



Larisa CUPCEA
Consultant
Republic of Moldova



OBSOLETE PESTICIDES MANAGEMENT AND DESTRUCTION IN MOLDOVA

**Larisa Cupcea, Ion Barbarasa, Valentin Plesca,
Iordanca-Rodica Iordanov**

**Origins of the problem*

- **The Republic of Moldova has never produced pesticides, including POPs pesticides;**
- **Intensive use of chemicals in agriculture in the past – between the 1950s and 1990s about 560,000 tons of pesticides were used in agricultural sector, including 22,000 tons of organochlorine pesticides;**
- **Absence of an adequate pesticides management strategy – more than 1,700 tons of banned and useless pesticides have been accumulated over the years in storage facilities up to 1990;**
- **Change of ownership in agricultural sector – the warehouses have been dilapidated in many cases (1000 in 1990 vs 350 in 2002);**
- **Improper storage conditions – mixture of POP pesticides, non-POP pesticides and fertilizers (the average amount of POP pesticides in the obsolete pesticide stock is about 20-30%);**
- **Lack of financial resources in the transition period.**

The bases of obsolete pesticides management

Government Initiatives and Actions

November 2002 – Decision 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.

The Stockholm Convention on POPs

- **May, 2001 – Moldova signed the Stockholm Convention on POPs;**
- **February, 2004 – the Stockholm Convention has been ratified by the Republic Moldova;**
- **October, 2004 – the National Strategy on the reduction and elimination of POPs and the NIP for the Stockholm Convention were approved.**

Obsolete pesticides management and destruction

Main stages and results

- Stage 1 – Inventory of POPs stockpiles;**
- Stage 2 – Repackaging and temporary storage of OP stockpiles;**
- Stage 3 – Strengthening the regulatory framework and capacity building for POPs management;**
- Stage 4 – Elimination of POPs stockpiles;**
- Stage 5 – Inventory and mapping of POP pesticide polluted areas;**
- Stage 6 – Remediation of POPs polluted sites;**
- Stage 7 – POPs awareness and educational activities.**

1. First Inventory of OP stockpiles

2003-2004:

- **1,700 tons in 350 poor equipped warehouses, including only 780 tons of known pesticides;**
- **4,000 tons buried in the landfill in the South of the country, including 650 tons of DDT and 1,300 tons of HCH.**



2. Repackaging and temporary storage of OP

2004-2008:

- **Works carried out by the Ministry of Defense, Department of Emergency Situations and Milieukontakt International (Netherlands);**
- **Financing – National Environmental Fund (NEF), the National budget, NATO/OSCE project and Milieukontakt International;**
- **Results – 3,350 tons of pesticides stored in 37 equipped and guarded warehouses;**



3. Strengthening the regulatory framework and capacity building

A number of legislative and bylaw documents in the field of POPs management developed or revised, including:

- **Law on Chemicals;**
- **Law on Waste;**
- **Law on Environmental Protection;**
- **Regulation on classification, labeling and packaging of substances and mixtures;**
- **Regulation on waste incineration;**
- **National Program on Sound Chemicals Management;**
- **a series of instructions and guidelines as tools for implementing the new legislation;**

4. Elimination of OP stockpiles

2007-2022:

- 4,220 tons of obsolete solid and liquid pesticides, and contaminated package waste evacuated and disposed in France, Germany and Poland.

Current situation:

- Several hundred tons of pesticide waste and other chemicals appeared from previously unknown small deposits, or those smuggled into the country, or left unused;
- Old pesticides from some warehouses in the Transdnistriean Region have not been evacuated.

