

***REMOVING THE  
THREATS OF  
OBSOLETE  
PESTICIDES IN  
MOLDOVA***



## *Why is it a threat?*

- ✦ **For decades, pesticides have been used worldwide as a mean to increase agricultural output, fight pests and control tropical diseases**
- ✦ **In Moldova, it is not uncommon for local residents to use the dismantled warehouses as building materials for their own sheds, houses and fences and even re-use obsolete pesticides for agriculture**
- ✦ **It is clear that obsolete pesticides lying out in the open or in ruined stores can easily pollute the environment and are a risk to human health.**



**Many chemicals  
are unidentified –  
Chemical in a  
sugar bag**



**Pesticides packages  
are damaged.  
Contamination is  
spreading to the  
environment**



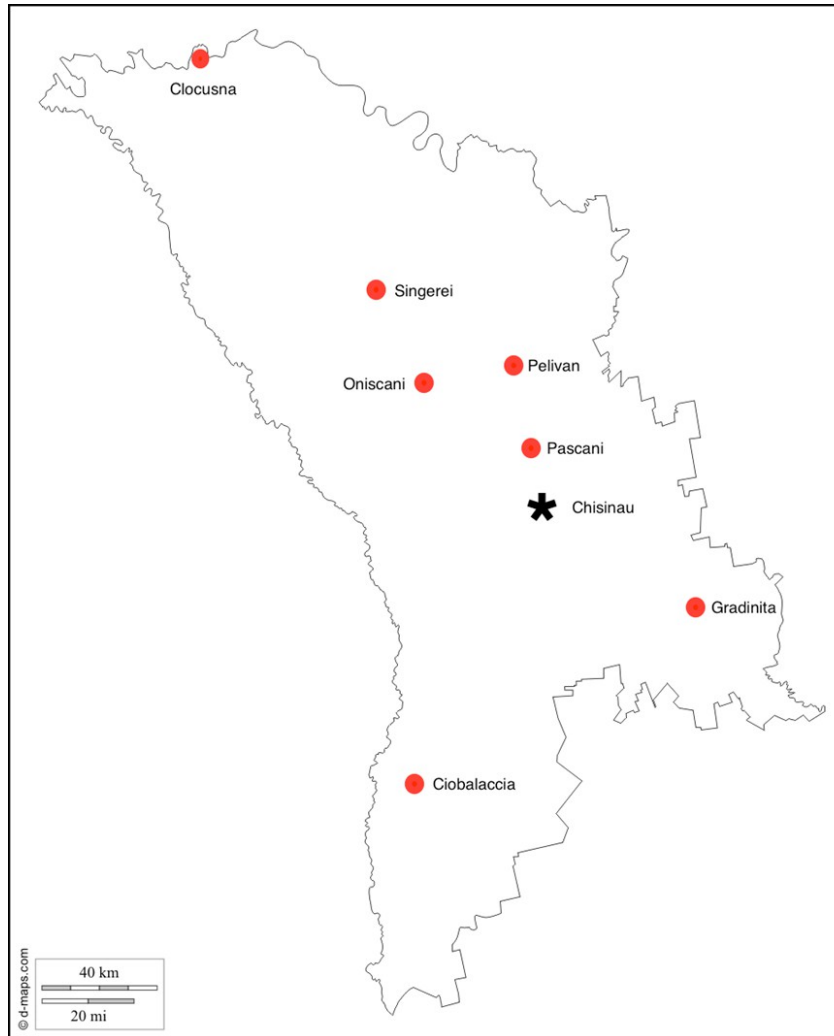




## ***DEKONTA's projects in Moldova***

<i><b>Project</b></i>	<i><b>Amount (t)</b></i>	<i><b>Summary</b></i>	<i><b>Status</b></i>
<i><b>Remediation of environmental burdens caused by pesticides in Moldova</b></i>	<i><b>202</b></i>	<ul style="list-style-type: none"> <li>• <i><b>Gradinita, Ciobalaccia and Clocusna storehouses</b></i></li> <li>• <i><b>Disposed in Germany</b></i></li> <li>• <i><b>Funded by the Czech Development Agency</b></i></li> </ul>	<i><b>Completed</b></i>
<i><b>Remediation of environmental burdens caused by pesticides in Moldova II</b></i>	<i><b>250</b></i>	<ul style="list-style-type: none"> <li>• <i><b>Singerei, Oniscani, Pelivan, Papauti storehouses</b></i></li> <li>• <i><b>Disposed in Germany</b></i></li> <li>• <i><b>Funded by the Czech Development Agency</b></i></li> </ul>	<i><b>Completed</b></i>
<i><b>Safeguarding and Disposal of hazardous chemical waste in Moldova</b></i>	<i><b>360,5</b></i>	<ul style="list-style-type: none"> <li>• <i><b>Pascani storehouse</b></i></li> <li>• <i><b>Project is running</b></i></li> <li>• <i><b>To be disposed in Poland</b></i></li> <li>• <i><b>Funded by FAO</b></i></li> </ul>	<i><b>Ongoing</b></i>

