Tauw

Final report
Caspian Sea POPs Workshop

Caspian Sea POPs workshop, Baku, December 7th - 11th, 2009

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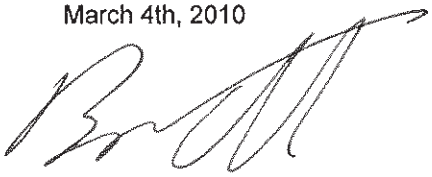

Colophon

Tauw bv
Soil & Groundwater department
P.O. Box 133
7400 AC Deventer
The Netherlands
Telephone +31 (0)570 69 99 11
Fax number +31 (0)570 69 96 66

Tauw

Contents

Appendices

1. List of participants
2. Expectations of workshop participants
3. Interviews
4. Presentations legal workshop
5. Country presentations legal issues
6. Technical presentation Tauw POPs project cycle

0 Executive summary

The Tauw Consortium (TC) formed by Tauw bv - the Netherlands, Milieukontakt International (MKI) - the Netherlands, International HCH and Pesticides Association (IHPA) - Denmark and COWI A/S - Denmark, was selected by the World Bank in October 2009 to execute a Caspian regional POPs workshop in Azerbaijan. TC forms a strong OP, POP and hazardous chemicals team that has cooperated in different combinations in many projects in Central Asia and the Caucasus. Local partner was Mr. Islam Muslim Mustafayev the director of the Azerbaijan branch of the Caucasus Environmental NGO Network.

The workshop aiming at the improvement of obsolete pesticides management was held at the World Bank Office in Baku, from 7 till 11 December 2009 with participants from the five Caspian littoral states and donor organizations (World Bank, FAO). The workshop comprised sessions on:

- An update on implementation of international requirements related to obsolete/ POPs pesticides
- Development and strengthening of legal and institutional framework
- Public awareness raising
- Technical problems and priorities

The workshop was held as an interactive workshop in which participants presented the current state of the abovementioned aspects of pesticide management for their country. Difficulties and gaps were discussed and ideas were developed in order to bridge the gaps identified. A legal gap analysis showed that in all countries there are gaps in legislation concerning the pesticides cycle. POPs often are not included and legislation needs to be aligned with international requirements. There is a lack of coordination between institutions and stakeholders in most countries.

In many countries environmental and human health problems related to obsolete pesticide stocks are aggravated by a lack of awareness.

Russia and Azerbaijan presented their experiences with inventory and technical difficulties. The presentations showed that there are problems with planning and coordination, a lack of environmentally sound storage capacity, a lack of knowledge concerning the scale of the problem (reliable and complete national inventory) and a lack of knowledge concerning handling of liquid pesticides. Action plans were presented, which for some countries like Russia, were plans of different options (signing the convention, detailed inventory, pilot on implementation PSMS). Also for Turkmenistan, ratification of the Stockholm Convention is a big challenge. For other countries like Azerbaijan, there is a follow up project about to start. Therefore the action plan for Azerbaijan comprises a number of defined steps already (capacity building, full national inventory). Iran presented an action plan for repackaging of obsolete pesticides in the Golestan province.

In the session on future plans the need for sufficient budget for inventory and repackaging as well as the need for coordination of national projects and efforts with regional GEF/POPs projects was discussed.

1 Introduction

1.1 General

A series of regional studies has shown that the Caspian Sea is polluted to an extent which causes bio-resources to decline. All five Caspian littoral states (Azerbaijan, Iran, Kazakhstan, Russia and Turkmenistan) have signed and ratified the Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention), which entered into force in August 2006. All five states together with several international partners (GEF, World Bank, UNDP, UNEP and EU) participate in the Caspian Environment Program (CEP). POPs pesticides in particular have been identified as a regional priority problem for the Caspian. Improved POPs management is desirable in all five Caspian littoral states. The World Bank project 10023633, POPs Regional Training Workshop, aims at improved POPs management in these states.

The Tauw Consortium (TC) formed by Tauw bv - the Netherlands, Milieukontakt International (MKI) - the Netherlands, International HCH and Pesticides Association (IHPA) - Denmark and COWI A/S - Denmark, was selected by the World Bank in October 2009 to execute the Caspian regional POPs workshop in Azerbaijan. TC forms a strong OP, POP and hazardous chemicals team that has cooperated in different combinations in many projects in Central Asia and the Caucasus. As a local partner TC works with Mr. Islam Muslim Mustafayev. Mustafayev is the director of the Azerbaijan branch of the Caucasus Environmental NGO Network (CENN Azerbaijan).

1.2 Inception

An inception mission to better assess the scope of the above mentioned project and if necessary to adapt the project scopes was carried out by the TC from the first till the fifth of November 2009. The program of the workshop was adapted based on the discussions with the stakeholders and the World Bank. The adapted workshop program comprises:

Day 1: Monday

- Introduction of all participants
- Introduction of the Stockholm Convention
- Update of status of implementation of NIP legal, awareness raising and technical by:
  - Representative Azerbaijan
  - Representative Iran

- The representatives of the participating countries that are not party to the Stockholm Convention will give an update about preparations to sign and ratify the convention and on implementation of legal, awareness raising and technical activities that are taken in their countries to deal with the problem of POPs pesticides. Update by:
  - Representative Kazakhstan
  - Representative Russia
  - Representative Turkmenistan

Day 2: Tuesday

- Legal workshop

Day 3: Wednesday

- Awareness raising workshop

Day 4: Thursday

- Technical workshop: in-depth review of selected technical issues (POPs inventory, repackaging, transport, safeguarding and disposal options)

Day 5: Friday

- Abstract of action plan on feasible next short, mid and long term and gap analyzes
  - Azerbaijan by country representative
  - Representative Iran
  - Representative Kazakhstan
  - Representative Russia
  - Representative Turkmenistan
  - Evaluation of workshop

1.3 Objectives

The workshop with representatives of all five Caspian littoral states and international partners (World Bank and FAO) was organized and held at Baku December 7th - 11th, 2009 in order to facilitate the preparation of larger projects to permanently remove POPs pesticides from the environment and prevent further contamination of the Caspian region.

The workshop aimed at improving POPs management by:

- Increasing capacity for integrated chemical management
- Increasing awareness of issues of obsolete pesticide stockpiles and effects on humans and the environment and
- Stimulating collaboration with other environmental projects in Azerbaijan, Iran and other Caspian littoral states

During the workshop the Stockholm Convention POPs pesticides management obligations were addressed. Some of the Stockholm obligations relevant for POPs waste and stockpiles is given in the figure 1.1 below.

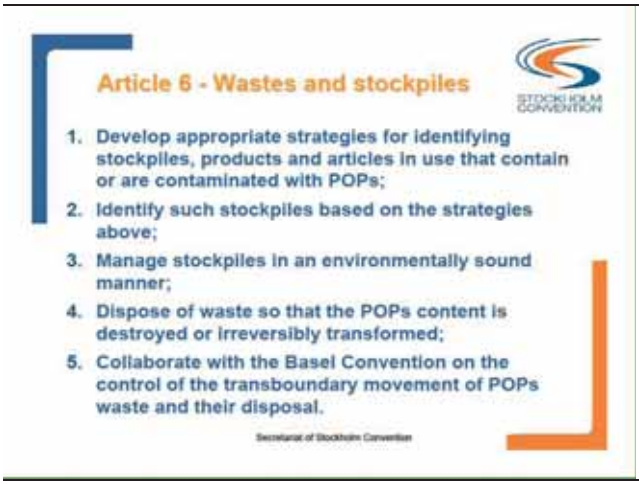

Figure 1.1 Stockholm Convention obligations concerning POPs waste and stockpiles (source: http://chm.pops.int/)

At the beginning of the workshop, an update was given concerning the implementation of international requirements. The international requirements related to obsolete pesticide management were addressed through addressing the following three interrelated aspects:

- Development of legal and institutional framework
- Plan and implementation of public awareness campaign
- Technical problems and priorities

1.4 Content of report

The activities during the workshop, findings per participating country and actions planned are described in this report. A list of the participants is given in appendix 1 of this report (see also group photo figure 1.2).

Section two summarizes the expectations of the participants and describes the introduction given at the first day. The second day, the legal workshop, is summarized in section 3. The awareness raising workshop is described in section 4. Section 5 deals with the technical workshop. The country action plans made during the workshop are for each country summarized in section 6. In the last section remarks are made on the way forward implementing the lessons learned during the workshop. In the appendices relevant presentations of the international team are presented. A memory stick with all the presentation given during the workshop was issued to all the participants for references during the workshop.

Figure 1.2 Particpants of the Caspian regional POPs workshop

2 Expectations of participants of the workshop

2.1 General

The participants (17 representatives of the 5 Caspian littoral states and 7 international experts) of the workshop were asked to express their expectations on the first day of the workshop. The list of expectations is given in appendix 2 of this document. The expectations can be grouped as follows:

- Stimulation of Caspian Sea Cooperation (9 participants)
- Practical solutions (8 participants)
- Solutions for obsolete pesticides (6 participants)
- Getting arguments for awareness raising (4 participants)
- Finances (3 participants)
- Stockholm Convention and NIP (3 participants)

Other expectations concerned issues of cultural exchange, networking, publications and information sharing. Some suggestions were made concerning an adaptation of the program like better agriculture, need for a wrap-up at the end of the workshop on how to raise funding, information exchange concerning NIP in other countries and how to get through to different target groups.

2.2 Introduction to the program

The aim of the workshop is to address the obligations coming forth from the Stockholm Convention concerning POPs pesticide management.

During the workshop:

- An update was given regarding the implementation of international requirements for the participating countries, i.e. status ratification/implementation, lessons learnt from NIP
- And the following three interrelated aspects of POPs pesticides management were addressed:
    1. The development of the necessary legal and institutional framework, in order to support the technical actions and in order to avoid the formation of new stockpiles of obsolete pesticides in the future
    2. Planning and implementing public awareness campaigns in order to avoid accidents and unwanted exposure e.g. because obsolete stocks are being moved around like at the Ganja site, cattle and poultry feed on the site or that people get exposed due to reuse of building material
    3. Technical problems and priorities, i.e. determine the scale of the problem, inventory reflecting the full national picture in the current situation, realistic solutions

An example of unwanted exposure via poultry at the Ganja site is shown on the figure 2.1 below.

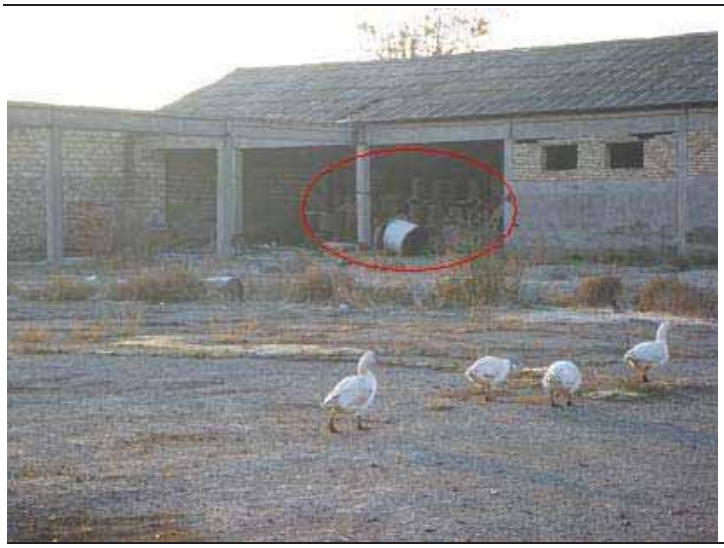

Figure 2.1 Flock of geese passing in front of the polidophen store at Ganja (photograph taken during inventory training)

The workshop is planned as an interactive workshop implying that participants participated actively and gave input on the country specific situation concerning the issues addressed during the workshop.

3 Legal workshop

3.1 Introduction

National legislation and institutions are strongly related to international legislation (see figure 3.1) and should support technical solutions to pesticide management problems and avoid the formation of new obsolete pesticide stockpiles.

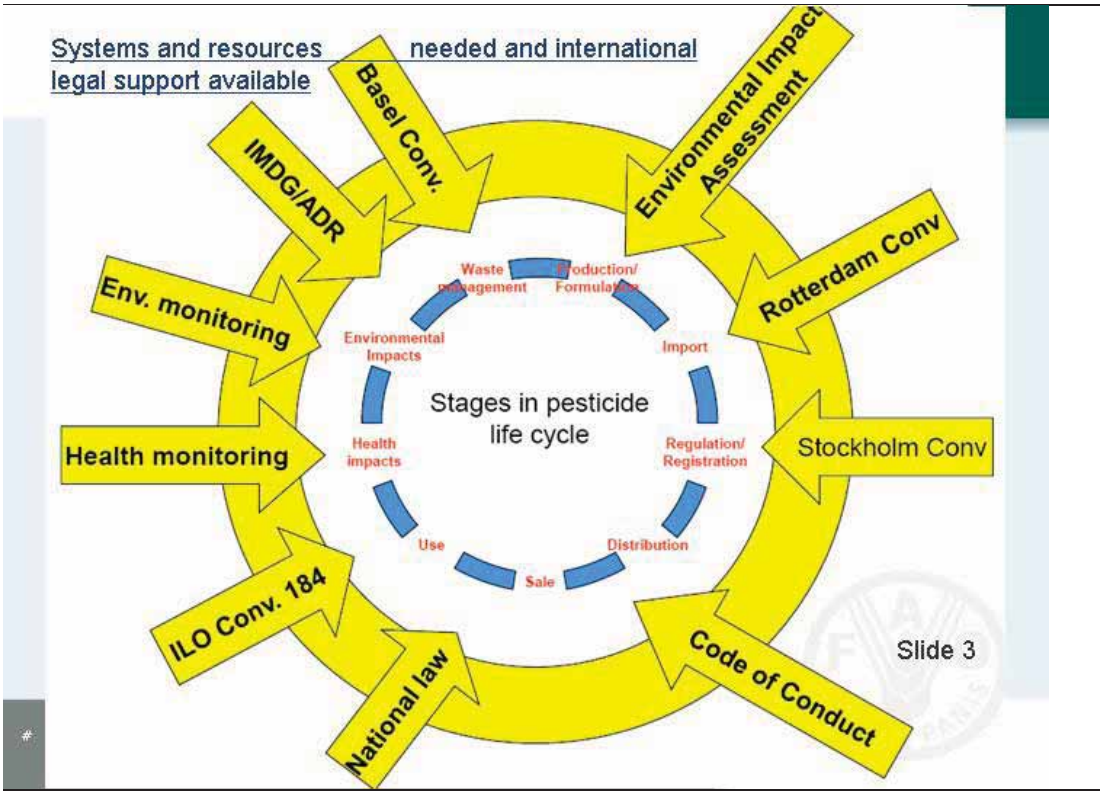

Figure 3.1 Overview systems and support international legislation (Source: FAO/Presentation Helle Husum)

The legal workshop addressed various aspects of how the necessary legal, policy and institutional framework could most effectively be developed in the five Caspian Sea countries, in the short, mid and long(er) term to:

- Support the technical priority actions on POP and other obsolete pesticides (OP) management - including (OP hotspots, burial sites, contaminated storages and soil), and
- Avoid stockpiles of new obsolete pesticides
- Effectively implement the related requirements set out in the Stockholm Convention on POPs

The workshop was structured around three main sessions and an introduction to the legal workshop, during which some overall considerations and recommendations for development of legal and institutional framework for POP were provided by the trainers and further addressed during the main sessions, including linkages to technical gaps and priority actions to be discussed on Thursday. See also the power point presentation attached hereto as appendix 4.

The main sessions of the legal workshop were:
1. Presentation and discussion on the status of implementation of Stockholm Convention and the NIPs in the five countries
2. Gap analysis and discussion
3. Action planning and prioritization.

3.2 Implementation of Stockholm Convention

This section reflects the presentation and discussion on the status of implementation of Stockholm Convention in the five countries. Taking into account the questionnaire circulated to the participants, country representative(s) provided an overview of the status of implementation of Stockholm Convention, and the associated national implementation plans (NIPs) and addressed the following questions:

- What legislation and policy/strategies are in place for management POPs pesticides and other obsolete pesticides?
- Who are the (main) responsible ministries and agencies?
- What are the main lessons learnt including problems encountered?

3.2.1 Status of NIPs

Among the Caspian Sea countries being parties to the Stockholm Convention (Azerbaijan since 2004, Iran since 2006 and Kazakhstan since 2007), only Iran has formally submitted its NIP to the Stockholm Convention Secretariat.

Azerbaijan has prepared a draft NIP which has been coordinated with the relevant ministries and other stakeholders on the substance matters. The issue of co-financing of the various actions by Azerbaijan remains to be solved. There appears to be some reluctance on the side of the Ministry of Finance to forward the NIP in the Government with its current budget. The status of the NIP for Kazakhstan is somewhat similar.

The Russian country representative explained that while there has been some reluctance within some Ministries to ratify the Stockholm Convention, this may be overcome and that it is hoped that Russia may ratify the Convention in 2010.

The country representative from Turkmenistan indicated that there is a certain push within the Ministry of Environment to request some guidance material to facilitate a policy decision in Turkmenistan to accede to the Stockholm Convention. The trainer will prepare a short note to that effect and submit it primo January - and contact the Stockholm Secretariat.

3.2.2 General findings and observations on legal and institutional framework

From the country presentations attached hereto as appendix 5, it can be seen that that while most countries have some legislation in place for e.g. registration and other aspects of safe handling of pesticides, next to no legislation has been enacted to implement the Stockholm Convention requirements related to POPs pesticides. In most countries there is no regulatory framework for POPs and a regulatory framework to take decisions, e.g., registration, bans, restrictions is also lacking.

