SOCIALIST REPUBLIC OF VIETNAM

VIETNAM NATIONAL IMPLEMENTATION PLAN

FOR STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS

HANOI, 2006

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS

BAT	Best Available Techniques
BEP	Best Environmental Practices
DANIDA	Danish International Development Agency
DDT	Dichloro-Diphenyl-Trichloroethane
ENVICO	Korea Environment & Resources Corporation
EVN	Vietnam Electricity
GDP	Gross Domestic Product
GEF	Global Environment Facility
HCB	Hexachlorobenzene
NIP	National Implementation Plan
MARD	Ministry of Agriculture and Rural Development
MOC	Ministry of Construction
MOF	Ministry of Finance
MOFi	Ministry of Fisheries
MOET	Ministry of Education and Training
MOH	Ministry of Health
MPI	Ministry of Planning and Investment
MOD	Ministry of Defense
MOI	Ministry of Industry
MOJ	Ministry of Justice
MOLISA	Ministry of Labor, Invalid and Social Affairs
MONRE	Ministry of Natural Resources and Environment
MOPS	Ministry of Public Security
MOST	Ministry of Science and Technology
MOSTE	Ministry of Science, Technology and Environment
MOT	Ministry of Trade
MT	Ministry of Transport
OCP	Organochlorine Pesticide
PCB	Polychlorinated Biphenyl

PCDD	Polychlorinateddibenzo Dioxin
PCDF	Polychlorodibenzo Furan
POP	Persistent Organic Pollutant
PPC	Provincial People's Committee
R&D	Research and Development
SDC	Swiss Development Cooperation Agency
SIDA	Swedish International Development Cooperation Agency
TEQ	Toxic Equivalent
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
USEPA	United States Environmental Protection Agency
USAID	United States Agency for International Development
VEPA	Vietnam Environment Protection Agency
VND	Vietnam Dong
VSC	Vietnam Steel Corporation
WB	World Bank

EXECUTIVE SUMMARY

The Stockholm Convention on Persistent Organic Pollutants was signed by the representatives of governments in Stockholm on 22 May 2001, and entered into force on 17 May 2004. The Socialist Republic of Vietnam ratified Stockholm Convention on 22 July 2002, becoming the 14th Party of the Convention.

The objective of Stockholm Convention is to protect the environment and human health against the threat of Persistent Organic Pollutants (POPs). POPs are chemical substances that possess toxic properties, resist degradation, bioaccumulate and are transported, through air, water and migratory species, across international boundaries and deposited far from their place of release, where they accumulate in terrestrial and aquatic ecosystems, have significant impacts on human health and the environment. Currently, the Convention is aiming at reducing and finally eliminating 12 POPs, including 9 pesticides: Aldrin, Chlordane, DDT, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Mirex, Toxaphene; PCBs (Polychlorinated biphenyls, used in insulating fluid, heat conducting fluid); and Dioxins and Furans, which are unintentionally produced from production and living activities.

In order to implement Stockholm Convention, each Party should develop its National Implementation Plan (NIP). The objective of Vietnam's NIP is to safely manage, reduce and finally eliminate POPs in Vietnam, thus fulfilling the obligations to the Stockholm Convention and to ward sustainable development in Vietnam.

The NIP consists of a synchronous system of actions and solutions, including those dealing with policies, institutions, management, technology, finance, awareness raising and international integration, aiming at fulfilling the obligations of Stockholm Convention step by step. In order for the NIP of the Stockholm Convention to be carried out effectively and synchronously, a roadmap is proposed, identifying clear priorities to be pursued in achieving the final goal of the NIP, namely to protect the environment and human health against POPs, consistent with the Convention's objective.

The NIP for Stockholm Convention includes the following contents:

I. Background

II. Current status of POPs and their management in Vietnam

III. The National Implementation Plan for Stockholm Convention on POPs

IV. Annex: List of 15 national priority programs on POPs

The Ministry of Natural Resources and Environment (MONRE) accessed funding from the GEF through the UNDP/GEF project VIE01G31: "Developing the National Implementation Plan of Vietnam during its accession, implementation and enforcement of Stockholm Convention on Persistent Organic Pollutants". The project was executed by MONRE, in the collaboration with relevant ministries, sectors and national and international experts. The development of the NIP involved close cooperation between MONRE and relevant ministries, sectors and localities. The views, feedbacks and comments of a wide range of stakeholders at all levels in Vietnam were taken into account in its formulation.

THE PRIME MINISTER

No: 184/2006/QÑ-TTg

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

Hanoi, 10 August 2006

DECISION

ON APPROVAL OF THE NATIONAL IMPLEMENTATION PLAN FOR THE STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS

THE PRIME MINISTER

Pursuant to Law on Organization of the Government dated 25 December 2001;
Pursuant to Law on Environmental Protection dated 29 November 2005;
Pursuant to Decree No. 68/2005/ND-CP dated 20 May 2005 on Chemical Safety;
In consideration of the proposal of Minister of Natural Resources and Environment,

DECIDES:

Article 1. Approve the National Implementation Plan (hereinafter refer to as NIP) for the Stockholm Convention on Persistent Organic Pollutants, with the main contents as follows:

1. About Persistent Organic Pollutants (hereinafter refer to as POPs) and the Stockholm Convention on Persistent Organic Pollutants

a) Persistent Organic Pollutants are very toxic chemicals that persist for a long time in the environment, resist degradation, can be transported in long range, highly bioaccumulative in organisms' tissues, and have significant impacts on human health (are linked to reproductive, neurological, immunologic adverse health effects, cancer, gene damage, etc.), biodiversity and the environment.

Currently, the Stockholm Convention on Persistent Organic Pollutants (which is called Stockholm Convention in short) is regulating the sound management, reduction and final elimination of 12 POPs, including: Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene,

Mirex, Toxaphene, DDT ([1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane]), Polychlorinated Biphenyls (PCBs), Dioxins (Polychlorinated dibenzo-p-dioxins) and Furans (Polychlorinated dibenzofurans). The first 9 chemicals are pesticides and insecticides that are intentionally produced; PCBs (the 10th) are often used in electrically insulating and thermally conducting fluids; the last two (Dioxins and Furans) are unintentionally produced from industrial, living or waste treatment activities.

Among these 12 POPs, Vietnam has banned the use of the 9 POP pesticides, and restricted the import and use of PCBs. Thus, to implement the commitments to the Stockholm Convention, Vietnam shall:

- Apply advanced technologies and measures to reduce the unintentional production and emission of Dioxins and Furans.
- Prevent the import and use of banned pesticides; eliminate the POP pesticides stockpiles, treat the pollution in former storage areas of pesticides, decontaminate the areas polluted by Dioxins from toxic chemicals used by the American Army during the war in Vietnam;
- Properly phase out and safely eliminate PCBs and PCB-containing equipments.

b) The Stockholm Convention was signed by Parties to protect the human health, biodiversity and the environment from the threats and risks of POPs. The Stockholm Convention requires to stop the production, restrict the use and finally eliminate the intentionally produced POPs, and carry out necessary measures to continuously reduce the emission of unintentionally produced POPs from industrial, living and waste treatment activities.

2. Objectives of the NIP

a) Develop and finalize policy, legislative and institutional frameworks for effective management of POPs in order to reduce and finally eliminate POPs;

b) Strengthen technological and financial capacity and information management for the prevention, control and safe disposal of POPs;

c) Reduce, treat and finally eliminate stockpiles of POPs pesticides by the year 2010;

d) Thoroughly treat sites contaminated with Dioxin residues from toxic

chemicals used by the American Army during the war in Vietnam and POPs pesticides;

e) Reduce the release of PCBs into the environment, eliminate the use of PCBs in equipment by 2020; and safely dispose of PCBs by 2028;

f) Continuously reduce the release of the unintentionally produced POPs (Dioxins and Furans).

3. Approaches and principles for the NIP implementation

a) The core approach shall be "pollution prevention" with recognition of POPs as posing long-term potential hazards to human health and the environment;

b) The management, reduction and elimination of POPs shall be implemented consistently, continuously and thoroughly;

c) The activities of the NIP shall be feasible and be in line with the objectives of the Vietnamese National Strategy for Environmental Protection as well as the requirements of the Stockholm Convention;

d) The NIP implementation shall ensure the cooperation, coordination, integration and participation of the government at all levels, as well as all economic sectors and the public;

e) Action will be based on scientific evidences and available technologies through the application of advanced, clean and environmentally friendly technologies, making use of a combination of domestic and international resources in order to effectively manage, reduce and treat POPs.

4. Activities and solutions for the NIP implementation

a) Finalize the organizational mechanism, policy and legislation

Review current policies and legal documents associated with POPs so that proper amendment can be implemented, with special attention given to:

- Inter-sectoral management policies for chemical safety, including POPs and relevant hazardous substances and chemicals;
- Incentive policies for POPs reduction, replacement, treatment and disposal;
- The provision of incentives through capital, tax, fee, land use rights and technology transfer considerations for enterprises which reduce, replace and eliminate POPs;

- Requirements for enterprises which are likely to produce POPs unintentionally to monitor POPs themselves and periodically report the monitoring results to competent authorities;
- Development, amendment and issue of environmental standards as the basis of POPs management and disposal;
- A mechanism for the publication of information on POPs pollution status and a mechanism for public participation in POPs sound management and monitoring.

b) Strengthen POPs management capacity

- Capacity building for national focal point and relevant competent authorities for POPs management; train and foster human resources for POPs management and related research and development; develop and incorporate POPs contents in curricula at universities and colleges;
- Develop technical capacity for POPs pollution monitoring and treatment facilities;
- Establish a national information system and database for POPs and other hazardous chemicals and wastes to collect and provide POPs information to all national and international stakeholders.

c) Promote the survey, research and application of advanced and modern technological solutions for the sound management, reduction, disposal and elimination of POPs

- Survey, inventory, monitor and assess POPs issues, establish and update the POPs database;
- Develop and apply technical guidelines on inventory, assessment and reporting on the stockpiles, emission, use, transport and treatment of POPs;
- Assess and categorize POPs-contaminated sites and their contamination levels, and develop a roadmap for their decontamination; research and apply measures for environmental rehabilitation of POPs-contaminated areas, with the priority to areas listed in the Plan for thoroughly handling establishments which cause serious environmental pollution, pursuant to Decision No. 64/2003/QD-TTg dated 22 April 2003 of the Prime Minister;

- Develop and implement a national program for the sound management and the phase-out of PCB-containing fluids, electrical equipment and industrial products, with due attention for the electricity sector;
- Develop a program for analysis, monitoring and updating of data on sources and emission loads of unintentionally produced POPs, with an initial focus on environmentally sensitive areas and sources having high potential impacts on human health, bio-diversity and the environment;
- Research, transfer and apply Best Available Techniques and Best Environmental Practices to reduce unintentionally produced POPs, with a focus on metal production industries, construction material production, chemical production and waste treatment.

d) Raise the awareness, roles and responsibilities of the government at all levels and among the public on the sound management, reduction and elimination of POPs

- Research the impact of POPs on human health, biodiversity and the environment;
- Develop and implement public awareness campaigns on POPs for management officials, enterprises and the public;
- Clarify responsibilities and establish an effective coordination mechanism for governmental agencies at the central and local levels with regards to POPs management;
- Promote and facilitate public participation in the sound management and control of POPs;
- Make public information on POPs polluted facilities.

e) Diversify the investment sources

- Increase the investment from the national budget, ODA and other sources for the sound management, reduction, disposal and elimination of POPs;
- Integrate the sound management, reduction, disposal and elimination of POPs into socio-economic development projects, plans and programs in order to effectively utilize resources.

f) Enhance international cooperation for the implementation of the Stockholm Convention

- Fulfill the obligations of a Party to Stockholm Convention. Develop a mechanism for registration of specific exemptions and additional POPs that may be covered by the Stockholm Convention, and periodically report on the implementation of the Stockholm Convention in Vietnam;
- Participate in bilateral and multilateral cooperations on POPs in the region and the world; share information and experience, transfer technology and exchange experts on the implementation of the Stockholm Convention;
- Actively participate in global and regional POPs monitoring programs;
- Coordinate and link the implementation of the Stockholm Convention with other relevant environmental protection agreements and conventions.

5. The NIP implementation arrangement

a) In order to implement the activities of the NIP, the line ministries are designated to promptly develop and approve or submit to the Prime Minister for approval in regards to 15 programs as follows:

- Development and finalization of policies, legislation and institutions for POPs management (Ministry of Natural Resources and Environment);
- Sound management, disposal and phase-out of POP pesticides stockpiles (Ministry of Agriculture and Rural Development);
- Thorough isolation and treatment of hotspots contaminated with Dioxins from toxic chemicals used by the American Army during the war in Vietnam (Ministry of Defense);
- Management of healthcare wastes to reduce POPs and other toxic releases (Ministry of Health);
- Thorough treatment of PCBs and POPs pesticides contaminated hotspots (Ministry of Natural Resources and Environment);
- Sound management, disposal and phase-out of PCBs and PCB-containing electrical equipments and industrial products (Ministry of Industry);
- Development of technical capacity for POPs monitoring and analyzing facilities; establishment of the network of laboratories for analyzing and assessing pollution and impacts of POPs on human health, bio-diversity and the environment (Ministry of Natural Resources and Environment);

- Promotion and assistance of the application of environmental friendly technologies, Best Available Techniques and Best Environmental Practices to reduce and finally eliminate the unintentional production of POPs from industrial, living and waste treatment activities (Ministry of Industry);
- Survey and study on the impacts of POPs-contaminated environment on human health in Vietnam (Ministry of Health);
- Education, training and awareness raising on POPs impacts (Ministry of Natural Resources and Environment);
- Enhancement of the technical and financial support for the implementation of the Stockholm Convention in Vietnam (Ministry of Planning and Investment);
- Strengthening capacity for managing and controlling the production, import-export, use and transport of prohibited chemicals in Vietnam (Ministry of Trade);
- Study and development of the emission and technological standards associated with POPs in line with development and integration needs (Ministry of Science and Technology);
- Development of a national information system on POPs, and promotion of stakeholder and public participation in the sound management of POPs (Ministry of Natural Resources and Environment);
- Survey and assessment of POPs management in the whole country (Ministry of Natural Resources and Environment);

b) Distribution of responsibilities

- The Ministry of Natural Resources and Environment, the National Focal Point for the implementation of the Stockholm Convention, is responsible for organizing the implementation of the NIP; supervising the performance of assigned tasks of ministries, sectors, People's Committees of provinces and cities directly under the central government; collecting and synthesizing data; and periodically reporting the NIP implementation to the Prime Minister and the Secretariat of the Stockholm Convention;
- Ministries, sectors and People's Committees of provinces and cities directly under the central government shall, within their management

scope, develop and organize the implementation of the assigned tasks of the NIP, and periodically report to the Prime Minister and the National Focal Point (Ministry of Natural Resources and Environment).

- The Ministry of Planning and Investment and the Ministry of Finance shall allocate and balance the investment from national budget and other sources, pursuant to annual and long-term plans, in order to effectively implement the contents and programs of the NIP.

Article 2. This Decision will enter into force after 15 days from the day of issuance.

The Minister of Natural Resources and Environment is responsible for the guidance and organization of the implementation of this Decision.

Ministers, leaders of agencies at ministrial level, chiefs of agencies under the Government, chairpersons of People's Committees of provinces and cities directly under the Central Government, and relevant organizations and agencies are responsible for the implementation of this Decision.

PRIME MINISTER

NGUYEN TAN DUNG

Destination:
- Secretariat of Vietnam's Communist Party Central Committee;
- The Prime Minister, Deputy Prime Ministers;
- Ministries, agencies at ministrial level, agencies under the Government;
- People's Councils, People's Committees of provinces and cities directly under the central government;
- Central Committee Office and other Commisions of Vietnam's Communist Party;
- Ethnic Affairs Council and other Committees of the National Assembly;
- Office of the National Assembly;
- The Presidential Office;
- Supreme People's Procuracy;
- People's Supreme Court;
- Central Offices of associations;
- National Academy of Administration;
- Corporations 91;
- Office of the Government: Minister-Director, Deputy Director, Management Board 112, Government Website, the spokepersons of the Prime Minister, subsidiary Departments and units, Official Gazette;
- Archives: Administration Office, KG (5b) (340 copies).

THU TÖÔNG CHÍNH PHU

So: 184/2006/QÑ-TTg

CONG HOA XA HOI CHU NGHÓA VIET NAM
Ñoc lap - Tö do - Hanh phuc

Hà Nội, ngày 10 tháng 8 năm 2006

QUYET ÑÒNH
PHE DUYET KE HOACH QUOC GIA THÖC HIEN CONG ÖÔC STOCKHOM VE CAC CHAT O NHIEM HÖU CÔ KHO PHAN HUY

THU TÖÔNG CHÍNH PHU

Căn cứ Luật Tổ chức Chính phủ ngày 25 tháng 12 năm 2001;

Căn cứ Luật Bảo vệ môi trường ngày 29 tháng 11 năm 2005;

Căn cứ Nghị định số 68/2005/NĐ-CP ngày 20 tháng 5 năm 2005 của Chính phủ về an toàn hoá chất;

Xét đề nghị của Bộ trưởng Bộ Tài nguyên và Môi trường,

QUYET ÑÒNH:

Ñieu 1. Phe duyet Ke hoach quoc gia thöc hien Cong öôc Stockhom ve cac chat o nhiem höu cô kho phan huy (sau ñay goi tat la Ke hoach) vôi cac noi dung chu yeu sau ñay:

1. Ve cac chat o nhiem höu cô kho phan huy (Persistent Organic Pollutants, viet tat la POPs) va Cong öôc Stockhom ve cac chat o nhiem höu cô kho phan huy

a) Cac chat o nhiem höu cô kho phan huy la cac hoa chat rat ñoc hai, ton tai ben vöng trong moi tröông va rat kho phan huy, co kha nang phat tan rong va tích tu sinh hoc cao trong cac mo cua sinh vat, gay tac hai nghiem trong cho söc khoe con ngöôi (gay ra cac benh ve sinh san, than kinh, mien dòch, ung thö, ton thöông gen,...), ña dang sinh hoc va moi tröông song.

Tai thôi ñiem hien nay, Cong öôc Stockhom ve cac chat o nhiem höu cô kho phan huy (sau ñay goi tat la Cong öôc Stockholm) quy ñònh

viec quan ly an toan hoa chat, giam thieu va tien tôi tieu huy hoan toan 12 hoa chat hoac nhom hoa chat o nhiem höu cô kho phan huy ñoc hai sau ñay: Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Mirex, Toxaphene, DDT [1,l,l-trichloro-2,2-bis (4-chlorophenyl) ethane], PCB (Polychlorinated Biphenyls), Dioxins (poly-chlorinated dibenzo-p-dioxins) va Furans (Polychlorinated dibenzofu-rans). Chín chat ñau tien do con ngöôi tao ra ñe lam thuoc bao ve thöc vat va chat diet con trung; nhom chat thö möôi PCB ñöôc sö dung trong dau cach ñien, truyen nhiet; hai nhom chat cuoi cung (Dioxins va Furans) la cac hoa chat phat sinh khong chu ñònh, thöông do hoat ñong san xuat cong nghiep, sinh hoat hoac xö ly chat thai sinh ra.

