with Articles 5, 6 and 11	109	
				6.1.1 Operate national coordination mechanisms and effective national implementation	7	4	2	1	There was no evidence of annual financial audits in MOEF related to the Project and therefore the arrangements for independent financial audits at key stages of the Project were not established	110	
				6.1.2 Establish a Technical Coordination Group at MOEF including the engagement of 5 institutions specialised in the field of pesticides, PCBs, dioxins and furans, monitoring and analysis and legal, policy and regulations	5	1	2	2	The heads of the contracts did not participate in the NSC meetings	111	
					0				MOEF/UNIDO did not provide the necessary management, technical and financial reporting to the Implementing Agency and the GEF and cooperate with any audit requirements	112	
				6.2.1 Establish independent technical peer review mechanism	2	1	1	0			
				6.2.2 Establish project	3	1	1	1	There was no evidence of Project Implementation Reviews	113	

Payment No	$	Date	Deliverable, according to sub-contract	Project Document number	Outputs				Comments	No	Dupl.
					Total	Del.	Partly Del.	Not yet Del.			
				evaluation mechanisms					carried out annually		
				Annual Audit Report of expenditure vs budget	1			1	Did not submit Audited Annual Financial Report	114	
4	133,750	TBS	Final Completion Report detailing the NIP for India with the endorsement of the GOI and its submission to the Stockholm Secretariat								
				Final Audited Financial Statement	1			1	Did not submit Final Audited Financial Statement	115	
TOTAL	580,000				74	10	17	47			

ANNEX 8: COMMENTS ON CONTRACT CONTENT AND CONSTRUCTION

Contract Number (1600-)	Responsible contractor	Objective	Objective / Outputs[2]	Contract Agreement $
1923	MOEF[1]	1	Convention implementation and infrastructure at national and State levels [Legislation]	580,000
1608	HIL	2	Measures in relation to chemicals (DDT) currently produced and used in India	244,100
1726	CPRI	3	Measures in relation to PCBs	239,200
1611	NEERI	4	Measures in relation to uPOPs	195,000
1612	NIIST	4	Measures in relation to uPOPs	150,000
1613	CPCB	4	Measures in relation to uPOPs	175,000
1610	NEERI	5	Measures in relation to wastes and contaminated sites	300,000
1923	MOEF[1]	6	Project management, monitoring and evaluation	Included in Objective 1

[1] HIL was responsible for financial administration and MOEF responsible for the objectives in 1 and 6
[2] As titled in Project Document GF/IND/07/004

Comment type	Evaluator comment
Misplaced objectives that were intended for MOEF, but were included in non-MOEF Contracts	• Objective 2.1.3 requires HIL to "build capacity within the national focal point…" [1608] • Objective 2.1.3 requires HIL to "…establish an Information Management System for DDT…" [1608] • Objective 3.2.1 requires CPRI to "…prepare a Management Information System to hold inventory data and replacement timetables…" [1726] • Objective 5.1.1 requires NEERI to "…prepare a Management Information System to hold inventory data and replacement timetables…" [1610] • Objective 5.1.1 requires NEERI to "… hold a review meeting to examine and endorse the recommendations [in Annex 4] and [to examine and endorse] a national implementation strategy based on agreed priorities…" [1610]
Double entitlement, or double payment	• MoEF and the Institutes have been paid for the same work, as the subcontract to the MoEF states that the work undertaken by the Institutes will form the principal mode of reporting to UNIDO [Contract 16001923 to HIL, Section VII page 9]
Payments not performance based	• MoEF received $157,500 for receiving the report of the Technical Coordination Group (TCG) [Heads of Institutes, PC, APC and PM] [1923] • HIL received $73230 for delivery of Report 1 of the TCG [1608] • NEERI received $90,000 for delivery of the Inception Report of the TCG [1610] • NEERI received $58,500 for delivery of the formal report of the TCG [1611] • NIIST received $45,000 for delivery of the formal report of the TCG [1612] • CPCB received $52,800 for delivery of the formal report of the TCG [1613] • CPRI received $167,440 for delivery of Report 1 of second meeting of the TCG [1726]
Duplicated objectives	• CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by providing legal and regulatory frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of unintentional production of POPs [1612 and 1613]

<table>
<tr><th>Comment type</th><th>Evaluator comment</th></tr>
<tr><td></td><td>

CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by developing regulatory, administrative or other schemes to promote the use of BEP in new sources [1612 and 1613]
CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by developing regulatory, administrative or other schemes to promote the use of BAT / BEP in existing sources of uPOPs [1612 and 1613]
CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by assessing the social and economic impacts of releases of uPOPs [1612 and 1613]
CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by developing strategies for uPOPs reduction and elimination in India [1612 and 1613]
CPCB and NIIST were required to duplicate the work of NEERI (the lead agency) by holding meetings to raise stakeholder awareness to gain their support for the NIP [1612 and 1613]

</td></tr>
<tr><td>Legally vague</td><td>

This TOR [16001923] sets out the responsibilities of the sub-contractor [HIL is the contractor; or should it be MOEF?] identified by MoEF on “Convention Implementation” [Objective 1] and “Project Management and monitoring evaluation” [Objective 6] … [Contract 1923]
To perform these activities, the scope of the contract with HIL, the sub-contractor [incorrect as HIL is the contractor] would be restricted [limited] only to provide services like [like = unrestrictive description, legally weak] [Page 7 of Contract 1923]
Annotations in handwriting on the contracts that deleted a requirement and replaced it with another requirement .e.g. 200 pages was struck out, and 50 pages was handwritten in its place

</td></tr>
<tr><td>Errors of omission</td><td>

Responsible for payments [to MoEF (omission)] on activities related to Objectives 1 and 6 of the Project from the funds released by UNIDO … [Contract 1923]

</td></tr>
<tr><td>Conflicts in payment amount in different parts of the same contract

Incorrect summation in the Contract</td><td>

Conflicting payment schedule in Contract 1923, and incorrect addition on TOR:

<table>
<tr><th colspan="3">Section 2.05 b, c and d</th><th colspan="3">Section VII</th></tr>
<tr><th>Action</th><th>Date</th><th>$</th><th>Action</th><th>Date</th><th>$</th></tr>
<tr><td>Signature</td><td></td><td>131,250</td><td>Signature</td><td>July 2009</td><td>125,000</td></tr>
<tr><td>Report 1</td><td>30 Nov 2009</td><td>157,500</td><td>Report 1</td><td>Nov 2009</td><td>150,000</td></tr>
<tr><td>Report 2</td><td>31 May 2010</td><td>157,500</td><td>Report 2</td><td>May 2010</td><td>150,000</td></tr>
<tr><td>Final</td><td>31 Oct 2010</td><td>133,750</td><td>Final</td><td>Oct 2010</td><td>127,000</td></tr>
<tr><td></td><td></td><td></td><td colspan="2">HIL 5%</td><td>28,000</td></tr>
<tr><td colspan="2">TOTAL IN TOR</td><td>580,000</td><td colspan="2">Incorrect TOTAL IN TOR</td><td>552,000</td></tr>
</table>
</td></tr>
<tr><td>MOEF did not receive, store and disburse funds</td><td>

MOEF was a lead agency along with UNIDO, but unlike the other organisations MOEF did not receive, store and disburse funds associated with the Project. For this reason, HIL charged UNIDO 5% or $28,000 for administration of the funds targeted by UNIDO for MOEF [Contract 1923]

</td></tr>
<tr><td>Typographical errors</td><td>

…with the approval of the competent authority of MoEF and according to the Work Plans established and agreed between HIL [MOEF (error)] and UNIDO. As the Contract specifies, HIL is responsible for the Work Plans of UNIDO-MOEF, thereby making it questionable as to whether MOEF’s outputs are the responsibility of HIL [Contract 1923]

</td></tr>
</table>

ANNEX 9: OUTPUTS ACHIEVED IN THE PROJECT

Performance indicator	Outputs
CONVENTION IMPLEMENTATION INFRASTRUCTURE AT NATIONAL AND STATE LEVELS	
Establish national management system	MOEF was the designated agency responsible for implementing the Stockholm Convention in India
Establish Information Management System (IMS)	IMS not established, but results and actions of other work packages (below) assessed that are relevant to information needs
Draft National Implementation Plan	National Profile prepared
DEVELOP MEASURES TO RESTRICT AND/OR ELIMINATE PRODUCTION, USE AND TRADE OF DDT	
Establish inventories on production, distribution, use and international trade	Production inventory methodologies developed
Establish inventories on production, distribution, use and international trade	Preliminary inventory undertaken of production of currently produced DDT through questionnaires and field visits
Establish inventories on production, distribution, use and international trade	Inventory prepared of international trade on currently produced DDT
Establish inventories on production, distribution, use and international trade	Prepared current and forecast future production, distribution and use of DDT in the country and trade to and from India
Describe alternative techniques for the control and phase-out of intentionally produced POPs	Alternative techniques for the control and phase-out of intentionally produced POPs investigated, in particular, alternative technologies
Establish national inventory of stockpiles	Examined existing regulatory measures related to the management of stockpiles from intentionally produced POPs
Establish national inventory of stockpiles	Identified additional measures necessary for proper disposal of expired stocks of DDT at contaminated sites/ hotspots
REPARE A PRELIMINARY NATIONAL INVENTORY OF PCBS AND EQUIPMENT CONTAINING PCBs	
Collect national information on production, import and use of PCBs and PCB-containing equipment	Conducted preliminary surveys in many States to develop a preliminary inventory
Collect national information on production, import and use of PCBs and PCB-containing equipment	Prepared preliminary inventory in a format suitable for inclusion in the NIP
Collect information on management and monitoring capacity	Gathered information related to existing control, management and replacement planning of PCB-containing equipment in use
Collect information on management and monitoring capacity	Made recommendations for capacity building and planning requirements
Develop and test a detailed inventory methodology for PCBs	Investigated obsolete PCB-containing devices and their current storage conditions
Develop and test a detailed inventory methodology for PCBs	Reviewed inventory information and developed timetable for equipment replacement and for safe storage
Develop and test a detailed inventory methodology for PCBs	Prepared recommendations for PCB storage compatible with the Convention requirements
Develop draft national strategy on options and approaches to PCB reduction and disposal	Commented on existing national institutional framework of PCB policy and management

Performance indicator	Outputs
Develop draft national strategy on options and approaches to PCB reduction and disposal	Prepared a draft strategy, including storage and disposal of obsolete, out-of-use PCB-containing devices
Establish pilot training programme	Facilitated national expert group meetings on key technical and logistical issues that promote awareness of PCB issues in India
MEASURES IN RELATION TO UNINTENTIONALLY PRODUCED POPS	
Develop inventories of sources and estimates of releases	Trained some project management staff, entrepreneurs and government officials to disseminate knowledge on how POPs may be formed unintentionally under local conditions
Develop inventories of sources and estimates of releases	Undertook surveys and released questionnaires to collect data and information on some sources of unintentionally produced POPs in India
Develop inventories of sources and estimates of releases	Developed inventories for some sources and estimated the unintentional production of some POPs
Evaluate existing analytical and monitoring capacity and needs	Analysed national analytical capabilities for monitoring unintentionally produced POPs
Evaluate existing analytical and monitoring capacity and needs	Commented on the need for establishing national standards for the sampling and analysis of unintentionally produced POPs
Evaluate and develop relevant policies, laws and promotional schemes	Commented on the current status of unintentionally produced POPs management in India, including relevant laws, rules and regulations and institutional responsibilities and identified the need to amend these or to develop relevant health and environmental standards and guidelines for unintentionally produced POPs in products, emissions, effluents, wastes, daily intake limits, etc
MEASURES IN RELATION TO WASTES AND CONTAMINATED SITES	
Develop and implement strategies to locate and characterise wastes	Undertook preliminary inventory of wastes and contaminated sites through questionnaires and field visits
Develop and implement strategies to locate and characterise wastes	Included inventory results in the NIP
Develop methodologies for the sound management of products and articles in use and wastes	Commented on techniques that may be in use in India or elsewhere for the environmentally sound handling, collection, transport and storage of POPs wastes
Develop methodologies for the sound management of products and articles in use and wastes	Identified the most effective destruction methods dealing with typical obsolete POPs pesticides/PCBs disposal and discussed the technical specifications for cement kilns and non-combustion technologies
Develop strategies for the appropriate disposal of POPs	Examined, where appropriate, techniques in use in India and elsewhere to destroy, irreversibly transform or otherwise dispose of POPs
Develop strategy for the identification of contaminated sites	Developed a methodology for the preparation of an inventory of potential contaminated sites and hotspots using some existing information relating to primary or secondary production, storage, transport, use and disposal of POPs or POPs-containing products
Develop strategy for the identification of contaminated sites	Used this methodology and incorporated the results of inventory work undertaken and to provide a preliminary national inventory
PROJECT MANAGEMENT AND MONITORING & EVALUATION	
Operate national coordination mechanisms and effective national implementation	Appointed National Project Director

Performance indicator	Outputs
Operate national coordination mechanisms and effective national implementation	Operated the Project Management Unit
Operate national coordination mechanisms and effective national implementation	Implemented project activities according to an agreement and implementation plans established with UNIDO
Operate national coordination mechanisms and effective national implementation	Recruited and supervised national experts and subcontractors as necessary to deliver project outputs
Establish a Technical Coordination Group at MOEF including the engagement of institutions specialised in the field of pesticides, PCBs, dioxins and furans, monitoring and analysis and legal, policy and regulations	[MOEF/UNIDO] provided support to Technical Coordination Group
Establish project evaluation mechanisms [UNIDO]	Undertook an independent terminal project evaluation according to GEF M&E procedures

ANNEX 10: STATUS OF NIP AND POST-NIP PROJECTS IN INDIA

ID	Country	Project	IA	GEF Grant	Co-finance	Status[1]
1520	India	Development of a **National Implementation Plan** in India as a First Step to Implement the Stockholm Convention on Persistent Organic Pollutants (POPs)	UNIDO	3,241,100	7,080,000	Completed
			TOTAL	**3,241,100**	**7,080,000**	
Post-NIP Projects						
3775	India	Environmentally Sound Management and Final Disposal of **PCBs** in India	UNIDO	14,100,000	29,000,000	IA Approved
3803	India	Environmentally Sound Management of **Medical Wastes** in India	UNIDO	10,000,000	30,100,000	Council Approved
			TOTAL	**24,100,000**	**59,100,000**	
Global post-NIP projects						
1802	Global	Demonstrating and Promoting Best Techniques and Practices for reducing health-care waste to avoid releases of **dioxins** and mercury	UNDP	10,326,455	13,544,437	IA Approved
			TOTAL	**10,326,455**	**13,544,437**	

Source: GEF Project Database ; [1] Status as at 10 February 2011

ANNEX 11: COMMENTS ON THE QUALITY OF ANNEX 1 IN THE NIP (OBJECTIVE 2 DDT)

Report was prepared by HIL. The report consists of Annex 1 ("3rd and *Final Report related to Objective 2 of NIP Stockholm Convention on POPs*"), Annexure -1-A (Tables 1-50) and Annexure-1-B (Alternatives to DDT). Annex 1 and Annexure -1-A were provided to the evaluators by the PC on 5 January 2011. Annexure-1-B was provided to the evaluators by HIL on 18 January 2011.