The following problems related to the existing law and awareness level thereof were indicated by some:

- Existing legislation fragmented - too many pieces of legislation often with both gaps and overlapping provisions
- Many provision cannot be enforced - either because there is no supporting infrastructure (e.g. for hazardous waste management) or no financial resources are available for implementation
- Need for better approval procedures for agricultural chemicals
- Little awareness in the local community about existing waste and chemicals legislations - insufficient public information
- Fines are too small to have any effect and the penalty procedures too long and cumbersome

In most countries the competence with regard to pesticides and obsolete pesticides is shared between Ministry of Agriculture (including phytosanitory services), Ministry of Environment (Ecology/Natural Resources) and Ministry of Health as well as customs for import/export. Coordination is often insufficient or inefficient coordination - if coordination mechanisms in place often at governmental level rather than inter-ministerial level. Therefore cooperation and exchange of information between the different institutions and bodies in charge of pesticides and POP pesticides management implementation and enforcement are not allowed. However, inter-ministerial coordination experiences exist in pesticides and POPs.
Moreover, often there is no clear allocation of responsibilities on operators (importer, producer, and holder).
Some common enforcement problems were also pointed. Several countries affirmed that they are increasingly experiencing problems with illegal import of pesticides - often obsolete pesticides marked with false labels. Others examples of attempts to sell from stockpiles of obsolete pesticides were also pointed to.

3.3 Legal gap-analyses

Following a synthesis of typical legal gaps and institutional gaps by the trainers, including those synthesized above, each country identified in five main gaps in terms of legislation - and institutional framework/coordination -followed by presentation on flip charts and discussion.
A similar round was made for enforcement problems/issues. The gaps identified by the countries are listed below.

3.3.1 Gap analyses - legislation and institutional framework/coordination

In this section an extended summary of the gabs identified by the country representatives during the workshop is given.

Azerbaijan

1. Law on Sanitary issues does not include POPs issues and this is needed
2. Lack of enforcement of law by importing pesticides by various private companies
3. Inconsistencies between institutional legal framework, specialists needs and competent people
4. No regulation of imported volumes: need supply according to demand. No any company/business can bring pesticides in. Company/business can obtain pesticides through an application to the competent authorities (custom services)
5. Not coordinated between agencies. Coordination needs to be defined in the legislation. The roles of different agencies regarding their responsibilities needs to be defined

Iran

1. Lack of specific codes to control the generation, storage, sale and supply, transport, application and use of POPS as included in the list of Stockholm Convention & PCBs and obsolete POP Pesticides stock
2. Lack of specific limit values for POPs contamination in food, feed and various environmental media (soil, water, sediments et cetera)
3. Lack of efficient emergency response to counter the ecological effects of possible POPs release
4. Lack of regulation to punish those who violate the laws and regulation about POPs

Kazakhstan

1. Inconsistencies/mismatches between laws
2. Financing of burial places and destruction options, also no clear separation of central government and sub-national competences
3. Public Barriers: no information on the risks itself
4. Technical and economical barriers, no technical strategies

Turkmenistan

1. Ratification of Stockholm Convention itself
2. In which Laws referred to different articles, need for one single law on Pesticides which cover all provisions
3. Law on correct management of chemicals how to be managed to be covered by this law
4. Lack of legal action plan on POPs
5. Revise/harmonize legislation in compliance with international laws and conventions
6. Enforcement and public awareness

Russia - in the form of action plan

1. Development of legal framework on POPs (all dispersed), including at the sub-national level
2. Adaptation/ ratification of Stockholm convention
3. Harmonization of legal framework to international laws/convention
4. Enforcement/control of existing legislation (like customs, illegal import)
5. Law on Environmental expertise/examination (old) should be updated and should include PTS and POPS

3.3.2 Enforcement gaps

The following enforcement gaps and/or problems were identified and discussed.

Azerbaijan

1. To avoid accumulation of new pesticides. Need coordination of private companies
2. No control on enforcement, should be strengthened
3. Enforcement and control of enforcement of corresponding regulations
4. Increase number of alternative methods of plant protection
5. Strengthen and training of environmental specialists such as ecologists and other experts
6. Strengthen Public awareness

Kazakhstan

1. No legislation that prohibits use of POPS. No technical guidelines on the management of stockpiles of POPS
2. Coordination of activities. No coordination of federal and local bodies
3. No interaction between agencies. Customs - Ministry of finance. Environmental control - Ministry of Environment. Interaction between controlling bodies. Sanitary control - Ministry of Health
4. Raising of Public Awareness is missing. Any information and education does not reach farmer. Executive authorities raise the awareness of people. Need national POPs Centre to be established

Turkmenistan

1. Development NIP for POPs
2. Show priorities to decision-makers
3. Develop Regularity framework for POPs
4. Strengthen organizational enforcement for POPs control
5. Reduce number of Ministries and Agencies to one or two to solve the issue
6. Awareness Raising

Iran

1. Illegal traffic in pesticides - false label
2. Lack of information about POPs by policymakers
3. Lack of Awareness by farmers and various stakeholders
4. Lack of simple cheap and effective methods of analysis
5. Lack of coordination

Russia

1. Lack of coordination of different ministries and services. On all levels federal and regional, local levels. Bring services together and ask them to do common work is not so easy. Often possible with help of local authorities it can be done. Overlap in different agencies. Representatives of Ministry of Emergency come and then Ministry of Health Care come et cetera. Lack of coordination
2. Insufficient of awareness of decision-making people (officials). Need for competent decisions and implications for the authorities
3. Lengthy process of documents and drafting legislation at different agencies. Process bureaucratic, example: Stockholm Convention has not been ratified yet.
4. Levels of private owners have no tradition of communication with local authorities on OPs. Enforcement is not enough

3.4 Some action planning considerations

The legal workshop was concluded by a session on action planning, during which the actions needed to bridge some of the gaps were identified.

The trainers recommended to address and regulate the management of POPs as a part of the general management framework for hazardous substances and waste, and to develop the legal framework for sound management of these substances based on existing international legislation - in particular Stockholm Convention and the UNECE POPs Protocol and the FAO Code of Conduct for Distribution and Use of Pesticides concerning:

- Restrictions of the marketing and use of POPs and other certain dangerous substances

- Registration/authorization system for plant protection products (pesticides) placed on the market
- Regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances
- Import/export of dangerous chemicals and hazardous waste
- Hazardous waste management

It was clear from the gap analyses session that all countries would need to:

1. Review existing legislation to include specific POPs/Pesticides issues. Particular attention should be given to the Stockholm Conventions key requirements with regard to POPs:
   - It foresees identification and safe management of stockpiles containing or consisting of POPs
   - *Waste containing, consisting of or contaminated with POPs* should be disposed of in such a way that the POP content is destroyed or irreversibly transformed so that it does not exhibit POPs characteristics
   - Disposal operations that may lead to recovery or re-use of POPs are explicitly forbidden
   - For *shipment of POPs waste*, relevant international rules, e.g. Basel Convention on apply
2. Review exist legislation to align it with international requirements classification of chemicals and waste
3. Clarify institutional roles and responsibility and operational/effective coordination mechanism(s)
4. Strengthen import/export control
5. Provide more effective sanctions

Operational short term actions on how to bridge some of the gaps were identified through discussions.

A note on legislation to support implementation of the Stockholm Convention - providing some considerations and examples, was prepared during the workshop, to assist the Caspian countries in their implementation of the basic obligations of the Stockholm Convention.
It was presented as part of the wrap up session on Friday. The note supplements the Caspian POPs workshop discussions on legal implementation of the Stockholm Convention. It presents some general recommendations and examples on how the basic obligations of the Stockholm Convention could be implemented in the countries, focusing on the POPs pesticides obligations. It contains some examples of key provisions on POPs, including POP pesticides (the key definitions and examples of substantial POPs provisions). It also contains some examples of key provisions on hazardous waste - focusing on POPs waste (obsolete pesticides).
It was underlined that not all aspects of POPs management are covered by the note but several of the important Convention obligations on POPs stockpiles and POPs waste management.

It was also stressed that some of them may need to be adjusted to reflect the specific situation in the respective Caspian Sea countries.
An example for secondary legislation for PCB was also presented.

Finally the note provides references to some of the international guidelines developed to facilitate implementation of the Stockholm Convention (appendix 4) and related international legislation.

3.5 Evaluation

The legal workshop was concluded by a brief evaluation session in which the participants were asked to fill in the evaluation questionnaire and invited to provide general feed back.
A summary of the gaps in legislation concerning the life cycle of pesticides shows that in most countries, existing laws need to be reviewed in order to include specific POPs/Pesticides issues. Existing legislation needs to be aligned with international requirements (e.g. classification of chemicals and waste).
Furthermore the institutions need to be strengthened and their roles need to be clarified to improve coordination. Registration of import is important and effective sanctions are needed for a better enforcement.

4 Awareness raising

4.1 Introduction

The workshop on awareness raising comprised:

- A session on elements of communication and awareness raising
- A session on obstacles and favorable conditions for awareness raising including a gap analysis and
- A session on proposal development on communication and awareness raising

Participants were asked to give case examples about awareness raising activities in their countries. Information about the case examples of Russia and Iran are given in the form of interviews. The interviews are reported in appendix 3.

Common obstacles for communication and awareness raising discussed in the third session were:

- Insufficient finances
- Insufficient information, mainly due to reluctance to give the public access to information
- Insufficient institutional capacity and
- Unwillingness to accept information

Cattle grazing around a former pesticide store is one example of unwanted exposure of people (see figure below), which can be counteracted by awareness raising.

Figure 4.1 Unwanted expusure of cattle, which could be counteracted by awareness raising (photograph presentation John Vijgen)

Favorable conditions discussed were:

- Good media coverage
- Good public response
- Availability of enthusiastic specialists and volunteers, information sources and
- Donor support

In the concluding session, the participants were asked to develop a proposal to overcome the main obstacle to awareness raising in their country. The different proposals are briefly described below.

4.2 Awareness raising proposals

4.2.1 Iran

The most important obstacle in Iran is insufficient information. The participants suggest that the main challenge therefore is to create a databank of information, in order to make the information available. The target is to collect lacking information from various sources. The activities proposed are:

- Coordination between various organizations to collect available information
- Analysis and clarification of the information
- Cooperation with foreign organizations for finances and technical support
- Start various inventories to complete the lacking information.

4.2.2 Kazakhstan

The most important obstacle in Kazakhstan is that there is no country inventory available. The main challenge according to the participants therefore is to make a detailed inventory with coverage of the whole territory and with exact location of all places with obsolete pesticides and rehabilitation of storages of obsolete pesticides based on risk assessment.
The activities proposed are:

- Performing a detailed inventory of old OPs
- Destruction of long term storage burials
- Interdepartmental group for coordination
- Development of a single database

4.2.3 Turkmenistan

The most important obstacle in Turkmenistan is that there is insufficient capacity for awareness raising. The main challenge according to the participants therefore is to provide central and regional organizations with equipment and instruments.
The activities proposed are:

- Establish public awareness offices
- Establish internet for remote publication offices
- Train new staff how to work

Indicators are 2-3 publication offices provided with equipment and personnel and a national coverage by these activities. Follow up is possible via sale of magazines, so profit in the future is expected.

4.2.4 Russia

The most important obstacle in Russia is that there is no independent information available. The main challenge according to the participants therefore is to provide independent information to the public with involvement of NGOs, information mass media and measures to change the position of information owners.

The activities proposed are:

- Training of NGOs/journalists
- Explanation/Communication with owners of information
- Promotion campaign for population

5 Technical workshop

5.1 Introduction

In order to draw the participants' attention to technical aspects, a short film showing the polydophen drums leaking their contents to soil and groundwater at the Salyan site was presented. In the presentation (see appendix 6) introducing the technical workshop an overview of the overall process of management of obsolete pesticide stocks was given (see figure below).

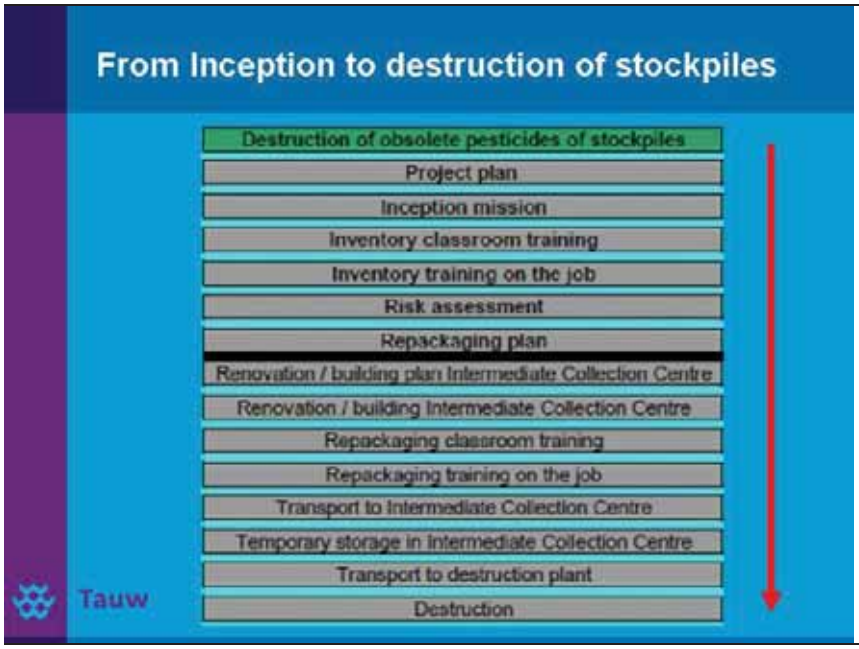

Figure 5.1 Overview over the steps in the POPs project cycle (presentation Boudewijn Fokke)

The presentation highlighted a couple of technical aspects such as unwanted exposure of children or cattle on former storage sites, hotspot removal as being the most cost-effective way to reduce exposure risks, the importance of disciplined use of PPE, field tests as tool to avoid repackaging of non hazardous agro chemicals, PSMS (FAO online tool, Pesticide Stock Management System) as data management system for good data handover between inventory and repackaging.
Dedicated presentations on the selection and use of suitable PPE, field tests and the use of PSMS provided further insight into technical aspects of pesticide stock management.

During the technical workshop a small exhibition (figure 5.2) of working materials was set up to show working material for inventory, repackaging and sampling: PPE for inventory and repackaging, a field test kit with test strips to estimate concentrations of ions present in fertilizer solutions, a handheld GPS and compass for inventory soil and groundwater sampling material.

Figure 5.2 Small exibition of equipment to carry out an POPs inventory and soil survey

Russia and Azerbaijan presented the state of inventory, repackaging and disposal activities in their countries. The other countries did not have actual information on examples to be worthy presenting.

5.2 State of inventory, repackaging and disposal activities Russia

In Russia, a national pesticide inventory was performed under the framework of the Arctic Council, in which all ministries as well as NGOs and mass media were involved. The repackaging team was trained, repackaging mainly addressed powder pesticides, which were subsequently stored in repaired storage places or in a number of landfills. At the new storage facilities, the pesticides in new metal containers were placed in concrete structures and then filled with concrete.

Difficulties encountered in Russia were: obtaining permits for transport and storage, storage capacity, handling liquid pesticides. Further difficulties arose from the fact that 50 % of the pesticides are unknown and that physically obsolete pesticides are allowed to be reused.

5.3 State of inventory, repackaging and disposal activities Azerbaijan

Until the beginning of the activities for the NIP, none of the stakeholders has dealt with the issue of obsolete pesticide stockpiles. The inventory for the NIP was performed in very short time, an overall inventory has not been performed. Some of the stores are in private ownership, some of the stores belong to government institutions.

In response to a letter written by the Ministry of Agriculture to the government in 2006, a presidential decree was released regarding an integrated plan for safeguarding and disposal of OPs at polygons.
The landfill for the disposal of OPs was built in 1987-1990 (Ganji landfill: concrete compartments of 33 m^3 each), in 2006 restoration and disposal work started there. The landfill is now fenced, the access road was repaired.
The whereabouts of stockpiles from pesticide production in the country are not known to the full extent. DDT production in the period from 1958-1980 amounted to 284,977 tons, Lindane production to 184 tons. However, currently it is not clear how much HCH was produced and where the piles of HCH waste are.
Monitoring data show that the Kura River has strongly elevated concentrations of DDT, soil in the central part of the country shows elevated concentrations DDT, which can be attributed to growing cotton and using high amounts of pesticides.
Difficulties encountered in Azerbaijan were an incomplete national inventory, lack of knowledge and techniques to handle liquid pesticides, lack of knowledge concerning selection and use of PPE and lack of knowledge concerning the whereabouts of HCH waste.

6 Action planning

Action planning was part of the final closure session on the last day of the workshop. Participants from each country presented their action plans and discussed them with the group.

During the session on action planning, Mark Davis gave a presentation on FAO activities concerning pesticide management. In Azerbaijan the FAO TCP project with a budget of 300,000 USD is starting in the first quarter of 2010 for a period of two years. The expected output comprises a full national inventory and risk assessment of obsolete pesticide sites, a plan for disposal and clean-up, training on pesticide life cycle management and a review and strengthening of pesticide legislation.
FAO support is not only directed towards the legacy from the past, but also towards improving future agricultural production. Improved crop production is increasingly important as food prices rise.
There is also the FAO Turkey partnership program, a regional project. A proposal to work in five Central Asian countries in order to achieve inventory and risk assessment including clean-up plans as well as an assessment of legal, institutional and technical capacity building in pesticide management. Mark states that donor agencies like FAO collaborate with other donors on pesticide management issues and that FAO as an UN organization is working for countries on request. Written requests are needed to start assistance. It is important to get sufficient information, to know about the quantity and scale of the problem in order to take efficient actions. Long delay in projects is not good, as it might increase the problem or create new problems. It might be helpful to plan repackaging and destruction pilots for designated high risk sites.

6.1 Action plan Russia

The plan of actions for Russia is a plan of different options.

- The first priority of all actions is the ratification of the Stockholm convention.
- Another specific objective is working with the FAO online tool PSMS in order to:
  - Gather information on current stockpile situation
  - Make information available for decision makers and specialists on different levels and regions
  - Map the information obtained for different regions and groups of regions.
  - Disseminate experiences to other regions in Russia that have not dealt with OPs yet
  - Plan of actions: costs and possible sources of finances, acquire equipment and software and train specialists
  - Prepare a note for decision makers and explain the actions which are planned
- The third objective is to prepare a pilot project on the implementation of PSMS in Russia combined with a meeting and workshop for the implementation of PSMS

We assume for this workshop that these actions could be done next year. However, in reality they are likely to take more time than one year.
The present Russian data management system is only in Russian, but the system is in the ownership of the Arctic Council. Presumably the data could be used for the actions planned, it is necessary to ask permission of the Arctic Council first. However the FAO data management system seems most effective.
For this action plan, Russia expects input concerning information and knowledge from international experts, financial assistance and assistance in putting the issue on the political agenda.

