

**REGIONAL PROJECT TO DEVELOP APPROPRIATE
STRATEGIES FOR IDENTIFYING SITES CONTAMINATED
BY CHEMICALS LISTED IN ANNEXES A, B AND/OR C OF
THE STOCKHOLM CONVENTION**

ANNEXES

(revised 4 August 2006)

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ANNEX 1: INCREMENTAL COST ANALYSIS

Regional Context and Broad Development Goals

Many countries in Africa such as Ghana and Nigeria recognize the problem of sustainability that ongoing POPs project would face where they deal only with the problem of disposal of stockpiles while ignoring the related problem of subsequent cleanup of sites contaminated with POPs chemicals. Such contaminated sites if redeveloped or redeployed for agricultural or housing purposes will pose significant and immediate threats to human and animal health and the environment. It is always cheaper to take precautionary and preventive action before using contaminated land for rural or urban development or put into agriculture so as to avoid expensive mistakes such as the Love Canal saga in the USA. Ghana and Nigeria have consequently approached UNIDO to assist them through GEF grant to develop policies and regulations for the rehabilitation of contaminated sites, capacity building in identifying contaminated land and in selection of methodology for site remediation, public education, setting up of Information Management System (IMS). At a later stage, through public-private partnership and other donors' support, it is expected to promote proper clean up of such sites while promoting the transfer of appropriate remediation technologies conforming to Best Available Techniques (BAT) and Best Environmental Practices (BEP) in accordance with the guidelines prepared by the Open-ended Working Expert Group on BAT/BEP of the Stockholm Convention.

The proposed project will take up the issue of POPs contaminated lands/sites in the region. It will provide the necessary policy/legal framework as well as national/regional incentive to identify POPs contaminated land and undertake remediation measures after a thorough scientific and technical analysis of various parameters based on Risk Based Decision Making (RBDM). The goal of the stakeholders' involvement and highlighting public-private partnership for any future development of contaminated land/sites has been adequately addressed by the project. Geoenvironmental R&D Centres to deal with technical aspects of site identification and experimental scale model testing will be established in existing institutions in the participating countries. Public awareness and education is given great importance for reliability, responsibility and sustainability.

Baseline

The total cost of the project is US\$ 4,730,00 including funds expended for the PDF-B (with US\$ 80,000 as co-financing) during the project preparation. The GEF contribution to the project, which is the subject of this proposal, is US\$ 2,000,000. The Government of Ghana and Nigeria and other donors including UNIDO and GRC-Cardiff and others will contribute US\$ 2,000,000. The total baseline is estimated at US\$ 5,020,000. The project has five major outputs and the Government baseline estimated for each output is based on the existing facilities and capabilities of the countries at the time of the preparation of the project. The baseline takes into account the efficient use of existing facilities and human resources for each output. To achieve the outputs, the corresponding costs of clean up of potential POPs contaminated hotspots that will result in national and regional benefits is taken into consideration. It will also have considerable benefits in reducing health risks to those exposed to the contaminated sites. In addition, it will potentially boost revenue income from the use of cleaned up land for various economic, residential and social activities. In order to develop the participating countries' capacity building in this field to achieve national or international standards, the costs to overcome the barriers have been calculated based on

experiences in similar activities in developed countries. The accrued benefits of the project from maximum stakeholders' involvement have induced interest of the private sector particularly when the Geo-environmental Research Centre of Cardiff University was involved in the public participation strategy as a technical and scientific institution providing services to the project. Thus, increased public knowledge and awareness will catalyze public-private partnership.

A detailed analysis of both pollutant pathways and benefits of the projects on recovered sites following the remediation and even by containment of the soil contaminants with regular monitoring to assess the direct and indirect benefits to the community living nearby and to the environment would be necessary. In order to achieve this capability and prevention of future POPs contamination in the region, five major outputs of the project brief would facilitate the removal of barriers. Therefore the relative GEF, Government and donor contributions presented in this report represent a satisfactory "cost sharing arrangement". The high baseline cost given to Components 4 and 5 was due to the fact that both Ghana and Nigeria have good infrastructure (human and physical) for chemical analysis, data information collection/storage/dissemination, active press/media. However, in order to achieve good coordination, development of technology and proper risk assessment/management and create regional stakeholders' awareness, the barriers removal cost is high as reflected in the cost matrix table.

Summary Incremental Cost Matrix in US\$

<i>Component</i>	<i>Baseline</i>	<i>Alternative</i>	<i>GEF</i>	<i>Co-finance (Region)</i>	<i>Co-finance (Donors incl. UNIDO)</i>
Project Coordination	50,000	665,000	300,000	100,000	265,000
Regional Policy/Legal Framework Enactment	100,000	500,000	250,000	100,000	150,000
National and regional capacity building and institutional strengthening	600,000	475,000	275,000	50,000	150,000
Toolkit for environmentally sound and economically feasible remediation technologies	2,520,000	1,650,000	875,000	150,000	625,000
IMS/public awareness and environment education	1,700,000	450,000	200,000	50,000	200,000
M&E Plan	50,000	260,000	100,000	50,000	110,000
TOTAL	5,020,000	4,000,000	2,000,000	500,000	1,500,000

The GEF Alternative:

The GEF alternative (GEF contribution plus co-financing) for each component including the M&E plan are given based on the estimated barrier removal cost. For project coordination, the GEF alternative will provide US\$ 665,000, for regional policy and legal framework, US\$ 500,000, for national and regional capacity building and institutional strengthening US\$ 475,000, for methodology and technology selection, US\$ 1,650,000, for IMS, public awareness and environmental education US\$ 450,000 and for monitoring and evaluation US\$ 260,000. The barrier removal and replicability of the outputs in other parts of the ECOWAS region will have a long-term beneficial effect in reducing the overall barrier cost removal. It should also be borne in mind that the project deals with a multidisciplinary and complicated area of soil decontamination and the incremental cost depends very much on the value of the contaminated land depending on its location and the type of use it is likely to be put viz commercial, social, educational or agricultural use.

Incremental Costs and Project Financing

Component	Sub-component	Increment in US\$				
		Ghana	Nigeria	GEF	UNIDO	Other Donors
1. Project Coordination	1.1. Establish RMC for Ghana and Nigeria 1.2. Establish RSC with TOR 1.3. Establish RCU with TOR and all support facilities	10,000	10,000	10,000		
	1.4. Recruit CTA	0	0	100,000		80,000
	1.5. Appoint Regional Coordinator and Admin. Staff (maximize synergies and avoid regional duplication)				120,000	
	1.6 Recruit two National Programme Officers and admin. Staff	20,000	20,000	150,000		
	1.7. Establish all NCUs with TOR 1.8. Equip RCU with all required facilities including office space rent	10,000	10,000	10,000	50,000	5,000
	1.9. Skill share workshops for RMC/RCU and regular review meetings	10,000	10,000	30,000		10,000
	Sub-Total		50,000	50,000	300,000	170,000
2. Regional Policy/Legal Framework	2.1. Develop regional policy for management of contaminated sites. 2.2. Recruit international and national experts to assist in drafting of environmental legislation. 2.3. Develop, reform existing policies to cover management of contaminated sites. 2.4. Keep RMC fully informed of the policies developed to facilitate enactment.	40,000	40,000	200,000		120,000
	2.5. Organize and conduct regional/national training programme for staff on requirements/enforcement of legal framework.	10,000	10,000	50,000		30,000
Sub-Total		50,000	50,000	250,000		150,000

Component	Sub-component	Increment in US\$				
		Ghana	Nigeria	GEF	UNIDO	Other Donors
3. National and Regional capacity building and institutional strengthening	3.1. Regional/national classification system.	5,000	5,000	25,000		20,000
	3.2. Strengthening of institutional capacity for mitigation of land contamination and sustainable contaminated land management.	20,000	20,000	250,000		130,000
	3.3. Human resource capacity development on sustainable methodologies for contaminated land site identification and remediation.					
	3.4. Programmes for stakeholder involvement, public awareness and education programmes.					
Sub-Total		25,000	25,000	275,000		150,000
4. Toolkit for selection of environmentally and economically feasible remediation technologies for Ghana and Nigeria	4.1. Establish two geoenvironmental centres in participating countries.	55,000	55,000	725,000		250,000
	4.2. Develop methodology for the systematic and stepwise identification of potentially POPs contaminated sites with regional context (including all risk studies).					
	4.3. Develop an analytical toolkit for decision/support system for environmentally sound and economically feasible technologies for contaminated sites.					
	4.4. Deploy selected methodology and framework for the identification and selection of appropriate low-cost remediation technology for POPs contaminated sites based on samples taken from the contaminated sites. <i>Note: GEF funds will be used to develop the methodology and not for remediation purposes.</i>					
	4.5. Undertake experimental project(s) to verify effectiveness of low-cost technology and validate site selection methodology, framework for remediation technology selection and the selected technology option. <i>Note: GEF funds will be used to develop the methodology and not for remediation purposes.</i>	20,000	20,000	150,000		375,000
Sub-Total		75,000	75,000	875,000		625,000

Component	Sub-component	Increment in US\$				
		Ghana	Nigeria	GEF	UNIDO	Other Donors
5. IMS, public awareness and environmental education	5.1. Develop project strategy for communication for all parties engagement. 5.2. Establish effective national database on POPs contaminated sites.	5,000	5,000	70,000		70,000
	5.3. Establish IMS as per requirements for a 10-year IMS strategic plan.	8,000	8,000	42,000		42,000
	5.4. Organize programmes of education and awareness for all relevant stakeholders including ECOWAS region.	8,000	8,000	42,000	10,000	32,000
	5.5. Develop/deploy complimentary websites, newsletters for regional dissemination of POPs related information	4,000	4,000	46,000		46,000
Sub-Total		25,000	25,000	200,000	10,000	190,000
6. Regional M&E Plan	6.1. Develop baseline for some M&E indicators for the project outputs	5,000	5,000	30,000		30,000
	6.2. Establish a socio-economic assessment and indicators for POPs exposure due to POPs contaminated sites	5,000	5,000	20,000		20,000
	6.3. Mid-term and Terminal project review exercise (excluding UNIDO staff time)	5,000	5,000	20,000	20,000	
	6.4. M&E of the various non-civil society stakeholders	5,000	5,000	20,000		20,000
	6.5. Involve civil society/participation in M&E	5,000	5,000	10,000		20,000
Sub-Total		25,000	25,000	100,000	20,000	90,000
GRAND TOTAL	4,000,000	250,000	250,000	2,000,000	200,000	1,300,000