Comment type	Evaluators' comments
Poor science	• The methods for selecting the DDT stores were not described and appear selective (Tables 26 to 47 in Annexure -1-A), especially when stockpiles of banned pesticides are not monitored (p216) and stocks of banned pesticides could be used after the ban date (p223) • NEERI found and reported the stockpiles of DDT (see NEERI p30) and not HIL, as evidence that HIL's methodology for finding stockpiles of DDT was not adequate 9p327) • 1.3: List of pesticides. There was no methodology in place to detect obsolete stocks, yet in the report it stated (p216) that some pesticides were exported after their ban date (chlordane, heptachlor and aldrin) and chlordane was imported after it was banned in India (p216) • The report does not provide any interpretation or explanation of the data in the 50 Tables, and just says "…these are the data…" (all report). For example, since 1955 India has produced more than 400,000 tonnes of DDT the majority of which has been released into the environment (Table 3, p 286); stocks of DDT are approximately equal to 1 year of 2009 production • Illegal use of DDT – an explanation of the methods used to search for this was needed (p231) • Inconsistent statements e.g. bed nets cost-effective (p240), contrast with other statements that DDT is the only solution • "Being Party to the Stockholm Convention…phase out [DDT] in a systematic way" (p255) cannot be found in the Stockholm Convention • '*…obsolete DDT was found in most of the States*' (p255), yet in the report there was no methodology in place to find and quantify such stocks • Table 20 is a mix of MT (no such unit exists in scientific nomenclature) and kgs (no such unit exists in scientific nomenclature), and the heading of the Table should state 75WP as this is the grade of DDT exported
Misleading	• Section 1.2: Amount placed on the market is double this because 50WP is twice the technical grade DDT produced • "DDT should not be used in agriculture" (p210). It's clear in several places in the report that it is being used, yet samples are not taken from farms • NGOs listed but were not included in the work (p220) • DDT is used in 20 States is misleading as this refers to the past and not current use (p226) • Description of alternatives in Annex 1 (p234 – 249, and 256-259) is not at all reflected in the NIP (1 or 2 paragraphs on p78/79), their current use, and hardly mentioned at all in the Action Plan • Alternatives require systematic monitoring and distribution, calibration, good maintenance of equipment etc (p 241/242), which implies that these attributes are not also required of DDT • No or very limited explanation for data e.g. the fall and rise of malaria (p247) • The reasons for ending the work on alternatives to DDT in Chennai (p248) and Kheda (p248) • 'States … are claiming resistance to DDT…" is not consistent with the map of DDT resistance on the next page (p261) which shows extensive areas of

Comment type	Evaluators' comments
	resistance, and undermines their concerns • The "challenges for DDT replacement" listed by Prof Yadav in Annex-1-B are not consistent with those in the NIP: 1) Bring new chemicals to the market 2) Address mosquito resistance
Reduces credibility	• 1.6: Inconsistencies with NEERI report (p210) that showed DDT pollution "…soil, water and ecosystem…" around many DDT stores, yet HIL reports none and that DDT is stored "properly" in 22 locations (249, and Tables 26 to 47). For example, p18 of NEERI for Aizwal (315 in HIL) shows contamination above WHO limit, yet HIL reports "No …pollution of soil, water and ecosystem…". Similarly for Chittisgarh (NEERI p28 shows 7 storage sites contaminated, HIL none on p321) and Assam (NEERI on p35, HIL none p320). • "*DDT is the most effective tool … as shown by the malarial cases in the past 5 years*" [Histogram p 231]. Below the text shows other controls that have contributed to these graphs, so it is not just DDT • "*Cost effectiveness, biological efficacy, safety to the environment, desired persistence. All are in favour of DDT …and there are no alternative to DDT*" (p233). There are questions over all of these aspects, and the second sentence shows HIL is not objective • "Bio-environmental control costs much less than chemical…" (p249) contradicts HILs statements on costs of alternatives • "The cost of spraying with malathion and deltamethrin is about 2.5 times the cost of spraying with DDT" (p262). No costs are provided for DDT sprays to allow comparison, especially those that take into account the government subsidy to HIL for the production of DDT • Mosquito resistance to pesticides is discussed in detail (p264 – 267), but the focus is on resistance to all pesticides except DDT. No explanation was provided for excluding DDT from this section.
Errors of omission	• Not all Deliverables listed were delivered e.g. Institutional and regulatory barriers, establishment of IMS, disposal system for obsolete DDT etc (p217) • Explanation is needed for use of DDT 50WP when WHO says that DDT 75WP should be used (NEERI p144), and the 75% was preferred and wanted (p283) • Tables 10 and 11 are missing – they show the DDT use pattern, and the SP use pattern (p229/230) • WHO Guidelines on the use of DDT should be in the Annex so the reader can determine whether DDT use in India is consistent with these guidelines (p230) • No date for the Wall Street Journal Report (p245)
Factual errors	• '*DDT if properly used in IRS … no health hazards*' (p283) is not supported by the world's literature • "*On the basis of bio-efficacy, cost etc, there is no suitable alternative to DDT*". (p243) There are questions over all of these aspects, and this statement is not supportable from the text provided
Typographical errors	• "India has the required…" paragraph (p213) is repeated on p216 • 11.2.3 is repeat of earlier text on p226 • Dicfol (p249) • ddt (p256)
Format errors	• Sources of information for the text are not located as a footnote but inserted into the text as full citation • Heading of 'Plants' is needed on p245 after 'Mosquito Dunks' • Text on p261 is repeated on p262

Comment type	Evaluators' comments
	• Details given in… (p313) and no details are provided or reference
Poor syntax	• Last bullet is difficult to understand because of misplaced '…is hereby restricted…"(p209)
Lack of meaning or lacking in value	• Histogram shows 50WP and 100% WP bars (p225) • Table headings are lacking in meaning e.g., "Unit wise supply"(p305) and the units are not provided but assumed to be tonnes and WP50 • The meaning of Pf and Pf% not provided (Table 13 – 18, p306 to 311) • The meaning of MF and PF is not provided (Table 18 p311) • Table 22 is meaningless without a footnote explaining that the experiments halted in 1996. Why are later data not shown, and the information is 14y old? • Table 24: No explanation provided for BHEL complex (see p 248) • Table 25 is meaningless without a footnote explaining that the experiments halted in 1989. Why are later data not shown, and the information is 20y old? • Tables 26-47 have questions that do not address the issue e.g., if closed, locking facility available or not? The question should be quite simply 'Store locked?', not whether it was capable of being locked. So the information in many of these tables has little meaning
Faulty logic	• On the silicon derivative of DDT, the report states "The Project is time-consuming and may require huge amounts of money" (p243). The Action Plan in the NIP subsequently focuses on "…neem-derived bio-pesticides (never mentioned in HIL's report) and Bt-based bio-pesticides", so there is no logical connection between HIL's report on alternatives and the information included in the Action Plan on DDT • Chlorine remains in the Si-DDT molecule (p8 of Annexure-1-B) which may still be an environmental problem. One solution proposed appears to be moving from one environmental contaminant to another

ANNEX 12: COMMENTS ON THE QUALITY OF ANNEX 2 IN THE NIP (OBJECTIVE 3 PCB)

Comments made on "*Report on Development of NIP on POPs - PCBs*", prepared by CPRI and dated 15 September 2010. Report provided to evaluators by CPRI on 24 January 2011. The report is Annex 2 in the NIP.

Comment type	Evaluator comment
Poor science	• Methodology lacking to find PCBs in all sectors in India (p5 and p10) • PCB incidence in plastizer manufacture etc was not undertaken (p21) • No reference for the statement that "…Majority of the PCBs in India are in the power sector…" as the methodology was not developed to support this claim (p22) • Section 7.4 and elsewhere: Number of samples of PCBs for analysis not disclosed • No description of the development and implementation of the inventory guidelines (p44) • The basis for the 50 ppm level is not explained, other than it is in the regulation • The relevance and origin of the 500 ppm is not explained (p60) • The authors do not express a preference for a PCB destruction technique (p70) • The applicability of UNEP's Guidelines are not discussed with respect to India, and therefore the text seems aspirational rather than operational
Misleading	• There is no text that states that the 1548 transformers are pre-1985 and contain PCBs. They are the only ones that exist in India in the power sector as the remainder of the 3,500 have been destroyed. The text implies that there are 3,500 transformers with PCBs, but this is not the case as the 1,548 is a subset of the 3,500 so the bulk of the transformers do not contain PCBs. • Aspirational text is makes it difficult to determine activities carried out in the Project when they are both together e.g. Section 8.1 objectives • Action Plan rather than the inventory was seen as the endpoint of the work by CPRI (Section 9.2, p42)
Lacking credibility	• How much of the work that goes to the next funding round should have been completed in the current NIP project? (p53)
Errors of omission	• Role of Customs in preventing illegal trade was not highlighted (p47) • Illegal trade in PCBs undermines work on PCBs – this was not discussed (p47) • Do users establish the non-hazardous nature of imports? Theory vs practice is not explained (p49) • The period of the Action Plan is not described (p53)
Typographical errors	• 1290 is referenced on page 12, but 1548 is the number elsewhere in the report • Plural and singular interchanged making it difficult to read e.g. teams
Format errors	• Bottom page 12 and page 13: Why bold? • Part 3-5 is a repeat of earlier paragraphs (p46-47) • "Please mention the recent notification" has been left in text • "Incase (sic), if we decide…" text is repeated on the next page (p57) • The text changes unexpectedly to bold for a-e, without reason (p58)

Comment type	Evaluator comment
	• The diagram is split between pages (p83/84) • The text changes unexpectedly to bold, without reason (p59, p60) • The results of the PCB work is reported from p60 onwards, which is too late
Poor syntax	• Problem with the sentence construction of last paragraph (p48) • Last paragraph is constructed in a way that make it difficult to understand (p49)
Lack of meaning or lacking in value	• Table 3 (p7) lacks relevance and explanation • Figure 1 (p7) lacks relevance and explanation • 50mg/kg should be shown as 50 ppm as this helps the reader to relate the regulation to low and high levels found in PCBs (p28) • Relevance of text on p28 not explained • The use of the term 'data bank' instead of inventory is not explained (p37) • The last paragraph on p64 has no endpoint
Faulty logic	• "Entries of PCBs were free…" etc. This page is entirely unclear (p6) and its significance to PCB presence is lacking explanation (p6) • High concentration not defined (p13) • "It is difficult to quantify or identify the presence of PCBs in India…" (p28). CPRI was supposed to develop the methodology to overcome this difficulty • The reason that the text on pages 34 and 35 repeats the text in Table 12 is not explained • Section 7.3: It was CPRI's responsibility to overcome these limitations (p39) • Section 8: Not clear initially whether it refers to current or future work (p41) • Legislation is interspersed throughout the Annex rather than in one section e.g., Section 6, Section 10, Section 16.4 etc • The methodology used by CPRI for PCB inventorisation is described on the last page, which is too late.

ANNEX 13: COMMENTS ON THE QUALITY OF ANNEX 3 IN THE NIP (OBJECTIVE 4 UPOPS)

Comments made on "*Final Report on Objective 4 Unintentionally Produced POPs*", prepared by NIIST and dated December 2010. Contributing organisations were NEERI and CPCB. Report provided to evaluators by NIIST on 17 January 2011. The report is Annex 3 of the NIP.

Comment type	Evaluators' comments
Poor science	• There are no statistics to show how your measured samples can be compared with the toolkit (p51) • 8.2 in Table states that '…data from the source keep varying…' [refers to crematoria]. The report should have considered variation in data and given a range of emissions, using examples (p45) • '…may reduce tremendously…' (p47) • The assumptions for the increasing POPs each year are not stated (seems to be 10% increase each year), and also no reason is given for omitting 2011 (p 62 bottom Table)
Misleading	• 60% of database is 4/9 sources, which failed to declare the number of sub-categories (33) that were not considered (14) (page v); shown more clearly (p50), but Table needs to show which is measured and which is toolkit in the Table • "*Sampling was done for all categories*" is incorrect (p51) • Inventories were not carried out for all within the dotted line (p3) • Failure to comprehend reservoirs of POPs covered in other parts of NIP (p3) • Bullets in 1.5 all erroneous and misleading; contradicted by statements in Annex on p 72 for example (p6) • Figure implies all of these steps were part of the study (p12) • Cannot say these are zero when they were not measured (p36, p38) • 7.2 mentions demonstration projects and implies that they were undertaken, but there is no reference to them in the report (p43) • Elements of the Action Plan should have been carried out in this project (according to the Project Document) and it is misleading to add them for the future (p61)
Lacking credibility	• The report does not state how many samples were analysed and from which sources • Much of the report seems to be a 'copy-paste' without attribution of the source in the text • Open burning covers just 1% of the waste generated (p15) • Just 12 sintering plants in India (p19) • Section 3.4: Total of 548 but in India (NSEW) only adds to 457 • Section 3.4.1 140 plus 365 does not add to 151 in 3.4 (p25) • 3.4.4 says 13 yet this section says 50 • Derivation of figures not shown e.g. 3.5 on transport (p27) • 3.6.1 has a value in the Table, but this section says it can be ignored (p29), which is incorrect • 3.6.2 has a value of 45.36 in the Table, but this section says it can be ignored, which is incorrect (p29) • 3.8.2 says '…typically fired…' whereas Conclusion say inception stage, therefore lack of credibility on number of crematoria (p33) • 3.9 says no open water dumping occurs, yet in the Table it gives a value for this activity (p33) • 120 in the table does not match number in Section 3.1.1 (p35)

Comment type	Evaluators' comments
	• Numbers in figure do not match numbers in text for waste incineration (252 vs 250), ferrous (949 vs 951), mineral (548 vs 457) and chemical (624 vs 620) (p47). Why is transport and uncontrolled missing from the figure? • Action 7: The high cost and poor outcome as a result of raising awareness in the general public is not mentioned, compared to raising awareness in 'at risk' groups • Much of the Action Plan was copied and pasted without reference to the source • Where are the results of the analyses for goat milk (p72), since on page 6 it says this work was not done
Errors of omission	• Reasons for many source sub-categories not being considered not given, but likely due to inadequate methodologies (p17-34) • Should mention have mentioned in the text that all incinerators are batch processors, so start up is low temperature and POPs result (p17) • Hot Dip and Galvanising missing (p19) • The numbers of a source should be stated, as this was used in the model. This occurs in many parts of the report (p19) • 'Hundreds of units' or 'many units' is unscientific and vague, and your methodology should have overcome this limitation (p20) • Reasons for not undertaking a '…thorough investigation …' in this work are not provided (p24) • Section 3.4.2: Why not say '72' instead of 'a large number'? • 3.7 summary : 'This needs extensive investigation …' should have been included in this work and not placed to the future • There were 12 sintering plants so why not refer to this in the Table? (p36) • 3.1 in the Table is Class 2, so why say 'relevant emission factor'? • 3.1 in the Table says few biomass plants, but there are 86 so this should be stated (p39) • 3.1 in the Table should say 72 for lime production (p 40) • 4.3 in the Table should say 153 for brick producers (p 40) • 6.1 is not in the text of the report and should be there (p42) • 6.4 is not in the text of the report and should be there (p43)
Factual errors	• There is a maximum permissible level for waste incinerators (p17), so to say there needs to be one is incorrect • 3.7.1 UNEP Class missing from many entries as basis of calculation • 'Stop imports of lead fuel' contradicts Section 3.5 that says it is not imported into India (p66)
Typographical errors	• 3.2.1 shows 260.26 but it should be 260.22 • 3.2.3 should be 710.50 to be consistent with the Table • 3.7.2 should be called 'Chloroalkali production' as Chemical industry is not consistent with Table (p30) • 3.7.2 should be 68.42 for consistency with Table (p30) • Class 3 in the Table should be Class 2 for consistency with 3.1.3 (p36) • 2.3 and 2.4 add to 710.50 and are Class 2 (p37) • 4.1 in the Table for figures does not match Section 3.4 figures • 5.2 the % figures do not match those in the Table on page vi • 'Ministry of Nature and Environment' was used instead of MOEF, showing the hazards of a quick copy and paste (p68)
Format errors	• Table not labelled; based on modelled data (pvi) • Words in Figure obscured (p3) and figure not labelled for reference