6.2 Action plan Kazakhstan

Kazakhstan at present cooperates very closely with the Russian Federation. EU directives are followed very closely. From January 2010, a three years program will start for the inventory of OPs aiming at ultimate destruction at the end. At present there is a World Bank project to transform 90 % of abandoned land in a region into green farm land. This project will be transferred to other regions. In 2010, the regions bordering with Iran will be addressed, it is planned to have a complete inventory performed and to have laboratories organized like the laboratory in Moldova.

A letter has been written to the administration stating that a full national inventory is necessary. Currently workshops on training are being organized, a single database will be established on stockpiles. In general there seems to be a need for PSMS training.
There are also burial sites. In the past in Khebalizin oblast, OPs were buried. There are three burial sites. Burying pesticides is only possible if there is a permission to do so.

6.3 Action plan Azerbaijan

A national action plan is needed, for which also government resources could be attracted. After the workshop, we will use the FAO project to push the process of pesticide management forward. The following steps are planned:

- Set up implementation team including experts from different ministries within two weeks
- Create technical capacity for inventory based on the training we received during the World Bank project, there is no need for extra budget for this step
- Organize training of several days for the regional inventory teams
- Add questionnaires to find all OP sites: due to special characteristics of pesticide use in Azerbaijan we consider it difficult to find all sites with OPs. For this step extra budget is needed. We estimate that it will take us 6-7 months to perform the full inventory with regional teams sent into the country. There are 35 regions in Azerbaijan. In each region, there are 20 villages, so a total of 500-600 villages need to be covered.

We have seen the example of how to act. The inventory work will have to be performed in the regions in parallel, without interruption.

6.4 Action plan Turkmenistan

- The biggest challenge is the ratification of the Stockholm Convention
- An Action Plan will be developed:
  - Actions, which can be taken next year depend on our activities and the support we obtain
  - We need to create the necessary infrastructure for fulfillment of the convention's obligations
  - A full proper inventory needs to be performed
  - The legislation needs to be strengthened in collaboration with all stakeholders.
  - If 30 % of the actions planned are accomplished, we have achieved a lot

A remark is made that it is not necessary to wait for the ratification; a lot can be done already prior to the ratification, such as dialogue with decision makers and training of people. International specialists can support the process of making decision makers realize how important the issue is.

6.5 Action plan Iran

Iran proposes an action plan for repacking of OPS in the Golestan province close to Caspian Sea. Envisaged activities comprise:

- Extension of the OPs survey
- Analysis of unidentified pesticides
- Repackaging
- Train custom officers in illegal trafficking of OPs
- Raise awareness on potential hazard of OPs in the market
- Upgrade existing warehouses
- Dispose OPs through export

The envisaged results are:

- Documentation and labeling of identified OPs
- Country wide OPs GIS
- Health, Safety and Environment Operation manual for handling OPs
- Minimize OPs risks
- Repack and safeguard OPs in central store

Responsible organizations are the Department of Environment, Ministry of Agriculture, Ministry of Health, and Ministry of Internal Affairs. The project is planned for a period of three years.

A remark is made that it is important to keep a clear focus for the action plan. The project plan is dealing with a lot of different issues, however many issues are interrelated. It is important to look at the whole life cycle of the pesticides and to take also developments of illegal traffic into account.

7 Looking forward

During the workshop representatives from five countries discussed Caspian problems related to obsolete pesticides and steps to come to an environmentally sound pesticide management. Most of the countries are focused to national needs.
In Azerbaijan, the whole country drains into the Caspian Sea, so pesticide management of the whole country affects the Caspian Sea. In Iran, the three provinces with main agricultural production affect the Caspian Sea.
In Russia, only some provinces affect the Caspian Sea, also in Turkmenistan and Kazakhstan, only part of the country affects the quality of the Caspian Sea.

So it is possible that the countries might need a different degree of international support to implement sound pesticide management on a national level.

Through the Teheran Convention, regional GEF/POPs projects could be started, which could provide an extra dimension on dealing with the POPs projects, which could be coordinated with national programs.

During the planning of the individual steps of the stocks management cycle projects (inventory training - inventory - repackaging - temporary safeguarding - final disposal or destruction), the whole process should be kept in mind. This means that there should also be funding for the steps ahead in order to avoid that new risk sites are created by extended temporary safeguarding and in order to avoid a ‘tiredness’ of repeated inventory without follow up. To avoid this, the need for pilots was discussed. With pilots it can be demonstrated that things can be done. Pilots are for funding partners motivating and the lessons learned during pilots are valuable for the implementation of larger (full scale) projects. The action plans presented per countries are all pilot projects. To be successful these pilot projects should be specific with measurable objectives, accepted by all the stakeholders, the objectives should realistic and all the project steps should planned.

The participants were asked for feedback on how they experienced the workshop. The participants experienced the workshop as comprehensive, all important aspects were covered. The atmosphere was open, constructive and energizing. The presentations also from the country representatives were informative and good. During the workshop a basis was formed for further collaboration and networking in the Caspian Basin.

Appendix

1 List of participants

Khosgadam	Aleskerova	Plant protection & POPs sector advisor	State Fito-Sanitarian Monitoring Service, Ministry of Agriculture	Azerbaijan	xosha58@yahoo.com
Damir	Alimkulov		Ministry of Agriculture of Kazakhstan	Kazakhstan	alimkulov@km.ru
Matthijs	Bouwknegt	Chemical expert	Tauw bv	The Netherlands	matthijs.bouwknegt@tauw.nl
Mark	Davis	Coordinator & Chief Technical Advisor Obsolete Pesticides Program	FAO	Italy	Mark.Davis@fao.org
Jerphaas	Donner	Director	Milieukontakt International	The Netherlands	j.donner@milieukontakt.nl
Najiba	Efendiyeva	Director	Radiology/Chemical/Biological Protection Department, Ministry of Emergency Situations	Azerbaijan	
Amy	Evans	Consultant	World Bank	USA	Aevans1@worldbank.org
Boudewijn	Fokke	Project Manger	Tauw bv	The Netherlands	boudewijn.fokke@tauw.nl
Gulana	Hajiyeva	Environmental Specialist	World Bank	Azerbaijan	ghajiyeva@worldbank.org
Hossein	Heidari		DOE	Iran	HHOB404@yahoo.com
Helle	Hussum	Senior Legal Advisor COWI	COWI	Denmark	HHU@cowi.dk
Alim	Karimov	Director, POPs polygon of Jangi region	State Fito-sanitarian Monitoring Service	Azerbaijan	
Bekbergen	Kerey		Ministry of Environment Protection of	Kazakhstan	B_kerey@eco.gov.kz Bkerey@mail.ru

Damir	Alimkulov		Ministry of Agriculture of Kazakhstan	Kazakhstan	alimkulov@km.ru
Vahid	Kheyrabadi		Dept. of Environment	Iran	khierabadi@yahoo.com
Marina	Klimova	Head of Department	Centre for International Projects	Russia	klimova@eco-cip.ru
Mikhail	Lunev	Head of Laboratory	D. Prianishnikov All-Russian Scientific Research Institute of Agrochemistry	Russia	milunev@yandex.ru
Mohsen	Morovati	POPs project Manager	Iranian Research Institute for Plant Protection	Iran	m_morowati@yahoo.com
Islam	Mustafayev	Director of CENN Azerbaijan, Local representative of the Tauw Consortium	Caucasus Environmental NGO Network	Azerbaijan	imustafayev@mail.ru
Gözel	Orazdurdiyeva	CEP/NPCO	National of Desert, Flora and Fauna	Turkmenistan	gozelcep@gmail.com lnfp-tm@online.tm
Telman	Rustamov	Senior Advisor	Radiology/Chemical/Biological Protection Department, Ministry of Emergency Situations	Azerbaijan	
Laleh	Talebi	Coordinator POPs	DOE	Iran	La_Tal1384@yahoo.com
Parviz	Valiyev	Head of Prevention Department	Prevention Department, Ministry of Emergency Situations	Azerbaijan	
John	Vijgen	Director	International HCH & Pesticides Association	Denmark	john.vijgen@ihpa.info www.ihpa.info

Appendix

2

Expectations of workshop participants

Expectations of participants

Participants are asked to put on a green paper “Friday I will be happy when….” And on a pink paper “I will be disappointed when…..”.

The answers were:
Friday I will be disappointed if:

- I will not receive information on NIP of Azerbaijan in detail
- If information provided is too much theoretical but misses that practical part
- If participants consider the workshop waste of time
- If I am unable to pass experience in an adequate way of work with obsolete pesticides in Russia.
- If we cannot create connection or translation in Persian
- If we have lack of implementation of POPs regulations in all countries
- If I do not know the methods to convince the public or other authorities
- If I do not get to know all the peculiarities of the Stockholm Convention
- If we will not adopt rational and applicable solutions
- If the results of the workshops will not be put in practice
- If I just got the participants certificate without learning anything from others expectations and information
- If participants have no intentions to take action at home
- If we will not realize our expectations
- If the study will not be permanent but only this week
- If we will not see Baku
- I do not think somebody will be disappointed. Every time at such seminars we get new information
- If I do not reach the aim of the workshop
- If we will not have financial support for programs
- If we will not come to a general agreement to solve the problems of chemical safety of the Caspian sea

Friday I will be happy if:

- If get new partners to solve regional projects of prevention of pollution of pest in Caspian Sea
- All 5 countries learn how to practically deal with pesticides
- Info on environmentally safe pesticides in five countries
- Info on methods and ways of limiting pesticides use in five countries
- Understanding of all discussed issues, and prepare new arguments that will convince countries to ratify Convention
- Success of the Workshop gives better arguments to obtain finances for the works to be done
- Receive information about realization of Landfills of Obsolete Pesticides with problems of OPs , storage of OPs at polygons

- Sharing information on technologies from other countries, Simple and effective destruction methods for POPs
- Learn more what I did not know about
- Good to deal with the problem in the country
- Get a lot of information
- Linking up with bureaucrats that do not understand the problem
- Obtain info of implementation of Stockholm convention by five countries
- Status on data on obsolete pesticides in five countries
- Progress in preparation and development of technologies on elimination of pesticides of POPs
- Happy if each participant will tell what he/she is planning to implement in his/her country after the workshop
- Translation in Azeri into Russian is provided
- Want that all outstanding work is done in time
- To have sound laws
- To ensure problem solving
- Information about environmental control of OP, POPs in Caspian Sea
- Publications in the Caspian countries
- Volume of OPs, POPs pesticides and rate of decrease
- Make new friends and relations
- Providing budget by World Bank for small regional project on POPs
- Joining of all countries Stockholm Convention
- Learn more about various and cheaper and easier ways of POPs destruction
- Get to know about various effective ways for public awareness
- Be of assistance to others

Conclusions

On issues:

1. Caspian sea cooperation (9)
2. Practical solutions (8)
3. Obsolete pesticides (6)
4. Awareness raising, get arguments (4)
5. Finance (3)
6. Stockholm Convention and NIP (3)

Other:

- Cultural exchange (1)
- Networking (!)
- Publications /information sharing (2)

Suggestions for Adaptation of program:

- Better Agriculture - Mark Davis

- Need in wrap-up how to get additional finances and how to approaches
- How NIPS are implemented in other countries
- How to get through to different target groups like bureaucrats and donors
- Excursion to Baku centre

Appendix

3

Interviews

Interview Awareness Raising Campaign

The interview is about the repackaging training in Russia

Question John Vijgen
What was the goal of the training?

Answer Marina
We have a different approach than Iran. We invited more than 200 representatives of various high levels decision makers such as from the industry, the scientific world, NGO, ministries and others and the press for a conference. The conference was organized to identify hotspots or black holes of sites with obsolete pesticides. From the hotspots a few were selected to perform an inventory, prioritization and repackaging pilot projects. These pilots were planned because Russia had singed the ratification.
The conference turned out to be very successful, the message was well received.

Question John Vijgen
What was the follow up of this conference?

Answer Marina
The follow up of the conference was a serious number of meetings on the different miniseries. For other environmental projects Russia was divided in regions. Meetings were held in these regions. The objectives was to get information on the about the hotspots to be able to select priority sites for the pilot. We did not come to give information we were gathering information.

Question John Vijgen
What did you do with all the information received?

Answer Marina
We prepared a report and supplied this to the environment committee of the Doema. This report was also submitted to the different related ministries. We as POP centre could easily contacted these different representatives. Russia was lucky because it has problem of POP only in the Northern region therefore the selection of hotspots was also not to difficult.

Question John Vijgen
What were the results?

Answer Marina
Yes they could start pilot project repackaging (inventory, identification of unknown, repackaging and destruction.

Question John Vijgen
What was the information in this project to the farmers?

Answer Marina
- We selected pilot region and there we started with the meetings as mentioned before
- NGO were also involved and they helped us
- The local administration were informed and it was explained that it was very important
- We established workgroup and informed them
- They went to the region to do the work

Question John Vijgen
What went wrong, do you want to share this with us, can we learn from your mistakes?

Answer Marina
- We involved press and TV
- In one of the region there was a case were there was to much information
- We had to start all over again because we did not inform the public
- Mistakes were also that we made mistakes with the different tradition and cultural difference

Question John Vijgen
Ask if the participants have any questions.

Question Kazakhstan young
What were the costs?

Answer Marina
- Each pilot cost different 18,000-100,000 dollar
- 400,000 ton pesticides were repacked

Question John Vijgen
But what were the communication costs?

Answer Marina
- We had practical no cost on the communication we had information of UNEP and FAO
- We spread our information and shared our experience also with other countries

Question John / Jerphaas
What was the final goal of your activities?

Answer Marina
I cannot say that it is a campaign these were activities which is a continues work. We started from the high level because we cannot do anything without the support of the high level people then we went down.

Question John Vijgen
What did you want to achieve?

Answer Marina
- We want to motivate the people to start the repackaging
- People did not known that it was dangerous
- Now we have the second campaign of repackaging planned

Question John
You started with de high level what were your arguments you used to convince these representatives?

Answer Marina
- We present them different case to all the people
- We did not only spread the scientific information but also the people of the field with all the information we covered the whole problem
- After the information we went down
- Than we prioritized the sites and selected where we had to start

Evaluation

The problem was no at the agenda by information spreading of high quality information.
But you need to have good scientific info to get it on the agenda
The chance of the mind set of the decision makers

We have two different levels in these examples:
1. One communication level on the lower level
2. One communication example on the higher level

Iran example of awareness Raising Campaign

The farmers field school in Iran

In Iran we have been working on the Farmers Field School. The first meetings were with decision makers and experts but, although important it did not bring the program further. We started with a small group of farmers (six to seven farmers we called and had schools in the field). We presented various biological methods in the field. The farmers were very enthusiastic and built a room for the training on their own initiative. And, very important, they trusted us. We asked farmers that were successful in the new methods to tell about it to other farmers. Other farmers became interested because we could show them results like the amount of fungicides which use went nearly to zero. The message was also interesting for the farmers. They had less costs.

We also had a priest involved and people listened to him. Priests in the villages are often farmers. The program was supported with leaflets. 60 people used 300 leaflets and farmers spread the materials themselves.

We did not only explain things in a room but started in the field with showing good and bad insects, farmers made drawings of them. A real school on the field. In between presentations, people came and ask advice. Then go in the field and explain. Good yields without pesticides. Take infected plants in class to show how it looked like. One innovation we used was the Ferramont trap. A smell is sent out by the female insect to the male insect for copulation. The insect gets trapped and falls on the glue on floor. NGOs and students explained the innovations to the farmers and covered many places with the traps.

We also presented proper spraying equipment like electrostatic pesticides sprayers and demonstrated them to the farmers. The whole program cost 40,000 US dollars. Most was done by farmers themselves. Who paid it? Came form the Caspian Environmental Program (CEP).

The trainer reflects on the story and asks participants why they think this was a success.

- The program worked with the people that use the pesticides
- Applicable alternatives were presented
- Information was on the level of the target group
- It was a bottom up approach, when it did not work with the decision makers they worked with the farmers and then the decision makers had to follow
- It started small, building up success
- There was a peer to peer approach (farmer to farmer)
- Stakeholders (NGOs, farmers, students) were involved
- Opinion leaders (religious man) were involved
- Form activity to routine- it was continued after funding was finished
- There is a ‘champion’, a person that is committed to take the program forward.
- People were engaged that know what they talk about

Appendix

4

Presentations legal workshop

World Bank

Caspian Regional Workshop on POPs

Legislation to support implementation of the Stockholm Convention

- Considerations and examples

COWI A/S

Parallelvej 2
DK-2800 Kongens Lyngby
Denmark

Tel +45 45 97 22 11
Fax +45 45 97 22 12
www.cowi.com

Table of Contents

Table of Appendices

1 Introduction

This note has been prepared to assist the Caspian countries in their implementation of the basic obligations of the Stockholm Convention. It supplements the Caspian POPs workshop discussions on legal implementation

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Approved	

of the Stockholm Convention.

The note presents some general recommendations and examples on how the basic obligations of the Stockholm Convention could be implemented in your countries, focussing on the POPs pesticides obligations.

The Stockholm Conventions key requirements with regard to POPs pesticides are the following:

1 It foresees *identification and safe management of stockpiles* containing or consisting of POPs.

2 *Waste containing, consisting of or contaminated with POPs* should be disposed of in such a way that the POP content is destroyed or irreversibly transformed so that it does not exhibit POPs characteristics.

3 Disposal operations that may lead to *recovery or re-use of POPs are explicitly forbidden*.

4 For *shipment of POPs waste*, relevant international rules, e.g Basel Convention on apply.

To effectively implement these Convention obligations, the obligations shall be introduced and adequately reflected in your national legislation.

We would like to underline, that not all aspects of POPs management are covered by these provisions, but several of the important Convention obligations on POPs stockpiles and POPs waste management.

Some of them may need to be adjusted to reflect the specific situation in your respective countries.

