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Report No: ICR00003654

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-99856)

ON A

GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF US$6.3 MILLION

TO THE

FEDERAL REBULIC OF NIGERIA

FOR A

POLYCHLORINATED BIPHENYLS (PCB)
MANAGEMENT PROJECT

June 30, 2016

Environment and Natural Resources Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective 12/31/2015)

Currency Unit =
1.00 Naira = US$ [0.0050]
US$ 1.00 = [199.05 Naira]

ABBREVIATIONS AND ACRONYMS

ASP	Africa Stockpiles Project
CMU	Country Management Unit
CPS	Country Partnership Strategy
CPTF	Canadian POPs Trust Fund
ESMF	Environmental and Social Management Framework
GEF	Global Environment Facility
GEO	Global Environment Objective
FMEnv	Federal Ministry of Environment
ICR	Implementation Completion and Results Report
ISC	Inter-Ministerial Steering Committee
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
NIP	National Implementation Plan
PAD	Project Appraisal Document
PCB	Polychlorinated Biphenyls
PHCN	Power Holding Company of Nigeria
PMU	Project Management Unit
POPs	Persistent Organic Pollutants
TC	Technical Committee
TCN	Transition Company of Nigeria
TORs	Terms of Reference

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FEDERAL REPUBLIC OF NIGERIA

POLYCHLORINATED BIPHENYLS (PCB) MANAGEMENT PROJECT

CONTENTS

A. Basic Information			
Country:	Nigeria	Project Name:	PCB Management Project
Project ID:	P113173	L/C/TF Number(s):	TF-99856
ICR Date:	June 30, 2016	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	FEDERAL REPUBLIC OF NIGERIA
Original Total Commitment:	USD 6.30M	Disbursed Amount:	USD 3.23M
Revised Amount:	USD 6.30M		
Environmental Category: B		**Global Focal Area: P**	
Implementing Agencies: Federal Ministry of Environment			
Cofinanciers and Other External Partners: Global Environment Facility			

B. Key Dates				
Process	**Date**	**Process**	**Original Date**	**Revised / Actual Date(s)**
Concept Review:	06/29/2009	Effectiveness:	04/30/2012	02/02/2012
Appraisal:	06/22/2010	Restructuring(s):		
Approval:	08/30/2011	Mid-term Review:	07/21/2014	10/20/2014
		Closing:	12/30/2015	12/30/2015

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Unsatisfactory
Risk to Global Environment Outcome	Significant
Bank Performance:	Moderately Unsatisfactory
Borrower Performance:	Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance			
Bank	**Ratings**	**Borrower**	**Ratings**
Quality at Entry:	Moderately Unsatisfactory	Government:	Unsatisfactory
Quality of Supervision:	Moderately Unsatisfactory	Implementing Agency/Agencies:	Unsatisfactory
Overall Bank Performance:	Moderately Unsatisfactory	**Overall Borrower Performance:**	Unsatisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
GEO rating before Closing/Inactive status	Moderately Unsatisfactory		

D. Sector and Theme Codes		
	Original	**Actual**
Sector Code (as % of total Bank financing)		
General energy sector	6	15
Petrochemicals and fertilizers	7	50
Public administration- Energy and mining	17	15
Public administration- Industry and trade	15	10
Public administration- Water, sanitation and flood protection	55	10
Theme Code (as % of total Bank financing)		
Environmental policies and institutions	17	60
Pollution management and environmental health	83	40

E. Bank Staff		
Positions	**At ICR**	**At Approval**
Vice President:	Makhtar Diop	Obiageli Katryn Ezekwesili
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F. Results Framework Analysis

Global Environment Objectives (GEO) and Key Indicators(as approved)

The Global Environment Objective is to strengthen national capacity for management of Persistent Organic Pollutants (POPs) and in particular Polychlorinated Biphenyls (PCBs) as required under the Stockholm Convention on Persistent Organic Pollutants.

Revised Global Environment Objectives (as approved by original approving authority) and Key Indicators and reasons/justifications

Not applicable

(a) GEO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	A national POPs/PCB policy adopted by the Government			
Value (quantitative or Qualitative)	POPs/PCB policy framework has not been developed	POPs/PCB Policy Framework finalized and validated by stakeholders		A National Policy framework on POPs/PCB management in Nigeria was adopted by the Federal Executive Council (FEC) on March 4, 2015
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This was achieved as a national policy framework was developed and adopted through an inclusive and consultative process.			
Indicator 2 :	A national PCB management plan adopted by the Government			
Value (quantitative or Qualitative)	No PCB management plan	National PCB Management Plan adopted		A National PCB Management Plan was developed and a final project workshop took place
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was achieved. The National PCB Management Plan was developed and a final-project workshop took place on December 9-10, 2015, where the Plan was finalized.			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Hazardous Chemicals/Waste Management Regulations are reviewed and harmonized			
Value (quantitative or Qualitative)	0	5		The regulations and guidelines were harmonized into 1 report.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was 100% achieved. The PAD did not define detail of the 5 reports and the 1 report produced achieved the objectives of this subcomponent			
Indicator 2 :	A POPs/PCB issues communication strategy is developed and implemented			
Value (quantitative or Qualitative)	Complete lack of awareness on the hazards of PCBs	Development of communication strategy and awareness creation.		A phase I communication strategy was developed and implemented in 2014, with limited success due to poor delivery of the agreed deliverables.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was partially achieved, as a communication strategy was developed and partially implemented.			
Indicator 3:	Number of procedures, manuals, management protocols and monitoring guidelines are adapted			
Value (quantitative or Qualitative)	0	10 total – 8 procedures, manuals and monitoring guidelines and 2 protocols.		2
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was 100% achieved. The PAD did not define details of the 10 documents and so while only two (2) documents were produced (the National PCB management plan and the Technical and Administrative Guideline for PCB Management in Nigeria) they included all the guidelines required as stated in the PAD.			
Indicator 4:	Number of laboratories for POP sampling and testing are identified and upgraded			
Value (quantitative or Qualitative)	No laboratories for PCBs analysis	Four (4) Laboratories for PCBs sampling and testing		Three laboratories for PCB sampling and testing were identified. None

		identified and upgraded.		were upgraded.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was not achieved.			
Indicator 5 :	Number of direct project beneficiaries of which are females (%)			
Value (quantitative or Qualitative)	2,750,000 2,115,000 (Female:57%)	Total 3,315,000 of which (57%) 2,477,000		Total direct beneficiaries are 412,000 persons of which 156,560 persons are females representing 38%.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was partially achieved. However, it is difficult to verify the number of direct beneficiaries since evidence of how this number was calculated was not provided. Similarly, the PAD did not provide a description of project beneficiaries.			
Indicator 6 :	Number of interim safe storage locations for PCB waste/oils and PCB-contaminated equipment identified and upgraded			
Value (quantitative or Qualitative)	No storage locations for PCBs	Four interim storage locations for PCBs waste/oils and PCB contaminated equipment identified and upgraded.		Two interim safe storage locations were identified. None were upgraded.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was not achieved.			
Indicator 7 :	Pilot disposal demonstrated			
Value (quantitative or Qualitative)	No pilot disposal demonstrated	One pilot PCB disposal demonstrated.		No pilot disposal demonstrated.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was not achieved.			
Indicator 8 :	Inventory of PCB owners completed			
Value (quantitative or Qualitative)	No inventory completed	Inventory of PCB owners Completed.		A final report was completed for the inventory of the PCBs and PCB-containing

				equipment in 15 states in the 6 geopolitical zones of Nigeria.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was 100% achieved, as the inventory was completed in 15 states, which was the target set out in the PAD.			
Indicator 9 :	Quantity of PCBs oil identified & labeled			
Value (quantitative or Qualitative)	421 tons of oil and 1,016 tons of contaminated equipment. As indicated in the inventory of states from the CPTF study.	3,000 tons of PCB oil and 5,000 tons of PCB contaminated equipment identified.		2,059.6 tons of PCB contaminated oil and 7,293.8 tons of PCB of contaminated equipment have being identified and labeled.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was partially achieved as the weight of PCB contained oil identified & labeled was less than and the weight of PCB contained equipment.			
Indicator 10 :	Monitoring and Evaluation manual developed and implemented			
Value (quantitative or Qualitative)	No M&E manual in place	The M&E manual is prepared and in Use.		The M&E manual has been prepared.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was partially achieved, as the manual has been developed but is not widely in use.			
Indicator 11 :	Implementation progress report produced annually			
Value (quantitative or Qualitative)	No implementation progress reports produced.	4 implementation progress report are produced (1 annually).		3 implementation progress reports and a Mid Term Review (MTR) were produced since project effectiveness.
Date achieved	30-Aug-2011	30-Dec-2015		30-Dec-2015
Comments (incl. % achievement)	This indicator was 100% achieved.			

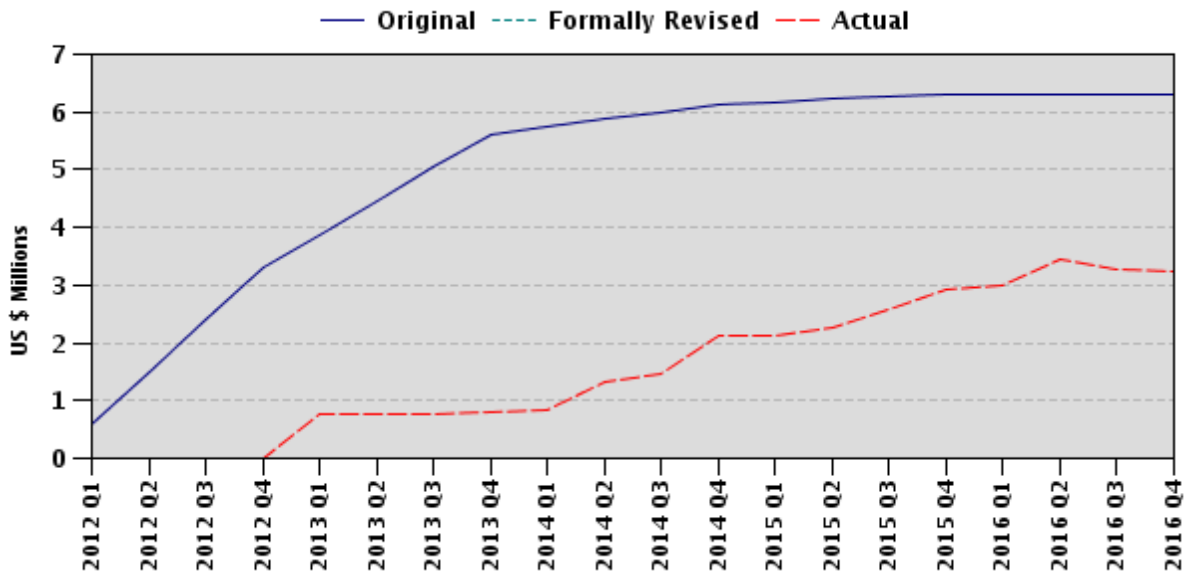
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	GEO	IP	Actual Disbursements (USD millions)
1	12/25/2011	Satisfactory	Satisfactory	0.00
2	07/04/2012	Satisfactory	Moderately Satisfactory	0.00
3	01/24/2013	Satisfactory	Moderately Satisfactory	0.75
4	10/19/2013	Satisfactory	Moderately Unsatisfactory	0.84
5	05/25/2014	Satisfactory	Moderately Satisfactory	1.74
6	12/31/2014	Moderately Satisfactory	Moderately Unsatisfactory	2.27
7	06/29/2015	Moderately Unsatisfactory	Moderately Unsatisfactory	2.92
8	12/21/2015	Moderately Unsatisfactory	Moderately Unsatisfactory	3.43

H. Restructuring (if any)

Not Applicable

I. Disbursement Profile



1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

The Stockholm Convention on Persistent Organic Pollutants

1. Persistent Organic Pollutants (POPs) are a set of toxic chemicals that are persistent in the environment and are able to last for long periods before breaking down. POPs circulate globally and chemicals released in one part of the world can be deposited at far distances from their original source through a repeated process of evaporation and deposition.