Trong 12 chat hoac nhom chat tren, nöôc ta ña cam sö dung 9 loai thuoc bao ve thöc vat la cac chat o nhiem höu cô kho phan huy va han che viec nhap khau va sö dung PCB. Vì vay, ñe trien khai cac cam ket trong Cong öôc Stockhom Viet Nam phai thöc hien:

- Ap dung cac bien phap, cong nghe tien tien ñe giam thieu sö hình thanh va phat sinh khong co chu ñònh cac chat o nhiem höu cô kho phan huy la Dioxin va Furans;
- Ngan ngöa viec nhap khau va sö dung cac loai thuoc bao ve thöc vat ña bò cam sö dung; tieu huy cac kho thuoc bao ve thöc vat la cac chat o nhiem höu cô kho phan huy con ton löu; xö ly o nhiem cac kho bai, khu vöc chon lap thuoc bao ve thöc vat tröôc kia; tay ñoc cac khu vöc bò o nhiem nghiem trong do Dioxin tö chat ñoc hoa hoc do My sö dung trong chien tranh ô Viet Nam;
- Loai bo theo lo trình phu hôp va tieu huy an toan PCB va thiet bò chöa PCB ña bò thai bo.

b) Cong öôc Stockholm ñöôc cac nöôc ky ket thöc hien nham muc ñích bao ve söc khoe con ngöôi, ña dang sinh hoc va moi tröông song tröôc nhöng nguy cô, rui ro do cac hoa chat rat ñoc hai la cac chat o nhiem höu cô kho phan huy gay ra. Cong öôc Stockhom quy ñònh viec ngöng san xuat, han che sö dung va tien tôi tieu huy hoan toan mot so chat o nhiem höu cô kho phan huy do con ngöôi tao ra, ñong thôi thöc hien cac bien phap can thiet ñe giam thieu lien tuc sö phat sinh khong chu ñònh cac chat o nhiem höu cô kho phan huy do hoat ñong san xuat cong nghiep, sinh hoat hoac xö ly chat thai sinh ra.

2. Mục tiêu của Kế hoạch

a) Xây dựng và hoàn thiện hệ thống cơ chế, chính sách, pháp luật, thể chế ñể quản lý an toàn hoá chất, giảm thiểu và tiến tôi loại bỏ các chất ô nhiễm hữu cơ khó phân huỷ;

b) Tăng cường năng lực về khoa học công nghệ, thông tin, tài chính ñể phòng ngừa, kiểm soát và xử lý an toàn ñối với các chất ô nhiễm hữu cơ khó phân huỷ;

c) Kiểm soát, xử lý và tiêu huỷ hoàn toàn các kho thuốc bảo vệ thực vật là các chất ô nhiễm hữu cơ khó phân huỷ - những hoá chất rất ñộc hại ñã bị loại bỏ, còn tồn lưu vào năm 2010;

d) Xử lý triệt ñể các khu vực ô nhiễm thuốc bảo vệ thực vật là các chất ô nhiễm hữu cơ khó phân huỷ và Dioxins từ chất ñộc hoá học do Mỹ sử dụng trong chiến tranh ở Việt Nam

ñ) Giảm thiểu lượng phát thải PCB vào môi trường; loại bỏ việc sử dụng PCB trong các thiết bị, máy móc vào năm 2020 và tiêu huỷ an toàn PCB vào năm 2028;

e) Giảm thiểu liên tục lượng phát thải các chất ô nhiễm hữu cơ khó phân huỷ hình thành không chủ ñịnh (Dioxins và Furans).

3. Nguyên tắc chỉ ñạo thực hiện Kế hoạch

a) Lấy phòng ngừa là chính, coi các chất ô nhiễm hữu cơ khó phân huỷ là hiểm hoạ trước mắt và lâu dài, ảnh hưởng trực tiếp tới sức khoẻ con người, ña dạng sinh học và môi trường sống;

b) Việc quản lý an toàn, giảm thiểu và loại bỏ các chất ô nhiễm hữu cơ khó phân huỷ phải ñược thực hiện thường xuyên, liên tục và triệt ñể;

c) Các nhiệm vụ của Kế hoạch phải bảo ñảm tính khả thi, phù hợp với mục tiêu của Chiến lược bảo vệ môi trường quốc gia, ñồng thời ñáp ứng yêu cầu của Công ước Stockhom;

d) Việc thực hiện Kế hoạch phải bảo ñảm tính hệ thống, ñồng bộ, toàn diện và có sự liên kết tham gia của các cấp, các ngành, cộng ñồng và mọi người dân;

ñ) Lấy khoa học, công nghệ làm nền tảng; phát huy nội lực kết hợp với sử dụng kinh nghiệm và sự giúp ñỡ của quốc tế; áp dụng các công nghệ tiên tiến, công nghệ sạch và thân thiện với môi trường ñể quản

ly an toan, giam thieu, xö ly co hieu qua cac chat o nhiem höu cô kho phan huy.

4. Nhiem vu va giai phap thöc hien Ke hoach

a) Hoan thien cô che, chính sach, phap luat

Ra soat he thong cô che, chính sach, phap luat hien hanh co lien quan ñen cac chat o nhiem höu cô kho phan huy ñe co sö söa ñoi, bo sung va hoan thien cho phu hôp, trong ño öu tien cac chính sach sau ñay:

- Chính sach quan ly lien nganh ve an toan chat, trong ño co cac chat o nhiem höu cô kho phan huy va cac chat, chat thai ñoc hai khac co lien quan;
- Chính sach khuyen khích cac hoat ñong giam thieu, thay the va loai bo cac chat o nhiem höu cô kho phan huy;
- Chính sach öu ñai, ho trô ve von, thue, phí, quyen sö dung ñat ñai, chuyen giao cong nghe ñoi vôi cac cô sô san xuat, kinh doanh, dòch vu, thöc hien cac bien phap giam thieu, thay the va loai bo cac chat o nhiem höu cô kho phan huy;
- Quy ñònh cac cô sô san xuat, kinh doanh, dòch vu co kha nang phat thai cac chat o nhiem höu cô kho phan huy khong chu ñònh phai tö quan trac va ñònh ky bao cao ket qua quan trac cac chat nay vôi cac cô quan quan ly nha nöôc co tham quyen;
- Söa ñoi, bo sung va xay döng môi cac tieu chuan moi tröông lam cô sô ñe quan ly an toan va tieu huy cac chat o nhiem höu cô kho phan huy;
- Cô che cong khai thong tin ve tình hình o nhiem moi tröông do cac chat o nhiem höu cô kho phan huy gay ra cho cong ñong va cô che cong ñong tham gia giam sat, quan ly an toan ñoi vôi cac chat o nhiem höu cô kho phan huy.

b) Tang cöông nang löc quan ly cac chat o nhiem höu cô kho phan huy

- Tang cöông nang löc cho cô quan ñau moi quoc gia va cac cô quan chöc nang khac co lien quan trong viec quan ly nha nöôc ñoi vôi cac chat o nhiem höu cô kho phan huy; ñao tao va xay döng nguon nhan löc quan ly, nghien cöu khoa hoc va phat trien cong nghe trong xö ly cac chat o nhiem höu cô kho phan huy; xay döng va ñöa chöông trình, noi dung ñao tao ve cac chat o nhiem höu cô kho phan huy vao cac

tröông ñai hoc ñe giang day, hoc tap;

- Xay döng va phat trien nang löc ky thuat cho cac cô sô quan trac va xö ly o nhiem moi tröông do cac chat o nhiem höu cô kho phan huy gay ra;
- Xay döng cô sô dö lieu, he thong thong tin quoc gia ve cac chat o nhiem höu cô kho phan huy va cac hoa chat, chat thai nguy hai khac ñe chia se dö lieu, thong tin giöa cac ben co lien quan.

c) Ñay manh cong tac ñieu tra, nghien cöu va ap dung cac giai phap khoa hoc cong nghe tien tien, hien ñai trong quan ly an toan, giam thieu, tieu huy va loai bo cac chat o nhiem höu cô kho phan huy

- Ñieu tra, thong ke, quan trac, ñanh gia va cap nhat cô sô dö lieu ve cac chat o nhiem höu cô kho phan huy;
- Xay döng va ap dung cac höông dan ky thuat ve thong ke, ñanh gia, bao cao ve löông ton löu, phat thai, sö dung, van chuyen, xö ly cac chat o nhiem höu cô kho phan huy;
- Ñanh gia, phan loai va xay döng lo trình xö ly cac khu vöc bò o nhiem do cac chat o nhiem höu cô kho phan huy gay ra; nghien cöu va ap dung cac giai phap phuc hoi moi tröông tai cac khu vöc bò o nhiem do cac chat o nhiem höu cô kho phan huy, öu tien xö ly cac cô sô trong danh muc cua "Ke hoach xö ly triet ñe cac cô sô gay o nhiem moi tröông nghiem trong" ban hanh kem theo Quyet ñònh so 64/2003/QÑ-TTg ngay 22 thang 4 nam 2003 cua Thu töông Chính phu;
- Xay döng va thöc hien chöông trình quoc gia, nganh ve quan ly an toan hoa chat va thay the dau chöa PCB, cac thiet bò va san pham cong nghiep chöa PCB, trong ño tap trung vao nganh ñien;
- Xay döng chöông trình phan tích, quan trac va cap nhat dö lieu ve nguon va löông phat thai cac chat o nhiem höu cô kho phan huy hình thanh khong chu ñònh, öu tien ñoi vôi cac nguon co nguy cô cao anh höông tôi söc khoe con ngöôi, ña dang sinh hoc va moi tröông;
- Nghien cöu, chuyen giao va ap dung cac cong nghe tien tien, hien ñai, cong nghe sach va than thien vôi moi tröông ñe giam thieu löông phat thai cac chat o nhiem höu cô kho phan huy khong chu ñònh, tap trung vao cac nganh san xuat kim loai, vat lieu xay döng, hoa chat va xö ly chat thai.

d) Nang cao nhan thöc, vai tro va trach nhiem cua cac cap, cac nganh, cong ñong dan cö va moi ngöôi dan trong viec quan ly an toan hoa chat, giam thieu va loai bo cac chat o nhiem höu cô kho phan huy

- Ñieu tra, nghien cöu anh höông cua cac chat o nhiem höu cô kho phan huy ñoi vôi söc khoe con ngöôi, ña dang sinh hoc va moi tröông song;
- Xay döng va thöc hien cac chöông trình ñao tao, nang cao nhan thöc, pho bien kien thöc ve cac chat o nhiem höu cô kho phan huy cho cac can bo quan ly, doanh nghiep va cong ñong dan cö;
- Xac ñònh trach nhiem va xay döng cô che phoi hôp hoat ñong giöa cac cô quan quan ly nha nöôc ô Trung öông va ñòa phöông co lien quan ñen quan ly cac chat o nhiem höu cô kho phan huy;
- Huy ñong sö tham gia rong rai va tao cô che thuan lôi ñe cong ñong dan cö, cac to chöc xa hoi va moi ngöôi dan chu ñong tham gia vao viec quan ly an toan va giam sat viec sö dung cac chat o nhiem höu cô kho phan huy;
- Cong bo cong khai thong tin ve cac cô sô gay o nhiem moi tröông do sö dung cac chat o nhiem höu cô kho phan huy gay ra.

ñ) Tang cöông va ña dang hoa cac nguon von ñau tö

- Tang möc ñau tö tö ngan sach nha nöôc, thu hut nguon von ODA va huy ñong cac nguon von khac cho viec quan ly an toan, giam thieu, tieu huy va loai bo cac chat o nhiem höu cô kho phan huy;
- Gan viec quan ly an toan, giam thieu, tieu huy va loai bo hoan toan cac chat o nhiem höu cô kho phan huy trong cac chöông trình, ke hoach, dö an phat trien kinh te - xa hoi nham sö dung tong hôp nguon löc mot cach co hieu qua.

e) Mô rong va nang cao hieu qua hôp tac quoc te

- Thöc hien ñay ñu trach nhiem thanh vien cua Viet Nam ñoi vôi Cong öôc Stockhom. Xay döng cô che ñe ñang ky mien trö, bo sung danh sach cac chat o nhiem höu cô kho phan huy can quan ly va bao cao ñònh ky ket qua thöc hien Cong öôc Stockhom tai Viet Nam;
- Tham gia cac hoat ñong hôp tac song phöông va ña phöông ve cac chat o nhiem höu cô kho phan huy trong khu vöc va quoc te, chia se thong tin, kinh nghiem, chuyen giao cong nghe, trao ñoi chuyen gia ve viec thöc hien Cong öôc Stockhom;

- Tích cöc tham gia thöc hien chöông trình quan trac cac chat o nhiem höu cô kho phan huy ô khu vöc va toan cau;
- Ñieu phoi, gan ket cac hoat ñong trien khai thöc hien Cong öôc Stockholm ve cac chat o nhiem höu cô kho phan huy vôi cac cong öôc, thoa thuan bao ve moi tröông co lien quan.

5. To chöc thöc hien Ke hoach

a) Ñe trien khai thöc hien cao muc tieu, nhiem vu cua Ke hoach, giao cac Bo khan tröông chu trì xay döng, phe duyet hoac trình Thu töông Chính phu xem xet, phe duyet 15 ñe an sau ñay

- Ñe an hoan thien cô che, chính sach, phap luat ve quan ly an toan cac chat o nhiem höu cô kho phan huy (Bo Tai nguyen va Moi tröông chu trì);
- Ñe an quan ly an toan, tieu huy va loai bo thuoc bao ve thöc vat dang cac chat o nhiem höu cô kho phan huy ton löu (Bo Nong nghiep va Phat trien nong thon chu trì);
- Ñe an xö ly triet ñe cac khu vöc bò o nhiem Dioxin tö cac chat ñoc hoa hoc do My sö dung trong chien tranh Viet Nam (Bo Quoc phong chu trì);
- Ñe an quan ly chat thai y te ñe giam thieu löông phat thai cac chat o nhiem höu cô kho phan huy va mot so chat ñoc hai khac (Bo Y te chu trì);
- Ñe an xö ly triet ñe cac khu vöc bò o nhiem moi tröông do cac chat o nhiem höu cô kho phan huy la thuoc bao ve thöc vat va PCB gay ra (Bo Tai nguyen va Moi tröông chu trì);
- Ñe an quan ly an toan chat, loai bo sö dung va tieu huy ñoi vôi PCB, cac san pham chöa PCB trong nganh ñien va cac san pham cong nghiep (Bo Cong nghiep chu trì);
- Ñe an xay döng, phat trien nang löc ky thuat cho cac cô sô quan trac va phan tích ket qua quan trac cac chat o nhiem höu cô kho phan huy; thiet lap mang löôi phong thí nghiem ñat tieu chuan ñe phan tích, ñanh gia möc ño o nhiem va tac ñong xau cua cac chat o nhiem höu cô kho phan huy ñoi vôi söc khoe con ngöôi, ña dang sinh hoc va moi tröông (Bo Tai nguyen va Moi tröông chu trì);
- Ñe an khuyen khích, ho trô viec ap dung cac cong nghe tien tien, hien

ñai, cong nghe sach, than thien vôi moi tröông, kinh nghiem bao ve moi tröông tot nhat hien co ñe giam thieu va loai trö phat thai cac chat o nhiem höu cô kho phan huy hình thanh khong chu ñònh do cac hoat ñong san xuat cong nghiep, sinh hoat va xö ly chat thai gay ra (Bo Cong nghiep chu trì);

- Ñe an ñieu tra va nghien cöu tac ñong xau cua moi tröông bò o nhiem do cac chat o nhiem höu cô kho phan huy ñoi vôi söc khoe cong ñong (Bo Y te chu trì);
- Ñe an tuyen truyen, giao duc, nang cao nhan thöc ve tac hai cua cac chat o nhiem höu cô kho phan huy (Bo Tai nguyen va Moi tröông chu trì);
- Ñe an tang cöông nguon löc ho trô ky thuat va tai chính cho cac hoat ñong trien khai thöc hien Cong öôc Stockhom ve cac chat o nhiem höu cô kho phan huy tai Viet Nam (Bo Ke hoach va Ñau tö chu trì);
- Ñe an nang cao nang löc quan ly, kiem soat viec san xuat, xuat khau, nhap khau, sö dung, löu giö, van chuyen cac hoa chat ña bò cam sö dung tai Viet Nam (Bo Thöông mai chu trì);
- Ñe an nghien cöu, xay döng he thong cac tieu chuan phat thai, tieu chuan cong nghe lien quan ñen cac chat o nhiem höu cô kho phan huy ñap öng yeu cau phat trien va hoi nhap (Bo Khoa hoc va Cong nghe chu trì);
- Ñe an xay döng he thong thong tin quoc gia ve cac chat o nhiem höu cô kho phan huy, tang cöông sö tham gia cua cac ben co lien quan, cong ñong dan cö va moi ngöôi dan trong quan ly an toan ñoi vôi cac chat o nhiem höu cô kho phan\(Bo Tai nguyen va Moi tröông chu trì);
- Ñe an ñieu tra va ñanh gia tình hình quan ly cac chat o nhiem höu cô kho phan huy tren pham vi toan quoc (Bo Tai nguyen va Moi tröông chu trì).

b) Phan cong trach nhiem

- Bo tai nguyen va moi tröông vôi tö cach la cô quan ñau moi quoc gia thöc hien Cong öôc Stockhom co trach nhiem chu trì, to chöc thöc hien Ke hoach; ñon ñoc, kiem tra cac Bo, nganh, uy ban nhan dan cac tænh, thanh pho tröc thuoc Trung öông trong viec thöc hien cac nhiem vu ña ñöôc phan cong; tong hôp so lieu, ñònh ky bao cao ket qua thöc

hien Ke hoach len Thu töông Chính phu va Ban thö ky Cong öôc Stockhom ve cac chat o nhiem höu cô kho phan huy;

- Cac Bo, nganh, uy ban nhan dan cac tænh, thanh pho tröc thuoc Trung öông theo pham vi quan ly, co nhiem vu xay döng va to chöc thöc hien cac noi dung cua Ke hoach ña ñöôc phan cong, ñònh ky bao cao ket qua thöc hien len Thu töông Chính phu va cô quan ñau moi quoc gia thöc hien Cong öôc Stockhoim la Bo Tai nguyen va Moi tröông; Bo Ke hoach va Ñau tö va Bo Tai chính can ñoi, bo trí von tö ngan sach nha nöôc va tö cac nguon von khac trong ke hoach hang nam va dai han ñe thöc hien co hieu qua cac noi dung, ñe an cua Ke hoach.

Ñieu 2. Quyet ñònh nay co hieu löc thi hanh sau 15 ngay, ke tö ngay ñang Cong bao.

Bo tröông Bo Tai nguyen va Moi tröông co trach nhiem höông dan va to chöc thöc hien Quyet ñònh nay. Cac Bo tröông, Thu tröông cô quan ngang Bo, Thu tröông cô quan thuoc Chính phu, Chu tòch uy ban nhan dan cac tænh, thanh pho tröc thuoc Trung öông va cac cô quan, ñôn vò co lien quan chòu trach nhiem thi hanh Quyet ñònh nay.

THU TÖÔNG CHÍNH PHU

NGUYEN TAN DUNG

Nơi nhận:
- Ban Bí thö Trung öông Ñang;
- Thu töông, cac Pho Thu töông Chính phu;
- HÑND, UBND cac tænh, thanh pho tröc thuoc TW;
- Van phong Trung öông va cac Ban cua Ñang;
- Van phong Chu tòch nöôc;
- Hoi ñong Dan toc va Uy ban cua Quoc hoi;
- Toa an nhan dan toi cao;
- Vien Kiem sat nhan dan toi cao;
- Cô quan Trung öông cua cac ñoan the;
- Hoc vien Hanh chính quoc gia;
- Cac Tong cong ty 91;
- VPCP: BTCN, cac Pho Chu nhiem; Website Chính phu, Ban Ñieu hanh 112,
- Ngöôi phat ngon cua Thu töông Chính phu, cac Vu, Cuc, ñôn vò tröc thuoc, Cong bao;
- Löu Van thö, KG (5b), (Hoa 340 ban)

VIETNAM

NATIONAL IMPLEMENTATION PLAN

FOR STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS

I. BACKGROUND

I.1. Persistent Organic Pollutants

I.1.1. Definition

Persistent Organic Pollutants (POPs) are chemical substances that have significant impacts on human health and the environment.

POPs are a concern because of the following 4 characteristics:

- Toxicity: POPs are toxic chemicals that have been linked to certain adverse health effects in people and wildlife.
- Persistence: POPs are highly stable chemicals that resist the natural processes of degradation. Once introduced into the environment, they can persist for a long time.
- Long-Range Transport: POPs released in one part of the world can travel far from their original source via wind, water and, to a lesser extent, migratory species.
- Bioaccumulation: POPs are readily absorbed in fatty tissue and accumulate in the body fat of living organisms; these substances become more concentrated as they move up the food chain, especially into larger, longer-living organisms.

