



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

PROJECT DOCUMENT

1. IDENTIFIERS

Project Number: GF/CPR/04/XXX

PIMS No. 1412

Country: People’s Republic of China

Title: Building the Capacity of the People’s Republic of China to implement the Stockholm Convention on POPs and develop a National Implementation Plan

Estimated Start Date: September 2004

Duration: 27 months

Executing Agency With Expanded Opportunities: United Nations Industrial Development Organization (UNIDO)

National Implementing Agency: Foreign Economic Cooperation Office (FECO), State Environmental Protection Administration (SEPA)

Eligibility: Eligible according to paragraph 9(a) and (b) of GEF Instruments

GEF Focal Area: Persistent Organic Pollutants

Programming Framework: Operational Programme 14: Persistent Organic Pollutants

Summary of Financing for Full Project	Amount (US\$)	Amount (Euro)
<b>GEF</b>		
Project	4,056,500	
<b>Sub-Total</b>	<b>4,056,500</b>	
<b>Co-financing</b>		
Government of Italy		
1 Pesticidal POPs*	1,798,500	2,115,036
2 PCBs*	1,611,150	1,500,000
3 Unintentional Production*	1,074,100	1,000,000
Government of Canada		
1 Impacts on human health	180,000	
2 Termite Control	250,000	
3 Capacity building for PCBs treatment	170,000	
Government of China (in-kind, full project)		
UNIDO (in-kind, full project)	870,000	
	195,000	
<b>Sub-Total</b>	<b>6,148,750</b>	<b>4,615,036</b>
<b>FULL PROJECT COST</b>	<b>10,205,250<sup>1</sup></b>	

\* Contributions in Euros. US \$ contributions estimated in which included the management fee to be paid to implementing and executing agencies.

2. Brief Description : The People’s Republic of China signed the Stockholm Convention on Persistent Organic Pollutants when it opened for signature and expects to complete the ratification procedures during 2004. Parties to the Convention must transmit a National Implementation Plan (NIP) to the Conference of Parties within two years of the date on which the Convention enters into force for them. To that end, China is committed to completing and delivering its NIP during 2006. This project document is designed to meet that objective and sets out the activities necessary to prepare the NIP. The project also provides for capacity building and for a series of case studies and demonstrations of methods that may represent suitable, practical and feasible approaches to meet the obligations of the Convention. The financing and implementation arrangements required to undertaken these activities is set out.

The success of China’s efforts to complete its NIP within the time period set by the Convention rests on the implementation of this full project without delay and on the availability of financial resources. China

<sup>1</sup> During the PDF-B phase of the project, a GEF PDF-B grant of US\$ 349,500 and co-financing (a total of US\$ 515,000) from the Government of Canada (US\$ 365,000), from the Government of China (in-kind US\$ 80,000) and from UNIDO (in-kind US\$ 70,000) were expended for project preparation.

has been successful in attracting a considerable proportion of co-financing for these activities but additional resources are required from the GEF as the interim principal entity for the financial mechanism of the Convention.

The project document is the final output of the UNIDO-executed project entitled 'Preliminary assessment to identify the requirements for developing a National Implementation Plan in the People's Republic of China as a first step to implement the Stockholm Convention on persistent organic pollutants POPs' funded by the GEF under a PDF-B grant.

The project document provides, in the text and accompanying appendices, a preliminary assessment of the current situation with regard to each of the chemicals listed in the Stockholm Convention, the overall legal and regulatory framework for chemicals management in China, and initial indications of the principal stakeholders.

While China has no legislation specific to the control of POPs chemicals, there is a considerable volume of legislation, regulation, rules and standards providing a regime for environmental protection and the sound management of chemicals. Of the POPs chemicals listed in the Convention, chlordane, mirex, HCB and DDT remain in production and use; chlordane and mirex for termite control, HCB largely as an intermediate in the production of sodium-pentachlorophenol and DDT largely as an intermediate for dicofol. China has signalled its intent to register specific exemptions for these applications and to produce and use DDT in malaria control programmes, an acceptable purpose as defined in the Convention. PCBs are no longer produced or traded but it seems likely that a considerable volume of PCB oils remains in electrical supply equipment still in use, retired or gathered for safekeeping. Unintentional production of POPs chemicals listed in Annex C is likely to be significant as China has a considerable industrial base including all the source categories listed in parts II and III of that Annex.

From this assessment of the current situation, the proposal sets out the objectives to be achieved in order to complete the preparation of a NIP for transmission to the Conference of Parties of the Stockholm Convention. A range of activities, grouped into a number of work packages, is proposed to meet these objectives. These activities and work packages have been planned according to the Articles, Paragraphs and Annexes of the Convention using initial guidelines and draft guidance for NIP preparation developed by the GEF and jointly by the World Bank and UNEP.

Some of these activities provide additional benefits above and beyond the requirements for national implementation planning. A series of case studies and demonstration projects will, for example, develop methodologies that may represent viable approaches to priority actions required by China in meeting the obligations of the Convention. The results of these activities provide valuable information for the strategies and action plans forming the NIP and will give indications of likely incremental costs. They will also enable China to take up priority actions without delay once the NIP has been transmitted to the Conference of Parties. For these reasons there are significant mutual advantages in conducting these demonstrations in parallel with the enabling activities.

Substantial co-financing has been won both for the enabling activities and for the additional elements noted above.

The Government of Italy is financing a large proportion of the work package dealing with POPs pesticides. It has also signed agreements with the Government of China to finance work on PCBs and to co-finance activities related to the reduction of unintentional production of POPs. The Government of Canada has committed itself to provide assistance for capacity building, particularly in PCBs management, and for case studies and demonstration projects related to termite control and health impacts. The achievement of a NIP will also benefit from associated financing provided as part of national regular budget actions, and international and bilateral technical cooperation projects in areas such as disease vector control, integrated pest management and hazardous waste management.

The project document is submitted to the GEF by the United Nations Industrial Development Organization (UNIDO) as Executing Agency with Expanded Opportunities. The Foreign Economic Cooperation Office of the State Environmental Protection Administration will have managerial responsibility for national implementation of the project.

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On behalf of	Signature	Date	Name/Title
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**National Executing Agency:** Foreign Economic Cooperation Office of the State Environmental Protection Administration

**Executing Agency:** United Nations Industrial Development Organization

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### **3. COSTS AND FINANCING:**

<b>Summary of financing: (including GEF and other donor financing during PDF-B grant phase)</b>	<b>Amount (US\$)</b>	<b>Amount (Euro)</b>
<b>Full Project</b>		
GEF	4,056,500	
Government of Italy (pesticidal POPs)*	1,798,500	2,115,036
Government of Italy (PCBs)**	1,611,150	1,500,000
Government of Italy (Unintentional Production)***	1,074,100	1,000,000
Government of Canada (Impacts on human health)	180,000	
Government of Canada (Termite Control)	250,000	
Government of Canada (Capacity building for PCBs treatment)	170,000	
Government of China (in-kind, full project)	870,000	
UNIDO (in-kind, full project)	195,000	
<b>Sub-Total Full Project Cost</b>	<b>10,205,250</b>	
<b>PDF-B</b>		
GEF	349,500	
Government of Canada (Capacity Building workshops – during PDF-B phase)	365,000	
Government of China (in-kind, PDF-B)	80,000	
UNIDO (in-kind, PDF-B)	70,000	
<b>Sub-Total PDF-B Cost</b>	<b>864,500</b>	
<b>TOTAL GEF BUDGET</b>	<b>4,406,000</b>	
<b>TOTAL PROJECT COST</b>	<b>11,069,750</b>	

\* co-financing in Euros. Dollar equivalent calculated as at July 2001; 1 Euro = 0.8503 US\$; including the management fee of € 190,353, equivalent to 9% of the total costs of the project, to be paid to UNDP and UNOPS;

\*\* co-financing in Dollar equivalent calculated as at February 2003; 1 Euro = 1.0741 US\$; including the management fee of € 75,000, equivalent to 5% of the total costs of the project, to be paid to the World Bank;

\*\*\* co-financing in Dollar equivalent calculated as at February 2003; 1 Euro = 1.0741 US\$; including the management fee of € 130,000, equivalent to 13% of the total costs of the project, to be paid to UNIDO and FECO/SEPA.

### **4. GEF FOCAL POINT ENDORSEMENTS:**

Name: Jinlin YANG  
Position: GEF Operational Focal Point for China  
Organization: International Department  
Ministry of Finance  
Date: 28 June 2001

## **5. EXECUTING AGENCY CONTACT:**

Mr S.M. Si Ahmed  
Director  
Multilateral Environmental Agreements Branch  
Programme Development and Technical  
Cooperation Division  
UNIDO  
Tel: +43 1 260 26 3782; Fax: +43 1 260 26 68 04  
Email: [S.Si-Ahmed@unido.org](mailto:S.Si-Ahmed@unido.org)

Mr M. Eisa  
POPs Unit Acting Chief  
Multilateral Environmental Agreements Branch  
Programme Development and Technical  
Cooperation Division  
UNIDO  
Tel: +43 1 260 26 4261; Fax: +43 1 260 26 68 19  
E-mail: [M.Eisa@unido.org](mailto:M.Eisa@unido.org)

## **6. NATIONAL EXECUTING AGENCY CONTACT:**

Mr Zhang Qingfeng  
Coordinator  
Stockholm Convention Implementation Office,  
State Environmental Protection Administration  
16 Guangqumennei Street  
100062 Beijing  
Tel: +8610 67117548  
Fax: +8610 67136207  
E-mail: [zhang.qingfeng@sepa.gov.cn](mailto:zhang.qingfeng@sepa.gov.cn)

## **LIST OF ACRONYMS/ABBREVIATIONS**

BAT	Best Environmental Techniques
BEP	Best Environmental Practices
CoP	Conference of Parties
CIO	Convention Implementation Office
DDT	(1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane)
DLG	Development Leading Group
EIA	Environmental Impact Assessment
EPB	Environmental Protection Bureau (of SEPA)
FAO	Food and Agriculture Organization
FECO/SEPA	Foreign Economic Cooperation Office of the State Environmental Protection Administration
GAC	General Administration of Customs
GDP	Gross Domestic Product
GEF	Global Environment Facility
HCB	Hexachlorobenzene
IFCS	Intergovernmental Forum on Chemical Safety
INC	Intergovernmental Negotiating Committee
IOMC	InterOrganizational Programme for Sound Management of Chemicals
IPM	Integrated Pest Management
ITCG	Inter-ministerial Technical Coordination Group
MCA	Ministry of Civil Affairs
MEA	Multilateral Environmental Agreement
MoA	Ministry of Agriculture
MoC	Ministry of Construction
MoH	Ministry of Health
MoFA	Ministry of Foreign Affairs
MWR	Ministry of Water Resources
Na-PCP	Sodium pentachlorophenate
NFP	National Focal Point

NGOs	Non-Governmental Organizations
NIP	National Implementation Plan
NPC	National People's Congress
NPD	National Project Director
OECD	Organization for Economic Cooperation & Development
PCBs	Polychlorinated biphenyls
PCP	Pentachlorophenol
PDF-B	Project Development Facility Block-B
PMG	Project Management Group
POPs	Persistent Organic Pollutants
PRTRs	Pollutant Release & Transfer Register
PSG	Project Steering Group
RENAP	Regional Network for the Production of Safe Pesticides in the Asia Pacific Region
SAF	State Administration for Forestry
SAQSIQ	State Administration for Quality Supervision, Inspection and Quarantine
SAWS	State Administration for Work Safety
SEPA	State Environmental Protection Administration
SETC	State Economic and Trade Commission
SPPC	State Planning & Development Commission
TCG	Technical Coordination Group
TVEs	Township & Village Enterprises
UNDP	United Nation Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training & Research
WB	The World Bank
WHO	World Health Organization

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## 1.0 Project Description; Background and Context

### 1.1 Introduction

1. The People's Republic of China signed the Stockholm Convention on Persistent Organic Pollutants (hereinafter 'the Stockholm Convention' or 'the Convention') on the date when it opened for signature<sup>2</sup>. Preparations to ratify the Convention are being made and China expects to complete the ratification procedures during 2004.
2. The Stockholm Convention will enter into force on 17<sup>th</sup> May 2004. Parties are required to transmit their National Implementation Plans (NIPs) to the Conference of Parties (CoP) within two years of the date on which the Convention enters into force for them<sup>3</sup>.
3. To that end, China is committed to start the compilation of the NIP. A preparatory project, to identify the requirements for developing the NIP, has been implemented during 2002 by FECO with the assistance of the United Nations Industrial Development Organization (UNIDO) under a Project Development Facility Block B (PDF-B) grant from the Global Environment Facility (GEF). This project document, for a GEF Full Project to develop the NIP, is the principal outcome of that preparatory phase.
4. The project has been prepared with the goal of delivering the NIP during 2006 thereby meeting the timetable set out in the Convention. In view of the considerable volume of work required to prepare the NIP, a start must be made in early 2004 as soon as the necessary technical and financial support from the international community is provided in accordance with Article 13 of the Convention.
5. The overall objective of the full project is to develop the NIP for the People's Republic of China to implement the Convention. To this end, the Project will
  - Establish inventories, or otherwise develop strategies to establish inventories, on the production, use, trade, stockpiles and wastes of, and sites contaminated by, chemicals listed in the Annexes of the Convention and existing in China;
  - Develop strategies and action plans for the reduction and elimination of the chemicals listed in Annexes of the Convention and existing in China;
  - Assess infrastructure capacity and propose management options, including institutional arrangements, regulatory frameworks, and requirements for capacity building, raising stakeholder awareness and research and development, to ensure the effective and sustainable implementation of the proposed strategies and action plans and thus facilitate China's transition to compliance with the Convention;
  - Formulate, and gain stakeholder endorsement for, a NIP, including priorities and objectives with the aim of estimating the total costs and the incremental costs likely to be incurred for introduction into development and assistance planning;
  - Build sustainable capacity sufficient to prepare the NIP and its component inventories, strategies and action plans, and to fulfil ongoing reporting requirements of the Convention; and
  - Develop and demonstrate methodologies representing practical and feasible approaches to priority actions required by China in meetings its Convention obligations.
6. The significant capacity building requirements at national and provincial levels in China can neither be met solely from the financial resources likely to be available during the full project, nor

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<sup>2</sup> The Convention was opened for signature on 23 May 2001 in accordance with Article 24 of the Convention.

<sup>3</sup> Articles 7(1)(a)-(b) of the Convention.

delivered during the limited duration of the project. For these reasons, a longer-term Capacity Building Programme will be developed for donor funding.

## **1.2 Initial Institutional Arrangements for NIP Development in China**

7. To facilitate its full participation in the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on certain Persistent Organic Pollutants (INC), China established an Inter-ministerial Technical Coordination Group (ITCG) to harmonize the interests and standpoints of different sectors involved and to determine the position of the Chinese Government with regard to POPs issues and the Convention being negotiated. Membership of the ITCG comprises the State Environmental Protection Administration (SEPA), as chair, the State Economic and Trade Commission (SETC), the Ministry of Agriculture (MoA), the Ministry of Health (MoH) and the Ministry of Foreign Affairs. The ITCG is expected to continue to play this important coordinating role during the development of the NIP and during China's transition to compliance with the Convention.
8. In September 2003, a high-level NIP Development Leading Group was formed to ensure that actions required for Convention implementation could be taken up and coordinated at the highest levels. The Group is chaired by SEPA and comprises 11 ministries and state administrations. A subordinate coordinator group, comprising the relevant division chiefs from each ministry is authorized to ensure the routine coordination related to NIP development. A Convention Implementation Office (CIO) within SEPA was formed to administer activities towards the implementation of the Stockholm Convention in China and coordinate the NIP development. CIO will establish and chair a Technical Coordination Group (TCG) for NIP development and implementation.
9. A POPs team within FECO/SEPA, which was the former of CIO, was designated to take the responsibility for the national implementation of the PDF-B phase. It has managed all local elements of the programme and been responsible for the recruitment and supervision of local expert subcontractors preparing component technical investigations and reviews, and drafting the project brief. A similar arrangement will be instigated for the implementation of the project proposed here.
10. China invited UNIDO to act as GEF Executing Agency with Expanded Opportunities for the development of the NIP and opted to undertake this work in two phases through the full GEF project cycle rather than by taking up the so-called 'Enabling Activities'. During the full project proposed here, UNIDO would continue to assist FECO/SEPA to coordinate the component work packages in its capacity as Executing Agency. During the PDF-B phase a coordinating mechanism drawing together China's international development partners was established to ensure that NIP development can take full advantage of the findings and experience of associated projects and programmes executed by intergovernmental organisations and bilateral donors. This will continue with UNIDO providing advice and guidance.
11. China has been successful in attracting considerable co-financing assistance to support NIP development and to undertake capacity building, case studies and demonstrations of possible approaches in priority areas. The Governments of Italy and Canada have committed themselves to support a series of work packages contributing to the NIP.
12. Italy is providing considerable co-financing and technical support in relation to those POPs chemicals intentionally produced and used in China (pesticides and HCB), and to PCBs. The United Nations Development Programme (UNDP) and the World Bank (WB), respectively, have been invited to execute these work packages within the overall programme. Italy has also agreed in principle to support the development of methodologies to promote transition to BAT in key sectors of industry representing major contributors to the unintentional production of POPs through a work package to be executed by UNIDO.
13. During the PDF-B phase, Canada has provided funding for a series of capacity building workshops to raise the awareness of national and provincial officials and industry to the requirements of the Convention. These workshops were of particular assistance to the preparation of the project brief.

Studies of the toxic burden of POPs in the human population and of integrated approaches to the replacement of POPs termiticides, as well as further capacity building to improve the management of PCB wastes will all be supported during the full project.

14. To further the development of appropriate strategies to meet the obligations of the Stockholm Convention a number of additional demonstration projects have been prepared. China has invited the World Bank to develop two further demonstration projects; to evaluate techniques for PCB management and destruction compatible with Convention requirements; and to pilot termite control techniques not requiring POPs chemicals. Both projects will be executed through the GEF full project cycle. Concept notes for them were approved at the GEF Council meeting in November 2003 and it is expected that the PDF-B phases will commence early in 2004.
15. Furthermore, China has expressed its interest to participate in the GEF-supported, UNDP-implemented, UNIDO executed global project to demonstrate the destruction of POPs wastes through non-combustion techniques. This project was approved for entry into the work programme of the GEF by the GEF Council at its May 2003 meeting. Both the Project Document for the first country project, in Slovakia, and the Project Brief for the second country project, in the Philippines, were submitted to the GEF early in 2004.

### 1.3 Current Situation

16. The following sections present the results of studies commissioned for the PDF-B phase of the project together with initial results from the Sino-Italian project to develop a strategy to reduce and phase-out pesticidal POPs (see Objective 1.2 below). Use has also been made of the National Mini-profile for the Sound Management of Chemicals developed by SEPA with assistance from United Nations Institute for Training and Research (UNITAR) during 1999.

#### (a) Overview

17. The Stockholm Convention lists 10 chemicals in its Annexes A and B. Among these;
  - **Aldrin, endrin and dieldrin** have never been produced at commercial scale, used or traded for industrial purposes in China; aldrin and endrin were prepared at pilot scale.
  - **Heptachlor** was produced and used in China but its production and use has been prohibited in China since the 1980s.
  - **Toxaphene and chlordane** were produced and used in China but their production and use has been progressively restricted since the 1980s. Production and use of toxaphene was banned in 1996. Chlordane remains in use for the restricted purpose of meeting China's termite control requirements.
  - **Hexachlorobenzene (HCB), mirex and DDT** are produced and used intentionally in China. HCB and mirex are not registered as agricultural pesticides; HCB is used as an intermediate in the production of pentachlorophenols and for a wide range of industrial purposes while mirex remains in use for the restricted purpose of meeting China's termite control requirements.
  - **PCBs**, and equipment containing PCBs, have not been produced or imported into China since the end of 1980s. A large number of items of equipment containing PCBs are currently still in use or have been removed from service and stored in China. There are waste-related and contaminated site issues that must be addressed.
18. The status of these chemicals is described more fully in the following sections and in Appendices 1-4.

#### (b) Chemicals that are currently being produced and used in China

(chlordane, mirex, hexachlorobenzene (HCB), and DDT; For details, see Appendix 1)

19. Of the intentionally produced POPs listed in the Convention, chlordane, hexachlorobenzene, mirex and DDT are intentionally produced and used in China.

## Chlordane and Mirex

20. There are approximately 2,000 species of termites known to exist globally, of which hundreds have been found to inhabit more than 40% of the total land area in China, generally in areas of more intense human settlement and activity. This area, shown in Figure 1, accounted for over 70% of the gross domestic product in 1999.
21. While termites are important contributors to the recycling of dead and decaying wood in natural systems, in the built environment they attack wooden structures and tree plantations and threaten critical infrastructure including housing, communications and wooden dams used in watershed management. The Chinese government has supported centrally coordinated termite control strategies since the mid-1980s to protect wood-construction buildings and dams, communication facilities and forestry and orchard operations. At present there are more than 800 termite control stations and 10,000 operators involved in termite control. The need to control pests is driven by possible direct impacts on human health and on economic well-being, as well as increased compensatory capital expenditures that are estimated at tens of millions of dollars annually. It has been estimated that termite damage in China would result in approximately US\$ 200 million dollars in economic loss per year without the use of effective termite control agents.

