



**TOGETHER**  
*for a sustainable future*

## OCCASION

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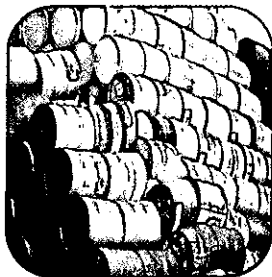
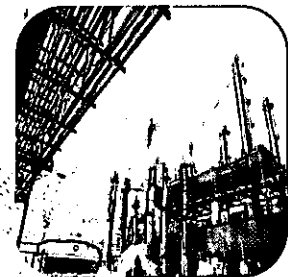
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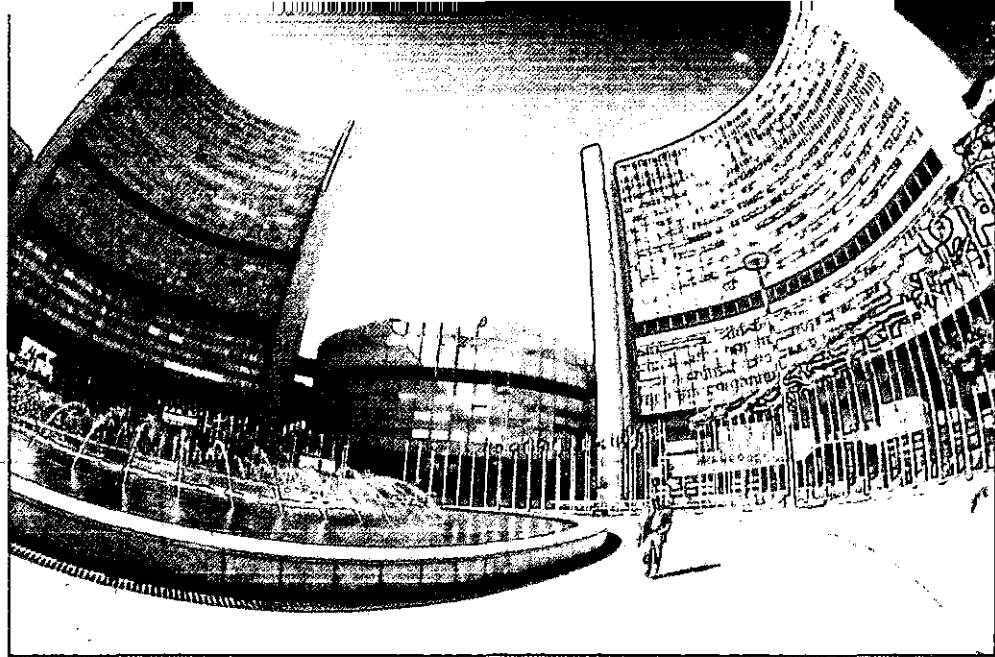


UNIDO's cooperation  
on Persistent Organic Pollutants  
with the  
Global Environment Facility

**Successful partnerships**



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



About the

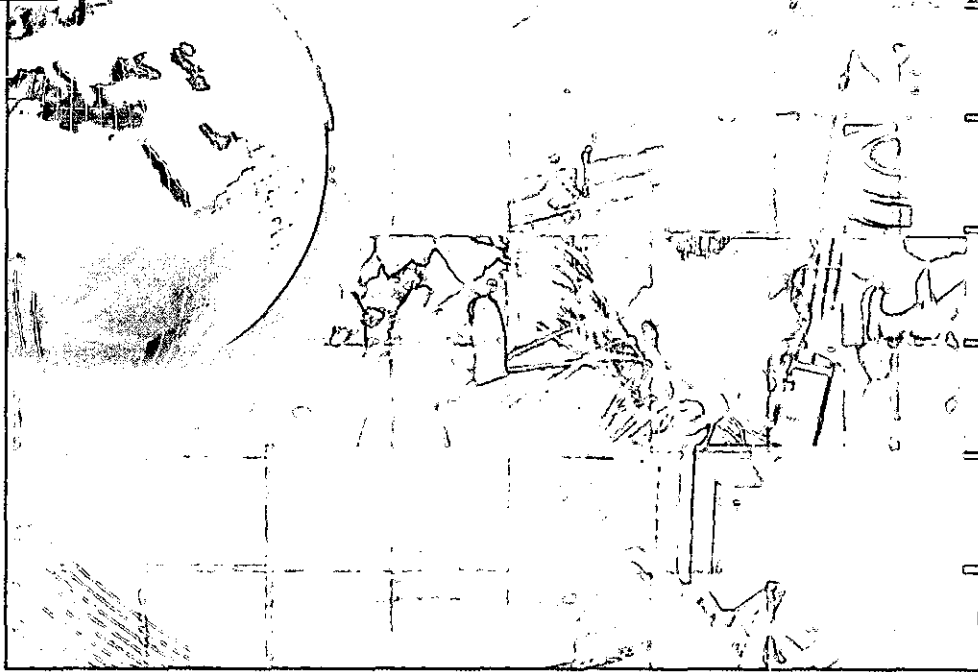
## United Nations Industrial Development Organization (UNIDO)

During the 1950s and 1960s, many countries in Africa, Asia and Latin America gained their independence, while others with centrally planned economies were seeking to achieve stability. Recognizing the key role that industry could play in economic development and social wellbeing, the Member States of the United Nations in 1961 established the Centre for Industrial Development at Headquarters in New York. On 17 November 1966, the General Assembly passed resolution 21/52 setting up the United Nations Industrial Development Organization (UNIDO) as its industrial development arm. The following year, UNIDO moved its Headquarters to Vienna, where it remains today. In 1985, it became a specialized agency, with its own budget, Member States and executive head.