Comment type	Evaluators' comments
	• Words in Figure obscured (p10) and figure not labelled for reference • Section 2.4 should be annexed (p13) • Why are 'tons' used throughout the report and not 'tonnes', which is scientifically correct? Is the author aware of different weight associated with each term? • 3.2.3 should be in two parts to reflect the results in the Table • Why is p47 in landscape rather than portrait? • Text on p63 repeats earlier text word for word
Poor syntax	• Meaning of '…potential contributing categories…' unclear (page vi) • "This criteria (sic) was proposed but not adopted" (p2): by whom? Relevance of statement unclear • '…partly undertaking the work' (p7). Meaning unclear • '…was organised.' By whom and when? Incomplete sentence (p7) • '…inventory preparatory activities…' duplicated for no reason (p11) • '…this may be updated to the preliminary inventory …' meaning unclear (p34) • Inconsistent labels in Table e.g. 7.13 and 7.14 with labelling in text
Lack of meaning or lacking in value	• '… secondary lead production etc…' What is the reader to understand from this paragraph? (p21) • Figure (un-numbered) conveys no meaning (p24) • Figure (un-named) conveys no meaning (p27) • Figure (un-numbered) conveys no information (p28)
Faulty logic	• Toolkit concept was not introduced (p3) • Sources do not match UNEP toolkit nomenclature (p9) • '…may wish to have the inventory reviewed..' suggests this was optional (p11) • Action Plans… (first paragraph). Implies that this was the aim of the work (p11) • Why does the figure list EPA method when the next page shows many methods (p14)? • Conclusions on each section are not conclusions but 'further thoughts', as they do not conclude the substance of the text • Actions at end of each section appear to be a 'wish list' and rather aspirational, with no description of how they could be achieved • 9.3 should be zero in the Table since it was zero for water dumping in the text (p 46)

ANNEX 14: COMMENTS ON THE QUALITY OF ANNEX 4 IN THE NIP (OBJECTIVE 5 WASTE AND CONTAMINATED SITES)

Comments made on "*Final Report: Development of NIP on POPs – Objective 5: Measures in relation to Waste and Contaminated Sites*", prepared by NEERI and dated 15 September 2010. Report provided to evaluators by NEERI on 17 January 2011. The report is Annex 4 in the NIP.

Comment type	Evaluator comment
Poor science	• 13.3: No PCB sampled from the drums, yet there were PCBs in the water, and the reason for PCB presence was not provided • Only 5 steel mills sampled – why so few? • Tables 21, 24, 26: No explanation given for the lack of quantification of the PCBs • No samples taken from the Rourkela Steel Plant • When were the PCBs imported from France (p70) • Insufficient samples taken at the Alang shipyard region • No reference for the source of the PCBs (p95) • Weak methodology as there was no samples taken of chemicals listed in Section 15.2, apart from DDT and PCB, and reasons for their inclusion are provided in Table 30 (p106) • No report on obsolete stocks for banned pesticides (p108) • These elements listed in the last paragraph of 15.6.1 should be included in the strategy for detecting DDT and PCBs • Transporters and Customs Officers were not part of the Project (p114) although important stakeholders • First paragraph is too vague to be of practical use (p117) • Field test instruments were not used in this study (p126) and could have increased the detection of POPs • 15.10.2: indicates that DDT is used on farms and therefore samples should have been taken in order to determine extent of contamination
Misleading	• 8.0 refers to NGOs, but in fact there were 15 people and no NGOs, and not all those listed were present (p4) • Despite the effort surveying, information was provided by only 4 agencies (p5) • 12.1.2: Should state that this is contrary to WHO guidelines • "… as there are no new inputs". Incorrect as DDT is still used, so the input to the environment continues (p88). Also illegal PCB imports (see CPRI Annex 2 of the NIP) • Figure misleads reader into thinking that the data were uploaded the MIS, which did not exist (p91) • 15.7: Were assurance and quality control measures carried out? Were standards enforced • Section 17.2: Must show applicability of risk assessment criteria to the NIP Project, otherwise it is an essay on 'risk assessment' which should not the intention of this section • Figures 47 and 48: No citation (p157) • Section 17.4: Public involvement and consultation was minimal (p171) • Website on page 178 does not exist
Reduces credibility	• One soil sample from the production facility and a sludge sample – why so few? (p53) • Most reports say there is a problem with PCBs at Alang, yet this work shows that the levels are v low (p85)

Comment type	Evaluator comment
	• How would the owner of equipment know the POPs concentration? (p116) • Many parts of this Annex appear to be copy-and-paste, but the source is not cited e.g. '… legislative concern for most countries…' The last section is very long and is a theoretical report of risk assessment, chemical and physical parameters, transport pathways, risk characterisation, carcinogens, steps in risk assessments etc. As such is it lots of theory but the relevance to that activities undertaken in this project is not explained (160-180)
Errors of omission	• Cholinesterase tests of DDT sprayers – an explanation if they were carried out or not would be needed (p41) • Table 2 header should state 'tonnes' in order to make the units clear • 50 ppb is easier for readers to understand and should be stated (p18) • Tables on DDT must state the number of samples in the title • A line on Figures on DDT would be useful for showing samples above and below the WHO 50 ppb threshold (soil) and 1 ppt (water) [If the evaluators understand the limits correctly] • 12.4: Is this the only incidence of DDT stocks? • Table 8 should include 40t in the title as this is important, or show a summary • The reason for the large amount of DDT was not explained (p44) • Table 28: Interpretation of results missing • GPS for (h) (p116) • 15.9: Needs legal basis and should have been mentioned • Last paragraph in Section 15.10 was not in the NIP and should be there with further explanation • '*…don't have dedicated storage areas…*'(p133) should have been accompanied by a comment on compliance with WHO guidelines • 16.1 shows WHO recommends 75% ai, but India uses 50% ai and risks increase in mosquito resistance – comment should have been made (p144) • Tests of mosquitoes to DDT resistance, and whether the DDT is still active – were these done? Comment needed (p144) • When was Dr Subrata Bose the APC? Explanation needed (p184)
Factual errors	• Table 31 conflicts with information in CPRI Annex that says ban date was 1998 (p109)
Typographical errors	• 13.1: Text (12 samples) is not consistent with Table (11 samples) • 13.7: Text (12 samples) is not consistent with Table 27 (14 samples) • 13.7: Text (7 samples) is not consistent with Table 28 (8 samples) • Biledge could be bilge (p81) • Adapted, not adopted (p91) • P137, second paragraph last word • Table 32 (p132) is different from Table 25 in the NIP on p 155 • Section 17.0 first paragraph – primary and secondary data are switched, which is confusing
Format errors	• Report is too spacious with maps and regions – these could be condensed without loss of information • Table 6: Block should be singular, as this is the number of the block • From page 53 to 57 in order to link the text • Section 13 should start on a new page since it is not DDT • From page 70 to 75 in order to link the text • From page 75 to 81 in order to link the text

Comment type	Evaluator comment
	• Section 13.7 is a new topic so new page would be useful • Figure (not numbered) is repeated on p153 (p91) • Parts of 15.7.2 are repeated on p118 (p120) • Annex this information (p121-125) • Information on page 136 is repeated from page 116 • (a) should be divided into 2 bullets, the second starting with 'restrictions…'
Poor syntax	• First paragraph on page 117 related to PRTR • '…there are model civic by-laws…' seems that 'creation' should be 'destruction' and 'mosquito' mentioned in the sentence
Lack of meaning or lacking in value	• Number of blocks visited is redundant information with no value as the next column shows the name (and hence the number of blocks can be seen) (e.g. 26 and other Tables)
Faulty logic	• Table 29 is not the same as in the body of the NIP (Table 26 /29) (p95) • Section 15 is interesting but too detailed and is suitable for an MSc thesis rather than a GEF-funded project • Relevance of information from p101 to 101 not explained as some of the chemicals were not reported in the NIP • Section 15.11.2 goes back to the laboratory description, and it is not made clear what was done in India in this Project • Suggestion for incineration technology (p149) is not consistent with other parts of NIP and Annexes

ANNEX 15: COMMENTS ON THE QUALITY OF THE INFORMATION CONTAINED IN THE NIP

Comments made on "*National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants*", prepared by MOEF (Dated [24] December 2010]. Report provided to evaluators by Project Coordinator 5 January 2011. The document is 206 pages and separate from the four Annexes.

Comment type	Evaluator comment
Poor science	• The results of primary data were mixed in the text with secondary data, making it difficult to differentiate between them (p6) • There are 28 pages of alternatives to DDT, yet the reason that the NIP focuses on a chemical approach using only neem is not explained (p10) • The NIP will have "…*developed and demonstrated methodologies* …" which was not the case (p15) • The NIP will have "…*developed strategies* …" which was not the case, as many of the key sectors were not analysed as they were perceived as "…*to difficult*…" (p15) • No evidence of partnerships with NGOs and the Ministry of Education to assist organisations involved in the NIP with awareness raising activities, even though there are such organisations involved in health care, medical education and research that are being strengthened (p35) • Arbitrary use by CPRI of <>500 ppm for low and high contamination thresholds in their analyses, but <> 50 ppm is the legal limit in the Hazardous Waste Rules • Anecdotal evidence for PCB contamination of ship-breaking sector (Section 3.2.4.2 p 64); similarly DDT /aldrin (Sector 3.6.2 on p107) • Reason for WP50 DDT use in India instead of WP75 use (WHO recommendation) is not explained (all NIP) • 2.5-fold times more cost for the use of malathion and deltamethrin compared to DDT was not explained (p78) • Lack of effort on resistance management of chemicals used in mosquito control • Citations for important numbers e.g., number of non-ferrous metal industries, and work e.g. DDT in breast milk, were not provided (p85 and throughout report) • Survey methodologies were weak or non-existent, resulting in key sectors not being sampled and simply omitted from the inventory e.g. SMEs, open burning of wastes (p85, p88) • '…*cross section sample*…' from 5 steel plants was aspirational rather than accurate statement (p99) • Secondary data were available and not used to supplement the paucity of primary data obtained as a result of the NIP project
Statistical analysis	• The aim of the NIP was to make an inventory (quantity, location and other parameters) of POPs presence in India, as a basis for future effort on POPs reduction and management. The report did not make use of statistics to <u>estimate</u> the quantity of POPs, based on a small but statistically-meaningful much smaller number of samples. • Conversely, the few samples that were taken were not used to validate the extrapolations from modelling. • Instead, significant users of POPs were either ignored e.g. SMEs ("India is a big country and there are thousands of SMEs") or variation in source data were dismissed as "unmanageable" (in the case of the number of crematoria), or arbitrary exclusion (capacitors, p63)
Misleading	• The data on PCB-contamination of oil in transformers showed the quantities in India according to the number of transformers located. It was

Comment type	Evaluator comment
	not clear that this was the total of the PCB-contaminated transformers, rather than a sample of the total transformers. As written, the data and results were misleading. • CPRI explained that the 1548 transformers represent the total of pre-1985 transformers present today that are contain PCBs. CPRI agrees that the draft text in the NIP is misleading because it implies that the number of transformers with PCB contamination is much larger (45,000 power transformers, p59), where as in reality 99.9% of these transformers do not contain PCBs • Implies that NGOs have been consulted, which in fact is not the case (p4) • Collaboration is overstated, as there was a meeting initially with some stakeholders but collaboration was not sustained (p5) and with some it was omitted altogether e.g. Customs, Power, Roads etc • The reason for "…informal contact with stakeholders…" was not explained (p20) • The PDF-B project did not undertake "proper" inventorisation (p5) • The GOI and UNIDO co-finance was in-kind, but this was not specified (p21) • Implies that large number of oil samples were taken but in fact it was 450-550 samples for which not all have been analysed yet (p6) • "*India analysed samples …and compared to the UNEP toolkit*…" implies many samples, but in fact there were only 36 taken over 3 years from four sources (out of many more sources possible). Thirty-six is not mentioned in the Executive Summary and it is misleading because without mentioning this number it implies more samples were taken (p6); ''*…a few important sources*…" was acknowledged (p24); the actual number are given in Section 3.4.2 (p81); Table 16 on page 98 should state the number of measured samples • MOEF was said to "…*work closely with* …" about 30 organisations in the development of the NIP, which was not supported by the findings in the evaluation which found that relatively few of the them were informed on POPs (p22). • Involvement of many medical societies, associations etc was largely aspirational on the part of the GOI, and not supported by the evidence which found that relatively few of the them were informed on POPs (p22) • PCB-contaminated oil, PCB-contaminated equipment vs pure PCBs are misleading terms in the NIP that were not clearly differentiated and explained • 3.3.3.3 Stocks – temporary stocks held by HIL were not reported • '…but in a systematic way…' was not explained (p79) • Mumbai was reported to dump waste into the sea[94], so it is misleading to say that such practices are banned and therefore it does not happen • DDT is likely used in agriculture, so it is misleading to say that such practices are banned and therefore it does not happen and therefore no samples will be taken in agricultural areas • Half of Section 3.6.3.2 is not related to wildlife, despite this being the title of the Section • Section 3.6.3.2 should have a Table on the half-life of chemicals in different compartments • Section 3.11.2 on legislation that could affect DDT is aspirational rather than factual

[94] NIP comments by India November 2010.