2. POPs are lipophilic, meaning they accumulate in the fatty tissue of living animals and human beings. Exposure to POPs can lead to serious health effects such as reproductive or development disorders, nervous system damage, and immune system diseases.

3. Given their toxicity, persistence and trans-boundary properties, the global community adopted a multilateral environmental agreement to address the challenge. In 2001, the first phase of the POPs negotiation was concluded leading to the Stockholm Convention which entered into force on May 17, 2004. The convention was ratified by an initial 128 parties and 151 signatories. At the time of project appraisal, the Stockholm Convention addressed twelve distinct POPs divided across three broad categories: pesticides, unintended by-products and industrial chemicals. The fourth Conference of the Parties (COP-4) of the Stockholm Convention on POPs in 2009 reached a consensus to add nine new POPs to the treaty's original "Dirty Dozen."

4. Polychlorinated biphenyls (PCBs) were included in the original "Dirty Dozen". They are a class of organic compounds which are fire-resistant, stable, non-conductive to electricity and with low volatility making them ideal for many industrial applications and consumer products. They were once widely used in industry as heat exchange fluids, in electric transformers and capacitors, and as additives in paint, carbonless copy paper, and plastics. PCBs were found however to have probable chronic health effects including cancer, reproductive and development toxicity, impaired immune function, effects on the central nervous system, and liver changes. Due to the toxicity characteristics of PCBs and their classification as POPs, their production was banned globally in the early 1980s.

5. The Stockholm Convention requires its parties to submit a National Implementation Plan (NIP) to the Conference of the Parties within two years of ratifying the Convention. For PCBs, it requires all parties to eliminate the use of PCB containing equipment by 2025 and to make concerted efforts to dispose of liquid PCBs and equipment contaminated with PCBs via environmentally sound waste management as soon as possible, but no later than 2028. Before 2025, the Convention does allow all parties to use PCBs in intact and non-leaking equipment in areas where the risk of environmental release can be minimized and quickly remedied. However, no PCB-containing equipment should be used in areas close to human food or animal feed production and processing facilities. Special measures apply for any use of PCB-containing equipment in populated areas, including near schools and hospitals.

Country context

6. Nigeria was never known to produce PCBs. However, between the late 1940s and early 1980s, the country imported a high quantity of PCB-containing equipment. The Power Holding Company of Nigeria (PHCN) is by far the largest Nigerian consumer of dielectric fluids and owns a lot of equipment that potentially contains PCBs. Other possible significant users of equipment that potentially contains PCBs were private electrical generators, major industrial facilities, oil refineries, textile mills and cement industries.

7. Nigeria signed the Stockholm Convention in May 2001, ratified it in May 2004, and submitted its NIP to the Stockholm Convention in April 2009. Twenty-three areas of action were identified as priorities for Nigeria in view of meeting its obligations. PCBs inventory and treatment was listed as priority No. 1 (inventory, remediation and treatment of areas polluted with PCBs), while disposal of PCBs was covered in Priority No. 9 (disposal of obsolete pesticides, PCBs and equipment contaminated with PCBs).

8. In 2008, a more refined PCB evaluation (compared to what was included in the NIP) was completed in the electric power generating, transmitting and distributing facilities, across 10 out of 36 states. The World Bank-executed Canadian POPs Trust Fund (CPTF) financed the evaluation and it was estimated to have evaluated about 10% of the potentially contaminated electrical equipment in the power sector. As a follow up, another study was financed by the CPTF in 2009, the "Location and Assessment of the Status of PCB containing equipment in all PHCN facilities". Both studies provided recommendations with a view to better managing the handling, storage and disposal of PCBs and PCB-contaminated equipment in Nigeria and bringing Nigeria into full compliance with the Stockholm convention in eliminating PCBs by the year 2025.

Project Background

9. Building on previous projects and their recommendations, the development objective of this project was to strengthen the national capacity for management of POPs and, in particular PCBs, as required under the Stockholm Convention on POPs. The project also aimed to support some of the national priority actions called for in the NIP, including, to enhance the national capacity for the identification, analysis and environmentally sound management of other POPs, including pesticides and unintentional POPs.

10. The proposed project was designed to improve public health and environmental quality by preventing the environmental release of PCBs from active and decommissioned electrical equipment in PHCN facilities as well as from other private sector industries that have PCB stocks (oil refineries, airports, textile mills, etc.), so as to ensure their sound management and, ultimately, their safe disposal.

11. At the global level, the project was designed to address Nigeria's obligations under the Stockholm Convention. At the national level, the project sought to support implementation of the Government's policy documents: NIP, National Strategy for Environmental Protection, the Federal Government's seven point agenda and vision 2020, with special attention to the pollution prevention, abatement, remediation and management theme.

Rationale for Bank assistance

12. The Bank has been very active in supporting Nigeria in addressing environmental challenges, had long-standing and broad involvement in the power sector in Nigeria and had previously completed studies on PCBs and PCB-containing equipment with financial assistance from CPTF. This project was consistent with the second pillar (vulnerability and resilience) of the Bank's Africa Strategy, as the project addressed health and environmental quality concerns associated with the use and handling of PCB contaminated equipment and oil. The project was not clearly aligned to the Country Partnership Strategy (CPS) at the time as there was limited focus on pollution within it. Despite this, the project provided a unique opportunity to support Nigeria in addressing this environmental challenge and associated public health risk which clearly fits within the wider goals of the World Bank Group.

13. The Bank possesses experience in streamlining environmental health considerations into solid and hazardous waste and wastewater management, as well as control of pollution from industry, energy, agriculture and health care activities. The Bank's technical knowledge specifically on POPs management and its experience in the design and implementation of Global Environment Facility (GEF) projects gave it a comparative advantage among the GEF implementing agencies in providing assistance to Nigeria. Specifically, the Bank's experience was reflected in the preparation and implementation of GEF funded POP/PCB management projects in China, Moldova, Vietnam, and the Philippines, as well as the African Stockpiles Project (ASP).

1.2 Original Global Environment Objectives (GEO) and Key Indicators (*as approved*)

14. The Global Environment Objective (GEO), as captured in the Project Appraisal Document (PAD) and the GEF Grant Agreement is to: *strengthen the national capacity for management of Persistent Organic Pollutants (POPs) and, in particular, Polychlorinated Biphenyls (PCBs) as required under the Stockholm Convention on Persistent Organic Pollutants.*

Indicators

15. The key project outcome indicators are:
    a) a national POP/PCB policy adopted by the Government;
    b) a national PCB management plan adopted by the Government.

1.3 Revised GEO (*as approved by original approving authority*) and Key Indicators, and reasons/justification

16. The GEO and key indicators remained unchanged throughout the life of the project.

1.4 Main Beneficiaries

17. Government officials, including both policy and technical staff, as well as members of the Inter-ministerial Steering Committee (ISC) and Technical Committee (TC), were the project's main beneficiaries. These included staff from the four main ministries that oversee the management of chemicals in Nigeria, the PHCN of the Federal Ministry of Power, the Federal Ministry of Information and Communication and relevant private sectors. The four main ministries included:

- Federal Ministry of Environment, in particular the Pollution control and Environmental Health Department, which is the lead implementation agency overseeing activities to ensure that Nigeria meets its obligations under the Stockholm Convention,
- Chemicals Safety Department of the Federal Ministry of Health,
- Nigeria Customs Services under the Federal Ministry of Finance,
- Factory Inspectorate Division of the Federal Ministry of Labor and Productivity.

18. The state level employees and technicians of the electricity sector, in particular of the PHCN, were expected to benefit from the project. Locally, populations living in proximity of PCB storage sites were also seen to be beneficiaries, as was the general public at large. Direct project beneficiaries were not defined in the PAD.

1.5 Original Components (*as approved*)

19. As originally approved and expressed in the PAD, the project had four components:

20. ***Component 1: Capacity-Building for POPs and PCB Management:*** This component aimed to strengthen the Government's capacity to manage, monitor, and control POPs but also, ultimately, phase out the use of PCBs. Activities under this component included a comprehensive review of current hazardous waste management regulations, and the development and incorporation of a new regulatory framework that would specifically address POPs in general, and PCBs in particular. In addition, the regulatory framework aimed to adequately address the financial question of who was responsible for the management and disposal of PCBs. Further, the component contained a communication strategy and addressed the issue of training and awareness (including a stakeholders workshop), and involved the preparation and dissemination of training materials, including TV programs/documentaries, posters and the production of brochures/pamphlets for the purpose of raising awareness on PCBs and other POP issues.

21. ***Component 2: Environmentally Sound Management of On-line and Off-line Electrical Equipment:*** This component involved a series of investment activities that provided the Government with the enabling capacity to handle PCBs, other POP chemicals and hazardous chemicals in the future. This consisted of:

22. Adaptation within the context of Nigeria of the various procedures, manuals, management protocols and guidelines that were already prepared by United Nations Environmental Program and the Secretariat of the Basel Convention for the identification and management of PCBs, PCB-containing or PCB-contaminated equipment and waste. The sub-component also entailed the labelling of all identified PCB-containing electrical equipment and waste to ensure good maintenance practices.

23. Identification and upgrading of laboratories for analyzing PCBs and other POPs in oils, water and soil samples. Activities under this component assessed the capacities of the existing laboratories in analyzing PCBs and other POP chemicals with a view to selecting appropriate in-country analytical techniques. This component also entailed training on new testing procedures and the purchase of some upgraded equipment. Upgrading the laboratories did not have the objective for the analysis of PCBs alone, but also other POPs chemicals, such as Mirex, Lindane, Heptachlor, Aldrin, etc. Four laboratories were to be identified and upgraded.

24. Upgrading of interim PCB storage facilities. This involved the identification and enhancement of storage locations that would safely handle PCB waste and PCB-containing equipment to prevent the release of such waste into the environment. These facilities would be used to store decommissioned PCB-containing equipment and PCB waste in an environmentally sound manner. Existing locations—such as the Ijora workshop in Lagos and sub-stations at Kontagora, Kaduna, and Oji River—would be assessed for their suitability as interim storage locations. A target of approximately four interim storage locations was set for enhancement and upgrading. With a baseline amount of 421 tons of PCB oil and 1,061 tons of PCB contaminated equipment, as indicated in the 2009 study financed by the CPTF and executed by the Bank, the proposed project set a target of safeguarding 3,000 tons of PCB oil and 5,000 tons of PCB-contaminated equipment.