## *Location of the storehouses*





### Health and Safety Plan

- Elaboration of the Health and Safety Plan
- Desk research on the country's legislation regarding the management of hazardous waste

### Inventory

- Warehouses inspected in detail, photo documentation and drawings of buildings and their vicinity. Start of environmental awareness information campaign
- Documentation of the storage method. Quantities estimation.
- Sample collection, analysis and detailed inventory

### Safeguarding

- Site set-up. Site accessibility improvement.
- Purchase and import of packages for shipment and disposal
- Medical checkup of staff. Worker training
- Repackaging of pesticides into UN approved containers . Weighing and labelling the drums.

### Export

- Notification and permits from transit and import countries. Route planning.
- Payment of financial guarantee to the country of import
- Loading of the cargo into certified vehicles. Verify the weight of the cargo.

### Disposal

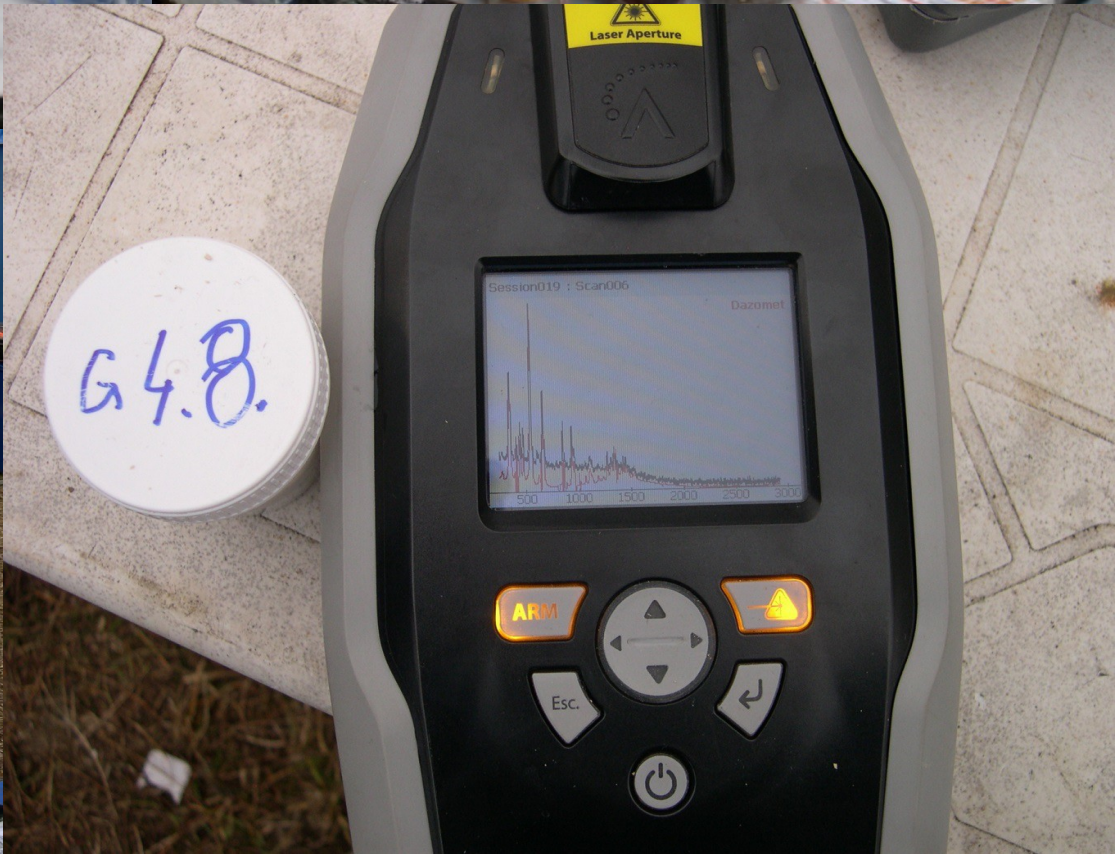
- Delivery of the hazardous waste cargo to the disposal facility
- Verify the weight of the cargo by the disposal facility
- Issue of waste disposal certificate by the disposal facility

### Site hand-over

- Survey of residual contamination on empty storehouses, bulding structures and site surrounding (soil, water sources and water streams)
- Environmental risk assessment
- Informating campaign to disseminate the results of the project to the local population





