



POPs ENABLING ACTIVITIES IN THE REPUBLIC OF SIERRA LEONE

UNIDO PROPOSAL (5-MARCH-04)

Project Summary

Project Identifiers	
1. Project Number:	4. GEF Implementing Agency/Executing Agency with Expanded Opportunities: United Nations Industrial Development Organization
2. Project Name: Enabling activities to facilitate early action on the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Sierra Leone	5. Country eligibility: Sierra Leone acceded to the Stockholm Convention on POPs on 26 September 2003
3. Country:	The Republic of Sierra Leone
6. Name of GEF national operational focal point and date of the endorsement letter was signed (copy of endorsement letter attached): Mr. Syril S. J. Jusu Director of Environment Ministry of Lands, Country Planning and the Environment 3rd Floor, Youyi Building, Freetown, Sierra Leone Endorsement Letter signed on the: 21 May 2002	
Summary of Project Objectives, Activities, and Expected Outcomes	
7. Project objective: The overall objective of the proposed Enabling Activities (EA) is to strengthen national capacity and capability to prepare a National Implementation Plan (NIP) for the management of POPs. This plan will provide a basic and essential level of information to enable policy and strategic decisions to be made and identify priority activities that Sierra Leone should undertake in order to meet the requirements of the Stockholm Convention. It will be endorsed by stakeholders, including the government of the Republic of Sierra Leone before transmission to the Conference of Parties (COP).	
8. Project activities: The proposed project activities will follow the step-wise process outlined in the GEF "Initial Guidelines for Enabling Activities for the Stockholm Convention on POPs" and are described in detail in the main body of this proposal. In summary, these activities are: <ul style="list-style-type: none">• establish a sustainable national inventory system that identifies and quantifies POPs production, trade, storage, use or unintentional emission (Articles 3, 5, 6, 9, 10);• assess current legal, institutional, and technical capacity in the management and monitoring of POPs;• assess the socio-economic implications of POPs use and reduction, and create awareness of POPs-	

<p>related risks amongst stakeholders through information exchange and education so as to facilitate the identification and introduction of alternative chemicals (substitutes) (Articles 9, 10);</p> <ul style="list-style-type: none"> • identify, from preliminary inventories and assessments, the actions to be taken by Sierra Leone as a matter of priority; • prepare and gain endorsement for, a National Implementation Plan, in accordance with Article 7.
<p>9. Project expected outcomes:</p> <p>A National Plan for the implementation of actions to meet the obligations of Sierra Leone under the Stockholm Convention (NIP).</p> <p>National capacity and capabilities built to implement the NIP and fulfil reporting requirements to the COP.</p>
<p>Project duration, costs and executing agencies</p>
<p>10. Project duration: 2 years</p>
<p>11. Estimated total budget: US\$ 394,600</p>
<p>12. Amount being requested from the GEF: US\$ 394,600</p>
<p>13. Information on the organization submitting the proposal:</p> <p>UNIDO is the United Nations' specialized agency for industrial development. It has long-established programmes to improve the economic and environmental performance of industry in developing countries and in countries with economies in transition. It has accumulated significant knowledge of a variety of industries such as the chemicals, pulp and paper, cement and textiles sectors. It is conversant with issues related, inter alia, to pesticide formulation and to the unintentional generation of POPs.</p> <p>UNIDO participated in the Inter-agency Cooperative events that led to the inter-governmental negotiations for the preparation of the Stockholm Convention including:</p> <ul style="list-style-type: none"> • international meetings held in Vancouver, Canada in 1995 and Manila, the Philippines, in 1996; • meetings of the Inter-governmental Forum on Chemical Safety (IFCS) and the Inter-Organization Programme for the Sound Management of Chemicals (IOMC); • Intergovernmental Negotiating Committee (INC) meetings for an International Legally Binding Instrument for Implementing International Action on Certain POPs. <p>UNIDO is an executing agency with expanded opportunities for implementing GEF projects and, in 2001, became a member of the GEF Inter-Agency Task Force on POPs. It is mandated to submit enabling activity proposals directly to GEF. To date, 37 EA proposals submitted by UNIDO have been approved.</p> <p>In addition to EAs, UNIDO and its partners have developed a number of proposals and is executing projects:</p> <ul style="list-style-type: none"> • to identify best technologies for POPs elimination; • to identify and evaluate alternative materials as substitutes for the proscribed POPs; • to identify suitable approaches to legal and social aspects of the management of POPs, engaging government structures, industry and civil society. <p>UNIDO's International Centre of Science and High Technology (ICS), Trieste, Italy, has prepared a training programme on POPs and is implementing it for national officials of developing countries.</p>
<p>14. Information on the proposed executing organization.</p> <p>The Department of Environmental Protection (DEP) of the Ministry of Land, Country Planning and the Environment is the designated body for all environmentally related projects. Therefore, it will be the executing agency of the Enabling Activities on POPs. The GEF and POP focal point for Sierra Leone are located in this Department. Detailed information of the Department is attached as Annex 1.</p>

15. Date the proposal was submitted to a GEF Implementing Agency/Executing Agency with Expanded Opportunities: 21 May 2002