25. Pilot PCB Disposal. The proposed project was to fund one pilot disposal for demonstration purposes in order to gain experience and build the capacity of public and private sector stakeholders to address the whole suite of activities pertaining to the management of PCB waste. The pilot for disposal was selected based on an analysis of the type of PCB waste to be eliminated, on the broader need for hazardous chemicals destruction in the country, and on the possibilities that exist to leverage ongoing initiatives, as well as on the requirement that any in-country disposal or destruction meet high international standards, including those under the

Stockholm and Basel Conventions. The pilot also included the development of arrangements and partnerships for the financially sustainable operation of destruction or disposal activities.

26. ***Component 3: Baseline National Inventory of PCBs and PCB-Containing Equipment and Development of a National PCB Management Plan:*** This component built on the previously conducted partial PCB inventory that covered 10 out of the 36 states and the Federal Capital Territory. Activities under this component included the establishment of a database for PCB containing equipment and waste in 15 additional states and the development of a comprehensive methodology for conducting inventories. The inventory also covered the sampling and testing of potentially contaminated equipment owned by members of the private sector. The outcome of this inventory aimed to provide a clear picture on the extent of PCB contamination across the country, especially as the proposed project targets the safeguarding of 3,000 tons PCB oil and 5,000 tons of PCB-contaminated equipment. Based on the outcome of this inventory, a long-term PCB management plan would be developed. As the PCB inventory is somewhat a living database, the project would make it possible for the Government to complete, maintain and update it until final decommissioning of the last contaminated piece of equipment. Under this component, the Government would build its capacity to carry out an inventory and to update/revise the existing one; it would subsequently apply this same methodology to cover the remaining 11 states and the Federal Capital territory in the future.

27. ***Component 4: Project Management and Monitoring and Evaluation:*** This component financed costs related to the establishment of the Project Management Unit (PMU) and incremental operational costs of the PMU. This component also ensured the proper coordination and timely delivery of project outputs. The PMU carried out the standard project management functions of financial management, procurement, auditing, managing, monitoring and evaluating project implementation, as well as dissemination of project results. The Monitoring & Evaluation (M&E) manual developed under this project was expected to be institutionalized for the management of all PCBs in Nigeria. The PMU included a Project Coordinator, a procurement specialist, an environment specialist and an M&E expert.

1.6 Revised Components

28. The original project component were not revised.

1.7 Other significant changes

29. No other significant changes occurred.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

30. The project's aims and structure were appropriately responsive to Nigeria's interest in addressing the technical, policy, regulatory and information challenges of PCB management and disposal to meet Stockholm Convention requirements, as well as to support the Government's efforts to reduce environmental pollution and protect human health. However, there were issues in the project's preparation, design and quality at entry.

Soundness of background analysis

31. The design of this project was built from recommendations made from the two PCB studies (2008 & 2009), which were executed with assistance from CPTF and facilitation by the World

Bank. Rationale for the Bank's intervention was based on its previous experience of working with POPs globally, and specifically in Nigeria on facilitating these two PCB studies. While basing this project design on the CPTF projects was advantageous, it also appeared to limit the rigor of background analysis completed. In particular, there was no assessment of the implementation capacity of stakeholders, no justifiable analysis conducted to define the number of laboratories and interim storage facilities selected or any justifiable analysis completed to define the technical options available for pilot disposal.

32. During project preparation, the project team completed four missions in March 2009, September 2009, March 2010 and July 2010.[1] The project team used questionnaires, face-to-face meetings and technical sessions conducted with key Government counterparts, sector stakeholders and representatives from existing projects and those in preparation to inform and shape the project design. Experts from previous World Bank PCB projects in China and Moldova were sought to provide guidance and lessons learnt applicable to the Nigeria context.

33. An earlier World Bank operation in Nigeria, the ASP[2], which focused on the management of pesticide stockpiles, involved the same implementing agency and included similar activities (i.e. inventory development, update of legal and regulatory framework and awareness raising) to this project. While the World Bank stockpiles team was not involved in the development of this project, lessons, in particular, related to institutional issues, were considered during preparation of the PCB project.

Assessment of project design

34. There were a number of issues with project design that negatively impacted on the quality at entry. The planned project components supported the achievement of the GEO by providing practical intermediate outcomes that would lead to better management of PCB/POPs. The project indicators for measurement of achievement of the GEO were output indicators. The number of direct project beneficiaries was not explained in the PAD and the quantity of PCB oil identified and labelled was an activity that did not provide adequate evidence for the improved management of PCB (see M&E section).

35. The overall project design had over ambitious technical goals, with no justifiable analysis provided that identified optimum numbers and types of outcomes, based on the existing situation, inherent country capacity and time frame/budget proposed. In particular, the project proposed a pilot disposal, with limited consideration of the true associated costs, potential safeguards issues and without conducting an appropriate background analysis of the optimum disposal solutions or alternatives (onsite, offsite or storage). The design only made financial provision for the capital costs associated with the planned infrastructure. The non-consideration of the ongoing operation and maintenance costs was an oversight that would directly affect the development outcome of this project. The technical support required by the PMU was under-anticipated and project design should have defined that an international/local technical consultant be contracted as a requirement for project effectiveness. The length of the project, at four (4) years, was unrealistic based on the complexity of the activities and on experiences learnt from other PCB management projects globally.

36. As the focal person of the Stockholm convention on behalf of Nigeria is housed in the FMEnv, it was selected as the implementing agency on behalf of the Government. It was

[1] Aide memoires of September 2009, March 2010 and July 2010.
[2] Africa Stockpiles Programme – Nigeria (TF054906)- Activated: September 5, 2006 and Closed June 30, 2010.

expected in the PAD that the staff of the PMU would most likely come from the Pollution Department of the Federal Ministry of Environment (FMEnv) and the Chemicals, Environment and Resettlement Department of the PHCN, due to the technical nature of the project. There was no evidence that a capacity assessment of various ministries, internal departments and staff was made during project preparation, to identify the most suitable ministry to implement the project.

37. The project was relatively complex in terms of its organization, requiring a number of key ministries, government departments, agencies and the private sector to work together and through the set-up of an ISC and TC to support project implementation. There was limited previous experience of these organizations working together in such a way. The project design could have done a better job of highlighting the organizational capacity, political economy situation and possible constraints to collaboration, in both the risk ratings but also steps to address them. Defining a more robust/innovative method (beyond the creation of ISC/TC) for establishing and monitoring collaboration would have facilitated this. The inclusion of supplementary sector stakeholders from the National Electricity Regulation Commission, National Chemical Programme and National Emergency Chemical Network, in the implementation arrangements would have been advantageous. These agencies could have supported the project through the provision of further information on private sector power generation and resultant PCB contamination. In focusing solely on PCB/POPs management, the project design missed an opportunity to address the broader objective and extend learning to the management of hazardous chemicals in Nigeria.

38. Some of the project activities; in particular, national inventory, creation of laboratory and upgrading of interim storage facilities, were complex in terms of geographic dispersion, with implementation planned in a number of states throughout Nigeria. This complexity was in part taken into account in the PAD's risk assessment and mitigation measures, which identified: i) a risk of poor coordination among national agencies, associated ministries and donors, and; ii) a lack of coordination and collaboration of the PMU with the PHCN. More analysis could have been done at the design stage to identify potential and optimum institutional arrangements in a bid to ensure that effective collaboration and coordination was achieved, specifically with local government agencies and stakeholders from the states involved.

39. The Mid-Term Review (MTR) was designed to occur after 2.5 years of project implementation. As the project was 4 years in length, the project design should have scheduled the MTR half way through project implementation (after 2 years) to ensure that there was adequate time left in project implementation to build on the findings of the MTR.

40. The counterpart funding amount of 66% (US$12.2 million) of total project costs were reasonable at the design stage of the project, based on the high price of oil at that time, which was the dominant source of Government revenue.

Adequacy of government's commitment

41. The Government's commitment was evident through their active involvement and collaboration during project preparation, especially during World Bank missions and through reviewing of key World Bank documentation (i.e. Project Concept Note, Project Appraisal Document). Their commitment was also demonstrated through designated counterpart contribution of US$12.2 million to the project.

Assessment of risks

42. At project concept, the project team identified potential risks facing the operation. Risks to the GEO included: i) delays in promulgation, adoption, and timely implementation of regulations and policies; ii) lack of awareness and appreciation of POP issues in general and PCB issues in particular among decision makers, PHCN technical staff and Government agencies and; iii) project financial management. Risks to the component results were identified as: i) poor coordination among national agencies, associated ministries and donors; ii) failure to properly identify and locate all PCB waste, sites and contaminated equipment; iii) procurement and financial management risks; iv) lack or absence of counterpart funds; v) lack of capacity by the PMU at the FMEnv to coordinate project activities; vi) lack of coordination and collaboration of the PMU with the PHCN; and vii) accidental leaks of PCB waste during packaging and transport to interim storage locations. To mitigate these risks measures, including collaboration, capacity building, communication strategies, training, supervision, creation of the ISC/TC, the hiring of staff with adequate experience and skills, were defined. Although the overall risk rating was Substantial, some of the individual risks, such as for coordination among agencies and the PMU management capacity, prior to mitigation, should have been elevated based on lessons learnt from the ASP project which indicated these were particular weaknesses that affected the success of that project. The counterpart funding risk was rated Substantial but no fallback option was considered. Some of the communication/sensitization efforts backfired as they resulted in creating alarm within the workers instead of understanding. In hindsight, the risk mitigation measures appear to have been poorly applied as evidenced by project performance during implementation.

2.2 Implementation

43. There were a number of factors affecting implementation that were outside the control of the Government. First, the world market price of oil, which is the dominant source of Government revenue, fell by 60%[3] within the project implementation period but no immediate action was taken to address the situation. The World Bank received a letter from the Ministry of Finance on June 23, 2015, six months before the project closing date, requesting a reconsideration of the counterpart funding requirement of the project owing to the fall in oil prices.

44. Second, the power sector was privatized in 2014, which resulted in the unbundling and sale of the PHCN and its facilities. As a result, the PHCN locations that were going to be used for one of the laboratories and two of the interim storage facilities, as defined in the PAD, were no longer available to the project, unless privately purchased or provided as a gift in kind from the State. These two components were delayed as the project waited for the privatization process to be completed before activities defined in the PAD were updated and land was purchased. In 2014, counterpart funds amounting to N76,915,177.51 (US$ 386,411) were spent on the purchase of land (in Lagos and Enugu). At this stage, this was inefficient use of counterpart funds, as up until that point very limited counterpart funding had been spent and there were a number of critical project activities outstanding.

45. Third, the Nigerian general elections were initially scheduled for February 14, 2015 and were finally held on March 28, 2015. The general election delayed the adoption of the national policy framework on POPs/PCB management in Nigeria due to the internal Government changes occurring at that time. It also delayed the implementation of project activities relating to laboratories and the interim PCB storage facilities as contact and work with state counterparts, in

[3]World Bank. 2016. Commodity Markets Outlook April 2016. World Bank.

particular the commissioners of Lagos and Enugu states Ministries of Environment, were restricted during the election period.