ANNEX 2: LOGICAL FRAMEWORK ANALYSIS

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Overall Objective			
Long Term Objective:	<ul style="list-style-type: none"> - Regional capacity developed to identify and take risk-based decision to clean-up and monitor POPs contaminated sites. 	<ul style="list-style-type: none"> - Policies/legal framework enacted as law and tool kit available for site/ methodology identification and Centres of Excellence. 	<ul style="list-style-type: none"> - Policies are enshrined and enforcement mechanism worked out.
Mid-Term Objective:	<ul style="list-style-type: none"> - Experimental scale testing on site remediation carried out and results analysed, public/NGO knowledge enhanced. 	<ul style="list-style-type: none"> - Geoenvironmental Centres established; results of experimental scale testing. 	<ul style="list-style-type: none"> - Experimental scale results not conclusive.
Short-Term Objective:	<ul style="list-style-type: none"> - Policy/legal framework drafted, stakeholders involved, RCU formed, various committees established. 	<ul style="list-style-type: none"> - Workshops/seminars carried out, trained people on board, minutes of committee meetings. 	<ul style="list-style-type: none"> - RCU provided with premises and regional character maintained.
Output 1: A suitable regional organization/arrangement for timely and well monitored implementation of the project			
<ul style="list-style-type: none"> - Establish a high level Regional Ministerial Committee (RMC) for overall supervision of the project and meeting twice annually. - Establish a Regional Steering Committee (RSC) to monitor the progress of the project and make recommendations for any changes/modifications to activities, outputs and budget allocations. Prepare terms of reference. - Establish a Regional Coordination Unit (RCU) for day-to-day implementation of the project. Prepare terms of reference for the Unit. 	<ul style="list-style-type: none"> - RMC, RCU and NCUs in place - TORs for all units/committees - Well-defined work plan in operation - Organization of regional seminars on policies and capacity building in cooperation with ECOWAS 	<ul style="list-style-type: none"> - RMC established, RCU at UNIDO Regional Office with 3 staff members (2 part-time and 1 full time) with office facilities, NCUs established in government offices. - Channel of communication, minutes of meetings, recruitment of experts, reports - Two regional seminars based on Outputs 2 & 5 in the ECOWAS region with reports. 	<ul style="list-style-type: none"> - Members of RMC are at high-level policy makers. - Reasonable office premises given by the government with administration staff and furniture. - A broadly representative RSC appointed by the RMC. - Capacity and will to undertake and invest in successful knowledge /skills sharing workshops.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
<ul style="list-style-type: none"> - Recruit Chief Technical Advisor. - Appoint Regional Co-ordinator (maximize synergies and avoid regional duplication) and National Programme Officers and administrative staff for the RCU. - Establish all the National Coordination Units (NCU) and prepare terms of reference. - Equip both RCU and NCU with office equipment and other facilities as agreed during the project implementation. - Skill share workshops in Ghana and Nigeria annually for project teams (RMC and RCU) and other potential country participation 			
Output 2: Establishment of Regional Policy and National Legal frameworks for the management of contaminated sites			
<ul style="list-style-type: none"> - Recruit national and international experts to assist in policy and legislation development - Develop regional policy for the management, (enforcement, monitoring, evaluation and remediation) of contaminated environment based on a risk assessment model. - Keep the RMC fully informed of the policies developed and take overall responsibility for monitoring the implementation of the policy when enacted through national legislation. 	<ul style="list-style-type: none"> - Policy/legal framework enacted enforcement mechanism in place. 	<ul style="list-style-type: none"> - Draft policy/legal framework discussed by Parliament. - Staff allotted with responsibilities for enforcement and stakeholders made aware. 	<ul style="list-style-type: none"> - Individuals with sufficient expertise can be identified and recruited. - Stakeholders actively engage in the development of the draft regional policy. - Sufficient political will to adopt draft policy and stakeholders actively engage in the monitoring of its implementation. - Sufficient legislative time is provided for the drafting and passing of national legislation. - Dependent on the adoption of the regional policy and enactment into national law. Requires commitment from regulatory staff to attend training courses.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
<ul style="list-style-type: none"> - Develop and obtain approval of policies and to have overall responsibility for monitoring the implementation of the policy when enacted through national legislation. - Develop, reform and extend existing policy and legislation to cover the management of contaminated environment. - Establish regional/national training programmes for staff and major stakeholders in the enforcement of the legal framework. 			<ul style="list-style-type: none"> - Agreement on terms of reference for the unit and its location. Sufficient resources made available to ensure efficient functioning. - RSC/RMC kept fully informed in order to speed up legislation/ enactment process.
Output 3: National and Regional capacity building and institutional strengthening			
<ul style="list-style-type: none"> - Recruit national and international experts in capacity building, institutional strengthening, human resource capacity development and capacity for stakeholder engagement, public awareness and education programmes. - Establish working group formed from local and national experts and other key stakeholders. - Establish two Geoenvironmental Centres; one in Ghana and one in Nigeria. - Organize intensive course on Geoenvironmental Engineering to cover risk assessment, site investigation (desk and field), contamination and remediation, i.e. train the trainers. 	<ul style="list-style-type: none"> - Regional/national classification guidelines for risk assessment/management with trained staff - Capacity established in POPs contaminated site identification 	<ul style="list-style-type: none"> - Document on regional/national classification guidelines, training course materials on risk assessment/risk management, training of trainers about 5 each in the participating countries. - All stakeholders fully involved in training courses. - MoU with existing laboratory (one each in Ghana and Nigeria) acting as Geoenvironmental Centre with all facilities/trained personnel. MoU established with similar institution in developed country. 	<ul style="list-style-type: none"> - Individuals with sufficient expertise can be identified and recruited. - Those trained will remain in direct employment of the project. - Capacity to be developed will be appropriate for the task to be completed. - Existence of political will of the leaders in the two countries. - Existing laboratories will be upgraded.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
<ul style="list-style-type: none"> - Develop rational approach for site classification based on risk management. - Prepare Regional / National classification guidelines - Establish R&D units (or contaminated land mitigation units) in Ghana and Nigeria - Organize training programme (for interested stakeholders) on the mitigation of land contamination (develop indigenous experience). - Twinning of a research centre in developed country with Universities in Ghana and Nigeria, encourage sharing and collaboration. Prepare Memorandum of Understanding (MoU). - Awareness and mainstreaming. 			
Output 4: Toolkit for selection of environmentally sound and economically feasible remediation technologies			
<ul style="list-style-type: none"> - Establish necessary drafting group for the site identification methodology - Develop methodology for the identification of potentially POPs contaminated sites in Ghana and Nigeria with a regional prospect (including all risk studies). - Inventory taking for all contaminated sites by industrial POPs in Ghana and partially in Nigeria. - Organise three (3) POPs site identification methodology stakeholder consultation workshops. 	<ul style="list-style-type: none"> - Toolkit for developing systematic strategies to identify POPs contaminated lands and selection of appropriate low-cost technology for contaminated land remediation 	<ul style="list-style-type: none"> - Documented evidence for identification strategies (risk studies). - Physical existence of toolkit for contaminated site identification and technology selection. Results of cleaning up of experimental scale clean up operations. 	<ul style="list-style-type: none"> - The site identification methodology and technology selection framework developed are equally applicable to the West African region as well as Ghana and Nigeria. - The stakeholders of selected laboratories for equipment and personnel strengthening are willing to cooperate with the project. - Stakeholders of the selected sites for pilot studies are willing to cooperate with the project.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
<ul style="list-style-type: none"> - Establish the necessary technology selection framework and toolkit drafting group. - Develop site selection framework and toolkit for a decision support system for the selection of low-cost environmentally sound economically feasible technologies for the remediation of POPs contaminated sites. - Organise three (3) POPs technology selection/framework stakeholder consultation workshops. - Establish the deployment and analytical studies working group. - Identify and select laboratories in both Ghana and Nigeria to undertake laboratory testing of selected technology framework - Deployment of the selected methodology and framework for the selection of low-cost appropriate remediation technology for POPs contaminated sites. - Strengthening laboratory capacities in equipment and personnel. - Undertake laboratory trials to check the suitability of selected methodology - Identify up to four (4) POPs contaminated sites (2 in each participating country). - Undertake experimental Project(s) in the designated sites in Ghana and Nigeria to verify and validate the site 			<ul style="list-style-type: none"> - The developed methodology for site identification and technology selection are correct. - The selected technologies will clean up the analytical study sites to the required level.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
selection methodology, the framework for remediation technology selection and the selected technology option.			
Output 5: Establishment of Environmental IMS, a framework for stakeholder engagement and a Public Educational and Awareness Programme			
<ul style="list-style-type: none"> - Recruit local and national experts for IMS, stakeholder engagement and public Educational and Awareness Programmes. - Establish a project strategy for communication and stakeholder engagement including a long-term strategic communication plan. - Establish the necessary POPs potentially contaminated sites database working group. - Establish an effective, national database for potentially contaminated POPs sites. - Establish an Environmental IMS working group to specifically develop and deploy a 10-year Environmental IMS Strategic Plan. - Establish an effective Environmental IMS to include relevant stakeholder information dissemination, assessment tools, classification system, remediation methodologies and best practices techniques. - Strengthening of IMS capacities in equipment and personnel. - Organise three (3) IMS stakeholder consultation workshops. - Undertake activities necessary to strengthen understanding of POPs 	<ul style="list-style-type: none"> - Project strategic plan for communication implemented. 	<ul style="list-style-type: none"> - A website on contaminated sites, newsletters, environment/economic indicators, press reports, public awareness campaign, promotion of private-public partnership. 	<ul style="list-style-type: none"> - Individuals with sufficient expertise can be identified and recruited. - The elements of sustainability described in the Sustainability section of this proposal have been successfully met. - Education and awareness programme are capable of being successfully received by all stakeholders equally. - Single country successes by both IMS and issue awareness programmes are able to translate into more regional applications. - A key assumption is that sufficient stakeholder interest can be fostered to participate in and engage positively with the activities for information dissemination, networking, workshops and education and awareness programmes.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
<p>issues through programmes of education and awareness for all relevant stakeholders.</p> <ul style="list-style-type: none"> - Identify and engage with all relevant sector stakeholders. - Organise at least two (2) POPs networking / workshop events per year in each country. - Disseminate information, knowledge, legislative updates and best practise across all aspect of POPs. - Plan and host at least two (2) meetings per year of the POPs Stakeholder Engagement Committee (SEC) to champion stakeholder interests and development of education and awareness campaigns in each country. - Development and deployment of complementary websites, newsletters and systems for internal and external dissemination of POPs related information and key messages. 			
Output 6: Regional monitoring and evaluation plan			
<ul style="list-style-type: none"> - Recruit local and national experts. - Establish the necessary M&E guidelines drafting working group. - Establish baseline indicators according to the GEF M&E guidelines. - Organise three (3) M&E indicator guidelines consultation workshops. - Establish the necessary UNIDO Evaluation and Review Mechanism Drafting Committee. 	<ul style="list-style-type: none"> - TORs for evaluation of the project in accordance with GEF M&E policy guidelines covering: <ul style="list-style-type: none"> - Relevance - Effectiveness - Efficiency - Results - Sustainability 	<ul style="list-style-type: none"> - Achievements of outputs and timely implementation reports - Stakeholders' cooperation/commitment, evidence of private-public partnership, sustainability/replicability of outputs, reports on mid-term evaluation, if any. 	<ul style="list-style-type: none"> - M&E should not be overlooked. - Individuals with sufficient expertise can be identified and recruited. - Sufficient funds made available for internal/external evaluation in accordance with GEF/UNIDO policies and procedure.

Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
<ul style="list-style-type: none"> - Review the monitoring mechanisms (to include project performance and evaluation review (PPER), Tripartite Review (TPR), mid-term independent evaluation and external evaluation). - Active involvement and participation in the GEF annual Project Implementation Review (PIR). - Proactively collect and analyse M&E activities from each of the other project outputs. - Actively assist and monitor the M&E for all other tasks and activities from project outputs. - Collate and structure the M&E priorities from all project outputs into a single consolidated plan for the project. - 			

ANNEX 3A: STAP REVIEW

STAP TECHNICAL REVIEW OF GEF PROJECT PROPOSALS

Subject of the Review:

Project name: Regional project to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annexes A, B and/or C of the Stockholm Convention

Requesting countries: Republic of Ghana and Federal Republic of Nigeria

Background and justification:

While most of the developing countries and the countries in economic transition banned agricultural and industrial Persistent Organic Pollutants (POPs) decades ago, they are burdened with obsolete stocks of POPs pesticides lying in unattended warehouses, buried underneath the ground without proper records and protective and monitoring measures, and PCBs contaminated and leaking electrical equipment. In addition, there is practically no knowledge/information to the public at large regarding the release of unintentionally produced highly toxic by-products namely dioxins and furans (also HCB and PCBs) from various industrial and non-industrial categories specified in Annex C, Article 5 of the Stockholm Convention.

Project clearly illustrates that presently the major types of chemicals used in Ghana and Nigeria are imported. Many of them are used in or arise from industry, agricultural and public health vector disease control. The inventory of obsolete pesticides has shown that there are stockpiles of persistent organic pollutants, which need to be disposed of since they are associated with risks to health and the environment.

The results of inventories carried out in Ghana and Nigeria as part of the preparation of their National Implementation Plan (NIP) indicated that there are several hundreds of metric tons of stockpiles/obsolete pesticides, which may include POPs pesticides. Sites where the stockpiles are stored need to be investigated for possible soil and ground water contamination. Potential sources of POPs releases in Ghana and Nigeria include:

- Locations where electrical equipment (particularly transformers and capacitors) were serviced
- Areas where spillages occurred during the filling of such equipment with PCBs
- Poorly designed and maintained storage sites;
- Locations where POPs wastes were/are potentially dumped (including co-disposal of hazardous and/or domestic waste);
- Waste discharges from chemical plants, where elemental chlorine is involved in the technology;
- Sewage sludge treatment plants; and
- Former organochlorine pesticides manufacturing/formulation plants;

The immediate surroundings of all leaking transformers are potential contaminated sites. This could be as a result of spillage resulting from maintenance operations of the main utility service providers. Transformers are occasionally filled or topped up with oil, which could be PCB oil. PCB- containing wastes for example may also be found at the Accra Central Station of the Electricity Company of Ghana, where broken down transformers from all over the country are repaired. This is located in the city's biggest open market where all types of goods, including vegetables, fruits, groceries, clothes and other goods are sold. There is a drainage which carries all spilled oil into the sea thus if the transformer oil is contaminated with PCBs it is a major hot spot not only contaminating the local

areas but also international waters. In Nigeria similar sites contaminated with PCBs may be found at Ijora warehouse of the Power Holding Company of Nigeria.

Available evidence indicates that contents of the dirty oil (PCB contaminated oil) reservoir in both countries are unofficially and illegally sold out to:

- Enterprising women who illegally use the oil or possibly PCBs to formulate beauty creams for sale on the open market
- Welders for use in welding machines as coolants
- People who apply them as lubricants in domestic sewing machines
- Other entrepreneurs who formulate mixtures with sawdust for industrial and domestic use as fuel

Scientific and technical soundness of the project:

There are unconfirmed reports of volumes of pesticides containers buried at some specific locations. For example in Ghana, it is alleged that the pesticides containers, might include POPs pesticides, were buried in the early 1970's at the premises of the Plant Protection and Regulatory Services Department (PPRSD) at Pokuase in the Ga District of the Greater Accra Region as well as at the Tono and Veia Irrigation projects in the Upper East Region. These locations are within important river basins such as the Densu and Volta. Similarly in Nigeria the African Stockpile Programme has identified some warehouses where obsolete pesticides including POPs are stocked. These places are: Lagos, Kaduna, Ibadan and Kano.

Following the identification of hotspots using the proposed methodology for site identification and after the selection of the economically viable and environmentally friendly remediation technologies, pilot scale remediation experiments for low cost technologies will be undertaken in both Nigeria and Ghana. Special emphasis will be given to sites that can be considered as hot spots of contamination.

Suitable training and supervisory assistance will also be provided to Ghana and Nigeria by linkage and partnership arrangement with relevant institution(s) in the developed world. Most importantly the proposed project will bring out two sets of toolkit; one for the systematic identification of land/sites contaminated by POPs and the other for methodologies to be adopted in the region for decontamination using low cost technologies. Such toolkits will benefit the whole of the Africa region.

The immediate objective of the programme includes:

- Policy and legal frameworks developed for management of contaminated lands/sites;
- Institutional capacity strengthened for mitigation of land contamination and sustainable land management.

List of outputs and activities summarized what will be done in this project.

Identification of the global environmental benefits and/or drawbacks of the project:

Project is focused to the help with removing barriers to the further adoption and effective implementation of available technologies.

This project is also very important for the developing of market with waste treatment technologies and broader competition.

However, many countries in Africa such as Ghana and Nigeria recognize the problem of sustainability that ongoing POPs project would face where they deal only with the problem of disposal of stockpiles while ignoring the related problem of subsequent cleanup of sites contaminated

with POPs chemicals. Such contaminated sites if redeveloped or redeployed for agricultural or housing purposes will pose significant and immediate threats to human and animal health and the environment.

Fitting of project within the context of the goals of GEF:

Nigeria and Ghana have consequently approached UNIDO to assist them through GEF funding to develop policies and regulations for the rehabilitation of contaminated sites, capacity building in identifying contaminated land and in selection methodology for site remediation, public education, setting up of Information Management System (IMS) and at a later stage through public-private partnership and other donors support, promote proper clean up of such sites while promoting the transfer of appropriate remediation technologies conforming to Best Available Techniques (BAT) and Best Environmental Practices (BEP).

The inventory of obsolete pesticides and other Persistent Organic Pollutants (POPs) chemical stocks is an integral component of the GEF funded Enabling Activities for the development of the National Implementation Plans (NIP) underway in Ghana and Nigeria and is expected to provide national listings of chemicals contaminated sites. The listings are not, however, associated with the identification of the risks to health and the environment that these sites pose. Both countries are covering NIP activities with the support of UNIDO and are aware of the fact that identification of contaminated sites for developing an inventory is very complicated with no available data.

Regional and/or global context:

The project is example of potential joint and useful collaboration between international bodies such as GEF and national authorities (local Government) and local private sector for future efforts which will be undertaken pursuant to the Stockholm Convention.

Important aspect is that the real regional hotspot was selected for this model study and results can be very useful for other GEF Projects in this part of Africa or in other part of Globe.

Demonstration of this approach in the region of Africa is very suitable, because a lot of countries in this part of Africa have huge amount of contaminated sites.

The main outcome of the Full Project would involve development of policy and legal frameworks for the management of POPs contaminated lands/sites in Ghana and Nigeria and possible use of this experience to extend the results to the West African region. It would also include activities leading to enhance national and regional assessment capacity and institutional strengthening on issues of POPs contaminated lands/sites. Over and above it will establish planning details for pilot case demonstration for identification and assessment of use of low cost but environmentally sound remediation technologies in selected hotspots in the two participating countries. The activities would also address outcome of issues of socio-economic importance namely Stakeholder Involvement and Establishment of Information Management System (IMS), Public Awareness and Environmental Education Programme.

Therefore a regional approach will have a far reaching effect for other countries in the region to move towards environmentally sustainable economic and industrial development.

The successful destruction and clean-up of the POPs stockpile and associate waste matrices (e.g. contaminated soils and sediment) in the demonstration area would eliminate the source of heavily contaminated leachates that is continuously feeding into the Guinea Current Large Marine Ecosystem (GCLME) and consequently would obviate a major source of PCB to the GCLME's input inland waters, thus mitigating what is currently a very serious public health problem in the Region, while

simultaneously addressing designated hotspots in the GCLME Region, which is the subject of a series of interventions under the International Waters Operational Programme (OP) # 8 of the GEF.

There are a number of ongoing programmes and projects, which are being supported by different donors in both countries, which, because they are closely related to the proposed project, provides leverage for obtaining further donor support. A summary of the ongoing programmes and projects is mentioned.

Project Design:

As previously enumerated the project is a response to address problems of inadequate capacity in developing countries in identifying and remediating POPs contaminated lands/sites based on systematic investigation and risk assessment studies.