UNIDO employs around 650 staff members at its Headquarters in Vienna and other established offices. In addition, for its project assignments, the Organization draws on nearly 2,800 international and national experts annually. UNIDO also has liaison offices in Brussels, Geneva and New York.

UNIDO is represented in some 42 countries. Additionally, it operates a network of 19 investment and technology promotion offices and units, financed by the countries in which they are located. It also has 32 national cleaner production centres established jointly with the United Nations Environment Programme (UNEP) and 9 international technology centres in various countries. Forty-four subcontracting and partnership exchanges in over 30 countries facilitate production linkages between small, medium and large manufacturing firms and link up with global markets and supply chain networks.

UNIDO works towards improving the quality of life of the world's poor by helping countries achieve sustainable industrial development.



In contrast to its earlier years, where the tendency was towards the provision of individual services, UNIDO now provides custom-made packages of services covering such areas as industrial governance and statistics, investment and technology promotion, industrial competitiveness and trade, private sector development, agro-industries, sustainable energy and environmental management. It also helps States meet their obligations under a number of multilateral environmental agreements, including the Kyoto Protocol, the Stockholm Convention and the Montreal Protocol.

Since its establishment, UNIDO has helped many countries meet their development goals through industrial development. Although sub-Saharan Africa has always been a priority area for UNIDO, in many instances individual achievements have yet to be translated into a continent-wide improvement in living standards. Much work clearly remains to be done.

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This document has been formally edited.



## Foreword

The use of chemicals has become an essential part of modern life. Properly managed, they contribute to the sustainable economic growth that is a prerequisite for development. However, chemicals must be produced, transported, used and disposed of in a sustainable manner so that we minimize any adverse impacts on people's health and the environment. Given the global nature of the chemicals industry, and the fact that pollution does not respect national boundaries, it is clear that the international community has a key role to play.

Over the last 40 years the United Nations Industrial Development Organisation (UNIDO) has helped many developing countries to build up their chemical industries. Since the late 1990's we have focused more on helping developing countries and countries with economies in transition to better manage their use of chemicals. We do this through supporting the development of appropriate chemicals management policies and regulations, capacity building, and by assisting countries to implement Multilateral Environmental Agreements on chemicals.

The Stockholm Convention on Persistent Organic Pollutants, which came into being in May 2001, has become one of the most important of these Agreements. UNIDO, through its close cooperation with the Global Environmental Facility (GEF), has implemented a wide range of projects that take forward the objectives of the Convention, with particular emphasis on the industrial sector.

It gives me great pleasure to present this brochure highlighting the activities that UNIDO has undertaken under the Stockholm Convention in cooperation with the GEF. I hope that you will find the examples of interest and that the brochure will help to demonstrate how UNIDO works with the rest of the international community to tackle this important global challenge.

Kandeh K. Yumkella  
Director-General  
UNIDO

## Acronyms and abbreviations

<b>ASP</b>	<b>Africa Stockpiles Programme</b>
<b>BAT</b>	<b>best available techniques</b>
<b>BEP</b>	<b>best environmental practices</b>
<b>EA</b>	<b>enabling activities</b>
<b>GEF</b>	<b>Global Environment Facility</b>
<b>MSP</b>	<b>medium-size project</b>
<b>NGOs</b>	<b>non-governmental organizations</b>
<b>NIPs</b>	<b>national implementation plans</b>
<b>PERSGA</b>	<b>The Regional Organization for the Conservation of the Environment of the Red Sea and the Gulf of Aden</b>
<b>PCBs</b>	<b>polychlorinated biphenyls</b>
<b>PCDDs</b>	<b>polychlorinated dibenzo-p-dioxins</b>
<b>PCDF</b>	<b>polychlorinated dibenzo-furans</b>
<b>PDF A</b>	<b>Project Development Facility Block A</b>
<b>PDF B</b>	<b>Project Development Facility Block B</b>
<b>POPs</b>	<b>persistent organic pollutants</b>
<b>UP-POPs</b>	<b>unintentionally produced POPs</b>
<b>RSGA</b>	<b>The Red Sea and the Gulf of Aden</b>
<b>UNEP</b>	<b>United Nations Environment Programme</b>
<b>UNDP</b>	<b>United Nations Development Programme</b>
<b>UNIDO</b>	<b>United Nations Industrial Development Organization</b>
<b>UNITAR</b>	<b>United Nations Institute for Training and Research</b>



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## The UNIDO POPs project portfolio

In keeping with the principles of result-based management, the United Nations Industrial Development Organization (UNIDO) takes every care to ensure that internal management processes have a positive influence on organizational performance and that the financial resources available to the Organization are used efficiently and effectively to fund priority activities yielding clearly identifiable and measurable results.

In order to ensure the success of the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) programme, UNIDO continues:

- To focus on the critical problems that constitute constraints to the achievement of a country's development objectives
- To seek out areas where UNIDO assistance could have a catalytic or multiplier effect
- To aim at a reasonable balance between economic, social and environmental considerations

UNIDO's effective harmonization of its overall policies and priorities with the needs and development plans of recipient countries and its close cooperation and coordination with other multilateral funds such as the Global Environment Facility (GEF), are indicators in improving the management of technical cooperation programmes and projects.

UNIDO's involvement in assisting developing countries and countries with economies in transition in fulfilling their obligations under the Stockholm Convention started with the development of national implementation plans (NIPs). More than 43 countries have received UNIDO support for NIPs and post-NIPs activities and several types of project have been developed in cooperation with GEF.