16. Date the proposal was submitted to the GEF Secretariat: 24 March 2004

17. Date the proposal was approved:

18. Date of first Disbursement:

Information on Implementing Agency/Executing Agency with Expanded Opportunities:

19. Implementing Agency/Executing Agency with Expanded Opportunities contact persons:

1. Mr. Abel John Julian Rwendeire
Managing Director
Programme Development and Technical Cooperation Division - PTC
UNIDO, Vienna International Centre
Wagramer Strasse 5, P.O. BOX 300
1400 Vienna, Austria
e-mail: A.Rwendeire@unido.org
2. Mr. Geoffrey Mariki
Chief of POPs Unit
Multilateral Environmental Agreements Branch - MEA
Programme Development and Technical Cooperation Division - PTC
UNIDO, D1215, Vienna International Centre,
Wagramer Strasse 5, P.O. BOX 300
1400 Vienna, Austria
e-mail: G.Mariki@unido.org

PROJECT DESCRIPTION

Background

Sierra Leone is a small state situated on the West Coast of Africa. Although it has suffered from a long civil war, the situation has now stabilized. The country has substantial mineral, agricultural, and fishery resources. The population is approximately 5,600,000 in a land area of 72,000 sq km. Only a small area of the country has agricultural potential restricting intensive agricultural farming possibilities. The total electricity utilized in the country is generated from fossil fuels.

The Government is committed to protecting human health and the environment from hazardous chemicals and therefore, has signed a number of international conventions. Of relevance to POPs issues are the Basel Convention on the Trans-boundary Movement of Hazardous Wastes, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on POPs. Concerning POPs, the following issues have to be addressed as a priority:

- Lack of capacity to monitor and control the trade, use, management and disposal of POPs;
- Lack of awareness of the health and ecological impacts of POPs amongst users, decision makers and the general population;
- Lack of information on existing alternatives for POPs.

Sierra Leone has no national chemicals profile that collates chemicals-related data in a single document.

A majority of POPs chemicals or contaminants were utilized in the past so the existence of obsolete stockpiles and the presence of POPs contamination of the environment cannot be ruled out.

Further information on the use of POPs chemicals in Sierra Leone is given in Annex 2.

Project Objective

The overall objective of the proposed EA is to strengthen national capacity and capability in the management of POPs and to prepare a National Implementation Plan (NIP) for the management of POPs. This plan will provide a basic and essential level of information to enable policy and strategic decisions to be made and identify priority activities that Sierra Leone should undertake in order to meet the requirements of the Stockholm Convention. It will be endorsed by all stakeholders and the government of the Republic of Sierra Leone prior its transmission to the Conference of Parties.

Project Activities

1. Co-ordinating Mechanism and Process Organisation

1.1 Needs assessment and strengthening of national focal point

The technical and human resources of the national executing agency will be assessed. A national project office will be established within the DEP and manned by a full-time National Project Coordinator (NPC) who will provide overall project coordination. During the first two months of the project, an institutional expert will assist the NPC in order to facilitate legal aspects of the project such as procedures for tenders, contract and agreement preparation.

1.2 Formation of multi-stakeholder national co-ordinating committee

A POPs National Committee (PNC) will be formed at the Environment Protection Board and comprising the following bodies:

- Ministries of Environment, Agriculture, Health, Commerce & Industry;
- Institute of Marine Biology and Oceanography;
- University of Sierra Leone;
- Private Sector and Industry Representatives;
- Non-governmental organizations and public interest groups active in the chemical field.

1.3 Drawing-up overall work plan and assigning responsibilities amongst government departments and other stakeholders

The DEP, with the guidance of the NPC and the Chief Technical Advisor (CTA), will prepare the work-plan for review and approval by the PNC. Strong emphasis will be placed on the participation of the private sector and civil society to ensure and secure their active involvement in the execution of the work-plan. All responsibilities, timelines and the budget (based on the tenders) will be clearly spelled out in order to guarantee fast, safe and accurate execution of the project.

1.4 Identification and sensitisation of main stakeholders

The NPC will prepare a preliminary directory of stakeholders and canvass their support and cooperation for the enabling activities. This directory will form the basis for awareness raising and information exchange activities, commencing with the inception workshop.

1.5 Inception workshop

A one-day workshop will be held in Freetown to raise awareness on POPs issues and the enabling activities project amongst the widest possible range of stakeholders. An international expert will facilitate discussion amongst the project officials and the approximately 100 invitees. The agenda will include discussion of the planned activities and timeframes, a presentation of environmental monitoring and inventory practices, description of sound disposal techniques and opportunities for the phasing out of POPs substances.

2. Preliminary POPs Inventories and Assessments of National Infrastructure and Capacity

2.1 Preparation of National Chemical Profile

A national profile to assess the national infrastructure for the management of chemicals will be prepared by two national experts following recognised methodologies. Relevant structures of the national infrastructure will be reviewed with particular emphasis on their ability to manage the obligations of the Stockholm Convention.