Comment type	Evaluator comment
Reduced credibility	• Misleading statements will reduce the credibility of the report • The application of poor science will reduce the scientific integrity of those involved in the work • WHO Guidelines – the impression is the India abides by them in its use of DDT, but this cannot be the case when NEERI's work reports in the NIP of many cases of off-target DDT contamination, which are not reported by HIL (p6, p7) • DDT was stored properly and there was environmental contamination was prevented (p75) is not consistent with the work of NEERI that reported many cases of off-target DDT contamination • Preliminary inventories for 9 new POPS over the period 2016-2022 appears exceedingly slow, considering they are posted by the Stockholm Convention in 2009 (p10) • The prospects of market-based approaches to achieve BAT/BEP penetration (p37) were not described, leaving the impression that this was only a notional concept whereas it should be a key driver • The reason for not mentioning the 0.1 ng TEQ/Nm^2 emissions limit for dioxin is not explained in the NIP, even though 50 ppm limit for ppb is mentioned (p60) • Old references e.g. 1996 (p57) • Not all PCB contaminated oil is mixed with uncontaminated oil, as oil recyclers separate them (p63) • The relative order of the factors governing the decision to phase out DDT given as (a) to (c) is highly questionable, and underscores the approach by India to DDT replacement (p79) • The reason for WHO not being involved in the Expert Group looking at alternatives to DDT was not explained (p79) • Budget was insufficient to allow more samples (p81) of contaminated sites • Section 3.7.1: "… *intends to establish*…awareness …" was the purpose of the current NIP rather than an action for the future • "India is committed to the goal of attaining 'Health for All by the Year 2000 AD'". The deadline has passed and this statement reduces the credibility of the NIP (p117) • The NIP strategies and action plans (p124, Chapter 4) show significant overlap in objectives leading to potential duplication of effort and funding requests • The NIP strategies and action plans (p124, Chapter 4) repeat the NIP requirements in some objectives, which means that some work is being funded twice (once in the NIP and again in the future) • Relationship of Action plans to India's National Development Plan, District Development Plans and Urban Development Plans was not explained • The NIP strategies and action plans (p124, Chapter 4) show little evidence of the use of existing resources and a tendency to start from scratch each time, which will be more costly • The use of market based mechanisms was not included in the Action Plans for BAT/BEP market penetration (Chapter 4) • The value of building awareness with the general public was not considered, with more targeted awareness approaches with specific industries (Chapter 4) • PCB summary in Section 4.4.3.2 does not match information provided elsewhere in the NIP (p136), especially as 500 ppm threshold is cited for the first time • "…*DDT cannot be replaced*" (p140) and further work to increase DDT infrastructure (p141)

Comment type	Evaluator comment
	• "*Basically, there aren't any database or research results available on POPs releases in the environment and their levels in human body, animals and foodstuff*" (p144), is not consistent with information in the NIP
Inconsistent use of information	• 28 States and 7 Union Territories (p6, p29) vs 29/6 (p28); vs 31 States on p64
Errors of omission	• PCB elimination from 2025/2028 in the Stockholm Convention is rarely mentioned as a driver for the Action Plans (just once on p137) • Table 3 should have 93-94 to show data for the previous period in the column header (p33) • Website was not established by MOEF on POPs over the 3 year period of the Project to assist with awareness raising on POPs • API not explained (p64) • Kala-azar not explained (p64) • ITNs not explained (p78) • Composition of DDT Mandate Committee (p71) • 50WP not in title of Figure 14 and Table 13 • Reasons for stopping DDT use in some States not explained (p73) • TEQ not explained (p81) • Reference for 4.4 million tonne / annum (p84) • "…serious shortcomings…" was not explained (p85) • Fig 27 should show share of emissions of D&Fs between 2-stroke, 4-stroke and diesel engines • 3.5.3: data missing • 3.6.2 Soil: No data presented for PCB contamination even though it was measured (p108) • The reasons that NEAC did not take the opportunity to provide information on POPs was not explained (p112) • Does the EIA consider POPs ?(p116) • 3.10.1 should have information on PCBs and D/Fs, but these were omitted (p119)
Factual errors	• "*India has not obtained an exemption for POP pesticides*…" (p58), which is not correct as an exemption has been granted by the Stockholm Convention for DDT • "*No systematic work on monitoring of PCBs has been undertaken so far…*" (p118). Also links with GEMS and MINARS/YAP in Section 3.9.2 not made
Typographical errors (some examples)	• Ehtion (p57); Mg (p57); releases (p64) for released; begging (p75) • 1290 (p61) vs 1548 (Table 10, p63) and many other places in the text • Xx (p64) and the paragraph is a repeat of an earlier one • MTs is not a scientific unit ('tonne' is the unit, and it is metric without needing to state this) (p72) • Figure 14 should be Figure 17 (p74) • Tons instead of tonne (p75) • '…information thus generated…" duplicated sentence • MTA is no such unit – should be tonne per annum (p84) • 56% should be 59% to be consistent with Table 14 (p82) • Figure 1 should be Figure 23 (p85) • Table 9 quote on p98 should be Table 14 • Table 16 needs to show toolkit (top measurement) vs measured (bottom one) in each of the first four sectors

Comment type	Evaluator comment
	• Figure 31 should be Figure 34 (p120) • t. (p138) • Furth (p144) • Pubic (p71, p197)
Format errors	• Erroneous copy-&-paste for the Priority Areas on p8, as they do not match the priority areas shown on p125 in Section 4.1.3. Instead they are 'medium-term' priorities from 2016-2022 as shown on p194 • Bullet points on p71 not formatted • Fig 20 and Fig 33 not legible • "*Release estimates by main source categories*" should be a major heading (p84) • 3.4.4 is incorrectly headed and should be "Comparison of measured versus modelled data" • 'no29n-ferrous' meaning unclear • The heading of Section 3.9.1 does not relate to the text that follows • "CPCB in collaboration…" is a repeat of previous text (p115) • Heading omitted "3.9.3 Voluntary action by companies" (p115, above last paragraph) • Heading omitted "3.9.4 Environmental Impact Assessment" (p116, above second paragraph) • P166 is a repeat of pages 118-119 • Numbering of bullets e.g. 42, 43 then 2, 3 etc incorrect (p202 – 204)
Poor syntax	• "stockpiles … except aldrin and dieldrin are found." Vs "stockpiles…exist for aldrin and dieldrin (p58) • Page 60 on HWM Rules is unintelligible (see bullet points) and further clarification is needed • "*800 kg of PCB-contaminated oil*", and not "*800 kg of PCBs*" as stated in the text (p64) as the two are very different • 'population' for 'people' in many places in the report • "…*non-insolvent of insensitive*…" incomprehensible • "legislative background, financial preconditions, technical possibilities and laboratory…" could be more clearly phrased as '…legislation, financial resources, technical solutions and improved laboratory…' • 3.12 heading could be clearer as 'Institutional assessment of chemicals on the market' as the existing one is difficult to understand
Lack of meaning or lacking in value	• Graph on p67 that shows bars for 50WP and technical grade DDT production • Fig 27 is meaningless as it shows 9.57 g TEQ released to air, and the rest of the releases are zero • ICAR paragraph on p107 lacking in relevance as not related to monitoring • Table in Section 3.9.3 is unlabelled. Relevance to POPs not explained.
Faulty logic	• Heavy reliance on promotion, rather than use of legislation, for BAT/BEP market penetration (p148)

ANNEX 16: SIMILARITY OF WORK DUE FOR COMPLETION IN THE NIP WITH WORK PROPOSED FOR FUTURE NIP IMPLEMENTATION

Table 12: Costs estimated by India for the implementation of the NIP

	ACTION PLAN OR ACTION	Budget ($ millions)		
		GOI	GEF	Total
1	Legal and Regulatory and Institutional Strengthening Measures	23.76	10.81	34.57
2	Production, import and export, use, stocks, landfills and wastes from chemical substances listed (Annex A, Part I of the Stockholm Convention)	44.0.	20.3	64.3
3	Production, import and export, use, identification, labelling, removal, storage and disposal of PCBs and of facilities containing PCBs (Annex A, Part II)	30.84	14.89	45.74
4	Production, import and export, use, stocks and wastes containing DDT (Annex B) if used and produced in the Party to the Convention	67.5	33.0	100.5
5	Releases from the unintentional production (by-products of PCDDs/Fs, HCB and PCBs)	190.2	136.5	286.7
6	Strategies to identify POPs stockpiles, articles in use and wastes (Annexes A, B and C)	3.0	2.0	5.0
7	Actions and measures to properly manage POPs stockpiles and proper disposal of articles containing POPs in use	24.15	14.1	38.25
8	Identification and corresponding management of contaminated sites (Annexes A, B and C)	77.0	47.0	124.0
9	Strategy pertaining to information access and exchange			
10	Promote information exchange for concerned parties, public information, awareness and education	2.5	2.5	5.0
11	Action Plan: Reporting	0.3	0.0	0.3
12	Monitoring and Evaluation and Research and Development	12.0	6.0	18.0
13	Technical and financial assistance			
14	Coordination for NIP Implementation	16.21	6.13	22.34
	Total NIP Implementation	**491.46**	**293.23**	**784.69**

Source: Chapter 6, Table 29 of the NIP, page 204.

Table 13: Similarity of many objectives in NIP with the Action Plans proposed by India

WORK DUE FOR COMPLETION IN THE NIP[95]	WORK PROPOSED FOR FUTURE NIP IMPLEMENTATION ACTION PLANS[96]
1.1.2 Establish Information Management System - Examine existing IT architecture within lead organization - Determine inventory and reporting requirements of the Convention - Assess results and actions of other work packages (described below) relevant to information needs - Determine remaining information needs - Determine existing data holdings relevant to POPs within other government departments and non-government institutions - Encourage cooperation between institutions gathering information that may be relevant to the reporting requirements of the Convention so that this can be exchanged with the IMS - Recruit and train staff to operate IMS	**Section 4.4.9.2 Gap Analysis** Information is not maintained centrally in an organized manner hence, not available for decision making. Consequently information on chemicals, both intentionally and unintentionally produced POPs, Stockholm Convention. The vast information on pesticides, PCBs, stockpiles, wastes, contaminated sites, dioxins & furans, impact of POPs on environment, human health, data on monitoring of POPs, etc. need to be maintained in a centralised manner so as to enable any one to have access to such information in a more comprehensive way through a established network Strengthening of the Management Information System (MIS) at the Coordination Cell of the Stockholm Convention on POPs Maintenance of the MIS through regular update of the database Organise meetings/workshops on the implementation of the obligations under the Stockholm Convention for regular exchange and access to the information though MIS network
4.1.3 Evaluate and develop relevant policies, laws and promotional schemes Evaluate available methods that use indirect data for the estimation and modelling of unintentional production of POPs and, where necessary, establish revised methodologies and models that are suited to the industrial practices of the key sources of unintentionally produced POPs in India.	**Section 4.4.5.3 Action plan implementation** Methodology for conducting monitoring of POPs chemicals as contained in Annex C in air, water, soil, and sediment and food products will be developed and monitoring sites and sampling frequencies will be defined. Measurement results will be integrated and used for preparing monitoring reports. Monitoring results will also be used for national and regional information sharing and decision making.
1.1.2 Establish Information Management System Establish data management infrastructure capable of input, storage modelling and reporting of national and state information in formats compatible with Convention requirements	**Section 4.4.11.3** Establishment of Management Information System for regular reporting of DDT to the Stockholm Convention Secretariat on POPs
5.1.4 Evaluate regulatory framework and institutional responsibilities pertaining to the management of waste - Review draft recommendations arising from other activities of Objective 2 for the modification of the regulatory framework governing the management of POPs products in use, and of wastes, their international trade and disposal to ensure compatibility with Article 6 of the Convention and, where applicable, with other multilateral environmental agreements to which India is party.	**4.4.3.2 Action plan implementation** This target will improve the capacity of the GOI to manage the PCBs in a coherent and professional manner. The gaps between Stockholm Convention requirements and existing legal / regulatory frame work will be assessed and recommendation to the legislative bodies for amendment and/or development of regulatory infrastructures will be undertaken. The above process would be undertaken at the national level and extended to the state level.

[95] Performance indicator in NIP Project that was completed on 31 December 2010

[96] Chapters 4, 5 and 6 in the NIP

WORK DUE FOR COMPLETION IN THE NIP[95]	WORK PROPOSED FOR FUTURE NIP IMPLEMENTATION ACTION PLANS[96]
- Make, where necessary, additional recommendations to ensure compliance. - Examine institutional responsibilities relating to measures ensuring that POPs wastes are handled, transported and stored in an environmentally sound manner and that actions are reported as required by the Convention and, where appropriate, prepare recommendations for revised responsibilities.	Strengthening policy, regulatory framework and institutions to comply with the PCB related obligations under the Stockholm Convention would be achieved through • Reviewing legal and regulatory framework for the ESM of PCBs • Establishing/upgrading legal and regulatory framework at the national level • Enforcement of national laws and regulations at the field level. • Evaluation of institutional capacity for ESM of PCB-containing equipment and wastes. • Establishing accredited laboratories. • Strengthening national, state and local level institutions • Regular country reports shall be filed at the Secretariat of the SC. MoEF is responsible for collating and completing the report. The mechanism of such reporting will be developed and put in place.
Others – See Project Document	Others – See NIP chapters 5 and 6

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ANNEX 17: ANNUAL EXPENDITURE (2007 TO 2011)

Budget Line	GEF allocation	2007	2008	2009	2010	2011	TOTAL	Percent	Residual
Contracts			705,201.00	1,178,099.00	10,999.95		1,894,299.95	63.2%	
International Experts		4,895.45	90,533.30	16,897.34	282,488.26	1,315.51	396,129.86	13.2%	
Equipment			5,522.00	17,996.97	165,235.28		188,754.25	6.3%	
Travel of project staff			25,703.64	21,372.42	70,627.91	14,036.62	131,740.59	4.4%	
Sundries			4,713.66	19,741.91	60,976.81	10,236.18	95,668.56	3.2%	
Premises			25,768.23	24,911.77	27,668.53		78,348.53	2.6%	
Administrative Support Personnel		365.00	15,945.09	13,835.37	47,992.90	56.53	78,194.89	2.6%	
UN Volunteers			11,402.89	14,225.06	26,266.27		51,894.22	1.7%	
Non-UNDP meeting			5,238.00	5,546.84	25,941.02		36,725.86	1.2%	
Non-UNDP group training					36,413.33	(1,525.20)	34,888.13	1.2%	
National Experts/Consultants					7,887.99	31.98	7,919.97	0.3%	
In-service training				600.99	6,413.49		7,014.48	0.2%	
Other personnel costs					(4,496.37)		(4,496.37)	-0.2%	
TOTAL	**3,074,700.03**	5,260.45	890,027.81	1,313,227.67	764,415.37	24,151.62	2,997,082.92	100.0%	**77,617.11**
PERCENT DISBURSED PER YEAR		0.2%	28.9%	42.7%	24.9%	0.8%	97.5%		2.5%

Source: Information provided from the Agresso accounting database by UNIDO 28 March 2011.