In the following table, the relevant POPs projects are summarized:

Projects	Description
National implementation plans (NIPs)	<ul style="list-style-type: none"> <li>• <b>Enabling activities in 43 countries</b> (in Africa(20), Africa Arab States (3), Asia Pacific (7), Europe (10), The Americas (3)).</li> <li>• <b>Preparation of NIPs in large countries:</b> China and India.</li> </ul>
Post-NIPs	<ul style="list-style-type: none"> <li>• <b>Polychlorinated biphenyls (PCBs) project</b> in Romania and the former Yugoslav Republic of Macedonia.</li> <li>• <b>Medical waste project</b> in China.</li> <li>• <b>Non-combustion projects</b> in China, the Philippines and Slovakia.</li> <li>• <b>Best available techniques (BAT) and best environmental practices (BEP) project</b> in the region of the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERS-GA) (Egypt, Jordan and Yemen), Morocco and VietNam.</li> <li>• <b>Regional project to develop appropriate strategies for identifying sites contaminated by chemicals listed in annexes A, B and/or C of the Stockholm Convention</b> in Ghana and Nigeria.</li> </ul>



## National implementation plans (NIPs) and UNIDO

Article 7 of the Stockholm Convention on POPs requires each party to the Convention to develop its NIP for fulfillment of its obligations under the Convention and to transmit its national implementation plan to the Conference of the Parties within two years of the date on which the Convention enters into force for that party. In addition, article 5 of the Convention requires each party to develop an action plan designed to reduce or eliminate releases from unintentional production of POPs and to implement it subsequently as a part of its NIP. It is expected that the reduction of POPs on a global scale will be promoted in order to achieve protection of human health and the environment through each party's concrete actions under the Convention.

To date, UNIDO assists 43 countries around the world with enabling activities (EA) to facilitate early action to implement the Stockholm Convention. The geographical scope covers almost all continents, including not only the most populous States such as China and India but also small island States such as Seychelles and Sao Tome and Principe.

The overall objective of EA is to strengthen national capacity and capability to prepare an NIP for the management of POPs.

Activities covered during the NIP implementation are:

- Coordination mechanism and process organization
- Preliminary inventories of POPs and assessment of national infrastructure and capacity
- Priority-setting and determination of objectives
- Formulation of an NIP, including specific action plans on POPs
- Endorsement of the NIP by stakeholders

In some of the countries, EA projects are in their advanced stage of implementation. UNIDO is therefore developing proposals for them to address issues identified by their NIPs and is working in cooperation with United Nations entities and other institutions and interest groups to further their initiatives.

The map below shows the geographical scope of approved EA projects being implemented by UNIDO.





## Cooperation between China and UNIDO on persistent organic pollutants (POPs)

Aware that POPs pose major and increasing threats to human health and the environment, China, the largest and most populous country in the Asia-Pacific region has signalled its firm commitment to protect human health and the environment by becoming a party to the Stockholm Convention: China signed the Convention on 23 May 2001 and ratified it on 13 August 2004.

UNIDO plays an important role in assisting China to meet its obligations under the Stockholm Convention. The cooperation between UNIDO and China covers a wide range of areas, including the development of an NIP; establishment of relevant capacity to comply with the Convention; the formulation of national strategy to

demonstrate best available technologies (BAT) and best environmental practices (BEP) and the demonstration of BAT and BEP in key sectors relevant to the release of unintentionally produced POPs (UP-POPs).

To date, three projects are being implemented by UNIDO in China, with a total budget of approximately US\$ 6 million. Four more projects are under preparation with a total budget estimated at \$144 million.

### Highlights of projects under implementation

The project entitled "Building the capacity of China to implement the Stockholm Convention on POPs and develop a national implementation plan" is so far the largest GEF-financed NIP project in the world. UNIDO is the lead agency for the project. The United Nations Development Program, UNEP, the United Nations Institute for Training and Research and the World Bank and the relevant bilateral donors such as Canada, Italy, Japan, Switzerland and the United States of America are also involved in the project, whose purpose is to enable China to take the first step towards fulfilling its obligations under the Stockholm Convention by developing an NIP.

This project has been a great challenge, not only for UNIDO but also for China. The project has made satisfactory progress, however, thanks to the joint efforts of UNIDO and the State Environmental Protection Administration of China and the hard work of national staff and international experts.

### Environmentally sustainable management of medical waste

The need for this project emerges from the provisions of article 5 of the Stockholm Convention, which obliges each party to make efforts to promote BAT and BEP for existing potential POP-generating facilities or sources (such as medical waste-processing plants) upon accession to the Convention and to require the use of BAT in new facilities no later than four years after the entry into force of the Convention for that party.

In general, medical waste has a higher content of chlorinated plastic products than municipal solid waste and is more likely to contain infectious or toxic materials.

In view of this, waste incinerators used in the disposal of medical waste are recognized in annex C, part II, of the Stockholm Convention as having the potential for comparatively high formation and release of polychlorinated dibenzo-p-dioxins/polychlorinated dibenzo-furans (PCDD/PCDF), hexachlorbenzene (HCB) and polychlorinated biphenyls (PCBs).



The incineration of medical waste in particular when carried out in small and/or poorly controlled incinerators, is a major source of PCDD/PCDF emissions.