With the ASP putting emphasis on environmentally sound disposal of obsolete stocks of POPs pesticides, an obvious follow-up is the need to develop capacity for the identification and remediation of POPs contaminated lands/sites. African countries therefore need a national/regional approach to clean the agricultural and industrial land/sites contaminated with POPs and other similar contaminants.

The overall objective of the programme is to build capacity and strengthen institutional arrangement and develop appropriate strategies for identifying sites contaminated by chemicals listed in annexes A, B and or C of Stockholm Convention. The project will also assess the viability of environmentally sound and low-cost remediation technologies. Results of these pilot project experiences will be extended to other countries in the region.

The immediate objective of the programme includes:

- Policy and legal frameworks developed for management of contaminated lands/sites;
- Institutional capacity strengthened for mitigation of land contamination and sustainable land management.

Evidence for government commitment and sustainability:

The sustainability is described. The Governments of participated countries is mentioned.

This Project Brief takes into account sustainability by linking project benefits to countries sustainable development benefits as well as through expanding the scope of contaminants beyond the POPs group to Persistent Toxic Substances (PTS).

Available evidence indicates that contents of the dirty oil (PCB contaminated oil) reservoir in both countries are unofficially and illegally sold out to:

- Enterprising women who illegally use the oil or possibly PCBs to formulate beauty creams for sale on the open market
- Welders for use in welding machines as coolants
- People who apply them as lubricants in domestic sewing machines
- Other entrepreneurs who formulate mixtures with sawdust for industrial and domestic use as fuel

Project barriers, risks, sustainability and commitment:

Project very detailed describes potential barriers and risks of project realization.

The most important topic of information campaign concerning to the application of this approach is to describe to Civil Society that is necessary to destroy all obsolete POPs stocks and contaminated wastes because the present disposal and storage is unacceptable and potentially dangerous for the environment and human.

The five principal risks that need to be taken into account for this programme and project include:

- The possibility that the programme and project will not be sustainable for financial and other reasons beyond the life of the GEF intervention.

The risk is low due to the fact that the capacity building achieved in the project would be broadly applicable to many similar toxic contaminants.

- The possibility that there exists inadequate and ineffective political will, government support and actual commitment for the Programme and Projects.

This is low since the project puts emphasis on policy/legal framework, countries driven ownership approach and will be implemented under the supervision of a committee at Ministerial level indicating full commitment.

- The possibility of inadequate time frame in which to complete and achieve the outlined tasks

The risk is none due to the fact the implementation will be based on a work plan that will be monitored periodically and remedial action and adjustments made to meet the timely inputs to achieve the outputs:

- The possibility of inadequate and ineffective stakeholder participation during the project as well as the possibility of conflicting long term stakeholder priorities.

The risk is low due to the fact that during the preparation of the country NIPs and the present project brief all the stakeholders played an important role and even wanted expanded coverage of toxic contaminants and not restrict only to POPs.

The capacity building, especially in public awareness, environmental education, NGOs and stakeholders' involvement and establishment of a well functioning IMS will provide the long term knowledge upgrade of public, civil servants and civil society which will have its own momentum for providing information on POPs land pollution and consequent impact on other environmental matrices including water bodies.

In the project sufficient cooperation/linkage with projects related to Stockholm Convention in the region is envisaged in the implementation of the project.

During the project brief preparation there has been a great cooperation and understanding and full involvement and interaction among the national experts, several Ministries and NGOs in order to keep the partnership, countries ownership and countries driven approach.

There will be no creation of any new stand alone centre but only existing institutions/laboratories will be upgraded thereby increasing the probability of long term sustainability and replicability.

Experience gained during project brief preparation has resulted in improved understanding of the barriers to be overcome during full project implementation. The major barriers identified to date include inadequate national policy on POPs, inadequate policy and legal framework, inadequate comprehensive scientific/socio-economic data, ineffective enforcement of regulations and legislation, lack of a national classification system, absence of clear responsibilities and limited coordination, inadequate financial resources, inadequate awareness and information, lack of capacity and experience in selecting environmentally sound cost effective technology for soil remediation, lack of capacity to conduct risk management decision for contaminated land/site remediation.

Replicability of the project:

Experiences gained during the project realization in both countries can be very helpful for other countries especially as far as the better understanding of potential barriers during project implementation in other countries. This project can lead to optimum procedure with using of experiences and results, what can be important especially as far as the applications in other countries.

Most importantly the proposed project will bring out tool kits for systematic identification of sites contaminated by POPs and methodologies to be adopted in the region for decontamination of the contaminated sites. Such tool kits could eventually benefit the whole Africa region.

Project funding:

Project will be funding by GEF, the Government of Nigeria and Ghana. As I mentioned, the guarantee of national partners should be suitable if will be done officially as soon as possible.

The items of incremental costs and project financing tables look reasonable, but it is impossible to evaluate during the short period and without more detailed description of them, how are realistic.

Linkages to other programs and action plans at regional or sub-regional levels:

Direct linkage with the development of National Implementation Plans in the Parties through GEF funded Enabling Activities exists and can be very useful as a potential additional application of this approach and technology or potential future co-operation of countries of Africa in the destruction of waste in both countries. The experiences and information from this project realization should be a valuable resource for many others.

Other beneficial or damaging environmental effects:

Projects also briefly summarize global benefits for other GEF projects such conservation of biological diversity or improved water quality and explain the potential effects of environmental present POPs for these global problems.

Degree of involvement of stakeholders in the project:

The role of stakeholders in the phase of Project preparation is described as a unique and can be very helpful during the future steps of project implementation and realization. Project will organize and covered some additional workshops and activities for better public understanding of the project.

Throughout the project preparation stakeholders' participation and discussions were given cardinal importance and this will continue to be a major feature of the project implementation. The project will stress participation within the two countries through workshops, IMS and dissemination of information giving transparency. NGOs along with relevant ministries will be part of the public awareness and environmental education programmes.

Summary:

The Project "Regional project to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annexes A, B and/or C of the Stockholm Convention" has a great relevance to global and regional solution of POPs problems as far as the disposal of obsolete POPs stocks, wastes and contaminated environmental matrices such as soil or sediments.

Project defines expected risks and barriers, which can be limited steps for application in the developing countries and in the countries with economy in transition.

Based on my professional experiences, I consider this project as very well prepared and selected approach as suitable for the destruction on POPs stocks and wastes without additional harmful environmental releases.

I recommend this project to accept.

Moscow, 21/03/2006

Prof. Dr. Ivan Holoubek

Prof. Dr. Ivan Holoubek
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ANNEX 3B: UNIDO RESPONSE TO STAP REVIEW

The STAP Review given under Annex 3A is self-explanatory and does not raise any critical comments or queries regarding the project brief. It broadly agrees with the project design, objective, outputs and the activities that will be done to achieve the outputs, sustainability and replicability. Under project funding it specifically says “the items of incremental costs and project financing tables look reasonable, but it is impossible to evaluate during the short period and without more detailed description of them, how are realistic”. The authors of the project brief are aware of this and further refinement will be made during the full project preparation stage. Overall the STAP review is favourable to the contents of the project brief.

FAO comments on the GEF proposal for a Regional project to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annexes A, B and/or C of the Stockholm Convention and UNIDO response

Comments:

1. The principle of a project to develop expertise, capacity and methodologies for addressing POPs (and other chemical) contaminated sites is welcome. This is a topic fraught with technical, scientific, economic and political difficulties where an objective approach is badly needed.
2. The project brief recognises the synergy with the ASP, but does not appear to be cognisant of the tools developed under the ASP and the methodologies to be applied in participating countries, including Nigeria. Each ASP country project will include a detailed national inventory and risk assessment of all obsolete pesticide stores and sites contaminated by obsolete pesticides. Thus it is anticipated that the ASP will produce a significant part of the national inventory of POPs contaminated sites in Nigeria, which the current proposal addresses. In addition the ASP could make available tools that have been developed with the support of GEF for the inventorization and risk assessment of chemical stockpiles and contaminated sites. The existence of the methodology and tools seems to fulfil one of the main objectives of the proposed project.
3. The UNIDO proposal focuses on institutional and policy development and proposes additionally to carry out pilot remediation activities. It seems that an important step may be missing from the process in that the survey process is not clearly defined and no risk assessment process is proposed which will allow sites to be prioritized for action on the basis of the risk they pose to health and the environment. Without such an assessment it is not clear on what basis sites will be selected for pilot remediation.

UNIDO response

FAO review is in support of the project and raises the issue of Risk Assessment/Management for dealing with POPs contaminated sites. In fact, this is one of the main themes of the project reflected as the systematic identification methodology to be adopted and will have the full spectrum of risk identification/risk assessment/management leading to decision making on remediation of POPs contaminated land. In line with Risk Based Decision Making (RBDM) process, there will be classification system of contaminated land based on level of contamination, location of the sites, pathway and receptors of contaminants, environmental and health indicators and consultation with all relevant stakeholders. There will be a continuous interaction with ASP programme in the region along with the strategy to prevent future contamination of soil with POPs and other PTS.

Intersessional Work Program: Comments from Council members (Reference to GEF/IS/15) and UNIDO response

Comments from France:

According to article 6 Section 1(e) of the Stockholm Convention states that Parties shall “*endeavour to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annex A, B or C*”. The objective of the proposed project is to build capacity in Ghana and Nigeria to develop appropriate strategies for identifying such lands and sites. In our view, this project is very interesting. We only have few remarks: concerning the importance given to PCB, there are other POP and as the project is planned for 4 years, it could be useful to consider “new” POP, which could be added to the Convention. However, there are other POP already concerned by the text, so there is no reason to focus on PCB. This is underline p 27, as “many similar toxic chemicals” are mentioned but it could be clearer.

To conclude, this project will be very helpful for these countries, if local authorities are supporting it. Important initiative for Western Africa.

UNIDO response:

The proposed project is focused to develop appropriate methodologies to identify sites contaminated by POPs chemicals listed under Annex A, B or C of the Stockholm Convention (including new POPs since the same criterion for screening information of POPs chemicals remains unchanged). Other sites contaminated by non-POPs chemicals could be identified using the methodologies established under this project (after performing some modifications). However, the technical and analytical procedures used for measuring the level of chemicals present other than POPs, could differ from those used for POPs chemicals. Users would need to adopt and readjust these methodologies in order to use them for other different purposes.