2 General recommendations on the implementation of the basic Stockholm Convention obligations

Regulate POPs as a part of the general management framework for hazardous substances and waste

As discussed during the workshop, we recommend to address and regulate the management of POPs as a part of the general management framework for hazardous substances and waste, and to develop the legal framework for sound management of these substances based on existing international legislation – in particular Stockholm Convention and the UNECE POPs Protocol and the FAO Code of Conduct for Distribution and Use of Pesticides concerning:

- Restrictions of the marketing and use of POPs and other certain dangerous substances
- Registration/authorization system for plant protection products (pesticides) placed on the market;
- Regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances;
- Import/export of dangerous chemicals and hazardous waste;

- Hazardous waste management.

Other priority problems

You may as a priority regulate other specific "technical" POPs or obsolete pesticides problems, such as:

- Empty pesticides containers (e.g. by requiring "distributors/importers" to set up a return system based on deposit for containers)
- Management of OP stores and contaminated sites, including contaminated soil.

Implementation of the obligations on supporting activities

Furthermore you may also wish to include specific provisions implementing the Convention supporting activities e.g. public information, participation, awareness and monitoring.

3 Examples on how the basic obligations of the Stockholm Convention could be implemented

3.1 Measures on persistent organic pollutants (POPs)

In the following we have listed some examples of key provisions on POPs, including POP pesticides.

We have first included the key definitions. These are followed by examples of substantial POPs provisions (in section 2.2.2). We would like to underline, that not all aspects of POPs management are covered by these provisions, but the most important Convention obligations on intended production and use of POP have been addressed.

In addition provisions on scope of the final legal measure and administrative/final provisions on e.g. inspections/control and sanctions would have to be included based on your country specific legal tradition.

Some of them would need to be adjusted to reflect the specific situation in your respective countries. We have placed square brackets […] around certain provisions or parts thereof - where certain policy decision, including deadlines for application, and/or institutional decisions will have to be taken by you. For some of such provisions, we have proposed alternative which all have been indicated by use of square brackets.

3.1.1 Definitions relevant for POPs management

You may wish to include in you legislation some – if not all of the following key definitions for POP. They have been listed in alphabetical order.

1. 'import' means the physical introduction into the customs territory of [insert the name of your country];
2. 'importer' means any natural or legal person established within [insert the name of your country] who is responsible for import;

3. ‘industrial chemicals’ means chemicals in either of the following two subcategories:
   (i) chemicals for use by professionals;
   (ii)chemicals for use by the public;
4. "intermediate' means a substance that is produced for and or used for chemical processing in order to be transformed into another substance [(hereinafter referred to as synthesis)];
5. 'mixtures' means mixtures or solutions composed of two or more substances.
6. 'mutagen' means an agent giving rise to an increase occurrence of mutations in populations of cells and / or organisms;
7. 'mutation' means a permanent change on the amount of structure of the generic material in a cell;
8. ‘pesticides’ means chemicals in either of the following two subcategories:

   (i) pesticides used as plant protection products
   (ii) other pesticides, such as biocidal products and such as disinfectants, insecticides and parasiticides
9. ‘PIC procedure’ means the Prior Informed Consent Procedure established by the Convention;
10. 'pictogram' means a graphical composition that may include a symbol plus graphic elements, such as a border, background pattern or colour that is intended to convey specific information;
11. 'placing on the market' means supplying or making available to a third party against payment or free of charge. Imports shall also be deemed to be placing on the market;
12. 'plant protection products´ means active substances and mixtures containing one or more active substances, put up in the form in which they are supplied to the user, intended to:
    a. protect plants or plant products against all harmful organisms or prevent the action of such organisms, in so far as such substances or mixtures are not otherwise defined below;
    b. influence the life processes of plants, other than as a nutrient, (e.g. growth regulators);
    c. preserve plant products, in so far as such substances or products are not subject to special provisions on preservatives;
    d. destroy undesired plants; or
    e. destroy parts of plants, check or prevent undesired growth of plants;

13. 'precautionary statement' means a phrase (and/or pictogram) that describes recommended measures that should be taken to minimise or prevent adverse effects resulting from exposure to a hazardous product, or improper storage or handling of a hazardous products;
14. 'producer of an article' means any natural or legal person who makes or assembles an article in [insert the name of your country];
15. 'product identifier' means the name or number used for a hazardous product on a label or in the SMS. It provides a unique means by which the product user can identify the substance or mixture within the particular use setting e.g. transport, consumer or workplace;
16. 'Protocol' means the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants;
17. 'restriction' means any conditions for or prohibition of the production, use or placing on the market;
18. 'solid' means a substance or mixture which does not meet the definition of liquid or gas;
19. ' Stockholm Convention' means the Stockholm Convention on Persistent Organic Pollutants;
20. 'substance' means chemical elements and their compounds as they occur in the natural state or as produced by industry; substances which occur in nature: means a naturally occurring substance as such, unprocessed or processed only by manual, mechanical or gravitational means, by dissolution in water, by flotation, by extraction with water, by steam distillation or by heating solely to remove water, or which is extracted from air by any means;
21. 'symbol' means a graphical element intended to succinctly convey information;
22. 'use' means any processing, formulation, storage, keeping, treatment, filing into containers, transfer from one container to another, mixing, production of an article or any other utilisation;

[Transposing the following: SC Art 2, UNECE POPs Protocol Art 2]

3.1.2 POPs measures

POPs Measures Article 1 Control of production, placing on the market and use of persistent organic pollutants

1. The production and placing on the market and use of substances listed in Annex I, whether on their own, in mixtures or as constituents of articles, shall be prohibited.

2. The production and placing on the market [and use] of substances listed in Annex II, whether on their own, in mixtures or as

constituents of articles, shall be restricted in accordance with the conditions set out in that Annex.

Comment: So far there are no substances listed in that Annex: While such restrictions are foreseen there scope has not yet been agreed to. However, once adopted in the UNECE/EU - only the Annex would need to be amended.

3. The [MENR/Ministry of Environment/other nominated competent authority, e.g. MoA and MoH] shall within the assessment and authorisation schemes of existing and new chemicals and pesticides under the relevant applicable legislation, take into consideration the criteria set out in paragraph 1 of Annex D to the Stockholm Convention and take appropriate measures to control existing chemicals and pesticides and to prevent the production and placing on the market [and use] of new chemicals and pesticides, which exhibits characteristics of persistent organic pollutants.

[Transposing the following: SC Art 3.1, UNECE POPs Protocol Art 3.1 (a)]

POPs Measures Article 2 Exemption from control measures

1. POPs Measures Article 1 shall not apply in the case of:

a) a substance used for laboratory-scale research or as a reference standard;

b) a substance occurring as unintentional trace contaminant in substances, mixtures or articles.

2. Article 1 shall not apply in respect of substances occurring as a constituent of articles produced before or on the date of entry into force of this Act.

3. Article 1 shall not apply in the case of a substance occurring as a constituent of articles already in use before or on the date of the entry into force this Act [to insert date of entry into force of the measure].

4. Where a substance is listed in Annex I or in Annex II, the [MENR/Ministry of Environment/other nominated competent authority] wishing to permit, until the deadline specified in the relevant Annex, the production and use of that substance as a closed-system site-limited intermediate shall notify accordingly the Secretariat of the Convention.

However, such notification may be made only if the following conditions are satisfied:

a) an annotation has been entered in the relevant Annex expressly to the effect that such production and use of that substance may be permitted;

b) the manufacturing process will transform the substance into one or more other substances that do not exhibit the characteristics of a persistent organic pollutant;

c) it is not expected that either humans or the environment will be exposed to any significant quantities of the substance during its production and use.

The notification shall give details of actual or estimated total production and use of the substance concerned and the nature of the closed-system site-limited process, specifying the amount of any non transformed and unintentional trace contamination by any persistent organic pollutant starting material in the final product.

[Transposing the following: SC Art 4, UNECE POPs Protocol Art 4]

POPs Measures Article 3 Update of the Implementation Plan

1. The [MENR/Ministry of Environment/other nominated competent authority] shall review and update, as appropriate, the national plan for implementation of the obligations under the Convention on a periodic basis in accordance with its international obligations.

2. When updating the national implementation plans, the [MENR/Ministry of Environment/other nominated competent authority] shall, in accordance with their applicable legislation and procedures, give the public early and effective opportunities to participate in this process.

[Transposing the following: SC Art 7 (1)c and (2)]

POPs Measures Article 4 Information exchange

1. The [MENR/Ministry of Environment/other nominated competent authority] shall undertake the exchange with third countries of information relevant to the reduction, minimisation or elimination, where feasible, of the production, use and release of persistent organic pollutants and to alternatives to those substances, specifying the risks and the economic and social costs related to such alternatives.

2. The [MENR/Ministry of Environment/other nominated competent authority], as appropriate, shall promote and facilitate with regard to persistent organic pollutants:

a) awareness programmes, including relating to their health and environmental effects and their alternatives and on the reduction or elimination of their production, use and release, especially for:

i) policy and decision makers,
ii) particularly vulnerable groups;

b) the provision of public information;

c) training, including workers, scientists, educators and technical and managerial personnel.

3. Without prejudice to existing legislation on public access to environmental information, information on health and safety of humans and the environment shall not be regarded as confidential.

4. The [MENR/Ministry of Environment/other nominated competent authority]shall protect any confidential information as mutually agreed, when exchanging other information with a third country.

[Transposing the following: SC Art 9]

POPs Measures Article 5 Monitoring

1. The [MENR/Ministry of Environment/other nominated competent authority] shall establish, in close cooperation with [other existing monitoring institutions?], appropriate programmes and mechanisms, consistent with the state of the art, for the regular provision of comparable monitoring data on the presence of dioxins, furans and PCBs as identified in Annex VI in the environment. When establishing such programmes and mechanisms, due account shall be taken of developments under [the Protocol and] the Convention.

[Transposing the following: SC Art 11, Rotterdam Art 15]

3.2 Examples of key POPs/hazardous waste provisions

In the following we have listed some examples of key provisions on hazardous waste – focussing on POPs waste (obsolete pesticides).

We have first included the key definitions. These are followed by examples of substantial POPs waste management provisions (in section 2.1.2). We would like to underline, that not all aspects of POPs management are covered by these provisions, but the most important Convention obligations on POPs stockpiles and POPs waste management.

In addition provisions on scope of the final legal measure and administrative/final provisions on e.g. inspections/control and sanctions would have to be included based on your country specific legal tradition.

Some of them would need to be adjusted to reflect the specific situation in your respective countries. We have placed square brackets […] around certain provisions or parts thereof - where certain policy decision, including deadlines for application, and/or institutional decisions will have to be taken by you. For some of such provisions, we have proposed alternative which all have been indicated by use of square brackets.

3.2.1 Key hazardous waste – including POPs waste definitions

For the purpose of cross reference between the draft provisions, we have introduced the term HWL Article 1etc. HWL is an abbreviation for Hazardous Waste Legislation.

HWL Article 2:

a) *waste"* mean any substance or object in the categories set out in Annex I cf. Annex II which the holder discards or intends or is required to discard;

b) [**Alternative 1**: *"hazardous waste"* mean waste featuring on the list of waste in Annex II marked as hazardous waste and which displays one or more hazardous properties listed in Annex III cf. Annex IV;]
[alternative 2:- if the list of waste - including hazardous waste is not included in the Law: *"hazardous waste"* mean waste which displays one or more hazardous properties listed in Annex III cf. Annex IV];

c) *"Pesticide"* means any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals causing harm during or otherwise interfering with the production, processing, storage, transport or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs, or substances which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant or agent for thinning fruit or preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport.

d) *"Obsolete pesticides"* means pesticides that can no longer be used for their intended purpose or any other purpose and therefore require disposal.

If you regulate other types of hazardous waste, e.g. separation collection of specific – include definition hereof

e) *"substance"* means chemical elements and their compounds as they occur in the natural state or as produced by industry;

f) *"preparations"* means mixtures or solutions composed of two or more substances.

g) *"waste producer"* mean anyone whose activities produce waste (original waste producer) or anyone who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of this waste.

h) *"waste holder"* mean the waste producer or the natural or legal person who is in possession of the waste;

i) *"dealer"* is any undertaking which acts in the role of principal to purchase and subsequently sell waste, including such dealers who do not take physical possession of the waste;

j) *"broker"* is any undertaking arranging the recovery or disposal of waste on behalf of others, including such brokers who do not take physical possession of the waste;

k) *"waste management"* mean the collection, transport, recovery, purchase, processing and disposal of waste, including the supervision of such operations and disposal sites and after-care of disposal sites and including actions taken as a dealer or broker;

l) *"collection"* means the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility;

m) *"re-use"* means any operation by which products or components that are not waste are used again for the same purpose for which the were conceived;

n) *"treatment"* means recovery or disposal operations, which include preparation prior to recovery or disposal;

o) *"recovery"* means any operation provided that its principal result is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or in it being prepared to fulfil that function, in the plant or in the wider economy. Annex V sets out a non-exhaustive list of recovery operations;

p) *"preparing for re-use"* means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they will be re-used without any other pre-processing;

q) *"recycling"* means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations;

r) "*disposal"* means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex VI sets out a non-exhaustive list of disposal operations;

The broad definition of waste and hazardous waste, empty containers, pallets, shelves, elements of storage constructions due to, leakage of pesticides are also considered as hazardous waste.

3.2.2 Key hazardous waste – including POPs waste management provisions

HWL Article 3 - Stockpiles of POPs

1. The holder of a stockpile, which consists of or contains any substance listed in Annex VII, for which no use is permitted, shall manage that stockpile as waste and in accordance with HWL Article 4.

2. The holder of a stockpile greater than 50 kg, consisting of or containing any substance listed in Annex VII, and the use of which is permitted shall provide the [MENR] with information concerning the nature and size of that stockpile. Such information shall be provided [within 12 months of the entry into force of this law] [and of amendments to Annex VII and annually thereafter until the deadline specified in Annex VII for restricted use].

3. The holder shall manage the stockpile in a safe, efficient and environmentally sound manner.

HWL Article 4 - POPs waste management

1. Producers and holders of waste shall undertake all reasonable efforts to avoid, where feasible, contamination of this waste with the following substances aldrin (CAS nr. 309-00-2), chlordan (CAS nr. 57-74-9), dieldrin (CAS nr. 60-57-1), DDT (CAS nr. 50-29-3), endrin (CAS nr. 72-20-8), heptachlor (CAS nr. 76-44-8), hexachlorbenzen (CAS nr. 118-74-1), mirex (CAS nr. 2385-85-5), toxaphen (CAS nr. 8001-35-2), polychlorerede dibenzo-p-dioxins and polychlorerede dibenzofurans.

2. Notwithstanding the Regulation on PCB, waste consisting of, containing or contaminated by any substances listed in Annex VIII shall be disposed of or recovered, without undue delay and in accordance with Annex IX in such a way as to ensure that the persistent organic pollutant content is destroyed or irreversibly transformed so that the remaining waste and releases do not exhibit the characteristics of persistent organic pollutants.

3. Disposal or recovery operations that may lead to recovery, recycling, reclamation or re-use of the any of the substances aldrin (CAS nr. 309-00-2), chlordan (CAS nr. 57-74-9), dieldrin (CAS nr. 60-57-1), DDT (CAS nr. 50-29-3), endrin (CAS nr. 72-20-8), heptachlor (CAS nr. 76-44-8), hexachlorbenzen (CAS nr. 118-74-1), mirex (CAS nr. 2385-85-5), toxaphen (CAS nr. 8001-35-2), polychlorerede dibenzo-p-dioxins and polychlorerede dibenzofurans is prohibited.

HWL Article 5 Responsibility for management of other hazardous waste

The producer [or holder] of other hazardous waste than those listed in HWL Articles 2 to 4 is by 1 January 2015] responsible for managing the hazardous waste in an environmentally sound manner, by

a) treating the hazardous waste himself, or

b) having the treatment handled by a dealer, or

c) having the treatment handled by an establishment or undertaking which carries out waste treatment operations, or

d) having the treatment arranged by a public or private waste collector,

in accordance with Articles 4 and 5.

2. When the waste is transferred from the original producer or holder to one of the natural or legal persons referred to in paragraph 1 for preliminary treatment, the responsibility for carrying out a com-plete recovery or disposal operation shall not be discharged as a general rule.

Note for MENR consideration: The MENR may wish to consider that HWL Art 3 would be integrated in a general provision on responsibility for waste management. Only if no such general responsibility provisions would be introduced at this stage, HWL Art 3 should be kept in the HWL of the law.

HWL Article 6 - Ban on mixing

1. Producers of hazardous waste and establishments and undertakings which manage hazardous waste shall ensure that hazardous waste is not mixed, either with other categories of hazardous waste or with other waste, substances or materials. Mixing includes the dilution of hazardous substances.

2. By way of derogation from paragraph 1, mixing may be allowed provided that the mixing operation is carried out by an establishment or undertaking which has obtained a permit in accordance with Article 21;

HWL Article 7 - Labelling of hazardous waste

1. Producers of hazardous waste and establishments and undertakings which manage hazardous waste shall ensure that, in the course of collection, transport and temporary storage, hazardous waste is packaged and labelled in accordance with the international standards and [national] legislation in force.

2. Whenever hazardous waste is transferred, it shall be accompanied by an identification document, which may be electronic format, containing the appropriate data specified in [alternative 1: refer to the movement document in the national import export legislation implementing Annex 1B of the Basel Convention] [alternative 2: Annex XX – inserting the X]

HWL Article 8 - Record keeping of hazardous waste

1. Establishments or undertakings referred to in [XXX Article - stipulating permit for waste undertakings], producers of hazardous waste and establishments and undertakings which collect or transport hazardous waste on a professional basis or act as dealers and brokers of hazardous waste shall keep a record of the quantity, nature, origin, and, where relevant, the destination, frequency of collection, mode of transport and treatment method foreseen in

respect of the waste and make that information available, on request, to the competent authorities.

2. For hazardous waste, the records shall be preserved for at least three years except in the case of establishments and undertakings transporting hazardous waste which must keep such records for at least 12 months.

3. Documentary evidence that the management operations have been carried out shall be supplied at the request of the competent authorities or of a previous holder.