**Figure 1: Termite Affected Areas (in brown) in China**



22. The main termiticides that have been used in China are chlordane, used predominantly to prevent termite damage by limiting early stages of colonization into wood structures (*i.e.*, as a chemical barrier), and mirex, used mainly for the control of termite damage once infestations are discovered. Given the widely recognized health and environmental problems caused by the release to the environment of chlordane and mirex, “viable” alternative products for termite control would likely be widely accepted.
23. The production and use of mirex<sup>4</sup> has never been officially permitted in China, however small amounts (currently less than 1 t/yr) are produced and used each year. The production and use of chlordane have been progressively controlled since the 1980’s, culminating with its registration for use being cancelled in 1996 and its production banned in 1999 under Regulations on the Management of Pesticides in China. Since 1999, other products and practices have been explored and the annual production and use of chlordane have been declining. However, the Chinese government continues to require that applied termiticides must have a period of efficacy of at least 15 years, while the effective periods of alternative chemicals tend to be less than 10 years and these alternatives are more expensive. The physical and chemical characteristics of soil in China are different from western countries, where alternative termiticides have been used, and it is not known whether these alternatives would be suitable for use in China. Therefore, there is currently no effective substitute available to replace chlordane and mirex use in China and there remains a continuing demand for them in the building and civil engineering sectors to control and

<sup>4</sup> There is some uncertainty over the chemical composition of the termiticide marketed in China as mirex and whether it conforms to mirex CAS No. 2385-85-5

restrict termite damage. For this reason, about 10 small-scale enterprises continue to produce chlordane and mirex. While there are no formal annual production estimates for chlordane in China, total production is assumed to be less than 1,000 tonnes per year. The Department of Pollution Control (SEPA) estimated chlordane production for 1998 at 160 t and a separate estimate from industry indicates a usage of 130 t per annum<sup>5</sup>. Production statistics for mirex are not available but usage in the construction industry is estimated at 300 kg per annum<sup>6</sup>.

24. The challenge in preparing safer and more environmentally preferable alternatives to chlordane and mirex for use in China is significant. Eliminating chlordane and mirex from production and use in China will require not only consideration of suitable alternatives, but also issues associated with education and training, public awareness of risks, regulatory and management regimes, pesticide production and distribution infrastructure, and building practices and design.

### **Hexachlorobenzene**

25. Hexachlorobenzene (HCB) is the only one of the 12 POPs in the Stockholm Convention that must be managed for the risks it poses as a result of its widespread generation as a by-product and its uses in both pesticidal and industrial applications. It has been used commercially as both a pesticide (since 1945) and an industrial chemical in many countries. It is also present as a by-product in several industrial emissions and effluents, in industrial chemicals (e.g., carbon tetrachloride, perchloroethylene, trichloroethylene, pentachlorobenzene) and in pesticides (e.g., pentachlorophenol, dicloram). In this section, measures are discussed for its commercial uses only: the by-product measures are discussed under Objective 1.4.
26. HCB has never been registered or used in China as an agricultural pesticide or in pesticide formulations. At present, it is used principally as an intermediate in the production of, and likely occurs as a contaminant in, pentachlorophenol (PCP, used in wood treatment and preservation) and sodium pentachlorophenate (Na-PCP, used in programmes to combat schistosomiasis in certain parts of China). However, recent information indicates that it is also used in the chemicals industry as a solvent and additive. Its other industrial uses, for example in fireworks manufacture, are being investigated at present. Of the 6 HCB producers in China during the 1970s-1980s, only 1 remains in production. Limited quantities of the HCB produced in China are exported and this suggests that no HCB is imported. However, detailed information on production, use and trade is unavailable.

### **DDT**

27. DDT was initially used during the Second World War to protect troops and civilians from vector borne diseases such as malaria and typhus. After the war, its use was expanded to protect a variety of agricultural crops, especially cotton, and it is still used in about 25 countries, including China, for disease vector control. This use is very important for China, as 1999 estimates indicate that about 65% of its population is potentially at risk from malaria, especially in regions that experience flooding (see the map below). Due to growing concerns about health and environmental effects, severe restrictions and bans on DDT use as a pesticide were implemented in many countries in the early 1970s and its use as a disease vector control agent is the only remaining pesticidal use for DDT. DDT has recently been used in China and other countries as an intermediate in the production of the pesticide dicofol.
28. Between the 1950s and 1980s, DDT was used principally in China as an agricultural pesticide. Accumulated consumption of DDT in China to 1983 was more than 430,000 tonnes. During the 1970s-1980s, there were 11 local DDT producers but only 2 factories, the Tianjin Chemical Factory and the Yangzhou Pesticide Factory, are thought to remain in production. Total annual production of DDT of these factories is in the range 4,000-6,000 t. All the DDT produced by the Yangzhou plant is used on-site for the manufacture of about 1000-1500 t/yr of dicofol. The DDT produced at the Tianjin factory is supplied to up to 20 other licensed producers that collectively

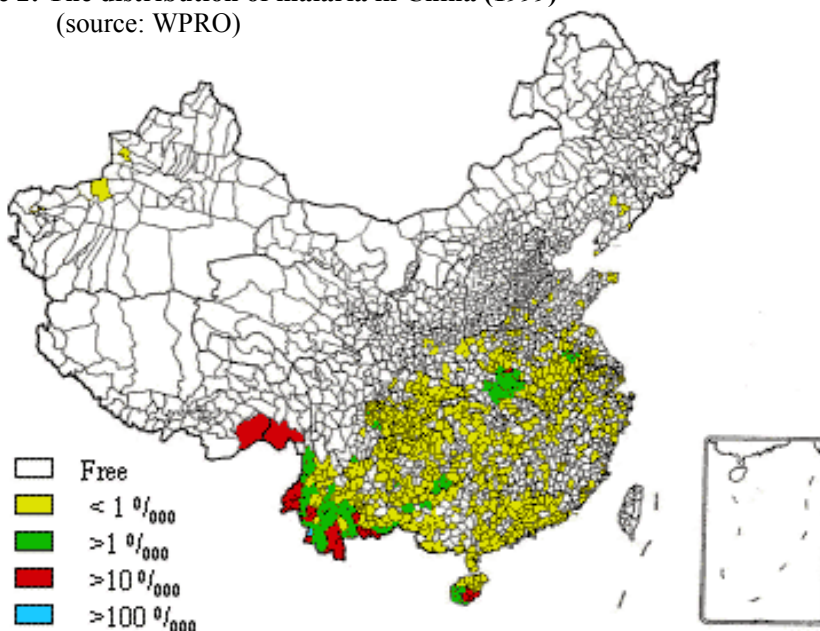
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<sup>5</sup> Association of Petroleum and Chemical Industry of China, February 2002.

<sup>6</sup> Jia'an Cheng. The status and strategies of termite prevention in China. *Report of seminar on POPs, March 2001*. Data excludes mirex use in agriculture, forestry and water conservancies.

produce about 1000 t/yr of dicofol. A total of 2,500 t of dicofol was produced in China in 2000. Production from the Tianjin plant is used there, and in several other enterprises, for the manufacture of DDT products such as mosquito-repellent incense and special paint. At least 2 factories are licensed to formulate DDT wettable powders using DDT from the Tianjin plant. A small proportion of DDT production is exported<sup>7</sup>.

**Figure 2: The distribution of malaria in China (1999)**  
(source: WPRO)



29. No systematic monitoring of contamination caused by pesticidal POPs, in particular contamination by DDT, has been conducted in China. However, case studies currently available indicate that the contents of DDT in environmental media, including soils, waters and sediments, as well as foods and human milks remain high but have been reduced significantly following the introduction, some years ago, of regulations restricting DDT use. It is reported that the residues of DDT in dicofol produced in China would not meet international standards and the application of dicofol in China may, therefore, be contributing to the present burden of DDT in humans and environmental media. An objective of this project is, therefore, to prepare the actions and measures necessary to address the Convention requirements for DDT and to further reduce pollution caused by the continued production and use of DDT in China.

(c) Polychlorinated biphenyls (PCBs)

(For details, see Appendix 2)

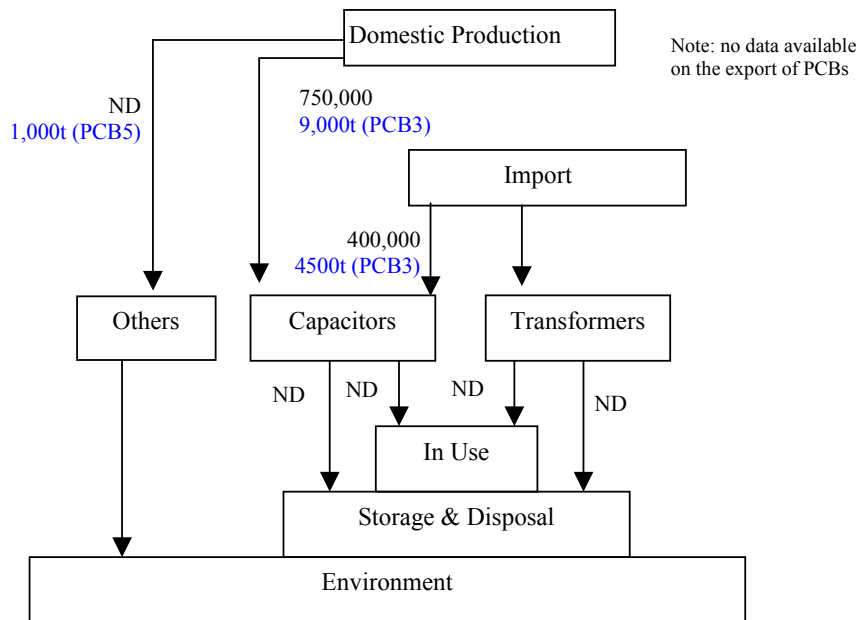
30. Polychlorinated biphenyls (PCBs) are industrial fluids that were commercially produced in various countries since 1930 and sold as mixtures containing varying amounts of the 209 possible different compounds. Due to their chemical inertness, resistance to heat, non-flammability, low vapour pressure and high dielectric constant, they were used in a wide range of industrial applications including as dielectric fluids in transformers and capacitors, hydraulic fluids, heat exchange fluids, paint additives and in carbonless copy paper and plastics. By the 1970's, it was

<sup>7</sup> Customs statistics indicate total exports of 350 t of DDT & HCB (combined) in 2002. Statistics for each individually are not collected.

recognized that PCBs were persistent, toxic environmental contaminants and most countries banned the manufacture and importation of PCBs and PCB-containing products and articles. However, due to their long in-service lifetimes, thousands of electrical capacitors and transformers remained in service for many years and a considerable number are still in service in many countries around the world today.

31. PCBs were produced in commercial quantities in China between 1965 and 1974. The estimated total output was over 10,000 tonnes, comprising 9,000 tonnes of trichlorobiphenyls (PCB3) and 1,000 tonnes of pentachlorobiphenyls (PCB5).
32. PCB5 oils were mostly used in a wide variety of open systems, such as in oil paints and exterior dopes. While some wastes may remain at production or formulation facilities, it is reasonable to assume that most of this material has been released into the environment.
33. PCB3 was principally used in manufacturing capacitors that were used in the electrical supply industry. An estimated average of 12 kg of PCB3 was used in each capacitor and, based on a production of 9,000 tonnes, it is estimated that about 750,000 capacitors were produced in China. However, estimates based on the installed transmission capacity in China in 1975 indicate that 1.15 million capacitors would have been required, suggesting that as many as 400,000 capacitors were imported into China. If this estimate were correct, then an estimated 4,000-4,500 tonnes of PCB3 oils would have been imported with this equipment so that a total of 13,000-13,500 tonnes of PCB3 would have been introduced into China as a result of the domestic manufacture and import of capacitors. Transformers containing PCB oils were never produced in China but an unknown number were imported. While 30 transformers have so far been found and disposed of, there is no basis to estimate how many PCB-containing transformers may remain in China, either in service or in storage for disposal. Efforts will have to be made to identify and manage such equipment.

**Figure 3: The Production, Use, Import, Export and Stockpile of PCBs in China**

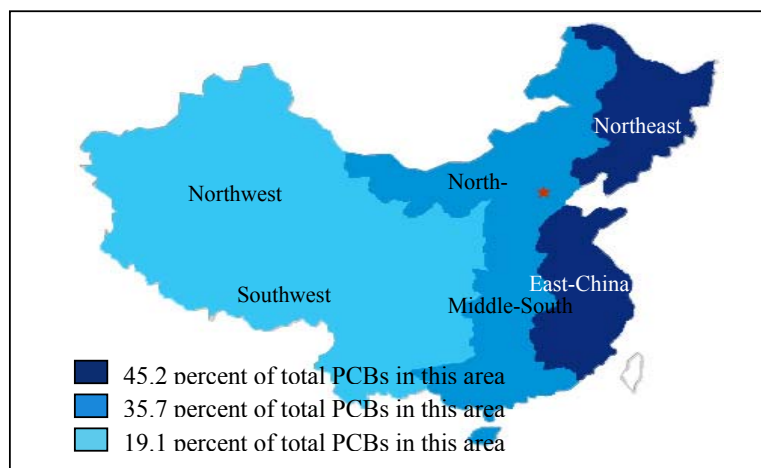


34. Since the lifetime of capacitors made in China is estimated at 15 years, it follows that most of the 1.15 million PCB-containing capacitors that were imported or produced in China prior to 1975 have now been retired from service. Some specialized capacitors and transformers were imported into China in the 1970s and 1980s and their lifetime is expected to be 15 years for capacitors and 25-40 years for transformers. Therefore, most of the imported capacitors and some of the transformers should have been removed from service by 2003. Assuming that less than 10 percent of PCB-



containing capacitors remain in service in China, approximately 1 million capacitors and an unknown number of transformers have been removed from service and are in storage and disposal sites throughout China.

35. During the 1980s, many pieces of electrical equipment were taken out of service and collected at temporary storage sites prior to disposal in accordance with the requirements proposed by relevant Ministries. A maximum storage time of 3 years was set, after which obsolete equipment was to be placed in caves or dedicated concrete-lined landfill facilities.
36. Surveys and investigations conducted in recent years indicate that some temporary storage facilities remain with accumulations of discarded PCB-containing equipment. Furthermore, the number of sites at which PCB oils and PCB-containing equipment were discarded is presently unknown. Few of the sites were recorded on files and/or marked on site. Many of those for which file details have been found are no longer marked on the ground, their identifiers having been destroyed or lost. Identification of these sites will, therefore, be a time-consuming and costly task.
37. In addition, there are a large number of disposal sites that have exceeded or are approaching their design lifetime of 20 years. Investigations at some of these sites indicate that they are leaking PCBs into the surrounding environment. Thus, measures to address such problems must be taken as soon as possible.



**Figure 4: The distribution of PCBs Used in China**

38. Figure 3 summarizes the general information on the production, use, import and export of PCBs in China. Figure 4 shows the distribution of PCBs used in China.

(d) Unintentional production of POPs specified in the Convention

(polychlorinated dibenzo-*p*-dioxins and dibenzofurans (dioxins and furans), HCB and PCBs; For details, see Appendix 3)

39. The Convention identifies 4 POPs that are generated unintentionally as undesirable by-products of various industrial and chemical production processes and other human activities. Dioxins and furans from most sources are usually produced as mixtures of varying composition and are widely recognized as the most toxic environmental contaminants recognized to date, especially in light of the minute amounts that can cause adverse effects. While more information is available on dioxins and furans, it is becoming increasingly apparent that HCB and PCBs are also produced and released from the same types of sources. Thus, actions taken to address dioxin and furans will likely have co-benefits in reducing associated releases of HCB and PCBs. In addition, these 4 POPs are found as contaminants in a number of industrial chemicals (e.g., chlorinated solvents)

- and pesticides (e.g., pentachlorophenol) and it is important to address such products as they constitute sources of releases to the environment.
40. The Stockholm Convention lists 20 source categories that are significant sources of unintentionally produced POPs (Annex C, Parts II and III). All these sources are found in China and industrial activity in many of these sectors has contributed significantly to China's impressive economic growth in recent years. Recent investment in new technologies, combined with general measures to control air pollution, in particular of sulphur dioxide emissions, from large- and medium-scale enterprises, may already be contributing to reductions of releases of unintentionally produced POPs.
  41. During the 1990s, many of the larger cities in China began to dispose of their *municipal solid wastes* by incineration and there are now more than 40 municipal incinerators with a combined capacity in excess of 132,000 t per day. A range of incineration technology has been introduced of which fluidised bed systems are perhaps the most common. Pollution control systems include electrostatic precipitation and semi-dry processes and with active carbon and fabric filters. Over 8 million tonnes of hazardous industrial waste were generated in China in 2000: about 20% was disposed of, in part by incineration.
  42. China has a large *pulp and paper industry* with more than 4000 enterprises in the sector. The raw materials and techniques used in the industry differ considerably from those in developed countries. In 2000, wood pulp represented less than 20% of total pulp production while significant quantities came from grass crop sources (grass, reeds, bagasse, etc). In addition, China typically achieves high rates of paper recycling, with almost 40% of total pulp coming from this source. As a consequence, predictions of dioxin and furan production from this source based on developed world experience may not be appropriate and the situation in China will need to be carefully evaluated.
  43. China is the world's largest producer of *iron and steel* and has almost 3000 enterprises in the sector. Of these, 3 produce in excess of 5 million tonnes per annum, 37 produce in excess of 1 million tonnes per annum and a further 13 produce in excess of 500 thousand tonnes each year. In addition, China has almost 5000 enterprises engaged in the recycling of non-ferrous metals. Despite considerable advances and investment in recent years, there remains a considerable technological gap between the industry in China and that in the developed world. This is particularly evident in the availability of pollution control equipment and technology. Air pollution control measures imposed on large- and medium-scale producers may have served to reduce POPs emissions incidentally, but there are no measures controlling pollution from the large number of smaller enterprises.
  44. China has a large and important *chloralkali industry* and ranks second in the world in terms of production with an annual output in 1998 of 5,080 thousand tonnes. Of an estimated 500 chloralkali enterprises in the world, 200 are in China. Graphite anodes were commonly used in China's chloralkali industry. In those enterprises where this process is used, it is being progressively replaced by metallic channel technology. Chlorine output via the graphite anode process is now thought to be very small representing only about 3% of total production. With the technical innovation now being carried out in the caustic soda industry of China all the graphite anode cell processes will soon be replaced. The present technical innovation and the technical status wait to be investigated in detail.
  45. The UNEP Standardized Toolkit indicates that *cremation*, the practice of destroying human bodies by burning, can result in the formation of dioxins and furans and may have significant impacts as most crematoria are located close to residential areas and have only relatively short emission stacks. There were 5,462 cremation furnaces operating in China in 2000 and a total of 3,736,540 corpses were cremated. At present, the fuel of the cremation furnace is diesel and most cremation furnaces have no pollution control equipment; there is no disposal equipment and remains are incinerated completely in the open air. With rapid urbanization, now being experienced in China, the cremation of human remains is likely to become the increasing trend so that attention should be attached to this kind of dioxin and furan source.

46. There are no reliable estimates of total unintentional production of POPs from sources in China. The limited research undertaken on dioxins and furans to date in China has been principally geared to determining their prevalence in certain limited and specific sites of environmental interest. There is no systematic monitoring of releases from anthropogenic sources.
47. Preliminary estimates of the unintentional production of POPs from each industrial sector or source category can be made using available methodologies such as the UNEP toolkit<sup>8</sup> (Table 1). It should be noted that the Table does not include data for all the source categories identified in the Convention due to a lack of information necessary to operate the model. In addition, for those categories included in the Table, it is not clear whether the emission factors set out in the toolkit, and based on the performance of industry in developed countries, are applicable. It seems likely that the different technologies, operating procedures and raw materials typically used in China will give rise to very different emission factors, so that results based on the toolkit model may be misleading.

Sources	Year of data	Unit	Baseline Information	Estimated Emissions (gTEQ/a)
Municipal waste incinerators		number	40	1.95 ~ 15600
Pulp production	1999	10 <sup>6</sup> t	21.6	2.16 ~ 21.6
Secondary copper production		t/a	347700	106 ~ 497.2
Sinter plants		number	2997	67.5 ~ 4451.9
Secondary aluminium production		t/a	145178	14.6 ~ 79.9
Secondary zinc production		t/a	69764	0.02 ~ 69.8
Production of steel		10 <sup>6</sup> t/a	128.5	210.5 ~ 3484.5
Production of pig iron		10 <sup>6</sup> t/a	131.0	
Production of coke		10 <sup>6</sup> t/a	121.84	43.9 ~ 372.8
Production of electricity (coal)		10 <sup>6</sup> t/a	528	318.1 ~ 343.6
Heat supply (coal)		10 <sup>6</sup> t/a	63.8	38.6 ~ 41.7
Production of PCP	1997	t	201	160
Production of Na-PCP	2000	t	5500	2.75
Production of tetrachloroquinone		t	800	320
Production of cement	2001	10 <sup>6</sup> t	621	95
Production of lime	1999	10 <sup>6</sup> t	68.46	4.8 ~ 684.6
Production of brick items	2001	10 <sup>9</sup>	11.4	5.8 ~ 58.3
Wastewater treatment plants		number	> 400	785 ~ 812.6
Wastewater discharge	2000	10 <sup>9</sup> t	32.2	827

**Table 1: Estimates<sup>9</sup> of dioxin and furan emissions from some major sources in China**

48. Nevertheless, data of the type shown in Table 1 may, subject to further refinement to give more reliable future estimates, serve to identify source categories that represent priorities for action to achieve the significant and meaningful reductions in emissions sought by the Convention.
49. Attempts to improve the model estimates of unintentional production of POPs are hampered by the lack of monitoring capabilities and analytical capacity. It is thought that few enterprises are equipped with emission sampling facilities and there is, at present, little or no sampling capacity amongst China's environmental monitoring stations. Several research laboratories, affiliated to the Chinese Academy of Sciences or to major universities, have recently received investment from the Government of China in order to equip themselves to undertake analysis of dioxins and

<sup>8</sup> UNEP. 2001. Standardized toolkit for the identification and quantification of Dioxin and Furan releases. *Draft report*.

<sup>9</sup> Prepared using the UNEP 'Standardised Toolkit for identification and quantification of dioxin and furan releases'

furans. None of them is yet accredited to an international scheme and it is unlikely that they would have the capacity to undertake a major analytical programme in support of systematic and routine monitoring without major additional investment.

50. An attempt will be made during this project to undertake initial, and limited, sampling and analysis at a small number of enterprises representative of key source categories. This is principally geared towards determining optimal routes towards the adoption of BAT and BEP but may also assist in elucidating emission and release factors for these industry sectors. It seems clear, however, that the preliminary inventory of unintentional production for the NIP will rely largely on modelling based on the UNEP toolkit and be accompanied by a detailed technical commentary.
51. Building the capacity for monitoring and analysing unintentionally produced POPs in China remains a priority. China will continue its effort to develop its facilities and will invite donor assistance through an investment project or projects to be included in the NIP.