2.2 Constitution of task teams responsible for inventories

The following task teams will be constituted:

- Research team to undertake preliminary inventories of trade, use and distribution of POPs-containing products;
- Contamination team to assess contaminated sites, obsolete stocks and disposal opportunities;
- Emission team to prepare preliminary inventories of unintentionally produced POPs;
- Institutional team to assess infrastructure, enforcement, monitoring and R&D capacities;
- Health team to assess the population's exposure to POPs.

2.3 Training in inventory procedures

Two international experts will provide training in inventory procedures. The training will include:

- Procedures for collecting POPs-related information;
- Undertaking preliminary inventories of trade, use and stocks;
- Initial surveying of contaminated sites;
- Monitoring and reporting methodologies using established guidelines;
- Undertaking inventories of releases into air, water, soil and sediment;
- Sampling for chemical analysis of POPs compounds especially POP pesticides;
- Obligations of the Stockholm Convention with regard to POPs management and infrastructure;
- Identification of POP-related health impacts from existing reporting schemes.

2.4 Preliminary inventory of production, distribution, use, import and export

A team of experts will gather relevant information regarding the import, use, distribution and export of POPs containing products from relevant institutions such as the ministries of Agriculture, Health, Commerce & Industry, Industries and NGOs active in this field. This activity will start in the 4th project month and be finalized in two months.

2.5 Preliminary inventory of stocks and contaminated sites; assessment of opportunities for disposal of obsolete stocks

A team of experts will undertake an inventory of stocks, contaminated sites and assess opportunities for disposal. This work will commence in the 5th month and be finalized by the 6th project month. Where priority contaminated sites are identified, a preliminary sampling programme may be undertaken.

2.6 Preliminary inventory of releases to the environment

A team of experts will use internationally accepted methodologies to estimate total unintentional production of POPs. They will assess the scenarios developed from different toolkits used and review their validity to Sierra Leone. Two months are available to complete this activity.

2.7 External independent review of initial national POPs inventories

Draft versions of the preliminary inventories described above will be submitted to the PNC. The PNC, supported by an international consultant will review the inventories and provide comments and recommendations. The expert teams will revise the preliminary inventories taking into account the comments and recommendations received. Final preliminary inventories will be submitted to the PNC for approval.

2.8 Assessment of infrastructure capacity and institutions to manage POPs, including regulatory controls; needs and options for strengthening them

The infrastructure capacity of Sierra Leone to manage POPs will be described and assessed. The responsibilities of relevant institutions and the regulatory instruments at their disposal will be reviewed. Analysis will include the capabilities of these institutions to play a full role, within the Conference of the Parties, to propose and review candidate POPs as set out in Article 8 of the Convention. An analysis of the changes necessary to accommodate actions to meet obligations under the Stockholm Convention will be prepared. A team of experts will be engaged for two months to undertake these tasks and the activity below.

2.9 Assessment of enforcement capacity to ensure compliance

The technical and human resources available for the enforcement of current chemical management regulations will be assessed. The changes necessary to meet the compliance challenges of the Stockholm Convention will be determined.

2.10 Assessment of social and economic implications of POPs use and reduction; including the need for the enhancement of local commercial infrastructure for distributing benign alternative technologies/products

An assessment of the social implications of restricting or discontinuing POPs use and unintentional production will be made. This assessment will be based on consideration of the indicative list of issues given in Annex F of the Convention. The identification of opportunities to transfer technology and share skills with more experienced countries will be particularly important as Sierra Leone has limited opportunities for the commercial introduction and distribution of new technologies. A team of experts will be engaged for one month to undertake this activity.

2.11 Assessment of monitoring and R&D capacity

The technical and human resources available for the monitoring of enterprise performance in relation to current chemical management regulations will be assessed. The changes necessary to meet the initial and continuing requirements of the Stockholm Convention will be determined. An assessment will be made of national and human resources available for the analysis and evaluation of POPs-containing products. Opportunities to analyse POPs-containing products at regional facilities will be examined. A team of experts will be engaged for one month for this activity.

2.12 Identification of POPs related human health and environmental issues of concern; basic risk assessments

A team of national health experts will collate and review available health information related to environmental exposure to POPs. Additionally, in conjunction with information from other inventory teams, they will prepare an initial assessment of POPs-related risks faced by the population of Sierra Leone. Particular emphasis will be placed on communities in areas where high-levels of POPs contamination or environmental release are suspected. The team will provide recommendations for further health-related studies that may need to be undertaken.

2.13 Workshop on preliminary inventories

Final draft preliminary inventories and assessments will be submitted to the PNC for approval. The Executing Agency, on behalf of the PNC, will organise a one-day meeting in Freetown to review and discuss the outcomes. It is expected that approximately 50 persons representing all main stakeholders will be invited.

3. Priority Setting and Determination of Objectives

3.1 Development of criteria for prioritisation

A team of national experts will review the inventories and assessments and develop criteria for the ranking of priority actions recommended by the various expert teams. These criteria will take into account health, environmental and socio-economic impacts and the availability of alternative solutions. In preparing these criteria, the experts will take advantage of experience of risk-reducing technologies and priority setting undertaken in other countries. The proposed criteria will be submitted to the PNC for review and approval.

3.2 *Determination of national objectives in relation to priority POPs or issues*

The national experts who develop these criteria will also facilitate a meeting of the PNC at which national objectives in relation to priority POPs or issues will be proposed. The experts will then prepare a draft prioritisation report.