Being aware of the increasing threat of POPs to the environment and human health, the Governing Council (GC) of the United Nations Environment Program (UNEP) requested an international assessment and management of the first 12 POPs, including: DDT, Aldrin, Mirex, Endrin, Dieldrin, Chlordane, Hexachlorobenzene, Toxaphene, Heptachlor, PCBs, Dioxins and Furans. This list of POPs includes intentionally produced chemicals such as pesticides and insecticides and unintentionally produced chemicals such as Dioxins/Furans from some industrial processes, living activities or wastes treatment.

I.1.2. The harm of POPs

Studies have linked POPs exposure to population declines, diseases, or abnormalities in a number of wildlife species, including certain kinds of fish,

birds, and mammals. In people, reproductive, developmental, behavioral, neurological, endocrine, and immunologic adverse health effects have been linked to POPs. People are mainly exposed to POPs through contaminated foods. Less common exposure routes include drinking contaminated water and direct contact with the chemicals. In people and other mammals alike, POPs can be transferred through the placenta and breast milk to developing offspring.

The world faces many risks related to POPs. Sensitive groups, such as children, the elderly, and those with suppressed immune systems, are typically more susceptible to many kinds of pollutants, including POPs. Because POPs have been linked to reproductive impairment, men and women of child-bearing age may also be at risk. The consequences of Dioxins in defoliant sprays used by the American Army in the war in Vietnam provides specific evidences of the harm to human health and the environment that can result from POPs.

POPs work their way through the food chain by accumulating in the body fat of living organisms and becoming more concentrated as they move from one creature to another. This process is known as "bioaccumulation". When contaminants found in small amounts at the bottom of the food chain accumulate in body fats, they can pose a significant hazard to predators that feed at the top of the food chain. This means that even small releases of POPs can have significant impacts.

I.2. Stockholm Convention on Persistent Organic Pollutants

I.2.1. History

As mentioned previously as awareness of the threat of POPs grew, in May 1995 the Governing Council (GC) of the United Nations Environment Program (UNEP) requested an international assessment on 12 POPs. Results of that assessment prompted the GC to convene an Intergovernmental Negotiating Committee (INC) to prepare an international legally binding instrument on POPs, as the basis for global action for the protection of human health and the environment from the negative consequence of these 12 POPs.

After 3 years of negotiations among national delegations, environmental non-governmental organizations and industry representatives, the final text of the Stockholm Convention on Persistent Organic Pollutants was completed. The Convention was adopted on 22 May 2001 in Stockholm, Sweden, and entered into force on 17 May 2004 (90 days after the 50th Party ratification of the Convention).

I.2.2. The objective of Stockholm Convention

The Stockholm Convention is a global treaty with the general objective to protect the environment and human health against the threat of POPs.

The Stockholm Convention divides POPs into 3 categories: chemicals that

must be eliminated, including 8 pesticides and PCBs (Annex A); chemicals whose use and production need to be reduced: DDT (Annex B); and unintentionally produced chemicals: Dioxins, Furans and PCBs (Annex C).

The Stockholm Convention requires that Parties to the Convention, which are countries or regional economic integration organizations, should make efforts to manage, reduce and finally eliminate the production and use of POPs. This obligation includes the following requirements:

- Parties should apply effective measures to eliminate the intentional production and use of POPs; and manage and safely treat POPs wastes and stockpiles.
- For PCBs: eliminate the use of PCBs in equipment (such as transformers, capacitors containing PCBs) by 2025; and introduce environmentally sound management for PCBs fluids and equipment with concentrations of PCBs higher than 0,005%. This should be done as soon as possible, but in any case no later than 2028; and reports on progress are to be prepared every 5 years.
- For unintentionally produced POPs: Parties are required to reduce and finally eliminate their releases. A Party should develop an implementation plan for the reduction of unintentional releases of Dioxins/Furans within 2 years after the Convention entered into force in its country. Every 5 years, Parties must report the strategies adopted; the application of Best Available Technologies and Best Environmental Practices with an appropriate roadmap to likely unintentional production sources POPs, no later than 4 years after the Convention entered into force.
- The Parties should develop their NIP for the Stockholm Convention and submit it to the Secretariat within 2 years after the Convention entered into force (17 May 2004). The NIP should include specific implementation plans for reducing and eliminating POPs according to the requirements of the Convention. These plans should be integrated into policies for environmental protection and sustainable development of each country.

I.2.3. Process of preparation of a NIP for Vietnam under the Stockholm Convention

The process of preparation of a National Implementation Plan (NIP) for Vietnam under the Stockholm Convention was executed by MONRE, supported by a project implemented by UNDP with funding from the GEF.

Under the UNDP/GEF project, 4 outputs were pursued. These were:

- Output 1: Establishment and strengthening of the capacity of the National Focal Point and competent authorities to support preparation of the NIP;
- Output 2: Establishment of information exchange and reporting mechanism;

Foto: BVMT

Training-workshop on POPs held in Hanoi, April 2005

- Output 3: The NIP document is approved by the Vietnam Government;
- Output 4: By-products, such as POPs inventories, reports, and guidelines, priority actions for POPs management, reduction and safe treatment.

Activities in support of these Outputs were undertaken over 18 months, with most activities completed by the end of June 2005. The main activities undertaken to achieve these Outputs are described below.

Output 1

The Government of Vietnam issued Official Document No. 1336/VPCP-KG dated 23 March 2004, designating MONRE as the National Focal Point for the Stockholm Convention, with the responsibility for coordinating line ministries, sectors and localities in the implementation of the Stockholm Convention. Subsequently, the Prime Minister issued Official Document No. 7009/VPCP-KG dated 24 December 2004, authorizing the establishment of a National Steering Committee for the implementation of the Stockholm Convention in Vietnam. Pursuant to Decision No. 1883/QD-BTNMT dated 2 August 2005, MONRE established the National Steering Committee for the implementation of the Stockholm Convention in Vietnam, chaired by the Vice Minister of MONRE, and consisting of representatives from MOI, MARD, MOH, MPI, MOT, DGOC and EVN, as well as representatives from departments of MONRE (VEPA, and the Department of International Cooperation).

During the preparation of the NIP, various workshops were organized, concerning the content of the Stockholm Convention and the POPs project, as well as methods for POPs inventories, treatment, and data assessment. Representatives of MONRE, MARD, MOI, MOH, MOF, research institutes, development agencies, NGOs and enterprises attended these workshops. A major

training workshop was also held in April 2005 in two locations (Hanoi and Ho Chi Minh City) with support from the USEPA, USAID, the Korea ENVICO, and other donors. Participants included environment officials and representatives of industrial and agricultural departments and enterprises from 64 provinces and cities. A study tour to the United Kingdom and the Switzerland was also arranged for officials from MONRE and other ministries, regarding the experience in the POPs management and implementation of the Stockholm Convention in these countries.

The Stockholm Convention text and associated documentation were translated into Vietnamese, and various public awareness leaflets were produced and distributed to interested stakeholders and the public.

Output 2

A network of management officials from governmental and local organizations, and experts in POPs management, treatment, analysis and monitoring was formed. A sub-contract was also awarded for the design of an information management system for POPs. Furthermore, guidelines were produced to assist several laboratories in Vietnam to join the Global POPs Monitoring Network.

Regarding public awareness, the POPs Project also supported the development of a communication program for the public on the Stockholm Convention, through which 30 news items were published in national or regional newspapers, and broadcasted on national radio and television.

Output 3

Five sub-contracts were awarded to generate the necessary information for preparation of the NIP. These sub-contracts dealt with:

* National inventory and assessment of POP pesticides.
* National inventory and assessment of PCBs.
* National inventory and assessment of unintentionally produced POPs (Dioxins and Furans).
* Assessment of national infrastructure for POPs analysis and monitoring.
* Assessment of the institutional, and regulatory framework for management of POPs in Vietnam.

Using the information generated by these sub-contracts, a NIP preparation group was formed, led by the Director General of VEPA, and including the sub-contractors, as well as experts from relevant ministries and sectors. This group was responsible for preparing an initial outline of the NIP, followed by a first draft. The process was also supported by a series of national workshops. The first workshop, held in December 2004, provided advices on the content and structure

of the NIP. The second one, held in April 2005, reviewed the outline of the NIP, and the third one, held in August 2005, reviewed the draft NIP. After the third workshop, the draft NIP was formally circulated to relevant ministries and other agencies, in September 2005, for comments. After receipt of comments, MONRE incorporated the necessary revisions in finalizing the NIP and submitted it to the Prime Minister.

Output 4

By-products of the NIP preparation process include reports from each of the sub-contracts, as well as the results of a pilot project on "Assessment and development of technology for treatment of PCBs in transformer oils using the Na-tech method". Action plans for reduction and minimization of POPs use in Vietnam were also produced, together with draft proposals for funding by the GEF to assist in implementation of the NIP in the future.

I.3. Geographical and socio-economic context of Vietnam

I.3.1. Geography, climate and population

Geographic position (mainland):

- Longitude: from $102^0 9'$ E to $109^0 30'$ E.
- Latitude: from $8^0 10'$ N to $23^0 24'$ N.
- Mainland area: 331,690 km^2.
- Longest North-South distance: 1,650 km.
- Longest East-West distance: 600 km (Northern area), 400 km (Southern area).
- Shortest East-West distance: 50 km (Quang Binh, Central area).

Administrative Units: 64 provinces/cities directly under the Central Government.

Geographic features

- Mountainous areas: mountains and highlands cover 75% of the mainland area. Mountain ranges extend from the northwestern border of the country to the eastern part of the south, with the total length of 1,400 km.
- Plain areas: Vietnam has two main plains, namely the Red River delta with an area of 15,000 km^2 and the Cuu Long River delta with an area of 40,000 km^2.
- Main rivers:

+ Red River: 1,149 km long, with the length in Vietnam of 510 km.

+ Mekong (Cuu Long) River: 4,220 km long, with the length in Vietnam of 220 km.

+ Total length of rivers in Vietnam is 41,000 km, with a total water flow of 300 billion m^3. The total length of canals is 3,100 km.

- Vietnam is located in the Indochinese peninsula in southeast Asia. It's territory is S-shaped, bordering China in the north, Laos and Cambodia in the west, and sea in the east and the south. Most of the mainland area is covered by mountains and hills, concentrated in the north and west, while most of the plains lie in the east and south. The sea area of Vietnam is about 1,000,000 km^2, with a coastline of more than 3,000 km along the East Sea. The sea and mountainous areas contain various natural and mineral resources. In the southwest of the Central region of Vietnam, there is a large highland area, with elevations reaching more than 1,000 m, covered with basaltic soil, which is very suitable for tropical and temperate industrial crops (rubber, coffee, tea, cocoa, etc.).

- Along the coastline, there are many beautiful beaches, especially Ha Long Bay with more than 3,000 small islands, which is acknowledged as a natural World Heritage Site by UNESCO. Vietnam has unexploited primary forests, with many rare and precious plant and animal species, many high elevation areas with a temperate climate and unique landscapes, such as Da Lat and Sa Pa, and many unique caverns, lakes, streams, waterfalls, etc.

- Mineral resources (coal, iron, aluminum etc.) are concentrated mainly in the northern and central areas. There are many oil and natural gas fields in the continental shelf and coastal areas. Rivers, lakes and coastal areas have a large amount of marine resources.

Climate: The climate of Vietnam is tropical monsoonal, with a hot and rainy season (mid-May to mid-September), and a warm and dry season (mid-October to mid-March).

Population: According to in the census of 2004, the population of Vietnam was 82.2 million, of which 74% live in rural areas and 26% live in urban areas. The population growth rate is 1.2% per year.

I.3.2. Economic development

In 2004, the GDP of Vietnam was 45.1 billion USD, and GDP per capita was 540 USD. The proportion of GDP generated by industrial sectors was 40.2%, by services (including tourism) was 38%, and by agriculture-forestry-fishery was 21.8%. In the past decade, due to economic renovation policies, the economy grew substantially, with an average economic growth rate of more than 7% per year.

It is predicted that the average economic growth rate in the period of 2001-2010 will be about 7.0-7.2%, with agriculture-forestry-fishery growing by 3.5-4.0%, industry-construction by 10-10.5% and services by 6.0-6.5%. Economic planning envisages that by 2010, GDP per capita will be 860 USD. Vietnam is modi-

SOCIALIST REPUBLIC OF VIETNAM MAP

fying its economic structure to enhance competitiveness and adaptability within the global economy. This process is seeing an increase in the contribution of industries and services, and a decrease in the contribution of agriculture-forestry-fisheries to the national economy.

The government has identified seven economic zones in Vietnam, distributed across three focal areas (Northern, Central and Southern) where the growth rate of the economy is expected to be 1.5 times higher than the average rate for the whole of Vietnam. Industrial zones, export processing zones, free trade and open economic areas are being developed in all parts of the country, along with the appearance of new urban areas. This process will involve improved planning of existing urban areas, and integration with the expanded urban network, seeking a more equitable distribution of development opportunities across the whole Vietnam.

I.3.3. Social development

Health: According to a survey in 2004, the average lifespan of Vietnamese was 70 years, with males averaging 66.7 and females 71.4. The mortality rate of children under 5 years old was 19/1,000. The average number of live-births per woman was 1.88, while the rate of maternal childbirth fatalities is 130/100,000.

Education: According to a survey in 2004, the ratio of literate adults is 90%; the ratio of those having access to elementary school is 93.9%; the ratio of those having access to secondary school is 65%; and the ratio of those having access to high school is 38%.

Poverty: In 2002, the poverty ratio was 12.9% in relation to national standards or 29% according to international standards. The ratio of food poverty was 10.87%.

Human development: According to data from 2003, Vietnam ranked 112th out of 177 countries for the Human Development Indicator (HDI); 87th out of 144 countries for the gender development indicator, and 41th out of 95 countries for the general poverty indicator.

I.3.4. Industrial development and the situation of industrial sectors which produce or use POPs

Industrialization and modernization is a cornerstone of the current socio-economic development strategy of Vietnam. Industrial output over the 12 years 1991-2002 averaged 11.6% per annum, with exports increasing by even faster rates.

Increased exposure to international trade has led to a shift in the pattern of industrial production, with the share of heavy industrial and mineral sectors declining from 70% of industrial exports in 1991 to only 40% by the end of 2002, and a corresponding increase in light manufacturing to 60% of industrial exports.

Agriculture: Agriculture employs more than two thirds of Vietnam's labor force and contributes one fourth of the country's GDP and a third of export earnings. Over the last 10 years, food output has increased by an average of 1.2 million tonnes / year. Coffee, rubber, tea and sugar outputs have increased in recent years by 400, 200, 65, and 750 thousand tonnes per year, respectively. The area of fruit and vegetable production is about 450 thousand hectares with an estimated output of 4.5 million tonnes. The growth rate of the livestock sector is 5-6% / year.

While the production of livestock products, sugar, fruits and vegetables mainly supplies domestic markets, other products are mainly for export, including coffee (95% exported), cashew (90%), rubber (80-85%), pepper (90%), and tea (50%). Vietnam is now the second largest global rice exporter (rice exports in 2005 were 5 million tonnes), and Arabica coffee exporter, and the fourth largest cashew exporter.

Agricultural development focuses on crop diversification, with a sharp decrease in monocultures, and an increase in livestock production. Out of nearly 12 million households in rural areas, 10 million are involved in agricultural production.

Minerals: Recent Government statistics indicate that, Vietnam has 930 quarries and mines under legal exploitation, of which 433 produce construction aggregates,

88 produce clays, 81 produce cobble stone and sand, and 52 produce coal (anthracite). The remaining 276 quarries and mines produce ferrous minerals, such as iron ore and pyrite, nonferrous and industrial minerals such as fluorspar, phosphate, and silica. The mineral sector employs only 0.6% of the national labor force.

Iron and steel: The steel industry consists of Vietnam Steel Corporation (VSC), several VSC-controlled steel producers, several joint-venture steel producers, and other small local steel producers. In 2000, there were 40 rolled steel plants with a total capacity of 2.5 million tonnes/year. Iron ore and pyrite, produced in Thai Nguyen Province and Bac Kan Provinces, and imported raw steel, are the main raw materials for steelmaking.

Cement: Vietnam's cement industry has expanded substantially in recent years to meet the growing demand for upgrading transportation infrastructure, as well as new office buildings and residential housing. In 2000, Vietnam's clinker production was 11.5 million tonnes, and cement production was 13.2 million tonnes. Cement production grew between 10% and 13% per year from 1998 to 2000, by which time cement consumption was estimated to be 12.5 million tonnes or about 145 kg per capita.

Production of cement is dominated by Vietnam Cement Corporation, which controls six affiliated cement companies. In recent years, joint-venture companies have also contributed to the major capacity expansion.

Coal: Vietnam Coal Corporation controls most of the country's coal mining, distribution, and export. In 2000, coal production was about 11.3 million tonnes, from 29 operating coal mines. These included six large-scale open-cast mines that produce between 800,000 tonnes/year and 2.5 million tonnes/year each, five large-scale underground mines that produce between 200,000 tonnes/year and 1 million tonnes/year each, and 18 small-scale open pit mines and underground mines.

Production of anthracite is concentrated in Quang Ninh Province. Production of brown coal is mainly from two open pit mines in the Northern Delta, with a capacity of less than 500,000 tonnes/year each. Raw coal is washed and cleaned at 3 coal processing facilities - the Cam Pha plant with a capacity of 2.5 million tonnes/year, the Hong Gai plant with a capacity of 2.0 million tonnes/year, and the Vang Danh plant with a capacity of 600,000 tonnes/year.

Vietnamese anthracite has a high heating value of about 8,250 kcal per kg with low ash and sulfur content. Vietnam's domestic demand for coal is between 7 and 8 million tonnes/year. Major consumers are power generators (28%), the cement industry (11%), the ceramics, chemicals, fertilizer, paper, and other construction material manufacturing industries (45%), and households (16%).

Natural Gas and oil: In 2000, Vietnam produced an average of 315,000 barrels per day of crude oil and an average of 4.25 million cubic meter per day of natu-

Foto: TTXVN

Production of crude oil in offshore oilfield of Vietnam

ral gas. Production of crude oil is from 6 offshore oilfields, of which the Bach Ho and the Rong Oilfields account for about 80% crude oil production. About 93% of crude oil production is exported, mainly to Japan and the United States.

Power generation: Total electricity output in 2002 was 35.8 billion kWh, and by the first quarter of 2004, electricity output had reached 10.937 billion kWh, representing an increase of 16.3%, year on year. Government-owned plants account for 95% of the total output. Hydro-electric power plants accounted for 48.3% of the production, with diesel-coal fired power plants accounting for 22%, gas/oil/steam for 29.5%, and others accounting for 0.2%.

Current electricity sectoral plans call for 37 power projects in the period 2003-2010, in which Vietnam Electricity (EVN) will be the main investor, and another 30 projects controlled by non-EVN entities. A total of fourteen 500 KV transmission lines, seventy 220 KV transmission lines, fifteen 500 KV sub stations and eighty five 220 KV sub stations will be built. The 37 power projects will have a total capacity of 14,400-16,400 MW, with the biggest single investment being the Son La Hydro power plant (2,400 MW).

Pulp and paper: The paper industry in Vietnam still focuses mainly on printing paper, writing paper, and packing paper. The Vietnam Paper Corporation (VPC) planned to produce 258,500 tonnes in 2005, representing a 14% increase per year. Imports of pulp for high quality paper amounted to about 401,000 tonnes in 2005.

Vietnam now has more than 300 paper production facilities, including 28 government-owned mills and 272 from other sectors, including private and joint-stock firms. Several mills have a capacity of over 1,000 tonnes/month.

I.3.5. Policies on environmental protection

Policies on environmental protection and sustainable development are consistently integrated with general development policies and legislation of Vietnam.

In its legal framework, Vietnam has promulgated many laws and regulations directly or indirectly related to environmental protection. The primary legal instrument is the Law on Environmental Protection, which was approved by the National Assembly on 27 December 1993. Based on that law, the legal framework related to the environment has subsequently been developed and refined. The new Law on Environmental Protection was approved on 29 November 2005 by the National Assembly. Guidance on implementation of the Law has been developed and applied, forming a relatively comprehensive legal framework for environmental protection.