**(e) Stockpiles, wastes and sites contaminated by POPs**

52. The Stockholm Convention distinguishes between *stockpiles*, representing accumulations of POPs chemicals, or products containing intentionally produced POPs chemicals that remain in use or usable, and *wastes*, representing similar accumulations that are no longer usable or materials containing or contaminated with unintentionally produced POPs that must be disposed of. Sites may become contaminated from the improper management of these accumulations, from the improper production, distribution, handling, transport, use and disposal of the chemicals and products or from the improper control of releases of unintentionally produced POPs.
53. Stockpiles are likely at, for example, sites where POPs remain in production, including both primary chemical producers and secondary formulators, and at distribution depots where dealers or users store POPs products prior to their application. Wastes, comprising obsolete chemicals may also occur at these sites, at facilities where POPs chemicals were formerly produced, stored or disposed of, and at sites used for the storage and safe-keeping of PCB-containing equipment retired from service. All of these may also be contaminated as may areas where releases of unintentionally produced POPs are discarded or where emissions of them are deposited.

<b>Table 2: The number of producers and historical production of POPs in China</b>	Total producers in history	Current Producers	Estimated accumulated production (tonnes)
Aldrin	3	0	Pilot scale only
Endrin	2	0	Pilot scale only
Chlordane	13	?	3,000-9,000
DDT	11	2	430,000**
Heptachlor	8	0	?
Hexachlorobenzene	6	1	300,000***
Mirex	8	?	?
Toxaphene	16	0	20,000-30,000
PCBs	4	0	10,000
Total	57*	3<	~800,000

54. The number of enterprises historically engaged in the production of POPs in China, together with estimates of total accumulated production, is shown in Table 2. Their geographical distribution is shown in Figure 5. In addition to these producers, there were many secondary producers that formulate products for final users and thousands of dealers across the country that store or stored POP products.
55. Although China has significantly reduced the production and usage of POPs chemicals, most wastes and contaminated sites have not been treated. In addition, land-use is changing fast with

**Figure 5: The distribution of POP pesticide producers by province (excluding Taiwan, Hong Kong and Macao)**



the rapid growth of China’s cities. This is resulting in the increased risk of exposure of the population to wastes and contaminated sites where such sites are reclassified for residential development or used for agricultural purposes.

56. The many sources of unintentional production of POPs are widely dispersed and few enterprises incorporate schemes to minimise or manage releases. It follows that there is the potential for many sites to be contaminated. There has been no systematic national attempt to identify these sites as China presently lacks the monitoring and analytical capacity to undertake such a task.

(f) China’s policies and legislative framework relevant to POPs

(For details, see Appendix 4)

**Introduction**

57. The Constitution of the People’s Republic of China establishes the National People’s Congress (NPC) as the principal organ of legislative power with authority to supervise and amend the constitution, adopt and amend national legislation, and to select the president and vice-president. A Standing Committee supervises the implementation of Congress decisions and the performance of administrative and legal institutions of government. Executive authority rests with the State Council that reports to the NPC and administers government through its various ministries and commissions.
58. Local People’s Congresses supervise local governments established at four levels – provincial administrations, cities, counties and townships<sup>10</sup>.
59. China’s government thus has three principal levels that are reflected in its legal system as follows:
  - the constitution and state laws promulgated by the NPC and its Standing Committee
  - administrative regulations issued by the State Council, and

<sup>10</sup> There are currently 34 provincial administrative areas including 23 provinces, 5 autonomous regions, 4 municipalities and 2 special administrative zones. There are 295 cities with some autonomous prefectures, more than 2,800 counties and over 40,000 township administrative areas.

- administrative rules issued by government departments and local administrative regulations promulgated by Local People's Congresses and governments.
60. Procedures for the establishment of new legal instruments at these various levels are set out in Appendix 4.

**The development of China's environmental legislation**

61. China has been developing its regulatory framework of environmental protection since the UN Human Environment Conference in 1972. In March 1994, following the 1992 Rio Declaration on Environment and Development, China enacted Agenda 21, thereby introducing the concept of sustainable development to the overall blueprint for the country's economic and social development and environmental protection.
62. China's environmental protection policies have experienced 3 major shifts over the past 20 or so years:
- a shift of emphasis from economic development to sustainable development
  - a shift from a centrally planned economy to a market based system, and
  - a shift from concentration-based pollution control to total emission volume pollution control.
63. There is now an extensive framework of environmental protection legislation and standards that is described in more detail in Appendix 4. Among these instruments, perhaps the most fundamental are the Environmental Impact Assessment System, the Pollution Registration System, the Pollution Fee System and the Targeted Responsibility System. This last is highlighted within many national plans and programmes and encourages a precautionary path towards balanced development between economic progress and environmental protection, raising the awareness of local officials to the need for environmental protection and of their responsibilities in delivering it. In addition to these instruments, SEPA issues advisory notes recommending Best Practical Technologies for environmental protection.
64. The shift from concentration based discharge control to total volume based discharge control (also called total emission control) in the mid 1990s represented a major change of China's environmental policies to cope to with plant owners who diluted the concentration of their pollutant discharges to escape punishment. Quotas of total emissions are assigned by SEPA to Environmental Protection Bureaux (EPBs) at provincial level and then further sub-divided to various subordinate departments and local enterprises. In this way, a vertical system of total emission control is established. Total emission control during the 9<sup>th</sup> five-year plan (1996-2000) was broadly successful and the total emissions of 12 major pollutants were all below the 2000 targets set by SEPA.
65. One unique feature of China's legislative system is its provisions for inspection. In addition to the inspection teams established by SEPA and local EPBs to conduct routine monitoring and environmental law enforcement, inspections undertaken by representatives of the NPC or local People's Congresses have been organized each year to assess environmental law enforcement.

**China's regulatory framework for the safe management of hazardous chemicals**

66. In recent years, the Chinese government has adopted the precautionary approach in its efforts to protect human health and the environment from chemicals hazards. A series of specific laws, regulations and rules has been formulated to ensure the safe management of pesticides, hazardous chemicals, pharmaceuticals and veterinary medicine (Appendix 4). Present practice requires such chemicals to be registered prior to production, sale and international trade while a review and approval system governs use, storage and transport.
67. Although none of these measures was established specifically to address the obligations set out in the Stockholm Convention a number of instruments include provisions for the control of chemicals listed in the Convention. For example, aldrin, dieldrin, endrin, heptachlor and mirex were never entered into the pesticide register established in 1982 while registrations for toxaphene and chlordane were cancelled in 1996. Without a valid register entry, these chemicals cannot be

- legally produced, sold, traded or used as a pesticide. Similarly, the Law on Solid Waste Pollution Prevention and Control (1998) discriminates hazardous wastes into 47 classes. Waste comprising or containing organochlorine pesticides, PCBs, dioxins and furans are covered in classes 4, 10, 44 and 43 respectively of the legislation.
68. A series of national standards and technical practices on classification, storage, transport, packaging and labelling of hazardous chemicals support this legislative framework.
  69. China has also adopted a number of international treaties and agreements and is a signatory to the Convention on Safe Use of Chemicals at Work (ILO 170.177; 1990), the Montreal Protocol on Ozone Depleting Substances (1985); the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. The implementation of these conventions and protocols is reflected in the body of domestic legislation.

### **Barriers to effective operation**

70. Although sustainable development is taken as a fundamental policy principle, China still confronts many barriers to its effective implementation;
  - local development strategies continue to emphasize economic growth promoting increased employment to meet the people's need for basic necessities and higher living standards in the face of population growth pressure;
  - the current economic foundation is still weak and sensitive to pricing reforms that support environmental protection;
  - many polluting enterprises are inefficient and can neither afford end-of-pipe treatment, nor take up precautionary within-process changes; and
  - there is insufficient central investment in environmental protection<sup>11</sup>.
71. Barriers to the effective implementation of the current environmental legislative framework may be considered as follows:
  - many provisions of important Chinese environmental laws are more policy pronouncements than law and their imprecise nature creates problems of determining what behaviour is required or prohibited, and which entities have duties or responsibilities under the law;
  - administrative regulations, rules, standards and guidelines issued by one body may be in conflict or contradiction to those issued by another body;
  - the efficacy of environmental and chemicals law and standards is hampered by weak enforcement;
  - local EPBs and other responsible bodies lack modern monitoring facilities and have limited access to legal expertise;
  - existing national standards will need revision and new standards will need to be developed to meet the requirements of specific instruments such as the Convention;
  - most industrial firms do not acknowledge that violating environmental laws and standards represents an offence; and
  - there is a deeply ingrained culture of negotiation and bargaining outside of the court system. While negotiations and arbitration are useful methods of resolving disputes they may not be sufficient to deal with serious and economically significant disputes that are likely to arise when EPBs start rigorously to enforce the laws.

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<sup>11</sup> Total environmental investment for the 10<sup>th</sup> FYP is about 1.3 percent of GDP or RMB 700 Billion. However, the World Bank estimates China's environmental costs to be equivalent to 3.5 % of GDP. In addition, a much greater allocation of investment funds needs to be made for basic capacity building that currently receives only about 1.5 % of environmental expenditure.

72. Although administrative controls remain the principal measures to control pollution, many of the instruments represent command and control measures based on the requirements of the planned economy. Most were effective until the mid 1990s when China's pattern of enterprise ownership began to diversify and the decision-making powers of economic development were progressively decentralized. For example, the 'Three Simultaneous Regulation' was issued in 1981 to ensure that new enterprises were established with pollution control facilities and that production did not commence until certification by the EPB had been received. The measure was broadly effective when introduced as enterprises were mainly publicly owned and major investment had to be undertaken and approved by the State Planning and Development Commission (SPDC) or the State Economic and Trade Commission (SETC) with participation of the EPB. However, enterprises using their own funds for investment do not currently require approval from these bodies so that, as private investment increases as a percentage of total national investment, the regulations become less effective.
73. In comparison with administrative instruments, economic instruments are relatively under-developed. Most are either only at the trial stage or generate adverse consequences through pricing distortion. For example, the system of pollution levies and non-compliance fines has been of limited impact as the levies and fines are set very low and enterprises opt simply to pay the fees rather than invest in pollution prevention and reduction facilities. The introduction of planned improvements to the system are hampered by the current weak monitoring capacity and public sensitivity to price adjustment, especially when the unemployment rate is rising in many areas.
74. Overcoming these barriers and integrating the requirements of the Convention will require considerable and long-term capacity building at both national and provincial levels within government and more widely across industry and a variety of key stakeholder communities.

#### **Establishing a legal framework to meet the obligations of the Stockholm Convention**

75. Any formulation or enforcement of laws or regulations to meet the obligations of the Stockholm Convention will need to be established within the general policy and legislative framework set out above in order to contribute towards China's overall development objectives.
76. A preliminary review, undertaken during the PDF-B phase and set out in detail in Appendix 4 has identified more than 30 State laws and policies containing provisions applicable to the management of POPs. In addition, there are almost 20 national standards concerning environmental protection, safety in production and health protection providing limit values on certain POPs listed in the Convention.
77. Of particular interest will be:
  - the existing EIA provisions that might be important in investment planning to prevent the establishment of new sources of unintentional production of POPs;
  - the registration system for pollutant discharges;
  - the total emission control system;
  - the system of pollution levies and non-compliance fines;
  - the voluntary clean production programme as a vehicle for the progressive migration of industry to BAT/BEP; and
  - the Law of Solid Waste pollution prevention and control and its associated listing of hazardous wastes.
78. In addition, there will be a need to incorporate the obligations of the Convention in national chemicals registration schemes as well as into a wide range of other legislation governing industry and chemicals production, use, trade and disposal.
79. A comprehensive study is now required to identify those obligations set out in the Stockholm Convention that are not met by current regulatory instruments and to recommend additions or amendments to ensure that China can expeditiously meet its obligations and reporting



- requirements. China will also need to identify those priority programmes and areas where additions to mainstream the control of POPs could play a role in supporting sustainable development nationally as well as China's contributions to international efforts to protect human health and the environment.
80. In each case, a methodology for their adaptation to meet the needs of the Convention and for their successful and effective implementation will need to be developed. In this regard the social and economic impacts associated with the continuing use of the chemicals listed in the Convention, and the consequences of any control measures established to eliminate or restrict their production and use, and to manage their destruction or disposal by environmentally sound means will need to be studied and evaluated. Such a study or studies, based, perhaps, on the parameters set out in Annex F of the Convention, would need to take account of the differing capacities and conditions of China's different regions.
  81. In addition to changes to the legislative framework, a wider range of mechanisms, including education and information dissemination, capacity building and promotional schemes for industry will need to be considered to ensure that Convention obligations can be met in an increasingly diversified, market-led economy. In this regard, the Government and the Chemicals Industry agreed during 2002 to exchange information relating to certain classes of chemicals. Such agreements may represent the foundations on which closer collaboration to meet Convention obligations can be built.
  82. China signed the Convention on the date when it opened for signature and expects to complete the ratification procedures during 2004.

(g) Relevant Institutions and their capacities

(For details, see Appendix 5)

83. An Inter-Ministerial Technical Coordination Group, led by SEPA, was established for the purpose of negotiating the Stockholm Convention on behalf of the Chinese Government. It comprises the following bodies:
84. The *State Environmental Protection Administration* (SEPA), chairs the group and is responsible for the supervision and administration of environmental protection. It is responsible for environmental monitoring and analysis through environmental protection bureaux and monitoring stations established throughout the country. With regard to the Convention, its responsibilities may include organizing and coordinating implementation activities; integrating POPs issues into the environmental management in China; and proposing and/or formulating relevant environmental laws and policies. Managerial responsibilities for the implementation of the Convention in China are delegated to a project management office established within its subsidiary office FECO. This office has been responsible for the national implementation of the PDF-B phase and will continue in this role during the full project.
85. The *State Economic and Trade Commission* (SETC) is in charge of administrative affairs related to most industries. Its major responsibilities include the development of policies and programmes for various industrial sectors; review, approval and issuance of production permits for special industries or products; formulation and implementation of policies. It is expected that SETC will play an important role in deciding and coordinating the many industry-related issues required by the Convention.
86. The *Ministry of Agriculture* (MoA) is responsible for rural economies, including the administration of agricultural cultivation, stockbreeding, fisheries, township enterprises, the feedstuffs industry and agricultural machinery. MoA is mainly in charge of pesticides management and registration, and administers the licensing system for pesticides import and export. MoA, aided by FAO, has developed integrated pest management (IPM) approaches for a number of important crops including for cotton and rice. IPM strategies for vegetables are being developed. The Ministry also administers the Agricultural Extension Network that could play an important role in training farmers to take up strategies to phase-out pesticides comprising and containing POPs chemicals.

87. The *Ministry of Health* (MoH) administers public health affairs, including the prevention and cure of infectious diseases, administers disease vector control, seeks to address issues of occupational disease, and the supervision of food hygiene. It is responsible for assessing the potential impact of chemicals on human health, preventing poisoning and providing first aid and/or medical rescue in case of emergencies.
88. The *Ministry of Foreign Affairs* (MoFA) is responsible for the administration of foreign affairs within the Chinese Government and supervises the execution of State foreign policies. It represents the Chinese government internationally. It is the lead agency responsible for representation at meetings of international conventions of which China is a party or intends to become a signatory.
89. For those POPs chemicals still in production and use in China, it will be important also to engage the *State Administration of Quality Supervision, Inspection and Quarantine* (SAQSIQ) and the *State Administration of Work Safety* (SAWS) together with the *General Administration of Customs* in order to strengthen production, use and trade controls.
90. In addition, the *Ministries of Construction* (MoC), *Railways*, and of *Water Resources* (MWR) and the *State Administration for Forestry* (SAF) are responsible for termite control within their respective jurisdictions and thus are important to the management and eventual elimination of chlordane and mirex. The Ministry of Construction is also responsible for municipal solid waste management.
91. These and other administrative organizations will be required to perform functions under their respective jurisdictions in the implementation of the Convention and will be called upon to assist in the preparation of the NIP and to comment upon and endorse its recommendations. This will be achieved through the NIP Development Leading Group, established in September 2003 and comprising 11 ministries and state administrations. In order to identify and ensure the participation of key stakeholders, a preliminary directory of stakeholders has been prepared as part of the PDF-B project. At present, this only holds information relating to Government institutions operating at national and provincial levels but it will be extended during the full project to include all those institutions and organisations, both within government and without that need to engage in the development of the NIP to ensure its effective and sustainable implementation.
92. At present, there is only limited capacity in these ministries and administrations to implement the many obligations and requirements of the Convention. SEPA, for example, as lead agency, lacks the capacity to undertake systematic monitoring and analysis programmes for POPs or to manage large quantities of monitoring data in order to report to Government and the Conference of Parties. It follows that there are considerable long-term capacity building and institutional strengthening requirements if the Convention is to be implemented effectively in China.
93. A great number of public organizations in China show great interest in the sound management of chemicals. Such organizations may be divided into three principal types: industrial associations, environmental protection societies and medical societies:
94. **Industrial Associations** are voluntary non-governmental organizations comprising enterprises drawn from the same or related sectors, registered with the relevant government department. Such associations include, for example, the China Pesticide Industry Association, the China Chlorine Alkali Industry Association, the China Nitrogen Fertilizer Industry Association and the China Phosphate Fertilizer Industry Association.
95. These associations: conduct exchanges concerning business activities of the industry, including development, science and technology, and business strategies; regulate the business activities of the industry; offer workers in the industry training in production technology, labour safety, hygiene and health, and environmental protection; implement the State's laws, regulations and standards; and organize environmental protection activities. Those associations concerned about chemical hazards actively participate in chemical control campaigns, implement the ILO 1990 Convention No. 170 on the Safety of Chemicals at the Workplace, and provide information for

- relevant government departments to manage chemicals. Such societies may be instrumental in promoting schemes to introduce BAT and BEP into various sectors of Chinese industry.
96. **Environmental Protection Societies**, such as the Chinese Society of Environmental Science, the China Industrial Association for Environmental Protection, the China Environment Journalists' Association, and the Chinese Environmental Protection Foundation, conduct academic and technical exchanges concerning environmental science, organize symposia and visits, and publicize knowledge of environmental protection. They concern themselves with issues related to environmental protection, for instance, the discharge of pollutants, and actively participate in activities to control chemicals. Such societies may be of particular help in developing education materials raising awareness of the risks posed to the environment by POPs chemicals, and promoting the safe use and progressive elimination of POPs chemicals.
  97. **Medical Societies** including the China Preventive Medicine Society, the China Society of Toxicology and the Chinese Medical Association are concerned with the impact of chemicals on human health, especially the impact of producing chemicals on workers' health. They conduct various types of academic and technical exchanges concerning preventive medicine and toxicology, including environmental health, labour hygiene and occupational diseases, and food nutrition and hygiene. They may also make safety assessments of chemicals and provide technology and information to relevant government departments for the management of chemicals. Such societies may be of particular help in elucidating the toxic burden of populations at risk in China, in developing education materials raising awareness of the risks posed to human health by POPs chemicals, and in promoting the safe use and progressive elimination of POPs chemicals.
  98. China has many **research institutes** that have made great contributions to the management of chemicals. These institutes belong to the Chinese Academy of Sciences, to different ministries, and to universities. They have made various types of studies on chemicals, collected information on chemicals extensively and conducted information exchanges. They have assisted government departments by providing a scientific basis for decisions relating to chemicals management; to the formulation of laws, administrative regulations and rules, standards and guidelines; and assisted in formulating management programmes. A number of institutes have been engaged during the PDF-B phase of the project and have carried out many of the studies reported above and in the appendices to this brief. A detailed review of China's capacity to monitor emissions and releases and to analyse for POPs chemicals is given in Appendix 6.

#### (h) Summary

99. In China, 3 of the 12 POPs listed in the Convention, including aldrin, endrin, dieldrin, were never produced in commercial quantities, used or traded. Production, use and trade of toxaphene and heptachlor have been prohibited for some years while the production and use of PCBs is also banned. Chlordane and mirex are also banned under pesticide legislation but remain in restricted production and use for termite control in the building, civil engineering and forestry sectors. Production and use of HCB is permitted as an intermediate in the manufacture of PCP and Na-PCP. Production and use of DDT is permitted as an intermediate in the manufacture of dicofol and in disease vector control, particularly to contain malaria. Stockpiles, wastes and contamination by POPs chemicals may occur at many sites around the country.
100. These chemicals remain in production and use because of market demands and the current lack of viable, environmentally-sound substitutes. Research and development to address this barrier is required.
101. Further major challenges that China has to face relate to the management of the large volume of equipment containing PCB oils that remains in use or has been removed to facilities for storage and safe-keeping, and to reduce releases and eliminate sources of unintentional production of POPs. Unintentional production of POPs is not monitored and there is currently insufficient analytical capacity to support regular and systematic monitoring. Each of these challenges is likely to include consideration of wastes and the identification of sites contaminated by POPs.

102. Finally, while China has an extensive regulatory framework, there is need to test its conformity with the obligations of the Convention and to recommend modifications or new measures; to ensure effective institutional arrangements and to raise public awareness and education of POPs-related risks.

#### **1.4 Expected Outcomes, Activities and Financial Inputs**

103. The purpose of this full project is to develop the NIP for implementing the Convention in China in accordance with the requirements provided for in Article 7 of the Convention. Thus, the principal final outcome of this full project is the NIP endorsed by the Chinese Government.

104. The key elements of the NIP shall include:

- Government commitments to addressing the POPs issues

Including: (1) a statement of China's status and commitment in relation to the Convention; (2) institutional and other arrangements for development and implementation of the NIP, in particular, the determination of coordinating and implementing mechanisms; and (3) actions towards the ratification of the Convention, etc.

- Country baseline

Including: (1) a concise and clear country profile, in particular the information on economic sectors closely related to POPs issues in China; (2) description and assessment of the current situations on institutions, laws and policies relevant to POPs management in China; (3) inventories on specific POPs chemicals listed in the Convention.

- Strategies and action plans

Including: (1) strategies for the reduction and elimination of intentionally produced POPs, PCBs and by-product POPs; (2) action plans for implementing the strategies, including action plans on capacity building, law and policy making, and action plans for the reduction and elimination of specific POPs; (3) priority setting; (4) financial requirements, including estimates of costs and analysis of incremental costs, possible financial sources, etc.