3.3 *Organization of a national priority validation workshop*

A three-day workshop will be organized for 50 participants to validate the criteria and national objectives established by the PNC and to discuss and endorse the draft Prioritisation Report. Following the meeting, the experts will prepare a final report, setting out criteria, national objectives and priorities taking into account the comments made by the PNC and participants.

4. Formulation of National Implementation Plan including specific Action Plans on POPs

4.1 *Training and assigning mandates to task teams to develop proposals for addressing priorities*

Based on the outcome of the validation workshop, the PNC will propose to the executing agency the recruitment of experts to prepare action plans necessary to address national priority issues. International experts will present training in the development of Action Plans, strategies and the NIP for the national experts recruited.

4.2 *Identification of management options, including phasing out and risk reduction options*

Technical reports setting out management and risk-reduction options to address national priority issues will be prepared. These reports will take into account the increased effectiveness and efficiencies to be gained from building, wherever possible, upon current legislation, institutional structures and capabilities. A team of experts will be appointed for two months to prepare these reports for submission to the PNC.

4.3 *Determination of the need for the introduction of technologies, including technology transfer, possibilities of developing indigenous alternatives*

Internationally available alternative technologies, techniques and strategies will be reviewed to assess their ability to meet requirements for the elimination, reduction and disposal of POPs in Sierra Leone. This review will use criteria based, *inter alia*, upon those set out in part V of Annex C (unintentional production) of the Convention in order to select best available techniques (BAT) and environmentally sound alternatives (Best Environmental Practices – BEP) most appropriate to Sierra Leone and include consideration of indigenous methods that provide protection from pests and diseases for which POPs chemicals may be currently employed.

A team of national experts will be recruited for a two-month period to undertake this review and prepare reports for the PNC.

4.4 *Assessment of the costs and benefits of management options*

Cost benefit analyses will be prepared to evaluate the economic feasibility and costs associated with the recommended management options set out in the technical reports prepared during the activities above. A team of national experts will prepare these reports for the PNC over a period of two months.

4.5 *Development of a national strategy for information exchange, education, communication and awareness raising*

A national strategy for information exchange, education, communication and awareness raising will be prepared in accordance with Articles 9 and 10 of the Convention. A focal mechanism for information exchange will be proposed. A team of national experts will be engaged for two months to prepare this strategy and submit it to the PNC. The Ministry's Environmental Education Unit, which functions under a multi-stakeholder environmental education committee will cooperate to deliver the activities identified under this step.

4.6 *Defining expected results and targets*

The technical, management, BAT and cost-benefit reports, together with the strategy for information exchange will be discussed by the PNC. Proposed actions will be presented by the PNC for discussion and endorsement at a fourth stakeholder workshop to be held in the 19th project month.

4.7 *Development and formulation of a detailed implementation plan, including an action plan for unintentional by-products, PCBs and, where appropriate, for DDT and other POPs as prioritised*

Preparation of the NIP will begin in the 18th project month with the collation of all component reports prepared in earlier activities. It will take into account decisions of the PNC as well as comments and endorsements received from the various stakeholder workshops. The draft NIP will be presented to the PNC for review.

A team of experts will be engaged for three months to prepare the draft NIP and make any necessary revisions. The revised draft will be submitted for review by an independent consultant.

4.8 *Preparation of initial funding request package for implementation, including cost estimates and incremental costs*

Proposed actions identified in the NIP will be costed and funding request packages prepared. These funding packages will establish implementation timetables consistent with Sierra Leone meeting its obligations under the Convention. A team of experts will be engaged in the 21st project month to undertake this activity.

4.9 *Expert review of Implementation Plan*

An independent consultant will review and comment on the revised draft NIP taking in account, in particular, the requirements set out in Article 7 of the Convention.

5. Endorsement of NIP by Stakeholders

5.1 *Submission of final draft NIP to stakeholders for comments;*

To facilitate review and the building of consensus around the NIP, stakeholders will be invited to provide written comments during a two weeks consultation period. The circulation, with the revised draft NIP, of a questionnaire prepared by the independent consultant who reviewed the document, will aid this process. Written submissions will be gathered by the PNC and taken into account in the preparation of the final draft NIP. The independent consultant will be retained for a period of two months for this activity.

5.2 *Final workshop to review and endorsement of the NIP*

A workshop will be organized for all the stakeholders and relevant governmental bodies to review and endorse the final draft NIP. The workshop will also seek to obtain stakeholder commitment of the resources necessary for the successful implementation of the NIP. Approximately 100 people, including high-level governmental officials, national decision makers and international development partners will be invited for this one-day meeting.

A press conference will be held to inform the public.

Following the workshop, the NIP will be submitted, in English, to the Secretariat of the Convention for transmission to the Conference of the Parties.

Project Management and Implementation

The DEP is charged with the protection of the environment, the co-ordination of the actions of the various institutions in this field, and the preparation and supervision of relevant legislations. It is also responsible for national implementation of actions required under international environmental agreements. It will be the executing agency for the proposed enabling activities and has requested UNIDO assistance in submitting its proposal to the GEF.