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ANNEX 18: RELEVANT ORGANISATIONS AND RESPONSIBILITIES

Organisations	Responsibilities / mandate
Ministry of Environment and Forests	• Nodal agency that plans, promotes and coordinates environmental programmes • Mandated to protect the land, air and water systems • Prevents and controls of pollution including hazardous substances such as POPs • GEF and Stockholm Convention focal point • Promulgates rules under the Environment Protection Act • Ensures effective implementation of legislation • Monitors and controls pollution (including pesticide levels in soil and water) • Provides environmental approval for industrial development projects • Promotes environmental education, training and awareness • Coordinates the national and international levels • Establishes standard for the quality of the environment, including emissions and/or discharges of environmental pollutants from various sources • Manages chemical disasters in India • Orders the closure, prohibition or regulation of an industry, operations or processes
Central Pollution Control Board	• Promotes cleanliness of streams and wells in different areas of the States through prevention, control and abatement of water pollution • Improves the quality of air and to prevent, control or abate air pollution in the country • Legal basis for both of the above
Ministry of Agriculture	• Nodal ministry for pesticides • Assesses the benefits and hazards of pesticides, encouraging proper use and developing alternatives to pesticides • Three bodies under the MOA regulate pesticides: o Central insecticides board, responsible for developing policies regarding pesticides o Registration committee, responsible for the registration of pesticides for manufacture, import and export; o Central insecticides laboratory, responsible for quality control, safety, packaging and efficacy of pesticides • Carries out research and technology development at the pesticide research institute and the Indian council of agricultural research • Promotes sustainable agriculture and IPM, including biological and cultural control systems • Responsible for the overall supervision and administration of the insecticide act • Works in cooperation with the MOEF to assess pesticides
Ministry of Chemicals and Fertilisers	• Policy, planning, development and regulation of the chemical, petrochemical and pharmaceutical industries • Provides approval to manufacture hazardous chemicals, including chlorine and pesticides
Department of Chemicals & Petro-Chemicals	• Part of the Ministry of Chemicals and Fertilisers from 5.7.1991 • Insecticides (excluding the administration of the Insecticides Act, 1968 (46 of 1968). • Alcohol - industrial and potable from the molasses route • Dye-stuffs and dye-intermediates • All organic and inorganic chemicals, not specifically allotted to any other Ministry or Department • Planning, development and control of, and assistance to, all industries dealt with by the Department • Bhopal Gas Leak Disaster-Special Laws

Organisations	Responsibilities / mandate
	• Industries relating to production of non-cellulosic synthetic fibres (Nylon Polyester, Acrylic etc.) • Synthetic rubber • Plastics including fabrications of plastic and moulded goods • Technical matters relating to dyes, inorganic & organic chemicals, PIC and POPs (Shri Jasbir Singh, Technical Advisor) • PCPIR, IPFT, RENPAP, Neem Project, Coordination, Performance Management & Vigilance (Mrs Geeta Menon, Director)
Department of Commerce	• Formulates, implements and monitors the Foreign Trade Policy which provides the basic framework of policy and strategy to be followed for promoting exports and trade • International trade, including tariff and non-tariff barriers • Foreign trade, especially in regard to MEAs such as the Stockholm Convention that involve the Department of Commerce • State trading • Special economic zones • Export products and industries, and trade facilitation
Ministry of Power	• Assists in the implementation of activities and measures for the limitation, elimination and monitoring of import and use of PCB-containing equipment • Assists in the reduction of unintentional production of POPs chemicals
Central Board of Excise and Customs	• Within the Ministry of Finance / Department of Revenue • Formulates policies on levy and duties • Prevents smuggling • Administration of matters relating to Customs • Central Excise and Narcotics to the extent under CBEC's purview
World Health Organisation (India)	• Articulating consistent, ethical and evidence-based policy and advocacy positions • Managing information by assessing trends and comparing performance; setting the agenda for, and stimulating research and development • Catalysing change through technical and policy support, in ways that stimulate cooperation and action and help to build sustainable national and inter-country capacity • Negotiating and sustaining national and global partnerships • Setting, validating, monitoring and pursuing proper implementation of norms and standards • Stimulating the development and testing of new technologies, tools and guidelines for disease control, risk reduction, health care management, and service delivery • Communicable disease surveillance including malaria and filariasis • Evidence & information for policy including National Health Accounts • Policies; Medical Ethics; Information System; Burden of Diseases; Essential Drugs and Medicines; World Health Survey; Health Finance; Trade Agreements and Reform Issues • Sustainable Development and Healthy Environment including Chemical Safety; Emergency & Humanitarian Action; Food Safety; Health & Environment; Healthy Cities; Environmental Epidemiology and Water Sanitation
Ministry of Health and Family Welfare	• Determines and manages the risks from chemicals in consumer products and foods. • Only authorized user of DDT in India • Mandates the quantity produced and use of DDT for health programs • Oversees the National Malaria Eradication Program (NMEP) • Develops an annual disease eradication plan • Sets permissible residue limits in foods • Shares responsibility for monitoring the level of pesticides with MOEF and MOA.

Organisations	Responsibilities / mandate
Hindustan Insecticides Limited	• A government-funded pesticide production company • The world's only remaining authorised producer of DDT
State Health Departments e.g., Punjab	• Control shipment, storage and distribution of DDT • Oversee the application of DDT, including the hiring and training of seasonal labourers • Disposal of out-dated/expired pesticides used in health programmes
Ministry of External Affairs	• Administration of foreign affairs • Supervises the execution of State foreign policies. • Needs assistance of MOEF, MOH and MOA to strengthen production, use and trade controls
Ministry of Urban Development Ministry of Road Transport and Highways Ministry of Railways Ministry of Water Resources	• Termite control in their respective jurisdictions • Important for the management and eventual elimination of POP chemicals • Municipal solid waste management • Overall planning, policy formulation, coordination and guidance • Technical guidance, scrutiny, clearance and monitoring • General infrastructural, technical and research support for sectoral development
Ministry of Labour	• Protects health, prevents injuries and saves the lives of workers. • Works with the State Departments of Labour to regulate chemical safety in the workplace • The Factory Advice Service and Labour Institutes Division advise the Central and State Governments on the administration of the Factories Act and coordinate factory inspection services in the States • The Factories Act is administered by the State Governments, which are required to appoint the Inspectorate of Factories • This Inspectorate shares co-responsibility for the enforcement of the Environment Protection Act • The Inspectorate of Factories is also responsible for enforcement of the Factories Act, including the approval and licensing of factories
National Environmental Engineering Research Institute (NEERI), Nagpur	• Leading organization in environmental technology development including hazardous waste management • Conducts R&D on environmental science and engineering • Provides assistance to industry and local bodies on environmental pollution problems • Collaborates with academic and research institutions on environmental science and engineering for mutual benefit • Contributes to CSIR area and mission projects
National Institute for Interdisciplinary Science and Technology **(NIIST),** Thiruvananthapuram	• Engages in R&D Programs in the area of Agro-processing, Chemical Sciences, Materials & Minerals, Biotechnology and Process Engineering and Environmental Science & Technology • Provides of basic research and technology development & commercialisation • Collaborative programmes with major National & International agencies
Central Power Research Institute (CPRI), Bangalore	• Autonomous society under Ministry of Power • Centre for applied research in electrical power engineering assisting the electrical industry in product development • Consultancy and quality assurance. • Independent authority for testing and certification of power equipment.

Organisations	Responsibilities / mandate
CSIR laboratories: • Central Leather Research Institute (CLRI) in Chennai; • Central Electrochemical Research Institute (CECRI) in Karaikudi • Central Salt and Marine Chemical Research Institute (CSMCRI), Bhavnagar; • Indian Institute of Chemical Technology (IICT), Hyderabad; • Indian Institute of Petroleum (IIP), Dehradun; • National Chemical Laboratory (NCL), Pune; and • Regional Research Laboratory (RRL), Jorhat • Industrial Toxicology Research Centre, Lucknow	• These laboratories have developed expertise and attained national and international recognition not only for their scientific standing but also technology development. • The chemical group of laboratories developed around 200 technologies and licensed 100 of these • Toxicological research • Involved in several programmes on POPs • Completed MOEF project on "Status of POPs in India" (PDF B Project, 2004) • Completed GEF project on "Regionally Based Assessment of Persistent Toxic Substances (PTS) in Indian Ocean Region" • Knowledge and innovations required for efficient utilization of coastal wasteland, sea water, marine algae, solar power and silicates • Development of new generation anti-malarial drug active against chloroquin-resistant malaria strains • Provide health safeguards to industrial and agricultural workers • Identify occupational health hazards due to exposure to chemicals in industries, mines, agricultural fields and general environment by undertaking health and environmental surveys • Determine mode of action of toxic chemicals/pollutants • Develop simple/rapid diagnostic tests for disorders caused by industrial and environmental chemicals • Safety evaluation of chemicals used in industry, agriculture and everyday life • Suggest remedial/preventive measures to safeguard health and environment from pollutants • Collect, store and disseminate information on toxic chemicals • Human resource development needed to cope with industrial and environmental problems
Central Institute of Mining and Fuel Research (CIMFR), Dhanbad	• Provides advice on science and technology to central government and States to facilitate management of technological changes in the areas of mining and fuels • Plans, performs and delivers R&D on coal and minerals for utilization in mining, energy and allied industries • Helps the mining industry in general and coal industry in particular with knowhow and R&D services from "Mine to Market" • Gives priority to clean coal initiatives with focus on resource conservation, coal quality up-gradation and coal processing technology packages for power, steel, chemical feedstock and liquid fuels
National Institute of Oceanography, Goa with regional centres in regional at Kochi, Mumbai and Visakhapatnam	• More than 200 scientists (half of them PhDs) and 100 technical support staff • Coastal and marine environmental quality studies including POPs degradation using bacteria • Active in monitoring POPs in the ship breaking industry • Carries out applied research including oceanographic data collection, environmental impact assessment, and modelling to predict environmental impact. • Consultancy work on a number of issues including marine environmental protection and coastal zone regulations
Industrial Associations e.g., - Pesticide Manufacturers and Formulators Association of India - Confederation of Indian Industry - Indian Chemical Industries	• Voluntary NGOs comprising enterprises drawn from the same or related sectors, registered with the relevant government department • Exchange business relevant information, including development science and technology, and business strategies • Regulate the business activities of the industry • Help to train workers in production, technology, labour safety, hygiene, health, and environmental protection • Implement the State's laws, regulations and standards

Organisations	Responsibilities / mandate
- Crop Care Federation of India	• Organize environmental protection activities • Organise training programmes • Participate in chemical control campaigns • Provide information to government on chemical management
Indian Council of Medical Research	• Government funded • Formulate, coordinates and promotes biomedical research. • Aligns research priorities with the national health priorities such as control and management of communicable diseases, and containment within safety limits of environmental and occupational health problems • Tries to reduce the total burden of disease and to promote health and well-being of the population. • ICMR has several research institutes in different parts of India • Work on malaria control and mosquito breeding
National Institute of Occupational Health, Ahmedabad	• Carries out research on the impact of POP pesticides • Develops preventive intervention and control measures, which are economical and locally available • Identifies and mitigates against the occupational and environmental health problems • Uses research, education, service and information dissemination. • Most of the epidemiological studies need a multidisciplinary approach, which the infrastructure facilities and trained manpower have been developed at the institute • Environmental monitoring for toxic agents in the working and community environmental form as integral component of various studies • Collaborates with Ministry of Labour, Chief Inspectorate of Factories, Ministry of Health and Family Welfare, MOEF, PCBs, Ministry of Science and Technology, and International agencies (US-EPA, CDC, WHO, ILO)
All India Institute of Public Health & Hygiene, Calcutta	• Leadership in human resource development in public health • Develops health manpower • Conduct research relating to various health problems and diseases in the community • Provides support services in urban and rural areas • Supports and guides various programmes at national level
NGOs such as Greenpeace, Bangalore; Environmental Resource Management (ERM), Delhi Centre for Science and Environment (CSE), Delhi Toxics Link, Delhi World Wildlife Fund for Nature (WWF)-India, Delhi Centre for Environmental Education (CEE), Ahmedabad Bombay Environmental Action Group (BEAG), Mumbai The Energy and Resources Institute	• NGOs working in the field of nature conservation and environmental protection • Identify environmental issues, and help the government to justify resources (funds, human) for key issues • Create awareness • Capacity building through training programmes • Greenpeace is a non-profit organisation, with a presence in 40 countries across Europe, the Americas, Asia and the Pacific that works on 5 key issues, one of which is the elimination of toxic chemicals • Some NGOs are members of the IPEN network is made up of over 700 public interest health and environmental organisations from more than 80 countries who support a common platform for the global elimination of POPs. Participating organisations in IPEN have endorsed the IPEN Stockholm Declaration • CSE undertakes work on awareness, research and advocacy, education and training, website information development, and pollution monitoring • ERM has 55 people that undertake multi-disciplinary environmental, health and safety management, social development and natural resource management work in India for national and state governments, public and private sector corporations, multinational corporations and major international financial institutions • CEE is Centre of Excellence supported by the MoEF with a regional network for promoting educational work in science, health, development and the environment • TERI has of 700 staff including Dr R K Pachauri who is Chairman of the

Organisations	Responsibilities / mandate
(TERI), Delhi	Intergovernmental Panel on Climate Change. In 2007, Dr Pachauri and former US Vice-President Al Gore shared the Nobel Peace Prize • Toxics Link provided a Report[97] in 2006 on POPs
Universities in India	• Undertaking research on waste management • Socio-economic studies on POPs in human populations • Modelling of the epidemiology of POPs in human populations

[97] Toxics Link. 2006. Country situation on POPs in India. International POPs Elimination Project. Report provided to IPEN, UNIDO, UNEP, GEF, UNITAR and the Swiss Agency for Development and Cooperation. 57pp.

ANNEX 19: RESPONSES TO COMMENTS MADE BY THE GOVERNMENT OF INDIA ON THE DRAFT EVALUATION REPORT

	Text in the Evaluation Report (June 2011)	Justification by India (August 2011)	Response by the Evaluators (September 2011)
1	**Hindustan Insecticide Ltd., Delhi** ***(Objective 2- Measures in Relation to DDT)***		
(i)	As HIL is the only global producer of DDT for vector control, with a financial interest in the continued production of DDT for national and international sales The report by HIL as a result did not maintain the required level of objectivity that would be expected from such a contract. (Pg.13)	M/s HIL is a Public Sector Unit under Ministry of Chemicals and Fertilizers, Government of India. It is a commercial organization engaged in the manufacture of various types of agrochemicals including DDT, a public health product used for disease vector control purposes. We do not agree with the observation that M/s HIL did not maintain required level of objectivity. The Ministry of Environment and Forests being the nodal Ministry for all the Multilateral Environmental Agreements (MEAs), has constituted a National Steering Committee to oversee the implementation activities of the NIP preparation under the Stockholm Convention. Considering the expertise and the information available with HIL, the National Steering Committee (NSC) was entrusted the work related to *Measures in Relation to DDT,* Objective-2 of the project to M/s HIL. Taking into consideration that HIL being the only producer & supplier of DDT in the country, is well aware about the whereabouts of DDT & other POP pesticides in the country,	Statements in the NIP affect the future of substances that have been or are being manufactured and used by various sectors of society. There are also social and economic impacts on individuals and/or on economic interests of the bans and restrictions that might be recommended as part of the Action Plan in the NIP. "*It is crucial that the decisions of the Committee are widely respected for their integrity and impartiality to such interests*" (POPRC Handbook, page 49). India reported that HIL's role in the Project was discussed in the only meeting of the National Steering Committee. The results of the Committee's discussion on HIL's role in the project were not included in the Minutes of the meeting. The Evaluation Report discussed in Section 3.5.1 other organisations in India that could have undertaken this work, apart from HIL. Had one of these organisations been selected they would have brought integrity and impartiality to the report on Objective 2: Measures in relation to DDT. They could have obtained relevant information from HIL for their report, as well as reported on alternatives. HIL's lack of objectivity is evidenced in their report in the NIP. Examples include: • "*Cost effectiveness, biological efficacy, safety to the environment, desired persistence. All are in favour of DDT …and there are no alternative to DDT*" (p233). There are questions over all of these aspects, and the second sentence clearly shows HIL is not objective; • Mosquito resistance to pesticides is discussed in detail (p264 – 267), but the focus is on resistance to all pesticides except DDT. No explanation was provided for excluding DDT from this section. • HIL reported that DDT was stored properly and environmental contamination was prevented (p75 of draft NIP), which is not consistent with the work of NEERI that reported many instances of off-target DDT contamination [Annex 15 Evaluation Report]; • Inconsistencies with NEERI report (p210) that showed DDT pollution "*…soil, water and ecosystem…*" around many DDT stores, yet HIL reports none and that DDT is stored "*properly*" in 22 locations (249, and Tables 26 to 47). For example, p18 of NEERI for Aizwal (315 in HIL) shows contamination above WHO limit, yet HIL reports "*No …pollution of soil, water and ecosystem…*". Similarly for Chittisgarh (NEERI p28 shows 7 storage sites contaminated, HIL none on p321) and Assam (NEERI on p35, HIL none p320). • The methods for selecting the DDT stores were not described and appear selective (Tables 26 to 47 in Annexure -1-A), especially when stockpiles of banned pesticides are not monitored (p216) and stocks of banned pesticides could be used after the ban date (p223) • '*…obsolete DDT was found in most of the States*' (p255), yet in the report there was no methodology in place to find and quantify such stocks • NEERI found and reported the stockpiles of DDT (see NEERI p30) and not HIL, as evidence that HIL's