46. Finally, the Mid-Term Review (MTR) of the project was delayed (original date: July 2014 and held October 2014) and was held at a relatively late stage in project implementation, since the project had been effective since February 2012 and was set to close on December 31, 2015. There was no obvious reason for the delay. Delaying the MTR and conducting it at a late stage in the project cycle was problematic, as issues identified had limited time to be rectified before project completion.

47. The MTR happened shortly after the new Environment and Natural Resources Global Practice introduced the rule of holding a pre-MTR meeting and therefore no such meeting was held. The MTR failed to adequately address, with a year left to closing, the ongoing delays in project implementation. The MTR did not include an M&E or safeguards specialist as part of the Bank team. This would have been advantageous to properly review the M&E aspects of the project and ensure the safeguard aspects were being properly addressed. After the MTR a level 2 restructuring of the intermediate outcome indicators for the number of laboratories and interim storage facilities was discussed with the client. The restructuring was never formally requested by the Government and so did not take place. A formal level 2 restructuring would have been advantageous at the MTR stage in reducing the overly ambitious investment activities and to review the counterpart funding arrangements.

48. Following the MTR the draft documentation (management letter, ISR, aide memoire) was produced, and a number of the project ratings were downgraded in the ISR. The management letter stressed the fact that time was running out and proposed an April 2015 deadline for critical activities to be undertaken. It also highlighted earlier unaddressed issues with unretired advances and ineligible expenses; financial systems reporting and funds flow; delayed recruitment of international engineering consultant; and project procurement capacity.

49. During discussions with the government in 2015, there were enquiries about the possibility of project extension. The Country Director indicated that no extension would be approved unless all of the critical activities, previously expressed, were achieved. Frequent follow up by the team found minimal progress by the time of project closing and thus there was no justification for an extension. A formal request for extension of the project closing date was received from the FMEnv on December 29, 2015, which was not approved based on the non-achievement of the critical key agreements.

50. There were a number of factors that affected the implementation that were subject to Government control. First, the delay in receiving GEF and counterpart funding. The project was approved for the GEF grant on August 30, 2011 and became effective in February 2012. The project did not receive the initial project GEF advance until September 2012, due to internal account set-up issues. Counterpart funds were approved by Government in April 2012 but were not immediately released. This delayed initial implementation (project launch happened in July 2012) and affected the achievement of future activities. Issues related to counterpart funding release continued throughout implementation causing delays in implementation and contributing to non-completion of a number of components which heavily relied on counterpart financing. At project close, only 7.74% of the counterpart funds had been spent by the project. The Government should have been more reactive to the oil price dropping, and contacted the World Bank earlier, as soon as they realized this would impede on the project implementation.

51. The low capacity of staff appointed to the PMU (on behalf of the implementing agency) affected project implementation at all levels. Despite training, the employment of consultants to support certain staff in their roles and the ongoing implementation support by the World Bank, the capacity did not improve. In particular: poor financial management; procurement processing issues; poor project management; and inadequate M&E, directly affected the overall implementation of this project. For most officers in the PMU, training took place in 2013 (M&E training in 2014), which was over a year into implementation. It would have been advantageous if training and supporting consultants to the PMU had been in place as early as possible after project effectiveness.

52. The Government had a role to play in ensuring that the project was led and managed by competent staff, especially within the PMU, who managed the day-to-day running of the project. There was weak supervision of the PMU by the FMEnv, which negatively affected implementation as the PMU were not held accountable be the supervisory agency. The low technical capacity of the PMU and wider stakeholders on the issues of PCB management was also a risk to project implementation. The late engagement of the technical consultant meant that insufficient support was available for the PMU for the majority of implementation and critical capacity building activities for targeted stakeholders from relevant ministries, government departments, agencies and the private sector, were not conducted.

53. A number of meetings were facilitated by the World Bank to try and identify and overcome issues underlying a low disbursement rate. In October 2013, senior staff from the Country Management Unit (CMU) mediated a meeting to attempt to overcome issues and put a comprehensive action plan in place. The issues raised were; low quality of reports submitted for no-objection to the World Bank, delays in receiving no-objection from the World Bank and issues with communication between the TTL and the PMU. Despite an action plan being put in place to address such issues a number of them continued throughout the lifetime of the project.

54. Formal meetings with the ISC were undertaken (and minutes produced) in August 2012, February 2013 and January 2014. There was no evidence that meetings were conducted with the TC. Interviewed members of the committee and minutes reviewed indicated that these meeting were primarily used to share the finalized work of consultants with the committee, and were not held to monitor progress reports or provide technical input and guidance, as anticipated in the project design. It should also be noted that during interviews there was no evidence that the PAD/Project Implementation Manual documents had been shared with any of the TC/ISC members by the PMU (this was also shown to be the case with consultants), providing further evidence of poor communication between the PMU and external stakeholders.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

M&E design

55. Whilst the GEO is very relevant to the Government's development priorities, there is a disconnect between the GEO and the two key project indicators. The GEO indicators are worded as output indicators rather than outcome indicators, measuring policy and planning aspects rather than increase in capacity for POPs/PCB management. Achievement of the two key project indicators may have been outside the scope of the project operation, as they rely on the adoption of a policy and plan by Government. Despite the disconnect between the GEO and the two key project indicators, the majority of the Intermediate Outcome Indicators developed were adequate for monitoring progress towards the project objective, as they would have furnished the evidence for strengthening of national capacity for management of POPs and, in particular, PCBs. The

Intermediate Output Indicator of 'Quantity of PCB oil identified & labelled' is an activity indicator rather than an output indicator that does not adequately measure the improved management of PCBs and, in particular, the efficacy of the inventory.

56. The project design foresaw the need to create a Management Information System to support project implementation. The design also stipulated that an experienced M&E Officer should be in place, to support M&E activities through project implementation. This was to be complemented by the recruitment of a consultant, early on in project implementation, to develop an M&E manual, which aimed to support the M&E activities of the PMU and be beneficial for the wider management of PCBs in Nigeria.

57. The PAD provided detail (in Annex 3), outlining arrangements for how and when project/intermediate outcome indicators should be achieved in the project cycle, the frequency of progress reporting, the methods of monitoring and defining responsibilities. The methods for monitoring achievements under the direct beneficiaries indicators were not robust. The progress reporting arrangements, both internally (quarterly) and to the ISC/TC/World Bank (bi-annually), were well designed to enhance project implementation by ensuring accountability and providing an opportunity for independent technical inputs from stakeholder outside of the PMU.

M&E implementation

58. The development of the M&E manual occurred in late 2013. According to the PAD, the onboarding of the M&E consultant and M&E manual development in the first year of the project (2012) was crucial to embedding an M&E philosophy within the PMU and within the wider context of PCB management. The training of the M&E Officer was also delayed, occurring in March 2014, thus reducing the ability to embed M&E practices at an early enough stage in project implementation.

59. The World Bank supported the PMU during the MTR to develop a monitoring table (based on the Management Information System in the M&E manual); however, there was limited evidence that regular collection of data (as detailed in Annex 3 of the PAD) was completed by the PMU to monitor progress (beyond World Bank implementation support missions). The M&E manual development was supposed to strengthen existing M&E systems and capacity for PCB management beyond the operations implementation period, which is an unlikely achievement based on its limited use to date. Up until the final ISR, M&E was rated satisfactory and later moderately satisfactory, despite the limited use of the M&E system within the PMU.

60. Quarterly reports (7 total), annual reports (3 total), 1 MTR report and 1 Borrower Completion Report were produced by the PMU. The FMEnv, through the Pollution Control & Environmental Health Department, were supposed to work in close collaboration with the M&E Officer of the PMU to oversee the monitoring and reporting of project activities. There was no evidence that this took place. The Pollution Control & Environmental Health Department were also required to produce a bi-annual report on implementation gaps and possible recommendations for improvements which was to be submitted to the ISC, which was never produced. The quality of the reports produced by the PMU, and in particular, the level of detail provided of achievement of results framework and financial summaries, their ability to identify implementation gaps and propose corrective actions was particularly weak. The Borrower's Completion Report also had a limited summary of financial expenditure and efficiencies. Despite M&E playing an important part in project implementation and a core part of component 4, no M&E specialist was included in the task team that was involved in the MTR.

61. There was no evidence that consultants and their work was monitored against their TORs. Weak intermediate monitoring resulted in the outputs of consultants being of varying quality as they were only evaluated once an output (e.g. report/manual) had been completed.

M&E utilization

62. The overall weak M&E of project activities and resultant reporting hindered the usefulness of data produced to inform decision making and resource allocation. The M&E reports produced were never submitted to the ISC/TC for review. Therefore, there was no opportunity for these committees to validate progress, provide technical insight or provide advice to improve future project implementation. A joint annual impact evaluation process (between FMEnv and other relevant stakeholders), aimed at conducting a component-by component assessment of project impacts and accomplishments, was never completed.

2.4 Safeguard and Fiduciary Compliance

63. The project was classified as a Category B (partial assessment) as no significant adverse long-term impacts were anticipated at the design stage. The project design triggered the Environmental (OP4.01) safeguard policy. The project should have been a category A (full assessment) because of the risks associated with the pilot disposal of PCBs activity that the project was to implement. However, the PAD and the Integrated Safeguards Data Sheet did not adequately highlight the potential risks associated with PCB disposal activities. The Environmental and Social Management Framework (ESMF) that was produced by the client, to address the environmental and socio-economic consequences of the project, did not include any reference to the pilot disposal activity. Therefore, the ESMF did not adequately identify the potential environment impacts and environmental assessment instruments associated with all the project activities. If the pilot disposal activity had been implemented there could have been a high risk that the project would have been non-adherent to World Bank's safeguard policies. The other project activities were adequately identified as having potential significant environmental and social impacts. Only the inventory and labeling of PCBs and PCB-containing equipment activity took place and adhered to mitigation measures in the ESMF.

64. The PMU were responsible for implementation of the ESMF. An Environmental Officer was employed as part of the PMU team to support its implementation of the recommendations contained in the ESMF and subsequent Environmental and Social Management Plans and site specific Environmental and Social Impact Assessments. Safeguards were rated as satisfactory throughout project implementation. Safeguards specialists were involved with the majority of the Implementation Support Missions conducted and safeguards were reported on all aide-memoires; however, no specialist was involved in the MTR.

Fiduciary Compliance

Financial Management

65. A number of issues with regard to financial management performance were reported throughout project implementation. The majority of issues occurred due to the poor capacity of the first Project Accountant, who was replaced in November 2014. At numerous stages throughout project implementation, internal financial reports, monthly bank statements and internal audit reports were delayed in their preparation and submission.

66. In October 2014, the MTR noted that the interim financial report was manually prepared and of low quality with issues of accuracy. Despite computerization/training on flexible

accounting software, the first Project Accountant continued to operate manual accounting. After the first Project Accountant was replaced in November 2014, the project accounting became computerized.

67. At two stages during the project implementation the issue of unretired advances was noted during implementation support missions. Whilst the first occurrence was rectified, the second (which was first noted in March 2014) was only resolved in the last quarter of project implementation. The issue of ineligible expenditures, first noted in October 2014, was also resolved in the last quarter of 2015. Excessive bank charges and the fact that no interest was being incurred by the project accounts were reported in March 2014 and remained unresolved by project close.