On approval of the proposal, UNIDO and the DEP will agree on a subcontract for the national administration of the enabling activities.

Under the terms of this subcontract, the DEP will, *inter alia*;

- call principal stakeholders to form a POPs National Committee (PNC) to oversee and coordinate the successful implementation of the enabling activities and to lobby high-level commitment to the objectives of the Stockholm Convention;
- establish a national project office charged with the successful implementation of the enabling activities;
- appoint a National Project Coordinator (NPC) with day-to-day responsibility for the management and coordination of the enabling activities and reporting to the PNC;

- agree with UNIDO on the appointment of a Chief Technical Advisor (CTA) and other international experts as might be required to build national capacities to ensure the successful preparation of the NIP.

The PNC will

- have meetings on a regular basis;
- agree on working arrangements and implementation plans with the NPC and the Executing Agency;
- lead stakeholder workshops to develop consensus and commitment to NIP objectives and plans.

The NPC will

- have day-to-day responsibility for the management and coordination of the enabling activities, including subcontract budgets, and reporting to the PNC;
- appoint national experts as necessary to undertake the various studies required during the course of the project using terms of reference agreed by the PNC and ensure the quality of their work;
- provide a secretariat function to the PNC and stakeholder workshops;
- provide a focal point for information about the implementation of the enabling activities and serve as a publicly-accessible National Information Centre on POPs;
- report regularly to the PNC, to the executing agency, and to the UNIDO appointed CTA, the progress of the project and the disbursement of project funds.

The CTA will

- supervise the development of the NIP in Sierra Leone, working in close co-operation with the NPC, using his experience as CTA for other EA projects implemented by UNIDO in the region and reporting to UNIDO;
- ensure that there is an exchange of experience and expertise between countries of the region;
- ensure national awareness of regional initiatives on POPs, such as the Africa Stockpile Programme (ASP).

UNIDO will

- in consultation with DEP, appoint CTA;
- upon request of the DEP, appoint international experts, wherever possible drawn from the region, for specific project tasks;
- monitor project execution by means of quarterly progress reports and close contact with the CTA;
- organize a mid-term evaluation in line with GEF guidelines at the end of the first year;
- evaluate the efficiency of the project management, including outcomes, the budget and timelines.

PROJECT IMPLEMENTATION PLAN																										
DURATION OF PROJECT																										
Activities	PROJECT MONTHS																									
Completion of major activities		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	Determining Co-ordinating Mechanism and Process Organisation																									
1.1	Needs assessment of focal point																									
1.2	Strengthening of national institution to serve as Focal Point																									
1.3	Formation of multi-stakeholder national coordinating committee																									
1.4	Drawing-up overall workplan																									
1.5	Identification and sensitization of main stakeholders																									
1.6	Obtaining commitment of national stakeholders																									
1.7	Inception workshop																									
2	Preliminary POPs Inventories and Assessments of National Infrastructure and Capacity																									
2.1	Preparation of National Chemical Profile																									
2.2	Constitution of task teams responsible for inventories																									
2.3	Training in inventory procedures																									
2.4	Preliminary inventory of production, distribution, use, import and export																									
2.5	Preliminary inventory of stocks and contaminated sites																									
2.6	Preliminary inventory of releases to the environment																									
2.7	External independent review of initial national POPs inventories																									
2.8	Assessment of infrastructure capacity and institutions to manage POPs																									
2.9	Assessment of enforcement capacity to ensure compliance																									
2.10	Assessment of social and economic implications of POPs use and reduction																									
2.11	Assessment of monitoring and R&D capacity																									
2.12	Identification of POPs related human health and environmental issues of concern																									
2.13	Workshop on preliminary inventories																									
3	Priority Setting and Determination of Objectives																									
3.1	Development of criteria for prioritisation																									
3.2	Determination of national objectives																									
3.3	Organization of national priority validation workshop																									
4	Formulation of National Implementation Plan including specific Action Plans on POPs																									
4.1	Training and assigning mandates to task teams to develop proposals for addressing priorities																									
4.2	Identification of management options																									
4.3	Determination of the need for the introduction of technologies																									
4.4	Assessment of the costs and benefits of management options																									
4.5	Development of a national strategy for information exchange																									
4.6	Defining expected results and targets																									
4.7	Development and formulation of a detailed implementation plan																									
4.8	Preparation of initial funding request package for implementation																									
4.9	Expert review of Implementation Plan																									
5	Endorsement of NIP by Stakeholders																									
5.1	Submission of final draft NIP to stakeholders for comments																									
5.2	Final workshop to review and endorse NIP																									