In addition, Vietnam has also promulgated the Law on Land (1993, 2003), the Law on Mineral Resources (1996) and amended (2005), the Law on Water Resources (1998), the Law on Agricultural Resources Protection and Development (1989), the Law on Aquaculture (2004), the Law on Forest Protection and Development (1991, 2004), the Law on Enterprises, the Code of Criminal Affairs, and the Decree on Chemical Safety (2005), among others. In such legislations, regulations regarding natural resource exploitation and use are supplemented by regulations on environmental protection and sustainable development.

Regarding the policy framework, Vietnam has developed and promulgated many policies and strategies on sustainable development such as Resolution No. 41-NQ/TW dated 15 November 2004, Directive No. 36-CT/TW dated 25 June 1998, Orientation for Sustainable Development (Agenda 21) dated 17 August 2004, the National Strategy for Environmental Protection until 2010 and Vision toward 2020 (2003), the Comprehensive Strategy on Poverty Alleviation, and the Plan for of Throroughly treating establishments which cause serious environmental pollution (2003), the National Plan on Environmental Pollution Control until 2010 (2005). Government, ministries, sectors and localities have developed implementation plans for Resolution No. 41-NQ/TW. In addition, ministries such as Ministry of Industry (MOI), Ministry of Agriculture and Rural Development (MARD), Ministry of Construction (MOC), Ministry of Health (MOH), Ministry of Transport (MT), Ministry of Fishery (MoFi) have development plans that take in to account the issues of environmental protection.

Regarding chemical safety and management (including POPs), Vietnam has promulgated six laws, four decrees and many regulations. Chemical exports,

imports, production, trade and circulation are all conducted pursuant to this legislative structure.

Vietnam is currently seeking to complete its legal system on environmental protection. Sanctions and economic measures appropriate to a market economy are also being enhanced in order to prevent and control pollution.

Vietnam is also rearranging the governmental administrative structure to promote environmental protection. MONRE, established in 2002, is responsible for overall governmental management of the environment, which includes sound management of chemicals and hazardous wastes in Vietnam. Ministries have also assigned specialized units for environmental issues within their scope. Many provinces have established a Division of Natural Resources and Environment at district level.

Currently in Vietnam there is a lack of environmental investment, even though Vietnam has policies designed to enhance and diversify environmental investment, including through the national budget allocation process and international financial aid. Research and development activities on environmental protection are being promoted, but there are shortcomings because of inadequate investment and uncoordinated approaches. Vietnam is strengthening awareness of, and participation in environmental protection.

The Vietnam Environment Protection Fund was established in June 2002. It is a governmental financial mechanism for the environment, directly under the administration of MONRE and under the financial management of the MOF. Its responsibility is to mobilize domestic and international financial sources pursuant to Vietnamese legislation in order to invest in environmental activities and provide financial aid for programs, projects and activities to prevent and mitigate the effects of environmental pollution, and pollution-related incidents at all levels: national, interdisciplinary and inter-regional.

Recently, Vietnam has played an increasing role in promoting regional and international cooperation on environmental protection. So far, Vietnam has ratified or accessed to 17 international conventions and agreements on the environment. These include the Climate Change Convention, the Kyoto Protocol and Clean Development Mechanism, the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal, and the International Labor Organization Convention on Safety in the Use of Chemicals at Work, etc.

I.4. Vietnam's Commitment to the Stockholm Convention

A representative of Vietnam signed the Stockholm Convention on 23 May 2001 and the President of Vietnam ratified it on 22 July 2002. Vietnam became the 14th Party to the Convention.

Being aware of environmental issues related to POPs, the Government of

Vietnam has developed policies and implemented some specific actions, aimed at sound management of chemicals including POPs:

In 1991, the Ministry of Agriculture and Food Industry (the precursor of MARD) promulgated Regulations on Pesticides Registration in Vietnam. MARD subsequently cooperated with line ministries and sectors in establishing the National Consultative Council on pesticides. Based on advice from this Committee, MARD published a list of pesticides that are allowed or prohibited to be used in Vietnam. By 1992, most of organochlorine pesticides including POPs and organophosphor pesticides with high toxicity and persistence had been prohibited.

In 1998, the Government of Vietnam issued Directive No. 29/1998/CT-TTg dated 25 August 1998 on enhancing the management of the use of pesticides and POPs, which stipulates the safe treatment and management of POPs and the relevant responsibility of line ministries and sectors.

In 2003, MARD cooperated with the Norwegian Agency for Development Cooperation (NORAD) in performing an inventory of pesticides stockpiles in Vietnam. In 2002-2003, MONRE cooperated with UNEP Chemicals and SDC in demonstrating the application of POPs inventory toolkits through an initial inventory and assessment of PCBs and Dioxins/Furans release sources in Vietnam.

In 2002-2003, MOSTE (the precursor of MONRE) supported the implementation of some pilot projects on treating POPs and pesticides stockpile wastes: safe disposal in landfills, in combination with bio-chemical treatment; research and development of the technology for the disposal of POPs and hazardous wastes at high temperature in specialized incinerators; and the incineration of pesticides in cement kilns.

In 2004, the POPs Project Office (established within the Vietnam Environmental Protection Agency, MONRE) cooperated with consultants, domestic and foreign experts and local authorities in an inventory and assessment of POPs issues in Vietnam, including: the production, export-import, use, transport, storage and disposal of POPs pesticides; the status of PCBs-containing oils and equipment; unintentionally produced Dioxins/Furans sources; an overview of toxic chemical-contaminated areas related to chemicals used by the American Army during the war in Vietnam (including those contaminated with Dioxins); assessment of POPs monitoring and treatment infrastructure; and a review of the policy, legislative and institutional framework related to POPs management. These POPs assessments provided the scientific base for the development of the NIP for the Stockholm Convention.

In 2004, MONRE was designated by the Government to be the Focal Point for the coordination of implementation activities under the Stockholm Convention in Vietnam. In collaboration with other line ministries, sectors and localities, MONRE is responsible for developing the National Implementation Plan and submitting it to the Prime Minister for approval.

II. CURRENT STATUS OF POPs AND THEIR MANAGEMENT IN VIETNAM

II.1. Policies, institutions and legal framework on POPs management

II.1.1. Overview on legal documents related to the management of POPs and toxic chemicals

Chemicals management covers all stages of the chemical life-span: import, export, production, transport, storage, trade, use and disposal. The Government of Vietnam has issued a set of laws, regulations and standards on chemical management.

The management of chemicals, including POPs, is governed by the following numbers of laws, decrees, decisions and other instruments:

- National Assembly: 6 laws, 4 ordinances
- Government: 21 decrees, 11 decisions, 4 directives
- MOSTE (former) and MONRE (now): 5 decisions, 1 directive, 1 circular
- MARD: 9 decisions
- MoFi: 4 decisions
- MOH: 5 decisions
- MOC: 2 decisions
- MOI: 2 decisions, 2 circulars
- MOT: 1 decision, 2 circulars
- MOF: 1 circular
- MONRE-MOF (Customs): 1 inter-ministerial circular
- MOI-MARD: 1 inter-ministerial circular
- MOI-General Department of Hydrometeorology-MARD: 1 inter-ministerial circular
- MoFi-MARD-General Department of Hydrometeorology: 1 inter-ministerial circular

- MOT-MOF-MT-MARD-MOH-MOFi-The State Bank of Vietnam:

  1 inter-ministerial circular

- Vietnamese Standards (TCVN): 10

Total: 96 legal documents.

II.1.2. Assessment of policies and legal framework

Vietnam was one of the first countries to sign and to ratify the Stockholm Convention. Since 1993, Vietnam has paid close attention to the management of POPs and other toxic chemicals. The Government, through MARD, MOH, MOI and MONRE, has adopted a series of legal documents on prohibition of the production and use of all POPs pesticides in Vietnam. DDT and Lindane have been officially prohibited since 1993. All nine of the POPs pesticides covered by the Stockholm Convention have now been prohibited from use. PCBs are only imported and used under strict conditions pursuant to the regulations of MOI. Dioxins/Furans are of special concern because of the unintentional nature of their releases and their damage to the environment and human health in Vietnam. These policies have proved to be an advantage for Vietnam in the implementation of the Stockholm Convention.

The key policies and legal provisions for management of chemicals and hazardous wastes, including POPs are:

- Resolution No. 41/TW dated 15 November 2004 on environmental protection in the industrialization and modernization of Vietnam and the Governmental Implementation Program for Resolution No. 41/TW: Create a firm policy and direction to enhance environmental protection. Ministries, sectors and localities have developed specific implementation programs for Resolution No. 41/TW, including environmental pollution prevention and degradation rehabilitation, waste (including hazardous wastes management) and raising of awareness of and responsibility for environment and human health protection.
- The Law on Environmental Protection (1993) and the new Law on Environmental Protection (2005): The Law on Environmental Protection affirms that environmental protection is the responsibility of the whole population. The basic principle of environmental protection is to seek to prevent environmental degradation, pollution and incidents. The use of chemicals, chemical fertilizers and pesticides, as well as wastes treatment should comply with the legislation. The Law on Environmental Protection (2005) more specifically regulates hazardous wastes management and pollution prevention.
- The National Strategy on Environmental Protection until 2010 and vision toward 2020 (2003) consists of thirty six national programs covering all

fields of environmental protection, including hazardous wastes management, application of environmentally friendly technologies and environmental pollution (including pesticides pollution) treatment and rehabilitation.

- The National Plan on Environment and Sustainable Development (1991) and Orientation for Sustainable Development in Vietnam - Agenda 21 (2004) provide specific requirements for the sound management of chemicals and hazardous wastes.
- The Plan for thoroughly treating establishments which cause serious environmental pollution (2003), issued by Decision No. 64/2003/QD-TTg dated 22 April 2003 is now under implementation. It contains regulations on penalties for violation of environmental standards, and defines appropriate policies and mechanisms for facilities that need to be closed or removed. According to this plan, 439 facilities of this type must be closed by 2007, some of which are contaminated by POPs pesticides.
- The Law on Population Health Protection (1989) specifies that people have the right to live healthily. Any activities that cause adverse impacts to the environment and human health should be minimized, eliminated or carefully controlled.
- The Ordinance on Plant Quarantine and Protection (2001) unifies the management of the production, export, import, maintenance, storage, transport, trade and use of pesticides. MARD has the responsibility for management of pesticides through the organization of registration, the issuance of permits, and publishing the lists of permitted pesticides, restricted pesticides and prohibited pesticides in Vietnam.
- The Decree on Chemical Safety (2005) and the Law on Chemicals (in preparation): there are 17 provisions dealing with the sound management and treatment of hazardous wastes/toxic chemicals.
- Hazardous Waste Management Regulations (1999) regulate all stages of the hazardous wastes lifecycle, including their production, transportation, storage, treatment and final disposal. Regulations on permits for collection, transport, storage, treatment and disposal are relatively specific. However, the application of these regulations is difficult due to lack of human capacity, equipment and a lack of clarity in some articles. Although these regulations are applied to all POPs, there is no clear distinction between POPs and other wastes.
- The Strategy for the Management of Municipal Solid Waste (1999) and Regulations on the Management of Solid Waste Landfills (2004), issued by MOC contain regulations on sanitary landfill of solid wastes (including hazardous wastes). However, landfill is not the best disposal method for POPs because they are highly toxic and persistent, even at low concentrations.

- Decision No. 328/2005/QD-TTg of the Prime Minister, dated 12 December 2005, on approving the National Plan for Environmental Pollution Control until 2010. This has established objectives for the management of wastes and waste sources, enhancement of the capacity for waste treatment and implementation of international treaties related to pollution control to which Vietnam is a Party. The National Plan for Environmental Pollution Control includes 19 priority projects, plans and programs. The implementation of these priority plans and projects will support the sound management, reduction and elimination of POPs.
- Directive No. 29/1998/CT-TTg of the Prime Minister, dated 25 August 1998 on enhancing the management of pesticides and POPs provides specific regulations on POPs management and assignment for line ministries and sectors.

THE MAIN CONTENTS OF THE DIRECTIVE No 29/1998/CT-TTg

Strictly prohibit all organizations and individuals from the production, trade, storage, transport and use of dangerous and prohibited pesticides. Any violation will be treated pursuant to legislation, and if it results in serious consequences, criminal proceedings will be taken against the facility.

Require timely and appropriate collection and treatment of prohibited pesticides. This includes the application of environmental pollution treatments for former pesticide stores.

Promote the dissemination of knowledge about the harm of pesticides to the environment and human health.

Prohibit the release of PCBs-containing oils and products into the environment. This includes the restriction and eventual prohibition of the use of PCBs-containing products. Strict controls are also specified to ensure that the release and transport of PCBs-containing products are pursuant to hazardous wastes management regulations. The organization of the collection, treatment and disposal of PCBs-containing products with hazardous wastes treatment technology is also covered.

Assign line ministries, sectors and localities different tasks according to their functions and responsibilities.

- Decisions No. 1970, 1971, 1972/QD-BKHCNMT dated 10 November 1999 of MOSTE, on treatment technology for prohibited pesticides stockpiles, includes guidelines on pesticide (including POPs) disposal. However, there has not been any assessment of the application of these guidelines in relation to POPs pesticides treatment.
- Decision No. 60/2002/QD-BKHCNMT dated 07 August 2002 of MOSTE, on publishing the technical guidelines on hazardous wastes landfill, contains technical guidelines on landfill of chemicals and hazardous wastes (including pesticides and POPs).
- Some specific regulations on POPs are found in Vietnamese Standards: TCVN 5938:1995, TCVN 6560:1999, TCVN 6984:2001, TCVN 5941:1995, TCVN 5507:1991, TCVN 6774: 2000, TCVN 6984: 2001, TCVN 6985: 2001.
- Decree No. 81/2006/ND-CP dated 9 August 2006 on the enforcement of, and financial penalties related to environmental protection includes regulations on the trade, export-import, transport and treatment of wastes, including POPs. Procedures are defined for determination of penalties, and jurisdiction for their application is assigned to chief inspectors specialized in environment, presidents of wards, and districts, towns, provinces and cities.
- Circular No. 08/2001/TT-BCN dated 14 September 2001 issued a List of Conditionally Exported and Imported Toxic Chemicals and their Products. This provided the basis for the prohibition by the Electricity of Vietnam Corporation on the import of PCBs-containing equipment by for its members.

Vietnam has defined the functions and responsibilities of ministries and sectors, including chemicals and hazardous wastes management (in particular) and environmental protection (in general). Furthermore, for multi-sectoral tasks and responding to particular conditions, the Government has issued supplementary regulations that modify the functions of, establish regulatory and cooperative relations among, and determine the responsibilities of relevant stakeholders for specific tasks and objectives. For example, Directive No. 29/1998/CP-TTg dated 25 August 1998 on enhancing the management of the use of pesticides and POPs, and Directive No. 23/2005/CT-TTg deted 21 June 2005 on promoting the management of solid wastes in municipal and industrial areas.

In general, Vietnam has been endeavoring to establish a legal and institutional framework for sound management of chemicals and hazardous wastes, including POPs. However, there are still shortcomings that need to be addressed. These include:

- Despite the various legal documents on chemicals management, there is still no Law on Chemical Safety, nor a database that can serve as a basis for management of POPs and other hazardous chemicals.

In 2000, the former National Environment Agency (now VEPA) with support from the SEMA Project (funded by Sweden) started drafting such a law. However, since MONRE inherited environmental functions from the former MOSTE, the draft has not been developed further. In 2004, MOI stated to develop a Law on Chemicals. These developments show that governmental agencies are aware of threats from and the need for sound management of chemicals, chemical products and wastes. However, their endeavors have thus not been sufficient or adequately focused.

- Legal documents on POPs management are vague and insufficient. For example:
  + There is no regulation on the management of by-products which contain unintentionally produced POPs in production processes and everyday activities. There is no regulation on the application of best environmental technologies and practices to minimize unintentional production of POPs.
  + There is a lack of specific legal documents on PCBs management and safe treatment.
  + The list of industrial, domestic, and healthcare chemicals is still vague.
  + There are not sufficient environmental standards for the 12 POPs substances controlled by the Stockholm Convention.
  + The Regulations on Hazardous Wastes Management are not sufficiently specific to be useful in the management of POPs and POPs-containing wastes. The legal documents on chemicals import, export, use, and transportation do not take into account the special characteristics of POPs management.
  + There are no clear regulations requiring enterprises that export, import, produce, use, and dispose of POPs to provide information on toxicity, classification, and labeling of chemicals.
- There is no technical guideline on POPs inventory to support the continuous survey and assessment of POPs required by the Stockholm Convention. Current inventories of POPs are fragmented and not completely reliable.
- Enforcement of existing legal instruments is not effective. The repeal of trading licenses for pesticides (according to the Ordinance on Plant Protection and Quarantine) has made the management of pesticides including POPs-containing chemicals more complex.
- There is a gap of specific policies on dissemination of information and knowledge of POPs' and hazardous chemicals' adverse impacts. There is no regulation covering responsibilities of communities and the private sector, or providing incentives for their involvement in POPs management and treatment.
- Vietnam is now a party to WTO. But, WTO regulations on chemical trade

have not been legalized in Vietnam as required for accession. Furthermore, Vietnam has not participated in some other agreements on chemical management, such as the London Guidelines on chemical information exchange in international trade (amended 1989), the Chemical Weapons Convention on the ban of the development, manufacture, storage and use of chemical weapons and their disposal (1997), and the Rotterdam Convention on prior informed consent procedures for certain hazardous chemicals and pesticides in international trade (1998).

- Vietnam has issued regulations on disposal methods for some hazardous chemicals, especially pesticides, but there are no specific regulations for other types of POPs. Due to limited experience, facilities, and regulations on processes and technologies to dispose of POPs, Vietnam has not issued licenses for POPs treatment to any organization or for any technology, except a permit for test burn of PCB oil in a cenment kilno.
- Vietnam has had no long term strategy or policy on training of experts in pollution monitoring, or management and safe treatment of hazardous chemicals including POPs.
- In their development strategies and programs, ministries and sectors, especially the industry, energy, and environment sectors, have not yet developed any specific activities associated with sound management, reduction and elimination of POPs.

II.1.3. Institutions: roles and responsibilities for management of POPs in Vietnam

In Vietnam, the Government is responsible for overall management of environmental protection. Assisting the government in this function are some Governmental Committees, who have consultative functions, and assist in coordination of activities in some areas. A substantial number of Ministries, Departments, and other agencies are involved in different parts of the lifecycle of POPs chemicals/wastes. The table below summarizes these responsibilities.

Lifecycle stage / Ministries /Sectors	Import	Production	Transport	Distribution/Marketing	Usage	Disposal
MONRE	+	+	+		+	+
MOH	+			+	+	+
MARD	+	+		+	+	+
MOLISA		+		+	+	
MOT	+	+		+		
MOI	+			+	+	+
MOF/ GDOC	+	+				
MT			+	+		
MOJ	+			+		+

Responsibilities of ministries/sectors relating to the management in POPs' lifecycle

The Ministry of Natural Resources and Environment (MONRE), as designated in Decree No. 91/2002/ND-CP dated 11 November 2002, is the principal government agency responsible for POPs, having an overall mandate for resource and environmental strategy development, legislation and policy formulation, resource and environmental institution building, environmental impact assessment, resource and environmental research, the establishment of environmental quality standards, data collection and management. MONRE is charged with inspection, the production of guidelines for provinces and sectors, and international cooperation for resource and environmental protection.

Based on its function and tasks, MONRE has the responsibility to guide the management of POPs and other chemicals throughout their whole lifecycle, from import to export, production, handling, transportation, treatment and disposal.

The Office of National Steering Committee 33 Office under MONRE is responsible for coordination of the program for overcoming the consequences of toxic chemicals used by the American Army during the war in Vietnam.

The Ministry of Science and Technology (MOST), according to Decree No. 54/2003/ND-CP dated 18 July 2003, is responsible for cooperating with MONRE and other Ministries to introduce advanced scientific techniques and technological applications to manage resources effectively and to control sources of pollution. It has an overall mandate on state management of Vietnamese standards, and to develop standards relating to POPs and other chemicals. Relevant agencies within MOST are the General Department of Standards, Measure and Quality, the Department of Nuclear and Radioactive Control and Safety, the Department of Science and Technology in Economic-technical Sectors, and the Department of Evaluation, Appraisal and Control of Technology.