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			methodology for finding stockpiles of DDT was not adequate (p327); • Section 3.3.3.3 reported that temporary stocks held by HIL were not reported; • 1.3: List of pesticides. There was no methodology in place to detect obsolete stocks, yet in the report it stated (p216) that some pesticides were exported after their ban date (chlordane, heptachlor and aldrin) and chlordane was imported after it was banned in India (p216) • The report does not provide any interpretation or explanation of the data in the 50 Tables, and just says "…*these are the data*…" (all report). For example, since 1955 India has produced more than 400,000 tonnes of DDT the majority of which has been released into the environment (Table 3, p 286); stocks of DDT are approximately equal to 1 year of 2009 production • No methods were used to determine the extent to which DDT was being used illegally, even though illegal use was reported by HIL (p231) • Inconsistent statements e.g. bed nets cost-effective (p240), contrast with other statements that DDT is the only solution • '*States … are claiming resistance to DDT…*" is not consistent with the map of DDT resistance on the next page (p261) which shows extensive areas of resistance, and HILs statement devalues the concerns of these States • "*DDT is the most effective tool … as shown by the malarial cases in the past 5 years*" [Histogram p 231]. Below the text shows other controls that have contributed to these graphs, so it is not just DDT • "*The cost of spraying with malathion and deltamethrin is about 2.5 times the cost of spraying with DDT*" (p262). No costs are provided for DDT sprays to allow comparison, especially those that take into account the government subsidy to HIL for the production of DDT HIL did not objectively report on alternatives to DDT (see next entry below). Moreover, HIL did not put in place procedures that would have exposed misuses of DDT, stockpiles and off-target contamination. Instead these were revealed by NEERI, a scientific institute that does not have commercial interests in the production of DDT.
		Report regarding i) Alternatives of DDT & ii) Phase out of DDT has been discussed elaborately in the Final NIP Document (p.152-156). The evaluation has been made by the evaluators before the completion of NIP document. The evaluators were provided with HILs 3rd& Final report wherein details have been provided on DDT alternatives and DDT Phase out plan (copy attached).	We do not agree that 4 pages (p 152-156) on alternatives and the phase out is a significant "elaboration" of alternatives, when considering thenumber of pages in the NIP (without Annexes) is more than 200 pages. We did indeed base our comments on HILs 3rd and Final Report. HIL's reports that were evaluated consisted of Annex 1 ("*3rd and Final Report related to Objective 2 of NIP Stockholm Convention on POPs*"), Annexure -1-A (Tables 1-50) and Annexure-1-B (Alternatives to DDT). Annex 1 and Annexure -1-A were provided to us by the Project Coordinator on 5 January 2011. Annexure-1-B was provided to us by HIL on 18 January 2011 during a visit to the HIL headquarters.
(ii)	There was limited information on alternatives to DDT for vector control,	**Purposes** has been elaborated at paragraph	We are aware of the list of alternatives describedin Chapter 11. However, overall there was limited information

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	particularly on the costs of alternatives and their use in India. This may have been because HIL has a financial interest in the continued production of DDT for national and international sales, rather than in the production of alternatives. The project missed an opportunity to produce a report on DDT and its alternatives without concerns being raised on the contractor's ability to provide an objective report. (Pg 35)	11.5 of the Report. **Basic situation of monitoring and R& D** has been highlighted at paragraph-11.6 - of HIL's final report. The final NIP Report has provided the DDT action plan, the alternatives to DDT, time frame and budget requirement.	on alternatives to DDT for vector control, particularly on the costs of alternatives and their use in India. The costs of DDT production and use were not compared on a like-for-like basis with the cost of alternatives to DDT in the NIP Report, including the expected costs of environmental amelioration for soil and water contamination as a result of the use of DDT. NEERI reported on such contamination in the NIP report. HIL's statement that the "*Cost effectiveness, biological efficacy, safety to the environment, desired persistence. All are in favour of DDT …and there are no alternative to DDT*" (p233) undermined and devalued the future role of alternatives to DDT. These statements also do not acknowledge the alternatives to DDT that are in place in many countries, and that are being developed and put in place e.g., Mexico. We maintain that these and other deficiencies in HIL's section of the report were due to HIL's commercial interest in the continued production of DDT rather than in the implementation of alternatives that would compete and even replace DDT (Page 71). HIL states on its website: "*…the company sees a great scope in emerging as the main DDT supplier to the world as HIL is the world's largest DDT producer. Moreover, the company has more than 50 years of experience and expertise in the manufacture of DDT*"[98]. These public statements led the evaluators to conclude that HIL has little intention of phasing out DDT. We recommend that any selection committee in the future develops and applies criteria to avoid a conflict of interest when choosing organisations for a project in order to ensure that any information generated as a result of the funding comes from organisations that are respected for their integrity and impartiality.
(iii)	The Ministry of Health appeared committed and motivated to maintain the production and infrastructure associated with continued use of DDT. (Pg. 47)	We do not agree with the observation of the evaluator as India is conscious of the harmful effects of DDT. Among the vector borne diseases (VBDs), malaria continues to pose a major public health threat. During the past few years, the Indian surveillance system has been reporting around 2 million cases of malaria every year. India is estimated to contribute 77% of cases in the South East Asia (SEA) Region of the WHO though only 66 % of SEA population actually lives in India. 1563574, 1485817, 336545 malaria cases and 1144, 767 and 75 deaths are reported during 2009, 2010 and 2011 (up	We at no stage questioned the serious impact of vector borne diseases (malaria, leishmaniasis) on human health. We fully acknowledge the resultant mortality and morbidity that affects many thousands of people in India as a result of these diseases, and the havoc that these diseases cause to local communities. Our report focused on statements by health and other officials in the NIP project that strongly indicated that alternatives to DDT were not seen as a solution to controlling these diseases. For example, during the interviews the Project management reported that agreement had recently been reached with the Ministry of Health for DDT to be phased out. However, a document in support of this agreement was not supplied to the evaluators. Importantly, this agreement was not corroborated in an interview with a senior representative of the Ministry of Health who stated there were " *…no plans to phase out DDT… in the next 20 years*". We concluded that statements by the Project management on the phase out of DDT were largely aspirational, and that HIL and the Ministry of Health appeared committed and motivated to maintain the production and infrastructure associated with continued use of DDT. UNIDO supplied a GEF Project Identification Form (PIF) to the evaluators on 8 June 2011. The PIF was signed by UNIDO on 14 February 2011, after our evaluation mission was concluded. The PIF addressed the possible introduction of alternatives to DDT "*… as a first step for elimination of dependency on DDT*" (PIF 'Origin of Proposal'). Moreover, the project did not specifically address the phase out of DDT "*…due to its*

[98] Welcome to Hindustan Insecticides Limited – a government of Indiaenterprise.

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		to May, 2011) respectively. In addition, DDT is also for control of leishmaniasis commonly known as Kala Azar. Kala Azar is endemic in 52 districts in four States. These four states reported 39,178 cases and 187 deaths due to Kala - Azar in the year 2006 and 33,233 cases in 2008 alone, with 146 deaths. 165.4 million people are affected. To give a general idea of the enormity of these numbers, this is more than the population of any of the countries in EU. Following initiatives have been taken by Government. ▪ Use of DDT in agriculture has been banned through National Legislation. ▪ Use of DDT permitted only for public health purpose. Ministry of Health is the only authorize user of DDT (only NVBDCP uses DDT). No other agency is allowed to use DDT. ▪ Detailed Guidelines for DDT use developed and made available in the field. ▪ Being used for Malaria and Kala-Azar vector control on highly selective basis. ▪ A high level Mandate Committee under Secretary, Health monitors the production/ use of DDT (maximum of production 10,000T/annum.) ▪ Integrated Vector Management	*socioeconomic and political sensitivity the phasing out DDT in India should be approached in a very cautious and considerate manner*" (PIF paragraph 14). The DDT Action Plan in the NIP for the period up to 2022 does not categorically state India's intention to phase out DDT. The Plan focuses instead on '*Life cycle management of DDT*", "*General public awareness*", and the "*Introduction of environmentally-sound alternatives to DDT*". On '*phase out'*, it states: • "*… the GOI is ready to take measures to phase out DDT. However currently due to resistance and cross resistance to the available alternatives to DDT, DDT cannot be replaced*"; • "*Progress towards DDT phase out…*" These statements suggest that production and use will not be zero, and that there are no planned reductions in the future to encourage the implementation of alternatives. We conclude that phase out of DDT before 2022 does not appear to be India's overall intention, and the Ministry of Health appears committed and motivated to maintain the production and infrastructure associated with continued use of DDT. In regard to the initiatives (see bullets in column to the left): • The ban on the use of DDT in agriculture does not mean that it is not being used in agriculture. According to statements in the NIP and comments made in interviews to the evaluators, it is very unlikely that the ban has resulted in no agricultural use of DDT; • There is a lack of adherence to the WHO Guidelines for DDT use, according to the report by NEERI in the NIP who documented workers taking home the empty DDT bags for other uses instead of destroying them, inadequate protection against DDT contamination by workers applying DDT to houses, and contamination of water and soil in areas adjacent to homes. • The 10,000 tonnes maximum per annum is for technical grade DDT (100%), but as the rate in practice uses 50% WP of this and therefore the maximum tonnage that can be manufactured is 20,000 tonnes annually of 50% WP. The WHO recommends 75% WP. It was unclear why India uses a lower WP value than internationally recommended, as lower values can readily lead to resistance. Resistance to DDT was reported in more than 20 states, according to the NIP.

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		being promoted in India. ▪ The All India Coordinated Project on Pesticides Monitoring, revealed the reductions in the concentrations of residual pesticides in soils and vegetables, indicates no misuse of the pesticides. HIL is producing DDT as per the demand of the Government of India for disease vector control purpose only as per the guidelines of the SC i.e. continued use of DDT till viable cost effective locally affordable alternatives are found. Phase out of DDT, has been discussed elaborately in the HILs 3rd& Final report. Forecast of future production of DDT also depends on the need of the country for DVC purpose as referred in paragraph 11.4 - Current and forecast future production, distribution and use of DDT of chapter 11 ASSESSMENT OF THE POP'S ISSUES of HIL s final report.	
2	**Central Power Research Institute, Bangalore** ***(Objective 3- Measures in Relation to Polychlorinated Biphenyls (PCB's)***		
(i)	Inception Reports from CPRI was not provided to the evaluators.(P 50)	The reports have been submitted to UNIDO within the time frame specified.	Inception reports were submitted to UNIDO by NEERI, NIIST and CPCB. These reports were written in 2008 and submitted from September to November 2008 to UNIDO. UNIDO reviewed the Inception Reports in July 2010, almost two years after they were submitted. An Inception Report from each of MoEF, HIL and CPRI were not provided to the evaluators. We double-checked the document library and we could not locate the Inception Report from CPRI. However, UNIDO did provide the Evaluators with a CPRI PowerPoint presentation entitled "*Measures in Relation to PCBs – Brain Storming Session on POPs (PCBs)*", which was authored by Dr CJ Naidu. It was presented at the beginning of the project. It includes all most of the elements of an Inception report, such as the preparation of a national inventory, the methodology to be used, capacity building using a pilot training programme, and the

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			deliverables. The CPRI PowerPoint presentation is different in format and approach to other Inception Reports written by NEERI, NIIST and CPCB and for this reason we may not have recognized CPRI submission to UNIDO as an Inception Report.
(ii)	Objectives for NEERI as the leader of the unintentional POP's work were duplicated in contracts agreed by CPRI, CPCB and NIIST.(p 49)	There is no duplication of work with respect to NIP between CPRI and NEERI. The CPRI was assigned Objective 3 - *Measures in relation to Poly Chlorinated Biphenyls* under which inventorization of PCB's (pure PCB+ PCB containing equipments) was carried out. Under objective 3, CPRI was entrusted to carry out the inventorization work of PCB's throughout the country. A series of awareness raising workshops conducted to sensitize the industries and the stakeholders on the effects of PCB's. NEERI, Nagpur was assigned Objective 5 - *Measures in Relation to Waste and Contaminated Sites*under which the inventorisation of POP's contaminated sites was carried out.	We agree that there was no duplication of work. However, we saw the same objectives in several contracts. During the interviews, we were consistently told by the contractors that "*this was not my objective [in my contract], so I do not have to do the work and report*". This avoided duplication of effort, but resulted in many objectives simply not being worked on and the results reported. We cited this as one of the reasons for many of the objectives in the project not being completed. For example, objectives in the contract for NEERI as the leader of the uPOPs work were duplicated in contracts agreed by CPRI, CPCB and NIIST. This resulted in contractors not accepting responsibility for the objectives that were believed to be within the expertise of another contractor, even though the contractor had signed and accepted payment for completing the work associated with the objective. We analysed the objectives in each contract carefully using the LogFrame analysis method. We see the same objectives in contracts agreed by CPRI, CPCB and NIIST. For example: • CPCB and NIIST had the same objectivesas NEERI (the lead agency) to provide legal and regulatory frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of unintentional production of POPs [Contracts 1612 and 1613] • CPCB and NIIST had the same objectives as NEERI (the lead agency) to develop regulatory, administrative or other schemes to promote the use of BEP in <u>new</u> sources [Contracts 1612 and 1613] • CPCB and NIIST had the same objectives as NEERI (the lead agency) to develop regulatory, administrative or other schemes to promote the use of BAT / BEP in <u>existing</u> sources of uPOPs [Contracts 1612 and 1613] • CPCB and NIIST had the same objectives as NEERI (the lead agency) to assess the social and economic impacts of releases of uPOPs Contracts [1612 and 1613] • CPCB and NIIST had the same objectives as NEERI (the lead agency) to develop strategies for uPOPs reduction and elimination in India [Contracts 1612 and 1613] • CPCB and NIIST had the same objectives as NEERI (the lead agency) to hold meetings to raise stakeholder awareness to gain their support for the NIP [Contracts 1612 and 1613] In addition, there were misplaced objectives that were intended for MoEF but were included in the CPRI contract, such as: • Objective 3.2.1 requires CPRI to "…*prepare a Management Information System to hold inventory data and replacement timetables*…" [Contract 1726]