68. An example of bad financial management was the upfront payment (majority of contract amount) of the communication consultant causing the project to lose any leverage with ensuring deliverables were met to an acceptable standard.

69. Prior to the penultimate ISR, financial management was rated as either Satisfactory or Moderately Satisfactory, despite numerous issues being reported. The rating was then downgraded to Moderately Unsatisfactory due to the continuous outstanding unretired advances and ineligible expenses.

Procurement Management

70. A number of issues with regard to procurement management performance were reported throughout project implementation.

71. The overall performance of the procurement system, regarding internal controls, record keeping and implementation of the project were in accordance with the PAD throughout project implementation. The ISRs reported procurement as Satisfactory or Moderately Satisfactory until the penultimate ISR, were it was downgraded to Moderately Unsatisfactory due to the delays in a number of key procurement activities.

72. The capacity of the Procurement Officer at the PMU was low, despite receiving training. A procurement consultant was employed to support the Officer in May 2013 for six months (as identified in the PAD), but further support was required, with a second consultant being employed in May 2014 for six months, with their contract being extended by five months from Feb 2015.

73. Delays in procurement caused by the poor quality of submissions of bid evaluation reports and consultancy services reports were noted during project implementation. An example is the extensive delays in the procurement selection (and eventual non-completion) of the recruitment of the communication consultants for the communication awareness activities (phase II), with the procurement process taking over six months to complete.

74. The procurement of laboratory equipment was cancelled due to non-adherence to the World Bank's procurement guidelines and processes in the preparation of technical specifications and difficulty in getting qualified bidders during the bid evaluation. Non-compliance to the World Bank's procurement guidelines and processes was also found as the contract of the National Technical Consultant had to be terminated due to an incidence of conflict of interest.

75. The procurement process for a number of activities was stopped by the World Bank due to extensive delays in the procurement process leading to inadequate time for activities to be completed by project close (December 31, 2015), and the lack of provision of counterpart funds. These non-completed activities include: (i) recruitment of communication consultants to commence communication awareness activities (phase II); (ii) recruitment of consultants to complete the design of rehabilitation of 4 laboratories and the design of 4 interim storage facilities; and (iii) procurement of equipment for the 4 laboratories to be rehabilitated.

2.5 Post-completion Operation/Next Phase

76. There is currently a GEF-funded project under preparation entitled 'Environmental sound management and disposal of PCBs', which will be implemented by UNDP in Nigeria. The Project Identification Form[4] indicates GEF financing of US$6,930,000 and co-financing of US$34,666,612 from a range of sources (both public and private). The project has 5 components, a number of which build upon the activities in this PCB project. The 5 components include: i) institutional capacity and trainings on PCBs; ii) inventory of PCBs in 21 states of Nigeria not previous covered by other inventories; iii) establishment of PCB collection and treatment center; iv) environmentally sound disposal of identified PCBs; and v) monitoring learning, adaptive feedback and evaluation.

77. The achieved project activities that the UNDP plans to build upon are :

- The National Policy Framework on POPs/PCB Management will be used to develop a national regulation on PCB management and disposal. This will also include the development of standards for the treatment of PCB contaminated equipment and oil.
- The successes and lessons learned related to the training of operators on PCB identification, handling, transportation and disposal will be built upon.
- The 1,800 tons of PCB contaminated equipment and 85 tons of pure PCB equipment that were identified will be used to start up disposal activities.
- The PCB inventory and database will be built upon and be extended to the remaining 21 states of the country. The UNDP project envisages that the government will continue to support the PCB inventory in the 15 states where the baseline inventory has been carried out under this project.

78. The GEF review of the UNDP project proposal[5] indicates that this activity will not take place earlier than one year after the closure of the Bank administered PCB project. The new UNDP project will help sustain a number of the achieved project activities and will support post-operation achievement of the project's overall objective, to strengthen the national capacity for management of POPs and in particular PCBs.

79. It is not clear how the activities that are not taken up in the UNDP-administered project will be sustained in the future. These include: the National PCB Management Plan; the Technical and Administrative Guideline for PCB Management; and the M&E manual.

80. There is also an upcoming integrated Pollution Management and Environmental Health project (P152730) being prepared with World Bank assistance in select African countries, including Nigeria. The project focuses on multi-pollutants in the city of Lagos. The Bank

[4] GEF-6 Project Identification Form submitted July 30,2015.
[5] GEF-6 GEF Secretariat Review For Full-Sized/Medium-Sized Projects the GEF/LDCF/CCF Trust Fund, October 01, 2015.

proposes that the new project should build upon and use the baseline inventory and database developed to identify land contamination sites that need cleaning up.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

81. The GEO of the project is substantially aligned with Nigeria's development priorities and in particular, its obligation under the Stockholm convention. The objective specifically supports some of the national priority actions called for in Nigeria's NIP to meet the Stockholm Convention obligations. The GEO is valid with regard to the priorities set out in Nigeria's National Strategy for Environmental Protection, the Federal Government's seven point agenda and its vision 20:2020 to ensure pollution prevention, abatement, remediation and management. The GEO is also relevant to the GEF 2020 strategy (2014-2018) especially within GEF's role as the finance mechanism for the Stockholm Convention on Persistent Organic Pollutants (2001).

82. The project was broadly aligned with the second pillar (vulnerability and resilience) of the African Strategy. Despite the absence of clear alignment with the CPSs, the potential benefits of undertaking a project with these objectives provided an opportunity not to be missed, with funds being available, to support Nigeria and GEF with their operations and strategies to eliminate PCBs. The World Bank had successfully supported previous GEF projects, with similar objectives, in Moldova and China. The objective of the project also fits well with the twin goals of the World Bank Group: eliminating extreme poverty by 2030 and boosting shared prosperity, by positively affecting the health of Nigeria's population as a whole, including the poor who are directly affected by PCB contamination.

83. The design was underpinned by previous Nigerian PCB studies, lessons that were incorporated from the implementation of other projects in-country and global PCB specific projects, and the requirements of the Stockholm convention. Although this provided a good basis for project design, a number of the project components, whilst relevant to the GEO, where over-ambitious and were not selected based on justifiable analysis to support project design. Similarly, the implementation arrangements were rather ad hoc and did not adequately include stakeholders that were critical in meeting the GEO (e.g. local government agencies). Despite the poor choice of GEO indicators (refer to M&E section) the Intermediate Outcome Indicators were robust enough to provide evidence and ensure that the project objectives were achieved.

84. The project did not proactively align itself to the changing situation caused by the unbundling of the PHCN and the drop in oil prices. Instead of exploring alternative options or the possibility of restructuring a 'Business As Usual' approach was taken which delayed and hindered the implementation of a number of key activities. Ultimately, in not being proactive to such changes, the project suffered from chronic delays and it resulted in a large number of key activities, that would demonstrate the improved management of PCBs, not being completed by project close.

85. The relevance of objectives is rated as Substantial. Relevance of design and implementation are both rated Modest. As a result, the overall relevance is rated as Modest.

3.2 Achievement of Global Environment Objectives

86. The GEO, *to strengthen the national capacity for management of POPs and, in particular, PCBs as required under the Stockholm Convention on Persistent Organic Pollutants,*

was achieved to a modest extent. Given the shortcomings of the GEO indicators to provide evidence of improved management of PCBs, the extent to which the project achieved the GEO should be assessed using both the GEO indicators and the Intermediate Outcome Indicators. A full description of the outputs of each component is provided in Annex 2.

87. The achievement of the two GEO indicators of: (i) adoption of the National Policy Framework on POPs/PCB Management in Nigeria; and (ii) the development and adoption of PCB management plan, as well as the identification of contaminated sites through the baseline inventory, are foundational to the strengthening of PCB management. The achievement of these objectives within the project provide the institutional framework to begin the successful management of PCBs. The ultimate goal of PCB management is to safely dispose of or contain the chemical so that the environmental and health risks it poses are managed. A number of critical activities that would have demonstrated successful PCB management were not achieved. Those critical activities that were not achieved, include: a) rehabilitation and equipping of 4 laboratories in Lagos, Enugu and Kano States; b) construction 4 interim storage sites in Lagos and Enugu States; c) construction of a demonstration pilot disposal facility in Lagos State and; d) training and capacity building in the management of PCBs (training only conducted in Abuja).

88. Overall, the achievement of the GEO is rated as Modest.

3.3 Efficiency

89. Efficiency is rated negligible. An economic analysis was not conducted during project preparation, to provide a frame of reference for an economic analysis upon project completion. Since only the policy-type project activities were completed, an economic analysis cannot be done.

90. An incremental cost analysis was completed in the PAD (Annex 15) and estimated a cost of US$18.5 million for achieving global environmental benefits, of which US$6.3 million was requested from the GEF and US$12.2 million was to be financed from Government counterpart contributions. No other measure of efficiency was completed as many of the project activities were not completed.

91. The project was not extended due to poor performance, and therefore the remainder of the grant (USD 3,074,060.59) was returned to GEF at project close. The total counterpart funding provided was only 7.72% of what was agreed.

92. There were a number of examples of project inefficiency. The ongoing issue of ineligible expenses and unretired advances, and the upfront payment of consultants were examples of poor contract management. Another example of project inefficiencies was the fact that counterpart funds were used to purchase land over other critical project activities.

93. A further example was the exchange visit to China that occurred in November 2015. Similar trips to the UK and Zambia had taken place earlier with Government officials. Such trips were intended to include relevant Government officials, as a way of introducing them to the project, its objectives and to serve as a catalyst for buy-in and subsequently ensure project sustainability. However, no Government officials took part in the China trip, apparently because the training budget had been exhausted. Only the Project Coordinator and Environmental Officer from the PMU attended, meaning the trip did not meet its objective. The trip took place very close to project completion when critical project activities were still pending.

3.4 Justification of Overall Outcome Rating

Rating: **Unsatisfactory**

94. The overall outcome rating is Unsatisfactory. Whilst the objective of the project remains relevant to Nigeria's development agenda, there were shortcomings in the project design and many of the major activities required to ensure the GEO was achieved were not completed. The project efficiency was also rated as negligible, as an economic analysis could not be conducted based on the design stage analysis and project achievements.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

95. The project, by design, had the potential to contribute to reducing the impacts of environmental health problems that contribute and burden the poorest. Due to the limited achievement of the planned project activities, those that could have potentially directly benefited populations effected by poor PCB management issues, were not met. Therefore, no assessment of the project's impacts can be made.

(b) Institutional Change/Strengthening

96. Whilst the members of the ISC and TC, did not have a continuous role in the project implementation as planned in the PAD, they were involved in a number of consultations during the project lifetime. These included consultations on the development/finalization of the PCB policy and management plan, the inventory and the communication strategy. During interviews with members of the ISC/TC, it was clear that being a part of these committees had positive impacts on their individual knowledge and awareness of POPs/PCBs. Attempts to share this knowledge with colleagues from their respective organizations were made by the Ministry Of Health and Transition Company of Nigeria (TCN) representatives. Representatives from customs attempted to initiate capacity-building activities in their workplaces with an article on PCBs/POPs being written and published in an internal quarterly newsletter.