Comments from Germany:

Recommendation:

Germany agrees to the project proposal. Changes outlined below should be made during further planning steps and during project implementation.

Comments:

There is ongoing work by an expert group to prepare guidelines on Best Available Techniques and Best Available Practices for presentation and discussion at POPs COP3. The implementing agency (UNIDO) should guarantee information flow between this expert group and people responsible for the project execution and should take care that policies and strategies defined for Nigeria and Ghana might match the contents of the guidelines under development.

UNIDO response:

We took note of Germany’s comments and revised para 3 of the Project Brief as well as para 1 of Annex A (Incremental Costs) of the Executive Summary.

Comments from the United States:

The United States seeks recirculation (of the project document) to the Council prior to CEO endorsement.

We had requested clarification whether only POPs listed under the Stockholm Convention are being addressed in this project. We also sought clarification that GEF funding will not be paying for remediation of the contaminated sites identified as part of the project. While such remediation efforts are beneficial, the costs of remediating POPs-contaminated sites on a global basis are not likely sustainable in the context of GEF funding.

UNIDO response:

We confirm that this proposed project will address only the POPs chemicals listed under Annex A, B or C of the Stockholm Convention. The texts concerning the above have been revised accordingly.

UNIDO also confirms that the GEF funding will not be used for remediation of contaminated sites rather for the development of methodologies for identification of these sites as well as for capacity building support for local human resources and experts to enable skills upgrading for the selection of remediation technologies on an environmentally sound manner.

ANNEX 4: RESULTS OF PDF-B IMPLEMENTATION

Implementation of PDF-B project GF/RAF/005/001

The PDF-B project was approved in June 2005 and implementation started in September 2005 with the appointment of Chief Technical Advisor (CTA) and a Project Steering Committee (PSC). The first meeting of the PSC took place in Cardiff University, Wales, UK during September 2005. The method of implementation, organizational chart, workplan with responsibilities were agreed. Following this, national and international consultants as well as an institution with long-standing experience in the UK on land reclamation, the GeoEnvironmental Research Centre (GRC) were assigned to provide the necessary technical inputs in association with the UNIDO Project Manager and CTA in order to achieve the outputs of the PDF-B project. A one-week discussion seminar to benefit senior project counterparts in Ghana and Nigeria was organized, which dealt at length the policy/legal framework, enforcement, technology of land remediation, risk assessment/management, practical aspects and benefits of private-public partnership in contaminated land reclamation. Following the discussion seminar, the CTA visited Nigeria and Ghana to prepare the groundwork for the planned visit of the GRC experts to the field in 2006. The CTA metamorphoses all the national project counterparts, visited some of the potential hot spots and laboratories in Ghana and Nigeria.

The GRC mission consisting of policy/legal expert, capacity building institution strengthening specialist, contaminated land remediation technology and IMS specialist visited Ghana and Nigeria during January to February 2006, participated in two one-day seminars on Policy/Legal framework and one workshop on appropriate technology selection for land reclamation. Relevant ministries, bilateral/multilateral donor agencies, industry representatives, NGOs, press, etc. attended both the seminars. The press coverage of the seminars is given in Appendix 3 of Annex 4. Following the seminars, UNIDO visited many international agencies to discuss the project and seek cooperation.

The draft Project Brief was prepared and the second PSC was organized in Cardiff from 27 February to 2 March 2006 to finalise the Project Brief. Minutes of the 2 PSC meetings are attached as Appendix 1 and 2 to Annex 4.

**Appendix 1: MINUTES OF 1ST PROJECT STEERING COMMITTEE MEETING
Cardiff University, Wales, United Kingdom
28 to 29 September 2005**

1. Participants:

1.1. Geoenvironmental Research Centre (GRC), Cardiff University, Wales, U.K.

Professor Hywel.R. Thomas, Director, GRC and Professor of Geotechnical Engineering

Dr. Peter J. Cleall, Lecturer

Dr. Rob W. Francis, Project Manager

Dr. David Huw Owen, Department Manager

Dr. Aleksandra Koj, Senior Research Associate

Dr. Talieb Mahdi, Senior Research Associate

Dr. Suresh C. Seetharam, Research Associate

Ms. Pauline Townsend, Administrative Assistant (Part time)

Prof. Keith Williams, Division of Materials and Minerals (during laboratory visit)

Mr. Ravi Metha, Chief, Analytical laboratory (during laboratory visit)

Mr. Devin Sapsford, Research Associate (during laboratory visit)

1.2. Counterpart Institutions:

Prof. E. O. Nsenkyire, Chief Director, Ministry of Environment and Science, Accra, Ghana

Prof. O.A. Afolabi, Director, Department of Pollution Control and Environmental Health,
Abuja, Nigeria

1.3. UNIDO:

Dr. Mohamed Eisa, Chief, POPs Unit, Multilateral Environmental Agreement Branch

Dr. B. Sugavanam, Chief Technical Advisor, UNIDO Consultant

2. Introduction:

Following the approval of the above project by GEF under its PDF-B scheme, the implementation of the project started with the establishment of a Regional Steering Committee (RSC) and appointment of a Chief Technical Advisor. In order to:

- bring an understanding of this very first GEF approved project on POPs contaminated sites;
- establish a linkage and coordination between the various present and future participants of the project and the ongoing Enabling Activities projects in Ghana and Nigeria for developing the National Implementation Plan (NIP) for POPs;
- agree on a workplan, role and responsibilities to meet the very tight time schedule for implementing the project; and
- come up with a full project brief for submission to the GEF Council.

The above RSC meeting was organized at the Geoenvironmental Research Centre (GRC) of Cardiff University.

3. Minutes of the meeting:

3.1. Presentation by the GRC

Dr. Mohamed Eisa chaired the meeting and introduced the participants and after opening remarks by Dr. Eisa and Professor Thomas, the meeting adopted the agenda. Prof. Thomas gave a detailed presentation of the activities of the GRC. He said that the GRC was the first centre in the field of Geoenvironmental Engineering in Europe. The major objective of GRC was to bring about a close partnership and collaboration between industry and the GRC and find answers to practical problems and not operate in an academic isolation. Many of their research projects in the GRC are industry driven and thereby helping the economy/environment of the region and the society at large. Their areas of interests include, among others, developing risk identification/ assessment tools, collaboration with organizations under a European networking system, chemical movement in water/soil matrices and study socio-economic impact of contaminated areas. He described various courses run by the GRC, covering MSc in Geoenvironmental Engineering, industrial training, advanced research leading to Ph.D. and post doctoral work in industry related problems, short and full academic courses, geoenvironmental monitoring, sustainable management of farm wastes, etc. He said that in Wales there are a number of lagoons created by steel works, and the sludge in these lagoons are being investigated for taking further action. They are also looking into arsenic pollution of ground water in Bangladesh, West Bengal *insitu* remediation of contaminated lands including POPs contamination. He specially mentioned about a project in Kuwait related to oil pollution that resulted from the 1990 Iran-Iraq war. They are already collaborating with the International Atomic Energy Agency (IAEA) in conducting training courses related to nuclear waste issues. They have many projects dealing with SMEs in the region.

Based on their work and help to the industry, they have assisted 151 companies and helped to create six new companies. Special mention was made to their project called RESCUE (Regeneration of European Sites in Cities and Urban Environment). A manual entitled *Best Practice Guidance for Sustainable Brownfield Regeneration* has been prepared under this programme. They have also identified and developed sustainability indicators and apparently their Geoenvironment Networking has been very successful. Another programme they have just embarked on is called *Sustainable Urban Environment (SUE)* where they map the flow and model the fate and transport of pollutants. He mentioned about different types of training courses they could do for degree courses or for a short-term dealing with specific topics in the areas of land contamination. The GRC is also giving greater attention to the study of socio-economic impact of contaminated sites. A hard copy of the presentation and a CD were provided to the participants.

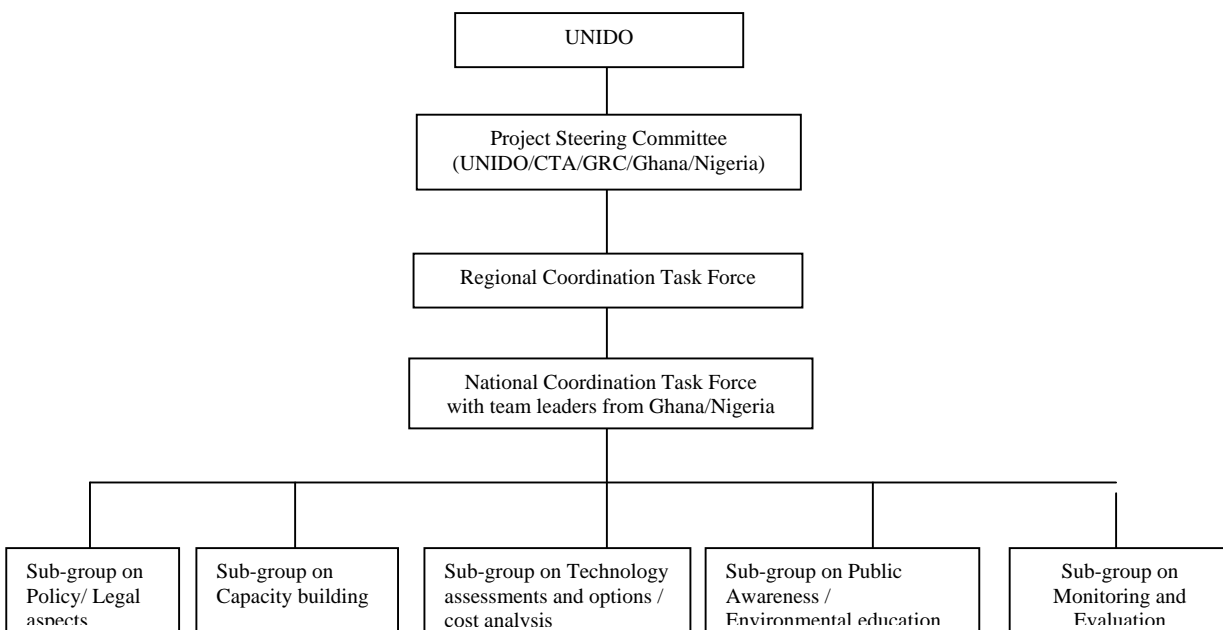
The Chairman thanked Prof. Thomas for his presentation and highlighted some of the activities and expertise that would benefit UNIDO projects in developing countries. Prof. Edward Osei Nsenkyire congratulated Prof. Thomas for his excellent presentation and based on the expertise, coverage of activities, laboratory facilities and the wealth of experience available at GRC he said that it would be very helpful for the implementation of the project. On a broader perspective he said that Ghana would be interested in pursuit of sustainable development. He specially mentioned about distance learning, rehabilitation of lagoons, land regeneration of mined sites, landfill engineering and sustainable urban environment. He added that areas such as capacity building, bioremediation of POPs contaminated sites, models of soil behaviour and ground water problems are of great importance.