The Ministry of Industry (MOI), according to Decree No. 55/2003/ND-CP dated 28 May 2003, is a governmental agency carrying out state management functions relating to industry, including the mechanical, metallurgical, electrical, energy development, renewable energy, petroleum and gas, metal exploitation, chemical (including pharmaceuticals and industrial explosives), food, and other processing sectors throughout the country. These functions include management of public services and representation of governmental ownership at industrial enterprises in conformity with laws and regulations.

In relation to the chemical sector, MOI is responsible for:

- Preparation and submission to the Prime Minister, or in accordance with its mandate (and in cooperation with related ministries and sectors) issuing policies and regulation for development of the chemical sector;
- Monitoring, inspection, guidance, control, and reporting on the development of the chemical sector;

- Publishing a list of permitted chemicals, including the control and inspection of implementation of regulations on production, import, and use of industrial chemicals.

The relevant agencies of MOI in management of chemicals are the Department of Industrial Safety, the Department of Local Industries, the Department of Science and Technology, the Department of Mechanics, the Department of Metallurgy, the Department of Chemicals, and the Department of Energy and Petroleum.

The Ministry of Agriculture and Rural Development (MARD), according to Decree No. 86/2003/ND-CP dated 18 July 2003, is responsible for governmental management of activities related to agriculture, forestry, water resources and rural development, and terrestrial national parks and protected areas, including coastal wetlands. MARD plays an important role in the control and reduction of sources of pollution originating from agricultural activities and the use of chemical fertilizers. The main agencies related to the management of POPs and chemicals are the the Depatment of Science Technology, the Department of Plant Protection, the Department of Veterinary Services, the Department of Dykes and Flood Prevention and Abatement, the Institute of Plant Protection. Annually, MARD checks and publishes lists of new pesticides permitted to be used, and those which are subject to limited use or are prohibited in Vietnam, based on advice received from the National Consultative Council on Pesticides, and with the participation and cooperation of relevant ministries and sectors.

The Ministry of Planning and Investment (MPI) according to Decree No 61/2003/ND-CP dated 6 June 2003, is responsible for overall planning of economic development projects and dealing with environmental consequences of such projects. The key department within MPI is the Department of Science, Education and Environment (DSEE), which oversees environment sector issues and is MPI's counterpart to MONRE and VEPA.

The General Department of Customs (GDOC), under the Ministry of Finance (MOF), according to Decree No. 16-CP dated 07 March 1994 and Vietnam Customs Law, is responsible for state management of customs, including import, export, transit activities, and combating transboundary smuggling or illegal transportation of goods, foreign currency, or Vietnamese currency. The GDOC is thus responsible for the management of import and export of POPs and other chemicals.

The Ministry of Trade (MOT), according to Decree No. 29/2004/ND-CP dated 16 January 2004, has the function of state management of the import, export, and circulation of goods and trade services throughout the country. The agencies of the Ministry relating to the management of POPs and chemicals are the Department of Market Control, the Department of Importation and Exportation, and the Department of Trade Inspection.

The Ministry of Transport (MT), according to Decree No. 86/2002/ND-CP dated 05 November 2002, is responsible for overall planning and implementation of infrastructure development for transportation, and control of air, land, railway and maritime transport throughout the country. It is in charge of the management of transportation of POPs and other chemicals, as well as control of port activities and vessels in ports. Its relevant subsidiaries are the Department of Road Transport, the Department of River Transport, the Vietnam Maritime Administration, Vietnam Airlines, Vietnam Railways, Vietnam Register, and the Department of Control and Management of Transportation Installation Quality.

The Ministry of Defense (MOD) is responsible for management of chemical equipment and centers serving defense and security objectives, as well as areas of residual chemical weapons and Dioxins.

The Ministry of Construction (MOC) is responsible for spatial planning and building of water supply and sanitation facilities, and management of waste treatment areas.

The Ministry of Fisheries (MOFi), according to Decree No. 43/2003/ND-CP dated 02 May 2003, is responsible for limitation of use of POPs and chemicals causing pollution to freshwater aquaculture facilities and aquatic processing factories in inland, coastal and marine areas. The main agencies are the Department of Exploitation and Protection of Aquatic Resources, the Department of Management of Aquatic Quality, Safety and Veterinary Services, and the Department of Science, Technology, and Fishery Inspection.

The Ministry of Education and Training (MOET) and Ministry of Culture and Information (MOCI) are responsible for cooperation with MONRE in raising awareness and knowledge of environmental issues, and in introducing policies and legislation on environment, pollution control, management of POPs and chemicals.

The Ministry of Health (MOH), according to Decree No. 49/2003/ND-CP dated 15 May 2003, is responsible for governmental management of care and protection of public health, including medical services, medicines, cosmetics, food safety and sanitation, and medical equipment. The Ministry is responsible for overseeing the delivery of health services in the country and managing hospital wastes. It therefore has a direct role in raising awareness related to environmental health issues. The Ministry manages unintentional production of POPs from incineration of hospital wastes.

Vietnamese Academy of Sciences and Technology (VAST) and a network of research institutes, serves as a technical advisor on environmental issues, technological processes, and means and techniques to manage POPs and other chemicals effectively.

Provincial People's Committees (PPC) have state management roles related to local environmental protection. Departments of Natural Resources and Environment are responsible for local environmental and resource protection.

The Vietnam Environment Protection Fund (VEPF), is a governmental financial organization belonging to MONRE and under the financial governmental management of the MOF. Established in June 2002, the Fund has the function of mobilizing all financial sources, from inside and outside the country, in accordance with Vietnamese legislation, to:

- Create and invest financial resources for environmental protection activities;
- Support environmental projects and plans;
- Support in prevention and control of pollution and management of domestic, inter-regional and inter-sectoral environmental accidents; and
- Support resolve local environmental issues which have potential for widespread impacts.

The initial source of financial resources for the Fund were from the Governmental budget (200 billion VND), supplemented by compensation for environmental damage, by fees on environmental protection from companies (including joint-venture companies), and by contributions from domestic and international organizations and individuals.

At the provincial level, the Industrial Pollution Minimization Fund (IPMF) was set up in September 1999 under the Decision No. 5289/QD-UB-KT of Ho Chi Minh City's People's Committee. The objective of the Fund is to provide support for projects, which aim to minimize environmental pollution caused by industries and handicrafts in the City, and treatment of wastes. The fund has an initial capital of US$ 1 million from compensation for environmental damage to the City caused by environmental incidents. It operates under the direction of the DONRE of Ho Chi Minh City. In Hanoi, a similar Environmental Fund with an initial capital of 1 billion VND was also established in 2000.

There are also some corporations whose activities are related to POPs and their management, including:

Vietnam Electricity (EVN) established in accordance withe the Decision No 148/2006/QÑ-TTg dated 22 June 2006 of the Prime Minister is a state onned enterprise operating in electricity production, transmission and commerce. EVN is responsible for the management of most electric generators and transmission equipment in Vietnam.

Vietnam National Chemical Corporation (Vinachem) according to (Decision No. 835/QÑ-TTg dated 20 December 1995 of the Prime Minister) has responsibility for carrying out trade activities under the direction, general plans and develop-

ment plans of the government for the chemical sector. This includes exploitation, production, trade (including import and export) of chemical materials and products; and exploration, design and construction of installations for the chemical industry, and technology transformation. It is also authorized to enter into joint-ventures with domestic and international economic organizations in conformity with laws and regulations on organization and operation of the Corporation to serve the development of the chemical sector. Specifically relating to POPs, the Corporation produces basic chemicals, pesticides, and electro-chemical products.

Vietnam Oil and Gas Corporation (PetroVietnam) according to Decision No 198/2006/QÑ-TTg dated 29 August 2006, is in charge of petroleum activities carried out on land, internal waters, territorial seas, economic exclusive zones and continental shelves of Vietnam. The activities of PetroVietnam relate to oil extraction, the refinery industry, and terminal and intermediate installations, which have equipment capable of generating POPs wastes.

Vietnam National Petroleum Corporation (Petrolimex) provides more than 60% of the petroleum and oil market share of the country. Petrolimex has an essential role in regulating, stabilizing and developing the petroleum and oil market, and chemical refinery production for the modernization and industrialization of the country.

II.2. Current status of POP pesticides

II.2.1. The use of pesticides

In Vietnam, pesticides have been used since the 1940s, initially for epidemic control. The rate of pesticides use has steadily increased, reaching approximately 33,000 tonnes in 1995. Before 1995, Vietnam imported pesticides from Russia and other formerly socialist countries (Eastern Europe), with amounts ranging from 6,500 to 9,000 tonnes/year. Most of those pesticides were highly toxic and persistent such as DDTs, HCBs, parathion ethyl, methyl parathion, Polychlorocamphen, some of which contain mercury and arsenic.

In 1992, the Ministry of Agriculture and Food Industry (the precursor of MARD) issued the first Regulation on Pesticides Registration in Vietnam and the List of Pesticides Restricted or Prohibited from Use in Agriculture. There were 22 pesticides prohibited in 1992. In 1998, MARD renewed the "List", with 26 pesticides being prohibited, including Aldrin, Dieldrin, Endrin, DDT, Chlordane, Toxaphene, Mirex and Heptachlor.

Since 1990, pesticides supply changed from a subsidy-based system to a market economy system, with all economic entities having the right to trade pesticides. Imported pesticides are now more abundant in amount and variety, and are also managed more strictly. The amount of pesticides use has continued to

Foto: TTXVN

Pesticide spraying in the rice field

increase, from 13,000-15,000 tonnes/year to 20,000 tonnes/year. There are now new pesticides that are more effective and less toxic. According to an initial inventory, the proportions of different categories of pesticides used in Vietnam are insecticides: 65%; phytophamarceuticals: 26%; and herbicides: 9%. There are about 1,117 distinct labels used for insecticides in Vietnam; 60 for phytophamarceuticals; 26 for herbicides, etc. However, the amount of POP pesticides has decreased considerably, due to prohibition of their use.

Pesticides that are in the "List of Pesticides Prohibited from Use in Vietnam" are not allowed to be imported into Vietnam under any conditions. This is an effective measure to reduce and ultimately eliminate POPs in Vietnam. Pesticides that are in the "List of Pesticides Restricted for Use in Vietnam" are allowed to be imported into Vietnam, but are limited and strictly controlled by MARD. Annually, the National Consultative Council on Pesticides considers and recommends to MARD which pesticides, having high toxicity and persistence, should be eliminated. This is an appropriate mechanism for POPs management that should be taken into account in the future implementation of the Stockholm Convention.

Due to various difficulties, surveys and inventories of POPs and POP pesticides are still imperfect. In recent years, with assistance from some international organizations in training for surveying, identifying, classifying, and defining the status of POPs pesticides, Vietnam has gradually been improving its capacity to assess the status of POPs pesticides, and eliminate them.

In principle, most highly toxic and persistent pesticides, including POPs, have been restricted or prohibited for some time. In reality, the import, circulation, trade and use of prohibited pesticides still occurs illegally, and in some localities there remain stockpiles of POP pesticides, mostly DDT, HCB and Lidane which have not been disposed of, or treated soundly.

II.2.2. Inventory and assessment on POP pesticides in Vietnam

The survey and inventory of POP pesticides in Vietnam adopted the following measures:

(i) Existing documents on projects and programs involving POP pesticides (in particular) and pesticides (in general) were gathered from relevant ministries, sectors, departments and branch offices from provinces throughout Vietnam. Particular attention was paid to data from VEPA (MONRE), the Department of Plant Protection and the Institute of Plant Protection (MARD), provincial Department of Natural Resources and Environment (DONRE), Branch Offices of Plant Protection Departments, Preventive Medicine Centers, plant protection companies, and pesticide production, processing, bottling and packaging facilities in Vietnam;

(ii) Field surveys were undertaken in pesticide production facilities, provincial Branch Offices of Plant Protection Department, pesticide stockpiles and POP pesticide-contaminated sites.

Initial results from the inventory show that current pesticide stockpiles (in 2005) amount to 39,800 kg in powder form, 14,000 liters in liquid form and approximately 1,400,000 packages of pesticides. Of these totals, the amounts of POP pesticides are about 13,000 kg in powder form and 42 liters in liquid form. Thus, POP pesticides account for about 30% of the total.

POP pesticides stockpiles in Vietnam mostly consist of DDT and Lindane. These stockpiles were created before 1990. In addition to the nine pesticides covered by the Stockholm Convention, there are two other persistent organic pesticides commonly found in stockpiles in Vietnam, namely 2,4D and Thiodan, with stockpiles amounting to 400 kg in powder form and 5.8 liters in liquid form.

POP pesticide stockpiles are concentrated in the North-central provinces (84% of the total), and the West Highlands (14% of the total). The province with the largest stockpile is Ha Tinh, with 4,000 kg of DDT, followed by Nghe An with 3,400 kg of DDT, and Gia Lai with 1,800 kg of DDT and 40 liters of Lindane.

Some scientific studies have found trace quantities of DDT and pesticides in different environmental media such as soil, sediment, water, fish etc. in the estuary areas of Red River and Mekong River deltas.

II.3. Current status of DDT

DDT was imported into Vietnam from 1949 and used in malaria control programs. DDT was widely used in 1962, 1963 and 1982 (about 1,000 tonnes per year). In the 1990s, incidences of malaria became more frequent, so the amount of DDT imported into Vietnam increased significantly, with the greatest amounts being imported in 1992 and 1993.

In 1993, recognizing its high toxicity and persistence in environment and human body, DDT was banned. In 1994, the Institute of Parasites and Malaria stopped providing DDT to provinces and cities, but some localities continued to use stored quantities of DDT. In 1995, Vietnam officially stopped using DDT in malaria vector control. Although DDT was prohibited from use in agriculture from 1992, it was still used in health protection until 1994. DDT stockpiles in Vietnam remain an issue that needs to be addressed.

II.4. The status of PCBs

II.4.1. Use of PCBs in Vietnam

PCBs (polychlorinated biphenyls) are the chemicals with 209 congeners, having different numbers and substitution positions of chlorine atoms in a biphenyl structure. PCB commodities consist of a mixture of congeners in differing proportions. Their trade names include Arochlor (made in the USA), Chlorphene (Germany), Fenchlor (Italy), Kanechlor (Japan), and Phenochlor (France), etc.

PCBs have many applications such as insulating fluids in transformers and capacitors, heat conducting fluids, hydraulic fluids, lubricant additives, paint additives, carbon-paper, plastic additives, etc. Because of their high heat-resistance and insulating capacity, PCBs are mainly used as additives in oils for transformers, capacitors and other electric equipment.

Before 1985, the total amount of imported PCBs in Vietnam (in electrical equipment from the USSR, China and Romania) may have reached 27,000-30,000 tonnes/year. Much of the electrical equipment imported from the United States to southern Vietnam before 1975 also contained PCB oils.

Currently, many transformers still use PCB oils because the scheduled date for oil replacement has not been reached. There are also suspected PCB-containing oil stockpiles in Vietnam. Sources of PCB releases into the environment are mainly from uncontrolled discarded waste oils from transformers or capacitors.

Initial studies on PCBs pollution show that PCBs are found in the air and sediments, especially the sediments in urban regions (for example, the Thi Nghe canal in Ho Chi Minh city, and soil in areas nearby transformers in Hanoi).

II.4.2. Inventory and assessment on PCBs

In Vietnam, PCBs have not previously been considered as chemicals which need to be fully controlled, thus data and assessments of PCBs are inadequate and have not been collected systematically. Additionally, due to constraints derived from a lack of awareness of the issue in Vietnam, only preliminary results of a PCBs inventory have been obtained. The preliminary inventory data originated only from the electrical sector, mostly relating to big transformers and capacitors. Other relevant sectors (estimated to account for approximately 30% of total amount) have generated no data. Data from the electrical sector are inadequate, covering only 70% of the estimated total amounts.

The initial inventory shows that total number of likely PCB-containing capacitors in Vietnam is about 1,800. The distribution is as follows: Northeastern region: 40%; Red River delta: 38%; Northcentral region: 9%; Central coastal region: 7%; Cuu Long River delta: 2%; West Highland: 1.6%; and Southeastern region: 1.4%.

Foto: TTXVN

Many electrical equipment are likely PCB-containing

The total number of likely PCB-containing transformers in Vietnam is about 10,000. These are distributed as follows: Northeastern region: 23%; Southeastern region: 22%; Red River delta: 21%; Southcentral region: 17%; Northcentral region: 13%; West Highland: 5%; and the Cuu Long River delta: 2%.

According to the initial inventory results, it is estimated that the number of pieces of likely PCB-containing electrical equipment is 11,800 and the amount of likely PCB-containing oils is 7,000 tonnes. However, the actual amounts may well be higher.

II.5. Current status of Dioxins and Furans

II.5.1. Dioxin issues related to the consequence of toxic chemicals used by the American Army during the war in Vietnam

From August 1961 to July 1971, the American Army carried out Operation "Trail Dusl", of which the largest one was "Ranch Hand" (accounting for 95% of total amount of toxic chemicals used) and the Pacer Ivy (disposal and transportation of more than 1 million littles of toxic chemicals away from the South of Vietnam. The spraying period was concentrated from 1966 to 1969, and the major geographic focus was on Quang Tri, Thua Thien Hue and the Southcentral provinces.

According to data collected during this period, the American Army undertook 19,905 spraying missions, covering an area of 2.6 million ha, including 25,585 villages. The most recent data from Vietnam indicate that the total amount of chemicals used was about 76.9 million liters, of which Agent Orange chemicals (a mixture of 2,4 D and 2,4,5 T herbicides in the proportion of 50:50) accounted for 44 million liters. Some American scientists have estimated that 366 kg of Dioxins were distributed in the South of Vietnam.

Due to the effects of sunlight, rain and other natural factors, the amounts of Dioxins in the environment have decreased rapidly. Studies have revealed that in many affected areas, the concentrations of Dioxins are now lower than the permissible maximum concentrations, and in some cases are very close to zero.

However, in the areas which were former airports and storage facilities of the American Army, the on-site and nearby concentrations of Dioxin in the environment remain very high, as much as thousands times the maximum permissible concentraitions (especially at the Da Nang Airport, Bien Hoa Airport, Phu Cat Airport). These hotspots have ongoing impacts on the environment, and eco-system and human health.

According to the research estimation of some international and national experts, in Vietnam there are at least 2.1 million, and possibly as many as 4.8 million people affected by the toxic chemicals used by the American Army during

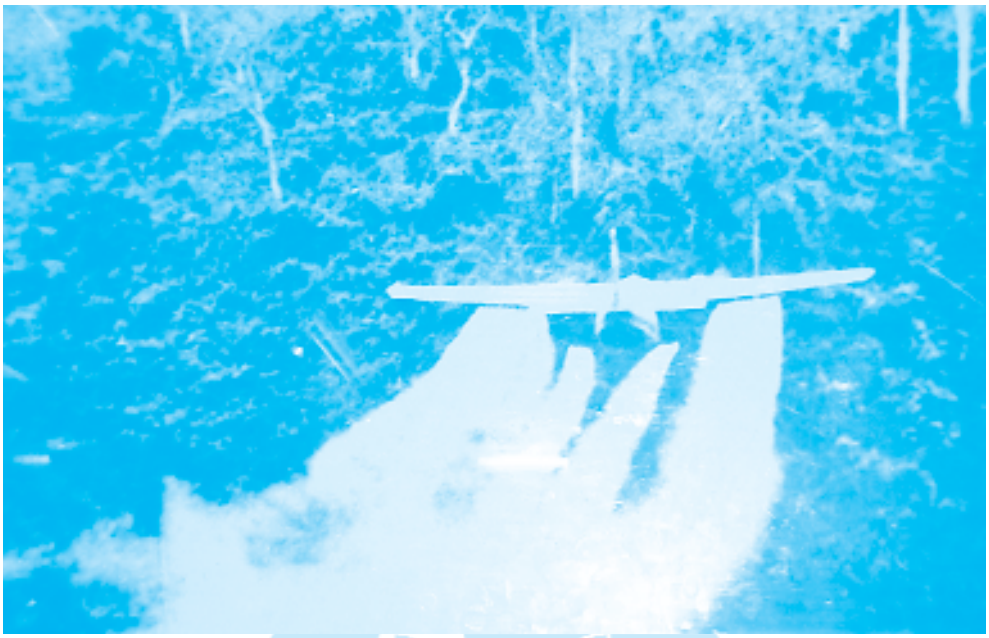

Foto: Archives

Spraying toxic chemicals by US Army

the war. Common health impacts attributed to victims of exposure are cancer, reproductive failure and birth defects. By causing chromosomal abnormalities, Dioxins can cause genetic pathologies in F1 and F2 generations of the victims.