105. A series of case studies and demonstration project components within the full project will develop methodologies presenting feasible approaches to priority actions required by China in meeting Convention obligations. The results of these components will provide valuable input to the strategies and action plans for the NIP and give indications of likely incremental costs. They will also enable China to take up priority actions once the NIP has been transmitted to the Conference of Parties.

106. In addition, proposals for a long-term Capacity Building Programme will be developed to take account of the large institutional strengthening and human resource development requirement in China to implement the Convention at all levels

107. Undertaking all these components within the context of the full project to develop China's NIP has considerable co-benefits:

- Experiences gained in one area of the work programme can be quickly transferred to other areas;
- Scientific and technical findings and expertise can be shared between components and between government departments and their development partners;
- Outputs from parallel demonstration activities can be used to inform action planning in the context of NIP development; and
- Capacity building and demonstration activities will ensure a quick start-up of implementation actions ensuring early global impacts and form a secure foundation to the sustainability of POPs management in China.

## 1.5 UNIDO's Relevant Experience

108. UNIDO is the United Nations' specialized agency for industrial development. It has long-established programmes to improve the economic and environmental performance of industry in developing countries and in countries with economies in transition. It has accumulated significant knowledge of a variety of industries such as the chemicals, pulp and paper, cement and textiles sectors. It is conversant with issues related, *inter alia*, to pesticide formulation and to the unintentional generation of POPs.
109. UNIDO has participated in those Interagency Cooperative events that led to the intergovernmental negotiations for the preparation of the Convention including:
  - International meetings held in Vancouver, Canada in 1995 and Manila, the Philippines, in 1996;
  - Meetings of the Intergovernmental Forum on Chemical Safety (IFCS) and the Inter-Organization Programme for the Sound Management of Chemicals (IOMC); and
  - Intergovernmental Negotiating Committee (INC) meetings for an International Legally Binding Instrument for Implementing International Action on Certain POPs.
110. UNIDO is an Executing Agency with Expanded Opportunities for implementing GEF projects and, in 2001, became a member of the GEF Inter-Agency Task Force on POPs. It is mandated to submit enabling activity proposals directly to GEF. To date, 35 Enabling Activity proposals submitted by UNIDO have been approved. In addition, UNIDO has won approval for two PDF-B grants to determine the requirements of China and India in terms of National Implementation Plan development.
111. In addition to the Enabling Activities, UNIDO and its partners have developed a number of proposals and is executing projects:
  - to identify best technologies for POPs elimination;
  - to identify and evaluate alternative materials as substitutes for the prescribed POPs; and
  - to identify suitable approaches to legal and social aspects of the management of POPs engaging government structures, industry and civil society.
112. At a recent meeting of the Inter-Organization Programme for the Sound Management of Chemicals (IOMC), UNIDO was elected as one of two IGOs representatives to serve on the Convention Expert Group on BAT and BEP
113. China is the recipient of UNIDO's largest programme of technical cooperation assistance. Of relevance to this proposal is the support that has been given over many years, in conjunction with UNDP, to the Regional Network for the Production of Safe Pesticides in the Asia Pacific Region (RENAP). UNIDO, with funding from the Government of Switzerland, is assisting China in the development of cleaner and economically feasible solutions for reducing and handling municipal solid waste and hazardous waste. UNIDO has also been executing efforts to encourage energy efficiency amongst Township and Village Enterprises (TVEs) with a grant from the GEF. All of these projects are likely to have a bearing on the work planned in this project and may provide models and experience of value in the furtherance of the objectives set out below.

## 1.6 The Importance of GEF Intervention

114. The People's Republic of China is the largest developing country in the Asia-Pacific region with a population estimated in 2002 to be 1,280 million. It is experiencing rapid industrialisation and is in transformation to a market economy. China's GDP has quadrupled since 1978. These factors represent significant challenges to efforts to protect human health and the environment both within China and globally.
115. China has expressed its strong interest to play a full role as a Party to the Stockholm Convention. Enabling China to comply with the obligations on Parties set out in the Convention will have a significant and positive influence not only on China's own chemicals management regime but

- also on the ultimate global success of the Convention to protect human health and the environment from the threat of POPs. Successful efforts moving towards compliance will also serve as a model for other developing countries.
116. The GEF is established as the interim principal entity of the financial mechanism of the Convention and has confirmed its willingness to act in this role in Council resolution, by establishing a dedicated focal area for POPs, and by reserving funds to support Enabling Activities, innovative demonstrations and capacity building efforts.
  117. China has opted to pursue development of its National Implementation Plan not through an Enabling Activities grant but through the full GEF project cycle, reflecting the scale of activities required in the country. It has succeeded in attracting considerable bilateral co-financing support for significant components of the work required in NIP development and now seeks equivalent sums from the GEF to enable completion of the NIP during the full project.

## **2.0 Rationale and Objectives**

### **2.1 Rationale for GEF Intervention**

118. Article 13 of the Convention sets out the principles on which "...developed country Parties shall provide new and additional financial resources to enable developing country Parties and Parties with economies in transition to meet the agreed full incremental costs of implementing measures that fulfil their obligations under the convention". Article 14 of the Convention states that "The institutional structure of the Global Environment Facility ... shall, on an interim basis, be the principal entity entrusted with the operations of the financial mechanism referred to in Article 13 ...".
119. In response, the Council of the Global Environment Facility agreed at its 19<sup>th</sup> meeting in May 2002 to amend the Instrument of the Facility to enable it to serve as an entity entrusted with the operation of the financial mechanism of the Convention. The Council having reviewed document GEF/C.19/14 recommends that the GEF Assembly designate "Persistent Organic Pollutants (POPs)" as a focal area in support to the implementation of the Convention.
120. Financial support to the Convention is currently focused on the preparation of National Implementation Plans, required by Parties under Article 7 of the Convention, during so-called Enabling Activities. Considering the scope of planning activities required, the People's Republic of China has opted to develop its National Implementation Plan through the GEF full project cycle.
121. The planned activities aim to remove barriers to the successful implementation of the Convention in the People's Republic of China through actions compatible with the requirements of the Convention and specific guidance documents. These activities include work to establish a national baseline together with strategies and action plans to address priority issues, initial capacity building, and demonstration activities that serve to inform action planning and prepare the way for implementation following the planning phase.

### **2.2 Long-term Objective**

122. The goal of this project is to protect human health and the environment from persistent organic pollutants – the principal objective of the Convention. The purpose of the project is to enable the People's Republic of China to take the first steps towards implementation of the Convention. Its principal outputs are:
  - a comprehensive National Implementation Plan incorporating:
    - an assessment of the national baseline with regard to POPs chemicals incorporating preliminary inventories of POPs chemicals currently in production and use, of PCBs and equipment containing PCBs, of unintentional production of POPs, of human burdens of POPs and health impacts, of research and development capabilities, and of

- regulatory and institutional frameworks relating to POPs and chemicals management and control;
- management strategies, action plans and investment needs required by the People's Republic of China to meet the obligations of the convention; and
- a methodology for the identification of sites contaminated by POPs or products containing POPs;
- a Capacity Building Programme proposal to meet China's long-term institutional strengthening and capacity building needs;
- management and information systems functioning at national level and instigated at provincial levels
- a national information centre established and information dissemination and public awareness and education campaigns developed;
- a pilot study to investigate the exposure to POPs and their adverse effects with special emphasis on the health of women and children;
- a case study on non-POPs alternatives and Integrated Pest Management strategies for termite control;
- a pilot project to develop a detailed inventory methodology for PCBs;
- a pilot capacity building programme on PCB management;
- a demonstration of methodologies to promote the implementation of BAT and BEP to reduce unintentional production of POPs in key sectors of industry

### 2.3 Specific Project Objectives

123. To achieve these outputs, the activities of the project have been grouped into a series of 'work packages' each focused on a specific objective contributing to the planned outputs. A diagrammatic representation of these work packages is included as Appendix 7. These objectives are:

Objective 1.1: Convention Implementation infrastructure at national and provincial levels:

"To develop a sustainable infrastructure enabling China to implement the Stockholm Convention at national and provincial levels"

Objective 1.2: Measures in relation to the four chemicals currently being produced and used in China (chlordane, mirex, HCB and DDT)

"To develop measures, appropriate to the obligations on Parties set out in the Convention, in relation to the four POPs chemicals (chlordane, mirex, HCB and DDT) currently being produced and used in China"

Objective 1.3: Measures in relation to polychlorinated biphenyls (PCBs)

"To develop measures, appropriate to the obligations on Parties set out in the Convention, in relation to polychlorinated biphenyls (PCBs)"

Objective 1.4: Measures in relation to unintentionally produced POPs

"To develop measures, appropriate to the obligations on Parties set out in the Convention, in relation to unintentionally produced POPs"

Objective 1.5: Measures in relation to wastes and contaminated sites

"To develop measures, appropriate to the obligations on Parties set out in the Convention, in relation to products and articles in use and wastes consisting of, containing or contaminated with intentionally or unintentionally produced POPs"

Objective 2.1: Strategy for capacity building and institutional strengthening

“To devise a strategy, expressed in a costed project proposal, for long-term programme of capacity building and institutional strengthening at national and provincial levels to secure the implementation of the Convention in China”

Objective 3.1: Project management and oversight

“To ensure the proper management and oversight of the project and the close coordination between its national and international actors in order to deliver high-quality project outputs on time and within budget”

124. Each of these objectives will require the execution of a series of activities. Wherever possible, these activities are developed in accordance with the initial guidelines prepared by the GEF<sup>12</sup> and following more detailed draft guidance prepared jointly by the UN Environment Programme and the World Bank<sup>13</sup>.

### 3.0 Project Activities / Components and Expected Results

#### Objective 1.1: Convention Implementation infrastructure at national and provincial levels

##### Rationale:

125. The Convention specifies the following obligations for Parties relating to general policies and activities that will contribute to the efforts of Parties to reduce and/or eliminate the releases of POPs.
126. Each Party must:
- a) where it has in place or introduces regulatory and assessment schemes for industrial chemicals and/or pesticides, take into consideration the criteria in Annex D for screening candidates for addition to Convention when conducting assessments of (Article 3):
    - new substances, to take measures to regulate with the aim of preventing the production and use of new POPs; and
    - in-use substances, to identify potential POPs for possible risk management.
  - b) develop and endeavour to implement a national plan for the implementation of its obligations under the Convention (Article 7) and:
    - include an action plan to identify, characterize and address releases of unintentionally produced POPs (dioxins and furans, HCB, PCBs) and to facilitate implementation of all the Convention requirements relating to these POPs (Article 5 and Annex C);
    - include a specific action plan for DDT if the Party will produce and/or use DDT for disease vector control as provided for under the acceptable purposes provisions of the Convention (Article 3 and Annex B);
    - submit this plan to the COP within 2 years of entry into force of Convention for the Party;
    - review and update this plan on a periodic basis as specified by the COP;
    - cooperate with other Parties, either directly or through intergovernmental organizations, and consult with national stakeholders in developing, implementing and updating plans; and
    - endeavour to utilize and integrate these plans in national sustainable development strategies;
  - c) participate in evaluating data and information on chemicals that will be nominated by Parties for addition to the Convention by (Article 8):
    - developing and submitting dossiers on candidate chemicals;

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<sup>12</sup> Initial Guidelines for Enabling Activities for the Stockholm Convention on Persistent Organic Pollutants. GEF/C.17/4, April 6 2001

<sup>13</sup> Guidance on Planning and Developing National Implementation Plans under the Stockholm Convention.



- evaluating information on nominated chemicals; and
  - participating in the operation of the POPS Review Committee that will be established at the first meeting of the Conference of the Parties to review nominations submitted by Parties;
- d) designate a national focal point to facilitate or undertake information exchange on the reduction or elimination of the production, use and release of POPs and alternatives to POPs, while taking measures to protect information that is mutually agreed by Parties to be confidential (Article 9);
- e) within its capabilities, promote and facilitate the following relating to public information, awareness and education on POPs and alternatives to POPs (Article 10):
- awareness among policy and decision makers;
  - public access to available and up-to-date information;
  - development and implementation of educational and public awareness programs;
  - public participation and input in developing and implementing measures to address POPs;
  - training and development programs for stakeholders including workers, scientists, educators and technical and managerial personnel;
  - development and exchange of educational and public awareness materials at the national and international levels
  - development and implementation of education and training programmes at the national and international levels.
  - encouragement of industry and professional users to promote and facilitate provision of information on all relevant aspects of POPs at the national and other levels;
  - usage of a range of approaches to communicate information on POPs, such as information centres at national and regional levels; and
  - development of mechanisms, such as pollutant release and transfer registers (PRTRs), to collect and disseminate information on estimates of the annual amounts of the 12 POPs that are released or disposed of;
- f) within its capabilities, and at the national and international levels (Article 11):
- encourage and/or undertake research, development, monitoring and cooperation relating to the following subjects for POPs, alternatives to POPs and candidate POPs (Article 11):
    - o sources and releases to environment,
    - o presence, levels and trends in humans and the environment,
    - o environmental transport, fate and transformation,
    - o effects on human health and the environment,
    - o socio-economic and cultural impacts,
    - o release reduction and/or elimination; and
    - o methods for source inventories and for analysis of POPs,
  - support and further develop international programmes, networks and organizations to define, conduct, assess and finance research, data collection and monitoring;
  - support national and international efforts to:
    - o strengthen national scientific and technical research capabilities, particularly in developing countries and countries with economies in transition, and
    - o promote access to and exchange of data and analyses;
  - undertake research work on alleviating effects of POPs on reproductive health;
  - take into account concerns and needs, particularly financial and technical resources, of developing countries and countries with economies in transition, and cooperate in improving their capability to participate in these efforts;
  - make the results of these research, development and monitoring activities accessible to the public on a timely and regular basis; and
  - encourage and/or undertake cooperation with regard to storage and maintenance of pertinent information generated from research, development and monitoring.

- g) submit reports to the COP on (Article 15):
- measures it has taken to implement the Convention;
  - the effectiveness of the measures taken;
  - data related to production and trade in intentionally produced POPs and wastes containing POPs.
  - experiences in using DDT for disease vector control (every 3 years);
  - data related to production or use of HCB or DDT as a closed-system site-limited intermediate;
  - progress in eliminating PCBs (every 5 years); and
  - the success of its strategies in reducing releases of unintentionally produced POPs (every 5 years).

*Sustainable and integrated system for managing China's obligations*

127. A primary objective of national implementation planning is to establish a sustainable and integrated system for managing China's obligations to the Convention. In this regard, China established an **Inter-Ministerial Technical Coordination Group (ITCG)**, chaired by SEPA, to harmonize the interests and standpoints of different ministries, and state administrations and commissions, to determine the position of the Chinese Government with regard to POPs issues and the Convention then being negotiated.
128. In September 2003, a high-level **NIP Development Leading Group (DLG)** was formed to ensure that actions required for Convention implementation could be taken up and coordinated at the highest levels. The Group is chaired by SEPA and comprises 11 ministries and state administrations. Within SEPA, a **Convention Implementation Office (CIO)** coordinates and administers activities towards compliance. The CIO will act as the national focal point for interactions between China, other Parties and the Secretariat to the Convention (Article 9) and translate decisions at intergovernmental levels into appropriate national actions<sup>14</sup>.
129. The CIO represents the nucleus for sustainable and integrated management of Convention implementation activities. It will provide support for China's representatives to the Conference of Parties (described in Article 19) and its review committees (*c.f.* Article 8) and be responsible for vertical coordination with local and provincial government representatives and stakeholders representing public, industry, academia and other groups. The Office will be charged with fulfilling the national review, reporting and information exchange obligations set out in several Articles of the Convention.
130. Activity 1.1.1 set out below represents those actions necessary to ensure that this Office is equipped and capable of performing these functions beyond the life of this project.

*Information Management System*

131. Important to achieve these management functions will be the establishment of an information management system capable of assimilating national and provincial data on the production, use, trade, disposal and release of POPs chemicals or of products containing POPs chemicals. This information management system will also require functionality to aid the interpretation and analysis of the data contained within it, and to provide a variety of review and report contributions as required by the Convention under, in particular, Articles 3, 4, 5, 7, 9 and 15. Data relating to key stakeholders, prepared during the PDF-B stage will be included and updated to include the range of stakeholders whose participation is necessary during the development of the NIP to ensure its effective and sustainable implementation.

*Preparation of the National Implementation Plan*

132. A Project Management Group (PMG) will be established within FECO/SEPA to take responsibility for drafting the National Implementation Plan to be transmitted by China to the Conference of Parties. This will involve the management and oversight of the various work

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<sup>14</sup> Detailed implementation arrangements are set out in Section 5.3

packages described below and the integration of their results into a comprehensive plan. The PMG will also be responsible for the management of a process to review and endorse the NIP prior to its transmission to the Conference of Parties. This is likely to involve the development of consensus amongst stakeholders in the various technical areas of the plan, and its submission via the CIO to Government. It is presently anticipated that the Convention will enter into force in 2004 giving a deadline of 2006 for the completion of the NIP and its transmission to the Conference of Parties.

*Information exchange, public access to information, education and awareness*

133. An important aspect of the Stockholm Convention is its emphasis, set out in Articles 9 and 10, on information exchange, public access to information, and the building of educational programmes facilitating public participation and awareness, particularly amongst women and children who may be most at risk.
134. Information exchange between China and other Parties to the Convention directly or through its Secretariat will form an important function of national management and information system to be established during the project. This system will ensure that China meets its obligations in respect of reporting requirements and other substantive inputs to the Conference of Parties and its review and expert groups.
135. The emphasis in the Convention on public access to information and education is not intended merely to inform members of the public of the risks they face but to build active public participation in efforts to reduce and ultimately eliminate the release of POPs chemicals. Public ownership of schemes to provide improved management of POPs chemicals and to develop safe alternative techniques is recognised as an important aspect of Convention compliance, particularly as China moves towards a market economy.
136. In devising schemes for public awareness and education, the project will take advantage of the considerable experience in existing public education departments of national and provincial government. For example, the Centre for Environmental Education and Communications, a professional agency affiliated to SEPA, focuses on developing propaganda and training activities related to environmental protection while an official web site [www.zhb.gov.cn](http://www.zhb.gov.cn) provides easy access to policies, regulations, principal activities and achievements related to environmental protection. Similarly, the Ministries of Health and Agriculture, and their respective development agency partners, provide considerable amounts of information and consultation materials to their stakeholder constituencies. In this regard, the Agricultural Extension Network of the Ministry of Agriculture may provide not only useful experience but also a suitable vehicle for the dissemination of awareness materials and education to farming communities. Industry and public-interest NGOs will be encouraged to participate in the development, delivery and support of public awareness and education campaigns to ensure their long-term sustainability.

*Legislative framework*

137. China has an established infrastructure of environmental and chemicals management legislation, administration regulation, operational rules, national standards and guidelines. None of this regulatory framework was established specifically with the obligations of the Stockholm Convention in mind but many of its provisions make reference to chemicals included in the Stockholm Convention. It follows that a detailed review of this framework is required to ensure that obligations under the Convention are met. The Convention requires Parties to address the regulation of intentionally and unintentionally produced POPs in different ways so that it is appropriate that the need to modify or add regulation is considered within each of the work packages of this project. Nevertheless, recommendations will need to be coordinated and integrated to ensure that they are mutually consistent and compatible with regulatory frameworks for other multinational chemicals and environmental agreements and with national sustainable development policies and strategies. In this last respect, China will seek assistance from the donor community to mainstream POPs chemicals management in development and country assistance strategies.

### *Research and Development*

138. The Convention provides, in Article 11, indications of topics that Parties should address in defining research, development and monitoring objectives. During the development of the NIP, China's existing capabilities to address these objectives will be assessed. Proposals to strengthen the nation's research and monitoring infrastructure and build capacity will be developed and included in the NIP and in the Capacity Building Programme proposal to be developed in parallel with it.
139. China will require research and development both to support policy making in relation to its full participation in the Conference of Parties, its subcommittees and expert groups, and to support national management activities, addressing areas of particular concern and providing regular and systematic monitoring.
140. China has signed an agreement with the World Bank for a study of human health impacts of POPs on human populations considered to be most at risk. The study, financed by a trust fund established at the Bank by the Government of Canada, will investigate the exposure to POPs and their adverse effects amongst a cohort of women and children. It will provide a general status report on the adverse health effects of POPs and provide a preliminary assessment of health impacts posed by existing pollutants in order to guide future actions. Principal activities of the project are included in section 1.1.5.1 and described in detail in the terms of reference for the project attached in Appendix 8.

### *Co-financing for Objective 1.1 outputs*

141. China recognises that some of the planned outputs of activities set out under Objective 1.1 may go beyond the strict limits of enabling activities. Nevertheless, it considers the activities below as necessary to establish a sustainable infrastructure to implement the Convention in China, the additional activities providing important information and experience as co-benefits to ensure effective and efficient national planning. For this reason China is committed to providing a significant proportion of in-kind co-financing to support activities under Objective 1.1.

### Activity 1.1.1 *Develop and implement national management system for Stockholm Convention compliance*

#### *1.1.1.1 Establish national management system*

(i) form Project Management Group (PMG) within FECO/SEPA; determine and formalise appropriate linkages between PMG and CIO and any other Governmental committees to which it reports; (iii) determine and formalise appropriate linkages between the CIO and national and provincial departments and bureaux providing monitoring information, regulatory control and other services; (iv) conduct training to build capacity in national and provincial departments and bureaux providing monitoring information, regulatory control and other services.

#### *1.1.1.2 Establish Information Management System*

(i) examine existing IT architecture within lead organisation; (ii) determine inventory and reporting requirements of the Convention; (iii) assess results and actions of other work packages (described below) relevant to information needs; (iv) determine remaining information needs; (v) determine existing data holdings relevant to POPs within other government departments and non-government institutions; (vi) encourage cooperation between institutions gathering information that may be relevant to the reporting requirements of the Convention so that this can be exchanged with the information management system; (vii) recruit and train staff to operate information management system; (viii) establish data management infrastructure capable of input, storage modelling and reporting of national and provincial information in formats, such as PRTR, compatible with Convention requirements.