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			We recommend that in the future UNIDO, contractors and the Project coordinator take care to ensure that each objective is correctly assigned to the designated contractor with the appropriate expertise, and that the same objective is not included in multiple contracts.
(iii)	"*…it is difficult to either quantify or identify the presence of PCBs in India. Another limitation is the available of an appropriate methodology for analysis*" (quote from p28 of CPRI Final Report). The Evaluation Report stated that "*CPRI was supposed to develop the methodology to overcome this difficulty*".	The work carried out by CPRI, inventoried more than 10,000 tons. This is more than the required target of 7,700 tons set under the post NIP project for Environmentally Sound Management of PCB's. Under the post NIP Project, it is proposed to dispose 7,700 tonnes of PCBs which includes 1,700 tonnes of Pure PCBs and 6,000 tonnes of PCB contaminated oil. During the inventorization work industries like steel, cement, paper & pulp and Government Agencies like State Electricity Departments are covered.	The contract with CPRI for the NIP did not specify the amount to be inventoried. It is also important to note that the NIP work was a continuation of a previous project (PDF-B Phase) which funded CPRI to undertake a PCB inventory. CPRI was funded in the NIP to*inter alia*"***Collect national information on production, import and use of PCBs and PCB-containingequipment*** *by building on an initial inventory prepared in PDF-B phase by gathering further information relating to import of PCBs and PCB-containing equipment; preparing the national inventory of equipment still in use from records held by utility corporations, government and other sources; conducting preliminary surveys at state level to develop a preliminary inventory; presenting a preliminary inventory to principal stakeholders; preparing a preliminary inventory in a format suitable for inclusion in the NIP*". Therefore, one of the key objectives in the Project was the development of an inventory of POPs. However, we found it difficult to determine the inventory of POPs as a result of the NIP project, as information on the inventory was scattered throughout the NIP in Chapters 1-6 and in the Annexes and not consolidated into a single table. The evaluators therefore constructed Table 2 on page 33 of the Evaluation Report from information on POPs reported in different parts of the NIP. We reported in Table 2 that CPRI had analysed 398 samples of transformer oil, which was likely to increase to more than 500 as the work was on-going. Most of the oil had been obtained by CPRI from theelectricity sector (71%) and the steel sector (18%)as these two industries were the focus for CPRI's sampling. CPRI's methodology did not, however, extend to significant sampling ofPCBs in heavy industries such as cement, fertiliser, mining, pulp, paper, lubricant and ship-breaking industries (CPRI report Section 4.4.3.2) . The ship breaking industry alone was estimated by India in the NIP to have 2,000 to 4,000 tonnes of PCBs. We also believe that the terminology for describing the PCB inventory of about "10,000 tons" should be expressed as3,000 tonnes of pure PCBs and 6,700 tonnes of PCB-contaminated equipment, which is an important distinction for post-NIP projects. We therefore acknowledged that in the NIP project CPRI had built on the inventory developed under the PDF-B phase project through taking primary samples. There was an opportunity to use data from other projects ('secondary data') that would have extended the PCB inventory, but this was not done. Therefore, because 2 sectors were the main focus of the samples we hold to the view that the methodology developed by CPRI was inadequate to build an inventory of PCBs that was representative of PCB contamination in India, yet this was one of the objectives of the Project.
3	**National Institute of Interdisciplinary Science and Technology (NIIST), Thiruvanathapuram& Central Pollution Control Board (CPCB), New Delhi** ***(Objective 4- Measures in relation to unintentionally produced POP's-Dioxins and Furans)***		

	Text in the Evaluation Report (June 2011)	Justification by India (August 2011)	Response by the Evaluators (September 2011)
(i)	There are no statistics to show how the measured samples can be compared with the toolkit (p 130)	Development of toolkit for few categories is an attempt to know the original annual emission apart from annual emission calculated using UNEP toolkit. This kind of attempt cannot be seen in any other NIPs and is a good scientific attempt to explore the original dioxin emission situation in India.	The justification by India does not address our comment that statistical analysis would have been helpful for comparing the measured from the modelled results. We still believe statistical analysis would have been helpful, not only in this comparison but also in estimating the number of industries present in India for the Toolkit Analysis. There was also no deliverable in India's NIP project that required India to compare its NIP with those of other countries, but we found in the interviews that the Project Coordinator preferred to benchmark progress in the India NIP this way rather than by monitoring progress according to deliverables in the Project Document signed between India and UNIDO. We respectfully disagree with India's justification statement that "*… emission monitoring …cannot be seen in any other NIPs…*" as China conducted emission monitoring for a few key sources. According to China's NIP, "*… dioxin emissions were measured mostly from municipal solid waste incineration rather than emissions from the cement, iron and steel and papermaking sectors* (P 55). *As a result, dioxin emissions for the NIP were estimated mainly by using the UNEP Toolkit but actual monitoring was conducted on a few key sources*" (P16). The approach by India and China therefore appear similar since both sampled emissions from a few key sources, but relied on the UNEP model to estimate the majority of emissions from a range of sources. We do not exclude the possibility of other country NIPs basing their inventory to some extent on primary data as our TOR did neither required us for the us to evaluate India's NIP in relation to other country NIPs, nor to examine the extent to which primary data was collected in other countries.
(ii)	Item 8.2 in Table 4.1 in the Final Report on Objective 4 by NIIST states that '*…data from the source keep varying…*' [refers to crematoria]. The Evaluation Report says the contractor should have considered the variation in data [for crematoria] and given a range of emissions, using examples (p 130)	No primary monitoring was done in case of crematoria. The observations are given in the Table based on the emission factor drawn from secondary data sources. The variation in the data was very wide. Average emission factor has been projected.	We compiled out comments on the Final Report on Objective 4 by NIIST into Annex 13 in the Evaluation Report. Our comment on crematoria was an example of the many instances of NIIST's comment that the "*data from the source keep varying…*". It is unfortunate that some primary monitoring was not undertaken for crematoria for the UNEP Model. We accept that average data were provided in the case of the crematoria. It would have been useful to annotate Table 4.1 to show how the variation in data was transformed in order to obtain a value for the UNEP Model. There were other examples when no data were available for the model because the tonnes per annum emitted were not be able to be estimated. In these cases, NIIST commented that "*…PCDD/Fs release from this source has not been considered*" (e.g., two-stroke engines, sewage sludge incineration, magnesium production, shredder, industrial boiler, firewood combustion, household heating and cooking etc). Some of these sources are likely to major emitters of PCDD/Fs and therefore their omission from the model underestimates these emissions in India.
(iii)	The assumptions for the increasing POP's each year are not stated (seems to be 10% increase each year), and also no reason is given for omitting 2011. (p 130)	The increase in emission was calculated assuming that the country will have an average annual industrial growth of 5-10%. Reduction by applying BAT/BEP was also	We can only find a figure of 5% growth per annum in the header of Table 5.2 in the Final Report on Objective 4 by NIIST. Thank you for the correction for the year 2010 being 2011 in Table 5.2. This leads to2012/2011 as 10% per annum as you state in the justification, and not 5% per annum based on the estimated emission in your Final Report over the 2 year period 2012/2010. The header in Table 5.2 would also need to be adjusted to show 5-

<table>
<tr><th></th><th>Text in the Evaluation Report (June 2011)</th><th>Justification by India (August 2011)</th><th>Response by the Evaluators (September 2011)</th></tr>
<tr><td></td><td></td><td>calculated with the same science. This was to show the dioxin emission situation in future. 2010 in the Table, be read as 2011.</td><td>10% growth rate per annum (and not 5% growth rate), according to the figures in the Table.
<table>
<tr><th colspan="4">Table 5.2 India Report (5%-10% growth rate)</th><th colspan="3">Evaluator analysis</th></tr>
<tr><th>2010~~10~~11</th><th>2012</th><th>2014</th><th>2015</th><th>2012/2011</th><th>2014/2012</th><th>2015/2014</th></tr>
<tr><td>5777.97</td><td>6355.77</td><td>6991.34</td><td>7340.911</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>2869.97</td><td>3156.97</td><td>3472.66</td><td>3646.297</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>504.15</td><td>554.57</td><td>610.02</td><td>640.5226</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>141.33</td><td>155.46</td><td>171.01</td><td>179.5598</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>9.57</td><td>10.53</td><td>11.58</td><td>12.15869</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>45.48</td><td>50.03</td><td>55.03</td><td>57.78234</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>352.95</td><td>388.25</td><td>427.07</td><td>448.4281</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>0.73</td><td>0.8</td><td>0.88</td><td>0.922383</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
<tr><td>74.82</td><td>82.3</td><td>90.53</td><td>95.05881</td><td>10%</td><td>5% per year</td><td>5%</td></tr>
</table></td></tr>
<tr><td>4</td><td colspan="3">NEERI, Nagpur
(Objective 5- Measures in Relation to Waste and Contaminated Sites)</td></tr>
<tr><td>(i)</td><td>How would the owner of equipment know the POP's concentration? (NEERI Final Report submitted to evaluators on 17 January 2011, page 116)</td><td>It comes under the heading "Develop policy or regulations requiring owners to report POP's", which is a part of inventorization where overall information regarding the POP's and POP's containing articles and wastes are to be collected. The owner can take help of the laboratory who is engaged in POP's analysis.</td><td>We thank NEERI for the useful clarification. We suggest that the following in italics is added to the sentence to capture your comment: (f) Concentration of POPs in the product, article or waste based on prior analysis by an approved laboratory;</td></tr>
<tr><td>(ii)</td><td>Objectives for NEERI as the leader of the unintentional POP's work were duplicated in contracts agreed by CPRI, CPCB and NIIST. (p 49)</td><td>There is no duplication of work with respect to NIP and between CPRI and NEERI. NEERI was assigned Objective 4 (Measures in Relation to Waste and Contaminated Sites).

Under the Objective the testing of soil and water samples was undertaken by NEERI as planned earlier.

For the inventorisation of DDT</td><td>Please refer to our answer in 2(ii) above.</td></tr>
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		contaminated sites 5 districts of Mizoram, 2 districts of West Bengal, 7 districts of Chhattisgarh, 6 districts of Himachal Pradesh, 2 districts of Assam, 2 districts of Tripura and 1 district of Meghalaya were Covered. For the inventorisation of PCB contaminated sites states of West Bengal, Chhattisgarh, Orissa, Tamil Nadu, Haryana, Uttar Pradesh, Gujarat were covered	
(iii)	13.3: No PCB sampled from the drums, yet there were PCB's in the water, and the reason for PCB presence was not provided (p 133 of Evaluation Report)	The oil samples were collected and analyzed by CPRI from various sites. The presence of PCB congeners in the water samples shows groundwater contamination in and around the industry premises.	We thank NEERI for the explanation which would have been useful to also include in your report.
(iv)	Insufficient samples taken at the Alang shipyard region (P 133 of Evaluation Report)	14 soil samples and 8 water samples were collected from the sites which are a good number for sample collection. We depended upon the authorities at Alang.	The Alang shipyard region is reported in the NIP to be contaminated with 2000 to 4000 tonnes of PCBs. We think that more samples could have been taken to substantiate this report, given the large amount of PCBs in this region which is equivalent to 40% of the total so far located by CPRI.
(v)	No report on obsolete stocks for banned pesticides (p133 of Evaluation Report)	An amount of 33,111 kg of technical grade Dieldrin and 20,744 litres of Dieldrin 18% EC has been reported from Maharashtra, Rajasthan and Gujarat States (Table 7 on page 58 of NIP). In India, its manufacture and import were banned through an order dated 17 July 2001, but marketing and restricted use (locust control) was permitted for a period of two years from the date of the ban, or up to the date of expiry, whichever was earlier.	Thank you for the clarification. However, our reference to Table 31 on page 108 in the Final NEERI Report in which 9 pesticides were listed. You correctly provided commentary on two of them (Dieldrin and Aldrin) in the NIP, and there is extensive comments on DDT, but there is no similar commentary on location and quantity for the other six pesticides Chlordane, Endrin, Heptachlor, Hexachlorobenzene, Mirex and Toxaphene. Our comment relates to the usefulness of comments for these six pesticides, similar to the comment that was provided for Dieldrin and Aldrin.

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		An amount of 101 liters of Aldrin 30% EC has been reported from Imphal district in Manipur and Sikar& Kota districts in Rajasthan. Information has been provided in Table 7 (p 59) of NIP.	
5	**MoEF, New Delhi** ***Objective 1 (Convention Implementation Infrastructure at National and State levels) and Objective- 6 (Project Management, Monitoring and Evaluation)***		
	General Comments by MoEF: The laid down procedure for such evaluation has not been followed as detailed below: (i) The evaluation was not carried out in consultation with the Ministry of Environment and Forests (MoEF) and without having its mandatory clearances for conducting such an evaluation and violates the protocol established in the matter between an UN Agency and a Ministry in the Government of India. (ii) The evaluation has been conducted much before the completion of the work of the NIP development, hence, delivery of the output cannot be considered as complete. (iii) As a consequence of premature evaluation, the tentative conclusion drawn fall short of the requirement of such evaluation and must not be submitted to the GEF Secretariat as it obviously presents an incomplete picture. (iv) The appointment of the two evaluators was made unilaterally by the UNIDO without consulting the Ministry of Environment and Forests (MoEF). It is to mention that the activities under the project had been assigned to premier reputed institution/organisation in the country. At the National level, the Indian evaluator has no relevant expertise in the area of Chemical Safety including the Multilateral Environmental Agreements dealt by the Ministry of Environment and Forests. (v) The mid-term evaluation was not carried out which would have		To i) It is UNIDO standard practice to channel all official correspondence through the Permanent Mission. The evaluation TOR was shared with the Indian Permanent Mission via a letter dated 19 November. Reply from the PM was received on December 8 2010, informing UNIDO that "*That the matter had been given due consideration by the nodal authority in the Ministry of Environment and Forest, Government of Indiawhich has observed that due to prior commitment of the Officers concerned, a meeting with the UNIDO Evaluation Team and Officials of the MoEF may take place only after 23 January 2011 i.e. between 24-28 January 2011.*". Consequently, the mission was carried out during that period (see attached correspondence). In parallel, on November 17, an email had been sent to the UNIDO Regional Office in India, asking it to share the TOR with the Indian Government. To ii and iii) The evaluation report acknowledges the fact that the project had not yet completed its work at the time of the evaluation. UNIDO was mindful that the project had already received a one year extension, and that a further extension of time was not possible. The evaluation was carried out at the end of the extension period when the project should have produced most of the planned outputs and, in fact, 97.5% of the approved budget had been spent and the approved project duration had expired.As the evaluation was financed from the project budget, which closed on 31 December 2010, the evaluation had to be initiated in December 2010.The evidence presented in the report is sufficient to justify findings and conclusions with regard to the work that had been completed by India at the time of the evaluation. Thus, the evaluation report meets the quality criteria established by the UNIDO Evaluation Group (see attached quality review of the evaluation report) and as such should be submitted to the GEF Evaluation Office in compliance with established agreements between the GEF and GEF Agencies (including UNIDO). To iv) The TOR, which was shared with the Indian authorities, clearly indicated the required qualifications for the assignment of both the international and the national evaluators. These requirements were not questioned during the consultation process and they were clearly met by the personnel contracted. Furthermore, the international Team Leader was recommended by the GEF Evaluation Office based on past