In 1970, having paid special attention to the consequences of toxic chemicals, the Government of Vietnam established the National Committee for survey of the consequences of toxic chemicals used by the American Army during the war in Vietnam (Committee 10-80). From 1980 to 1999, Committee 10-80 carried out many studies on the chemical war and its impacts on the environment and human health. In 1999, the Government of Vietnam replaced Committee 10-80 with the National Steering Committee for overcoming the consequences of toxic chemicals used by the American Army during the war in Vietnam (Steering Committee 33), basically changing the direction from survey to study and application of recovery methods for the consequences of chemical war.

II.5.2. Unintentional production of Dioxins/Furans in Vietnam

Dioxins and Furans, or polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), are unintentionally produced compounds generated by some industrial processes and in urban areas, especially through thermal processes such as the production of construction materials (cement, brick, ceramics), ferrous and non-ferrous metal production, paper manufacture, thermal electricity generation, burning of waste, biomass burning, transportation, etc. The unintentionally produced sources result in Dioxins/Furans in the environment.

With rapid economic development, unintentional production of Dioxins and Furans is unavoidable. Potential Dioxins/Furans sources are varied in type, properties and release loading, because they originate from different facilities with different technologies (industrial zones, export processing zones, production facilities, health-care facilities, factories, etc.). These sources are also identified, categorized, managed and treated in different ways. Furthermore, there is inadequate awareness about the different types of Dioxins/Furans sources. As a result, it has proven difficult to undertake an inventory of Dioxins/Furans.

II.5.3. Survey and assessment on unintentional production of Dioxins/Furans

In 2004, under the UNDP/GEF NIP preparation project, an inventory and assessment of unintentional production sources of POPs in Vietnam was conducted. This task relied on cooperation among various relevant authorities, localities, consultants and domestic and international experts. Data were analyzed by cities/provinces and then integrated by regions.

There are 2,130 likely Dioxins/Furans release sources in Vietnam. By sector, the proportions are production of minerals: 29%; ferrous and non-ferrous metal production: 25%; production and use of chemicals and consumer goods: 5.5%; heat and power generation: 17%; waste incineration: 9.5%.

By region, the proportions are: Red River delta: 26%; Southeastern region: 21%; Northeastern region: 16%; Central coasts: 14.5%; Northcentral region: 11%; Cuu Long River delta: 6%; West Highland: 4.5% and Northwestern region: 2%.

Fuel consumption (firewood, coal, gas, oil, natural gas) in Vietnam amounts

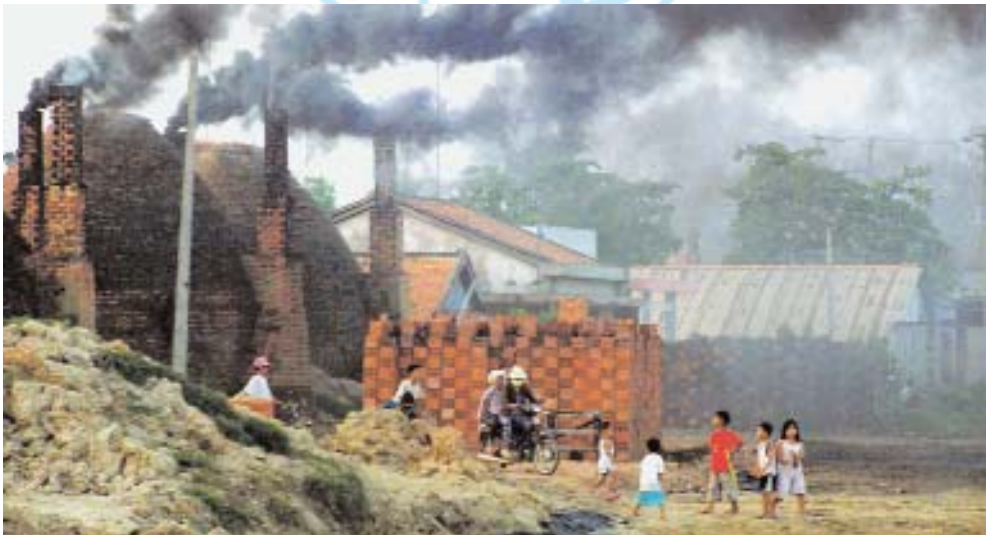

Foto: TTXVN

Brick production using primitive kilns

to 3,477,600 tonnes/year, with the Cuu Long River delta accounting for 24.5% of the total, the Red River delta 22%, the Southeastern region 16%, Central coasts 12%, the Northeastern region 11%; the Northcentral region 7.8%, the Northwestern region 3%, and the West Highlands 3%.

The quantities of fuels consumed each year by forest fires, burning of agricultural residue and similar activities is 5,400,000 tonnes/year, of which the Cuu Long River delta accounts for 45%, the Red River delta 21.5%, the Northeastern region 11%, the Northcentral region 8%, the Central coasts 4.5%, the Southeastern region 4%, the West Highlands 3%, and the Northwestern region 3%.

Landfill wastes accumulate at a rate of 5,000,000 tonnes/year. The Southeastern region accounts for 35% of this total, the Red River delta 27.5%, the Cuu Long River delta 12%, the Northeastern region 10.5%, the Central coasts 7%, the Northcentral region 4.5%, the West Highlands 2.5%, and the Northwestern region 1.5%.

Wastewater from industrial activities and domestic use amounts to 1,000,000 metric cub/year. The Southeastern region accounts for 36,5% of this total, with the Red River delta accounting for 21.5%, the Northeastern region 19.5%, the Cuu Long River delta 13%, the Central coasts 5.5%, the Northcentral region 2.5%, the Northwestern region 1%, and the West Highlands 0.7%.

II.6. Stockpiles and contaminated sites

The import and use of all POP pesticides are now banned in Vietnam. However, stockpiles that accumulated before the bans came into effect still exist. An inventory of POP pesticides stockpiles undertaken during the preparatory process of the NIP revealed that the POPs pesticides found in Vietnam are mainly DDT (and Lindane), and all or virtually all of these stockpiles dated before 1990.

In addition, there are also a large number of additional stockpiles of unknown and mixed chemicals, some of which will almost certainly be POPs pesticides. The resources available for the inventory conducted during NIP preparation were insufficient to allow sampling of these stockpiles of unknown chemicals.

Fourteen sites in nine provinces (Thai Nguyen, Tuyen Quang, Lang Son, Bac Kan, Phu Tho, Nghe An, Ha Tinh, Quang Binh, Dong Nai), and amounting to a total area from 5,000 to 10,000 m^2 were identified as POP pesticides-contaminated sites. At many sites, POP pesticides have been temporarily burried under unsafe condition and without appropriate control measures. The POP Pesticides Inventory report prepared under the UNDP/GEF NIP preparatory project also listed eight contaminated sites burried POPs stockpiles for priority action.

Additionally, PCB-contaminated sites are expected to be identified in future,

resulting from improper handling, storage and disposal of PCB equipment, contaminated transformer oils and PCB wastes.

II.7. Future production, use and releases of POPs

Vietnam seeks no exemptions from the provisions of the Stockholm Convention in terms of future production and use of POPs.

II.8. Existing programs for monitoring

There have been several POPs monitoring programs or activities carried out in Vietnam as cooperative research projects between Vietnam and international research institutes. These include:

- Analysis of POP pesticides residues (DDT, HCH, PCBs, HCL, HCB) immigrant and residential birds, cooperative research between Center for Chemical Technology and Sustainable Development (Hanoi National University, Vietnam) and Ehime University, Japan.
- Monitoring of DDT, HCH, PCBs, HCL, HCB residues in mussels and fishes in some coastal areas of Vietnam (1997-1999): a research program "Asia-Pacific Mussel Watch" implemented by Marine Environment Center, Ehime University, Japan.

Foto: BVMT

A site of POP pesticides stockpiles in Nghe An province

- Analytical activities of the OCP residues in water and sediment in some areas such as West Lake (Hanoi), Ba Be Lake (Bac Kan province), Red River, Ba Lat estuary, Ha Long Bay, some rivers in the central provinces, and a fluvial bog (Hue), implemented by the Center for Chemical Technology and Sustainable Development (Hanoi National University, Vietnam) within the framework of environmental monitoring of hydrosphere in West Asia supported by United Nations University (since 1998).
- Research on DDT and PCBs residues in sediment and water of some canals in Hanoi and some Northern coastal areas (1994-1999), implemented by the Vietnam National Institute of Nuclear Energy, The Quality Assurance and Testing Center 1 (Quatest 1, Directorate for Standards and Quality, Ministry of Science and Technology), the Portugal National Institute of Nuclear Energy and the Marine Environment Laboratory of the Monaco Institute of Nuclear Energy. This collaborative research project was organized by the International Atomic Energy Agency.
- A ministerial research project on "Investigating the POPs pollution situation in the Hanoi area" (Ministry of Science and Technology), carried out by the Analytical Laboratory of the Quality Assurance and Testing Center 1, Directorate for Standards and Quality.
- Some research projects on POPs residues in soil and plants, implemented by the Institute of Plant Protection, MARD.
- A monitoring program on pesticide residues, implemented by Department of Plant Protection, MARD.
- A national research project (KHCN.07.15) on identification of toxic pollutants released from industrial and urban activities and development of appropriate treatment technologies, implemented by the Vietnam-Russia Tropical Center.
- A project assessing Dioxin stockpiles in military airport areas which were used as chemicals storage areas in the war in Vietnam, implemented by the Vietnam-Russia Tropical Center.
- An analysis task under Program 33, implemented by the Vietnam-Russia Tropical Center, in cooperation with other agencies such as VEPA, the Institute of Biological Technology, the Center for Environmental Treatment Technology - Chemical Military Headquarters, etc.
- Some cooperative projects with the United States, Canada, the Netherlands and others on the movement and adverse impacts of Dioxins derived from toxic chemicals used by the American Army during the war in Vietnam.

This review of POPs monitoring programs in Vietnam indicates that POPs monitoring activities in Vietnam have been carried out but yet, limited. With the

Foto: TC BVMT

exception of some research programs on Dioxins and toxic chemicals used by the American Army, research projects on POPs in Vietnam have not been implemented systematically, with a focus on relatively short periods of time and covering limited areas. There is currently no systematic program for monitoring POPs in Vietnam. Therefore, the data on POPs collected are not comprehensive and insufficient to assess the POPs situation in a large area as well as the persistence and transformation of POPs in the environment.

Priority programs 7 and 9 of the NIP (see Annex) seek to rectify this situation through the strengthening of existing capacity and the systematization of processes for monitoring POPs.

II.9. Awareness and education on POPs

Surveys undertaken on public awareness of POPs identified different subgroups among stakeholders in terms of their level of understanding of the issues. These were:

(i) Policy makers Management officials and environmental specialists

(ii) Members of the general public

(iii) Members of the general public who are exposed to POPs (for example, through living in contaminated areas, or who use POPs).

On average, the members of sub-group (i) have adequate awareness of POPs and the harm that they cause to public health. However, awareness levels are not uniform. A consequence of this variability in awareness is that the implementation of specific actions for the sound management of POPs and the minimization of their harmful effect is not synchronous and therefore its impacts are limited.

Generally, the members of sub-group (ii) have limited awareness of POPs, thus they may unintentionally absorb and accumulate POPs due to exposure to POPs or POP-containing contaminants.

Sub-group (iii) consists of farmers who directly used POP pesticides, workers who directly handled PCB-containing oils, or people who live near landfills or storages of pesticides, PCBs and pesticides-containing wastes, or Dioxins-contaminated areas. This sub-group can be divided into three levels: (a) those who have no awareness and knowledge of POPs and their threats to human health, and therefore fail to appreciate the direct threats of POPs to themselves; (b) those who have some knowledge of this issue, but who, for reasons such as insufficient resources to move to other locations, or the demands of their jobs, have failed to take action in order to reduce exposure to POPs (this is the majority of the sub-group); and (c) those who have good knowledge of POPs and their harmful effects, and who are willing to move to other places, change their jobs or implement other measures to reduce POPs exposure (amounting to only a small proportion of the total number in this sub-group).

Regarding the dissemination of information on POPs in Vietnam, many communication types can be used, such as publications, videos, workshops, mass media, the internet, etc.

Based on the surveys and initial communication activities, awareness raising programs for different audiences have been developed. The details of these activities can be found in section 3.3.3 and Priority Program 10 in Annex.

II.10. Non-governmental organizations

Vietnam is promoting the socialization of environmental protection. Socio-political organizations, national and international non-governmental organizations and the public are participating more and more actively in environmental protection. Associations such as the Vietnam National Front, the Vietnam Womens' Union, the Vietnam Youth Union, and the Vietnam Peasantry Association play active and important roles in promoting the socialization of environmental protection.

In Vietnam there are many professional associations working in the fields related to environmental protection and sustainable development such as the Vietnam Association for Conservation of Nature and Environment, the Vietnam Union of Scientific and Technical Associations, the Chemistry Association, and

the Biology Association, etc. These associations have contributed actively by commenting on the development of strategies and legal documents on environmental protection, exchanging experiences and expertise, enhancing international cooperation, disseminating knowledge of environmental protection, and also supporting governmental authorities in supervising environmental protection in localities and facilities.

II.11. Technical infrastructure for POPs monitoring and treatment in Vietnam

II.11.1. Assessment of technical infrastructure for POPs monitoring

An initial assessment of infrastructure for POPs monitoring revealed a limited number of laboratories capable of analyzing POPs in Vietnam. Those laboratories are mainly located in research institutes or universities. Some are under the governmental management, including those belonging to MARD, the former MOSTE (now MOST), and the Center for Quality and Standards. Some laboratories have participated in cooperative research programs on POPs pollution monitoring.

Vietnam has established a national environmental monitoring system which is based on a network of hydro-meteorological laboratories. However, POPs are not covered by the monitoring network. The national environmental monitoring system is being re-designed and further developed.

Some laboratories with advanced equipment and well-trained personnel have started analyzing trace amounts of POP pesticides and PCBs in water and sediment. However, air and biological samples require specialized sampling equipment and processes, of which Vietnam's laboratories have little experience. Vietnam has no laboratory which can analyze Mirex or Toxaphene, although there is little need to monitor these 2 pesticides because there is no evidence of their presence in Vietnam.

Analysis of Dioxins and Furans needs highly advanced facilities capable of applying complex techniques. The laboratory of the Vietnam-Russia Tropical Center under the MOD often analyzes Dioxins and Furans from locations with high concentrations, such as wartime pollution hotspots. The laboratory of the Chemistry Institute and Center for Analytic Experiment and Service has been equipped with high-resolution chromatography and mass spectrometry equipment and is now capable of analyzing trace amounts of Dioxins and Furans. Analysis of this group of substances outside hotspots is difficult because of the extremely low concentrations that need to be detected.

The laboratories in Vietnam are not synchronously equipped and don't have sufficient human resources to perform trace analysis of DDT, PCBs and Dioxins in biological samples such as breast milk, blood, hair samples to assess the impact of POPs to human health.

In general, laboratories in Vietnam are not adequate, nor are their capabilities and programs coordinated. In particular, there is a lack of well-trained human resources and funding to monitor POPs, set up inter-laboratory monitoring programs, and actively participate in POPs monitoring programs at the regional and international levels.

II.11.2. Assessment of technical infrastructure for safe treatment of POPs

For POP pesticides:

Scientists and government officials in Vietnam have recently reviewed and studied various methods for safe treatment of POPs, and as a result have proposed different treatment methods. As a result, MOSTE has issued regulations on the process and methods for safe disposal of toxic chemicals, including POP pesticides.

In recent years (2001-2003), some pilot projects on the treatment of chemical and pesticide (including POP pesticides) stockpiles have been carried out. These have generated some initial results and built experience on the issue:

- The pesticide incineration method, used by the Center for Environmental Treatment Technology - Chemical Military Headquarters. This method was applied in Lang Son, Ha Tay, Hanoi, Thai Binh, Ha Nam, Quang Ninh, and Hoa Binh provinces. However, a major drawback is the risk of releasing unmonitored Dioxins and Furans into the atmosphere.
- The chemical treatment of pesticides, used by the Center for Consultation on Environmental Technology (under the Vietnam Union of Scientific and Technical Associations), applied in Ninh Binh province.
- A test burn at high temperatures in a cement kiln of the Holcim cement factory at Hon Chong, Kien Giang in 2003, through which 40.000 liters of "Access" pesticide were destroyed with no Dioxins or Furans release.
- Soil pollution treatment applied at pesticide stockpile locations using a combination of isolation, solidification, and chemical and micro-organism methods. This was applied in Nghe An, with about 2.5 tonnes of pesticides and their packages treated.

The lessons learned through these trials will form the basis of future treatment of pesticides including POPs pesticides.

However, POPs treatment still faces many challenges. POP pesticides stockpiles are not large, but are scattered across many localities in the country, so selecting an appropriate treatment site in each locality and transportation to that site is problematic. The movement of pesticides from site to site is strongly

opposed by the public, budgets for collection and treatment are often insufficient, and an appropriate organizational mechanism for such treatment does not exist.

For PCBs and PCB-containing equipment:

The Government of Vietnam accords high priority to the safe treatment of PCB-containing waste oils and equipment. However, appropriate technology for such treatment is not yet available in Vietnam. The Na-Tech (sodium based) method for disposal of PCBs in transformer oils remains experimental, while incineration in cement kilns has not yet been fully tested and licensed.

Therefore, the safe handling, management and treatment of PCBs, PCB-containing oils and equipment and PCB-contaminated sites are urgent tasks that need to be addressed as soon as possible to limit the adverse effects of PCBs on human health and the environment.

For unintentionally produced Dioxins/Furans:

Vietnam do not have sufficient experience on the technologies and processes that can unintentionally release Dioxins and Furans. So, in order to reduce and eliminate unintentionally produced Dioxins and Furans, it is necessary to undertake studies and promote the application of BAT & BEP, consistent with the objectives of sustainable development in Vietnam.

In summary, the legal basis and technological infrastructure for the disposal of POPs in a sound and standardized manner so as to avoid adverse effects to human health and the environment is still inadequate.

II.12. Impacts on human health

Large amounts of Agent Orange defoliant, containing high concentrations of Dioxins, were sprayed over areas of Vietnam from 1962 to 1971. As a result, Dioxins have been found at very high levels in human milk, in soil and sediments, and in food in some areas of Vietnam from the 1970s to the present. The North Vietnam was never sprayed, but only certain areas of Central and Southern Vietnam. Consequently, Dioxin levels in the North are much lower than in the South.

Various research projects have studied the distribution and effects of the Dioxins associated with Agent Orange (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD]). For example, in 1999 blood samples were taken from residents of Bien Hoa, a location known to have been contaminated by spills of Agent Orange, showed that elevated TCDD levels up to 271 ppt were found, while in the samples from residents of Hanoi, where Agent Orange was not sprayed, TCDD levels averaged about 2 ppt.

Foto: TTXVN

Taking care of children effected by agent orange

Research on the pathology of TCDD have found statistically elevated rates of diseases of the musculoskeletal system and connective tissue, the genitourinary system, the skin, the blood and endocrine system, and infectious diseases. There is also a demonstrated relationship between exposure and the reproductive health, with occurrences of spontaneous abortion and birth defects being statistically significantly higher in those exposed to TCDD. The most common birth defects are those associated with the nervous system like mental retardation of different levels, defects of the musculoskeletal system like deformities of hands, legs, and spina bifida.