The objective of the project is to minimize the generation and emissions of UP-POPs (principally PCDD/PCDF) from the medical waste treatment sector. The project will simultaneously explore ways to reduce emissions of other POPs and globally harmful contaminants generated by the medical waste sector, such as HCB, PCBs, mercury and polycyclic aromatic hydrocarbons. This approach is

expected to be a highly effective one and to result in significant additional global environmental benefits for little or no additional cost, since many of the measures to reduce PCDD/PCDF emissions are able to or can be adopted to simultaneously reduce emissions of the other micro-organic pollutants. Additional measures to achieve lower mercury emissions will also be considered.

### **Sino-Italian project: "Strategies to reduce UP-POPs in China"**

This project demonstrates methodologies to promote the application of BAT and BEP and to determine incremental costs in reducing UP-POPs in key industrial sectors. Medical waste sectors and the paper and pulp and iron and steel industries have been identified and selected as the demonstration sectors after an overall assessment of UP source categories on China. Furthermore, two typical enterprises in each sector were selected and

an intensive survey and evaluation of the technologies and management of these enterprises were conducted. The auditing reports and the demonstration plans for each enterprise have been worked out by the international and national teams and agreed upon with the enterprises. On-site sampling and analysis of UP-POPs have been conducted. Some enterprises will conduct alternative trial measures to reduce the emission of UP-POPs.

### **Highlights of projects under preparation**

#### **Long-term capacity-building project**

As one of the important outputs of the NIP project, UNIDO will support China to develop a project entitled "Long-term capacity-building programme", to meet prioritized capacity-building requirements for compliance with the Stockholm Convention, especially at the provincial level.

#### **Environmentally sustainable development of the iron and steel industry in China**

The need for this project emerges from the fact that the iron and steel industry is one of the key sources for UP-POPs. The objective of this project is to introduce, demonstrate and disseminate suitable BAT and BEP in the iron and steel industry and to conduct corresponding capacity-building activities to facilitate China's move towards widespread utilization of BAT and BEP in the sector. This objective would be of great global environmental benefit and would lead to technical promotion in the industry.

#### **Global programme to demonstrate the viability and removal of barriers that impede the successful implementation of available non-combustion technologies for destroying POPs**

China has been selected as one of the participating countries in this project. As organochlorine pesticides were produced and used predominantly in the past, a large amount of waste POP pesticides has been generated in production and storage sites and has become a potential risk to the environment and to human health.

The objective of this project is the disposal of POP wastes by demonstrating the viability and removal of barriers that impede the adoption and successful implementation of available non-combustion technologies to destroy these wastes.

#### **Environmental sustainability in the pulp and paper industry in China**

The objective of this project is to introduce, demonstrate and disseminate suitable BAT and BEP in the pulp and paper industry and to conduct corresponding capacity-building activities to facilitate China's move towards widespread utilization of BAT and BEP in the industry. This objective would be of great global environmental benefit and would lead to technical promotion in the industry, since this sector has been identified as one of the key sources of UP-POPs.



## Introduction of Best Available Techniques (BAT) and Best Environmental Practices (BEP) methodology to demonstrate reduction or elimination of dioxins and furans (PCDDs and PCDFs) releases from the industry in Vietnam

In 1994, UNIDO assisted Viet Nam in developing industrial environmental policies, shortly after the country developed its National Plan for Environment and Sustainable Development for 1991-2000. This has resulted in a series of technical assistance support projects and programmes. This project on BAT and BEP is an agreed continuation of UNIDO cooperation with the Government of Viet Nam in implementing the priorities of its NIP.

Through this project, UNIDO will assist the country to plan and develop strategies to comply with its obligations under article 5 of annex C, part II, of the Stockholm Convention on POPs, concerning reduction or elimination of PCDD and PCDF emission releases from the industrial sectors and processes.

Key objectives of the project are:

- To prepare BAT and BEP options to demonstrate reduction and elimination of unintentional production of POPs in industry, recognized by the preliminary inventory conducted within the POPs EA process for Viet Nam, as key sources of unintentional production of POPs chemicals listed in annex C to the Stockholm Convention.

- To prepare estimates of the likely range of

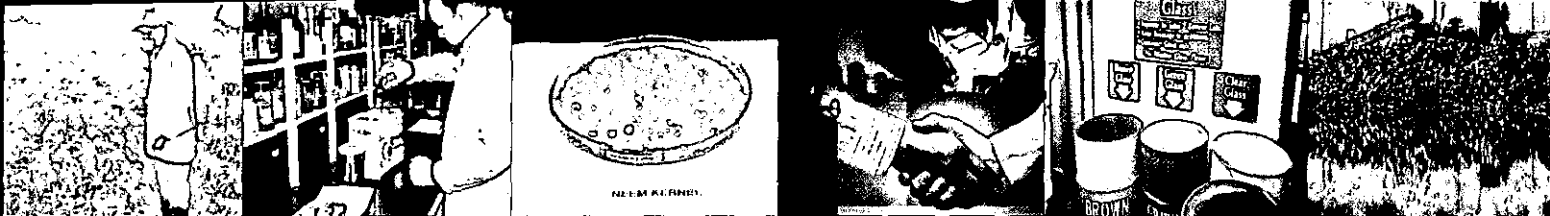
incremental costs of implementing BAT and BEP options at the enterprise and sector levels as contributions to action planning and strategy development to reduce releases and eliminate sources of unintentional production of POPs chemicals listed in annex C to the Stockholm Convention.

The preliminary inventory identified the priority industries of concern in terms of releases of dioxins and furans, such as the metallurgical industries and the pulp and paper, open burning and cement industries, which are firing used tyres as well as used oils and waste incinerations. The fossil fuel power stations in the major cities of the country may constitute a major source of releases classified under article 5 of annex C, part III, on source categories.