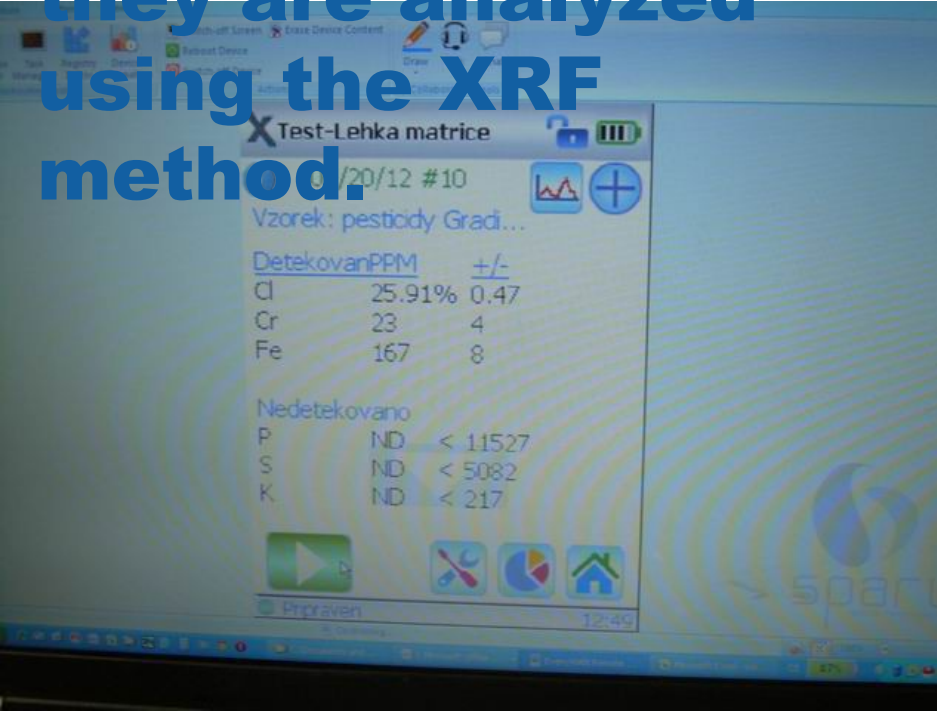




**The collected samples are analyzed (Raman Spectrometry) on the spot and taken to our on site mobile laboratory where they are analyzed using the XRF method.**



**All data about the concentration of Sulphur, Mercury, Chlorine and etc are important for the incineration companies.**









# *Air Quality Monitoring*





**In the case of Pascani, the safeguarding works started in May 2015, after the approval of the H&S Plan by the client**



**The repackaging of the waste has been completed at the end of July 2015.**





13H3/Y/03.09/A/PA-03/  
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13H3/Y/03.09/A/A-02  
43009-PEMA/6750/1250

13H4/Y/0912  
02-CIM/2711/JUTA  
400/1000



**The trucks are loaded using forklifts**

**The cargo is secured to the truck.**



**An ADR check is performed for each truck.**

**The driver is instructed on the nature of the waste.**



**Upon arrival at the incinerator a receipt confirmation is issued.**

**When the waste is incinerated, DEKONTA receives a confirmation of waste disposal.**



## *Main Challenges*

- **Lack of information regarding the pesticides stored in the storehouses. Storehouses in very poor conditions.**
- **Very poor access to the storehouses**
- **Presence of strong oxidizers in the storehouses. Permanent risk of fire.**
- **Routes for the transportation of the pesticides should be planned considering the countries of transit/import. Some authorities are quicker to approve the movement of the waste through/to their territory.**
- **Maritime transportation companies may refuse to transport the waste in their vessels.**



**Site access in very poor conditions. Road very muddy and with low grip**



**It was necessary to constantly improve the access to the site**



**Wall of one of  
the storehouses  
presenting a  
great risk of  
collapse**



**Bricks that  
supported the  
roof structure in  
a very poor state**













2799  
P23  
P22  
P24  
R20



## *Lessons Learned*

- **Due to the uncertainties regarding the identities of the chemicals present at the site, DEKONTA's approach is to be one step ahead and use more PPE than the minimum required.**
- **Detailed analysis in the field (Raman), cross analysis in the laboratory for the identification of unknown chemicals.**
- **Elemental analysis (XRF) of every drum for presence of limiting elements regarding incineration limits.**



## *Conclusion*

- ✦ **The projects had a very positive impact in the condition of the environment.**
- ✦ **As the direct benefits in the social sphere, we can see the opportunity of an additional income of local experts from auxiliary works associated with removal of wastes.**
- ✦ **Repackaging and disposal of the obsolete pesticides only removes the source of the contamination. It is common that residual contamination remains at the site and it should also be addressed in future projects.**
- ✦ **For these reasons, a comprehensive information campaign to raise awareness must be carried out until further projects addressing residual contamination are implemented.**

*Thank you for your attention.*

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