He would be keen on Universities working closely with the GRC through exchange of relevant staff and students. He specifically mentioned about the Graduate School of Environmental Science at Knust and the School of Nuclear and Applied Sciences at the University of Ghana. He concluded that the projects under the Multilateral Environment Agreements (MEAs) to which Ghana is a signatory or has ratified could be taken up for future collaboration.

Prof. O.A. Afolabi, said that he was very much excited about the breadth and depth of activities and expertise at the GRC and would like to have a long-term relationship between Nigeria/Nigerian institutions and the GRC. In a broad sense he would be willing to collaborate on issues of capacity building and institutional strengthening, broad range of areas of environmental management and POPs related issues. Other areas could be the Decision Support System software, modelling, twinning of Nigerian universities (e.g. Open University) and other institutions with GRC. The idea to commence the process of developing an African Centre for Environmental Strategy was mentioned and wanted a possibility of facilitation of this process by UNIDO and the GRC could be explored.

3.2. Presentation by UNIDO

The Chairman explained the functioning of GEF and circumstances leading to the approval of the project on POPs contaminated sites. He explained the CTA's role in the project and the tight time schedule for completion of the project activities. Following this, the CTA presented an introduction to the development of the chemical industries, in general, the role of chlorine and the historical development of various Conventions and global milestones leading to Environmentally Sustainable Manufacture. He gave detailed account of the project, the various segments dealing with objectives, outcomes, activities and outputs. The prepared draft tentative work plan was discussed step by step and a modified work plan was agreed. The institutional arrangements for the implementation of the project was discussed and agreed by the Regional Steering Committee:



The Chairman informed that the GRC participation could be through a Memorandum of Understanding (MoU). He added that the GRC in collaboration with the CTA could contribute to technology options, capacity building, policies, economic and financial issues, social aspects, development of indicators and IMS.

3.3. Laboratory visit

A tour of the laboratories was arranged where among other things, experiments on sludge from steel manufacturing company lagoons, model experiments on the trafficking of waste based manufactured soils reinforced with waste plastic fibres, to be used in grass covered areas subjected to vehicular traffic were being carried out. The laboratory tours included a visit to new analytical laboratories, 3D Visualization theatre for a better view of sections of materials and structures, instruments for interpretation, trouble shooting and solving problems were being carried out. The visitors were informed that soon they would be doing analysis for dioxins/furans/PCBs in selected industrial wastes. The visit gave a good understanding of the type of facilities available for future cooperation in managing contaminated land in an environmentally sound manner.

4. Detailed discussion of the workplan

The meeting continued after the laboratory visit. The Chairman summarized the time schedule for the programme including the follow up phase as:

- September 2005 Kick off meeting
- March 2006 Full Project Brief for submission to GEF
- June 2006 Comments from GEF/ Final project Document /Approval of Project
- Completion of project: Two years after approval

Based on the workplan, Prof. Thomas presented the activities on a monthly basis. To facilitate taking action and implementation, Prof. Afolabi suggested keeping it as a working document along with the agreed workplan.

Finally the meeting discussed the immediate task of the implementation arrangements for carrying out activities and delivering various outputs according to a tight schedule agreed in the workplan. The Chairman wanted GRC to provide the following consultancies:

- Capacity building 2.0 w/m over 4 months
- IMS (Information Management System) 1.0 w/m over 3 months
- Technology Assessment/options 2.0 w/m over 4 months
- Policy /legal frame work 1.0 w/m over 3 months
- Monitoring and Evaluation 1.0 w/m over 3 months

The Chairman said that all the 2.0 w/m assignments will include two missions of two weeks each to the field and 1.0 w/m assignments will include one mission of two weeks duration. In all the above fields, senior national experts will be working for 2.0 w/m over a period of 4 months. The GRC and the participating countries will provide CVs of candidates and job descriptions will be prepared by the CTA. The Chairman informed that the project would cover the salary, travel and daily subsistence allowances of GRC consultants. He added that reasonable expenses incurred during the training courses at the GRC could also be covered.

Prof. Afolabi suggested that in order to have an effective and smooth implementation of the project, there should be a one-week interactive seminar early on between the senior national consultants and the GRC consultants in Cardiff. This was agreed and the seminar was suggested during end October 2005 and the first field mission of the GRC consultants will take place during the second or third week of November 2005 to work with the same national consultants. Such a discussion seminar will cover the following:

Day 1	General introduction /Wales Development Agency/Environmental Agency
Day 2	Economic aspects /Technical Solutions
Day 3	Social aspects
Day 4	Net working/LRN (Land Regeneration Network)
Day 5	Risk Assessment

It was agreed to have the next meeting of the Regional Steering Committee during the end of February 2006 in Cardiff. (see Annex 5 for Report on Discussion Seminar)

5. Conclusion

The meeting came to a conclusion after closing remarks by the Chairman and Prof. Thomas of GRC.

**MINUTES OF THE 2ND PROJECT STEERING COMMITTEE MEETING
Cardiff University, Wales, United Kingdom
1st to 2nd March 2006**

1. Participants

Geoenvironmental Centre (GRC):

Prof. H. Thomas, Director
Dr. Rob W. Francis, Project Manager
Dr. David –Huw Owen, Development Manager
Dr. Talib Mahdi, Senior Research Associate
Dr. Rob Sleet, Representing GRC from Envirogene, Cardiff
Dr. Aleksandra Koj, Research Associate

Ghana/Nigeria

Prof. Johnathan A. Allotey, Executive Director, EPA, Ghana, (National Project Coordinator)
Prof. O. A. Afolabi, Director, Department of Pollution Control and Environment Health, Federal Ministry of Environment (National Project Coordinator)

UNIDO

Dr. Mohamed Eisa, Project Manager, UNIDO, Vienna
Mr. Adegboyega O. Ajani, Regional Coordinator, UNIDO Office, Abuja
Dr. B. Sugavanam, CTA

2. Agenda

The meeting was chaired by Dr. Eisa and adopted the following Agenda:

Wednesday, 1st March 2006

13:30 – 13:45	Introductory Remarks by Prof. Thomas and Dr. Eisa
13:45 – 14:45	Progress since the 1 st Project Steering Committee meeting by the CTA
14:45 – 16:00	Discussion on the Project Brief
16:00 – 17:00	Gaps in the Project Brief (co-financing, cost-sharing, selection of laboratories Training in actual m/m and number of senior trainees to be trained abroad Linkages to other programmes by CTA/GRC/Project Coordinators/Dr. Eisa)

Thursday, 2nd March 2006

10:00-10:30	Further discussions on Project Brief
10:30 – 10:45	Timeframe for GEF submission and follow-up to full project leading to approval (Dr. Eisa)
10:45 – 12:20	Strategy to approach donors, expansion of programmes to cover other countries
12:20 – 13:15	Recommendations and follow-up
13:15 – 13:30	AOB and closing of the session