3.3 Specifically about PCBs

The Stockholm Convention requirements for phase out of use and safe destruction of PCBs were not one of the Workshop subject. We have however provided an example of a complete regulation on PCB – addressing all the Convention requirements on:

- intended use
- and phase out of PCB containing equipment
- inventories of equipment
- management of PCB containing equipment
- and related requirements.

The Regulation was prepared by COWI in collaboration with the MENR of Moldova under a World Bank POPs Project. It was adopted in February 2009. Although the Regulation was developed for Moldova and the country (technical and legal) specific context, we believe it can be of inspiration for you when preparing legislation on PCB. It should be noted that the Regulation was introduced just prior to a national inventory of PCB and PCB containing equipment

The main elements of the proposed Regulation on PCB are:

- Chapter I sets out the **objective of the Regulation and definitions;**
- Chapter II regulates the **production, placing on the market, use and maintenance of PCB and equipment containing PCB**. It implements the deadline for phasing out of PCB containing equipment set in the UNECE POPs Protocol (equipment containing PCBs in volumes more than dm^3 (5 liter) shall be taken out of service no later than 2015; where such equipment contains only between 0.005% and 0.05% PCB it may be used until 2020);
- Chapter III stipulates for what, by whom and how **inventory of PCB containing equipment** shall be made.;

- Chapter IV provide for the **labelling**;
- Chapter V **sets out the provisions for storage, decontamination and disposal of equipment containing PCB.** It implements the deadline for disposal/decontamination of PCB containing equipment set in the UNECE POPs Protocol (2020 for equipment subject to inventory).

  Equipment containing PCB and any mixture containing more than 0.005% PCB shall ultimately either be incinerated on land or be decontaminated/destructed by biological or physico-chemical treatment; It is prohibited to landfill this waste (cf. Article 2, 11 and 13).

  Until a license system is in place, the holders of waste PCB and PCB containing equipment have the obligation to store it in their own premises in an environmentally safe manner (cf. Article 10 and annex II).

  Transport, storage and disposal of equipment and other waste containing PCB are only to be undertaken by companies holding an appropriate permit (cf. Article 10 and 16).

  PCB-disposal undertakings shall keep registers of the quantity, origin, nature and PCB content of used PCBs delivered to them. They shall communicate this information to the Ministry of Ecology and Natural Resources (cf. Article 14);
- Chapter VI concerns **analyses of PCB;**
- Chapter VII sets out **permitting requirements** including how to apply and the condition for obtaining a permit. Decontamination of PCB containing transformers are only to be undertaken by companies holding an appropriate permit (cf. Article 16);
- Chapter VIII contains the **administrative provisions**, including enforcement;
- Chapter IX concerns **penalties** for non-compliance with the Regulation;
- Chapter X stipulates **the entry into force** of the Regulation.

The Regulation is **supplemented by two implementing handbooks**; one which sets out guidance for holders of power capacitors and transformers on the application and implementation of the new Regulation on PCB; and another which sets out guidance for waste undertakings aiming at obtaining a licence for treatment of PCB containing equipment and PCB containing waste in accordance with the new Regulation on PCB.

We will be pleased to pleased make the handbooks available for you, should you so wish.

Appendix 2 - text of the Regulation

The full text of the Regulation is presented in Appendix 2 of this note.

What are PCBs and why are they of concern – in brief

Polychlorinated biphenyls (PCBs) are a class of chlorinated hydrocarbons that has been used extensively since 1930 for a variety of industrial uses. If PCBs are released into the environment, they do not readily break down and can accumulate in fatty tissues of animals. The longevity of PCBs and their affinity for fatty tissue can result in PCBs moving up and concentrating through the food chain.

PCBs can enter the human body by absorption through the skin, inhalation of PCB vapor and by ingestion, mainly from contaminated food. The likelihood of becoming sick from PCB exposure increases with the length of time and the amount of material that a person might come in contact with. The most commonly observed symptom in people exposed to high levels of PCBs is a condition known as chloracne. It is a severe, persistent acne-like rash due to repeated and prolonged contact of PCBs with skin. This condition has also occurred in people who have accidentally ingested PCBs orally. Very high exposure to PCBs may also cause liver damage and damage to the nervous system, resulting in numbness, weakness and tingling in the arms and legs. There is the possibility that PCBs may cause cancers.

In the event of fire, some of the PCBs is converted into dioxins and furans which are among the most toxic compounds known.

Most – if not all PCB-containing equipment present in Azerbaijan, Kazakhstan, Russia and Turkmenistan today originates from the Soviet period. Their utilization in some sectors has been discontinued or prohibited in the 1980s. However, PCBs continue to be used in power installations and other types of equipment.

Transformers are used by thee categories of enterprises: power production and transmission companies, power distribution companies and large consumers of electricity.

4 References to international guidelines

A number of guidelines have been developed to facilitate implementation of the Stockholm Convention and related international legislation.

For ease of reference, link to several of these have been included in this note. Where available, links to both the English and Russian version have been indicated:

Stockholm Convention fact sheets and guidelines:
http://chm.pops.int/Convention/Media/Factsheets/tabid/527/language/en-US/Default.aspx

Some Basel convention guidelines:
http://www.basel.int/meetings/sbc/workdoc/techdocs.html

Some FAO guidelines are available on:
http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/en/

Appendix 1 - Annexes relating to the hazardous waste provisions

- [Based on the EU lists and categories – alternatively you may base your definition of the Basel Convention definition and classification.]

Annex I Categories of waste

1. Production or consumption residues not otherwise specified below;

2. Off-specification products;

3. Products whose date for appropriate use has expired;

4. Materials spilled, lost or having undergone other mishap, including any materials, equipment, etc., contaminated as a result of the mishap;

5. Materials from constructions, demolishes, fittings in built areas, etc.;

6. Materials contaminated or soiled as a result of planned actions (e.g. residues from cleaning operations, packing materials, containers, etc.);

7. Unusable parts (e.g. reject batteries, exhausted catalysts, etc.);

8. Substances which no longer perform satisfactorily (e.g. contaminated acids, contaminated solvents, exhausted tempering salts, etc.);

9. Residues of industrial processes (e.g. slags, still bottoms, etc.);

10. Residues from pollution abatement processes (scrubber sludges, baghouse dusts, spent filters, etc.);

11. machining/finishing residues (e.g. lathe turnings, mill scales etc.);

12. Residues from raw materials extraction and processing (e.g. mining residues, oil field slops, etc.);

13. Adulterated materials (e.g. oils contaminated with PCBs, etc.);

14. Any materials, substances or products whose use has been banned by law;

15. Products for which the holder has no further use (e.g. agricultural, household, office, commercial discards, etc.);

16. Contaminated materials, substances or products resulting from remedial action with respect to land;

17. Any materials, substances or products which are not contained in the above categories.

Annex II List of list of waste cf Article 3 (a) and (b)

The list of waste transposes the European Waste Catalogue (EAK), which has been drawn up pursuant to EU Directive 2006/12/EU on Waste.

The list is a non-exhaustive list of waste. However, the inclusion of a material in the list does not mean that the material is a waste in all circumstances. Materials are considered to be waste only where the definition of waste in Article 3(a) is met.

Any waste marked with an asterisk (*) is considered as a hazardous waste pursuant to Article 3(b) when the criteria in Annex III and IV is met.

INDEX

Chapters of the list

Two-digit

18 Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)

19 Wastes from waste treatment facilities, off-site waste water treatment plants and the water industry

20 Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions

01 WASTES RESULTING FROM EXPLORATION, MINING, DRESSING AND FURTHER TREATMENT OF MINERALS AND QUARRY

01 01	**Wastes from mineral excavation**
01 01 01	Waste from mineral metalliferous excavation
01 01 02	Waste from mineral non-metalliferous excavation
01 02	**Wastes from mineral dressing**
01 02 01	Wastes from the dressing of metalliferous minerals
01 02 02	Wastes from the dressing on non-metalliferous minerals
01 03	**Wastes from further physical and chemical processing of metalliferous minerals**
01 03 01	Tailings
01 03 02	Dusty and powdery waste
01 03 03	Red mud from alumina production
01 03 99	Wastes not otherwise specified
01 04	**Wastes from further physical and chemical processing on non-metalliferous minerals**
01 04 01	Waste gravel and crushed rocks
01 04 02	Waste sand and clays
01 04 03	Dusy and powdery waste
01 04 04	Waste from potash and rock-salt processing
01 04 05	Waste from washing and cleaning of minerals
01 04 06	Waste from stone cutting and sawing
01 04 99	Waste not otherwise specified
01 05	**Drilling muds and other drilling wastes**
01 05 01	Oil-containing drilling muds and wastes
01 05 02	Barite-containing drilling muds and wastes
01 05 03	Chloride-containing drilling muds and wastes
01 05 04	Fresh-water drilling muds and wastes
01 05 99	Wastes not otherwise specified
02	**WASTES FROM AGRICULTURAL, HORTICULTURAL, HUNTING, FISHING AND AQUACULTURAL PRIMARY PRODUCTION, FOOD PREPARATION AND PROCESSING**
02 01	Primary production wastes
02 01 01	Sludges from washing and cleaning
02 01 02	Animal tissue waste
02 01 03	Plant tissue waste
02 01 04	Waste plastics (except packaging)
02 01 05*	Agrochemical wastes
02 01 06	Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site 02 01 07 Waste from forestry exploitation
02 01 99	Waste not otherwise specified

02 02	**Wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 01	Sludges from washing and cleaning
02 02 02	Animal tissue waste
02 02 03	Material unsuitable for consumption or processing
02 02 04	Sludges from on-site effluent treatment
02 02 99	Waste not otherwise specified
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee and tobacco preparation and processing; tobacco processing; conserve production**
02 03 01	Sludges from washing, cleaning, peeling, centrifuging and separation
02 03 02	Waste from preserving agents
02 03 03	Waste from solvent extraction
02 03 04	Materials unsuitable for consumption or processing
02 03 05	Sludges from on-site effluent treatment
02 03 99	Wastes not otherwise specified
02 04	**Wastes from sugar processing**
02 04 01	Soil from cleaning and washing beet
02 04 02	Off-specification calcium carbonate
02 04 03	Sludges from on-site effluent treatment
02 04 99	Wastes not otherwise specified
02 05	**Wastes from the dairy products industry**
02 05 01	Materials unsuitable for consumption or processing
02 05 02	Sludges from on-site effluent treatment
02 05 99	Wastes not otherwise specified
02 06	**Wastes from the baking and confectionery industry**
02 06 01	Materials unsuitable for consumption or processing
02 06 02	Wastes from preserving agents
02 06 03	Sludges from on-site effluent treatment
02 06 99	Wastes not otherwiese specified
02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 01	Waste from washing, cleaning and mechanical reduction of raw materials
02 07 02	Waste from spirits distillation
02 07 03	Waste from chemical treatment
02 07 04	Materials unsuitable for consumption or processing
02 07 05	Sludges from on-site effluent treatment
02 07 99	Wastes not otherwise specified
03	**WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PAPER, CARDBOARD, PULP, PANELS AND FURNITURE**
03 01	**Wastes from wood processing and the production of panels and furniture**
03 01 01	Waste bark and cork 03 01 02 Sawdust 03 01 03 Shaving, cuttings, spoiled timber/particle board/veneer

03 01 99	Wastes not otherwise specified
03 02	**Wood preservation wastes**
03 02 01*	Non-halogenated organic wood preservatives
03 02 02*	Organochlorinated wood preservatives
03 02 03*	Organometallic wood preservatives
03 02 04*	Inorganic wood preservatives
03 03	**Wastes from pulp, paper and cardboard production and processing**
03 03 01	Bark
03 03 02	Dregs and green liquor sludges (from black liquor treatment)
03 03 03	Bleaching sludges from hypochlorite and chlorine processes
03 03 04	Bleaching sludges from other bleaching processes
03 03 05	De-inking sludges from paper recycling
03 03 06	Fibre and paper sludge
03 03 07	Rejects from paper and cardboard recycling
03 03 99	Wastes not otherwise specified
04	**WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES**
04 01	**Wastes from the leather and fur industry**
04 01 01	Fleshings and lime split waste
04 01 02	Liming waste
04 01 03*	Degreasing waste containing solvents without a liquid phase
04 01 04	Tanning liquor containing chromium
04 01 05	Tanning liquor free of chromium
04 01 06	Sludges, in particular from on-site, effluent treatment containing chromium
04 01 07	Sludges, in particular from on-site effluent treatment free of chromium
04 01 08	Waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium
04 01 09	Waste from dressing and finishing
04 01 99	Waste not otherwise specified
04 02	**Wastes from the textile industry**
04 02 01	Waste from unprocessed textile fibres and other natural fibrous substances mainly of vegetable origin
04 02 02	Waste from unprocessed textile fibres mainly of animal origin
04 02 03	Waste from unprocessed textile fibres mainly of artificial or synthetic origin
04 02 04	Waste from unprocessed mixed textile fibres before spinning and weaving
04 02 05	Waste from processed textile fibres mainly of vegetable origin
04 02 06	Waste from processed textile fibres mainly of animal origin
04 02 07	Waste from processed fibres mainly of artifical or synthetic origin
04 02 08	Waste from processed mixed textile fibres
04 02 09	Waste from composite materials (impregnated textile, elastomer, plastomer)
04 02 10	Organic matter from natural products (e.g. grease, wax)
04 02 14*	Waste from finishing containing organic solvents
04 02 15	Waste from finishing other than mentioned in 04 02 14
04 02 16*	Dyestuffs and pigments containing dangerous substances
04 02 17	Dyestuffs and pigments other than those mentioned in 04 02 16

04 02 19*	Sludges from on-site effluent treatment containing dangereous substances
04 02 20	Sludges from on-site effluent treatment other than mentioned in 04 02 19
04 02 99	Wastes not otherwise specified
05	**WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL**
05 01	**Oily sludges and solid wastes**
05 01 02	Desalter sludges
05 01 03*	Tank bottom sludges
05 01 04*	Acid alkyl sludges
05 01 05*	Oil spills
05 01 06	Sludges from plant, equipment and maintenance operations
05 01 07*	Acid tars
05 01 08*	Other tars
05 01 09*	Sludges from on-site effluent treatment containing dangerous substances
05 01 10	Sludges from on-site effluent treatment other than those mentioned in 05 01 09
05 01 99	Wastes not otherwise specified
05 02	**Non oily sludges and solid wastes**
05 02 01	Boiler feedwater sludges
05 02 02	Waste from cooling columns
05 02 99	Wastes not otherwise specified
05 04	**Spent filter clays**
05 04 01*	Spent filter clays
05 05	**Oil desulphurisation wastes**
05 05 01	Waste containing sulphur
05 05 99	Wastes not otherwise specified
05 06	**Wastes from the pyrolytic treatment of coal**
05 06 01*	Acid tars
05 06 02	Asphalt
05 06 03*	Other tars
05 06 04	Waste from cooling columns
05 06 99	Wastes not otherwise specified
05 07	**Wastes from natural gas purification**
05 07 01*	Sludges containing mercury
05 07 02	Waste containing sulphur
05 07 99	Wastes not otherwise specified
05 08	**Wastes from oil regeneration**
05 08 01*	Spent filter clays
05 08 02*	Acid tars
05 08 03*	Other tars
05 08 04*	Aqueous liquid waste from oil regeneration
05 08 99	Wastes not otherwise specified

06	**WASTES FROM INORGANIC CHEMICAL PROCESSES 06 01 Waste acidic solutions**
06 01 01*	Sulphuric acid and sulphurous acid
06 01 02*	Hydrochloric acid
06 01 03*	Hydrofluoric acid
06 01 04*	Phosphoric and phosphorous acid
06 01 05*	Nitric acid and nitrous acid
06 01 99*	Wastes not otherwise specified
06 02	**Waste alkaline solutions**
06 02 01*	Calcium hydroxide
06 02 02*	Soda
06 02 03*	Ammonia
06 02 99*	Waste salts and their solutions
06 03	**Waste salts and their solutions**
06 03 01	Carbonates (except 02 04 02)
06 03 02	Saline solutions containing sulphates, sulphites or sulphides
06 03 03	Solid salts containing sulphates, sulphites or sulphides
06 03 04	Saline solutions containing chlorides, fluorides and halides
06 03 05	Solid salts containing chlorides, fluorides and other halogenated solid salts
06 03 06	Saline solutions containing phosphates and related solid salts
06 03 07	Phosphates and related solid salts
06 03 08	Saline solutions containing nitrates and related compounds
06 03 09	Solid salts containing nitrides (nitrometallic)
06 03 10	Solid salts containing ammonium
06 03 11*	Salts and solutions containing cyanides
06 03 12	Salts and solutions containing organic compounds
06 03 99	Wastes not otherwise specified
06 04	**Metal-containing wastes**
06 04 01	Metallic oxides
06 04 02*	Metallic salts (except 06 03)
06 04 03*	Waste containing arsenic
06 04 04*	Waste containing mercury
06 04 05*	Waste containing other heavy metals
06 04 99	Wastes not otherwise specified
06 05	**Sludges from on-site effluent treatment**
06 05 02*	Sludges from on-site effluent treatment containing dangerous substances
06 05 03	Sludges from on-site effluent treatment other than those mentioned in 06 05 02
06 06	**Wastes from sulphur chemical processes (production and transformation) and desulphurisation processes**
06 06 01	Waste containing sulphur
06 06 99	Wastes not otherwise specified