## Activity 1.1.2 Draft the National Implementation Plan

### *1.1.2.1 Draft the National Implementation Plan*

(i) prepare national profile, using, as a basis, the mini-profile prepared under the aegis of UNITAR; (ii) integrate profile, inventory reports, priority assessments, strategies and action plans from all Objectives into a comprehensive draft NIP suitable for transmission to the Conference of Parties according to requirements of Article 7 and in formats consistent with recommendations arising from the Conference of Parties; (iii) consolidate national priorities and their incremental costs.

### *1.1.2.2 Review and Endorse National Implementation Plan*

(i) conduct a detailed review of the draft NIP and its component implementation plans with international and national experts and representatives of principal stakeholder groups; (ii) correct, amend and modify the draft NIP to take account of review recommendations; (iii) hold a meeting, or meetings, with principal stakeholders at national and provincial levels to introduce, and gain endorsement for, the NIP, its component implementation plans, and priority actions; (iv) disseminate draft NIP to relevant ministries to gain endorsement of the NIP; (v) correct, amend and modify the draft NIP to take account of recommendations from these ministries; (vi) submit the NIP for Government endorsement; (vii) prepare the final NIP for publication in both Chinese and English; (viii) submit the final NIP to the appropriate authorities for transmission, via the Convention Secretariat, to the Conference of Parties

## Activity 1.1.3 Develop national and provincial policy, legal, regulatory and promotional frameworks to meet Convention requirements

### *1.1.3.1 Establish regulatory requirements in relation to national sustainable development policies, national environmental protection plans, country assistance strategies, state laws and administrative regulations*

(i) integrate results and recommendations from Objectives 1.2-1.5 with regard to national sustainable development policies, national environmental protection plans and country assistance strategies; (ii) integrate results and recommendations from Objectives 1.2-1.5 with regard to state laws and administrative regulations; (iii) examine the recommendations for consistency, conformity with Convention requirements and Government policies, plans and laws; (iv) examine the recommendations for conformity with other multilateral environmental agreements (v) organise a study tour for national experts developing national and provincial policy, legal, regulatory and promotional frameworks to review the development and operation of similar frameworks in one or more OECD countries.

### *1.1.3.2 Establish regulatory requirements in relation to national and provincial administrative rules, standards and guidelines*

(i) integrate results and recommendations from Objectives 1.2-1.5 with regard to national and provincial administrative rules, standards and guidelines; (ii) examine the recommendations for consistency and conformity with Convention requirements;

### *1.1.3.3 Assess opportunities for management instruments to address Convention requirements*

(i) examine the opportunities, and develop recommendations, for command control, economic, and information disclosure instruments to enhance the implementation of Convention requirements within industry; (ii) assess opportunities to encourage industry compliance with Convention objectives and obligations through market-led voluntary approaches, such as Clean Production, ISO accreditation or eco-labelling initiatives; (iii) assess opportunities to encourage voluntary compliance with Convention objectives and obligations amongst users of POPs chemicals through the take-up, for example, of integrated pest management and improved health awareness.

### *1.1.3.4 Undertake Socio-economic impact study*

(i) study, using guidance for such activities drawn up, for example, by the OECD, using parameters such as those included in Annex F of the Convention, the social and economic impact of; (a) the continuing use of POPs chemicals; and (b) the possible regulatory requirements and voluntary schemes, to assess the incremental costs and benefits of proposed actions to facilitate the consideration of proposals by legislative bodies.

#### *1.1.3.5 Provide recommendations and gain acceptance and approval for them*

(i) provide recommendations and cost-benefit analysis, based upon estimated incremental costs, to relevant legislative bodies; (ii) hold detailed consultations with legislative bodies and principal stakeholders to review and gain acceptance and approval for inclusion of the recommendations in the NIP; (iii) present the recommendations to SEPA and other legislative bodies to facilitate legal drafting; (iv) assess institutional strengthening and capacity building implications of recommended actions at national and provincial level for integration with the Capacity Building programme proposal at Objective 2.1; (v) undertake an international study tour to examine successful and suitable approaches to the revision of regulatory and management instruments, their incremental costs, and their integration to meet Convention requirements.

### Activity 1.1.4 Public awareness and education

#### *1.1.4.1 Establish National Dissemination Centre*

(i) review national and provincial requirements for the provision of information to stakeholders, including the public, and existing public awareness infrastructure, such as ministry public education departments and civil society interest groups, in order to develop an information dissemination and awareness raising strategy integrated with actions under 1.1.4.2 – 1.1.4.5; (ii) establish a national information centre and determine appropriate arrangements for establishing a permanent information network providing public access to POPs information consistent with Article 10 of the Convention at provincial level; (iii) establish an internet presence for the purpose of disseminating information related to the objectives of the Stockholm Convention and related multinational chemicals management agreements; (iv) develop generic materials, suitable for dissemination by a variety of printed, broadcast or virtual media, to raise awareness of issues related to the objectives of the Stockholm Convention and related multinational chemicals management agreements; (v) determine a sponsorship strategy and conduct a survey of potential sponsors, particularly from the private sector, in order to secure long-term funding support for the National Dissemination Centre and its public awareness and education activities.

#### *1.1.4.2 Increase public awareness of POPs issues related to human health*

(i) determine, in conjunction with the Ministry of Health, WHO and other stakeholders, in particular women's groups, appropriate educational schemes to raise the awareness of the hazard posed by the inappropriate use and management of POPs chemicals in public health and disease vector control programmes; (ii) examine public health campaigns in other countries where POPs chemicals have been minimised or eliminated for examples of best practice that can be exploited in China; (iii) devise appropriate programmes and materials that can be delivered, for example through the public health network, to promote the safe handling and use of those POPs chemicals remaining in use, environmentally sound alternatives to POPs, or integrated disease management techniques minimising or eliminating the need for POPs chemicals.

#### *1.1.4.3 Increase public awareness of POPs issues related to agriculture*

(i) determine, in conjunction with the Ministry of Agriculture, FAO and other stakeholders, appropriate educational schemes to raise the awareness of the hazards posed by the use and inappropriate management of intentionally produced POPs; (ii) devise appropriate programmes and materials that can be delivered, for example through the agricultural extension workers network, to promote environmentally sound alternatives to POPs or integrated pest management alternatives; (iii) develop appropriate programmes and materials for enterprises licensed to produce POPs chemicals, to use POPs chemicals in product formulations, and to distribute these chemicals and products, to promote improved and safer manufacturing and handling and progressive transfer to effective and environmentally sound alternatives.

#### *1.1.4.4 Increase industry and public awareness of unintentional production of POPs*

(i) determine, in conjunction with the SETC, other relevant Ministries and their development partners and other stakeholders, appropriate educational schemes to raise the awareness of industry and the public of the hazards posed by the unintentional production and release of POPs; (ii) examine examples of best practice in other countries for methodologies useful in China; (iii) devise appropriate awareness raising programmes and materials that can be delivered in conjunction with schemes to promote the improved performance of industry (Activity 1.5.1.3).

*1.1.4.5 Increase national and local government, municipalities, industry and public awareness of POPs issues related to waste management*

(i) determine, in conjunction with the national and local government, municipalities, relevant Ministries and their development partners and other stakeholders, appropriate educational schemes to raise the awareness of administrations, industry and the public of the hazards posed by the inappropriate disposal of wastes comprising POPs or products containing POPs ; (ii) devise appropriate awareness raising programmes and materials that can be delivered in conjunction with schemes to promote environmentally sound waste management in conjunction with Activity 1.5.1.

Activity 1.1.5 Develop R&D and monitoring strategies

*1.1.5.1 Undertake a toxicity study of POPs on women and children*

(i) collect available information on the adverse health effects of POPs from both domestic and foreign studies; (ii) hold expert workshop to review the information collected and select the study sites, design investigation methodologies and establish the sampling cohort; (iii) conduct methodology training for field teams; (iv) collect information via health and clinical examinations of population cohort, field investigations of levels of DDT and PCB in the environment - water, soil and food in the pilot area, and monitoring and analysis of samples; (v) prepare a preliminary assessment of health impacts posed by POPs to guide future actions.

*1.1.5.2 Develop R&D and monitoring strategies to support Convention implementation*

(i) examine national research and development facilities capable of assisting Government to play a full role as a Party to the Convention particularly in regard to the review and screening of new chemicals proposed for use or for listing under the Convention; (ii) examine national research and development facilities capable of assisting Government to play a full role as a Party to the Convention particularly in regard to Best Available Techniques (BAT) and Best Environmental Practices (BEP) to be required or promoted in compliance with Article 5 and Annex C; (iii) examine national research and development facilities capable of undertaking specific research programmes as well as systematic and regular investigations into POPs production, use, trade, release, disposal, environmental occurrence and impact and provide recommendations for institutional strengthening and capacity building to meet China's requirements under the Convention for monitoring and reporting information; (iv) assess, incorporating results from work packages described below, and provide recommendations for strengthening national R&D programmes: (a) leading to improved methodologies for preparing regular POPs inventories, (b) leading to improved techniques for production, management and disposal of POPs and products containing POPs and alternative environmentally-sound products and practices, removing barriers to POPs elimination, (c) providing testing information on new industrial chemicals and pesticides to ensure compliance with Article 3 Para 3 and Annexes D, E, and F of the Convention, (d) leading to the determination of release limit values, to improved disposal techniques, and to improved methodologies for the identification and characterisation of land contaminated by POPs to ensure compliance, in particular, with Articles 5, 6 and 11.

**Objective 1.2: Measures in relation to the four chemicals currently produced and used in China (chlordane, mirex, HCB and DDT).**

**Rationale:**

142. The Convention specifies the following obligations for Parties with regard to reducing and/or eliminating the releases associated with the production and/or use of intentionally produced POPs (Articles 3 and 4; Annexes A and B). Of the 10 intentionally produced POPs specified in the Convention, only chlordane, HCB, mirex and DDT are currently produced and used in China. In addition to summarizing the general Convention provisions, information is included on specific impacts that relate to the 4 POPs that China will continue to produce and use.

a) Parties must take legal and administrative measures to prohibit and/or eliminate the production, use, import and export of intentionally produced POPs.

b) *Specific exemptions* are listed in the Convention that would permit China to produce and/or use chlordane (local ectoparasiticide, insecticide, termiticide, termiticide in buildings and

dams, termiticide in roads, additive in plywood adhesives), HCB (intermediate, solvent in pesticide, closed system site-limited intermediate), mirex (termiticide) and DDT (production of dicofol, intermediate). On becoming a Party to the Convention, China must inform the Secretariat if it intends to use a specific exemption, in order to be included in the Register of Specific Exemptions, and take measures to prevent or minimize human exposure and releases to the environment related to production and/or use of a POP under a specific exemption. Specific exemptions are valid for a 5-year period and China may request an extension: however, such a request is subject to review by the Conference of the Parties (COP) to the Convention.

- c) Parties must either eliminate the production and use of DDT or restrict production and/or use to the **acceptable purpose** specified in the Convention (i.e., disease vector control programs). As China intends to continue producing and using DDT under this provision, it must:
- notify the Secretariat of its intentions and be included in the DDT Register;
  - produce and/or use DDT in accordance with WHO recommendations and guidelines and only when locally safe, effective and affordable alternatives are not available;
  - report every 3 years on the quantities of DDT used, the conditions of use, and the relevance of DDT to China's disease control strategy;
  - develop a national DDT action plan within 2 years of entry into force of the Convention, as part of the NIP required by Article 7 (Objective 1.1), to confine the use of DDT to disease vector control, to explore alternatives to DDT, and to take measures to strengthen health care and reduce the incidence of disease; and
  - take general measures to prevent or minimize human exposure and releases to the environment related to production and/or use under the **acceptable purpose** provisions.
- d) Parties that intend to make use of the provisions that permit HCB and/or DDT to be produced and/or used as closed-system site-limited intermediates (i.e., they are chemically transformed in the manufacture of other chemicals that do not exhibit POPs properties) must notify the Secretariat of their intention to do so, the total amounts of HCB and/or DDT that are produced or used, the nature of the site-limited process, and the amount of HCB and/or DDT present in the final products produced. These exemptions are valid for a 10-year period and a Party may request an extension: however, such a request is subject to review by the COP. As China intends to make use of these provisions for both HCB and DDT, it will have to address all these requirements.
- e) Parties must restrict trade involving intentionally produced POPs. Imports and exports may only be made between Parties with **specific exemptions** or **acceptable purposes** or where shipments are intended for environmentally sound disposal (Article 6). For trade with non-Parties, the non-Party must provide annual certification to an exporting Party specifying the intended use of the chemical and expressing commitment to: protect health and environment by minimizing or preventing releases; comply with the requirements of the Convention concerning POPs stockpiles and wastes (Article 6); comply with the Convention requirements that DDT production and/or use be in accordance with WHO recommendations and guidelines; and supply information on domestic legislation, regulations, policy and guidelines. The exporting Party must submit this certification to the Secretariat within 60 days. As China exports HCB and DDT, it must address these trade requirements.
- f) Parties must provide reports on trade in intentionally produced POPs including data on, or estimates of, the total quantities of chemicals that were produced, imported and exported, and a list of States from which it has imported or to which it has exported these POPs (Article 15).
- g) All Parties must, within their capabilities, promote research and development to seek alternatives to DDT and also participate in a review at the first COP meeting, and every 3 years thereafter, to see whether DDT continues to be needed for disease vector control.



- h) Parties must implement provisions that exempt intentionally produced POPs in quantities that are used for laboratory-scale research or as a reference standard, or that occur as unintentional trace contaminants in products and articles or as constituents of articles manufactured or already in use before or on date of entry into force of an obligation concerning that chemical.
  - i) Parties must develop and implement strategies for identifying *stockpiles* that consist of or contain intentionally produced POPs and manage these stockpiles in a safe, efficient and environmentally sound manner until they are deemed to be wastes (Article 6). A stockpile is deemed to be a waste when there are no remaining specific exemptions or acceptable purposes for a POP nor any prospects for exporting the stockpile.
143. China has indicated its intention to register specific exemptions with regard to chlordane and mirex, which are used to reduce termite damage to buildings and civil engineering infrastructure, and hexachlorobenzene and DDT, for use as intermediates. China has also indicated its intention to use the acceptable purpose provision to permit continued production and use of DDT in disease vector control. A priority in this component of the project will be to develop mechanisms to monitor the uses of these chemicals and, periodically, to test the continuing need for their production and use in China. Towards these objectives, strategies for the continued restriction of these chemicals - through, for example, improved production of dicofol to remove DDT residues, will be developed. The work package will also examine the viability of environmentally sound techniques and alternative chemicals permitting their elimination and enabling China to withdraw its requirement to use the specific exemptions and acceptable purposes provision of the Convention. In considering the viability of techniques and alternatives it will take into account best practice developments within the MoA and the FAO and their experience of delivering such practice, for example in Integrated Pest Management, through the Agricultural Extension Network.
144. The greater part of activities towards this Objective will be undertaken within two fully-funded projects. For the first of these, China has signed an agreement with the Government of Italy under which Italy is providing the funding necessary for the development of a strategy and programme to reduce and phase-out pesticidal POPs in China [Project number CPR/01/R51/A/CC/31]. This project, which is being executed by UNDP, began in 2001 and its preliminary results have been used during the PDF-B phase. Principal activities are set out below and described more fully in the project document and work plan attached as Appendix 9. A preliminary inventory of stockpiles will complete the work necessary for this element of the NIP.
145. The World Bank has been invited to prepare a case study on termite control without POPs chemicals. This study, to be funded by a trust fund established at the World Bank by the Government of Canada, will provide input to the National Implementation Plan in the form of methodologies, and indications of the incremental costs associated with the use of alternative practices and chemicals, for termite control. It will assist China in removing barriers to the elimination of chlordane and mirex as required under the Convention. The terms of reference for this study are attached as Appendix 10. Recommendations from this study will be taken up in the GEF-supported project 'Alternatives to Chlordane and Mirex in termite control' approved for entry to the work programme by the GEF Council at its November 2003 meeting.

Activity 1.2.1 Develop measures to restrict and/or eliminate production, use and trade of chlordane, mirex, HCB and DDT

*1.2.1.1 Establish inventories on production, distribution, use, and international trade*

- (i) develop production inventory methodologies; (ii) undertake preliminary inventory of production of currently produced POPs through questionnaires and field visits; (iii) undertake inventory of distribution and use of these POPs through customer investigations; (iv) prepare inventory of international trade in currently produced POPs; (v) identify potential obsolete pesticides during activities (i)-(iv) and prepare an inventory; (vi) prepare current and forecast future production, distribution, use of these POPs in China and trade to and from China;

#### *1.2.1.2 Develop reduction and phase-out strategies*

(i) investigate alternative techniques for the control and phase-out of intentionally produced POPs, in particular, alternative technologies; (ii) evaluate the feasibility of alternative technologies for use in China; (iii) evaluate existing institutional and regulatory barriers to the reduction and phase-out of intentionally produced and used POPs chemicals; (iv) assess public awareness and participation opportunities and prepare recommendations to increase awareness and participation; (v) assess monitoring and R&D capacity; (vi) formulate the strategy on reduction and phase-out of these POPs for inclusion in the NIP.

#### *1.2.1.3 Build capacity within the national focal point*

(i) train government officials involved in the implementation of Convention obligations relating to the POPs chemicals currently intentionally produced and used; (ii) establish a management information system (MIS) for the intentionally produced POPs within the national focal point (SEPA); (iii) establish a long-term expert working group to support SEPA in the implementation of Convention obligations relating to the intentionally produced POPs chemicals.

### Activity 1.2.2 : Develop measures in relation to stockpiles of, or containing, intentionally produced POPs

#### *1.2.2.1 Establish national inventory of stockpiles and integrate with existing inventories of chemicals currently produced*

(i) develop stockpile inventory methodology, taking advantage, wherever possible, of information from inventories established in Activity 1.2.1; (ii) undertake preliminary inventory of stockpiles through questionnaires and field visits; (iii) prepare data in formats for inclusion in the data management system and for reporting in the NIP; (iv) integrate stockpiles inventory into production, use, trade and distribution inventories prepared under Activity 1.2.1

#### *1.2.2.2 Develop guidelines for the management of stockpiles*

(i) examine existing regulatory measures related to the management of stockpiles; (ii) identify additional measures necessary for the safe, efficient and environmentally sound management of stockpiles and identified as stockpile management priorities during the inventory activities; (iii) identify, and make proposals to overcome, barriers to effective working of current and proposed management measures; (iv) hold stakeholder workshop to review and endorse recommendations; (v) prepare recommendations for inclusions in the NIP and for incorporation into regulatory framework.

### Activity 1.2.3 Undertake a case study of termite control without POPs chemicals

#### *1.2.3.1 Develop inventories of chlordane, mirex, their alternatives and IPM practices for termite control in China*

(i) collect information about the use of mirex and chlordane; (ii) review the use of chlordane, mirex, their alternatives and IPM practices for termite control in China and in other countries; (iii) review the information collected, select two pilot sites which have reasonable statistics on impacts of termites, and where mirex or chlordane have been heavily used; (iv) develop study workplan through an experts workshop.

#### *1.2.3.2 Conduct pilot study*

(i) collect historical data and information on termite damage, usage of pesticides and outcomes on pilot sites; (ii) identify major domestic barriers to the elimination of chlordane and mirex; (iii) select test areas for the trial application of different alternatives to identify the most appropriate alternative(s) for the pilot sites.

#### *1.2.3.3 Develop an appropriate IPM for termite control and prepare a national action plan.*

(i) develop an appropriate IPM for termite control for selected pilot sites; (ii) evaluate the feasibility of IPM practices for termite control in other areas in China; (iii) make recommendations for actions that can be implemented on a nation-wide basis to achieve the objectives of the Stockholm Convention through a series of follow-up projects and actions.

### Objective 1.3: Measures in relation to polychlorinated biphenyls (PCBs)

#### Rationale:

146. The Convention specifies the following obligations for Parties with regard to the management of PCBs and of PCB-containing equipment (Articles 3 and 4; Annex A, Parts I and II).
- a) The production of new PCBs must cease upon entry into force of the Convention. As China ceased production in 1975, this requirement has already been met.
  - b) All in-use PCB-containing equipment must be eliminated by 2025. However, a *specific exemption* allows all Parties to continue using such equipment provided: they make determined efforts to identify, label and remove this equipment from use; they promote measures to reduce exposures and risk; they use PCBs only in intact and non-leaking equipment and only in areas where risk of environmental release can be minimized and quickly remedied; they forbid use in food and feed production and processing areas; when such equipment is used in populated areas (schools, hospitals, etc.), all reasonable measures are taken to inspect regularly for leaks in equipment and to protect from electrical failure which could result in a fire; PCB equipment is not exported or imported except for the purpose of environmentally sound management of waste; and liquids with more than 0.005 % of PCBs are not recovered for reuse in other equipment. A Party using the PCB specific exemption must also take general measures to prevent or minimize human exposure and releases to the environment of PCBs (Article 3, paragraph 6).
  - c) The environmentally sound management of wastes containing more than 0.005 % PCBs must be achieved by 2028. The Convention's general management provisions for all POPs wastes (Article 6) must be applied to PCB wastes and these are summarized in Objective 1.5.
  - d) Parties must endeavour to develop strategies for identifying sites contaminated by POPs, including PCBs, and while remediation is not required by the Convention, if it is attempted, it must be conducted in an environmentally sound manner (Article 6). Note that the issue of developing strategies to identify contaminated sites for all POPs under the Convention is addressed in Objective 1.5.
  - e) Parties must report to the COP every 5 years on their progress in eliminating PCBs.
147. An estimated 10,000 t of PCBs were produced in China between 1965 and 1974. Of this, 1000 t of PCB5 was used in a wide variety of open systems and has been released to the environment. The remaining 9000 t of PCB3 was used in electrical capacitors. It is estimated that a further 4,000-4,500 t of PCB oils were imported to China within capacitors. Current estimates, set out in Section 1 above, indicate that about 1.15 million capacitors containing PCBs were in use in China by 1975 and more were imported in the 1970s and 1980s. A small proportion, probably less than 10%, may remain in service. While PCB-containing transformers were never manufactured in China, an unknown number were imported.
148. Many items of electrical equipment were taken out of service during the 1980s and collected at temporary storage sites prior to disposal. Some items remain at these temporary storage sites while others were placed in facilities developed within caves or in landfills, possibly with the intention that such measures constituted disposal. Details of storage sites and disposal facilities are generally lacking and recent investigations indicate that most of those locations have now exceeded their design lifetime and are leaking PCB oils to the environment. It follows that further national inventory work and the development and implementation of appropriate management arrangements, compatible with the obligations of the Convention, are a priority.
149. China and the Government of Italy have agreed to cooperate towards the 'development of a PCB inventory methodology and a draft strategy on PCB reduction and disposal in China'. This project, which the World Bank has been invited to execute, will develop the methodology necessary to prepare detailed inventories of PCBs. It will demonstrate this methodology in two pilot areas. The project will also prepare a draft strategy providing an assessment of current PCB disposal, reduction, management, policy and regulation, and identify approaches and options that

are suitable for China. Project outputs represent important inputs to the National Implementation Plan and complement the preparation of a preliminary national inventory under Activity 1.3.1. Principal activities are set out below in activity 1.3.2 and described more fully in the project document and work plan attached as Appendix 11.