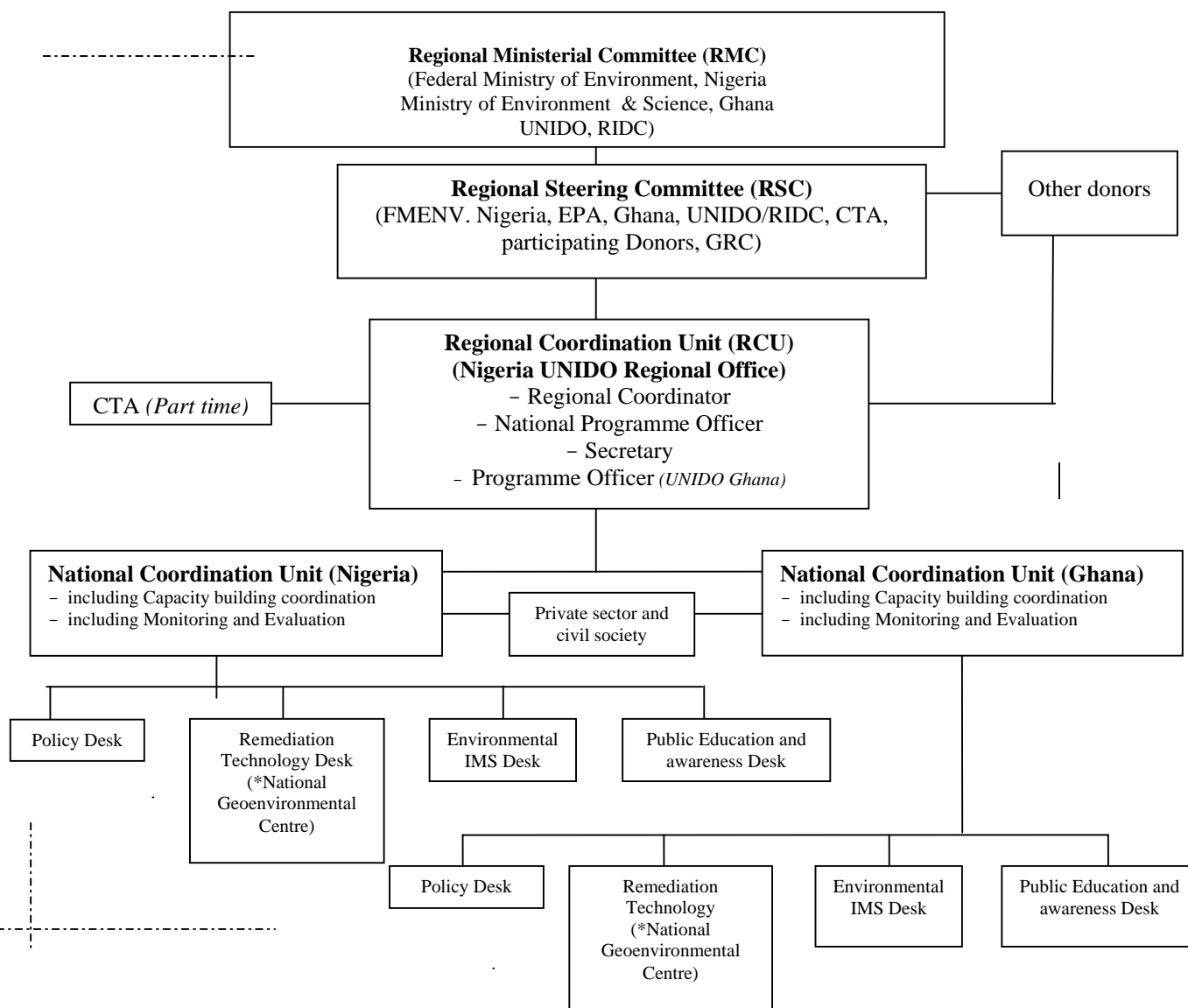
3. **Proceedings of the Meeting**

After the initial introductory remarks, the CTA presented the progress of the project since the 1st Project Steering Committee Meeting held in September 2005. He gave a summary of various activities carried out according to the agreed work plan in the 1st PSC meeting. He gave a brief account of the Cardiff Discussion Seminar (see Annex 5) held in November 2005, the CTA mission in December 2005 and January-February 2006 and the GRC field mission in January-February 2006. During these missions, detailed discussions took place with national experts, various ministries, industries and visits to the laboratories in Lagos and Accra. Based on the findings and discussions, the team jointly prepared the project brief covering different areas. During the mission, two one-day seminars were organized in Abuja on Technology Option and another in Accra on Policy and Legal Framework. National experts further discussed the draft Project Brief in detail during a meeting in Ibadan, Nigeria from 13-16 February 2006. Multidisciplinary audience from ministries, civil society and universities attended the one-day seminars mentioned above. During the field visits, many potential donors were consulted regarding their work and possible support and linkages to their programmes. The CTA also mentioned that in the Ibadan meeting, it has been agreed to present two project brief versions: one with a budget of US\$ 4.0 million and another for US\$ 6.0 million.

Following the CTA's presentation, the Chairman suggested that the meeting should take up the US\$ 4.0 million project proposal. He said that the GEF funding of possible US\$ 2.0 million should be matched at a minimum ratio of 1 to 1. The meeting went through the draft proposal paragraph-by-paragraph and agreed on all the suggested modification. The organizational structure for the implementation of the project was discussed in detail and it was agreed that the Regional Industrial Development Office in Abuja would accommodate the Regional Project Coordinator unit. The UNIDO offices in Accra and Abuja will have a project office to assist the RPCU office. The meeting was informed about the strong interest shown by the NGOs, industries and also some of the donors met during the mission. Ghana and Nigeria informed about the availability of supporting letters from the Governments. The organizational arrangement given in Fig.1 was agreed.

The CTA agreed to prepare the Project Executive Summary. The Chairman explained the time schedule followed by GEF to consider project briefs, the procedure for submitting comments and follow-up for the full project preparation. He informed that 24 March 2006 is the final date of project brief submission and by a series of comments and suggestions from GEF and other agencies within two weeks. Based on this, UNIDO will resubmit the proposal for inclusion and consideration by GEF Council by first week of June 2006. By end of June 2006, the approval status of the project will be known. During this period, it was agreed that UNIDO along with other parties will follow a set procedure to meet potential donors for financial support and GRC will also look into the possibility of their contribution mainly in kind to the project. The meeting came to a close after a vote of thanks.

Figure 1: Proposed Organizational Chart for the implementation of the Regional Project



* **Note:** The Centre will not be a stand-alone institution. It will be established within existing institutions in order to be cost effective and sustainable in the long-term.

Appendix 2: NGO/CIVIL SOCIETY COMMITMENT TO THE PROJECT

The NGOs have been consulted in both the enabling activities and the PDF-B projects. They took great interest in the various consultation meetings held during the years 2004 to 2006. In particular, the two one-day seminars in Accra, Ghana and Abuja, Nigeria organized under the PDF-B project were attended by more than 30 NGOs, companies and press in each country.

A NGO in Nigeria called Nigerian Environmental Society (NES) is actively involved in the national sensitization to POPs contamination. They organize workshops and are actively involved in the NIP and PDF-B activities. As an example copy of a letter from NES to UNIDO, Nigeria is copied below.

Copy of letter to Mr. Ajani/UNIDO Regional Coordinator, Abuja, Nigeria

Quote:

Dear Ajani,

I am forwarding our IPAM, which will precisely give you some information and you could also visit IPEP home page for IPEP projects details on <http://www.oztoxics.org/ipepweb/>. Click on projects, view countries or project index. At the moment 3 NGOs from Nigeria are participating in the IPEP network after a regional capacity building programme in Tanzania, they are Nigerian Environmental Society (NES), Friends of the Environment (FOTE), Nigerian Environmental Study Team (NEST).

Our (NES) Project workshop objectives are:

- * To raise awareness and enlighten stakeholders and the general public on POPs issues and POPs contaminated sites (hotspots) in the Nigeria environment.
- * To present to stakeholders current information on types of contaminants present, ownership, storage and condition of stocks based on the project findings.
- * To build capacity of stakeholders towards the phase one activities of the African Stockpile Programme (ASP) in the management and reporting of POPs and POPs pesticides in Nigeria.
- * To propose environmental benign ways (low cost environmentally sound remediation technologies) of cleaning up contaminated sites, etc.

The Guest Speaker (an erudite environmental scientist of international repute) is Prof. Oladele Osibanjo (Director, African Regional Centre, Basel Convention and HOD, Chemistry Department, University of Ibadan) who will speak on “Global and National POPs Situation”. Other technical presentation by Dr. Lawrence Ezemonye (Associate Prof. Department of Life Sciences, University of Benin) who would speak on “Identification and Control of POPs contaminated (Hotspots) in Lagos”. Goodwill messages are also expected from international NGOs such as Pesticides Action Network, U.K and AGENDA, Tanzania and UNIDO.

Expected to grace the event are environmental professionals and environmentalist, Government officials, MAN, Farmers Associations, Chemicals Users (owners, distributors, associations) national NGOs and CBOs, Media, UNIDO/UNDP, SON, NAFDAC, etc.

I hope you find this information useful. Let me know if you require more information.

Unquote

Appendix 3: SAICM AFRICA REGIONAL GROUP MEETING REPORT

PROPOSED INSTITUTIONAL ARRANGEMENTS FOR SAICM (SAICM/PREPCOM.3/INF/11)

Submitted by the African Group

BACKGROUND

The text adopted at the African Regional Meeting held in Saly, 15-18 March 2005, was used as the departure point for further consultation within the African region, to elaborate the criteria and to examine possible options for the SAICM Institutional Arrangements.

1. The SAICM institutional arrangements should operate an open, transparent, and inclusive process involving the participation of all responsible and relevant stakeholders at international, regional, sub-regional and national levels in its deliberations.

Functions

2. Successful implementation of SAICM will require arrangements to ensure the following functions are undertaken.
 - (a) Ensure that all activities in the Global Plan of Action are effectively implemented, taking into account any existing activities
 - (b) Promote compliance with existing international instruments
 - (c) Monitor and report on progress on implementation
 - (d) Review SAICM measures and priorities, and update as needed, to ensure SAICM implementation is on track to meet the SAICM overall goals and targets
 - (e) Provide policy guidance on the continuing implementation of SAICM
 - (f) Promote coherent governance at international, regional and national level
 - (g) Work to ensure that the necessary financial and technical resources are available for implementation
 - (h) Ensure ongoing participation of private sector, labour public interest organizations and science (academic institutions) and intergovernmental organizations with relevant mandates
 - (i) Communicate the recommendations of SAICM to the appropriate intergovernmental organization governing bodies and other relevant institutions
 - (j) Liaise with focal points which may be established to facilitate implementation of SAICM at the regional and national levels
 - (k) Evaluate the performance of the financial mechanism in support of SAICM
 - (l) Promote the strengthening of the countries' national chemicals management coordination mechanisms, capacities and abilities
 - (m) Ability to emerging issues as they arise

Criteria

3. The criteria for any additional institutional arrangements for SAICM need to include the following:
 - Must have sustainable funding sources and mechanism
 - Must not duplicate the mandates of other existing institutions

- Must have political/policy capacity
- Must have administrative and technical capacity

4. Political/policy capacity

- Include multi-stakeholder participation;
- Multi-sectoral in nature;
- Ability to take authoritative decisions that will be implemented nationally;
- Ability to influence international/intergovernmental organizations involved in chemicals management;
- Ability to promote coherent and co-ordinated approach;
- Capacity to secure the collaboration and cooperation of national, regional and international bodies;
- Capacity to help strengthen national coordinating mechanism and national capabilities for chemicals management;
- Ability to ensure that the governing bodies of intergovernmental organizations give full and appropriate considerations to SAICM decisions.

5. Administrative and technical capacity

Ability to:

- Evaluate the implementation of the SAICM Action Plan and progress towards achieving the 2020 goal.
- Prepare progress reports.
- Engage stakeholders.
- Establish and implement mechanism to ensure that recommendations are conveyed to international organizations.
- Assist in identifying gaps in scientific knowledge.
- Promote information exchange and scientific and technical cooperation.
- Advise Governments in their work on chemicals management.

6. **Possible options for the institutional arrangements for SAICM**

The following options could be considered for the SAICM institutional arrangements:

- (a) To assign responsibility to one or more existing intergovernmental organisations involved in chemicals management;
- (b) To assign responsibility to the IFCS with the possibility of revising its Terms of Reference;
- (c) Possible combination of (a) and (b) above.

7. **Proposal**

Since the mandates of existing IOMC institutions include many of the activities listed in the concrete measures, it is proposed that the SAICM institutional arrangements complement the functions of existing institutions and not duplicate them. Successful SAICM implementation will require full support from all relevant intergovernmental organizations.