06 07	**Wastes from halogen chemical processes**
06 07 01*	Waste containing asbestos from electrolysis
06 07 02*	Activated carbon from chlorine production
06 07 99	Wastes not otherwise specified
06 08	**Waste from production of silicon and silicon derivatives**
06 08 01	Waste from production of silicon and silicon derivatives
06 09	**Wastes from phosphorus chemical processes**
06 09 01	Phosphogypsum
06 09 02	Phosphorous slag
06 09 99	Wastes not otherwise specified
06 10	**Waste from nitrogen chemical processes and fertiliser manufacture**
06 10 01	Waste from nitrogen chemical processes and fertiliser manufacture
06 11	**Waste from the manufacture of inorganic pigments and opacificiers**
06 11 01	Gypsum from titanium dioxide production
06 11 99	Wastes not otherwise specified
06 13	**Wastes from other inorganic chemical processes**
06 13 01*	Inorganic pesticides, biocides and wood preserving agents
06 13 02*	Spent activated carbon (except 06 07 02)
06 13 03	Carbon black
06 13 04*	Waste from asbestos processing
06 13 99	Wastes not otherwise specified
07	**WASTES FROM ORGANIC CHEMICAL PROCESSES**
07 01	**Wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals**
07 01 01*	Aqueous washing liquids and mother liquors
07 01 03*	Organic halogenated solvents, washing liquids and mother liquors
07 01 04*	Other organic solvents, washing liquids and mother liquors
07 01 07*	Halogenated still bottoms and reaction residues
07 01 08*	Other still bottoms and reaction residues
07 01 09*	Halogenated filter cakes, spent absorbents
07 01 10*	Other filter cakes, spent absorbents
07 01 11*	Sludges from on-site effluent treatment containing dangerous substances
07 01 12	Sludges from on-site effluent treatment other than those mentioned in 07 01 11
07 01 99	Wastes not otherwise specified
07 02	**Wastes from the MFSU of plastics, synthetic rubber and man-made fibres**
07 02 01*	Aqueous washing liquids and mother liquors
07 02 03*	Organic halogenated solvents, washing liquids and mother liquors
07 02 04*	Other organic solvents, washing liquids and mother liquors
07 02 07*	Halogenated still bottoms and reaction residues
07 02 08*	Other still bottoms and reaction residues
07 02 09*	Halogenated filter cakes, spent absorbents

07 02 10*	Other filter cakes, spent absorbents
07 02 11*	Sludges from on-site effluent treatment containing dangerous substances
07 02 12	Sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 13	Waste plastic
07 02 99	Wastes not otherwise specified
07 03	**Wastes from the MFSU of organic dyes and pigments (except 06 11)**
07 03 01*	Aqueous washing liquids and mother liquors
07 03 03*	Organic halogenated solvents, washing liquids and mother liquors
07 03 04*	Other organic solvents, washing liquids and mother liquors
07 03 07*	Halogenated still bottoms and reaction residues
07 03 08*	Other still bottoms and reaction residues
07 03 09*	Halogenated filter cakes, spent absorbents
07 03 10*	Other filter cakes, spent absorbents
07 03 11*	Sludges from on-site effluent treatment containing dangerous substances
07 03 12	Sludges from on-site effluent treatment other than those mentioned in 07 03 11
07 03 99	Wastes not otherwise specified
07 04	**Wastes from the MFSU of organic pesticides (except 02 01 05)**
07 04 01*	Aqueous washing liquids and mother liquors
07 04 03*	Organic halogenated solvents, washing liquids and mother liquors
07 04 04*	Other organic solvents, washing liquids and mother liquors
07 04 07*	Halogenated still bottoms and reaction residues
07 04 08*	Other still bottoms and reaction residues
07 04 09*	Halogenated filter cakes, spent absorbents
07 04 10*	Other filter cakes, spent absorbents
07 04 11*	Sludges from on-site effluent treatment containing dangerous substances
07 04 12	Sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 04 99	Wastes not otherwise specified
07 05	**Wastes from the MFSU of pharmaceuticals**
07 05 01*	Aqueous washing liquids and mother liquors
07 05 03*	Organic halogenated solvents, washing liquids and mother liquors
07 05 04*	Other organic solvents, washing liquids and mother liquors
07 05 07*	Halogenated still bottoms and reaction residues
07 05 08*	Other still bottoms and reaction residues
07 05 09*	Halogenated filter cakes, spent absorbents
07 05 10*	Other filter cakes, spent absorbents
07 05 11*	Sludges from on-site effluent treatment containing dangerous substances
07 05 12	Sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 05 99	Wastes not otherwise specified
07 06	**Wastes from the MFSU of fats, grease, soaps, detergents disinfectants and cosmetics**
07 06 01*	Aqueous washing liquids and mother liquors
07 06 03*	Organic halogenated solvents, washing liquids and mother liquors
07 06 04*	Other organic solvents, washing liquids and mother liquors
07 06 07*	Halogenated still bottoms and reaction residues
07 06 08*	Other still bottoms and reaction residues

07 06 09*	Halogenated filter cakes, spent absorbents
07 06 10*	Other filter cakes, spent absorbents
07 06 11*	Sludges from on-site effluent treatment containing dangerous substances
07 06 12	Sludges from on-site effluent treatment other than those mentioned in 07 06 11
07 06 99	Wastes not otherwise specified
07 07	**Wastes from the MFSU of fine chemicals and chemical products not otherwise specified**
07 07 01*	Aqueous washing liquids and mother liquors
07 07 03*	Organic halogenated solvents, washing liquids and mother liquors
07 07 04*	Other organic solvents, washing liquids and mother liquors
07 07 07*	Halogenated still bottoms and reaction residues 07 07 08* Other still bottoms and reaction residues
07 07 09*	Halogenated filter cakes, spent absorbents
07 07 10*	Other filter cakes, spent absorbents
07 07 11*	Sludges from on-site effluent treatment containing dangerous substances
07 07 12	Sludges from on-site effluent treatment other than those mentioned in 07 07 11
07 07 99	Wastes not otherwise specified
08	**WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS**
08 01	**Wastes from MFSU and removal of paint and varnish**
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous substances
08 01 12	Waste paint and varnish other than those mentioned in 08 01 11
08 01 13*	Sludges from paint or varnish containing organic solvents or other dangerous substances
08 01 14	Sludges from paint or varnish other than those mentioned in 08 01 13
08 01 15*	Aqueous sludges containing paint or varnish containing organic solvents or other dangerous substances 08 01 16
08 01 17*	Aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
08 01 18	Waste from paint or varnish removal other than those mentioned in 08 01 17
08 01 19*	Aqueous suspensions containing paint or varnish containing organic solvents or other dangerous substances
08 01 20	Aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19
08 01 21*	Waste paint or varnish remover
08 01 99	Wastes not otherwise specified
08 02	**Wastes from MFSU of other coatings (including ceramic materials)**
08 02 01	Waste coating powders
08 02 02	Aqueous sludges containing ceramic materials
08 02 03	Aqueous suspensions containing ceramic materials
08 02 99	Wastes not otherwise specified
08 03	**Wastes from MFSU of printing inks**
08 03 01*	Waste ink containing halogenated solvents
08 03 02*	Waste ink containing non-halogenated solvents
08 03 03	Waste from water-based ink
08 03 04	Dried ink
08 03 05*	Ink sludges containing halogenated solvents

08 03 06*	Ink sludges containing non-halogenated solvents
08 03 07	Aqueous sludges containing ink
08 03 08	Aqueous liquid waste containing ink 08 03 09 Waste printing toner (including cartridges)
08 03 10*	Waste organic solvents used for cleaning
08 03 11*	Waste etching solutions 08 03 99 Wastes not otherwise specified
08 04	**Wastes from MFSU of adhesives and sealants (including waterproofing products)**
08 04 09*	Waste adhesives and sealants containing organic solvents or other dangerous substances 08 04 10
08 04 11*	Adhesive and sealant sludges containing organic solvents or other dangerous substances
08 04 12	Adhesive and sealant sludges other than those mentioned in 08 04 11
08 04 13*	Aqueous sludges containing adhesives or sealants containing organic solvents or other dangerous substances
08 04 14	Aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13
08 04 15*	Aqueous liquid waste containing adhesives or sealants with organic solvents or other dangerous substances
08 04 16	Aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15
08 04 99	Wastes not otherwise specified
08 05	**Wastes not otherwise specified**
08 05 01*	Waste isocyanates
09	**WASTES FROM THE PHOTOGRAPHIC INDUSTRY**
09 01	**Wastes from the photographic industry**
09 01 01*	Water-based developer and activator solutions
09 01 02*	Water-based offset plate developer solutions
09 01 03*	Solvent-based developer solutions
09 01 04*	Fixer solutions
09 01 05*	Bleach solutions and bleach fixer solutions
09 01 06*	Waste containing silver from on-site treatment of photographic waste
09 01 07	Photographic film and paper containing silver or silver compounds
09 01 08	Photographic film and paper free of silver or silver compounds
09 01 10	Single-use cameras without batteries
09 01 11*	Single-use cameras containing batteries included in 16 06 01, 16 06 02 or 16 06 03
09 01 12	Single-use cameras containing batteries other than those mentioned in 09 01 11
09 01 99	Wastes not otherwise specified
10	**INORGANIC WASTES FROM THERMAL PROCESSES**
10 01	**Wastes from power stations and other combustion plants (except 19)**
10 01 01	Bottom ash
10 01 02	Coal fly ash
10 01 03	Peat and (untreated) wood fly ash
10 01 04*	Oil fly ash
10 01 05	Calcium-based reaction waste from flue gas desulphurisation in solid form
10 01 06	Other solid waste from gas treatment
10 01 07	Calcium-based reaction waste from flue gas desulphurisation in sludge form
10 01 08	Other sludges from gas treatment

10 01 09*	Sulphuric acid
10 01 11	Aqueous sludges from boiler cleansing
10 01 12	Spent linings and refractories
10 01 13*	Fly ash from emulsified hydrocarbons used as fuel
10 01 99	Wastes not otherwise specified
10 02	**Wastes from the iron and steel industry**
10 02 01	Waste from the processing of slag
10 02 02	Unprocessed slag
10 02 05	Other sludges
10 02 06	Spent linings and refractories
10 02 07*	Solid waste from gas treatment of electrical arc furnaces containing dangerous substances
10 02 08	Solid waste from gas treatment of electrical arc furnaces other than those mentioned in 10 02 07
10 02 09	Solid waste from gas treatment of other iron and steel processes
10 02 10	Mill scales
10 02 11*	Waste from cooling water treatment containing oil
10 02 12	Other waste from cooling water treatment
10 02 13*	Sludges from gas treatment containing dangerous substances
10 02 14	Sludges from gas treatment other than those mentioned in 10 02 13
10 02 99	Wastes not otherwise specified
10 03	**Wastes from aluminium thermal metallurgy**
10 03 01*	Tars and other carbon-containing wastes from anode manufacture
10 03 02	Anode scraps
10 03 04*	Primary smelting slags/white drosses
10 03 05	Alumina dust
10 03 06	Used carbon strips and fireproof materials from electrolysis
10 03 07*	Spent pot linings
10 03 08*	Salt slags from secondary smelting
10 03 09*	Black drosses from secondary smelting
10 03 10*	Waste from treatment of salt slags and black drosses
10 03 11	Flue gas dust
10 03 12	Other particulates and dust (including ball mill dust)
10 03 13	Solid waste from gas treatment
10 03 14	Sludges from gas treatment
10 03 15*	Skimmings that are flammable or emit, upon contact with water, flammable gases in dangerous quantities
10 03 16	Skimmings other than those mentioned in 10 03 15
10 03 99	Wastes not otherwise specified
10 04	**Wastes from lead thermal metallurgy**
10 04 01*	Slags (first and second smelting)
10 04 02*	Dross and skimmings (first and second smelting)
10 04 03*	Calcium arsenate
10 04 04*	Flue gas dust
10 04 05*	Other particulates and dust
10 04 06*	Solid waste from gas treatment

10 04 07*	Sludges from gas treatment
10 04 08	Spent linings and refractories
10 04 99	Wastes not otherwise specified
10 05	**Wastes from zinc thermal metallurgy**
10 05 01*	Slags (first and second smelting)
10 05 02	Dross and skimmings (first and second smelting)
10 05 03*	Flue gas dust 10 05 04 Other particulates and dust
10 05 05*	Solid waste from gas treatment
10 05 06*	Sludges from gas treatment
10 05 07	Spent linings and refractories
10 05 99	Wastes not otherwise specified
10 06	**Wastes from copper thermal metallurgy**
10 06 01	Slags (first and second smelting)
10 06 02	Dross and skimmings (first and second smelting)
10 06 03*	Flue gas dust
10 06 04	Other particulates and dust
10 06 05*	Waste from electrolytic refining
10 06 06*	Solid waste from gas treatment
10 06 07*	Sludges from gas treatment
10 06 08	Spent linings and refractories
10 06 99	Wastes not otherwise specified
10 07	**Wastes from silver, gold and platinum thermal metallurgy**
10 07 01	Slags (first and second smelting)
10 07 02	Dross and skimmings (first and second smelting)
10 07 03	Solid waste from gas treatment
10 07 04	Other particulates and dust
10 07 05	Sludges from gas treatment
10 07 06	Spent linings and refractories
10 07 99	Wastes not otherwise specified
10 08	**Wastes from other non-ferrous thermal metallurgy**
10 08 01	Slags (first and second smelting)
10 08 02	Dross and skimmings (first and second smelting)
10 08 03	Flue gas dust
10 08 04	Other particulates and dust
10 08 05	Solid waste from gas treatment
10 08 06	Sludges from gas treatment
10 08 07	Spent linings and refractories
10 08 99	Wastes not otherwise specified
10 09	**Wastes from casting of ferrous pieces**
10 09 01	Casting cores and moulds containing organic binders which have not undergone pouring
10 09 02	Casting cores and moulds containing organic binders which have undergone pouring
10 09 03	Furnace slag
10 09 04	Furnace dust

10 09 99	Wastes not otherwise specified
10 10	**Wastes from casting of non-ferrous pieces**
10 10 01	Casting cores and moulds containing organic binders which have not undergone pouring
10 10 02	Casting cores and moulds containing organic binders which have undergone pouring
10 10 03	Furnace slag
10 10 04	Furnace dust
10 10 99	Wastes not otherwise specified
10 11	**Wastes from manufacture of glass and glass products**
10 11 01	Waste preparation mixture before thermal processing
10 11 02	Waste glass
10 11 03	Waste glass-based fibrous materials
10 11 04	Flue gas dust
10 11 05	Other particulates and dust
10 11 06	Solid waste from gas treatment
10 11 07	Sludges from gas treatment
10 11 08	Spent linings and refractories
10 11 99	Wastes not otherwise specified
10 12	**Wastes from manufacture of ceramic goods, bricks, tiles and construction products**
10 12 01	Waste preparation mixture before thermal processing
10 12 02	Flue gas dust
10 12 03	Other particulates and dust
10 12 04	Solid waste from gas treatment
10 12 05	Sludges from gas treatment
10 12 06	Discarded moulds
10 12 07	Spent linings and refractories
10 12 99	Wastes not otherwise specified
10 13	**Wastes from manufacture of cement, lime and plaster and articles and products made from them**
10 13 01	Waste preparation mixture before thermal processing
10 13 02	Waste from asbestos-cement manufacture
10 13 03	Waste from other cement-based composite materials
10 13 04	Waste from calcination and hydration of lime
10 13 05	Solid waste from gas treatment
10 13 06	Other particulates and dust
10 13 07	Sludges from gas treatment
10 13 08	Spent linings and refractories
10 13 99	Wastes not otherwise specified
11	**INORGANIC METAL-CONTAINING WASTES FROM METAL TREATMENT AND THE COATING OF METALS, AND NON-FERROUS HYDROMETALLURGY**
11 01	**Liquid wastes and sludges from metal treatment and coating of metals, (e.g. galvanic processes, zinc coating processes, pickling processes, etching, phosphatising, alkaline degreasing)**
11 01 01*	Cyanidic (alkaline) waste containing heavy metals other than chromium
11 01 02*	Cyanidic (alkaline) waste not containing heavy metals

11 01 03*	Cyanide-free wastes containing chromium
11 01 04	Cyanide-free wastes not containing chromium
11 01 05*	Acidic pickling solutions
11 01 06*	Acids not otherwise specified
11 01 07*	Alkalis not otherwise specified
11 01 08*	Phosphatising sludges
11 02	**Wastes and sludges from non-ferrous hydrometallurgical processes**
11 02 01	Sludges from copper hydrometallurgy
11 02 02*	Sludges from zinc hydrometallurgy (including jarosite, goethite)
11 02 03	Waste from the production of anodes for aqueous electrolytical processes
11 02 04	Sludges not otherwise specified
11 03	**Sludges and solids from tempering processes**
11 03 01*	Waste containing cyanide
11 03 02*	Other wastes
11 04	**Other inorganic metal-containing wastes not otherwise specified**
11 04 01	Other inorganic metal-containing wastes not otherwise specified
12	**WASTES FROM SHAPING AND SURFACE TREATMENT OF METALS AND PLASTICS**
12 01	**Wastes from shaping (including forgoing, welding, pressing, drawing, turning, cutting and filing)**
12 01 01	Ferrous metal filings and turnings
12 01 02	Other ferrous metal particles
12 01 03	Non-ferrous metal filings and turnings
12 01 04	Other non-ferrous metal particles
12 01 05	Plastics particles
12 01 06*	Waste machining oils containing halogens (except emulsions)
12 01 07*	Waste machining oils free of halogens (except emulsions)
12 01 08*	Waste machining emulsions containing halogens
12 01 09*	Waste machining emulsions free of halogens
12 01 10*	Synthetic machining oils
12 01 11*	Machining sludges
12 01 12*	Spent waxes and fats
12 01 13	Welding waste
12 01 99	Wastes not otherwise specified
12 02	**Wastes from mechanical surface treatment processes (blasting, grinding, honing, lapping, polishing)**
12 02 01	Spent blasting grit
12 02 02	Sludges from grinding, honing and lapping
12 02 03	Polishing sludges
12 02 99	Wastes not otherwise specified
12 03	**Wastes from water and steam degreasing processes (except 11)**
12 03 01*	Aqueous washing liquids