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	averted many of the miss-conception to this evaluation. (vi) As MoEF frequently interacted with UNIDO Country Office, it is desirable that these projects need to be managed from the UNIDO country office.		performance in similar evaluation exercises. ODG/EVA studied a list of potential candidates recommended by different organizations and rated them, and Dr Batchelor ranked the first among all the candidates. He has also worked with UNEP Evaluation Office and at the European Commission. The national evaluator was Dr Kurian Joseph, Associate Professor in Environmental Engineering, who worked at a reputable institution in India. He is an expert on Environmental Management including hazardous wastes. He was short-listed among 5 experts from India that are working on environmental programmes and in particular POPs. He was selected on the basis of his professional qualifications, international standing and experience. To v) The mid-term evaluation was not carried out as foreseen in the project document. We fully agree that this is a major shortcoming and that doing the mid-term evaluation would have been very useful|. To vi) This recommendation coincides with a recommendation made in the project evaluation report and in the report of the UNIDO India Country Evaluation.
(i)	MoEF rarely reported on progress on identifying legislative gaps, the proposed website, the proposed Information Management System and other aspects of their contract (Evaluation Reportp 52).	Under the Government structure, the Ministry of Environment and Forests is responsible for implementation of Policies and Programmes relating to conservation of the countries natural resources, its biodiversity, forests and wild life, welfare of animals and prevention and abetment of pollution. The Ministry is the nodal agency in the country for the United Nations Environment Programme and is also entrusted with the issues relating to GEF, Commission on Sustainable Development and Regional bodies like Economic and Social Council for Asia and Pacific (ESCAP) and South Asian Association for Regional Cooperation (SAARC) . Following are the views of this Ministry: - Being the nodal Ministry for environmental related issues, MoEF has identified the gaps in the legislations/ rules and time to time propose amendments to	We are cognizant of the national and international responsibilities of the MoEF, based on information available on the MoEF website and in the Project Document. Our comment that MoEF rarely reported on progress identifying legislative gaps is in the context of reports made by CPCB, CPRI, HIL, NEERI and NIIST to the Technical Group two to three times per year on their progress on work in their contracts, but this was not the case with the MoEF. Progress on the deliverables by MoEF were never reported as having being discussed in group meetings, compared with the work of the other contractors. MoEF's contract included work on legislative gaps, institutional gaps, the website and a Management Information System. The lack of a website on POPs at the time of the evaluation eliminated the opportunity to improve the awareness of POPs in India. MoEF's only information submitted for paymentin this Project was in early December 2010, which was about three weeks before the end of the Project. The deliverables for MoEF related to the Information Management System were to: - Establish data management infrastructure capable of input, storage modelling and reporting of national and state information in formats compatible with Convention requirements - Examine existing IT architecture within lead organization - Determine inventory and reporting requirements of the Convention - Assess results and actions of other work packages (described below) relevant to information needs - Determine remaining information needs - Determine existing data holdings relevant to POPs within other government departments and non-government institutions - Encourage cooperation between institutions gathering information that may be relevant to the reporting requirements of the Convention so that this can be exchanged with the IMS - Recruit and train staff to operate IMS MoEF was contracted to evaluate available methods that use indirect data for the estimation and modelling of

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		the existing rules. - Out of the 12 listed initial POPs, most of the chemicals have been banned through the National legislations. Use of DDT for agricultural purposes has been banned. Use of DDT is permitted only for disease vector control by the Ministry of Health and Family Welfare. - There is a procedure for issuing necessary legislative notifications. The procedure is quiet exhaustive and lengthy. The necessary procedure has already been initiated for seeking comments of the various stakeholders for issuing the notification for banning Mirex, HCB and PCBs. India has deposited its instrument of ratification under Article 25 (4). The new chemicals will come into force fir India only upon the deposit of specific instrument of ratification with respect to that chemical. Therefore, the nine new chemicals listed in 2010, have not come into force for India. These chemicals will come into force by following a National legislative procedure. Process has been initiated and comments and comments and suggestion have been invited from various stakeholders. Lindane has been listed under Annex 'A' of	unintentional production of POPs and, where necessary, establish revised methodologies and models that are suited to the industrial practices of the key sources of unintentionally produced POPs in India. MoEF was contracted evaluate regulatory framework and institutional responsibilities pertaining to the management of waste by: - Reviewing draft recommendations arising from other activities in the Project for the modification of the regulatory framework governing the management of POPs products in use, and of wastes, their international trade and disposal to ensure compatibility with Article 6 of the Convention and, where applicable, with other multilateral environmental agreements to which India is party. - Make, where necessary, additional recommendations to ensure compliance. - Examine institutional responsibilities relating to measures ensuring that POPs wastes are handled, transported and stored in an environmentally sound manner and that actions are reported as required by the Convention and, where appropriate, prepare recommendations for revised responsibilities. Many of these deliverables do not necessarily involve new legislation but rather a review of existing legislation (such as that described in the box to the left) and/or an examination of institutional responsibilities. We met with a MoEF representative at the time of the evaluation who was not able to supply us with this information. We also discussed with other contractors (CPCB, CPRI, HIL, NEERI and NIIST) that had deliverables related to these deliverables or legislation in their contracts, and each time they insisted that these were deliverables for MoEF. The Evaluation focused on deliverables in the NIP that was relevant to POPs when the NIP was being undertaken, not after the NIP Project had been finished such is the case with endosulfan, for example. We note the website www.nipindia.gov.in has commenced, and that the pages are being constructed. However, it was constructed sometime after the completion of the Project and the evaluation, and therefore it was not included in our evaluation report.

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		the Convention with specific exemptions in 2010. The Ministry of Agriculture has issued a notification on 25/03/2011 banning the manufacture, import or formulation from 25th March 2011 and allowed use of existing stock of Lindane for a period of two years from the date of issue of the notification. The Supreme Court of India is reviewing the status of Endosulfan in the country. Based on the order of the Supreme Court, Ministry of Agriculture, the nodal Ministry for dealing with issues related to pesticides will take necessary steps in this regard. The website ***nipindia.gov.in*** has been developed which contains all the information related to NIP and Stockholm Convention related activities.	
(ii)	MoEF submitted reports with the longest delays. A 17-month delay in submitting a report was assessed as a significant delay in the context of a 24-month NIPproject that was later extended to 36 months. (Evaluation Reportp 54)	It is not understandable that the delay has been mentioned as 17 months in one place and then mentions that duration was later extended from 24 months to 36 months i.e. delay is of 12 months. It is to mention that there has been delay in initiating the NIP Project due to late receipt of the sanction by the GEF Secretariat. GEF had sanctioned the project in November, 2007. The Inception Workshop was held on May, 2008 and the contracts were issued by UNIDO in May-December, 2008 to various institutions	We apologise for any confusion that was caused by the wording in this sentence, and we have added the word 'NIP' to remove the ambiguity. We were referring to the fact that the NIP project was originally 24 months, but during the term of the project it was extended from 24 to 36 months. MoEF submitted the report 17 months late, which is a significant delay for a project that has a duration of 24 months (initially) or 36 months (finally). The three year period takes into account the time of the project from when it was signed until its conclusion in December 2010. We noted in the report that about half of the original project time of 24 months had elapsed before the candidate organisations had been selected by the Steering Committee and contracts had been agreed with each organisation. We note in the comment that India also agrees that this was a 'time-taking exercise'. We recommended in our Report that procedures, including the time taken, for the selection of candidates and issuing of contracts needs to be improved in future projects. We do not agree, however, that the time taken for the NIP project justified the extension of time because it focused on primary data. We think that the inventory could have been developed much further with better sampling methodology including the use of statistics, and more innovative ways of measuring POPs, than were used in the NIP Project. We think that secondary data could have been a valuable addition to the inventory,

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		/organizations involved in the project. . The actual field work started from June, 2008 onwards. The project implementation required a lot of coordination with participating institutes i.e. NEERI Nagpur, CPRI Bangalore, NIST Thiruvananthapuram, CPCB New Delhi and HIL New Delhi and concerned departments of State Governments, which was a time taking exercise. Also primary data on PCB's and U POP's has been generated under the project which justifies the extension taken. Considering the size of the country and the magnitude of the problems, India requested extension of the project. The final NIP for India has been forwarded to the Stockholm Secretariat on 21st April, 2011.	after carefully analysis and screening, which would have been helpful for showing the extent of POPs contamination in India more than focusing solely on primary data. We remain unsure as to the reasons for collecting only primary data as this was not explained in the NIP, particularly as other country NIPs use secondary data and where available primary data. We suggest ways that the management of the project could be improved to provide more feedback on progress to the contractors and to involve other stakeholders, and analysis proceduresthat would helpto reduce the time to deliver the project objectives and to build and inventory based mainly on primary data more quickly. The NIP reported that the effort was not made to reach out to SMEs in a country the size of India because it was "…*too difficult*…".We think that the large population of India was not a valid reason in itself for an extension of time. However, the problem was not so much the "*difficulty per se*", but rather there was no methodology developed to survey a limited but statistically-relevant number of SMEs, and then to use statistics to extrapolate this information to estimate the POPs in SMEs. Such methodological developments were missing in this project, and therefore "…*difficulties*…" were seen as insurmountable. The Project did not consult and make use of the skills, experience and knowledge of a wide range of appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the design, implementation and review of project activities. India's activities on consultation were not consistent with the requirements of the Stockholm Convention that requires consultation at all stages of the Project. As an example of the benefits of stakeholder consultation, some stakeholders such as Trade Associations could have helped India to overcome communication difficulties throughout India. Associations can provide information on POPs. The Confederation of Indian Industry established a "*Centre of Excellence for Sustainable Development*". CII communicates with "…*thousands of members*…" by website and using a publication called "*Sustainability Tomorrow*". Industries that have registered with CII also have access to this and other CII publications as well as "*Environmental Regulations Update*". CII focuses on finding technically and economically feasible alternatives for chemicals that cause environmental and human health problems, the R&D effort required, and sensitizing its members to problem chemicals. CII and IRRC conducted national awareness raising workshops in 2002 and 2003 during the PDF-B project, in collaboration with the author of the report ITRC. However, in the current Project they were rarely consulted and as a result they were unsureof their role in the development of the NIP.
(iv)	CPRI, for example, informed the evaluators that they have not seen the draft NIP that has been edited by the MoEF's editor and submitted for MoEF approval (Evaluation Report p 62)	During compilation of NIP the draft report was circulated to all the institutions including CPRI. The queries pertaining to specific objectives were also forwarded to them before finalising the Draft. The representatives of CPRI were	Our comments were made at the time the evaluation, based on comments made to us at the time by CPRI staff. We take note that the draft NIP was circulated to CPRI after our evaluation.

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<tr><td></td><td></td><td>consulted for PCB related activities. In addition, all the participating organizations were consulted before finalizing the NIP.</td><td></td></tr>
<tr><td>(v)</td><td>Institutional strengthening was assessed as inadequate for MoEF (Evaluation Reportp 73)</td><td>The project was implemented under the Guidance of Joint Secretary, who is the National Focal Point and Official Contact Point for the Stockholm Convention related activities. One Director (Technical) and One Deputy Director (Technical) from the Ministry were associated with the NIP activities. In addition, services of two Assistant Project Coordinators, Consultants have been utilized.</td><td>We were aware of the roles in the NIP Project of the Joint Secretary of MoEF(Dr Gauba) the Technical Director (Dr Chowdhury) and the deputy Technical Director (Mr SundarRamanathan) who are all staff in the Hazardous Substances Management (HSM) Division.

We made the comment in the Evaluation because the Assistant Project Coordinators (1, 2 below), that are referred to in the Justification by India, were UN volunteers that were temporarily appointed to the position. Moreover, their appointments were within 13 months of the end of the NIP Project (for 1) and with 7 months of the end of the Project (for No 2). We think that these appointments did not strengthen the MoEF because their appointments were temporary and made relatively late in the Project. Even during this short period of time, their employment period had been extended at least once, which highlighted the uncertainty of employment at MoEF.

<table>
<tr><th>No.</th><th>Qualifications</th><th>Age range</th><th>Start date</th><th>End date</th><th>Position and task</th></tr>
<tr><td>1</td><td>PhD in environmental science</td><td>20-30</td><td>November 2009</td><td>December 2011</td><td>UN Volunteer; assistant Project coordinator</td></tr>
<tr><td>2</td><td>MSc in environmental science</td><td>20-30</td><td>May 2010</td><td>December 2011</td><td>UN Volunteer; assistant Project coordinator</td></tr>
<tr><td>3</td><td>MSc - environmental management& science</td><td>20-30</td><td>June 2010</td><td>April 2011</td><td>Draft NIP</td></tr>
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We consider the value of the Contract to MoEF ($580,000) was more than sufficient to have employed staff to assist in this project, considering the level of salary paid to technical staff employed by MoEF as policy officers.

In addition, we noted that the role of Project Coordinator had been delegated to UNIDO, rather than maintaining this position within its own organisation, which had been the case with other projects. It will be difficult for MoEF to capture the experience gained by UNIDO's Project Coordinator. There was no evidence as a result of this Project that MoEF had been strengthened as it had not improved its focus on POPs; clarified its responsibilities, accountabilities and reporting lines; made changes to its procedures and communications; or made any changes in the deployment of human resources to better manage POPs.

Now that the Project has been completed, it will be difficult for the MoEF to pass the PC's experience to other staff in the MoEF as the Project Coordinator is near retirement. The GOI's decision to designate the UNIDO/RENPAP coordinator as a part-time Project Coordinator for the Project reduced the prospects of capacity building within the MoEF for this role. For other projects, MoEF had engaged Project Coordinators within the Ministry, which built the capacity of MoEF for that project as well as other projects.This was a lost</td></tr>
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			opportunity for building the capacity of MoEF for follow up work on POPs after the conclusion of the Project. For these reasons, we assessed Institutional strengthening as inadequate for MoEF, which was one of the objectives of the NIP Project. We recommended that in future MoEF consider engaging a full time project coordinator or manager whose position remains in MoEF after the Project is completed so that they are available for other subsequent projects on POPs.
(vi)	Objectives that were within the expertise of MoEF were duplicated in other contracts regarding creating awareness on POPs related issues (Evaluation Report p 49)	India has a well-developed chemicals industry contributing significantly to industrial and economic growth. The industry manufactures more than 70,000 commercial products and contributes to about 3% of India's gross domestic product (GDP). The chemical sector accounts for 13%-14% of total exports and 8%-9% of total imports of the country. In terms of volume, it is the 12th largest in the world and third largest in Asia. However, per capita consumption of products of the chemical industry in India is low, at about one-tenth of the world average. There is no duplication of efforts. All the participating organizations conducted awareness workshops in their respective project area. MoEF also conducted awareness workshop on the obligations of the Stockholm Conventions, status of the 12 listed chemicals in India, legal provisions and the initiatives of Govt. Of India for safe management and handling of chemicals. Under the objectives, a website has been developed which provides information on the activities carried out under the NIP Project.	We are unclear of the relevance of the first paragraph in the Justification by India to our comment on the duplication of objectives. We did not mention in the comment duplication of effort, only duplication of objectives in the contracts. However, we saw the same objectives in several contracts. During the interviews, we were consistently told by the contractors that "*this was not my objective [in my contract], so I do not have to do the work and report*". This avoided duplication of effort, but resulted in many objectives simply not being worked on and the results reported. We cited this as one of the reasons for many of the objectives in the project not being completed. For further information on this aspect, please see our answer to 2(ii) above; and 5(i) for comments on the website.