The project will be a logical continuation of the EA project and one of the first steps for the practical implementation of pollution reduction and elimination measures for POPs in Viet Nam.

### Expected outcomes

- Establishment of a project steering committee and coordination mechanism
- Development of a detailed logistics plan for the introduction of BAT and BEP strategies
- Enterprise-level analysis for setting out optimized BAT and BEP strategies for unintentional production, reduction and the incremental costs of implementation
- Sector-level analysis of incremental costs of implementing BAT and BEP in the selected industrial sector
- Enhanced capacity at the enterprise and sector levels for: (a) preparing BAT and BEP implementation strategies; (b) preparing incremental cost calculations; and (c) monitoring unintentional production
- Enhanced capacity at the national level in BAT and BEP options and incremental cost calculations for the national action plan and participation in implementation of the Convention
- Publications setting out methodologies adopted in the project and lessons learned for distribution to industry in Viet Nam and as a contribution to BAT and BEP implementation using existing processes
- Intensive communication and preparation of awareness-raising activities on BAT and BEP opportunities in the industrial sector
- Evaluation and dissemination of the results to industry at the national level



## Fostering active and effective civil society participation in preparations for implementation of the Stockholm Convention

By adopting the Stockholm Convention in May 2001, Governments demonstrated their intent to include successful implementation of the Convention among their national priorities. The Convention contains important provisions related to public participation and access information. Article 10 obliges parties to promote public participation in addressing and developing adequate responses to POPs and their health and environmental effects. Article 10 also calls for the development and exchange of educational and public awareness materials and education and training programmes. Stockholm Convention EA projects foresee the active involvement of non-governmental organizations (NGOs) and civil society in all stages of development.

The project entitled "Fostering active and effective civil society participation in preparations for implementation of the Stockholm Convention" encourages and enables NGOs in approximately 40 developing countries and countries with economies in transition to engage in activities in their countries that will provide concrete and immediate contributions to country efforts in preparing for implementation of the Stockholm Convention.

NGO interest, involvement, capacity and activity on issues relating to POPs and other persistent toxic substances have been rapidly emerging and evolving in many developing countries and countries with

economies in transition. NGOs in many countries are linked to one another through national, regional and/or global communication networks and share, along with national Governments, a common commitment to the Stockholm Convention and its objective of protecting human health and the environment from POPs. The unifying vehicle for these NGOs has been the International POPs Elimination Network (IPEN), a network of 350 NGOs and community-based groups around the world working together to eliminate POPs. The Environmental Health Fund proposes this project on behalf of IPEN.

This project's rationale and objectives concentrate primarily on activities to protect human health and the environment from the initial 12 POPs listed in the Stockholm Convention. These activities serve to enhance the skills and knowledge of NGOs in participating countries to help build their capacity as effective stakeholders and participants during national preparations for implementation of the Convention. In the longer-term, after project completion, these activities should leave NGOs who have participated in the project with enhanced ability to undertake future and ongoing national and regional activities aimed at the reduction and elimination of POPs and other persistent toxic substances.

### Project achievements:

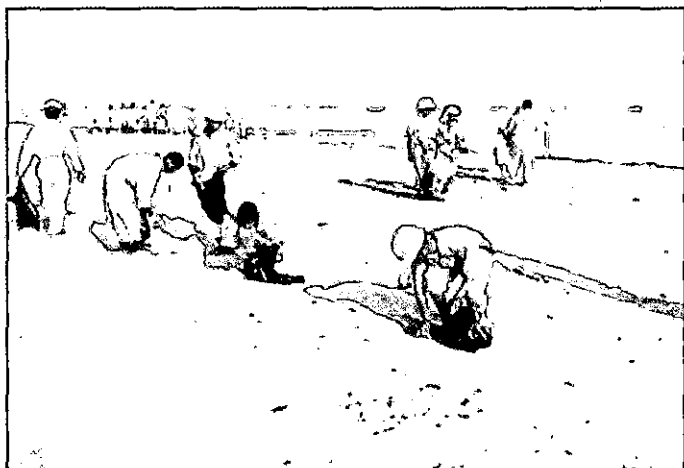
- Regional NGO facilitation hubs have been established in English-speaking Africa; Central and Eastern Europe; French-speaking Africa; Latin America and the Caribbean; the Middle East; the Russian Federation and the newly independent States; South Asia; and South-East and East Asia and the Pacific.
- These hubs help NGOs develop and implement the country-based medium-size project (MSP) activities.
- Country-specific and/or country-relevant informational and policy documents and materials have been or are being prepared.
  
- Country situation reports on which the project has activities have been or are being prepared.
- POPs hotspot reports have been or are being completed.
- POPs policy briefs have been or are being completed.
- MSP regional reports have been or are being completed.
- Key information has been translated into local languages.
- Support has been given to facilitate NGO participation in country NIP development processes, while public awareness activities and campaigns, country and district workshops and trainings and similar activities are being undertaken.
- Five issue-focused, international NGO expert teams that provide support and assistance to NGOs undertaking country-based activities have been established and are continuing their work.
- A global website containing country-specific and relevant informational, educational and policy-oriented materials about POPs from approximately 40 countries has been established and is regularly updated.
- Global project management and facilitation, including support for the eight regional facilitation hubs, is being provided.

**Regional promotion of strategies to reduce unintentional production of POPs in the  
Regional Organization  
for the Conservation of the Environment  
of the Red Sea and Gulf of Aden (PERSGA) Region**

The Red Sea and the Gulf of Aden (RSGA) contain some of the world's most important coastal and marine environment and resources. Although the region is still one of the least ecologically distributed seas in relation to other enclosed bodies of water, it is still at increasing risk of pollution. The high rate of population and economic growth in the coastal areas in the region has resulted in increased pressure on the environment by pollution. There is a growing risk of marine pollution and environmental degradation by several human activities, among them industrial pollution.