GEF PROJECT BUDGET

Component	Name of units	Number of Units	Unit Cost (US\$)	Total Cost (US\$)
1. Co-ordinating Mechanism and Process Organisation				
National Project Coordinator (NPC)	work months	24	2,000	48,000
Chief Technical Advisor (CTA)	work months	5	14,000	70,000
Technical assistance (local)	work months	4	2,000	8,000
Technical assistance (international)	work days	5	500	2,500
Inception Workshop	participants/day	100/1	60	6,000
Travel of National experts	person	50	100	5,000
Equipment (computers, software)		3 Computers	4,000	12,000
Sub-total				151,500
2. Preliminary POPs Inventories and Assessments of National Infrastructure and Capacity				
Technical assistance (local)	work months	23	2,000	46,000
Technical assistance (International)	work months	2	14,000	28,000
Training on Inventory Procedures	day	10	1,000	10,000
Analysis Equipment (Kit)	sample	80	100	8,000
Workshops on initial inventories	person	50/1	60	3,000
Travel of National experts	person	50	100	5,000
Sub-total				100,000
3. Priority Setting and Determination of Objectives				
Technical assistance (local)	work months	4	2,000	8,000
Priorities validation workshop	participants/day	50/3	60	9,000
Travel of National experts	person	50	100	5,000
Sub-total				22,000
4. Formulation of National Implementation Plan including specific Action Plans on POPs				
Technical assistance (local)	work months	25	2,000	50,000
Technical assistance (international)	work months	1	14,000	14,000
Training on NIP development	day	10	1,000	10,000
Objectives defining workshop	participants/day	50/1	60	3,000
Travel of National experts	person	50	100	5,000
Sub-total				82,000
5. Endorsement of NIP by Stakeholders				
Technical assistance (local)	work months	2	2,000	4,000
Final Workshop	participants/day	100/1	60	6,000
Sub-total				10,000
Miscellaneous: printing costs, etc. (3%)				10,900
Contingency (5%)				18,200
Total Cost of Enabling Activities				394,600

ANNEX 1
DETAILED INFORMATION ON THE EXECUTING AGENCY

The Department of Environment Protection (DEP) is working under the umbrella of Ministry of Lands, Country Planning and the Environment.

The DEP is responsible for all chemical-related environmental issues and, therefore, has expertise in water monitoring. The different branches of the DEP are in charge of coordinating and executing environment protection projects and environmental monitoring.

DEP is responsible for environmental and chemicals related issues, such as development of legislations, enforcement, coordinating and executing environment related projects. DEP has environmental inspectors, who have the right to enter private premises and ensure enforcement of legislation. Monitoring activities are done through the Institute of Marine Biology and Oceanography. During project implementation the institutes expertise will be strongly utilized.

Institute of Marine Biology and Oceanography was created in October 1965, following the adoption by the University Senate of Proposals from the Faculty of Pure and Applied Science, Fourah Bay College.

The Institute advisory body is an Advisory Committee consisting of representatives of the departments of Geography, Geology, Botany, Zoology and relevant government ministries. The Institute was formerly located at Kissy Dockyard some five miles from the city centre. Following the January 6 1999 rebel invasion of Freetown, its premises were destroyed. It has been relocated on the campus of Fourah Bay Collage. The Institute is headed by the director, while qualified staff include senior research fellows, research fellows, research assistants, laboratory and field technicians.

Research Facilities and Activities

The research facilities of the institute include laboratory, modest data collection instruments and equipment. The computer park is fairly outdated. Research activities include the followings:

1. **Fisheries** - identification, stock assessment and management of commercially important species in coastal and inland waters.
2. **Marine biology and biological oceanography** - studies of primary and secondary production (phytoplankton, zooplankton), benthos, invertebrates, marine bacteriology, fish biology, marine macrophytes (macro-algae, seaweeds, sea grasses), dynamics of mangrove and biodiversity.
3. **Physical and dynamic oceanography** - water - air interactions, water –sediment interactions, hydrogeography and dynamics (including currents, waves of coastal and inshore waters, hydrodynamics, sea-level studies, modelling and prediction of marine systems.
4. **Chemical oceanography and pollution studies** - nutrient cycles, bigeochemical cycles, chemical composition of sea water, studies of dissolved and suspended hydracarbons, heavy metals, trace metals, PCBs; their distribution and effects; ecotoxicology, water pollution studies.
5. **Aquaculture** - identification and development of cultivable fish species (both marine and freshwater), development of ponds, prawn and oyster culture techniques.
6. **Marine geology** - study of startigraphy, sedimentology and applied technology; evolution of beaches and development of coastal defence. Impact of climate change.
7. **Fish processing and preservation** - development of low-cost methods for processing and preserving different types of fish, changes in nutritional value with different storage and processing methods.
8. **Marine resource management** - development of resource and environmental databases.

Participation in international projects

The institute has also participated in a number of international and regional projects, which include:

- Assessment and Control of Pollution in the Coastal and Marine Environment of the West and Central Africa WACAF I and II.
- Coastal Marine Systems in Africa- COMARAP (UNESCO)
- First IOCEA Scientific cruise (Ocean science and non-living marine resources) in the Gulf of Guinea.

Laboratory facilities

Following the January 6, 1999 rebel invasion of Freetown, the laboratories of the Institute of Marine Biology and Oceanography were completely destroyed. The facilities/equipment presently available at IMBO for undertaking environmental monitoring, sampling, analysis and research on POPs and other pollutants are fairly modest, comprising basic analytical equipments.