SUMMARY ON SHORTCOMINGS RELATED TO POPs IN VIETNAM

Policy, institution and legal framework:

- There are regulations governing responsibilities of authorities for POPs management, but they are unspecific and overlapping, and the responsibilities of authorities and localities are not coordinated for each stage of the POPs life-cycle.
- There is no binding regulation that specifies "the polluter must pay" principal for POPs in POP contaminated sites.
- There are not enough environmental standards for the 12 POPs.
- There is no specific regulation governing management of export-import, use, labeling, transport and disposal of PCBs and PCB-contaminated equipment; there are no technical guidelines on safe handling of PCBs.
- There are no regulations governing the management of and responsibility for the unintentional production of Dioxins and Furans by industry.
- Legislation and regulations governing POPs management are insufficient and unspecific, and hard to apply them effectively; enforcement and sanctions related to POPs management are feeble.
- The development program and strategy for the electricity sector have not paid great attention to the stable and safe treatment and management of PCB-containing oils and equipment.

POPs status in Vietnam:

- There are POP pesticides stockpiles in many localities in Vietnam. At many sites, pesticides are stored or have been temporarily buried under unsafe conditions, without appropriate control measures.
- It is very difficult to exert complete control over the trade and use of pesticides; In fact, POPs may be illegally imported, stored and used for mosquito control and as pesticides.
- Some sites are contaminated with POP pesticides as a result of unsafe storage or poorly designed landfills; The inventory of POPs and pesticide-contaminated areas is inadequate.

- POPs pesticides and PCBs are found in various environmental media including water, soil, and lake sediments.
- Inventory data on PCBs, PCB-containing equipment, and especially PCB stockpiles and PCB-contaminated sites are insufficient.
- There has not been an adequate inventory and assessment of release sources, release factors, facilities and technologies related to the unintentional production of POPs.
- There are localities that are heavily polluted by the Dioxins from toxic chemicals used by the American Army during the war in Vietnam.

Awareness, capacity and infrastructure:

- Awareness of POPs threats to human health and the environment within the Government at all levels and all sectors, and among the public is not high.
- Vietnam is still not be able to select the most appropriate technology and measure for the safe treatment of POPs pesticides, PCB-containing oils and PCB-contaminated equipment.
- There is no effective information management system and database for the control of export-import and use of toxic chemicals including POPs.
- There is a lack of capacity and infrastructure for systematic pollution monitoring and evaluation of the impact of POPs on human health and the environment in Vietnam.
- There is a lack of funding for the thorough treatment of POP stockpiles, POP wastes and POP-contaminated areas.
- There is a lack of capacity (human and technology) for the effective application of BAT & BEP in reducing and eliminating the unintentional production of POPs.
- International integration on environmental protection and sound management of chemicals (including POPs) is limited.
- The Government has issued policies governing the sound management of POPs, but Vietnam does not have adequate capacity for their effective implementation.

III. NATIONAL IMPLEMENTATION PLAN FOR STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS

III.1. Objectives

a) Develop and finalize policy, legislative and institutional frameworks for effective management of POPs in order to reduce and finally eliminate POPs.

b) Strengthen technological, and financial capacity and information management for the prevention, control and safe disposal of POPs.

c) Reduce, treat and finally eliminate stockpiles of POPs pesticides by the year 2010.

d) Thoroughly treat sites contaminated with Dioxin residues from toxic chemicals used by the American Army during the war in Vietnam and POPs pesticides.

e) Reduce the release of PCBs into the environment, eliminate the use of PCBs in equipment by 2020; and safely dispose of PCBs by 2028.

f) Continuously reduce the unintentional production of POPs.

III.2. Approaches and principles

- The core approach shall be "pollution prevention" with recognition of POPs as posing long-term potential hazards to human health and the environment.
- The management, reduction and elimination of POPs shall be implemented consistently, continuously and energetically.
- The activities of the NIP shall be feasible and be in line with the objectives of the Vietnamese National Strategy for Environmental protection until 2010 and Vision toward 2020 as well as the Stockholm Convention.
- The NIP implementation shall ensure the cooperation, coordination, integra-

tion and participation of the government at all levels, as well as all economic sectors and the public.

- Action will be based on latest scientific evidence and available technologies through the application of advanced, clean and environment-friendly technologies; making use of a combination of domestic and international resources.

III.3. Activities and Solution for implementation of the NIP

III.3.1. Policy, legislative and institutional frameworks support effective management of POPs

Priority Programs 1 and 13 in the Annex provide details on this Activity. The key benchmarks in achieving this Activity will be:

- Review current policies and legal documents associated with POPs. Develop a policy for POPs management, with special attention given to:
  + An inter-sectoral management policy for chemical safety, including POPs and relevant hazardous substances and chemicals.
  + An incentive policy for POPs reduction, replacement, treatment and disposal.
  + The provision of incentives through capital, tax, fee, land use rights and technology transfer considerations for enterprises which reduce, replace and eliminate POPs.
  + A mechanism for the publication of information on POPs pollution status and a mechanism for public participation in POPs sound management and monitoring.
  + A requirement for enterprises which are likely to produce POPs unintentionally to monitor POPs themselves.
- Develop, amend and issue environmental standards and by-laws related to the management, use, release and disposal of POPs and POPs-containing equipment, so as to reduce their impacts on human health and the environment.
- Finalize the Law on Chemicals and by-laws, pursuant to the ordinance and law development program of the National Assembly in 2006 (an attachment to the Resolution No. 49/2005/QH11 dated 19 November 2005 of the National Assembly), including the basis for sound management of POPs and relevant hazardous wastes and chemicals.

III.3.2. POPs management capacity is strengthened

The building, strengthening and enhancement of capacity for POPs management takes a high priority in projects and programs to implement the Stockholm

Convention. Capacity enhancement is also incorporated into programs dealing with specific issues on the management and safe disposal of POPs. Priority Program 7 in Annex provides details on activities to enhance technical capacity for POPs monitoring and analysis. Priority Program 12 in Annex provides details on activities to build capacity of responsible ministries, departments and other agencies. The key benchmarks in the capacity building program will be:

- Capacity building for the National Focal Point and relevant competent authorities for POPs management; Train and foster human resources for POPs management and related research and development activities; develop and incorporate POPs contents in curricula at universities and colleges.
- Development of capacity for POPs monitoring and treatment:
  + Set up a network of POPs monitoring and analysis laboratories, including standardized laboratories for POPs monitoring at national, regional and international levels.
  + Develop and implement the plan for strengthening national capacity for R&D on POPs monitoring and assessment, in which attention should be paid to capacity for trace analysis of POPs in different environmental media to support the assessment of POPs impacts on public health and the environment.
  + Develop a POPs sample bank to support monitoring and assessment of POPs pollution and their potential long-term impacts on human health and the environment.
  + Support development of techmlogies for POPs treatment.
- Establish a national information system and database for POPs and other hazardous chemicals and wastes to collect, update, integrate and provide POPs information to relevant national and international stakeholders.

III.3.3. Promotion of survey, study and application of technological solutions for management and elimination of POPs

Priority Programs from 2 to 9 in the Annex provide specific information on the technical issues to be addressed under this Activity. The key benchmarks will be:

- Survey, inventory, monitor and assess POPs issues, establish and update a POPs database, including POP pesticides, PCBs, unintentionally produced POPs, and POP-containing wastes.
- Develop and disseminate technical guidelines on inventory, assessment and reporting on POPs.
- Assess and categorize POP-contaminated sites and their contamination levels, and develop a roadmap for their decontamination; Research and pro-

pose measures for environmental rehabilitation of POP-contaminated areas, particularly in combination with the Plan for thoroughly handling establishments which cause serious environmental pollution, pursuant to Decision No. 64/2003/QD-TTg dated 22 April 2003 of the Prime Minister.

- Outline a roadmap and implement a program for the phase-out of use of PCB-containing oils and electrical equipment and industrial products, with due attention for the electricity sector.
- Develop a program for analysis, monitoring and updating of data on sources and emission loads of unintentionally produced POPs, with an initial focus on environmentally sensitive areas and sources having high potential impacts on human health, bio-diversity and the environment.
- Research, transfer and apply BAT & BEP to reduce unintentionally produced POPs, with a focus on metal production industries, construction material production, chemical production and waste treatment.

III.3.4. Raising awareness of roles and responsibilities of the government at all levels and the public

Priority Program 10 and 14 in the Annex provides details on this Activity. The key benchmarks in achieving this Activity will be:

- Research the impact of POPs on public health, biodiversity and the environment.
- Develop and implement public awareness campaigns on POPs, targeting various groups including: (i) Government officials, environmental inspectors, chemical safety control staff of the relevant ministries/sectors; (ii) relevant production, trading and service enterprises; (iii) the public and people exposed to POPs in their work places.
- Clarify responsibilities and establish an effective coordination mechanism for governmental agencies at the central and local levels with regards to POPs management:
  + Identify responsibilities and develop a cross-sectoral mechanism for management of POPs and relevant hazardous wastes and chemicals.
  + Establish a coordination, collaborative and decentralized mechanism for Central and local authorities to undertake environmentally sound management and treatment of POPs.
  + Promote public participation in control and management of POPs:
  + Develop a mass media information campaign involving various methods

Photo: TC BVMT

Poster to promote public awareness on POP issues in Vietnam

of education, training and dissemination of information to raise awareness of all relevant groups on POPs and their adverse impacts on human health and the environment.

+ Develop a mechanism to encourage and facilitate the public to participate in monitoring and the environmentally sound management of POPs.

+ Improve dissemination of information, guidelines for identification of chemicals and products containing POPs, the classification and labeling of equipment containing POPs, and safety manuals related to POPs, development of inventory database and procedure for reporting on chemical safety including POPs.

+ Promote and institutionalize the participation of non-government organizations in consultation and management of toxic chemicals including POPs.

+ Identify responsibilities of production, trading and service facilities in sound management of POPs and relevant chemicals.

- Information on POPs polluted facilities are made public.

III.3.5. Investment sources are diversified

Priority Program 11 in the Annex provides details on activities to enhance technical and financial support to implement the Plan. The key benchmarks will be:

- Increase investment from the national budget, ODA and other sources for POPs management and elimination.
- Integrate POPs elimination and management into socio-economic development projects, plans and programs in order to utilize resources effectively.

III.3.6. International cooperation for implementation of Stockholm Convention is enhanced

This Activity seeks to improve international cooperation and facilitate implementation of the plan. The key benchmarks in achieving this Activity will be:

- Fulfill the obligations of a Party to Stockholm Convention:
  + Develop a mechanism for registration of specific exemptions and additional POPs that may be covered by the Stockholm Convention in the future.
  + Reporting responsibility for implementation of the Stockholm Convention:
    * Based on the result of inventories, monitoring and assessment of POPs in economic sectors or geographic areas, relevant agencies update the information on POPs regularly and report to the National Focal Point to facilitate governmental management activities and report to the Stockholm Convention.
    * The National Focal Point reports on regular basis to the Stockholm Convention as required by the COP, provides information as required by the Stockholm Convention Secretariat on all activities related to management, reduction and elimination of POPs in Vietnam.
  + Evaluate the implementation of the Stockholm Convention: Evaluate the effectiveness of activities to implement the Stockholm Convention in Vietnam, as stated in the NIP and according to the obligations under the Stockholm Convention, and report to the Secretariat on a regular basis.
- Participate in and promote bilateral and multilateral cooperation on POPs in the region and the world; share information and experience, transfer technology and exchange experts on the implementation of the Convention:
  + Actively participate in global and regional POPs monitoring programs.
  + Strengthen cooperation with United Nations Organizations and specially the GEF implementing agencies to implement programs on POPs and chemical safety.
  + Integrate activities on environmentally sound management, reduction and elimination of POPs into other bilateral and multi-lateral cooperative

programs in environmental protection and sustainable development in Vietnam.

+ Mobilize and effectively utilize international resources for POPs management, reduction, disposal and elimination.

+ Coordinate and link the implementation of Stockholm Convention with other relevant environment agreements and conventions.

- Improve relations and international networking in the field of management and treatment of POPs and other hazardous chemicals/wastes

- Develop and implement a plan/strategy for human resource development through training courses, workshops, meetings and exchange of experiences in implementation of the Stockholm Convention and other relevant international agreements in the field of environmental protection.

III.4. Implementation arrangement

III.4.1. Distribution of responsibilities

1) The Ministry of Natural Resources and Environment shall:

- Serve the National Steering Committee to assist the Government in coordinating relevant ministries, sectors and localities in implementation of the NIP

- Organize the dissemination of the NIP to all actors and stakeholders.

- Develop a network of relevant ministries, sectors and the public for NIP implementation.

- Develop capacity, including human material resources and laboratories to implement the NIP.

- Develop and finalize policies, institutions and legal documents for the prevention, reduction and elimination of POPs.

- Develop a national information system for the management of POPs and hazardous wastes.

- Carry out annual inventories and synthesis of POPs data from relevant ministries, sectors and localities and present a report to the Prime Minister.

- Assess the adverse impact of POPs on human health and the environment.

- Develop and apply model technologies and guide the application of the model technologies for sound management, treatment and disposal of POPs.

- Annually review and assess NIP implementation, and regularly report to the Prime Minister.

2) The Ministry of Agriculture and Rural Development shall:

- Annually issue and widely propagate the list of permissible and prohibited pesticides; compile an annual report on pesticide management and the amount of prohibited pesticide stockpiles in the country, and submit to the Government and National Focal Point for the Stockholm Convention;
- Take the lead and collaborate with relevant ministries and sectors in investigating, supervising and promoting the comprehensive collection and sound management of pesticide stockpiles for treatment and disposal, pursuant to appropriate hazardous waste treatment procedures;
- Take the lead and collaborate with relevant ministries, sectors and localities in safely treating and disposing of obsolete pesticide stockpiles as scheduled; with special priority given to the treatment of polluting hotspots that seriously affect human health and the environment;
- Collaborate with relevant ministries, sectors and localities in managing, investigating, and strictly supervising facilities that produce, bottle, package and trade permissible pesticides in accordance with the Ordinance on Plant Protection and Quarantine; enhance inspections to identify and enforce those who are not compliant with regulations on pesticide management;
- Closely collaborate with the General Department of Customs, Ministry of Finance and the Department of Market Management, Ministry of Trade in strictly controlling, supervising and punishing the illegal importation of pesticides;
- Collaborate with the mass media, professional associations, unions and provincial People's Committees in disseminating and guiding farmers on proper procedures for pesticide use and relevant personal protection equipment in order to reduce public health risks;

3) The Ministry of Industry shall:

- Coordinate the inventory and updating of data on unintentional production of POPs from production and service activities, as well as the inventory of PCB stockpiles and PCB-containing equipment;
- Take the lead and collaborate with relevant ministries, sectors and localities in strictly managing and controlling the use, transport and disposal of PCB-containing equipment; and in surveying, identifying and treating PCB-contaminated sites;
- Collaborate with relevant ministries, sectors and localities in developing options for promoting Best Available Techniques and Best Environmental Practices to minimize the unintentional production and release of Dioxins and Furans from production and service activities;

4) The Ministry of Health shall:

- Manage, supervise and monitor the production, import-export and use of chemicals for controlling insects, rats, pests and bacteria in the healthcare sector;
- Regularly update the rates of POPs and pesticides exposure; and study the impact of pesticides on human health in order to develop effective prevention and therapy measures;
- Collaborate with relevant ministries, sectors and localities in collecting, treating and disposing prohibited pesticides and insecticides;

5) The Ministry of Trade shall:

- Take lead and collaborate with the General Department of Customs and relevant ministries and sectors in enhancing the inspection and supervision of imports and exports and market circulation of prohibited pesticides and PCB-containing oils and products;

6) The General Department of Customs (Ministry of Finance) shall:

- Take lead and collaborate with relevant ministries and sectors in managing and supervising the import and export of chemicals included in the permissible list across national borders.
- Carry out inventories and report on the import and export of substances related to the implementation of Stockholm Convention to the National Focal Point.

7) The Ministry of Planning and Investment and Ministry of Finance shall:

- Compile annual and five-year plans of ministries and localities related to the implementation of Stockholm Convention.
- Balance and allocate appropriate budgets for relevant ministries and localities to support and ensure NIP implementation in accordance with the schedule approved by the Prime Minister;

8) The People's Committee of provinces and cities directly under the central government shall:

- Collaborate with relevant ministries and sectors in developing and implementing the NIP's activities related to their localities;

9) The Mass media shall:

- Strengthen propaganda, education and awareness raising on potential and long-term threats of POPs to human health and the environment and the

need for comprehensive and effective implementation of the NIP under the Stockholm Convention.

Ministries, sectors and People's Committees of Provinces and cities directly under the government are responsible for the integration of the implementation of the NIP under the Stockholm Convention into their socio-economic development plans; for annually reviewing and assessing progress in NIP implementation; and for reporting to the Government and the National Focal Point for the Stockholm Convention.

III.4.2. Implementation roadmap

The implementation of the Priority Programs will be phased according to the outline presented below. The phasing of implementation will be kept under regular review by the National Focal Point, and will be adjusted according to the practical situation and availability of resources.

a) Period of 2006-2010

- Develop and finalize the legal framework, policies, laws, and standards for POPs.
- Raise stakeholders' and public awareness of POPs issues and the NIP implementation.
- Strictly isolate and treat sites contaminated with toxic chemicals used in the war.
- Survey, inventory, and assess POPs current status and POP-contaminated sites.
- Manage, treat, and phase out POPs pesticide stockpiles.
- Safely manage PCBs in use, collect PCBs stockpiles and begin to phase out PCB-containing oils and equipments.
- Treat sites contaminated with POPs pesticides and PCBs.
- Manage healthcare wastes to minimize unintentional production of POPs.
- Build a national information system on POPs .
- Strengthen capacity and human resources for NIP implementation.
- Build capacity for POPs monitoring and analysis, initially develop and implement a monitoring program on POPs pollution, including unintentionally produced POPs.
- Research on technologies for POPs control and treatment.
- Carry out communication activities, encourage and guide manufacture and trading enterprises, as well as communities to take measures to minimize unintentional production of POPs from production and everyday activities.

b) Period of 2006-2015

- Safely manage and phase out the use of PCB-containing equipment and strictly treat PCB-containing wastes.
- Continue the treatment of sites contaminated with PCBs and POPs pesticides.
- Continue to enhance the control and monitoring system for import, use, and transportation of prohibited pesticides;
- Continue communication activities, encourage and guide manufacture and trading enterprises, as well as communities to take measures to minimize unintentional production of POPs.
- Continue raising awareness and setting up a cooperation mechanism for stakeholders and the public to increase their participation in the sound management of POPs and the mitigation of their impacts.
- Strengthen POPs monitoring activities and research on the impacts of POPs and pesticides on human health, so as to promote effective prevention and treatment.

c) Period of 2015-2020

- Continue the control and monitoring of the import, use, and transportation of prohibited pesticides.
- Safely manage the de-construction, treatment, and disposal of out-dated PCB-containing equipments and wastes.
- Monitor and minimize unintentional production of POPs from production activities.

III.5. Resource requirements

The estimated total cost for each of the 15 Priority Programs is provided in the Annex. In total, the projected resources requirements amount to US$ 102.225 millions over the period 2006-2020.

ANNEX

LIST OF 15 NATIONAL PRIORITY PROGRAMS ON PERSISTENT ORGANIC POLLUTANTS

1 DEVELOPMENT AND FINALIZATION OF POLICIES, LEGISLATION AND INSTITUTIONS FOR POPS MANAGEMENT

Objective:

Develop and finalize the system of policies, legislations and institution to create the bases for effectively managing, reducing and finally eliminating POPs until 2020.

Expected outcomes:

- Institutional and organizational mechanisms for effectively implementing and coordinating POPs management are established in a coordinated and collaborative fashion;
- The system of policies and the legal framework for POPs management are enhanced and finalized.

Main activities:

- Review policies and legal documents related to POPs in order to develop and finalize a synchronous system of policies and legal documents for POPs management, reduction, disposal and final elimination.
- Study and recommend options to finalize institutions, organizations, standards, technologies, and financing related to POPs.
- Study and develop the Law on Chemicals documents for implementation of new policies and mechanisms on chemical safety.
- Develop a public participatory scheme for supervision and sound management of POPs.
- Review and assess the organizational scheme and coordination mechanisms related to POPs management.
- Develop and implement a project on consolidation and enhancement of capacity for the POPs management system.