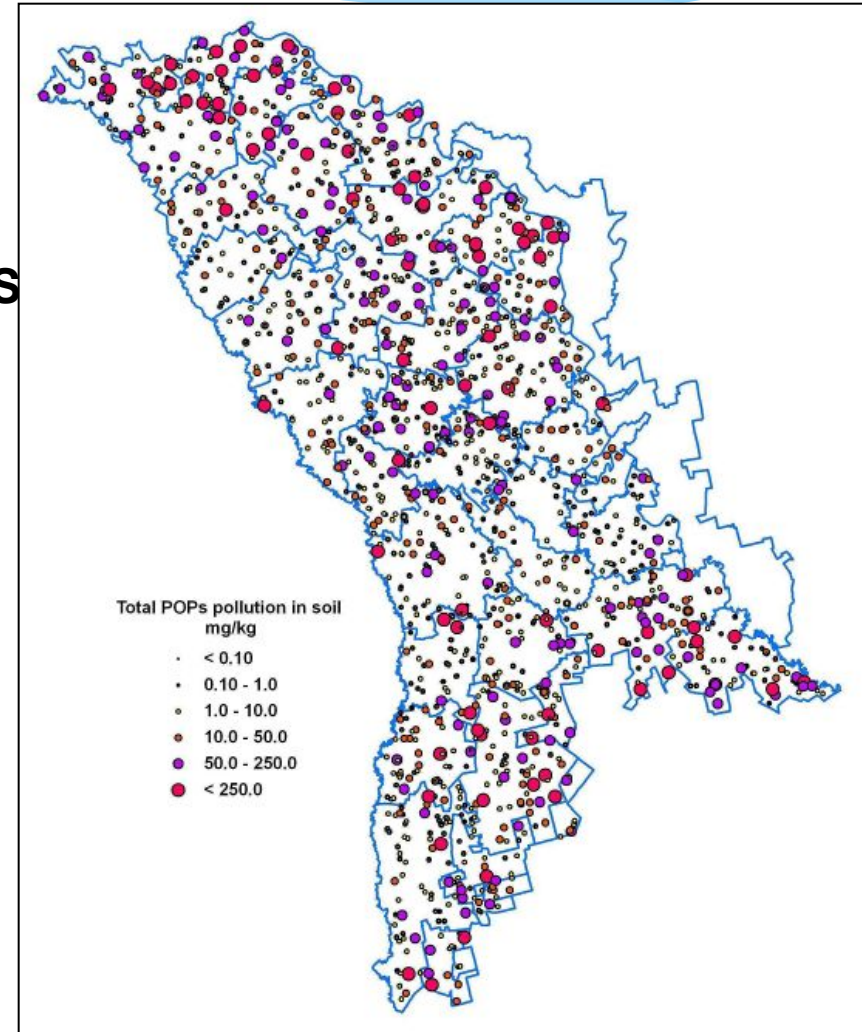


4. Elimination of OP stockpiles

Project	Financing Agency	Implementing/ coordinating Agency	Period of elimination works	Amount of OP eliminated, tons
<i>POPs stockpiles management and destruction</i>	GEF/WB, MD Gov, NEF	MoE (POPs PMT)	2007-2008	1293
<i>Remediation of environmental burdens caused by pesticides in Moldova</i>	CzDA	CzDA, MoE (POPs PMT)	2011-2015	452
<i>Elimination of obsolete pesticides stocks with major risks (liquid OP)</i>	NEF	MoE (POPs PMT)	2013-2014	200
<i>Improving capacities to eliminate and prevent recurrence of OP as a model for tackling unused hazardous chemicals in the former Soviet Union</i>	EC/FAO	FAO, MAFI, MoE (POPs PMT)	2013-2015	360
<i>Destruction of pesticides and hazardous chemicals in the Republic of Moldova</i>	NATO, NEF	NATO, MoD	2013-2017	1350
<i>Disposal of dangerous pesticides from the Transnistrian Region of Moldova</i>	OSCE	OSCE Mission to Moldova, MoE (POPs PMT)	2013-2022	565

5. Inventory and mapping of POP pesticide polluted areas

- ❑ The POPs pollution study and risk assessment methodology developed and applied for identification and mapping of potentially polluted sites;
- ❑ POPs Pollution Database using the GIS technology was built and tested;
- ❑ 1,600 hot spots have been identified, investigated, sampled, and organized in the data base accessible on web: <http://pops.mediu.gov.md>
- ❑ To be used by the central and local authorities in monitoring and supervising of the polluted sites, as a tool for identification of environmental and health risks and will facilitate the decision making on polluted sites management/ decontamination.



5. Inventory and mapping of POP pesticide polluted areas

Prioritizing of POPs contaminated sites

Ranking the site hazard according to the five generic groups:

Site Hazard Total Score	Site hazard rank	Site priority for remediation strategy	Action needs	Number of contaminated sites	
> 95 %	I	Very high	Urgent	76	4.8 %
65 – 95 %	II	High	In short-term perspective	467	29.7 %
35 – 65 %	III	Medium	In medium-term perspective	513	32.7 %
5 – 35 %	IV	Low	In long-term perspective	440	28,0 %
< 5 %	V	Negligible	General protective / low cost measures required	76	4.8 %

6. Remediation of POPs polluted sites

- **Three remediation techniques have been selected as the most adequate 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;**
 - **phytoremediation.**

- **Selection was based on the costs and assessment of the opportunities of their further application by local authorities on the facilities under their administration.**

- **These remediation techniques have been tested on five places selected based on some characteristics and criteria, on feasibility study and on additional analyses performed.**



7. POPs awareness and educational activities

- **A communications framework for POPs and other chemicals and to improve awareness of Moldovan public about POP sources and their effects through awareness building activities, as well as training and education of target groups with higher exposure to risks has been created;**
- **A broad range of awareness activities, ranging from print to video products, maintenance of the website, workshops, conferences, radio and television shows have been implemented;**
- **Monitoring and evaluation studies have shown that the public's and official's level of awareness and knowledge about POPs issues has increased.**



CONCLUSIONS AND LESSONS LEARNT (1)

- **A comprehensive strategy and action plans at the national level is the key for an efficient implementation of relevant policies and for providing the appropriate funding resources;**
- **A key to success is the cooperation and communication among the relevant stakeholders (ministries, agencies, control bodies, local authorities, retailers, private owners) involved in the hazardous waste management;**
- **The establishment of a reliable cooperation with the donors at an early stage was important. Due to this fact, transparency and better planning of projects activities in terms of finance and procurement have to be established;**
- **The approaches and decisions that led to successful achievement of the objectives were based on the fact that all initiated projects and measures carried out had continuity in time and trained personal. All parties have to respect their commitments and activities and complement each other and complete their tasks within the set time frame;**
- **A comprehensive assessment and establishment of a detailed inventory is essential to have a control over the OP stockpiles;**

CONCLUSIONS AND LESSONS LEARNT (2)

- **Streamlining of the existing policies in the field of OP management and development of subsequent legislation is essential for ensuring the effectiveness of the implementation;**
- **From a practical implementation point of view, one of the important decisions was the establishment and maintenance of the project management team (e.g. POPs Sustainable Management PMT under the Ministry of Environment) that, once established, continued for 15 years to work in order to ensure the sustainability and effectiveness of OP and POPs stocks management and elimination activities;**
- **The selection and contracting of qualified consultants, both local and international, facilitated the successful implementation of planned activities and transferring knowledge to personnel;**
- **Compliance of and contribution from the government and the partners who have agreed to support projects are non-negotiable for the successful implementation of activities.**
- **Awareness raising activities at all levels of society are crucial throughout the entire process of approaching and solving of POPs issues.**

THANK YOU FOR YOUR ATTENTION !

Larisa CUPCEA

e-mail: lcupcea@yahoo.com