12 03 02*	Steam degreasing waste
13	**OIL WASTES (except edible oils, 05 and 12)**
13 01	**Waste hydraulic oils and brake fluids**
13 01 01*	Hydraulic oils, containing PCBs or PCTs
13 01 02*	Other chlorinated hydraulic oils (except emulsions)
13 01 03*	Non-chlorinated hydraulic oils (except emulsions)
13 01 04*	Chlorinated emulsions
13 01 05*	Non-chlorinated emulsions
13 01 06*	Hydraulic oils containing only mineral oil
13 01 07*	Other hydraulic oils
13 01 08*	Brake fluids
13 02	**Waste engine, gear and lubricating oils**
13 02 01*	Chlorinated engine, gear and lubricating oils
13 02 02*	Non-chlorinated engine, gear and lubricating oils
13 02 03*	Other engine, gear and lubricating oils
13 03	**Waste insulating and heat transmission oils and other liquids**
13 03 01*	Insulating or heat transmission oils and other liquids containing PCBs or PCTs
13 03 02*	Other chlorinated insulating and heat transmission oils and other liquids
13 03 03*	Non-chlorinated insulating and heat transmission oils and other liquids
13 03 04*	Synthetic insulating and heat transmission oils and other liquids
13 03 05*	Mineral insulating and heat transmission oils
13 04	**Bilge oils**
13 04 01*	Bilge oils from inland navigation
13 04 02*	Bilge oils from jetty sewers
13 04 03*	Bilge oils from other navigation
13 05	**Oil/water separator contents**
13 05 01*	Oil/water separator solids
13 05 02*	Oil/water separator sludges
13 05 03*	Interceptor sludges
13 05 04*	Desalter sludges or emulsions
13 05 05*	Other emulsions
13 06	**Oil waste not otherwise specified**
13 06 01*	Oil waste not otherwise specified
14 08)	**WASTES FROM ORGANIC SUBSTANCES USED AS SOLVENTS (except 07 and**
14 01	**Wastes from metal degreasing and machinery maintenance**
14 01 01*	chlorofluorocarbons
14 01 02*	other halogenated solvents and solvent mixes
14 01 03*	Other solvents and solvent mixes
14 01 04*	Aqueous solvent mixes containing halogens
14 01 05*	Aqueous solvent mixes free of halogens
14 01 06*	Sludges or solid wastes containing halogenated solvents

14 01 07*	Sludges or solid wastes free of halogenated solvents
14 02	**Wastes from textile cleaning and degreasing of natural products**
14 02 01*	Halogenated solvents and solvent mixes
14 02 02*	Solvent mixes or organic liquids free of halogenated solvents
14 02 03*	Sludges or solid waste containing halogenated solvents
14 02 04*	Sludges or solid waste containing other solvents
14 03	**Wastes from the electronic industry**
14 03 01*	Chlorofluorocarbons
14 03 02*	Other halogenated solvents
14 03 03*	Solvents and solvent mixes free of halogenated solvents
14 03 04*	Sludges or solid wastes containing halogenated solvents
14 03 05*	Sludges or solid wastes containing other solvents
14 04	**Wastes from coolants, foam/aerosol propellents**
14 04 01*	Chlorofluorocarbons
14 04 02*	Other halogenated solvents and solvent mixes
14 04 03*	Other solvents and solvent mixes
14 04 04*	Sludges or solid waste containing halogenated solvents
14 04 05*	Sludges or solid waste containing other solvents
14 05	**Wastes from solvent and coolant recovery (still bottoms)**
14 05 01*	Chlorofluorocarbons
14 05 02*	Halogenated solvents and solvent mixes
14 05 03*	Other solvents and solvent mixes
14 05 04*	Sludges containing halogenated solvents
14 05 05*	Sludges containing other solvents
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**Packaging**
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 03	Wooden packaging
15 01 04	Metallic packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 07	Glass packaging
15 01 08*	Packaging containing residues of or contaminated by dangerous substances
15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 02*	Absorbents, filter materials, wiping cloths, protective clothing contaminated by dangerous substances
15 02 03	Absorbents, filter materials , wiping cloths and protective clothing other than those mentioned in 15 02 02
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**

16 01	**End-of-life vehicles and their components**
16 01 03	End-of-life tyres
16 01 04	Discarded vehicles
16 01 06	End-of-life vehicles, drained of liquids and emptied of other hazardous components
16 01 99	Wastes not otherwise specified
16 02	**Discarded equipment and its components**
16 02 09*	Transformers and capacitors containing PCBs or PCTs
16 02 10*	Discarded equipment containing or contaminated by PCBs or PCTs other than those mentioned in 16 02 09
16 02 11*	Discarded equipment containing chlorofluorocarbons
16 02 12*	Discarded equipment containing free asbestos
16 02 13*	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12
16 02 14	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 15*	Hazardous components removed from discarded equipment
16 02 16	Components removed from discarded equipment other than those mentioned in 16 02 15
16 03	**Off-specification batches**
16 03 01	Inorganic off-specification batches
16 03 02	Organic off-specification batches
16 04	**Waste explosives**
16 04 01*	Waste ammunition
16 04 02*	Fireworks waste
16 04 03*	Other waste explosives
16 05	**Chemicals and gases in containers**
16 05 01	Industrial gases in high pressure cylinders, LPG containers and industrial aerosol containers (including halons)
16 05 02	Other waste containing inorganic chemicals, e.g. lab chemicals not otherwise specified, fire extinguishing powders
16 05 03	Other waste containing organic chemicals, e.g. lab chemicals not otherwise specified
16 06	**Batteries and accumulators**
16 06 01*	Lead batteries
16 06 02*	Ni-Cd batteries
16 06 03*	Mercury-containing batteries
16 06 04	Alkaline batteries (except 16 06 03)
16 06 05	Other batteries and accumulators
16 06 06*	Electrolyte from batteries and accumulators
16 07	**Wastes from transport and storage tank cleaning (except 05 and 12)**
16 07 01*	Waste from marine transport tank cleaning, containing chemicals
16 07 02*	Waste from marine transport tank cleaning, containing oil
16 07 03*	Waste from railway and road transport tank cleaning, containing oil
16 07 04*	Waste from railway and road transport tank cleaning, containing chemicals
16 07 05*	Waste from storage tank cleaning, containing chemicals

16 07 06* Waste from storage tank cleaning, containing oil
16 07 07 Solid waste from ship cargoes
16 07 99 Wastes not otherwise specified

16 08 Spent catalysts
16 08 01 Spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)
16 08 02* Spent catalysts containing dangerous transition metals (1) or transition metal compounds
16 08 03 Spent catalysts containing other transition metals (2) or transition metal compounds (except 16 08 07)
16 08 04 Spent fluid catalytic cracking catalysts
16 08 05* Spent catalysts containing phosphoric acid
16 08 06* Spent liquids used as catalysts
16 08 07* Spent catalysts contaminated with dangerous substances

17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING ROAD CONSTRUCTION)

17 01 Concrete, bricks, tiles, ceramics, and gypsum-based materials
17 01 01 Concrete
17 01 02 Bricks
17 01 03 Tiles and ceramics
17 01 04 Gypsum-based construction materials
17 01 05 Asbestos-based construction materials

17 02 Wood, glass and plastic
17 02 01 Wood
17 02 02 Glass
17 02 03 Plastic

17 03 Asphalt, tar and tarred products
17 03 01 Asphalt containing tar
17 03 02 Asphalt not containing tar
17 03 03 Tar and tar products

17 04 Metals (including their alloys)
17 04 01 Copper, bronze, brass
17 04 02 Aluminium
17 04 03 Lead
17 04 04 Zinc
17 04 05 Iron and steel
17 04 06 Tin
17 04 07 Mixed metals
17 04 08 Cables

17 05 Soil and dredging spoil
17 05 03* Soil and stones containing dangerous substances
17 05 04 Soil and stones other than those mentioned in 17 05 03

17 05 05*	Dredging spoil containing dangerous substances
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 06	**Insulation materials**
17 06 01*	Insulation materials containing asbestos
17 06 02	Other insulation materials
17 07	**Mixed construction and demolition waste**
17 07 02*	Mixed construction and demolition waste or separated fractions containing dangerous substances
17 07 03	Mixed construction and demolition waste other than those mentioned in 17 07 02

18	**WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)**
18 01	**Wastes from natal care, diagnosis, treatment or prevention of disease in humans**
18 01 01	Sharps (except 18 01 03) 18 01 02 Body parts and organs including blood bags and blood preserves (except 18 01 03)
18 01 03*	Waste whose collection and disposal is subject to special requirements in view of the prevention of infection
18 01 04	Waste whose collection and disposal is not subject to special requirements in view of the prevention of infection, (e.g. dressings, plaster casts, linen, disposable clothing, diapers)
18 01 06*	Chemicals consisting of or containing dangerous substances
18 01 07	Chemicals other than those mentioned in 18 01 06
18 01 08*	Cytotoxic and cytostatic medicines
18 01 09	Medicines other than those mentioned in 18 01 08
18 01 10*	Amalgam waste from dental care
18 02	**Wastes from research, diagnosis, treatment or prevention of disease involving animals**
18 02 01	Sharps (except 18 02 02)
18 02 02*	Waste whose collection and disposal is subject to special requirements in view of the prevention of infection
18 02 03	Waste whose collection and disposal is not subject to special requirements in view of the prevention of infection
18 02 05*	Chemicals consisting of or containing dangerous substances
18 02 06	Chemicals other than those mentioned in 18 02 05
18 02 07*	Cytotoxic and cytostatic medicines
18 02 08	Medicines other than those mentioned in 18 02 07
19	**WASTES FROM WASTE TREATMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE WATER INDUSTRY**
19 01	**Wastes from incineration or pyrolysis of waste**
19 01 02	Ferrous materials removed from bottom ash
19 01 05*	Filter cake from gas treatment
19 01 06*	Aqueous liquid waste from gas treatment and other aqueous liquid waste
19 01 07*	Solid waste from gas treatment
19 01 10*	Spent activated carbon from flue gas treatment
19 01 11*	Bottom ash and slag containing dangerous substances
19 01 12	Bottom ash and slag other than those mentioned in 19 01 11
19 01 13*	Fly ash containing dangerous substances
19 01 14	Fly ash other than those mentioned in 19 01 13
19 01 15*	Boiler dust containing dangerous substances
19 01 16	Boiler dust other than those mentioned in 19 01 15
19 01 17*	Pyrolysis waste containing dangerous substances
19 01 18	Pyrolysis waste other than those mentioned in 19 01 17

19 01 99	Wastes not otherwise specified
19 02	**Wastes from specific physico/chemical treatments of industrial waste, (e.g. dechromatation, decyanidation, neutralisation)**
19 02 01*	Metal hydroxide sludges and other sludges from metal insolubilisation treatment
19 02 03	Premixed waste composed only of wastes not marked as hazardous
19 02 04*	Premixed waste composed of at least one waste marked as hazardous
19 03	**Stabilised/solidified wastes** ([3])
19 03 04*	Waste marked as hazardous, partly stabilised ([4])
19 03 05	Stabilised waste other than those mentioned in 19 03 04
19 03 06*	Waste marked as hazardous, solidified
19 03 07	Solidified waste other than those mentioned in 19 03 06
19 04	**Vitrified waste and wastes from vitrification**
19 04 01	Vitrified waste
19 04 02*	Fly ash and other flue gas treatment waste
19 04 03*	Non-vitrified solid phase
19 04 04	Aqueous liquid waste from vitrified waste tempering
19 05	**Wastes from aerobic treatment of solid wastes**
19 05 01	Non-composted fraction of municipal and similar waste
19 05 02	Non-composted fraction of animal and vegetable waste
19 05 03	Off-specification compost
19 05 99	Wastes not otherwise specified
19 06	**Wastes from anaerobic treatment of waste**
19 06 01	Anaerobic treatment sludges of municipal and similar waste
19 06 02	Anaerobic treatment sludges of animal and vegetal waste
19 06 99	Wastes not otherwise specified
19 07	**Landfill leachate**
19 07 01	Landfill leachate
19 08	**Wastes from waste water treatment plants not otherwise specified**
19 08 01	Screenings
19 08 02	Waste from desanding
19 08 03*	Grease and oil mixture from oil/waste water separation
19 08 04	Sludges from the treatment of industrial waste water
19 08 05	Sludges from treatment of urban waste water
19 08 06*	Saturated or spent ion exchange resins
19 08 07*	Solutions and sludges from regeneration of ion exchangers
19 08 99	Wastes not otherwise specified

19 09	**Wastes from the preparation of drinking water or water for industrial use**
19 09 01	Solid waste from primary filtration and screenings
19 09 02	Sludges from water clarification
19 09 03	Sludges from decarbonation
19 09 04	Spent activated carbon
19 09 05	Saturated or spent ion exchange resins
19 09 06	Solutions and sludges from regeneration of ion exchangers
19 09 99	Wastes not otherwise specified
19 10	**Wastes from shredding of metal-containing waste**
19 10 01	Iron and steel waste
19 10 02	Non-ferrous waste
19 10 03*	Fluff — light fraction containing dangerous substances
19 10 04	Fluff — light fraction other than those mentioned in 19 10 03
19 10 05*	Dust and other fractions containing dangerous substances
19 10 06	Dust and other fractions other than those mentioned in 19 10 05
20	**MUNICIPAL WASTES AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**Separately collected fractions**
20 01 01	Paper and cardboard
20 01 02	Glass
20 01 03	Small plastics
20 01 04	Other plastics
20 01 05	Small metals (cans, etc.)
20 01 06	Other metals
20 01 07	Wood
20 01 08	Organic kitchen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 13*	Solvents
20 01 14*	Acids
20 01 15*	Alkalines
20 01 17*	Photochemicals
20 01 19*	Pesticides
20 01 21*	Fluorescent tubes and other mercury-containing waste
20 01 22	Aerosols
20 01 23*	Discarded equipment containing chlorofluorocarbons
20 01 25	Edible oil and fat
20 01 26*	Oil and fat other than those mentioned in 20 04 25
20 01 27*	Paint, inks, adhesives and resins containing dangerous substances
20 01 28	Paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 29*	Detergents containing dangerous substances
20 01 30	Detergents other than those mentioned in 20 01 29
20 01 31*	Cytotoxic and cytostatic medicines
20 01 32	Medicines other than those mentioned in 20 01 31
20 01 33*	Mixed batteries and accumulators containing batteries or accumulators included in 16 06

01, 16 06 02 or 16 06 03

20 01 34 Batteries and accumulators other than those mentioned in 20 01 33

20 01 35* Discarded equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components

20 01 36 Discarded equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35

20 02 Garden and park wastes (including cemetery waste)

20 02 01 Compostable waste

20 02 02 Soil and stones

20 02 03 Other non-compostable wastes

20 03 Other municipal wastes

20 03 01 Mixed municipal waste

20 03 02 Waste from markets

20 03 03 Street cleaning residues

20 03 04 Septic tank sludge

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(1) Transition metals are: scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum, tantalum, rhenium.

(2) See footnote 1.

(3) Stabilisation processes change the dangerousness of the constituents in the waste and thus transform hazardous waste into non-hazardous waste. Solidification processes only change the physical state of the waste by using additives, (e.g. liquid into solid) without changing the chemical properties of the waste.

(4) A waste is considered as partly stabilised if after the stabilisation process dangerous constituents which have not been changed completely into non-dangerous constituents could be released into the environment in short, middle or long term.

Annex III Properties of waste which render them hazardous

H1 'Explosive': substances and preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

H2 'Oxidizing': substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

H3-A 'Highly flammable':

- liquid substances and preparations having a flash point below 21 ºC (including extremely flammable liquids), or
- substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- gaseous substances and preparations which are flammable in air at normal pressure, or
- substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

H3-B 'Flammable': liquid substances and preparations having a flash point equal to or greater than 21 ºC and less than or equal to 55 ºC.

H4 'Irritant': non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

H5 'Harmful': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

H6 'Toxic': substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested or if they penetrate the skin, may involve serious, acute or chronic health risks and even death.

H7 'Carcinogenic': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

H8 ‘Corrosive’: substances and preparations which may destroy living tissue on contacts.

H9 ‘Infectious’: substances and preparations containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms.

H10 ‘Toxic for reproduction’: substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

H11 ‘Mutagenic’: substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

H12 Wastes which release toxic or very toxic gases in contact with water, air or an acid.

H13* 'Sensitizing': substances and preparations which, if they are inhaled or if they penetrate the skin, are capable of eliciting a reaction of hypersensitization such that on further exposure to the substance or preparation, characteristic adverse effects are produced.

* as far as testing methods are available.

Annex IV Percentages which render waste hazardous

In the assessment of whether waste which contains a mixture of one or more chemical substances is hazardous, account shall be taken of all properties (1-15) which are mentioned in Annex 3.
Waste is hazardous under all circumstances if:
* the flash point of the waste is less than or equal to 55^0C, and/or if:
* the sum of the composite chemical substances which exhibit the properties specified in Appendix 3 amounts to a concentration which is equal to, or exceeds, the following percentage limits (by weight):

Property	%
Very toxic (R26, R27, R28, R39) [1])	0.1
Toxic (R23, R24, R25) [1])	3
Toxic (R48, R39) [1])	1
Harmful to health (R20, R21, R22) [1])	25
Harmful to health (R48) [1])	10
Corrosive (R35) [1])	1
Corrosive (R34) [1])	5
Irritant (R36, R37, R38) [1])	20
Irritant (R41) [1])	5
Sensitizing (R42, R43) [1])	1 [2])
Carcinogenic, category 1 or 2 (R45, R49) [1])	0.1
Carcinogenic, category 3 (R40) [1])	1 [2])
Mutagenic, category 1 or 2 (R46) [1])	0.1 [2])
Mutagenic, category 3 (R40) [1])	1 [2])
Teratogenic, category 1 or 2 (R60, R61) [1])	0.5 [2])
Teratogenic, category 3 (R62, R63) [1])	5 [2])
Ecotoxic, aquatic environment (R50, R51, R52, R53) and other ecosystems (R54, R55, R56, R57, R58, R59) [1])	not set

Property	%
Infectious	not set
Other	not set

[1]) [Refer to the MENR prevailing rules on classification, packaging, labelling, sale, and storage of chemical substances and products].

[2]) Concentration limits apply to individual chemical substances with the relevant properties.

Annex V Disposal operations

D 1 Deposit into or on to land (e.g. landfill, etc.)

D 2 Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.)

D 3 Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)

D 4 Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)

D 5 Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)

D 6 Release into a water body except seas/oceans

D 7 Release to seas/oceans including sea-bed insertion

D 8 Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12

D 9 Physico-chemical treatment not specified elsewhere in this Annex which results in inal compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.)

D 10 Incineration on land

D 11 Incineration at sea *

D 12 Permanent storage (e.g. emplacement of containers in a mine, etc.)