ANNEX 2

DETAILED INFORMATION ON THE PRESENT STATE OF POPs

General information on POPs

Pesticides

	Description
DDT	Insecticide used on agricultural crops, especially cotton, and insects that carry diseases like malaria and typhus. DDT is still widely used in developing countries mainly for mosquito control and also for the production of Dicofol.
Aldrin and dieldrin	Insecticides used for crops like corn and cotton. Also used for termite control.
Chlordane	Broad spectrum contact insecticide used on agricultural crops including vegetables, small grains, maize, other oilseeds, potatoes, sugarcane, sugar beets, fruits, nuts, citrus, cotton, and jute. Used on home lawns and gardens. Also used for termite control.
Endrin	Insecticide used mainly on field crops such as cotton and grains. Used as a rodenticide to control mice and voles. Also used to combat birds.
Heptachlor	Stomach and contact insecticide, used primarily against soil insects and termites. Also used against cotton insects, grasshoppers, some crop pests, and to combat malaria.
Hexachlorobenzene (HCB)	Fungicide used for seed treatment of wheat, onions, and sorghum. Also found as impurity in several pesticide formulations. Also found as an industrial by-product.
Mirex	Stomach insecticide used to combat fire ants and leaf cutters, harvester termites, mealy bug, and yellow jacket wasps. Also used by a fire retardant in plastics, rubber, and electrical goods.
Toxaphene	A mixture of more than 670 chemicals and an insecticide primarily used to control insect pests on cotton and other crops. Used to control insect pests on livestock and to kill unwanted fish in lakes.

Polychlorinated biphenyls (PCBs)

Major emission sources of PCBs are: certain high temperature industrial processes such as pyrogenous emission from the burning, firing, combustion of fossil fuels, waste incineration, road transport, and crude steel production. PCBs are used in synchronous condensers and capacitors as a good dielectric fluid, in transformers as unburnable heat exchanger, for lubrication and hydraulic oils, in impregnators, as an insulator liquid and as refrigeration liquid.

By-products: PCDD/PCDFs (polychlorinated dibenzo-P-dioxins and dibenzofurans) and Hexachlorobenzene (HCB)

PCDD/Fs have never been produced intentionally. They are formed as by-products of numerous industrial activities and combustion processes. Almost all of the 210 individual congeners have been identified in emissions from thermal and industrial processes and consequently PCDD/Fs are found as mixtures of individual congeners in environmental matrices such as soil, sediment, air and plants and lower animals. PCDD/Fs, particularly the higher chlorinated, are poorly soluble in water, have low volatility, and adsorb strongly to particles and surfaces. Thus, PCDD/Fs are only found in minute concentrations in water and are largely immobile once absorbed to soil. They bioaccumulate in the fatty tissues of animals and humans.

Major possible sources of dioxins and furans are waste incineration, thermal metallurgical processes, power plant combustion of fossil fuels, residential combustion and firing of wood and coal at households, specific chemical processes releasing intermediates, PCB based transformers and electric arc furnace.

Primary sources of environmental contamination with PCDD/Fs in the past were due to the production and use of chloro-organic chemicals including the pulp and paper industry. PCDFs were/are formed as inadvertent by-products in the production and use of polychlorinated biphenyls (PCBs) and, in combination with PCDDs, in the production of chlorophenols and have been detected as contaminants in these products. PCDFs can also be found in residual waste from the production of vinyl chloride and the chloralkali process for chlorine production. Factors favourable for the formation of PCDD/Fs are high temperatures, alkaline media, presence of UV-light, and the presence of radicals in the reaction mixture/chemical process.

Major sources of Hexachlorobenzene (HCB) are almost the same as dioxins and furans: waste incineration, thermal metallurgical industries, use of chlorinated fuels in furnace installations, combustion of fossil fuels, firing of chlorinated compounds, use of solvents and wood preservers and electric arc furnace.

Country-specific information on POPs

Like the majority of African countries, Sierra Leone faces very serious problems on POPs management, namely:

- No nation-wide inventory on POPs;
- Lack of specific legislation on POPs; and
- Lack of information at the political and public level on the POPs hazards.

Production, distribution, use, export, import procedures of POPs

None of the twelve POP chemicals have been manufactured in Sierra Leone. Importation of pesticides and application equipments is undertaken by commercial organisations. Over the years, the former Shell (now Safecon) dominated as an import agent of pesticides for some overseas manufacturers. However, other companies and agents e.g. Mobil and foreign businessmen continue to serve as potential focal points for pesticides import. The imported pesticides are used by government institutions, private enterprises, local communities and individuals. Agriculture and health related governmental institutions are the main consumers of pesticides. These institutions follow a process of tendering before orders are placed. These orders are sometimes executed by agents that are not familiar with the risks involved in the trade of pesticides.

In the agricultural sector the former Sierra Leone Produce Marketing Board (SLPMB) used to procure some pesticides and sprays for cash crops producers (particularly cocoa and coffee) that marketed their products through the board. In 1979/80, the Ministry of Agriculture stocked key pesticides as security storage for special emergency conditions for controlling outbreaks of armyworms.

Ministry of Health has also been involved in the use of pesticides in its campaign against river blindness caused by the black fly (*Simulicea*) and malaria. The applied pesticides were malathiam and izaral.

The Pest Control Unit of the Ministry of Health and Sanitation is also involved in the distribution of pesticides to institutions and also fulfils requests from public and private enterprises as well as from individuals to fight against pest infestations and attacks.