(c) Other Unintended Outcomes and Impacts

97. It was identified that the poor quality of the phase I communication strategy had unintended negative impacts on people's awareness and understanding of PCBs. In particular, with the TCN workers who became unwilling to work with transformers after the campaign because they feared their health would be detrimentally affected. It was also noted that the strategy made people more aware of the risks but provided no information on how to reduce or manage these risks. Ensuring the quality of public awareness campaigns, being especially mindful of language, approach and the route of communication is critical to ensuring there are no negative impacts and incorrect messages delivered to targeted stakeholders and the public at large.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

98. No beneficiary survey or stakeholder workshop was conducted.

4. Assessment of Risk to Development Outcome
Rating: **Significant**

99. This overall risk is Significant**,** as there is significant risk that a number of the activities achieved, that fall outside of the upcoming UNDP project, will not be maintained and those that were not achieved will ever be implemented. As of date, capacity to manage PCBs in Nigeria is rudimentary.

100. For the activities that were achieved, including: (i) adoption of the National Policy Framework on POPs/PCB Management in Nigeria by Federal Executive Council; (ii) production of final baseline inventory; (iii) production of final National PCB Management Plan; (iv) production of PCB Management Guidelines; and (v) development of M&E manual, only (ii) will be fully utilized by sector stakeholders in the upcoming UNDP/ PMEH programmes.

5. Assessment of Bank and Borrower Performance

5.1 Bank
(a) Bank Performance in Ensuring Quality at Entry
Rating: **Moderately Unsatisfactory**

101. The Bank's performance in ensuring quality at entry is rated Moderately Unsatisfactory**.**

102. The Bank worked effectively with Government counterparts and sector stakeholders in the preparation and design of this project. Inputs were sought from a range of stakeholders, both from previous PCB studies undertaken in Nigeria, other PCB projects globally and existing projects in the same sector. Multiple project preparation missions were undertaken and a number of information collection methodologies were used to inform the project design. The project preparation costs were in-line with other GEF funded PCB management projects, implemented by the World Bank in China and Moldova. The project preparation time was relatively long, being over two years (concept review took place June 2009 whilst board approval was September 2011). An issue with the government's borrowing plan that caused delays with all Bank executed projects in Nigeria at that time, was the reason for this. A combined Quality Enhancement Review and Decision Meeting was held in June 2010.

103. There were a number of issues with project preparation and design that negatively impacted on the quality at entry. These included: poor design of project indicators; over ambitious technical goals will no justifiable analysis of quantity and reasons for selection; non-robust methods for monitoring project outcomes; the provision of only capital costs with no plan for operation and maintenance; under anticipated requirement for technical support for the PMU; unrealistic length of project; incorrect categorization of safeguards and oversight of inclusion of pilot disposal in ESMF produced; and the oversight in timing of the MTR.

104. While the assessment of risks undertaken at the design stage was comprehensive in attempting to overcome any potential issues, a number of ratings and mitigation measures were not adequate. The implementation and M&E arrangements detailed in the PAD could have provided more detail on the arrangements to support validity in the monitoring of project implementation. A capacity assessment of the various relevant ministries, internal departments and staff, was not conducted as part of the design phase to ensure those selected to implement the project had the correct capacity and skills, or help to identify where weaknesses needed to be addressed.

(b) Quality of Supervision
Rating: **Moderately Unsatisfactory**

105. The quality of Bank supervision is rated as Moderately Unsatisfactory**.**

106. The Bank provided a high level of support to the PMU throughout the project. This was a result of the low inherent capacity of the PMU, specifically with financial and procurement management. Throughout project implementation, the CMU and Practice Manager actively engaged with the project team, to ensure the successful supervision of this project, which at numerous stages was defined as a 'problem project'. A number of meetings were held between the World Bank team and the PMU to try and address issues. One such meeting (October 8, 2013) was mediated by a senior member of the CMU.

107. Regular bi-annual implementation support missions were conducted throughout the project lifetime; however, over the last year, formal implementation support had not been conducted (last detailed aide memoire was dated October 2014). ISRs were completed on time, approximately every 6 months, with 8 completed overall. The TTL indicated that the supervision budget provided was not adequate as project activities were geographically dispersed and the budget did not account for that.

108. The majority of key and other project ratings were satisfactory or moderately satisfactory in ISRs until the last year of implementation. At this stage a number of them were downgraded with overall Implementation Progress being downgraded to Moderately Unsatisfactory in December 2014. Clearly there was a candor gap between reported progress and reality, as problems of financial management, procurement processes, poor project management, low disbursement and inadequate M&E were only reported late on in implementation, despite having been issues throughout project implementation.

109. The MTR was conducted as a normal implementation support mission, not a specialized MTR mission. Various specialists, specifically M&E and safeguards, should have been part of the mission team. It was only after the MTR (December 2014) that the World Bank acknowledged the major issues that were facing project implementation and set out short term objectives and priority actions to be addressed, in the management letter to the client. During the last year of implementation, the client sought clarity on the possibility of project extension, with an official request being sent by the FMEnv near project close. During discussions, the Bank clarified that an extension would only be approved once progress had been shown and priority actions had been met. The majority of actions not done by project close as so an extension was not granted.

(c) Justification of Rating for Overall Bank Performance
Rating: **Moderately Unsatisfactory**

110. There were significant shortfalls in the Bank's performance in ensuring quality at entry and during implementation support. For these reasons, the Bank's overall performance is rated as Moderately Unsatisfactory.

5.2 Borrower
(a) Government Performance
Rating: **Unsatisfactory**

111. The quality of Government performance is rated as Unsatisfactory.

112. The FMEnv worked effectively with the World Bank and other stakeholders during the design of this project. Their commitment was clear from their involvement with preparation missions, the resources they made available during preparation (staff and consultants used in previous PCB projects) and the assurance of counterpart funding to support the project.

113. The Government's commitment during preparation was not maintained during implementation. Supervision of the PMU by the FMEnv was inherently weak, with no evidence of monitoring or auditing of the PMU's performance. There is no evidence that adequate collaboration occurred between the PMU and FMEnv, for the M&E of project progress. Inherent issues took a long time to resolve, if resolved at all.

(b) Implementing Agency or Agencies Performance
Rating: **Unsatisfactory**

114. The Implementing Agency's (PMU) performance is rated as Unsatisfactory.

115. Overall project management was weak, with limited information sharing and communication between staff within the PMU and with external stakeholders including technical committee members (ISC/TC) and the PMU unit within the PHCN facility. The limited implementation of M&E and the low quality of reporting by the PMU was further evidence of weak project management. A large number of issues, including serious fiduciary issues, occurred over the project lifetime, which the PMU was unable to resolve in a timely manner. Post MTR the World Bank communicated several times with the client defining the critical time bound milestones and priority actions to be met for the project to demonstrate management capacity for PCB/POPs handling. These actions were not met in the end.

116. Capacity issues inherent in the PMU were attempted to be overcome through the attendance of training and the recruitment of consultants, with varying success.

117. A large number of key project activities were not completed and some only started in the last year of implementation.

(c) Justification of Rating for Overall Borrower Performance
Rating: **Unsatisfactory**

118. The Government's performance was unsatisfactory and the implementing agencies performance unsatisfactory, resulting in an Unsatisfactory overall Borrower's performance rating.

6. Lessons Learned

119. A number of lessons learned can be drawn from the design and implementation of the project as follows:

120. **An appropriate assessment of the implementation capacity of agencies and political economy situation at the project design stage is critical to identify the optimum implementation arrangements.** The FMEnv was selected as the implementing agency, with the PHCN playing a small role in project management/implementation. The majority of staff of the PMU came from the FMEnv. A capacity assessment and/or political economy assessment of various ministries, internal departments and individual staff was not made during the preparation of this project, to identify the optimal implementing arrangements. The collaboration of the PHCN, which was not adequately achieved, was critical in project implementation as the majority of PCBs were identified in the power sector and the majority of project activities involved the power sector explicitly. Collaboration of the state level administration was also critical as the project activities took place at the state level and therefore there buy-in was paramount. The states had no formal role in the implementation arrangement of the project. It is critical that adequate analysis is done at the design stage to help define implementation arrangements. In situations where implementation arrangements can be improved, a proactive restructuring should be undertaken to improve the effectiveness of implementation.

121. **External influences that may affect project implementation need to be adequately anticipated at the design phase in an attempt to ensure project immunity.** Both the privatization of the power sector, which had been in the making for a while, and elections, negatively affected project implementation at some stage. Both situations could have been better anticipated and plans put in place to limit the level of disruption. In situations where the full extent of the situation cannot be foreseen at the design stage (e.g. extent and timing of the privatization) the project team should be reactive to the situation, and initiate a project restructuring, in order to minimize their negative impacts.

122. **An ineffective working relationship between the Bank's task team and the PMU can negatively affect project implementation.** This project was the first World Bank project implemented by the Ministry of Environment. The counterpart, being unfamiliar with Bank requirements, misunderstood some of the Bank's advice or found it confusing and inconsistent, which led to misunderstandings and created tensions that remained unresolved till the end. In hindsight, it may be said that the underestimated the time needed to build trust, rapport and capacity of the new counterpart. The lesson for future operations is to carefully assess the needs of the counterpart agency and help them build confidence in working with the Bank.

123. **A lack of supervision of the PMU by the implementing Ministry can negatively affect project implementation.** The FMEnv, as the implementing ministry in this project, should have closely supervised the performance and outputs of the PMU at frequent points throughout implementation, to ensure the PMU was performing adequately. There is no evidence that any independent monitoring or auditing was done of the PMU's performance or that collaboration took place to M&E project progress. Whilst representatives of the FMEnv took part in some implementation support missions, overall they took a detached approach to supervision of the PMU which was evident from the excessive length of time it took to resolve issues, if they were resolved at all. The implementing agency of projects (FMEnv in this case) needs to be actively involved to ensure that PMUs are implementing the project adequately and achieving results.

124. **A lack of systems to keep key stakeholders informed and involved in project implementation is likely to negatively affect project progress.** There were no regular staff

meeting, results, M&E feedback and project output sharing occurring. The limited and irregular contact between the PMU and the ISC and TC, prevented external monitoring or input/guidance from being provided. It was also noted that the PAD documents were not shared with TC/ISC members or consultants. An issue as complex, interdisciplinary, and inter-ministerial as PCB management must continuously involve all relevant ministries and agencies, NGOs, the private sector and the general public if it is to succeed. Monitoring of the functionality and success of information sharing and input arrangements should be undertaken throughout project implementation.

125. **The late conduction of implementation support, in particular the MTR, led to lost opportunities for successfully enhancing project implementation.** The MTR was conducted late in project implementation (2.8 years into a 4-year project) and was conducted as a normal implementation support mission, not a specialized MTR mission. Overall, the MTR failed to address critical/obvious flaws in implementation and did not provide timely, clear and measurable actions. The MTR should take place at minimum half way through project implementation, in order to allow time for any changes to be made if required. The MTR needs be thorough and fielded with relevant experts in order that project progress towards its GEO can be properly assessed, and targeted recommendations for improvements can be made.