Implementing agency: Ministry of Natural Resources and Environment

Collaborating agencies: Relevant Ministries, sectors and PPCs

International counterparts: GEF, SIDA, SDC, UNDP, WB

Implementation duration: 2006 - 2010

Priority level: Highest

Estimated cost: US$ 0.62 million

2 SOUND MANAGEMENT, DISPOSAL AND PHASE-OUT OF POP PESTICIDES STOCKPILES

Objective:

The environmentally sound management and disposal of POPs pesticides stockpiles and wastes.

Expected outcomes:

- Capacities of relevant central and local authorities and POPs treatment facilities are strengthened and monitored for safe treatment of POPs.
- POP pesticides stockpiles are completely identified, collected, and temporarily stored in an environmentally sound manner.
- POP pesticides stockpiles and wastes are safely and thoroughly disposed.

Main activities:

- Undertake additional inventories and assessments of POPs contamination in POP pesticide stockpile areas and develop an appropriate roadmap for disposing POP pesticides stockpiles.
- Identify, collect, handle and soundly store POP-containing pesticides and wastes for safe collection and disposal.
- Finalize, promulgate and disseminate regulations and technical guidelines for handling and disposal POP pesticides.
- Collect and safely and completely dispose of POP pesticides.

Implementing agencies: Ministry of Agriculture and Rural Development

Collaborating agencies: MONRE, PPCs

International counterparts: UNDP, SIDA, GEF...

Implementation duration: 2006 - 2010

Priority level: Highest

Estimated cost: US$ 1.875 million

3 THOROUGH ISOLATION AND TREATMENT OF HOTSPOTS CONTAMINATED WITH DIOXINS AND TOXIC CHEMICALS USED BY THE AMERICAN ARMY DURING THE WAR IN VIETNAM

Objective:

Effectively isolate, treat and environmentally restore the hotspots contaminated with Dioxins and toxic chemicals sprayed by the American Army during the war in Vietnam.

Expected outcomes:

- Extent and levels of contamination and impacts of the chemicals used by the American Army on the environment at hotspots are evaluated.
- Measures and models for environmentally sound and safe treatment and environmental restoration at hotspots are determined.
- Replication of measures and models for treatment of hotspots

Main activities:

- Identify the areas contaminated by Dioxin from toxic chemicals used by the American Army during the war in Vietnam.
- Survey and evaluate the extent and levels of contamination and impacts of the chemicals used by the American Army on the environment at hotspots; develop a roadmap for their treatment.
- Research and recommend measures and models for environmentally sound and safe treatment and environmental restoration at hotspots; develop and demonstrate isolation and decontamination methods at selected hotspots.
- Replicate demonstrated models and measures for treatment of hotspots.

Implementing agency: Ministry of Defense

Collaborating agencies: MONRE, relevant Ministries, sectors and PPCs

International counterparts: UNDP, IUCN, SIDA, GEF...

Implementation duration: Phase 1: 2006 - 2010; Phase 2: 2011 - 2020

Priority level: Highest

Estimated cost: US$ 30.0 million

4 MANAGEMENT OF HEALTHCARE WASTES TO REDUCE POPs AND OTHER TOXIC RELEASES

Objective:

Safely manage, reduce and treat healthcare wastes to prevent and eliminate the unintentional production of Dioxins/Furans and other toxic chemicals.

Expected outcomes:

- The unintentional production of Dioxins/Furans and other toxic chemicals from treatment of healthcare wastes in Vietnam is assessed.
- Models of management and treatment of hospital wastes to reduce Dioxins/Furans releases are developed, demonstrated and gradually replicated.
- Best available technologies and loest availaible practices for healthcare waste treatment to prevent releases of Dioxins/Furans and other toxic chemicals are selected, demonstrated and gradually replicated.
- Awareness of healthcare wastes and skills on its handling are raised.

Main activities:

- Survey the healthcare waste treatment situation in selected areas in Vietnam; assess releases of Dioxins, Furans and other toxic chemicals from healthcare waste treatment.
- Research and recommend best technologies and practices for healthcare waste treatment to prevent releases of Dioxins, Furans and other toxic chemicals.
- Demonstrate healthcare waste treatment models at central and local levels.
- Develop and implement training and awareness programs on healthcare wastes and their handling.
- Develop and gradually implement a national replication plan.

Implementing agency: Ministry of Health

Collaborating agencies: MONRE, relevant Ministries, sectors, urban environment companies, PPCs

International counterparts: UNDP, WHO, SIDA, GEF, SDC...

Implementation duration: Phase 1: 2006 - 2010; Phase 2: 2011 - 2020

Priority level: Highest

Estimated cost: US$ 12.5 million

5 THOROUGH TREATMENT OF PCBs AND POP PESTICIDES CONTAMINATED HOTSPOTS

Objective:

Identify and comprehensively treat PCBs and POPs pesticides contaminated hotspots, and reduce their impacts on human health and the environment.

Expected outcomes:

- Extent and levels of contamination and impacts on the environment at PCB- and POPs pesticides-contaminated sites, with special attention to burried stockpiles of POPs, are evaluated.
- Measures and models for environmentally sound and safe treatment and environmental restoration at hotspots are recommended; regulations and technical guidelines for hotspots treatment and management are developed and issued.
- Environmental management capacity for management and treatment of hotspots are is built and sustained so as to minimize impacts on human health and the environment.
- Measures and models are replicated so as to treat all hotspots.

Main activities:

- Survey and evaluate the extent and levels of contamination and impacts of PCBs and POPs pesticides on the environment at hotspots; develop a roadmap for their treatment.
- Research and recommend measures and models for environmentally sound and safe treatment and environmental restoration at hotspots; develop and demonstrate isolation and decontamination methods at selected hotspots.
- Strengthen environmental management capacity regarding hotspots.
- Replicate demonstrated models and measures.

Implementing agency: Ministry of Natural Resources and Environment

Collaborating agencies: MARD, relevant Ministries, sectors and PPCs

International counterparts: UNDP, DANIDA, SDC, SIDA, GEF

Implementation duration: Phase 1: 2006 - 2010; Phase 2: 2011 - 2020

Prioirity level: Highest

Estimated cost: US$ 18.75 million

6 SOUND MANAGEMENT, DISPOSAL AND PHASE-OUT OF PCBs AND PCB-CONTAINING ELECTRICAL EQUIPMENT AND INDUSTRIAL PRODUCTS

Objective:

Safely manage, dispose and phase-out PCBs and PCBs-containing electrical equipment and industrial products

Expected outcomes:

- Nationwide use of PCB-containing oils and electrical equipment is controlled and managed.
- Safe and sound storage of PCB-containing waste oils and used equipment is ensured.
- PCB-contaminated waste oils and electrical equipment are thoroughly treated.
- Safe and sound management of other industrial products containing PCBs is achieved.

Main activities:

- Finalize, promulgate and disseminate regulations and technical guidelines for handling and disposal of PCBs and PCB-containing wastes.
- Develop capacity for rapid and exact analysis and assessment of PCB-containing oils and equipment; undertake additional inventories of PCBs in existing equipment and electrical networks; develop a roadmap for oil replacement and treatment of PCBs in existing electrical equipment.
- Assess PCB treatment capacity in Vietnam; Study and recommend measures for developing capacity for safe treatment of PCBs.
- Gradually treat and dispose PCBs and PCB-containing equipment in the electricity sector.
- Undertake inventories and assessments of other industrial products that contain PCBs; develop and implement measures to manage those products safely.

Implementing agencies: Ministry of Industry

Collaborating agencies: MONRE, EVN, relevant Ministries, sectors, PPCs

International counterparts: SDC, WB, SIDA, GEF

Implementation duration: Phase 1: 2006 - 2010; Phase 2: 2011 - 2020

Priority level: High

Estimated cost: US$ 25.0 million

7 DEVELOPMENT OF TECHNICAL CAPACITY FOR POPs MONITORING AND ANALYSIS; ESTABLISHMENT OF THE NETWORK OF STANDARDIZED LABORATORIES FOR ASSESSING POLLUTION AND IMPACTS OF POPs ON HUMAN HEALTH AND THE ENVIRONMENT

Objective:

Develop technical capacity for POPs monitoring and analysis; and establish a network of standardized laboratories for assessing International and regional pollution and impacts of POPs on human health and the environment

Expected outcomes:

- National infrastructure and capacity for POPs monitoring and analysis are strenghtend.
- International cooperation programs for enhancing capacity and integration of research and development with respect to POPs.
- Network of Vietnamese laboratories capable of monitoring and analyzing POPs in Vietnam as well as participating in global POPs monitoring programs.

Main activities:

- Develop and implement a plan for strengthening national capacity for POPs analysis, with a focus on training sufficient competent human resources for POPs analysis in different environmental settings.
- Continuously develop laboratory infrastructure for POPs monitoring and analysis; develop a POPs sample bank.
- Establish national research and development programs and projects on POPs.
- Enhance participation in international and global POPs monitoring and analysis programs.

Implementing agency: Ministry of Natural Resources and Environment

Collaborating agencies: MPI, relevant Ministries.

International counterparts: GEF, UNDP, DANIDA, SDC, SIDA...

Implementation duration: 2006 - 2010

Priority level: High

Estimated cost: US$ 2.5 million

8 ASSESSMENT, STUDY, PROMOTION, ASSISTANCE AND MANAGEMENT ON APPLICATION OF BEST AVAILABLE TECHNIQUES AND BEST ENVIRONMENTAL PRACTICES TO REDUCE AND FINALLY ELIMINATE THE UNINTENTIONAL PRODUCTION OF POPs FROM PRODUCTION AND LIVING ACTIVITIES

Objective:

- Review the use of technologies that could unintentionally produce Dioxins/Furans in different industries; promote and support the application of BAT&BEP to reduce unintentionally produced Dioxins/Furans.
- Continuously reduce unintentionally produced Dioxins/Furans from living activities.

Expected outcomes:

- Technologies that could unintentionally produce Dioxins/Furans in different industries have been reviewed and assessed.
- Guidelines on BAT&BEP appropriate for the national circumstances in Vietnam have been developed.
- Programs for businesses, industries and communities to apply BAT&BEP to sustainably reduce Dioxins/Furans release sources have been promoted and supported.

Main activities:

- Undertake additional surveys and assessment of the use of technologies that could unintentionally produce Dioxins/Furans in different industries; forecast industrial development trends and develop options and relevant roadmaps to promote BAT, BEP to reduce Dioxins/Furans released sources.
- Develop and issue guidelines on BAT&BEP appropriate for the national conditions in Vietnam.
- Develop and apply standards for technologies and practices that have a high probability of releasing Dioxins/Furans; enhance the supervision and application of environmental standards for Dioxins/Furans.
- Monitor unintentional production and release of Dioxins/Furans from technologies, as recommended by the Convention.
- Raise communities' awareness of their lifestyle and habits that could potentially cause unintentional production of Dioxins/Furans, and options to reduce such unintentional releases.

Implementing agency: Ministry of Industry.

Collaborating agencies: MONRE, MOET, relevant Ministries, sectors.

International counterparts: UNDP, GEF, DANIDA, SDC, WB.

Implementation duration: Phase 1: 2006 - 2010; Phase 2: 2011 - 2020

Priority level: High

Estimated cost: US$ 6.25 million

9 SURVEY AND STUDY THE IMPACTS OF POP-CONTAMINATED ENVIRONMENT ON HUMAN HEALTH IN VIETNAM

Objective:

Understand the cause of diseases and other health impacts associated with POPs in order to prevent and reduce the consequences.

Expected outcomes:

- Level of impact of POPs pollution on human health is assessed.
- Causes of diseases and other health impacts associated with POPs are understood and relevant measures for prevention and reduction of these impacts are established.

Main activities:

- Develop programs for enhancing capacity for POPs monitoring, especially for assessment of biosamples.
- Survey and evaluate the level of impacts of each POPs compound on human health throughout the chemical lifecycle, and its distribution in the food chain.
- Develop and implement research programs on the mechanisms through which POPs impact human health.
- Recommend measures for preventing and reducing POPs impacts on public health.

Implementing agency: Ministry of Health

Collaborating agencies: MONRE.

International counterparts: UNDP, DANIDA, SDC, SIDA, WHO...

Implementation duration: 2006 - 2010

Priority level: High

Estimated costs: US$ 1.25 million

10 EDUCATION, TRAINING AND AWARENESS RAISING ON POPs ISSUES

Objective:

Raise awareness and understanding within various target groups on POPs and their impacts on human health and the environment, contributing to the sound management of POPs and the reduction of their impacts.

Expected outcomes:

- Active participation of NGOs and communities in supervision and sound management of POPs and reduction of their impacts.
- Enhanced awareness and understanding of POPs among target groups such as government, businesses, youth, women, peasantry, with a particular focus on POPs-exposed communities.

Main activities:

- Develop media campaigns to inform and educate people on POPs and their impacts on human health and the environment.
- Organize workshops, training courses and seminars on POPs for selected target groups to develop a network of trainers or disseminators to extend coverage to other groups.
- Diversify information dissemination options suitable for different target groups.
- Incorporate POPs information into common practices or programs for the public, such as labor safety, food hygiene, production skills dissemination etc.

Implementing agency: Ministry of Natural Resources and Environment

Collaborating agencies: MOET, relevant Ministries, sectors and PPCs

International counterparts: SIDA, SDC, UNDP, WB...

Implementation duration: 2006 - 2010

Priority level: High

Estimated cost: US$ 0.32 million

11 ENHANCEMENT OF TECHNICAL AND FINANCIAL SUPPORT TO IMPLEMENTATION OF THE STOCKHOLM CONVENTION IN VIETNAM

Objective:

Ensure the necessary resources to implement the NIP in Vietnam in harmony with national socio-economic development programs.

Expected outcomes:

- Financial and technical resources to implement the NIP are mobilized and allocated adequately and reasonably.
- Activities to implement Stockholm Convention to protect human health and the environment against POPs in Vietnam are incorporated effectively into national and local socio-economic development programs.

Main activities:

- Balance and arrange Governmental budget allocations for implementation of the Stockholm Convention in Vietnam.
- Promote bilateral and multilateral cooperation to mobilize international resources for implementation of the Convention.
- Set priorities and incorporate activities to implement the NIP into national and local socio-economic development programs.

Implementing agency: Ministry of Planning and Investment.

Collaborating agencies: MONRE, relevant Ministries and Sectors

Implementation duration: 2006 - 2010

Priority level: High

Estimated cost: US$ 0.32 million

12 STRENGTHENING CAPACITY FOR MANAGING AND CONTROLLING THE PRODUCTION, IMPORT-EXPORT, USE AND TRANSPORT OF PROHIBITED CHEMICALS INCLUDING POPs IN VIETNAM

Objective:

Ensure the necessary capacity within competent and relevant authorities for effective cooperation and implementation regarding sound management of POPs and toxic chemicals.

Expected outcomes:

Capacity of competent and relevant authorities for identifying and controlling of POPs are enhanced to fulfill the obligations requirements for the sound management of POPs and the obligations of the Stockholm Convention.

Main activities:

- Evaluate the management capacity of competent and relevant authorities for implementation of the Stockholm Convention in Vietnam.
- Develop appropriate training programs to strengthen the capacity of relevant authorities such as the General Department of Customs MOF, the Market Management Department MOT, the Plant Protection Department MARD, the Department of Science and Technology MOI, VEPA (MONRE) provincial Departments of Trade, provincial Departments of Natural Resources and Environment, etc.
- Implement training programs at central and local levels.
- Harmonize the working and organization mechanisms of competent and relevant authorities to enhance the efficiency of collaboration on management and control of POPs and their impacts.

Implementing agency: Ministry of Trade

Collaborating agencies: General Department of Customs, MONRE, relevant Ministries, PPCs

International counterparts: SIDA, SDC, UNEP, WB

Implementation duration: 2006 - 2010

Priority level: High

Estimated cost: US$ 0.32 million

13 STUDY AND DEVELOPMENT OF EMISSION AND TECHNOLOGICAL STANDARDS ASSOCIATED WITH POPs IN LINE WITH DEVELOPMENT AND INTEGRATION NEEDS

Objective:

- Enhance capacity for scientific research and technological development on monitoring and safe treatment of POPs.
- Develop emission and technological standards associated with POPs treatment and monitoring.

Expected outcomes:

- Programs of research, analysis and assessment of POPs contamination are developed, together with enhanced technological capacity for safe treatment of POPs stockpiles and wastes.
- A complete set of environmental standards for the first 12 POPs are developed, together with selection criteria for technologies and practices to be used in order to manage and promote BAT&BEP to reduce unintentional production of POPs.

Main activities:

- Implement programs to develop capacity for analysis, monitoring and assessment of POPs contamination to fulfill the obligations of Stockholm Convention in Vietnam.
- Research and determine sound measures and technologies for safe treatment of POP stockpiles and wastes.
- Develop and implement international cooperation programs for research and development related to POPs and implementation of the Stockholm Convention.
- Develop a complete set of environmental standards for the first 12 POPs.
- Develop criteria and standards for technologies and practices in order to manage and promote BAT&BEP to reduce unintentional production of POPs.

Implementing agency: Ministry of Science and Technology

Collaborating agencies: MONRE.

International counterparts: GEF, UNDP, DANIDA, SDC, SIDA...

Implementation duration: 2006 - 2010

Priority level: Medium

Estimated cost: US$ 0.32 million

14 DEVELOPMENT OF NATIONAL INFORMATION SYSTEM, WORKING NETWORK ON POPs AND PROMOTION OF STAKEHOLDER AND PUBLIC PARTICIPATION IN THE SOUND MANAGEMENT OF POPs

Objective:

Develop a national information system and working network for updating, exchange and management of information on POPs and associated chemicals and hazardous wastes, supporting the implementation of the Stockholm Convention in Vietnam.

Expected outcomes:

- A national information system on POPs and associated chemicals and hazardous wastes that supports POPs management and is compatible with other national environmental information systems and relevant international information systems is established.
- Capacity of stakeholders from central to local levels for synthesis and management of POPs information is strengthened.
- A mechanism for collaboration among stakeholders on Stockholm Convention implementation is clarified and regulated for effective and rapid exchange and updating of POPs information.

Main activities:

- Design an organization and collaboration mechanism among stakeholders in Stockholm Convention implementation in Vietnam, from which, an effective mechanism for updating, exchange and management of POPs information is developed.
- Design, develop and operate an information management system and database on POPs and associated chemicals and hazardous wastes, supporting POPs management and Convention implementation.
- Strengthen the capacity of stakeholders from central to local levels for collection and management of POPs information.
- Enhance a working network on POPs for stakeholders such as management agencies, research bodies, NGOs, environmental services, communities etc in order to exchange information, encourage and mobilize multi-stakeholder participation in implementation of the Stockholm Convention.

Implementing agency: Ministry of Natural Resources and Environment

Collaborating agencies: Relevant Ministries, sectors, urban environment companies and PPCs

International counterparts: GEF, UNDP, UNEP, SIDA, SDC...

Implementation duration: 2006 - 2010

Priority level: Medium

Estimated cost: US$ 0.32 million

15 ASSESSMENT OF POPs MANAGEMENT IN THE WHOLE COUNTRY

Objective:

- Supervise assessments of the national situation regarding POPs.
- Evaluate the effectiveness of activities to implement the Stockholm Convention and regularly report to the Government and the Convention.

Expected outcomes:

- POPs data is updated regularly.
- Regular reports are produced on the POPs situation in line with management requirements and obligations under the Convention.

Main activities:

- Supervise and monitor the POPs situation in each locality, particularly in hotspots related to POPs stockpiles and contamination.
- Monitor and supervise the management and use of technologies that could unintentionally produce POPs in industries.
- Apply information management systems for POPs and associated chemicals and hazardous wastes to produce regular and accurate updates, and exchange and manage information on POPs.
- Evaluate the effectiveness of implementation of the Stockholm Convention in Vietnam.
- Compile reports on human health and environmental protection against POPs to submit to the Government and the Secretariat of the Convention.

Implementing agency: Ministry of Natural Resources and Environment

Collaborating agencies: MARD, MOI, relevant Ministries, Sectors and PPCs.

Implementation duration: Phase 1: 2006 - 2010; Phase 2: 2011 - 2020

Priority Level: Medium

Estimated cost: US$ 1.875 million

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