PERSGA has approached UNIDO to seek assistance in developing a GEF MSP to develop an action plan and strategy for the elimination of POPs in the RSGA region, in particular for the reduction and elimination of the unintentional production of POPs as per article 5 of the Stockholm Convention. PERSGA is an intergovernmental body, a GEF-supported institution, dedicated to the conservation of the coastal and marine environment in the region. This project constitutes logical post-NIP implementation and is linked to all the NIPs of the PERSGA member States. UNIDO ongoing and pipeline environment programmes will also benefit from the project.

Considering that the major part of the gross domestic products (GDP) of Egypt, Jordan and Yemen comes from tourism, there is a need to take into careful consideration the potential risks from environmental pollution, in particular the impact on health in populated coastal areas. This requires a more regional approach of cooperation among all countries rather than individual country interventions. The MSP for Egypt, Jordan and Yemen will therefore support the development of an action plan and a strategy for the introduction of BAT and BEP into the coastal zone industries of the three countries. This goal will permit the PERSGA member States to attain compliance with their obligations under the Stockholm Convention on POPs, in particular those related to industry, and to contribute to the improvement of environmental conditions and human health in the coastal zone and to sustainable development programmes and plans. The project will eventually help in sharing experiences among the three countries and support those who have faced or are facing difficulties in the last stages of development of a sound management plan for reduction and elimination of dioxins and furans.



Threats / Pollution: Post Limburg oil spill cleaning sand (PERSGA)



Public awareness: Environmental school clubs activity (tree planting by club members) (PERSGA)

#### **Expected outcomes**

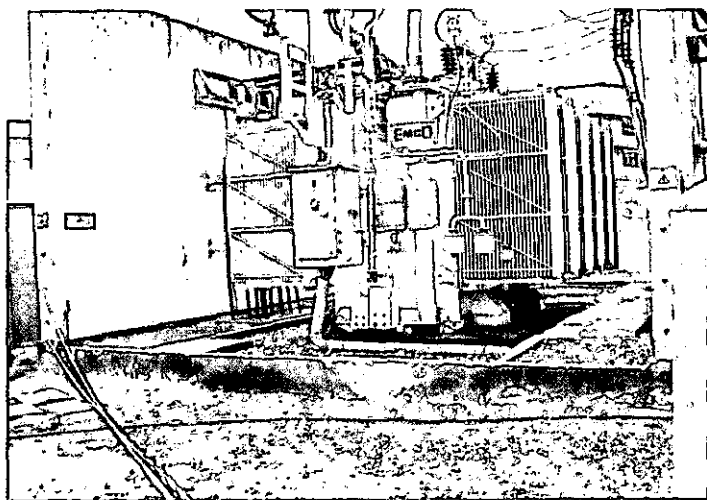
The MSP outputs will include:

- Establishment of a project management structure through identification of stakeholders from public, private and NGOs and assessment of the present situation of POPs chemicals management in the coastal zone, including linkages with the countries' NIPs
- Collection of data and survey the coastal zone in order to design a logical framework for the development of an action plan linking the outcomes to objectives and measurable indicators of the project proposal
- Development of a regional action plan to introduce BAT and BEP options at the enterprise and sector levels, including selection of one or two demonstration sites
- Development of a fund mobilization plan targeting specific priority sectors for technology transfer through BAT and BEP

## Regional project to develop appropriate strategies to identify sites in Ghana and Nigeria contaminated by chemicals listed in annexes A, B and/or C of the Stockholm Convention

The inventory of obsolete pesticides and other POPs chemical stocks is an integral component of the EA for the development of NIPs under way in Ghana and Nigeria. Both countries are covering NIP activities with the support of UNIDO. These activities will provide national listings of chemicals and of sites contaminated by chemicals. The listings are not, however, associated with the identification of the risks to health and the environment that these sites pose.

The countries recognize the problem of sustainability that the ongoing POPs project would face by dealing only with the problem of disposal of stockpiles while ignoring the related problem of clean-up of lands contaminated by POPs chemicals. Such contaminated lands, if redeveloped or redeployed for agricultural purposes, will pose significant and immediate threats to human and animal health and to the environment. The two countries have, consequently, approached UNIDO to assist them through GEF funding to develop policies and regulations for the rehabilitation of contaminated sites and at a later stage through other donor support to promote in situ clean-up of such lands while promoting the transfer of appropriate remediation technologies.



Discarded transformer at ECG site at Accra central market

The main objective of this project development facility (block B) is to develop a project brief that would promote and facilitate environmentally sustainable development in Ghana and Nigeria through the development of strategies to identify industrial and agricultural lands contaminated by POPs.