126. **When public awareness campaigns are not carefully designed, there are risks of negative repercussions.** The poor quality of the communication strategy (phase I) had unintended and negative impacts on people's awareness and understanding of PCBs. In particular, the TCN workers became unwilling to work with transformers after the campaign because they perceived the risk to be higher and were not trained in how to reduce the perceived risk. The strategy was successful in making people more aware of PCB risks, but did not provide adequate information on how to reduce or manage these risks. Ensuring the quality of public awareness campaigns, and in particular, the use of appropriate language and approach to audiences, is critical. Messages to stakeholders need to be accurate, targeted and carefully formulated to positively impact their understanding of risks and provide understandable and clear solutions/actions to address any risks faced. This is especially important in projects such as this that relate to public or environmental health.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

127. The counterpart's ICR was submitted to the World Bank and the Executive Summary is attached in Annex 7. The full report, which is more than 80 pages, is available in WBDox. There were no major controversial issues raised in the ICR, though the main message was regret that the project was not extended and the underlying assessment of PMU and Bank performance was more positive than the Bank's assessment in this ICR. The counterpart's ICR noted that the World Bank's delays in issuing 'no objections' were the main reason for project implementation setbacks.

128. The Bank's draft ICR was shared with the counterparts but no official response was received from the Ministers of Finance or Environment by the requested deadline. A letter was received from the Project Coordinator which expressed disappointment along the lines of the project shortcomings already described herein. The letter also provided some factual clarifications which have been reflected in the final version of this ICR to the extent that there was available evidence to support the statements.

(b) Cofinanciers
Not applicable.

(c) Other partners and stakeholders
(e.g. NGOs/private sector/civil society)
Not applicable.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Component 1: Capacity -Building for PCB management	1.97	0.48	24%
Component 2: Environmental Sound Management for Electrical Equipment (On-Line and Off-line)	6.91	0.09	1%
Component 3: National baseline inventory of PCBs and Development of Management Plan	4.39	2.09	27%
Component 4: Project Management, Monitoring and Evaluation	2.10	1.12	53%
Total Baseline Cost	**15.37**	**3.76**[6]	**25%**
Physical Contingencies	0.79		
Price Contingencies	2.31		
Total Project Costs	**18.5**	3.76	
Project Preparation Facility (PPF)	Not applicable		
Front-end fee IBRD	Not applicable		
Total Financing Required	**18.5**	3.76	

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		12.20	0.94	7.74%
Global Environment Facility (GEF)		6.30[7]	3.23	51.3%

Annex 2. Outputs by Component

[6] This is the amount provided in the last IFR submitted by the client. There is a discrepancy with the total in table (b) which contains data from Clientconnection. Despite numerous interactions with the PMU, the numbers were not reconciled by the time this ICR was submitted for approval.

[7] A total of USD$ 6,300,000 was received from the Global Environment Fund. A total of 3.07M was not used by project closed and was refunded back to GEF.

Project objectives	Project outputs
Global Environment Objectives	
A POPs/PCB policy framework finalized and validated by stakeholders.	A National Policy Framework on POPs/PCB Management in Nigeria was adopted by the Federal Executive Council (FEC) on March 4, 2015. The presidential elections in 2015, delayed the adoption of this policy.
A national PCB management plan adopted by the Government.	The National PCB Management Plan was developed and finalized during a final-project workshop which took place in December 2015. Overall the implementation of this indicator was delayed as the workshops and consultants should have happened in YR3 (2014) of the project (as indicated in the PAD).
Intermediate Results Outcomes	
Component 1: Capacity Building for POPs and PCB Management	
Hazardous Chemicals/ Waste Management Regulations are reviewed and harmonized.	The regulations and guidelines were reviewed and harmonized into 1 report, the Technical and Administrative Guideline for PCB Management in Nigeria.
A POP/PCB issues communication strategy is developed and implemented.	A phase I communication strategy was developed in 2014, which focused on the production and distribution of public awareness materials. Parts of the strategy were implemented and the outputs included: development and dissemination of 2000 posters, 5000 car stickers, 2000 handbills and 400 information booklets; two 60 minute radio spots; one 30 minute TV documentary; one newspaper advert in 2 national newspapers; development of project website; and development and mounting of 12 billboards in 2 geopolitical zones. The training of journalists and the development of a PCB website (www.nigeriapcbmgmt.gov.ng) was completed (three workshops held in Abuja, Enugu and Lagos on 27th August, 3rd September and 5th September respectively). The influence of this campaign is not known as M&E of its impact was not conducted. There was no consultation of the draft phase I communication strategy with the ISC/TC or any other stakeholders, and the strategy was presented after completion of the activities. The quality of the phase I strategy was noted in an aide memoire to be very weak, providing unclear messages and insufficiently targeted technical stakeholders as intended. A training program for Government officials, which was supposed to include (i) facilitation of three (3) theoretical and practical workshops in Abuja, Lagos and Enugu which would entail site visits for PCB sampling/screening; and (ii) development of a comprehensive general PCB Management handbook which includes factsheets with easy to understand and partly illustrated designs on specific topics such as Health & Safety, Maintenance and Handling/Packaging targeted for workers in the electricity sector, was meant to take place in the first quarter of 2015. A training of government officials took place in Abuja on July 28th-29th 2015; however, additional training in Enugu and Lagos did not take place. Whilst a contract was awarded to an internationally recognized consulting firm, the training did not take place as the dates of the original training were changed multiple times, causing the

	consultant to be unavailable to conduct the training before project close. A PCB management handbook was developed and produced for this project and they were forwarded to Nigeria by the consultant firm and are now at the Lagos state environmental protection agency. A phase II communication strategy was planned for 2015 to try and achieve this indicator, in spite of the poor progress made in the first strategy. An experienced communication expert from the Federal Ministry of Information was engaged to support the implementation of the second phase of the communication activities. Whilst some further communication and awareness activities, were undertaken by the communication expert in January 2015, there was no formal no-objection for payment of these activities given by the World Bank and no record provided of the resulting number of beneficiaries. Delays in the procurement process for the phase II communication strategy resulted in the process being stopped by the World Bank, as insufficient time was left for the deliverables to be met by project close. Whilst a communication strategy was partially undertaken, this focused predominately on the production and distribution of public awareness material, that was poorly implemented, and subsequently this subcomponent was not adequately met.
Component 2: Environmentally Sound Management of On-line and off-line PCB Electrical Equipment	
Achieve the adaption of 10 procedures, manuals, management protocols and monitoring guidelines.	Whilst only two documents were developed during project implementation, the National PCB Management Plan and the Technical and Administrative Guidelines for PCB Management in Nigeria, they provided the guidelines required and so this subcomponent was achieved. The development of these guidelines were not continuous throughout project implementation, with both being completed in the final year. This increased the risk that they will not be fully adopted and sustained beyond the project life.
Identify and upgrade four (4) laboratories for PCBs sampling and testing.	The privatization of the power sector meant that the upgrading of the laboratory identified in PHCN facilities could no longer be achieved and so a LASEPA laboratory was identified for upgrading instead. Whilst the contract for equipping three laboratories – NESREA laboratory, Kano State; LASEPA laboratory, Lagos State and CEMAC Laboratory, Enugu State commenced in 2014, the process was cancelled by the Bank due to non-adherence to World Bank's procurement guidelines and processes in the preparation of technical specifications coupled with the difficulty in getting qualified bidders during the bid evaluation. Whilst it was planned that revised bidding documents should be sent to the World Bank in December 2014, and the process completed by January 2015, this activity was not achieved by project closure. This activity should have been completed gradually throughout project implementation (YR2-YR4).
Number of direct project beneficiaries of 3,315,000, of which (57%) 2,477,000 female.	The ISR indicator results recorded the total direct beneficiaries of this project as 412,000 persons of which 156,560 persons were females representing 38% of the end target. This data was derived by the PMU from the number of persons met during the inventory; and those targeted by advertisements in national and local newspapers and billboards set up in Lagos, Abuja and Enugu cities as recorded in the December 2014 ISR. It is difficult stand by the rigor of these figures as they cannot be independently verified by the World Bank team. It is also difficult to claim that direct beneficiaries of this project are all those that have been involved in communication and awareness raising activities, as the direct impact (reduction in exposure to PCBs) and behavior change achieved as a result of these activities were not monitored.
Identify and upgrade 4	Privatization, meant that new sites had be identified and purchased, prior to installation of the interim storage facilities. Counterpart funds of N76,915,177.51 (US$427,306.56) were

interim storage locations for PCBs waste/oils and PCB-contained equipment.	spent on the purchase of land (Neke-Uno Nike community in Enugu state and Epe Axes in Lagos State). The bank did not receive the required Certificate of Occupancy for both purchased sites, to prove land ownership, before project end. This activity was delayed overall and should have begun in the second year of the project (2013). However, due to the ongoing privatization of the electricity sector in Nigeria in 2014, this activity was paused, until the privatization was finalized. After which, land had to be first purchased so that the interim storage facilities could be provided, causing further delays. Whilst the procurement process had commenced in 2015, delays resulted in the process being stopped by the World Bank as insufficient time was left for the deliverables to be met by project close. This indicator was not achieved by project close.
Achieve 1 pilot PCB disposal demonstration.	The consultancy for the feasibility study for PCB disposal options was completed in May 2014. It was proposed that the project should fund a mobile incinerator with two chambers located next to the proposed interim storage facility in Lagos. The PMU instigated the procurement process for purchasing a mobile PCB disposal unit in October 2015; however, the process was stopped by the World Bank as insufficient time was left for the deliverables to be met by project close. This activity was meant to be achieved in YR3 (2014) of the project; however this was delayed and the activity was not achieved by project closure.

Component 3: National Baselines Inventory PCBs and PCB-Containing Equipment and Development of a National PCB Management Plan

<table>
<tr><td>Inventory of PCB owners completed.</td><td>A consultant was contracted in 2014 and the following tasks were achieved: (i) Initial survey of equipment and oil stored onsite in two states (Niger and Abuja); (ii) Sampling, Labeling, Testing and analyzing potential PCB containing equipment and oils stored onsite; (iii) Development of a PCB Management Information System containing the inventory data; (iv) training and consultation workshops conducted on PCB management and sampling methodologies. Stakeholder workshops (kick off and mid-project) were also held to raise awareness, update stakeholders on the inventory progress and disseminate information on the project aim.

A final report was completed for the inventory of the PCBs and PCB-containing equipment in 15 states in the 6 geopolitical zones of Nigeria. The inventory activities were completed in the Northwest (Kano, Sokoto and Kaduna States), Southwest (Lagos, Ogun and Oyo States), South-south (Delta and River States), Northeast (Bauchi), North central (Niger, Abuja and Benue States) and Southeast (Abia, Anambra and Enugu) zones.

