



Ministry of Environment  
of the Republic of Moldova

Sustainable POPs Management Office



# Improving the Management of POPs in Moldova

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# **Sustainable POPs Stockpiles Management in Moldova**

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## **Obsolete Pesticides in the Republic of Moldova**

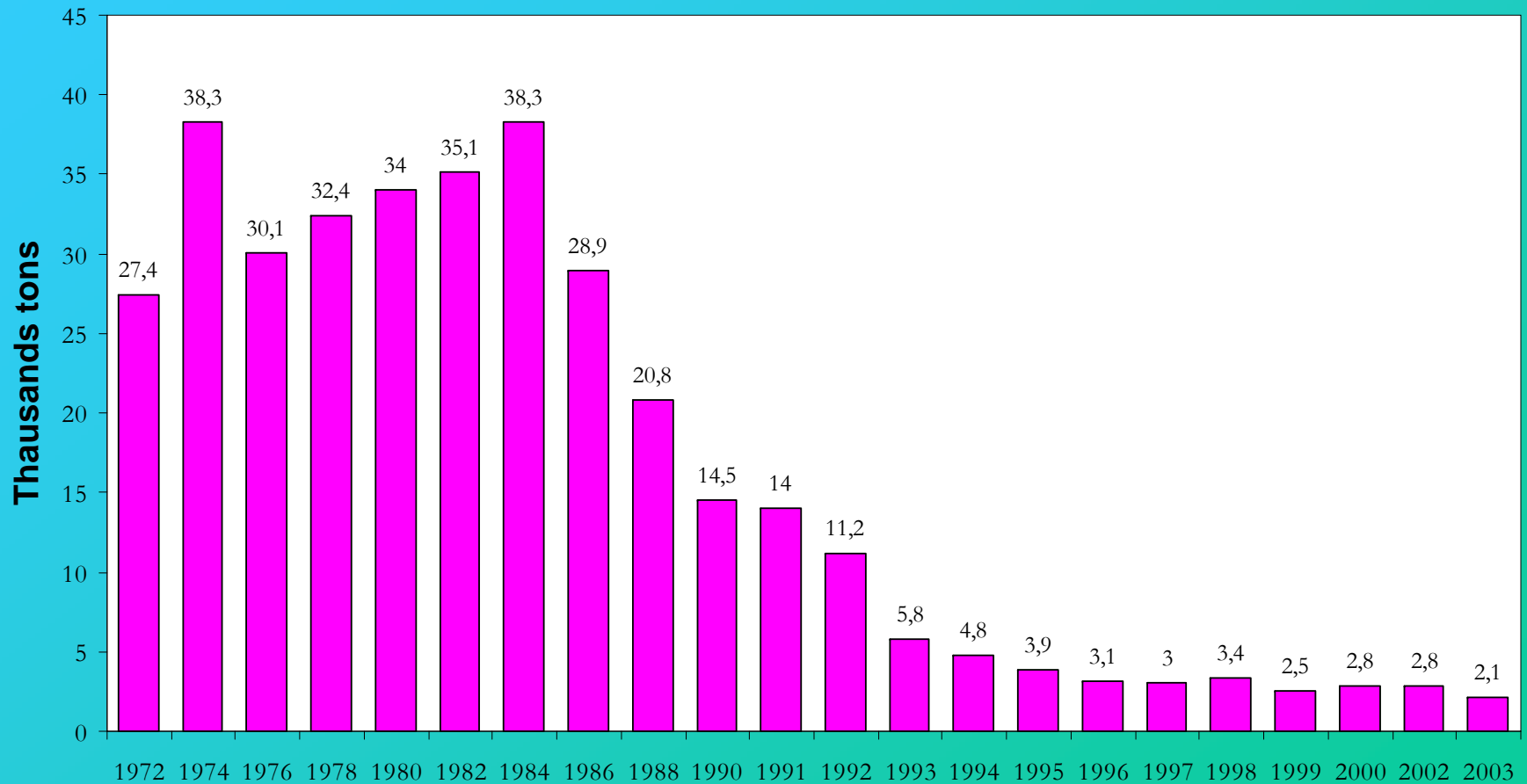
- **The Republic of Moldova has never produced pesticides, including POP pesticides;**
- **Most of the existing POP pesticides (including DDT) are strictly regulated in Moldova since 1970-1972;**
- **POP pesticides are banned from being used in agriculture (farming, forestry, household);**