Project activities will include:

- Preliminary inventories of sources and emissions of POPs listed in annexes A and B to the Convention
- Preparation of a preliminary assessment of stockpiles of POPs and of products contaminated by POPs and identification of management options, including opportunities for disposal as provided for in article 6 of the Convention
- Building capacity to identify sites contaminated by POPs and support for communication, information exchange and raising awareness through a multi-stakeholder participatory process, as provided for in articles 9 and 10



Group photo:  
Participants at the regional seminar on POPs contaminated sites in Accra

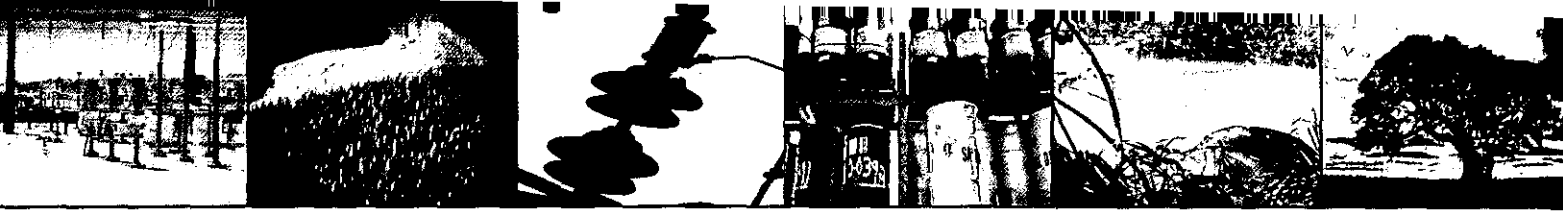
### Project outcomes

The main outcome of the full project would be the development of policy and legal frameworks for the management of POP-contaminated lands in Ghana and Nigeria and possible use of this experience to extend the results to the West African region. The project would also include activities leading to enhancing national and regional assessment capacity on issues of POP-contaminated land. Above all, 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 issues of socio-economic importance, namely, stakeholder involvement and establishment of information management systems, public awareness and environmental education programmes. The Geoenvironmental Research Center of the University of Cardiff in Wales-UK is a UNIDO partner in this project.

The full project will assist the participating countries:

- To develop policy and legal frameworks for the management of contaminated lands
- To build/strengthen institutional capacities/arrangements for the management of contaminated lands
- To develop a national classification system for the management of contaminated lands
- To provide methodology and guidelines to select, acquire, adapt and implement low-cost but environmentally sound remediation technologies
- To identify priority locations for the demonstration of appropriate technologies
- To establish information management systems as a decision-making support
- To establish local, national, regional and international scientific, technical and socio-economic networks and partnerships for the management of contaminated lands
- To strengthen public awareness campaigns in communities and environmental education programmes





## Phasing-out and elimination of PCBs and PCB-contaminated equipment in the former Yugoslav Republic of Macedonia

PCBs and the POPs chemicals listed in the Stockholm Convention have demonstrated their chronic adverse effects on human health and the environment. Chronic impairment of human health through environmental exposure to POPs has direct implications for national and international efforts to meet development targets in human health.

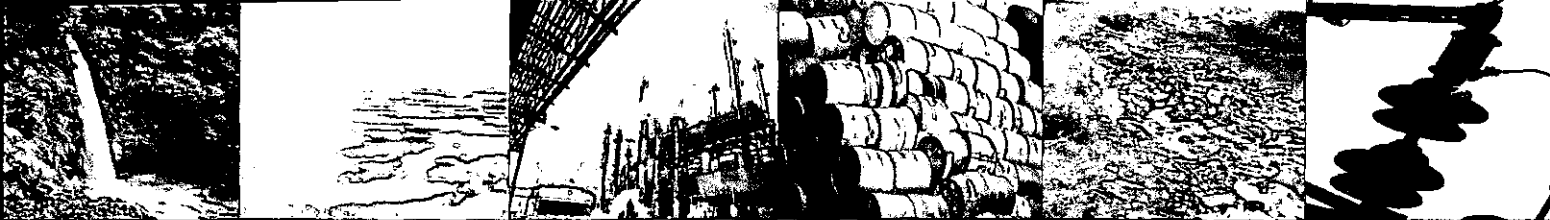
This project will allow the Government of the former Yugoslav Republic of Macedonia to meet its obligations under the Stockholm Convention in relation to environmentally sound management of hazardous wastes. Collecting, safe phasing-out, interim storage and professional treatment and disposal of PCB wastes will prevent further diffusion of contamination. According to available information, there are PCB-containing electrical units in a number of industries.

UNIDO has assisted the former Yugoslav Republic of Macedonia in developing its NIP for the Stockholm Convention. This project is a logical continuation of UNIDO cooperation with the country in implementing the priorities of its NIP.

The main objective of the project is to develop a full-scale MSP that would assist the country to phase out PCB-containing equipment from the national electric power company (Electrostopanstvo na Makedonija) and to establish the knowledge and management capacity and experience for equipment, replacing procedures, promoting collaborative best practices, learning and training of personnel to follow the activities in other sectors and to assist the Ministry of Environment and Physical Planning in the establishment of mechanisms for safe handling and disposal of PCB-containing or PCB-contaminated equipment.

The MSP will address the development of the transformer management strategy of Electrostopanstvo na Makedonija and will deal with the following issues:

- Identification and labelling of PCB-containing or PCB-contaminated equipment in continuation of the preliminary inventory
- Management system for decontamination and proper disposal/elimination of PCBs and PCB-polluted equipment, including the most appropriate scenario for pollution prevention, containment and methods for phasing out and disposal
- Protection for personnel handling PCBs (e.g. during drainage of transformers)
- Evaluation of existing regulations for local and international transportation and internal regulations for all PCB-related activities
- Potential improvement
- Full understanding of the existing disposal technologies and their requirements; selection and demonstration of the most efficient technological approaches
- Training of staff for management of all phase-out cycles
- Increasing public awareness



## Disposal of PCB wastes in Romania

In the action plan of the NIP prepared through the GEF-funded and UNIDO-implemented EA project in Romania, PCB wastes have been identified as a priority and an urgent problem to be solved in Romania due to the threat they represent for human health and the environment.