8. While recognizing the fact that the SAICM process has developed with the participation of all stakeholders, the momentum achieved should be retained to undertake the even greater challenge of overseeing implementation. It is therefore proposed that institutional

arrangements for SAICM be established by the International Conference on Chemicals Management (ICCM) as follows:

- (a) The SAICM preparatory process will be converted to a Review Conference using the rules of procedure adopted for the preparatory process and which will provide the political/policy oversight.
- (b) The SAICM Review Conference will be supported by a secretariat, which will provide the administrative and technical support required. The Secretariat will undertake the functions assigned to it by the Review Conference, under the direction of the Expanded Bureau, UNEP and WHO may jointly undertake responsibility for the operation of the secretariat. Ideally, the functions of the SAICM secretariat and the IOMC secretariat (based within UNEP); as well as upon the work and experience of the IFCS and IOMC Secretariats (based within WHO).
- (c) Each country should establish a National SAICM Focal Point, which should ideally, should be based within a national inter-ministerial /inter-agency chemicals coordinating body.
- (d) The Review Conference will meet every two years to ensure effective implementation of the SAICM Global Plan of Action.
- (e) The Expanded Bureau formula will be used for a SAICM Bureau to under the functions delegated to it by the Review Conference and will meet at least once annually.
- (f) Regional Groups will be established, to facilitate monitoring and review of implementation in their region and to facilitate regional reporting to the Review Conference. SAICM regional groups should ideally meet intersessionally. Such Intersessional work groups may meet face-to-face or may operate by email and teleconference.
- (g) The SAICM Review Conference may establish intersessional work groups with well-defined terms of reference that report back to the SAICM Review Conference and/or Bureau. Such intersessional work groups may meet face-to-face or may operate by email and teleconference.
- (h) Relevant Intergovernmental organizations are requested to assume responsibility for activities that fall within their mandate and:
 - i. Adopt SAICM at the earliest governing body meeting after the adoption of SAICM High Level Conference;
 - ii. Ensure that the necessary resources are made available through their budgets to implement the assigned responsibilities;
 - iii. Agree that their governing body will periodically review decisions of the SAICM Review Conference, and will give programmatic and budgetary consideration to requests from the SAICM Review Conference;
 - iv. Report periodically on progress in implementation of their assigned SAICM responsibilities to the SAICM Review Conference.

9. The functions of the SAICM Review Conference will be to:

- (a) Ensure that all SAICM activities effectively implemented,
- (b) Promote compliance with existing international instruments and programmes,
- (c) Monitor and report on progress of implementation,
- (d) Provide policy guidance on implementation,
- (e) Promote coherent governance at international, regional and national level,
- (f) Work to ensure that the necessary financial and technical resources are available for implementation,

- (g) Ensure ongoing participation of private sector, labour, public interest organizations and science (academic institutions) and intergovernmental organizations with relevant mandates,
 - (h) Evaluate the performance of the financial mechanism in support of SAICM,
 - (i) Promote the strengthening of national chemicals management coordination mechanism, capacities and abilities,
 - (j) Address emerging issues as they arise.
10. The functions of the Secretariat will be to support the activities of the Review Conference by undertaking the following tasks:
- (a) Collection and collation (and, in part, evaluation) of information on SAICM implementation;
 - (b) Synthesize and review reports submitted by stakeholders;
 - (c) Preparation of progress reports;
 - (d) Promote engagement with stakeholders;
 - (e) Ensure that recommendations from the policy body are conveyed to international organizations involved in chemicals management;
 - (f) Help identify gaps in scientific knowledge;
 - (g) Promotion of information exchange and scientific and technical cooperation;
 - (h) Advise Governments as necessary;
 - (i) Communicate the recommendations of SAICM to the appropriate intergovernmental organization governing bodies and other relevant institutions;
 - (j) Liaise with SAICM focal points.

SAICM Focal Points

11. To sustain an integrated approach to managing chemicals, it is recommended that Governments establish central bodies to implement SAICM on an inter-ministerial or inter-institutional basis. Mechanisms must therefore be established at national and regional levels to promote and facilitate implementation as follows:
- (a) Each country should establish a national focal point, to interact with the SAICM institutional arrangement;
 - (b) The SAICM focal point should represent the country's inter-ministerial body or inter-institutional arrangement where established.
 - (c) Each Focal Point should have one or two alternates, ideally all from different ministries or agencies.
 - (d) The national SAICM Focal Point should receive the invitation to participate in the SAICM Review Conference.

ANNEX 5: MONITORING AND EVALUATION PLAN

Intervention Logic	Targets	Objective verifiable indicators	Results
Component 1: Project Coordination	<ul style="list-style-type: none"> - National\Regional coordination done in execution of various activities - All relevant key stakeholders fully involved in decision making process 	<ul style="list-style-type: none"> - TORs for various committees/ coordination units - Workplan for implementation of project with role and responsibilities - Physical premises with trained staff, facilities and proper filing of all reports. 	Each component of the project implemented with proper coordination involving all stakeholders including government officials, civil societies and industries.
Component 2: Establishment of policy/legal framework for management of POPs contaminated sites.	<ul style="list-style-type: none"> - National/international experts drafting policy/legal framework for management of POPs contaminated land - Enactment of policy/legal framework as law - Trained personnel in Ghana and Nigeria for enforcement of above law. 	<ul style="list-style-type: none"> - Draft policy/legal framework document for management of POPs contaminated sites. - Enforcement mechanism 	<ul style="list-style-type: none"> - Policy/legal framework for management of POPs contaminated sites, enacted on a national basis with future prospects for regional approach. - Trained personnel for legal enforcement
Component 3: National/Regional Capacity building	<ul style="list-style-type: none"> - Production of regional/national classification guidelines - MoU developed between research centre in a developed country and centres in Ghana and Nigeria 	<ul style="list-style-type: none"> - Contaminated land classification system - MoU with centres in developed countries for future cooperation 	<ul style="list-style-type: none"> - Used of classification system for ranking contaminated sites. - Cooperation with similar institutions in developed country(ies)
Component 4: Toolkit for selection of low-cost environmentally sound remediation technology	<ul style="list-style-type: none"> - Upgrade of two laboratories to Geoenvironmental Centres capable of identifying/analysing POPs contaminated lands. - Training of personnel on site remediation / analysis of contaminants / risk analysis/ management - Preparation of toolkit for site identification and selection of appropriate low cost remediation techniques. - Experimental scale tests on two sites for land remediation of POPs contaminated sites. 	<ul style="list-style-type: none"> - Two upgraded laboratories to Geoenvironmental Centres in Ghana and Nigeria - Existence of toolkit for site identification and technology selection - Experimental laboratory scale tests results 	<ul style="list-style-type: none"> - Regional capacity developed for identifying POPs contaminated sites, their classification based on risks. - Region using toolkit for identifying POPs contaminated land and selection of appropriate low-cost technology for remediation.

Annex 5: Monitoring and Evaluation Plan

<p>Component 5: Establishment of IMS framework for stakeholders engagement/public education/awareness related to POPs contaminated sites</p>	<ul style="list-style-type: none"> - Data base on POPs contaminated sites and IMS training manual - Use of websites, newsletters, mapping of potential POPs contaminated sites in the region available to all stakeholders / public. - Two regional seminar for the benefit of ECOWAS region. 	<ul style="list-style-type: none"> - Existence of data base on POPs contaminated sites - IMS working group – - Regional mapping of potential POPs contaminated sites - Socio-economic indicators available to Govt. and planning authorities. - Aide Memoire for regional seminars 	<ul style="list-style-type: none"> - A robust IMS system on POPs contaminated sites operating with trained personnel and updating periodically. - Proceedings of the regional seminars
<p>Component 6: Regional Monitoring and Evaluation</p>	<ul style="list-style-type: none"> - To objectively evaluate implementation of the project according to workplan, achievement of outputs, assessing the cost effectiveness and sustainability of the outputs in accordance with GEF M&E policies and procedures. 	<ul style="list-style-type: none"> - TOR for the Mid- term and final evaluation using GEF M&E Guidelines. 	<ul style="list-style-type: none"> - Report on TER with findings and recommendations.

ANNEX 6: CO-FINANCING LETTERS

Cardiff School of Engineering
Head of School Professor HR Thomas BSc MSc DIC PhD DSc FREng CEng FICE FGS



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United Nations Industrial Development Organization (UNIDO)
Vienna International Centre
P.O. Box 300,
Vienna A-1400,
AUSTRIA.

Date: 24 March 2006
Ref: RWF/UNIDO/001

Dew Mohamed,

RE: GE/RAF/05/001 - POPs CONTAMINATED SITES

On behalf of the Geoenvironmental Research Centre (GRC) may I say that we are very pleased to be able to offer our support and to be a part of the above project.

The GRC has been closely involved in the preparatory phase of this worthwhile project, and we are in full support of the project. The GRC has a world class reputation and conducts research and development to provide solutions to land environment problems such as remediation of contaminated land, pollution control and risk assessment.

We can confirm that the GRC will provide its expertise and facilities for the implementation of the project. As a guide, we anticipate that the total value of the GRC input will be around £400,000 and subject to further detailed discussion, we are prepared to contribute £140,000 towards the cost of the project. The basis for this is that the budget is prepared in accordance with the University's Full Economic Costing model.

I trust that you will find this acceptable.

Yours faithfully

Hywel Thomas

**Professor Hywel R Thomas FREng
Director, Geoenvironmental Research Centre**



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26 April 2006

Letter of endorsement - GF/RAF/O5/001, POPs Contaminated sites in Ghana and Nigeria

I refer to the UNIDO-GEF project brief on a Regional Programme to Develop Appropriate Strategies for Identifying Sites Contaminated by POPs in Ghana and Nigeria.

I have discussed the programme at length with you and the members of the steering committee and preparation team, involving officials of both countries, UNIDO and the Geo-Environmental Research Centre, University of Cardiff.

As environment adviser to DFID in both Nigeria and Ghana, this is a programme that I would endorse with its objective of rehabilitation of industrial and agricultural lands contaminated by persistent organic pollutants (POPs). In particular, I would note that the broader objective of addressing the removal of barriers that are preventing or hindering the rational management of contaminated lands and sustainable land management is one that is in accord with both national development plans and development partner plans in both countries. I recommend this for consideration by the GEF Council.

Yours sincerely

Sean Doolan, D.Phil.
MBA Environment adviser
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