### ***Origins of the problem:***

- **Intensive use of chemicals in agriculture in the past;**
- **Storage of obsolete pesticides in improper conditions;**
- **Change of ownership in agricultural sector;**
- **Lack of financial resources in the transition period.**

# Sustainable POPs Stockpiles Management in Moldova

## Pesticides use in Moldova



# **Sustainable POPs Stockpiles Management in Moldova**

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## **Government Initiatives and Actions**

*on management of obsolete pesticides and decrease of their negative impact on the environment and population health*

**Decision no. 1543 from November 29, 2002 on additional measures to stock and destruct obsolete pesticides:**

- **a plan of measures approved;**
- **funding to carry out the works to be allocated from the state budget and National Ecological Fund;**
- **one centralized warehouse for obsolete pesticides in each district to be identified;**
- **works to be carried out by the Ministry of Defense and Department of Emergency Situations.**

# **Sustainable POPs Stockpiles Management in Moldova**

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## **The Stockholm Convention on Persistent Organic Pollutants**

- **On May 23, 2001 the Ministry of Ecology, Constructions and Territorial Development signed the Stockholm Convention on POPs;**
- **By signing the Convention the country expressed political commitment to solve this national/global POPs issue;**
- **Lack of resources & capacities;**
- **GEF addressed to provide support.**

## **Sustainable POPs Stockpiles Management in Moldova**

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### **GEF/WB Project “Enabling activities related to the implementation of the Stockholm Convention on POPs” (July 2002 – July 2004)**

#### **Project Objectives:**

- **Facilitation of the Convention’s ratification**
- **Develop a National Implementation Plan (NIP)**

#### **Project Activities:**

- **NIP preparation activities;**
- **Strengthen institutions and build capacity;**
- **Information exchange and public information and awareness.**

#### **NIP Priorities:**

- **Inventory of POPs emissions sources;**
- **POPs stockpiles assessment;**
- **Contaminated sites identification;**
- **Determination of management measures in the field of POPs;**
- **Assessment of National Capacity;**
- **Development of implementation proposals.**

# **Sustainable POPs Stockpiles Management in Moldova**

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## **Enabling activities project results (1)**

### **Obsolete pesticides stockpiles in 2003**

*(National Inventory based on Inventory lists)*

- **1 700 tons, in 350 poor equipped warehouses, including 777 tons of known pesticides - 0.08 tons of heptachlor and 1.6 tons of toxaphene;**
- **4 000 tons buried in the landfill in the South of the country (Vulcanesti district), including 650 tons of DDT and 1 300 tons of hexachlorhexane;**
- **About 1000 abandoned and/or destroyed pesticides warehouses.**

## **Sustainable POPs Stockpiles Management in Moldova**

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### **Enabling activities project results (2)**

- **On February 19, 2004 the Stockholm Convention on Persistent Organic Pollutants has been ratified by the Republic Moldova;**
- **On October 20, 2004 the Moldovan Government approved:**
  - ***The National Strategy on the reduction and elimination of POPs; and***
  - ***National Implementation Plan of the Stockholm Convention (NIP).***

*These documents have been ensuring the implementation of Stockholm Convention and will contribute in the solving of the environmental problems regarding the POPs impact on the human health and environment*



# **Sustainable POPs Stockpiles Management in Moldova**

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## **Repackaging and centralized storage:**

### **2003-2005**

- Works carried out in 22 out of 37 districts;
- 2 000 tons of pesticides stored in equipped and guarded warehouses;
- About \$400,000 spent from the state budget and National Ecological Fund;

### **2006-2008**

- Works carried out in 19 districts, with about 1330 tons of pesticides;
- Funding received from NATO/OSCE Project, implemented by the Ministry of Defense and from Milieukontakt International regional Project (the Netherlands), about €700,000.

### **June 2008**

- 3330 tons - the total amount of repacked and stored OP in 35 centralized district warehouses.