This project will allow the Government of Romania to meet its obligations under the Stockholm and Basel Conventions in relation to environmentally sound management of hazardous wastes. The objective of this project development facility (block A) project is to collect information and data on PCB wastes and stockpiles in order to develop an MSP proposal for safe collection, interim storage and disposal of the PCB wastes identified.

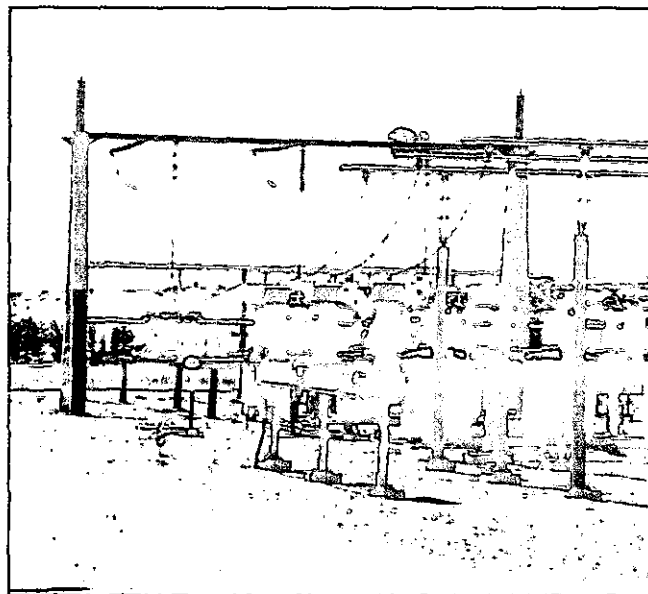
The expected outcome of the project is a reduction in the ongoing threat to human health from PCBs as well as avoidance of future releases of PCBs into the environment through safe containment, storage and disposal.

Planned outputs to achieve these outcomes are:

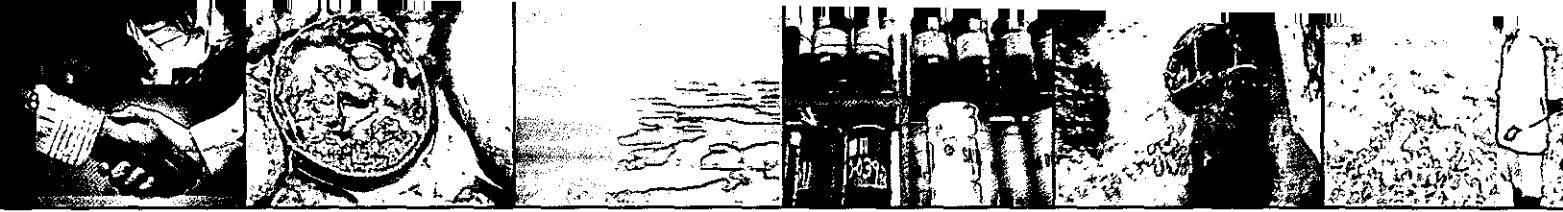
- Stakeholders' agreement on a clear project objective, outcomes and indicators associated with these
- Definition in detail of the scope of work to be carried out under the full project
- Definition of the process and methodologies for conducting the activities
- Identification of potential partners
- Development of project costing for the various components and incremental cost assessment
- Development of a financial plan, identification of funding possibilities for each activity and negotiation of co-financing for the non-GEF-funded work
- Preparation of a GEF MSP proposal and project document



Hazardous waste



Transformers still contain huge quantities of PCB



**Global programme to demonstrate the viability and removal of barriers that impede adoption and successful implementation of available, non-combustion technologies for destroying persistent organic pollutants (POPs)**

This project, which is global in scope, will develop a programme and an initial project in Slovakia, which will demonstrate the viability of available non-combustion technologies for use in the destruction of obsolete POPs stockpiles. The programme would successfully use such technologies to destroy significant obsolete POPs stockpiles in developing countries and countries with economies in transition, starting with Slovakia, and will thereby help remove barriers to the further adoption and effective implementation of available non-combustion technologies and meet the Stockholm Convention requirement to ensure the use of BAT and BEP.

Engaging the World Bank/International Finance Corporation and other funding agencies and institutions to ensure dissemination of results and replication

Emphasis will be given to procedures that facilitate the participation of civil society and encourage community confidence and support for proposed destruction and clean-up activities. An important feature of the programme is the recognition that, in all regions and in many countries, groups within civil society have often resisted proposed POPs destruction and clean-up activities using different traditional combustion technologies on the ground that these have often created significant burdens in developed countries in the past and continue to do so in developing countries and countries with economies in transition even today.

The principal subject of this project is located in Slovakia. The project will address one of the most seriously contaminated PCB sites in the world and will also result in the creation of a useful case study to illustrate how to create joint GEF, government and private sector collaboration for future efforts that will be undertaken pursuant to the Stockholm Convention.

Since there will be four country-specific demonstration projects, strong coordination of the four project activities will be needed for purposes of successful replication and sustainability. This will require formation of a small global coordinating unit that will oversee the non-combustion programme.



From left to right: H.E. Mr. László Miklós, Minister for Environment of the Slovak Republic and Mr. Kandeh Yumkella, UNIDO Director-General.

The programme would be extended to China, to an African country (yet to be identified) and to the Philippines (where project preparation activities are already under way). This will allow for the demonstration of the viability of non-combustion technologies in a wide range of representative socio-economic and cultural conditions and in solving POPs problems by:

- Addressing various types of POPs waste
- Deploying different technologies
- Ensuring effective links and synergies with other GEF Stockholm Convention-related projects such as the Africa Stockpiles Programme (ASP)

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