150. China has also invited the World Bank to address capacity building needs in the area of PCBs management. The project, to be funded by a trust fund established at the World Bank by the Government of Canada, will conduct a series of training workshops focused in two pilot areas, with the intent of developing an overall programme and materials for training various groups of stakeholders. Principal activities are set out below in activity 1.3.3 and described more fully in the project document and work plan attached as Appendix 12. Recommendations from this study will be taken up in the GEF-supported project 'PCB Management and Disposal' approved for entry to the work programme by the GEF Council at its November 2003 meeting.

#### Activity 1.3.1 Prepare a preliminary national inventory of PCBs and equipment containing PCBs

##### *1.3.1.1 Collect national information on production, import & use of PCBs and equipment containing PCBs*

(i) build on initial inventory prepared in PDF-B phase by gathering further information relating to production and import of PCBs and equipment containing PCBs; (ii) prepare national inventory of equipment still in use from records held by utility corporations, government and other sources; (iii) conduct preliminary surveys at province level to develop a preliminary inventory; (iv) present preliminary inventory to principal stakeholders; (v) prepare preliminary inventory in format suitable for inclusion in the NIP.

##### *1.3.1.2 Collect information on management and monitoring capacity*

(i) gather information related to existing control, management and replacement planning of equipment in use; (ii) assess capacity to undertake any phase-out programme necessary to meet Convention requirements; (iii) make recommendations for capacity building and planning requirements; (iv) present recommendations to principal stakeholders.

#### Activity 1.3.2 Develop and demonstrate a detailed inventory methodology for PCBs and a draft strategy on PCB reduction and disposal in China

##### *1.3.2.1 Develop and test a detailed inventory methodology for PCBs in two provinces*

(i) prepare requirements, guidelines and training for inventory; (ii) investigate PCB-containing devices in use; (iii) investigate obsolete PCB-containing devices in storage and sealed in disposal sites; (iv) review inventory information and develop timetable for equipment replacement and for safe storage; (v) prepare a management information system for holding inventory data and replacement timetables; (vi) prepare recommendations for PCB storage compatible with Convention requirements.

##### *1.3.2.2 Develop draft national strategy on options and approaches to PCB reduction and disposal*

(i) assess existing national institutional framework of PCB policy and management; (ii) assess current PCB disposal management and monitoring and prepare draft strategy; (iii) review draft national strategy; (iv) disseminate information to relevant stakeholders within national and provincial governments, electrical utilities and industry.

#### Activity 1.3.3 Build capacity in PCB management

##### *1.3.3.1 Establish pilot training programme*

(i) facilitate a national expert group meeting to reach consensus on key technical and logistical issues and to promote awareness of PCB issues in China; (ii) undertake a pilot programme of up to three workshops to raise awareness of PCB health and safety issues, and inventory, management and destruction methods and techniques for key stakeholders; (iii) lead a study tour to PCB management, storage and destruction facilities in Canada.

##### *1.3.3.2 Develop a national PCB training programme*

(i) develop a proposal for a permanent, sustainable training programme to address all aspects of PCB work.

#### **Objective 1.4: Measures in relation to unintentionally produced POPs**

##### **Rationale:**

151. The Convention specifies the following obligations for Parties with regard to unintentionally produced POPs and stresses that these measures are to be taken “at a minimum” to reduce the total releases derived from anthropogenic sources of each of these POPs, with the goal of their continuing minimization and, where feasible, ultimate elimination (Article 5 and Annex C).
- a) Parties must, as part of the overall implementation plan required by Article 7, develop an action plan within 2 years of entry into force of the Convention that will:
    - evaluate current and projected releases of unintentionally produced POPs, including the development and maintenance of source inventories and release estimates, taking into account the 20 source categories that are identified in the Convention (Annex C);
    - evaluate the efficacy of the Party’s laws and policies to manage such releases;
    - develop strategies to reduce these releases;
    - promote education and training on these strategies;
    - include a schedule for implementation of the action plan;
    - review success of the strategies every 5 years; and
    - report on progress in implementing the action plan to the COP (Article 15).
  - b) Parties must implement the action plan.
  - c) Parties must promote the application of available, feasible and practical measures to achieve expeditiously realistic and meaningful levels of release reduction or source elimination.
  - d) Parties must promote development and, where appropriate, require the use of substitute or modified materials, products and processes to prevent the formation and release of unintentionally produced POPs.
  - e) Parties must address identified ‘high potential’ sources, including but not limited to the seven sources specified in Annex C Part II, by:
    - for existing sources, promoting the use of best available techniques (BAT) and best environmental practices (BEP), and
    - for new sources warranting such action, promoting the use of BEP and, as identified in the action plan, requiring the use of BAT, phasing in such BAT requirements for sources in the 7 categories listed in Annex C Part II as soon as practicable, but no later than 4 years after entry into force of the Convention. The Convention defines as “new” any source “of which the construction or substantial modification is commenced at least one year after the date of entry into force” of the Convention for a Party.
  - f) Parties must address identified ‘potential’ sources, including but not limited to the 13 specified in Annex C Part III, by promoting BAT and BEP for both new and existing sources.
152. Reliable estimates of total unintentional production of POPs in China are not yet possible as there have been very few analytical studies of emissions and there is no systematic monitoring. Preliminary inventory work will rely on available methodologies but the limitation of these procedures with regard to industry in China has been noted above.
153. All 20 of the sources listed in the Convention are found in China and industrial activity in many of these sectors has contributed significantly to China’s impressive economic growth in recent years. Despite considerable investment and improvement in technology, there remains a large gap between the performances of industry in China with that of the developed world. This is particularly evident in pollution control technology and equipment. Some advances have been made in recent years to control air pollution emissions from large- and medium-scale enterprises and these may also have served to reduce emission of unintentionally produced POPs. However,

- a feature of many industrial sectors in China is the prevalence of relatively small-scale enterprises and these are not yet covered systematically by environmental monitoring regimes.
154. The full project will address China's obligations in two parallel series of activities. A first group of activities will continue preliminary inventory work begun in the PDF-B phase and prepare agreed strategies and costed action plans to achieve meaningful reductions in emissions. An important aspect of this will be to devise schemes to promote moves towards the adoption of BAT and BEP at the enterprise level within the context of an economy in transition to a market-oriented system. These activities form essential components of the NIP.
  155. China has invited UNIDO to undertake the second group of activities to identify methodologies to release reduction and source elimination in key sectors of industry. The Government of Italy has expressed its interest to co-finance such a demonstration project. Detailed audits of unintentional POPs production will be prepared for a small number of typical enterprises drawn from key sectors. The project will then attempt to identify optimal routes to release reduction and source elimination combining modification to raw material and product specifications, improvements in process control through capacity building, and technology change. It is hoped that project outputs will have a bearing not only at enterprise level but also at sector level. They will also serve to inform the NIP by providing suitable methodologies to promote the introduction of BAT and BEP to meet the relevant Convention obligations. In so doing they will allow China to contribute fully to the BAT/BEP Expert Group of the Conference of Parties and to assess the incremental costs of compliance. Principal activities are set out in section 1.4.2 below while the project is described in detail in the project document included as Appendix 13.

#### Activity 1.4.1 Develop measures for the progressive reduction of releases and elimination of sources of unintentionally produced POPs

##### *1.4.1.1 Develop inventories of sources and estimates of releases*

(i) train project management staff, entrepreneurs and government officials to disseminate knowledge on how POPs may be produced unintentionally; (ii) develop an inventory strategy appropriate to determining a preliminary national inventory as required by the Convention and including an estimate of total unintentional production of POPs in China, the principal sources of unintentional production, and the estimated contribution of each to the total; (iii) implement the inventory strategy by undertaking preliminary inventory activities, including, but not limited to, questionnaire surveys and field visits, and the modelling of data from estimated or proxy data; (iv) establish, within the overall POPs information management system, data management routines to hold, manipulate, display, model and report direct and proxy inventory data; (v) test and refine unintentional production models and proxy data elements by comparison with findings arising from Activity 1.4.2; (vi) develop the source inventories and estimate the unintentional production of POPs, providing detailed technical commentary on the modelled results, for inclusion in the NIP.

##### *1.4.1.2 Evaluate existing analytical and monitoring capacity and needs*

(i) evaluate the analytical and monitoring capacity of existing laboratories, their human and physical resources, management and analytical standards; (ii) develop a plan to strengthen national analytical institutions and capacity in order to establish national analytical capabilities for monitoring unintentionally produced POPs; (iii) evaluate the need for establishing national standards for the sampling and analysis of unintentionally produced POPs; (iv) evaluate available methods that use proxy data for the estimation and modelling of unintentional production of POPs and, where necessary, establish revised methodologies and models that are better suited to the industrial practices of the key sources of unintentionally produced POPs in China.

##### *1.4.1.3 Evaluate and develop relevant policies, laws and promotional schemes*

(i) evaluate the current state of unintentionally produced POPs management in China, including relevant laws, regulations and rules and institutional responsibilities and identify the need to amend these or to develop relevant health and environmental standards and guidelines for unintentionally produced POPs in products, emissions, effluents, wastes, daily intake limits, etc; (ii) propose sustainable monitoring and reporting regimes for major sources of unintentionally produced POPs; (iii) develop legal and regulatory

frameworks to implement BAT requirements for new sources (identified in Part II of Annex C) of unintentional production of POPs; (iv) develop regulatory, administrative or other schemes to promote the use of BEP in new sources and BAT and BEP in existing sources of unintentional production.

#### *1.4.1.4 Assess control techniques*

(i) collect and analyse information on unintentionally produced POPs reduction and control techniques in developed countries and evaluate their applicability in China; (ii) compile information on available, feasible and practical measures to achieve realistic and meaningful levels of release reduction for unintentionally produced POPs including, for example, cleaner production, pollution control techniques, substitute or modified raw materials, products & processes; (iii) draft technical guidance documents for selected key sectors.

#### *1.4.1.5 Formulate strategies and action plan for the control of unintentionally produced POPs*

(i) assess the social and economic impacts of releases of unintentionally produced POPs; (ii) develop the strategies for unintentionally produced POPs reduction and elimination in China; (iii) prepare an action plan as part of the overall NIP within 2 years of entry into force of the Convention; (iv) prepare an investment portfolio, including estimates of incremental costs incurred, to implement the strategies in the action plan relating to key priority industry sectors; (v) hold meetings to raise stakeholder awareness and to gain their support of the action plan

### Activity 1.4.2 Demonstrate methodologies to promote implementation of BAT and BEP and determine incremental costs in reducing unintentional production of POPs in key industry sectors

#### *1.4.2.1 Initiate promotion of BAT and BEP*

(i) promote concepts of BAT and BEP to industry and governments; (ii) secure support from key sectors and enterprises for implementation of pilot activities to develop implementation methodologies.

#### *1.4.2.2 Assess current source production conditions and monitoring capacity*

(i) train teams at participating enterprises to undertake audits to identify sources of unintentional production of POPs; (ii) conduct preliminary audits of identified sources to establish current conditions of unintentional production; (iii) assess the technological capacity of participating enterprises to monitor process performance; (iv) where necessary, plan and carry out capacity enhancement to permit the monitoring of process performance; (v) train enterprise teams in appropriate sampling techniques to acquire representative release samples for analysis of unintentional POPs; (vi) undertake sampling, monitoring and analysis in internationally accredited laboratories to contribute to the development of source inventories and release estimates as required by the Convention.

#### *1.4.2.3 Audit process and operational aspects of enterprises and evaluate options for reducing unintentional production of POPs*

(i) prepare detailed descriptions (flow sheets, material balances, etc.) of production processes and technologies, raw material inputs, releases and waste treatment regimes in participating enterprises in order to identify likely sources of unintentional production of POPs; (ii) identify options to amend in-process procedures in order to reduce unintentional production of POPs using, for example, cleaner production methodologies; (iii) assess the viability and feasibility of options and, where possible, implement suitable options; (iv) examine opportunities to change raw material and product specifications to eliminate sources of unintentional production of POPs without impairing output quality; (v) identify in-use technologies that contribute to unintentional production of POPs and evaluate available alternative technologies and techniques to reduce unintentional production.

#### *1.4.2.4 Identify practical and feasible approaches and incremental costs*

(i) examine the options identified in 1.4.2.3 to identify the combinations of measures providing practicable and feasible approaches to the meaningful reduction of unintentional production of POPs; (ii) determine the incremental costs of implementing and operating these measures; (iii) devise a suitable implementation strategy for each participating enterprise; (iv) disseminate enterprise case studies setting out reduction and/or elimination options and related incremental costs to industry and government; (v) extrapolate enterprise-level estimates to determine incremental costs across the industry sector;

#### *1.4.2.5 Contribute results to NIP and BAT/BEP development*

(i) utilize the results relating to reduction methodologies and incremental costs in the development of the NIP; (ii) utilize the results relating to reduction methodologies as a contribution to the BAT/BEP review committee of the Conference of Parties.

### **Objective 1.5: Measures in relation to wastes and contaminated sites**

#### **Rationale:**

156. The Convention specifies the following obligations for Parties with regard to reducing or eliminating the releases of POPs from wastes and identifying POP-contaminated sites (Article 6).
- a) Parties must develop strategies for identifying products and articles in use and wastes consisting of, containing or contaminated with intentionally or unintentionally produced POPs.
  - b) Parties must take measures to ensure that these materials are:
    - handled, collected, transported and stored in an environmentally sound manner;
    - disposed of in such a way that the POP content is destroyed or irreversibly transformed into substances that do not exhibit POPs characteristics, or otherwise disposed of in an environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option or the POP content is low; and
    - not subjected to disposal operations that may lead to recovery, recycling, reclamation, direct reuse or alternative uses of POPs.
  - c) Parties must restrict trade involving POPs wastes and ensure that shipments crossing international boundaries respect relevant international rules, standards and guidelines (e.g., Basle Convention, regional waste conventions). Imports and exports of wastes with Parties or Non-Parties may only be made where shipments are intended for environmentally sound disposal. For trade with non-Parties, the non-Party must provide annual certification to an exporting Party specifying the intended use of the chemical and expressing commitment to: protect health and environment by minimizing or preventing releases; comply with the requirements of the Convention concerning POPs wastes; and supply information on domestic legislation, regulations, policy and guidelines. The exporting Party must submit this certification to the Secretariat within 60 days.
  - d) Parties must provide reports on trade in POPs wastes including data on, or estimates of, the total quantities of chemicals that were produced, imported and exported, and a list of States from which it has imported or to which it has exported these POPs (Article 15).
  - e) Parties must endeavour to develop strategies for identifying sites contaminated by intentionally or unintentionally produced POPs. While remediation of such sites is not required by the Convention, if it is undertaken, it must be performed in an environmentally sound manner.
157. A considerable volume of information relating to wastes and contaminated sites is likely to become available from specific inventory activities contained in other work packages under Objective 1. This information is likely to be in the form of direct evidence – where accumulations and contamination are known - and indirect or ‘proxy’ information – such as information on current and former production sites, distribution hubs, and centralised use facilities at high risk of remaining with stockpiled or waste materials or that are likely to be contaminated.



Activity 1.5.1 Develop and implement strategies for identifying and managing waste consisting of containing or contaminated by POPs.

*1.5.1.1 Develop and implement strategies to locate and characterise wastes*

(i) develop methodology to locate and characterise wastes or sites that potentially host wastes, taking advantage, wherever possible, of information from inventories established in other Activities of Objective 1; (ii) conduct training in inventory techniques for officials, investigators and key stakeholders likely to hold wastes; (iii) undertake preliminary inventory of wastes and sites through questionnaires and field visits; (iv) establish, within the overall POPs information management system, data management routines to identify, hold, display and report direct and proxy inventory data; (v) test proxy data elements through pilot investigations in selected areas; (vi) include inventory results in the NIP.

*1.5.1.2 Develop methodologies for the sound management of products and articles in use, and wastes*

(i) collect draft recommendations arising from all other Activities of Objective 1 and relating to the sound management of products and articles in use and wastes; (ii) test their appropriateness against the obligations for wastes set out in Article 6 of the Convention and, where necessary, make additional recommendations to ensure compliance; (iii) examine techniques that may be in use in China or elsewhere for the environmentally sound handling, collection, transport and storage of POPs wastes; (iv) assess the appropriateness of these techniques to wide application in China and prepare recommendations establishing a preferred methodology, or methodologies meeting Convention requirements; (v) examine the incremental costs to those with actual or potential liabilities arising from the additional requirements of sound management of POPs products and wastes and prepare a national strategy for implementation; (vi) hold a national expert review meeting to examine and endorse recommendations and a national implementation strategy based on agreed priorities.

*1.5.1.3 Develop strategies for the appropriate disposal of POPs*

(i) review recommendations from other Activities of Objective 1 relating to the disposal of POPs materials and wastes and test their compliance with Article 6 of the Convention; (ii) examine, where appropriate, techniques in use in China and elsewhere to destroy, irreversibly transform or otherwise dispose of POPs; (iii) undertake an international study tour to learn about best practice approaches to the disposal of POPs and the identification and remediation of sites contaminated by POPs; (iv) assess the appropriateness of these techniques for application in China and prepare recommendations establishing preferred techniques meeting the requirements of the Convention, including for BAT/BEP; (v) examine any incremental costs involved in the introduction of appropriate disposal techniques or the modification of existing techniques to comply with the Convention; (vi) prepare recommendations and a draft national strategy for implementation; (vii) hold a national expert review meeting to examine and endorse recommendations and strategy;

*1.5.1.4 Evaluate regulatory framework and institutional responsibilities pertaining to the management of wastes*

(i) review draft recommendations arising from other Activities of Objective 1 for modification of the regulatory framework governing the management of POPs products in use, and of wastes, their international trade and disposal to ensure compatibility with Article 6 of the Convention and, where applicable, with other multilateral environmental agreements to which China is party; (ii) make, where necessary, additional recommendations to ensure compliance; (iii) examine institutional responsibilities relating to measures to ensure that POPs wastes are handled, transported and stored in an environmentally sound manner and that actions are reported as required by the Convention and, where appropriate, prepare recommendations for revised responsibilities;

*1.5.1.5 Prepare and disseminate training and awareness raising materials and technical guidance for the management of POPs wastes*

(i) prepare, in conjunction with Activity 1.1.4, training and awareness-raising materials and technical guidelines to promote environmentally sound management and assist stakeholders to dispose of POPs materials in a manner compatible with the Convention; (ii) hold training and information meetings to disseminate information and guidance to national and provincial officials and for key stakeholders that possess POPs wastes requiring, or likely to require, disposal or who operate disposal facilities.

## Activity 1.5.2 Develop measures to identify sites contaminated by POPs

### *1.5.2.1 Develop a strategy for the identification of contaminated sites*

(i) develop a methodology for the preparation of an inventory of potential contaminated sites using, where possible, existing information relating to primary or secondary production, storage, transport, use and disposal of POPs or products containing POPs; (ii) use this methodology and incorporate the results of inventory work undertaken in activity components 1.2.1.1, 1.3.1.1 and 1.4.1.1 to provide a preliminary national inventory; (iii) conduct preliminary investigations to refine this inventory in selected provinces through field characterization and interviews with relevant persons; (iv) establish risk assessment criteria related to contaminated sites and make a preliminary assessment to identify sites requiring priority attention;

### *1.5.2.2 Evaluate relevant laws, policies and institutions*

(i) assess laws, policies and administrative instruments related to the prevention and control of contamination, to the management of contaminated, or potentially contaminated, sites and to the environmentally sound clean-up of such sites in China and make proposals for their amendment to meet China's obligations under the Convention; (ii) make recommendations for relevant legal and regulatory measures to control contamination of sites by POPs, including the legal principles guiding the assignment of responsibilities and obligations; (iii) assess the capacities of relevant administrative institutions and propose options for institutional strengthening and capacity building.

## **Objective 2.1: Strategy for capacity building and institutional strengthening**

### **Rationale:**

158. A primary objective of national implementation planning is the identification of capacity building and institutional strengthening requirements needed to develop sustainable support for Convention implementation. Capacity building begins during the 'enabling activities' phase and many of the actions set out in activities contributing to Objective 1 include capacity building efforts. Indeed, capacity building and awareness raising amongst national officials has been promoted during the PDF-B phase. In collaboration with the PDF-B activities, the World Bank, with financial assistance from the Trust Fund established at the Bank by the Government of Canada, hosted a series of workshops for national and provincial officials and industry representatives.
159. It is clear, however, that capacity building and institutional strengthening cannot be achieved simply during the full project for two reasons; (i) the likely scale of the requirement for training in China is such that it must be undertaken as a phased and long-term programme – extending beyond the term of the full project; and (ii) the funding requirement for training and institutional strengthening cannot be met from the requested full project budget alone.
160. For these reason, China has opted to prepare a proposal for a long-term Capacity Building Programme to meet its needs. In parallel, it will seek to support human resource training by building institutional capacity through its own resources and through bilateral assistance.

## Activity 2.1.1 Devise strategy for Capacity Building and Institutional Strengthening to meet national needs for Convention compliance

### *2.1.1.1 Consolidate capacity building requirements*

(i) gather and consolidate estimated capacity building requirements from Objective 1 work packages described above; (ii) determine scope of training requirements and the number of officials requiring training in order to ensure sustainable capabilities; (iii) examine training opportunities available internationally and nationally and prepare a phased and costed strategy for training.