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## **NIP of Stockholm Convention Implementation**

- GEF/WB PDF-B Project “Grant for Preparation of Sustainable POPs Stockpiles Management Project” (2005)**
- GEF/WB ”Persistent Organic Pollutants (POPs) Stockpiles Management and Destruction” Project (2006-2010)**
- GEF/CIDA Project “Remediation of POPs pesticides polluted areas and decontamination of PCB polluted oils in electric equipment” (2007-2009)**
- UNEP Project "Moldova-UNEP Partnership on capacity building for improving the environmentally sound management of chemicals in the Republic of Moldova and the implementation of SAICM” (2008-2009)**
- GEF/FAO Regional Project “Capacity Building on Obsolete and POPs Pesticides in Eastern European, Caucasus and Central Asian (EECCA) Countries” (2009-2011)**

## **POPs Management and destruction in Moldova**

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### **GEF/WB "Persistent Organic Pollutants Stockpiles Management and Destruction" Project**

- **The overall cost of the Project – US\$ 12.6 M, including GEF grant of US\$ 6.35 M, counterpart funding of US\$ 3.72 M from Government of Moldova and US\$ 2,53 M – activities related to POPs within other projects;**
- **Implementing period: March 2006 – May 2010;**

#### **Project objectives and tasks**

- **Protection of the environment and human health by safely managing and disposing of stockpiles of POPs containing or contaminated pesticides in agriculture and PCBs contaminated equipment in energy sector;**
- **Strengthening the regulatory and institution arrangement for the long term control of POPs and other toxic substances in line with the requirements of the Stockholm Convention and other related conventions and protocols ratified by Moldova.**

## **POPs Management and destruction in Moldova**

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### ***Component 1. MANAGEMENT AND DESTRUCTION OF POPs:***

- **Repacking and storing of obsolete pesticides (3 000 tons) from agriculture in centralized warehouses;**
- **Transportation and disposal of 1 150 tons of pesticides (from 10 districts).**

#### **Implementation status**

- **3 330 tons of obsolete pesticides repacked and stored in 35 centralized district warehouses. The works finished in June 2008;**
- **1 292 tons of obsolete pesticides transported from 11 districts (1/3 of the country territory) and disposed; the works finished in June 2008.**

#### **Current situation**

- **2 000 tons of OP are stored in 22 equipped and guarded warehouses. Their evacuation and destruction is planned in the near future within the the NATO Project implemented by MoD;**
- **4 000 tons OP buried in the landfill in the South of the country.**

# POPs Management and destruction in Moldova

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## **Component 2: Strengthening the Regulatory Framework and Capacity Building for POPs Management**

- **Providing a legal basis for POPs chemical management** under Stockholm Convention requirements and set-up of an overall chemical safety system in Moldova according the EU regulation and legislation related to handling of dangerous chemical substances and hazardous waste:
  - revision and gap analyses of the existing legislation regarding the compliance with EU regulation;
  - assistance in drafting relevant regulations and instructions;
  - development of regulatory mechanisms;

### ***Implementation status:***

- At this moment - elaboration of 2 law projects on wastes' and on chemicals management; several regulation, instructions and handbooks packages in the field of POPs.

## POPs Management and destruction in Moldova

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### ***Component 2: Strengthening the Regulatory Framework and Capacity Building for POPs Management***

- **Capacity Building for POPs Management:** strengthening of Inspectorates for enforcement of POPs regulations and prevention of POPs stockpiles accumulation.
- **Upgrading and Strengthening of Existing Laboratories** for POPs analysis.

#### ***Implementation status***

- The laboratory of State Centre for Testing and Certification of Fitosanitary Products and Fertilizers of MAFI was equipped (Euro 278 000) to improve its capacity for analyzing pesticides content in the environment within the NATO Project (2007);
- The Monitoring Center of the State Hydrometeorological Service was modernized with the laboratory equipment (\$470 000) for the analysis of PCB and other POPs in environment components, purchased in the frame of the POPs project (2009);

## POPs Management and destruction in Moldova

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### **Component 3. INSTITUTIONAL STRENGTHENING AND PROJECT MANAGEMENT SUPPORT (1)**

- **Developing of POPs Information Management and Reporting System, POPs Monitoring Network;**

*Implementation status:*

Will be done after approval of relevant regulatory framework.