A further output of this component was to build the Nigerian Government's capacity so that they could update/revise the inventory and extend it to the remaining 11 states (out of 36) that required it. Due to the late implementation and completion of this component, it is unlikely that their capacity has been increased because of this project. However, the inventory extension will be completed as part of the proposed UNDP project.</td></tr>
<tr><td>Quantity of PCBs identified and labeled) target 3000 tons of PCB oil; 5000 tons of PCB contaminated equipment).</td><td>This indicator was achieved (weight was less than planned for the PCB oil but greater for the contaminated equipment) as the draft inventory report reported the following information:

Table 1: Quantity of oils and equipment identified and labelled in 15 states of Nigeria
<table>
<tr><th colspan="4">Total number of inventoried and sampled equipment and oils in 15 states</th></tr>
<tr><th>Inventory</th><th>Total Samples (tons)</th><th>PCB contaminated (tons)</th><th>PCB contaminated (%)</th></tr>
<tr><td>Equipment</td><td>175,261.4</td><td>7,293.8</td><td>4.1</td></tr>
<tr><td>Oils in Equipment</td><td>9,581.6</td><td>2,037.8</td><td>9.5</td></tr>
<tr><td>Stored Oils</td><td>187.7</td><td>13.9</td><td>7.4</td></tr>
<tr><td>Disused oil</td><td>49.5</td><td>7.8</td><td>15.8</td></tr>
<tr><td></td><td>9818.8</td><td>2059.6</td><td>20.9</td></tr>
</table></td></tr>
<tr><td colspan="2">Component 4: Project Management and Monitoring and Evaluation</td></tr>
<tr><td>The M&E manual prepared and in use.</td><td>The M&E manual was finalized in December 2014; however, there is limited evidence that the manual or MIS was being used extensively by the PMU or any other stakeholders. An activity monitoring table was developed, in conjunction with the World Bank team, after the 4th Implementation Support Mission to monitor disbursement and project achievements. Therefore, this indicator was only partially achieved, as the institutionalization of the M&E manual for the management of all PCBs in Nigeria did not occurred.

The development of the manual was late in the overall project</td></tr>
</table>

	implementation and was identified as an important output requirement for the first year in the PAD.
4 implementation progress reports are produced (1 annually).	This indicator was achieved as 3 implementation progress reports and a MTR were produced by the PMU since project effectiveness. The quality of the reports can be questioned as there was limited inclusion of detailed analysis of the results framework and progress towards achievement, financial summaries detailing expenditure and detailed action plans to overcome issues affecting implementation.

Annex 3. Economic and Financial Analysis

This was not completed. Please see section 3.3 of the main report.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Africa Eshogba Olojoba	Lead Environmental Specialist	GEN05	Team Leader
Amos Abu	Senior Environmental Specialist	GEN07	Team Member
Salimata Follea	Natural Resources Management Specialist	GEN07	Team Member
Dahlia Lotayef	Program Coordinator	GEN07	Program Coordinator
Gayatri Kanungo	Consultant	GENO6	Team Member
Joseph Ese Akpokodje	Senior Environmental Specialist	GEN07	Team Member
Akinrinmola Oyenuga Akinyele	Sr. Financial Management Specialist	GG0DR	Financial Management Specialist
Ogo-Ooluwa oluwatoyin Jagha	Senior Operations Officer	OPSSR	Monitoring & Evaluation
Manush A. Histov	Senior Counsel	LEGES	Legal
Abiodun Elufioye	Program Assistant	AFCW2	Team Member
Mary Asanato-Adiwu	Senior Procurement Specialist	GGO01	Procurement Specialist
Chita Azuanuka Oje	Program Assistant	GEE01	Team Member
Supervision/ICR			
Joseph Ese Akpokodje	Senior Environmental Specialist	GENDR	Team Leader
Bayo Awosemusi	Lead Procurement Specialist	GGODR	Procurement Specialist
Akinrinmola Oyenuga Akinyele	Sr Financial Management Specialist	GGODR	Financial Management Specialist
Chukwudi H. Okafor	Senior Social Development Specialist	GSURR	Safeguards Specialist
Obadiah Tohomdet	Senior Communications Officer	AFREC	Team Member
Oyewole Oluyemi Afuye	Procurement Specialist	GGODR	Team Member
Jayne A. Kwengwere	Program Assistant	GENO7	Team Member
Ugonne Margaret Eze	Program Assistant	AFCW2	Team Member
Ruth Kennedy-Walker	Environmental Engineer	GENDR	ICR author

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY09	1.98	15.81
FY10	8.41	62.18
FY11	13.46	60.88
Total:	23.85	138.88
Supervision/ICR		
FY12	8.53	53.39
FY13	17.36	65.45
FY14	18.25	81.83
FY15	19.22	75.89
FY16	22.55	80.81
Total:	85.91	359.37

Annex 5. Beneficiary Survey Results
Not applicable.

Annex 6. Stakeholder Workshop Report and Results
Not applicable.

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

The borrower's ICR report is over 10 pages and therefore an executive summary is provided below. The full report is available in WBDox.

Executive Summary

Implementation Completion and Results reports (ICRs) are an integral part of the World Bank's drive to increase development effectiveness, through a continuous process of self-evaluation, lesson learning and application, sharing of knowledge, and being accountable for results. The lessons learned from ICRs improve the quality and effectiveness of Bank loans/credits, especially for follow-on operations, while borrower/stakeholder participation in the ICR process enhances later designs, preparation, and implementation.

The Borrower is in response and contribution required to prepare and submit to the Bank its own Completion Report to satisfy accountability needs, while providing lessons from completed operations.

The PCB Management Project was approved in August 2011 and declared effective, February 2012. The Project completion date was scheduled for December 30, 2015, and this now looms. In response to the requirement for an implementation review, this ICR is prepared for the Project Management Unit of the PCB Management Project. Against the objectives of the assignment, the report assesses and delineates the:

- Project operational components and experience in terms of objectives, design, implementation etc. (***Sections One & Two***)
- Project performance components as: achievement of project outcomes against defined objectives, project impacts, project execution activities, financial management, procurement, Monitoring and Evaluation (M&E), Engineering and Safeguards management (***Section Three***)
- Project issues and challenges of implementation and how they were addressed (***Section Three***)
- The effort also seeks to draw lessons from these (the design and implementation experiences) as well as recommendations which will be used to guide future interventions (***Sections Four & Five***)
- ***Section Six*** concludes discussions, assessing project sustainability and replicability, as basis for continuity, and further highlights priorities for action going forward

Implementation of project activities only formally kicked off the end of the first quarter 2013, yet considerable progress towards its outcomes and GEO was made, notwithstanding that activities were planned for four years. If going by the indicators of strengthened national capacity, the project has achieved 70-75% of its objective.

For an overview, in terms of progress towards objectives, Component 1 was mostly achieved at 75% complete; Component 2 was in part achieved, at 25% complete; while Components 3 and 4 were also mostly completed at 85% and 75% respectively.

To mention a few, some land marks attained included the development of the National Policy Framework, and its adoption at the Federal Executive Council. This along with the Management Plan which is in draft (with assurances of adoption before project end) proved as defined, the project's goal of strengthened national capacity for PCB management in Nigeria. The inventory process, a major heartbeat of the project, also made its contributions and has set the sail for key PCB management activities as mop up and disposal. Further pointing to project achievements is

the availability of key outputs and knowledge products such as the M&E Manual, the Technical and Administrative Guidelines, the Communication Strategy, the Management Plan etc.

Among others, challenges to implementation included late project Launch, incessant changes in the project activities due to evolving external factors as the unbundling and privatization of PHCN, grant management requirements of counterpart funding, which eventually became a bottleneck to implementation etc.

Various lessons were gained in the course of implementation. For one, they further underscored that:

- There is yet more need for sensitization and awareness creation, in particular, as the current level of PCB awareness amongst actual end users, (Fitters, Line Workers etc) is still very low. Likewise, advocacy and awareness creation to decision makers within facilities without whom interventions would not make headway
- Training and capacity building has grave implications for sustainability, as such, there is need to build capacity and give attention to the areas of - Information and knowledge of risks posed by PCBs and other organic chemicals; Equipment and laboratories for testing; Training of personnel etc.

Furthermore on lessons, implementation also brought to the fore, some relevant Stakeholders/groups who were not captured in project design, including: Local government and state officers; Federal Ministry of Works, who were identified during training needs exercise to be responsible for road transport (Ministry of Transportation oversees activities associated with rail and maritime transport; while the Ministry of Aviation oversees air transport); Federal Ministry of Justice; Standard Organization of Nigeria (SON); National Chemical Programme and National Emergency Chemical Network; NERC and the PCB Elimination Network; waste management agencies at state level etc.

Conclusively, implementation has been a challenging but enlightening experience, and most valuable for Stakeholders was the awareness and insight gained on the subject matter and its harmful effect. Albeit, much still needs to be done as achievements have merely scratched the surface.

The opportunity for strengthening and improvement exists if given through the extension of the project. More so of outstanding activities of the training of key Stakeholders, upgrading of laboratories and interim storage facilities, implementation of pilot disposal which brings with it, immense value for sustainability, and replicability, and implementation of developed knowledge products. These investment activities in particular will give the project the stamina it needs to strengthen national capacity as intended. Discussions and analysis throughout this report have been sufficiently presented to support this need.

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders
Not applicable,

Annex 9. List of Supporting Documents

- Project Appraisal Document
- Global Environment Facility Grant Agreement between Federal Ministry of Nigeria and IBRD
- World Bank Implementation Status Reports
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    - National baseline inventory of PCBs and PCB Containing equipment
    - Preliminary Draft Report of the National PCBs Management Plan
    - Draft National Policy Framework
    - Environment and Social Management Framework
    - Minutes of ISC meetings
    - Inspection Report fort the Upgrading of Laboratories
    - Training Needs Assessment Report
    - Borrower's Completion Report

NIGERIA
PCB MANAGEMENT PROJECT
BASELINE INVENTORY COMPLETED IN 15 STATES
PROJECT STATE
CITIES AND TOWNS
STATE CAPITALS
NATIONAL CAPITAL
STATE BOUNDARIES
INTERNATIONAL BOUNDARIES
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Budget, Performance Review & Strategic Planning
General Services
Printing & Multimedia
0 50 100 150 200 Kilometers
0 50 100 150 Miles
5°E
10°E
15°E
10°N
5°N
NIGER
CHAD
BENIN
BURKINA FASO
CAMEROON
Lake Chad
Gulf of Guinea
Bioko I. (EQ. GUINEA)
Niger River Delta
SOKOTO
KEBBI
ZAMFARA
KATSINA
KANO
JIGAWA
YOBE
BORNO
KADUNA
BAUCHI
GOMBE
NIGER
KWARA
PLATEAU
ADAMAWA
FEDERAL CAPITAL TERRITORY
NASARAWA
OYO
OSUN
EKITI
KOGI
BENUE
TARABA
OGUN
LAGOS
ONDO
EDO
ENUGU
ANAMBRA
EBONYI
CROSS RIVER
DELTA
IMO
ABIA
RIVERS
BAYELSA
AKWA-IBOM
ABUJA
Sokoto
Birnin Kebbi
Gusau
Katsina
Kano
Dutse
Damaturu
Maiduguri
Kaduna
Bauchi
Gombe
Jos
Minna
Yola
Jalingo
Ilorin
Lafia
Oshogbo
Ibadan
Abeokuta
Ado-Ekiti
Akure
Lokoja
Makurdi
Lagos
Benin City
Asaba
Awka
Enugu
Abakaliki
Owerri
Umuahia
Uyo
Calabar
Yenogoa
Port Harcourt
Rima
Sokoto
Niger
Kainji Reservoir
Kaduna
Hadejia
Jamaari
Komadugu Gana
Yobe
Bunga
Gubi
Gongola
Benue
Taraba
NIGERIA