### *2.1.1.2 Undertake capacity building to meet short-term training needs*

(i) consolidate short-term training needs from Objective 1 work packages and, where these are not met in activities set out above, prepare detailed plans for initial training to ensure that short-term requirements of the Convention can be met; (ii) prepare training materials suitable for planned trainees at national and

provincial levels; (iii) conduct training programme; (iv) gather training experiences and incorporate in 2.1.1.4 below.

#### *2.1.1.3 Consolidate institutional strengthening requirements*

(i) gather and consolidate estimated requirements for the strengthening of national and provincial institutions from Objective 1 work packages described above.

#### *2.1.1.4 Prepare Capacity Building Programme proposal*

(i) from 2.1.1.1 and 2.1.1.2, prepare a proposal for capacity building for submission to the GEF, taking into account training advances made by non-GEF co-financing made available for capacity building and institutional strengthening within Objective 1 work packages; (ii) from 2.1.1.3, prepare compatible proposal for institutional strengthening requiring financial support for the development and equipping of existing or new physical infrastructure necessary to meet China's obligations under the Convention; (iii) hold government and stakeholder consultations and workshops to review and endorse proposals; (iv) hold donor conference to elicit co-financing support for proposals.

### **Objective: 3.1 Project management and oversight**

#### **Rationale:**

161. The requirements for NIP development are complex. Many of the required actions are cross-cutting and form a matrix between technical, socio-economic and environmental considerations. Added to this is the scale of implementing the Convention at national and provincial levels in China, particularly at a time of rapid economic and social change in the country. In building a strong programme of actions towards implementation of, and compliance with, the Convention, China has rightly sought to benefit from the different comparative advantages of its international development partners. In doing so, it has been successful in winning a considerable level of co-financing support for the work in hand.
162. China is establishing a permanent infrastructure to ensure that the Convention is implemented and its obligations met. This infrastructure comprises a high-level **Leading Group for Stockholm Convention**, chaired by the Deputy Ministers of SEPA, a **Convention Implementation Office**, within SEPA, and within FECO/SEPA, a supporting **Project Management Group**. These are described more fully in Objective 1.1 and in section 5.3.
163. In this section are described only those incremental activities necessary to deliver the planned project outputs.
164. For the full project SEPA will establish and chair a **Technical Coordination Group (TCG)** to review and comment upon project outputs, provide guidance to the project at the macro-level, and help disseminate project findings and outputs. In addition to SEPA, membership of the TCG will comprise UNIDO, as Executing Agency with Expanded Opportunities, the World Bank, UNDP, Italian government, and members of other Donor community with development partners and the National Project Director providing advice and guidance. FECO/SEPA will also request independent **peer review mechanisms** at national level and commission independent international reviews at key milestones.
165. For the full project, SEPA will appoint a **National Project Director (NPD)** responsible for day-to-day project management and chair the PMG.
166. The PMG, within FECO, will, under letter of agreement with UNIDO, manage all local elements of the programme included, for example, the recruitment and supervision of local expert subcontractors; the drafting of the project outputs; and the provision of secretarial support to the TCG. It will organise project activities and liaise with UNIDO for the procurement and delivery of international project inputs. The PMG will prepare periodic forward planning, progress and financial reports through FECO to UNIDO.

167. China invited UNIDO to act as GEF *Executing Agency with Expanded Opportunities* for the development of the NIP. During the full project, as in the PDF-B phase, UNIDO will establish a letter of agreement with FECO allowing for the release of funds to FECO at milestones identified during implementation planning. UNIDO will assist FECO in the execution of the project by holding and disbursing funding necessary for the recruitment of international expert assistance and for other international expenditure. It will also continue facilitation of a group representing the donor and development partner communities. UNIDO is responsible to the GEF for the execution of the project as a whole and will provide annual Project Implementation Reviews and make arrangements for a terminal evaluation of the project in accordance with the policies and procedures of the GEF Monitoring and Evaluation Unit.
168. In view of the complex nature of the full project and its many and diverse components, a project focal point will be established within UNIDO to assist with project execution. This focal point will comprise a small, dedicated staff. It will also benefit from the part-time services of professional and support staff colleagues, in particular of senior staff engaged in the management and coordination of UNIDO's programme of support to the Stockholm Convention, which UNIDO will make available as its in-kind contribution to the project.
169. The proposed management structure for the full project is shown diagrammatically in Appendix 14.

#### Activity 3.1.1 Establish project management and implementation arrangements

##### *3.1.1.1 Operate national coordination mechanisms and effective national implementation*

(i) establish Technical Coordination Group; (ii) appoint National Project Director; (iii) operate the Project Management Group; (iv) implement project activities according to letter of agreement and implementation plans established with UNIDO; (v) recruit and supervise national experts and subcontractors as necessary to deliver project outputs; (vi) prepare and present project plans, regular progress to UNIDO and to meetings of the Technical Coordination Group; (vii) prepare regular financial reports to UNIDO and establish arrangements for independent financial audit at key stages.

##### *3.1.1.2 Establish project focal point in UNIDO and effective execution modalities with FECO*

(i) establish a project focal point within UNIDO to provide administrative, financial and logistical functions in support of the project; (ii) provide technical advice, international experts and other services as necessary to assist FECO in accordance with letter of agreement and implementation plans; (iii) undertake regular missions to China to review implementation plans and progress; (iv) participate in Technical Coordination Group meetings; (v) provide support to Coordination Group of Development Partners; (vi) provide necessary management, technical and financial reporting to the Implementing Agency and the GEF and cooperate with any audit requirements.

#### Activity 3.1.2 Operate project review, monitoring and evaluation regime

##### *3.1.2.1 Establish independent technical peer review mechanism*

(i) establish an independent national expert group for peer review of project outputs; (ii) recruit independent international experts to undertake technical reviews at key milestones.

##### *3.1.2.2 Establish project evaluation mechanisms*

(i) undertake annual Project Implementation Reviews (PIRs); (ii) agree a mechanism to provide independent management and financial reviews according to GEF M & E procedures at the termination of the project; (ii) undertake a terminal project evaluation according to GEF M & E procedures.

## 4.0 Risks, Sustainability and Commitments

### 4.1 Possible Risks

#### Political willingness

170. The ultimate long-term success of the Stockholm Convention depends the willingness of its Parties to meet their obligations. For developing countries, such as China, this entails considerable efforts: to develop and enforce regulatory frameworks; to encourage and promote change amongst users in many sectors of government, industry and society; to build capacity and strengthen institutions; and to manage a transition to BAT and BEP across many sectors of industry and society. These changes, prompted by the Convention, are nowhere trivial and represent a major challenge for China as a major industrial power in transition to a market economy.
171. Developed countries are obligated by the Convention to support these changes through the provision of technical assistance and cooperation, and through financial support, including through the GEF as the interim principal entity entrusted with the Convention's financial mechanism.
172. China, in being one of the first countries to sign the Convention and in making rapid progress towards ratification, continues to demonstrate its strong commitment to the national and global objectives of the Convention. China has also been successful in winning support from its bilateral development partners for actions towards the development of the National Implementation Plan. This proposal seeks wider international community support in the form of co-financing assistance from the GEF.
173. The success of China's efforts to complete its NIP within the time period set by the Convention rests on the implementation of this full project without delay and the availability of GEF funding support.

#### Completion of the NIP, availability of reporting formats and guidance

174. Development of China's NIP in a format acceptable to the Conference of Parties will depend on the availability, at an early stage within the full project, of reporting formats and guidance to be agreed by the Conference of Parties. Many of these are in development by the Intergovernmental Negotiating Committee and its Review Committees and Expert Groups.
175. Furthermore, the development of the NIP will be constrained if practical guidance related to BAT and BEP is not forthcoming from the Conference of Parties and its Expert Group. The Convention requires that measures to be employed, for example, in the reduction of releases of unintentionally produced POPs are available, feasible and practical. These parameters are likely to vary between the Parties to the Convention. Recognition by the Expert Group of the barriers faced by developing country Parties in introducing BAT and BEP, and the need for flexible arrangements, is critical.

#### Participation by Stakeholders

176. Many of the activities set out in this proposal require the willing participation of a broad range of stakeholders. Inventories, for example, require enterprises, local authorities and others to cooperate in the provision and sharing of information. Each of the Activities set out for the project will require the development of successful methodologies *inter alia* encouraging active participation by relevant stakeholder groups. Furthermore, activities have been designed so that draft findings are taken to principal stakeholder groups for review and endorsement before being included in the NIP.
177. An important aspect of participation is empowerment through capacity building, public awareness and education, particularly in those groups most at risk from exposure to POPs chemicals. Objective 1.1 contains specific activities related to the development of schemes to raise public awareness and provide information and guidance. These activities will be integrated with, and

supported by, approaches in some of the Objectives related to particular POPs chemicals or aspects of their management.

178. Stakeholder participation, discussed more fully in section 5, is key to aspects of sustainability of the project objectives in China. These are dealt with below.

#### **4.2 Sustainability**

179. Sustainability implies not only the commitment of China and its national implementing agency to continue to make provision for Convention implementation, but also on the development of a NIP that provides initiatives to mainstream the objectives of the Stockholm Convention into the nation's broader development policies and strategies, and on the engagement of a wide range of stakeholders.
180. Various objectives of the full project are directed to address these issues. The initiative in Activity 1.5.2 to develop approaches to BAT for key sectors of industry relies on the active and willing participation of enterprises. The methodology set out for this activity is broadly similar to that employed globally by UNIDO in its Cleaner Production programme. This emphasises both the environmental and economic benefits of participation. Raising production effectiveness and reducing manufacturing inputs, for example, generate lower production costs and provide a positive incentive for enterprises to participate. Concomitant reductions in polluting releases bring the environmental benefits sought by the wider community.
181. The national implementing agency, FECO, has over ten years experience in the development, implementation and managerial oversight of projects and programmes funded by various MEAs and their funding mechanisms, including the GEF. It has wide experience of collaboration with various Intergovernmental Organizations, bilateral donors and enterprises in China. It has acted successfully as the national implementing agency for the PDF-B phase of this project and is currently establishing convention implementation measures that are intended to be permanent.
182. Nevertheless, the proposers recognize that capacity building and institutional strengthening to ensure that China moves successfully from development to the subsequent implementation of its plans cannot be fully achieved within the duration or financial resources of the project proposed here. For this reason, the full project will develop and invite donor support for a proposal for a longer-term Capacity Building Programme.

#### **4.3 Commitments**

##### Commitment of China

183. China signed the Convention on the date when it opened for signature and expects to complete the ratification procedures in mid 2003. China recognises its obligation, under Article 7 of the Convention, to develop and transmit a National Implementation Plan (NIP) to the Conference of Parties (CoP) within two years of entry into force of the Convention.
184. China is committed to start the compilation of the NIP as soon as the necessary technical and financial support from the international community is provided in accordance with Article 13 of the Convention. A preparatory project, to identify the requirements for developing the NIP, has been successfully implemented during 2002 by FECO with the assistance of the United Nations Industrial Development Organization (UNIDO) under a Project Development Facility Block B (PDF-B) grant from the Global Environment Facility (GEF).

##### Commitment of UNIDO

185. UNIDO is committed to assisting its developing country Member States in regard to the Stockholm Convention. The GEF has approved Enabling Activities proposals submitted by UNIDO for 38 countries, including China and India that have opted to undertake NIP development via the GEF full project cycle. In addition, UNIDO is executing or developing a range of demonstration and capacity building projects geared to support Convention

- implementation. UNIDO has committed considerable effort to build this assistance programme. This commitment is based on a clear understanding that these activities are compatible with UNIDO's mandate and corporate strategy and lead towards the Millennium Development Goals.
186. China is UNIDO's largest recipient of technical cooperation assistance. Activities undertaken in China by UNIDO include a range of measures related to investment, industrial efficiency and waste management. The experience gained in these projects will be of relevance in the development of China's NIP. UNIDO's in-kind contribution to the project will comprise the establishment of a project focal point and the provision of the part-time assistance of senior staff within its Multilateral Environmental Agreements Branch to ensure the effective implementation of the project and to support project implementation. UNIDO has also agreed to undertake the translation into Chinese of the "Standardized Toolkit for Identification and Quantification of Dioxin and Furan Releases" prepared by UNEP under the auspices of the Inter-Organization Programme for the Sound Management of Chemicals (IOMC). In addition, UNIDO will continue to seek co-financing or associated financing for activities that further the objectives of the project and of implementation of the Stockholm Convention in China.

## **5.0 Stakeholders Participation and Implementation Arrangements**

### **5.1 Stakeholders Participation**

187. Activities to be undertaken during the full project have been planned in accordance with the initial guidelines for POPs enabling activities established by the GEF. These include provision for stakeholder reviews and endorsement at various stages of development of the NIP and its various action plans and strategies. During the PDF-B phase, a directory of principal stakeholders has been instigated. It is intended that development of this directory will continue in order to facilitate engagement with appropriate actors at key stages.
188. Awareness of the Convention amongst stakeholders at national and provincial level has been raised during the PDF-B phase through a series of workshops executed by the World Bank and funded by a trust fund established at the Bank by the Government of Canada. Staff from Provincial administrations and from EPBs of all provinces attended workshops held in Beijing, Hangzhou and Kunming. A further workshop held in Beijing was dedicated to stakeholders from key industry sectors.
189. During the full project, each component work package will include opportunities to engage stakeholders in the development of strategic actions, the ranking of objectives against national and Convention priorities, and in the endorsement of action plans and other outcomes. In many cases, the proposed actions require stakeholder engagement drawn from both the producers and users of POPs chemicals.
190. The obligations of the Convention require more than the establishment and enforcement of a legal framework. In developing actions to protect human health and the environment from POPs chemicals within the context of a market economy, the Convention stresses the need to develop and promote a range of voluntary actions. Developing successful positive drivers for change will require stakeholders to be involved in their formulation. The full project will take full advantage of the experience of other development activities in order to establish successful initiatives; the group representing the donor and development partner communities will be of value in this regard.

### **5.2 Training and capacity building**

191. Objective 1.1 of this proposal has been designed to secure a Convention implementation infrastructure at national and provincial levels. Capacity building within FECCO and cooperating departments of SEPA begun during the PDF-B phase will continue. Furthermore, all the component work packages of this proposal include provision for capacity building. Nevertheless, considering the scale of work to be undertaken and the limited duration and financial resources available, it is not feasible to address all of China's capacity building requirements in terms of the

Convention within the full project. For this reason, a proposal for a long-term Capacity Building programme will be developed in parallel with the NIP. Donors will be invited to participate in this longer-term partnership to ensure that sustainable capacity is built not only at national level but also amongst officials and other stakeholders at provincial level and below.

### 5.3 Implementation arrangements

192. Within SEPA, a high-level **Leading Group for Stockholm Convention**, chaired by the Deputy Minister, will coordinate initiatives across its divisions and departments. A **Convention Implementation Office** was formed to administer activities towards the implementation of the Stockholm Convention in China.
193. SEPA will establish and chair a **Technical Coordination Group** (TCG). The TCG will review and comment upon project outputs, provide guidance and coordination to the project at the macro-level, and help disseminate project findings and outputs. In addition to SEPA, membership of the TCG will comprise UNIDO, as Executing Agency with Expanded Opportunities, the World Bank, UNDP, Italian government together with other members of the donor community and development partners. Draft provisional agendas for the broadly 6-monthly meetings of the TCG are given in Appendix 16. The agendas indicate the reports likely to be considered for each project component at each meeting. SEPA will establish independent **peer review mechanisms** at national level and commission independent international reviews at key milestones.
194. **Managerial responsibilities** for the development of China's National Implementation Plan are delegated to a **Project Management Group** (PMG) established within FECO/SEPA. FECO/SEPA has over ten years experience in the development, implementation and managerial oversight of projects and programmes funded by various MEAs and their funding mechanisms, including the GEF. It has wide experience of collaboration with various Intergovernmental Organizations and bilateral donors. It has acted successfully as the national implementing agency for the PDF-B phase of this project.
195. For the full project, FECO/SEPA will appoint a **National Project Director** (NPD) responsible for day-to-day project management.
196. The PMG will, under letter of agreement with UNIDO, manage all local elements of the programme including, for example, the recruitment and supervision of local expert subcontractors preparing component technical investigations and recommendations, and the drafting of the project outputs. It will cooperate with UNIDO for the procurement and delivery of project inputs and the organisation of project activities. The PMG will prepare periodic forward planning and progress reports through FECO to UNIDO and TCG. The PMG will provide periodic financial reports to UNIDO.
197. China invited UNIDO to act as GEF **Executing Agency with Expanded Opportunities** for the development of the NIP. During the PDF-B phase, UNIDO has assisted FECO/SEPA through the provision of timely assistance at key phases, in the review of investigations and reports prepared as outcomes to the project, and in guiding FECO/SEPA in relation to the requirements of the Stockholm Convention and GEF procedures. UNIDO also has responsibility to the GEF for the overall management of the project and its funds. It will provide periodic progress and financial reports to the GEF as required.
198. UNIDO will establish a letter of agreement with FECO/SEPA, its national executing agency counterpart. This letter will detail the responsibilities of the parties, the activities and outputs to be achieved and the milestones against which funds will be released. The draft terms of reference for this letter of agreement are given in Appendix 17.
199. UNIDO will assist FECO/SEPA in the execution of the project by holding and disbursing funding necessary for the recruitment of international expert assistance and for other international expenditure. Draft Job Descriptions for the international expert positions required to execute the project are provided in Appendix 18.



200. During the PDF-B phase, UNIDO facilitated a coordinating mechanism drawing together China's donor and development partner communities. The purpose of the group was to ensure that the activities towards NIP development take full advantage of the findings and experience of associated projects and programmes executed by intergovernmental organisations and bilateral donors. This group, which will continue to meet during the full project, includes both agencies, such as UNDP, that are directly engaged in project activities and agencies such as WHO and FAO that are not directly involved but are recognised as having important experience of benefit to the project.
201. In view of the complex nature of the full project and its many and diverse components, a project focal point will be established within UNIDO to assist with project execution. This focal point will comprise a small, dedicated staff. It will also benefit from the part-time services of professional and support staff colleagues, in particular of senior staff engaged in the management and coordination of UNIDO's programme of support to the Stockholm Convention. UNIDO will make these facilities available as part of its in-kind contribution to the project.
202. The proposed management structure for the full project is shown diagrammatically in Appendix 14.

#### **5.4 Legal Context**

203. This project is governed by the provisions of the Basic Assistance Agreement that the Government of China concluded with the United Nations Development Programme on 29 June 1979. These provisions are applicable to the present project by virtue of the Declaration of the Government, appended to the Project Document (Appendix 19) accepting the application of the above-mentioned Basic Assistance Agreement to the present project.

#### **5.5 Project Phasing**

204. An implementation plan for the project is provided in Appendix 15. The time required for individual activities does not allow for a significant degree of phasing within the overall length of the project. The preparation of national inventories, the identification of priorities for action, the drafting of action plans, consultation with stakeholders and Government, and the preparation of investment portfolios in the various technical areas of the project will require considerable time and it follows that they will be implemented in parallel.
205. Legal and regulatory frameworks, and management and promotion instruments represent key elements in ensuring China's rapid take-up of the Convention. For this reason, they are given priority in the implementation plan and will be undertaken during 2004. In this way, the principal recommendations can be fed into the drafting of China's 11<sup>th</sup> 5-year (2006-2010) Economic and Social Development Plan, and its accompanying Plan for Environmental Protection, in order to mainstream the objectives and obligations of the Convention into national policy.
206. Activities in relation to wastes and contaminated land will commence later, in about the 6<sup>th</sup> project month, in order to benefit from initial findings arising from other inventory work and from co-financed work packages, many of which have already begun.
207. The development of a sustainable national management system, including an information management system, together with public awareness and education schemes will continue throughout the project and be continued after its completion. A key element of the development of the National Dissemination Centre for POPs information will be the preparation of a sustainable business plan based upon a public-private sponsorship partnership.
208. About 50% of the incremental costs to be borne by the GEF will occur in 2004. A further 40% will arise in 2005 and the remaining 10% in 2006.

## **6.0 Monitoring, Evaluation and Dissemination**

### **6.1 Monitoring and Evaluation**

209. Provision is made in the proposal for the establishment of a TCG, chaired by SEPA and comprising principal actors engaged in its execution. The group will report to the CIO and thus to the NIP Development Leadership Group.
210. Through the TCG, coordination between China's development partners will continue and engender the integration of successful operational experience into the development of strategies and action plans required as elements of the NIP.
211. Provision has been made for the establishment of a national expert review group to undertake independent technical reviews at key milestones of the project. The review group will report its findings to CIO/SEPA.
212. Formal monitoring and evaluation of the project will follow the procedures set out in the GEF Monitoring and Evaluation Policies and Procedures. SEPA, as national executing agency, will be responsible for the preparation of annual Project Implementation Reviews and will use the detailed progress reports provided to the TCG for this purpose. UNIDO will also make arrangements for an independent international terminal evaluation of the project according to Monitoring and Evaluation procedures established by the GEF. The TCG, the PMG and their partners will use the results of these reviews to inform project implementation planning in subsequent periods.
213. Ultimately, the success of the project will be measured by the endorsement of its principal product, the National Implementation Plan, by Government and its successful review by the Conference of Parties of the Stockholm Convention.

### **6.2 Dissemination of Results**

214. The principal output of this full project is the National Implementation Plan for transmission to the Conference of Parties of the Stockholm Convention. This plan will describe how China intends to implement the Convention in order to meet its obligations. It is expected that this plan will be made available to other Parties and more widely, through the Secretariat to the Convention, in its clearing-house function. To facilitate this, it is proposed here that the NIP be translated into English.
215. Prior to its transmission to the Conference of Parties, the NIP will be endorsed by the Government of China and made available to those stakeholders with direct responsibilities for elements of plan implementation. It is likely that a very wide range of stakeholders will have responsibilities during plan implementation so that the dissemination of the NIP to them will ensure its widespread release across Government and various non-government communities.
216. Throughout the project, these and other stakeholders will be engaged to review and endorse its many elements at various stages of their development. In this way, preliminary results and draft recommendations can be disseminated widely and discussed prior to their formalisation.
217. The Convention requires the establishment of a National Focal Point (NFP) for information exchange between each Party and the Conference of Parties and the Secretariat. The full project includes provision for the establishment of such a focal point and for the data management systems required to hold, process and report the information that China is obliged to present periodically to the Conference of Parties. It is expected that this information will be available to other Parties and more widely through the Secretariat to the Convention.
218. *Public awareness and education:* The Convention is based on a consensual approach to the safe management of the chemicals listed within its various annexes. It requires Parties to promote and facilitate public access to various forms of information pertaining to POPs. Furthermore, it obliges Parties to promote and facilitate public awareness and education, especially for women, children and the least educated.