- **Identification of POPs Residuals and Mapping of Polluted Areas** - about 1 500 areas which are polluted with POPs, particularly around destroyed warehouses and depots for temporary storage of obsolete and banned pesticides);

*Implementation status:*

- 980 potentially polluted sites were investigated and sampled. The investigation covered 24 out of 33 administrative districts. Some other 500 sites are awaiting identification and assessment;
- A significant part of soil samples were already analyzed by gas chromatography. The principal pollutants found among investigated POPs were DDTs and HCHs. Toxaphene, Heptachlor and Chlordane appeared sporadically. Aldrine, Dieldrine, Endrine, HCB and Mirex were not detected in the investigated samples.
- Data acquired in the field are being transferred into the developed POPs database. The information will be used for facilitating the decision making on polluted sites management/decontamination.



## POPs Management and destruction in Moldova

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### *Component 3. INSTITUTIONAL STRENGTHENING AND PROJECT MANAGEMENT SUPPORT (2)*

#### POPs Awareness and Educational Activities

The Objectives of the Campaign are oriented towards:

- conducting an information, awareness and education campaign in the field of POPs in Moldova and organization of conferences and workshops at the international, national and local level;
- developing and carrying out an educational process for the target groups with higher exposure for POPs impact (women, children, farmers, employees of the energy sector etc);
- providing assistance to the MENR in the strengthening of the Environmental Information Centre (CIM) in the field of POPs information.

Is implemented by 5 teams (organizations) with experience in the field of information, awareness and education: Association INQUA-Moldova, Regional Environmental Centre for Moldova (REC Moldova), Moldovan Ecological Movement (MEM), Garamond Studio SRL and Casa Imago SRL.



# POPs Management and destruction in Moldova

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## Component 3. INSTITUTIONAL STRENGTHENING AND PROJECT MANAGEMENT SUPPORT (2)

### POPs Awareness and Educational Activities

#### *Implementation status*

The major results of the campaign in the period of 2006-2009:

- organized more than 20 information and training workshops, with more than 1 000 participants;
- conducted two national, one local public opinion survey and target groups surveys in order to evaluate the level of knowledge in the field of POPs;
- developed posters, leaflets, brochures, calendars;
- organized TV and Radio programs, press-conferences;
- organized and carried out The 9th International HCH and Pesticides Forum;
- on the national web page [www.moldovapops.md](http://www.moldovapops.md) all POPs activities are shown and updated monthly;
- a hotline were established within the Sustainable POPs Management Office in order to assist other interested people from Moldova.

## Remediation of polluted sites

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### GEF/CIDA Project “Remediation of POPs pesticides polluted areas and decontamination of PCB polluted oils in electric equipment”

- Project cost – grant CAD 440 000;
- Financed by the Canadian Fund on POPs (CIDA)
- Implementation period: July 2007 – December 2008;

#### Project objectives

Selection and testing of the POPs contaminated areas remediation technologies and techniques in the conditions of Moldova and validation of the most adequate for their application in the future.

#### Project components

- A. POP pesticides contaminated sites remediation;
- B. Inventory of PCB contaminated transformer oils; and
- C. Information, awareness and training activities.

# **Sustainable POPs Stockpiles Management in Moldova**

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## **Implementation**

### **Component A: Testing of remediation technologies of POP pesticides polluted areas**

**Two remediation techniques have been recommended as the most adequate techniques to be tested on the former pesticides storage facilities:**

- Isolation of contaminated materials from two selected sites in cofferdams covered by protection layers**
- Biological remediation with Daramend of one site.**

**These technologies have been selected based on the costs and assessments of the opportunities of their further application by local authorities on the facilities under their administration.**

**Three places have been selected based on some characteristics and criteria, on feasibility study and on additional analyses performed.** 19

## **Government Initiatives and Actions**

### ***In the filed of PCB Management***

**On October 20, 2004 the Moldovan Government approved:**

- *The National Strategy on the reduction and elimination of POPs; and***
- *National Implementation Plan of the Stockholm Convention (NIP).***

**Decision no. 81 dated February 2, 2009 on PCB:**

- *Which states that Ministry of Environment will develop additional guidelines and instructions on implementation of the PCB regulation and;***
- *During one year will perform the national PCB Inventory.***

# **Activities In the filed of PCB Management**

***According to the National Implementation Plan of the Stockholm Convention (NIP) National Strategy on the reduction and elimination of POPs - the following priorities had been set up:***

- 1. Capacity building for energy sector for PCB identification in power equipment***
- 2. Inventory of PCBs content in power equipment in the energy sector***
- 3. Country wide handling of PCB contaminated and damaged equipment***