PCBs entered the country through imported electrical appliances, hydraulic oils, impregnators, etc. The current legislation related to POPs in Sierra Leone is summarized in the following table:

Table 1: Current POP legislation in Sierra Leone

Compound	Regulation	Date of effect
Aldrin	Banned*	28 August 2000
Chlordane	Banned *	28 August 2000
DDT	Banned *	28 August 2000
Dieldrin	Banned *	28 August 2000
Endrin	Banned *	28 August 2000
Heptachlor	Banned *	28 August 2000

Mirex	Banned *	28 August 2000
Toxaphene	Banned *	28 August 2000
Hexachlorobenzene	Banned *	28 August 2000
PCBs	Banned * Possibly used in electrical and hydraulic equipment	28 August 2000
Dioxins and Furans	No inventories and measurements have been conducted.	
*Approved by Conceal of Ministries on 20 June 2000.		

Detailed information on the stocks, contaminated sites and disposal opportunities

Stocks

According to the current estimations, there are no significant stockpiles of PCBs in Sierra Leone. It should however be noted that inventories on PCBs and PCBs containing equipments have never been undertaken and published.

Presumably, ministries such as Health and Sanitation, Agriculture and Forestry, Energy and Power, private enterprises, mining companies and local institutions have pesticides in stock for public health emergencies crop yield improvement and domestic pest control purposes. A detailed inventory should be undertaken to map the current stocks qualitatively and quantitatively.

Contaminated sites

Countrywide surveys with the aim of identifying possible contamination sites and determining the levels of contamination have not been undertaken so far. Since there are no standards and legislations for managing wastes, and the current practices can not be named as eco-friendly, the contamination of environmental compartments (mainly water, soil and sediment) can not be excluded and underestimated.

Assessment of disposal opportunities

The main bulk of wastes disposed at the official dump sites in the country are of domestic origin. These contain materials, which are potentially hazardous such as batteries, pesticides, cleaning solvents, bleaching agents, mineral oils and gas containers.

Ministry of Health and Sanitation is responsible for municipal waste collection and disposal, but due to the lack of sufficient logistics, personnel, and disposal facilities (landfill sites and incinerators) badly handicapped. Currently there is no hazardous waste disposal site in Sierra Leone and neither there are incinerators that dispose hazardous wastes. Wastes that inherit the characteristics of hazardous to environment and to human are dumped in municipal landfill sites. It should also be mentioned that these landfill sites are not designed and controlled properly. Poisonous chemicals can enter the surface and ground water tables. People can access them and researchers often "recycle" everything that has any value.

Hazardous Waste Management

Currently hazardous waste management has not yet been designed and introduced in the country. Information on hazardous waste collection, storage and disposal is poor. Hazardous waste database has not yet been developed in the country and environmental inspections in this regard had been very modest. The registration, filing and reporting rules on hazardous wastes have not yet been outlined.

Alternative technologies

Presently no alternative non-combustion technologies for POPs management can be found in the country.

Detailed information on the releases to the environment

Currently there are no procedures and methodologies for emission estimation and reporting for any pollutants. Therefore neither there is a preliminary estimation of POPs releases into the environment. PCBs are emitted during the burning of synchronous condensers and capacitors transformers. The technical expertise is also missing to prepare the first inventories. Therefore as a first step a training programme and technical assistance is essential.

Detailed information on the regulatory control

The Environmental Act, GPA 2000 is the main regulatory instrument for the protection of the country's environment. This legislation outlines the administrative duties and functions. Ministry of Land Housing, Country Planning and the Environment is responsible for drafting, monitoring and enforcing all environment related laws through its Department of Environment Protection. The Environmental Board the statutory organ charged with overseeing the activities of the department. It also makes provisions for Environmental Impact Assessments for new facilities falling into certain categories and for disposal of hazardous and toxic wastes. It also mandates DEP to carry out environmental monitoring and inspections at certain facilities. However, enforcement of the provisions of the Act is scattered due to the lack of financial resources. There are also sectoral regulations of various ministries, which are often overlapping and conflicting with each other. These sectoral regulations do not specifically address the production, import, distribution, use and disposal of pesticides. Strong capacity building is necessary to build credible expertise in the country to draft, amend and audit environment related legislations.

Monitoring of POPs

There is no national institution charged with the responsibility of monitoring air quality and emission values and no emission control network has been established. Neither there is a laboratory in the country equipped with the facilities to undertake accurate analytical measurements.

Water quality monitoring is primarily the responsibility of the Ministry of Health and Sanitation, but in this case the regulation is overlapping and other authorities are also charged with the same subject. Efforts have already been made to coordinate their operation as provided by the Environment Pollution Agency, 2000, but no permanent programmes have been started yet.

Soil monitoring is traditionally falls under the responsibility of the Ministry of Agriculture, while the Institute of Agricultural Research (IAR) of Njala University Collage carries out soil analytical research, but there is no specialised institution charged with monitoring this environmental compartment on a regular basis.

HUMAN HEALTH ASSESSMENTS

Human Health assessments have not yet been undertaken in Sierra Leone.