219. The full project includes provision for a review of national and provincial requirements to ensure public access to information and the existing infrastructure available at national and provincial levels to deliver such information. The full project also includes provision for the establishment of a national dissemination centre and for the determination of appropriate arrangements for establishing an information dissemination network at provincial level. Given the size and population of China, it will be important to take advantage of the full range of media and of information technology to deliver awareness and education materials.
220. The project contains provision for the active participation of industry and public interest non-government organisations in the development and delivery of public awareness and education campaigns. The project will examine approaches to ensure the long-term sustainability of information provision and education campaigns through, for example, sponsorship from industry and other sources.

## **7.0 Incremental Costs and Project Financing**

221. *Incremental costs:* The project has been designed to incorporate actions required to develop a sustainable capability to meet the obligations of the Convention within the institutional and regulatory frameworks that exist in China. The costs of doing so thus represent incremental costs that would not be incurred if the Convention had not prompted them. This incrementality may be considered as permitting a series of efficient precautionary actions that will reduce future costs likely to be incurred in China and globally addressing human health problems and remediating an environment damaged by POPs chemical pollution. The physico-chemical characteristics of the chemicals listed in the Convention, in particular their persistence and capacity for long-range transport, mean that the global benefits sought by the Convention derive from local and national efforts. For this reason it is difficult to dissociate the incremental costs of gaining global benefits from the costs of actions only benefiting local communities.
222. The cost of inaction is the continued use, disposal and release of POPs chemicals to the environment with consequent risks to the environment and to human health both in China and globally. Inaction with regard to a major Party such as China will also weaken the global accord established in the Stockholm Convention with a knock-on effect in other developing countries that lack the capacity to manage POPs chemicals in a safe and environmentally sound manner.
223. Inaction will also result in China being unable to fulfil its requirement to provide a NIP to the Conference of Parties within the time limit specified in Article 7 of the Convention. The lack of a NIP, and its component strategies and action plans, and the investment portfolio it is expected to contain, will delay the implementation of subsequent actions jeopardising China's ability to meet its many obligations under the Convention.
224. *Co-financing:* For most developing countries, the costs of such enabling activities are fully borne by the international community through the GEF in accordance with Article 13 of the Convention. China recognises that, in developing its enabling activities through the full GEF project cycle, it has prepared activities that go beyond the narrow definition of enabling activities to include capacity building and demonstration activities that provide additional inputs to the NIP, enhance the ability of China to sustain POPs management activities after the project ends, and provide experience permitting China to begin implementation of its action plans at the earliest opportunity after the NIP is transferred to the Conference of Parties. To support all these activities, China has achieved a considerable degree of co-financing support from its bilateral development partners (see Table 3 below). Financing from the GEF will meet the incremental costs, over and above this co-financing, to ensure that components not so supported but essential for the development of the NIP can be undertaken in a timely manner. GEF financing will also provide support for the development of a long-term capacity building strategy and for essential coordination, integration and evaluation activities.

**Table 3: Budget summary**

Objective	Cost (US \$)	Cost as % of full project total	Co-financing as % of objective cost	Incremental cost as % of objective cost
1.1: Infrastructure	2,134,000	21	36	64
1.2: POPs currently produced and in use	2,247,300	22	92	8
1.3: PCBs	1,985,150	19	91	9
1.4: Unintentional production	2,091,000	20	53	47
1.5: Wastes and contaminated sites	726,500	7	0	100
2.1: Capacity Building Strategy	275,900	2	0	100
3.1: Project management & oversight	745,400	8	48	52
Full project total	10,205,250		60	40
Overall total (full project + PDF-B)	11,069,750		60	40

225. Since the May 2003 approval by the GEF Council for the entry of the Project Brief into the GEF work programme, China and its development partners have signed a number of project agreements for project that represent work packages of the NIP development project set out here. These agreements confirm the co-financing for these work packages. The agreements signed are set out in Table 4 below.

**Table 4: Co-financed components confirmed by signature since the approval of the Project Brief**

Project Title	Agreement signed	Project End date
1 Strategy and Program on Reduction and Phase-out of Pesticidal POPs in China (UNDP/Italy)	10/7/2001	30/6/2004
2 Capacity Building in PCB Management (WB, Canada)	2/8/2003	28/2/ 2005
3 A Case Study on POPs Alternatives for Termite Control in China (WB, Canada)	2/8/2003	28/2/2005
4 A Toxicity Study of POPs on Women and Children (WB, Canada)	2/8/2003	28/2/2005
5 Development of PCBs Inventory Methodology and draft Strategy on PCBs Reduction and Disposal in China (WB, Italy)	30/9/2003	30/9/ 2005
6 Strategies to Reduce Unintentional Production of POPs in China (UNIDO/Italy)	31/3/2004	28/02/2006

226. The Government of Italy signed an agreement with China in October 2003 to provide co-financing for a further component, to demonstrate strategies to reduce unintentional production of POPs. The project document and trust fund agreement for this component was signed in March 2004.
227. China's in-kind contribution to the project comprises the provision of local facilities, infrastructure and logistics to ensure that the project can be executed efficiently and effectively. China's contribution will also ensure the continued operation of the inter-ministerial working group, an essential element of project management ensuring that NIP development is supported across Government. China is also providing in-kind support to projects that contribute to the development of the NIP and are funded by the Governments of Canada and Italy. China's total in-kind contribution to the full project is expected to amount to the equivalent of US\$ 870,000 and is additional to the equivalent of US\$ 80,000 which China contributed in-kind to the PDF-B phase.

228. UNIDO's in-kind contribution to the project comprises assistance, over and above direct project administration, provided on a part-time basis by professional and support staff colleagues, in particular of senior staff engaged in the management and coordination of UNIDO's programme of support to the Stockholm Convention. In addition, UNIDO will provide a translation into Chinese of the Standardised Toolkit for Identification and Quantification of Dioxin and Furan Releases, prepared by UNEP under the auspices of the Inter-Organization Programme for the Sound Management of Chemicals. It is estimated that this assistance will amount to US\$ 195,000 over the course of the project and is additional to an estimated in-kind contribution of US\$ 70,000 to the PDF-B phase.
229. Section 8 Project Budget (below) sets out the total budget for each Activity of the project, identifies the source of co-funding agreed for its execution and the incremental costs to be borne by the GEF.
230. Two further projects that contribute to NIP development in China were approved for entry to the GEF work programme at the November 2003 meeting of the GEF Council. These projects 'Demonstration of PCB Management and Disposal' and 'Alternatives to Chlordane and Mirex in Termite Control' will be implemented by the World Bank.
231. *National Execution:* All enabling activities, leading to the development of National Implementation Plans, are executed by national agencies. This project is no exception. A substantial proportion of the funds made available by the GEF, and other donors, for this project will be administered in China and disbursed by FECO/SEPA. Funds made available by the GEF for the project will be held by UNIDO on China's behalf and released to FECO/SEPA on the successful completion of milestones identified during implementation planning.
232. About 50% of the incremental costs to be borne by the GEF will occur in 2004. A further 40% will arise in 2005 and the remaining 10% in 2006. A schedule of payments meeting this balance is included in the draft terms of reference for a letter of agreement (Appendix 17) to be signed between UNIDO and FECO/SEPA.
233. *Baseline expenditure:* China has expended considerable sums in preparing to become a Party to the Convention. China established inter-agency coordination mechanism to provide a harmonized position to the Chinese Government with regard to POPs. This mechanism was provided with administrative and technical support by FECO/SEPA. FECO/SEPA also coordinated with development partners to instigate a programme of technical cooperation projects including those reported here. In addition, the Chinese Government has provided investment to several laboratories and research centres undertaking analysis and research on POPs and alternatives. The total estimated cost of this baseline expenditure is in excess of US \$ 5 Million.
234. *Associated expenditure* is related in part to multi-million dollar programmes of technical cooperation from which this project can benefit. These include; the World Bank China Health 5 project completed in 2002; continuing work on disease vector control with the WHO; continuing work on integrated pest management with the FAO; and continuing work on cleaner solid waste management with UNIDO and funded by the Government of Switzerland.

## 8.0 Project Budget

235. The following tables 5, 6 and 7, together with Appendix 20 provide details of the project budget. Table 5 shows the budget requirements and source of funding for each project activity. Table 6 provides an input budget for the GEF funds requested to support the project. Table 7 provides a detailed input budget for the subcontract between UNIDO and FECO/SEPA and included under Budget Line 21 of Table 6. Appendix 20 provides a detailed breakdown, by activity and input, of the allocation of the GEF funds requested for the project.

**Table 5: Project Budget by activity and source**

Objective	Activity	Cost (US \$)		Co-financing (US \$) ( <i>italics = in-kind</i> )					Incremental cost (US \$)
		by activity	by objective	Italy	Canada	<i>China</i>	<i>UNIDO</i>	Total	
1.1	Convention Implementation infrastructure at national & provincial levels	570,000				<i>570,000</i>		570,000	0
1.1.1	Develop & implement national management system for Stockholm Convention compliance							0	0
	<i>1.1.1.1 Establish national management system</i>	155,000						0	155,000
	<i>1.1.1.2 Establish Information Management System</i>	148,000						0	148,000
1.1.2	Draft National Implementation Plan							0	0
	<i>1.1.2.1 Draft National Implementation Plan</i>	126,000						0	126,000
	<i>1.1.2.2 Review and endorse NIP</i>	124,000						0	124,000
1.1.3	Develop national & provincial policy, legal, regulatory & promotional frameworks to meet Convention requirements							0	0
	<i>1.1.3.1 Establish regulatory requirements in relation to national sustainable development policies, country assistance strategies, state laws and administrative regulations</i>	90,000						0	90,000
	<i>1.1.3.2 Establish regulatory requirements in relation to national &amp; provincial administrative rules, standards and guidelines</i>	18,000						0	18,000
	<i>1.1.3.3 Assess opportunities for voluntary schemes to address Convention requirements</i>	38,000						0	38,000
	<i>1.1.3.4 Undertake socio-economic impact study</i>	100,000						0	100,000
	<i>1.1.3.5 Provide recommendations and gain endorsement for them</i>	79,000						0	79,000
1.1.4	Public awareness & education							0	0
	<i>1.1.4.1 Establish National Information Centre</i>	133,000						0	133,000
	<i>1.1.4.2 Increase public awareness of POPs issues related to human health<sup>15</sup></i>	239,000						0	239,000
	<i>1.1.4.3 Increase public awareness of POPs issues related to agriculture</i>	5,000						0	5,000
	<i>1.1.4.4 Increase industry &amp; public awareness of unintentional production of POPs</i>	25,000						0	25,000
	<i>1.1.4.5 Increase national &amp; local government, municipalities, industry &amp; public awareness of POPs issues related to waste management</i>	30,000						0	30,000
1.1.5	Develop R&D & monitoring strategies								
	<i>1.1.5.1 Undertake a toxicity study of POPs on women and children</i>	200,000			180,000	<i>20,000</i>		180,000	0
	<i>1.1.5.2 Develop R&amp;D &amp; monitoring strategies to support convention implementation</i>	54,000						0	54,000
	<b>OBJECTIVE 1.1 TOTAL COSTS</b>	<b>2,134,000</b>	<b>2,134,000</b>	<b>0</b>	<b>180,000</b>	<b>590,000</b>	<b>0</b>	<b>770,000</b>	<b>1,364,000</b>

<sup>15</sup> Costs shown in line 1.1.4.2 include the costs of a subcontract covering activities in 1.1.4.3 and 1.1.4.4

1.2	Measures in relation to chemicals currently produced and used in China (chlordane, mirex, HCB, DDT)							
1.2.1	Develop measures to eliminate production, use & trade of chlordane, mirex, HCB and DDT	1,798,500		1,798,500			1,798,500	0
	<i>1.2.1.1 Establish inventories on production, distribution, use and international trade</i>						0	0
	<i>1.2.1.2 Develop reduction &amp; phase out strategies</i>						0	0
	<i>1.2.1.3 Build capacity for the national focal point</i>						0	0
1.2.2	Develop measures in relation to stockpiles of, or containing, intentionally produced POPs							
	<i>1.2.2.1 Establish national inventory of stockpiles</i>	131,800						131,800
	<i>1.2.2.2 Develop guidelines for the management of stockpiles</i>	47,000						47,000
1.2.3	Undertake a case study of termite control without POPs chemicals	270,000		250,000	20,000		270,000	0
	<i>1.2.3.1 Develop inventories of chlordane, mirex, their alternatives and IPM practices for termite control in China</i>						0	0
	<i>1.2.3.2 Conduct pilot study</i>						0	0
	<i>1.2.3.3 Develop an appropriate IPM for termite control and prepare a national action plan</i>						0	0
	<b>OBJECTIVE 1.2 TOTAL COSTS</b>	<b>2,247,300</b>	<b>2,247,300</b>	<b>1,798,500</b>	<b>250,000</b>	<b>20,000</b>	<b>0</b>	<b>2,068,500</b>
1.3	Measures in relation to Polychlorinated biphenyls (PCBs):							
1.3.1	Preliminary national inventory							0
	<i>1.3.1.1 Collect national information on production, import and use of PCBs and equipment containing PCBs</i>	128,000						128,000
	<i>1.3.1.2 Collect information on management &amp; monitoring capacity</i>	46,000						46,000
1.3.2	Develop a detailed PCB inventory methodology and draft strategy on PCB reduction and disposal in China	1,611,150		1,611,150			1,611,150	0
	<i>1.3.2.1. Develop and test a PCB inventory methodology in two provinces</i>						0	0
	<i>1.3.2.2. Develop draft national strategy on options and approaches to PCB reduction and disposal</i>						0	0
1.3.3	Build capacity in PCB management	200,000		170,000	30,000		200,000	0
	<i>1.3.3.1 Establish pilot training programme</i>						0	0
	<i>1.3.3.2 Develop a national PCB training programme</i>						0	0
	<b>OBJECTIVE 1.3 TOTAL COSTS</b>	<b>1,985,150</b>	<b>1,985,150</b>	<b>1,611,150</b>	<b>170,000</b>	<b>30,000</b>	<b>0</b>	<b>1,811,150</b>

1.4	Measures in relation to unintentionally produced POPs							
1.4.1	Develop measures for the progressive reduction of releases & elimination of sources of unintentionally produced POPs							
	<i>1.4.1.1 Develop inventories of sources &amp; estimates of releases</i>	262,600					0	262,600
	<i>1.4.1.2 Evaluate existing analytical &amp; monitoring capacity and needs</i>	46,000					0	46,000
	<i>1.4.1.3 Evaluate and develop relevant laws, policies &amp; promotional schemes</i>	51,000					0	51,000
	<i>1.4.1.4 Assess control techniques</i>	101,400					0	101,400
	<i>1.4.1.5 Formulate strategies &amp; action plan for the control of by-product POPs</i>	182,267					0	182,267
1.4.2	Demonstrate methodologies to promote implementation of BAT/BEP & determine incremental costs in reducing unintentional production of POPs in key industry sectors	1,447,733		1,074,100	30,000		1,104,100	343,633
	<i>1.4.2.1 Instigate promotion of BAT and BEP</i>							
	<i>1.4.2.2 Assess current source production conditions and monitoring capacity</i>							
	<i>1.4.2.3 Audit process and operational aspects of enterprises and evaluate options for reducing unintentional production of POPs</i>							
	<i>1.4.2.4 Identify practical and feasible approaches and incremental costs</i>							
	<i>1.4.2.5 Contribute results to NIP and BAT/BEP development</i>							
	<b>OBJECTIVE 1.4 TOTAL COSTS</b>	<b>2,091,000</b>	<b>2,091,000</b>	<b>1,074,100</b>	<b>0</b>	<b>30,000</b>	<b>0</b>	<b>986,900</b>
1.5	Measures in relation to wastes & contaminated sites							
1.5.1	Develop and implement strategies for identifying & managing waste consisting of, containing, or contaminated by POPs							
	<i>1.5.1.1 Develop and implement strategies to locate &amp; characterize wastes</i>	173,000					0	173,000
	<i>1.5.1.2 Develop methodologies for the sound management of products &amp; wastes</i>	96,000					0	96,000
	<i>1.5.1.3 Develop strategies for the appropriate disposal of POPs</i>	134,000					0	134,000
	<i>1.5.1.4 Evaluate regulatory framework and institutional responsibilities pertaining to the management of wastes</i>	29,000					0	29,000
	<i>1.5.1.5 Prepare and disseminate training and awareness raising materials and technical guidance for the management of POPs wastes</i>	81,000						81,000
1.5.2	Develop measures to identify sites contaminated by POPs						0	0
	<i>1.5.2.1 Develop strategy for the identification of contaminated sites</i>	179,000					0	179,000
	<i>1.5.2.2 Evaluate relevant laws &amp; policies &amp; institutions</i>	34,500					0	34,500
	<b>OBJECTIVE 1.5 TOTAL COSTS</b>	<b>726,500</b>	<b>726,500</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>726,500</b>



2.1	Strategy for institutional strengthening & capacity building								
2.1.1	Devise strategy for Capacity Building & Institutional Strengthening to meet national needs for Convention compliance								
	<i>2.1.1.1 Consolidate capacity building requirements</i>	43,500					0		43,500
	<i>2.1.1.2 Undertake capacity building to meet short-term needs</i>	96,000					0		96,000
	<i>2.1.1.3 Consolidate institutional strengthening requirements</i>	18,000					0		18,000
	<i>2.1.1.4 Prepare Capacity Building Programme proposal</i>	118,400					0		118,400
	<b>OBJECTIVE 2.1 TOTAL COSTS</b>	<b>275,900</b>	<b>275,900</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>275,900</b>
3.1	Project Management & oversight								
3.1.1	Establish project management & implementation arrangements								
	<i>3.1.1.1 Operate national coordination mechanisms and effective national implementation</i>	440,400				200,000		200,000	240,400
	<i>3.1.1.2 Establish project focal point in UNIDO and effective execution modalities with FECCO</i>	195,000				195,000		195,000	0
3.1.2	Operate project review, monitoring & evaluation regime							0	0
	<i>3.1.2.1 Establish independent technical peer review mechanism</i>	69,000						0	69,000
	<i>3.1.2.2 Establish project evaluations mechanism</i>	41,000						0	41,000
	<b>OBJECTIVE 3.1 TOTAL COSTS</b>	<b>745,400</b>	<b>745,400</b>	<b>0</b>	<b>0</b>	<b>200,000</b>	<b>195,000</b>	<b>395,000</b>	<b>350,400</b>
	<b>SUB-TOTAL FULL PROJECT BUDGET</b>		<b>10,205,250</b>						
	<b>SUB-TOTAL FULL PROJECT CO-FINANCING</b>			<b>4,483,750</b>	<b>600,000</b>	<b>870,000</b>	<b>195,000</b>	<b>6,148,750</b>	
	<b>SUB-TOTAL FULL PROJECT INCREMENTAL COST</b>								<b>4,056,500</b>
	<b>SUB-TOTAL PDF-B COMPONENT</b>		<b>864,500</b>						
	<b>SUB-TOTAL PDF-B CO-FINANCING</b>			<b>365,000</b>	<b>80,000</b>	<b>70,000</b>		<b>515,000</b>	
	<b>SUB-TOTAL PDF-B INCREMENTAL COST</b>								<b>349,500</b>
	<b>TOTAL PROJECT COST</b>		<b>11,069,750</b>						
	<b>TOTAL CO-FINANCING</b>			<b>4,483,750</b>	<b>965,000</b>	<b>950,000</b>	<b>265,000</b>	<b>6,663,750</b>	
	<b>TOTAL INCREMENTAL COST</b>								<b>4,406,000</b>

**Table 6: UNIDO budget, by input (GEF funds only)**

<b>BL</b>	<b>Description</b>	<b>Total</b>	<b>Subtotal</b>
11	International consultants/experts	574,600	
21	Subcontracts	3,192,000	
	<i>National execution by FECO/SEPA</i>		3,192,000
32	Study Tour	176,000	
35	Workshops/meetings	85,000	
59	Miscellaneous	28,900	
	(52) Reporting & publication		28,900
<b>Total actual cost of project (GEF funds only)</b>		<b>4,056,500</b>	

**Table 7: FECO/SEPA budget for national execution (GEF funds only)**

<b>Description</b>	<b>Total</b>	<b>Subtotal</b>
Administrative support	92,000	
Local travel	164,500	
Local experts	674,000	
Subcontracts	1,515,500	
<i>Development of National Information Management System</i>		72,000
<i>NIP Development</i>		120,000
<i>Policy, regulatory &amp; promotional frameworks</i>		72,000
<i>Socio-economic impact study team</i>		72,000
<i>Public awareness &amp; education</i>		144,000
<i>National stockpile inventory team</i>		90,000
<i>National PCB inventory team</i>		108,000
<i>National inventory of unintentional production</i>		247,000
<i>Investment portfolio &amp; incremental costs</i>		99,000
<i>National inventory of wastes &amp; proxy data tests</i>		117,000
<i>Sound management of products &amp; wastes</i>		61,000
<i>Strategies for appropriate disposal</i>		61,000
<i>Preliminary trial of methodology to identify contaminated sites</i>		108,000
<i>Contaminated land management</i>		34,500
<i>Capacity building</i>		110,000
Workshops & seminars	478,000	
Equipment	80,000	
Miscellaneous	188,000	
(51) Sundries		8,000
(52) Reporting & publication		180,000
<b>Total actual costs of national execution</b>	<b>3,192,000</b>	
<b>Total subcontract value</b>	<b>3,192,000</b>	