## **Sustainable POPs Stockpiles Management in Moldova**

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### **Activities** *In the filed of PCB Management*

**Capacity building for energy sector for PCB identification in power equipment**

***On Feb 2009 a PCB regulation on PCB Inventory has been developed and approved by the Government***

***The detailed PCB Inventory in closed system had been launched in Sep 2008 in terms of staff preparation and initiation seminars***

***The PCB Inventory in closed systems had been divided in two sector: (1) energy sector which includes – generation, transpiration and distribution, totally **28000** of electrical units with oil to be inventoried and (2) Consumers – **7000** electrical units to be inventoried***

## **Activities Involved parties**

**The PCB Inventory activities are supported by:**

- 1. Global Environmental Facility via the World Bank***
- 2. Canadian Trust Fund on POPs via World Bank and***
- 3. National Ecological Fund***

**The PCB Inventory are coordinated by the Ministry of Environment via POPs Management Office**

# Sustainable POPs Stockpiles Management in Moldova

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## Activities

### *In the filed of PCB Management*

The PCB Inventory in closed systems in energy sector includes  
– generation, transportation and distribution, totally 28000 of  
electrical units

*Totally there are 8 companies in the energy sector (4 companies in the generation sector, 1 transport company and 3 distributors of energy)*

*The approach followed in the energy sector was to trained companies' staff responsible for technical inspection who will handle the PCB Inventory.*

*Basically the technical engineers have been trained and equipment with sampling and precautionary equipment.*



## **Activities**

### ***In the filed of PCB Management Screening Analyses of oil samples & Data management***

***The PCB screening is done in two level:***

- 1. PCB screening is done using L2000Dx analyzer,***
- 2. If PCB content is above 50 ppm - the PCB false positive samples are analyzed by GC-MS***
- 3. Totally there are 4 screening centers (three in energy sector) and the fourth one for Consumers at State Hydro meteorological Services equipment with L2000Dx and reagents including the GC-MS method for all received false positive samples***
- 4. All results are to be introduced in the National Database for electrical equipment with volumes of dielectric oil greater than 5dm<sup>3</sup>***
- 5. Requirements to database are in line with Basel Convention and the toolkit developed under this convention, named “PCB Inventory and Management Decision Supportive Tool (DST)”.***

### **Activities**

#### ***In the filed of PCB Management PCB Inventory outputs***

- 1. It is expected that by the end of 2010 the PCB inventory of the closed system is to be completed***
- 2. All electrical equipment (closed systems with volume of dielectric oil higher than 5 dm<sup>3</sup>) inventoried entered into national database***
- 3. The owners of PCB identified equipment aware and specific PCB Management Plans developed for final treatment***

# **Sustainable POPs Stockpiles Management in Moldova**

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## **Activities** *In the field of PCB Management*

**Country wide handling of PCB contaminated and damaged equipment**

***Within the GEF/WB project one of the main priority in the field of PCB was solved***

***More than 18 thousands located at 13 electrical substations of PCB contaminated capacitors have been dismantled, packed and disposed***

***The total amount PCB disposed capacitors is 934 tons***

***The period of the above activities is November 2006 – April 2007***

**Activities**  
*In the filed of PCB Management*  
**Follow-up**

- 1. Update the National PCB Inventory yearly***
- 2. Development of the PCB Management Plan for PCB contaminated equipment***
- 3. PCB Inventory of the open systems***

# POPs Management and destruction in Moldova

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## OUR PARTNERS

- Ministry of Agriculture and Food Industry,
- Ministry of Industry and Infrastructure,
- Ministry of Defense,
- Emergency Situations Department,
- State Enterprise „Moldelectrica”,
- NATO/OSCE Project for Destruction of Pesticides and Dangerous Chemicals (*Ministry of Defense*),
- Regional Project „Elimination of Acute Risks of Obsolete Pesticides in Moldova, Georgia and Kyrgyzstan” (*Milieukontakt International, The Netherlands*),

## CONTRACTED COMPANIES

- Tredi S.A., France,
- NIRAS, Denmark,
- COWI, Denmark,
- Regional Environmental Centre “REC-Moldova”,
- Ecological Movement of Moldova

## **POPs Management and destruction in Moldova**

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***Thank you!***