D 13 Blending or mixing prior to submission to any of the operations numbered D 1 to

[D 12**]

D 14 Repackaging prior to submission to any of the operations numbered D 1 to D 13

D 15 Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where the waste is produced) ***

* This operation is prohibited by EU legislation and international conventions.

** If there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, inter alia, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12.

*** Temporary storage means preliminary storage according to letter l of Article 3.

Annex VI Recovery operations

R 1 Use principally as a fuel or other means to generate energy*
R 2 Solvent reclamation/regeneration

R 3 Recycling/reclamation of organic substances which are not used as solvents (including
composting and other biological transformation processes) **
R 4 Recycling/reclamation of metals and metal compounds
R 5 Recycling/reclamation of other inorganic materials ***
R 6 Regeneration of acids or bases
R 7 Recovery of components used for pollution abatement
R 8 Recovery of components from catalysts
R 9 Oil re-refining or other reuses of oil
R 10 Land treatment resulting in benefit to agriculture or ecological improvement
R 11 Use of waste obtained from any of the operations numbered R 1 to R 10
R 12 Exchange of waste for submission to any of the operations numbered R 1 to R 11 ****
R 13 Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where the waste is produced) *****

* This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above:

- – 0.65 for installations permitted after 31 December 2008, using the following formula:

•

Energy efficiency = (Ep -(Ef + Ei)) / (0.97 xK (Ew + Ef))

In which:

Ep means annual energy produced as heat or electricity. It is calculated with energy in the
form of electricity being multiplied by 2.6 and heat produced for commercial use
multiplied by 1.1 (GJ/year)

Ef means annual energy input to the system from fuels contributing to the production of
steam (GJ/year)

Ew means annual energy contained in the treated waste calculated using the lower net
calorific value of the waste (GJ/year)

Ei means annual energy imported excluding Ew and Ef (GJ/year)

0.97 is a factor accounting for energy losses due to bottom ash and radiation.

This formula shall be applied in accordance with the reference document on Best Available
Techniques for waste incineration.

** This includes gasification and pyrolisis using the components as chemicals.

*** This includes soil cleaning resulting in recovery of the soil and recycling of inorganic
construction materials.

**** If there is no other R code appropriate, this can include preliminary operations prior to
recovery including pre-processing such as, inter alia, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending
or mixing prior to submission to any of the operations numbered R1 to R11.

***** Temporary storage means preliminary storage according to letter l of Article 3.

Annex VII List of substances cf. Article 3 on persistent organic pollutant stockpiles

Part A Substances listed in the Convention and in the Protocol

Substance	CAS No	EC No	SPECIFIC EXEMPTION ON INTERMEDIATE USE OR OTHER SPECIFICATION
Aldrin	309-00-2	206-215-8	-
Chlordane	57-74-9	200-349-0	-
Dieldrin	60-57-1	200-484-5	-
Endrin	72-20-8	200-775-7	-
Heptachlor	76-44-8	200-962-3	-
Hexachlorobenzene	118-74-1	200-273-9	-
Mirex	2385-85-5	219-196-6	-
Toxaphene	8001-35-2	232-283-3	-
Polychlorinated Biphenyls (PCB)	1336-36-3 others	215-648-1 others	Without prejudice to the Regulation of PCB, articles already in use at the time of entry into force of this Law are allowed to be used.
DDT trichloro-2,2-bis(4-chlorophenyl) ethane)	50-29-3	200-024-3	-

HCH, including lindane	608-73-1, 58-89-9	210-168-9, 200-401-2
Substance	CAS No	EC No
Chlordecone	143-50-0	205-601-3
Hexabromobiphenyl	36355-01-8	252-994-2

Part B Substances listed only in the Protocol

Annex VIII List of substances subject to waste management provisions set out in HWL Article 7

Substance	CAS No	EC No	Concentration limit referred to in A (a)
Aldrin	309-00-2	206-215-8	50 mg/kg
Chlordane	57-74-9	200-349-0	50 mg/kg
Dieldrin	60-57-1	200-484-5	50 mg/kg
Endrin	72-20-8	200-775-7	50 mg/kg
Heptachlor	76-44-8	200-962-3	50 mg/kg
Hexachlorobenzene	118-74-1	200-273-9	50 mg/kg
Mirex	2385-85-5	219-196-6	50 mg/kg
Toxaphene	8001-35-2	232-283-3	50 mg/kg
Polychlorinated Biphenyls (PCB)	1336-36-3 and others	215-648-1	50 mg/kg (*)
DDT (1,1 ,1-	50-29-3	200-024-3	50 mg/kg
Chlordecone	143-50-0	205-601-3	50 mg/kg
Polychlorinated dibenzop-dioxins and dibenzofurans			15 µg/kg (**)
The sum of alpha, betaand gamma-HCH	58-89-9, 319-84-6, 319-85-7	206-270-8, 206-271-3 and 200-401-2	50 mg/kg
Hexabromobiphenyl	36355-01-8	252-994-2	50 mg/kg

(*) Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

(**) The limit is calculated as PCDD and PCDF according to the following toxic equivalency factors (TEFs):

	TEF
PCDD	
2,3,7,8-TeCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0,1
1,2,3,6,7,8-HxCDD	0,1
1,2,3,7,8,9-HxCDD	0,1
1,2,3,4,6,7,8-HpCDD	0,01
PCDF	

2,3,7,8-TeCDF	0,1
1,2,3,7,8-PeCDF	0,05
2,3,4,7,8-PeCDF	0,5
1,2,3,4,7,8-HxCDF	0,1
1,2,3,6,7,8-HxCDF	0,1
1,2,3,7,8,9-HxCDF	0,1
2,3,4,6,7,8-HxCDF	0,1
1,2,3,4,6,7,8-HpCDF	0,01

Annex IX Management of POPs waste

Part 1 Disposal and recovery under HWL Article 4

The following disposal and recovery operations, as provided for in Annex V and VI of this Law, are permitted for the purposes of HWL Article 4 when applied in such a way as to ensure that the persistent organic pollutant content is destroyed or irreversibly transformed

D9 Physico-chemical treatment,
D10 Incineration on land, and
R1 Use principally as a fuel or other means to generate energy, excluding waste containing PCBs.

Pre-treatment operation prior to destruction or irreversible transformation pursuant to this Part of this Annex may be performed, provided that a POP substance that is isolated from the waste during the pre-treatment is subsequently disposed of in accordance with this Part of this Annex.

In addition, repackaging and temporary storage operations may be performed prior to such pre-treatment or prior to destruction or irreversible transformation pursuant to this part of this Annex.

Appendix 2 - Annexes relating to the POPs provisions

Annex VI List of POP substances subject to prohibitions

[Note: Substances listed in the Convention and in the Protocol]

Substance	CAS No	EC No	Specific exemption on interme or other specification
Aldrin	309-00-2	206-215-8	-
Chlordane	57-74-9	200-349-0	-
Dieldrin	60-57-1	200-484-5	-
Endrin	72-20-8	200-775-7	-
Heptachlor	76-44-8	200-962-3	-
Hexachlorobenzene	118-74-1	200-273-9	-
Mirex	2385-85-5	219-196-6	-
Toxaphene	8001-35-2	232-283-3	-
Polychlorinated Biphenyls (PCB)	1336-36-3 and others	215-648-1 others	Without prejudice to the Regu PCB [insert the relevant refere articles already in use at the ti entry into force of this Regula allowed to be used.
DDT trichloro-2,2-bis(4-chlorophenyl) ethane)	50-29-3	200-024-3	[The existing [production and] DDT as a closed-system site- l intermediate for the productio dicofol until 1 January 2014, i accordance with Article 4(4) o Law.]

[Part A bis The new substances listed in the Convention and in the Protocol]

Substance	CAS No	EC No	Specific exemption on intermedi other specification
pentabromodiphenyl	32534-81-9		
chlordecone	145-50-0		
hexabromobifenyl	36355-01-8		
hexachlorocyclohexane (HCH, including lindane)	08-73-1 and 58-89-9		

Annex VIII List of POP substances subject to restrictions

Part A Substances listed in the Convention and in the Protocol

Substance	CAS No	EC No	Specific exemption on intermedi other specification
-			

Comment for consideration: No exception are any longer permitted under the EU

Part B Substances listed only in the Protocol

Substance	CAS No	EC No	Specific exemption on intermedi
-			

Comment for consideration by MENR: See my comments above under Annex I- MENR to decide to follow UNECE or EU approach re linden legislation

Appendix 3 – Example of an PCB Regulation

Regulation on PCB

Chapter I Objective and definitions

Article 1

This Regulation has been developed to provide a legal framework for environmental sound management with PCB and equipment containing PCB and to ensure effective implementation of and compliance with requirements of the Stockholm Convention on Persistent Organic Pollutants (ratified by RM on 19 February 2004), the UNECE Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants (ratified by RM on 1 October 2002) and its associated EU Regulation 850/2004/EC of 29 April 2004 on POPs and as well as approximation of the EU Directive 96/59/EC of 16 September 1996 PCB disposal, the Government of the Republic of Moldova.

Article 2

The purpose of this Regulation is to approximate Moldovan law to that of the European Union on the controlled disposal of PCBs, the decontamination or disposal of equipment containing PCBs and/or the disposal of used PCBs in order to eliminate them completely on the basis of the provisions of Directive 96/59/EC on disposal of PCB as well as to implement certain provisions of the Stockholm Convention on Persistent Organic Pollutants concerning PCBs.

Article 3

For the purposes of this Regulation:

(a) 'PCBs` means:

- polychlorinated biphenyls,
- polychlorinated terphenyls,
- Monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyl-dibromo-diphenyl methane,
- any mixture containing any of the abovementioned substances in a total of more than 0,005 % by weight;

(b) 'equipment containing PCBs` means any equipment containing PCBs or having contained PCBs (e.g. transformers, capacitors, switches, receptacles containing residual stocks) which has not been decontaminated. Equipment of a type which may contain PCBs shall be

treated as if it contains PCBs unless it is reasonable to assume the contrary;

(c) 'used PCBs` means any PCBs which are waste according to the legislation on waste;

(d) 'holder` means the natural or legal person who is in possession of PCBs, used PCBs and/or equipment containing PCBs;

(e) 'decontamination` means all operations which enable equipment, objects, materials or fluids contaminated by PCBs to be reused, recycled or disposed of under safe conditions, and which may include replacement, meaning all operations in which PCBs are replaced by suitable fluids not containing PCBs;

(f) 'disposal` means operations D 8 (biological treatment), D 9 (physico-chemical treatment), D 10 (incineration on land), and D 15 Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where the waste is produced) provided for in the legislation on wastes ;

(g) 'placing on the market' means supplying or making available to third persons against payment or free of charge. Imports into Moldova shall also be deemed to be placed on the market;

(h) 'article' means an object composed of one or more substances and/ or preparations which during production is given a specific shape, surface or design determining its end use function to a greater extent than its chemical composition does;

(i) 'substance' means chemical elements and their compounds as they occur in the natural state or as produced by industry;

(j) 'preparations' means mixtures or solutions composed of two or more substances.

Article 4

Unless otherwise stipulated in this Regulation, other waste management legislation shall apply to PCB waste.

Chapter II Production, placing on the market, use and maintenance

Article 5

The production and placing on the market of PCB whether on its own, in preparations or as constituents of articles, is prohibited.

Article 6

Article 5 shall not apply to a substance used for laboratory-scale research or as a reference standard.

Article 7

1. Equipment containing PCBs in volumes more than 5 dm^3 shall be taken out of service as soon as possible and no later than 31 December 2015. In the case of power capacitors, the threshold of 5 dm^3 shall be understood as including all the separate elements of a combined set.

2. Use of equipment referred to in Paragraph 1 containing between 0.005 % and 0.05% PCB may continue to be used until 31 December 2020.

3. Equipment containing PCB in volumes less than 5 dm^3 may continue to be used for their remaining lives, provided that they are in good working conditions.

Article 8

1. Separation of PCBs from other substances for the purpose of reuse of the PCBs is prohibited.

2. Topping up of transformers with PCBs is prohibited.

3. Until such time as they are decontaminated, taken out of service and/or disposed of in accordance with Article 12, the maintenance of transformers containing PCBs may continue only if the objective is to ensure that the PCBs they contain comply with technical standards or specifications regarding dielectric quality and provided that the transformers are in good working order and do not leak.

4. Equipment in use should be checked regularly in order to ensure timely response in case of leakage.

5. Leaking equipment containing PCB shall be taken out of service and managed in according to the provisions of article 11.

6. It is prohibited to mix or dilute any PCB liquid, PCB solid or PCB substance with any other substance.

Chapter III Inventory of PCB containing equipment

Article 9

1. The holder of equipment with PCB volume of more than 5 dm^3 shall compile an inventory of such equipment. In the case of power capacitors, the threshold of 5 dm^3 shall be understood as including all the separate elements of a combined set. The inventory shall be submitted to the Ministry of Ecology and Natural Resources no later than three month after entry into force of this Regulation.

2. The inventory shall comprise the following:

- the names and addresses of the holders,
- the location and description of the equipment,
- the quantity of PCBs contained in the equipment,
- the dates and types of treatment or replacement carried out or envisaged,
- the dates of declaration.

It shall be prepared on the basis of the inventory form contained in Annex I.

3. The inventory shall be regularly updated.

4. The holder of PBC containing equipment subject to inventories pursuant to Paragraph 1 shall notify the Ministry of Ecology and Natural Resources of any changes of the quantities they hold using the inventory form contained in Annex I.

5. Holders of electrical power equipment shall at the request of Ministry of Ecology and Natural Resources submit information indicating whether they hold PCB containing equipment.

6. Based on the information received from the holders, the Ministry of Ecology and Natural Resources shall compile a national inventory of equipment containing PCBs no later than one after the entry into force of this Regulation. The national inventory shall be updated annually.

Chapter IV Labelling

Article 10

1. Equipment containing PCBs which is subject to inventory pursuant to Article 9 shall be marked with a label indicating as a minimum (according to the Annex III, A):

(a) that the equipment contains PCB;

(b) that the equipment shall be disposed of to a licensed PCB waste management undertaking;

2. A label must also be affixed to the doors of the premises where such equipment is located indicating (according to the Annex III, B) that:

(a) PCB containing equipment is located at the premises;

(b) there is a risk of formation of toxic fumes in case of fire.

3. The marking pursuant to Paragraphs 2 and 3 shall be clearly visible and easily legible. The marking shall be appropriately durable and lasting.

4. The labelling of transformers pursuant to Paragraph 1 shall after its decontamination be replaced with the labelling specified in Article 11, Paragraph 2 letter d.

5. Inventoried equipment determined not to contain PCB shall be labelled with a label indicating that the equipment is not PCB-containing specified in the Annex III D hereto.

Chapter V Storage, decontamination and disposal of equipment containing PCB

Article 11

1. When equipment containing PCB subject to inventory in accordance with Article 9 is taken out of service, the holder of such equipment is responsible for managing the equipment in an environmentally sound manner by;

(a) transferring the equipment to an undertaking licensed to decontaminate and /or dispose of equipment containing PCBs in accordance with Article 17;

(b) storing it at designated areas in accordance with Annex II until decontamination or disposal will take place.

2. Where reasonably practicable, equipment containing PCBs which is not subject to inventory in accordance with Article 9 and which is part of another piece of equipment shall be removed and collected separately when the latter equipment is taken out of use, recycled or disposed of.

Article 12

1. Holders of equipment containing PCBs which are subject to inventory in accordance with Article 9 shall ensure that the equipment will be decontaminated and/ or disposed of as soon as possible and no later than of 31 December 2020.

2. Transformers subject to inventory in accordance with Article 9, containing more than 0,05 % by weight of PCBs shall be decontaminated under the following conditions:

(a) the objective of the decontamination must be to reduce the level of PCBs to less than 0,05 % by weight and, if possible, to no more than 0,005 % by weight;
(b) the replacement fluid not containing PCBs must entail markedly lesser risks;
(c) the replacement of the fluid must not compromise the subsequent disposal of the PCBs;
(d) the labelling of the transformer after its decontamination must be replaced by the labelling specified in the Annex III C hereto.
3. Transformers which contain between 0,05 % and 0,005 % by weight of PCBs in fluid shall be either decontaminated under the conditions laid down in paragraph 2 (b) to (d) or disposed of without prior decontamination.

4. PCB and equipment containing PCBs shall be disposed of in such a way that it does not exhibit the characteristics of persistent organic pollutants.

5. PCB and equipment containing PCBs shall be disposed of by one of the operations stated in Article 3 letter (f).

Article 13

Used PCBs and equipment containing PCBs shall be kept away from flammable products.

Article 14

1. Disposal or recovery operations that may lead to recovery, recycling, reclamation or re-use of PCB is prohibited.

2. Incineration of PCBs or used PCBs on ships is prohibited.

3. Until the entry into force of normative acts on incineration of waste, incineration of PCB in the Republic of Moldova is prohibited.

Article 15

PCB-disposal undertakings shall keep registers of the quantity, origin, nature and PCB content of used PCBs delivered to them. They shall communicate this information to the Ministry of Ecology and Natural Resources. The registers may be consulted by the local authorities and by the public. The undertakings also issue to holders who deliver used PCBs receipts specifying the nature and the quantity thereof.

Chapter VI Analyses

Article 16

Analyses of PCB shall be carried out by accredited laboratories in accordance with the reference methods in Annex IV.

Chapter VII Permitting

Article 17

1. Any establishment or undertaking which carries out decontamination and / or disposal of PCB equipment containing PCB or used PCBs shall obtain a permit from the Ministry of Ecology and Natural Resources.

2. An application for a permit shall include:

(a) The applicant and ownership:

i. The undertaking's name, address, Title Number, Enterprise Register Number and web-site;

ii. The undertakings contact person: name, address, phone number and e-mail address;

iii. Name and address of the owner of the property where the installation if sited if the applicant is not the owner;

iv. Short description of the undertaking's other activities and permits.

(b) Information of establishment and site of the installation:

i. Description for the need for establishment of new buildings and constructions;

ii. Expected time schedule for establishment of building works and construction works and expected time for starting of operation ;

iii. Information on the siting of building and installations;

(c) Layout drawings and maps showing :

i. The placing of the site and all buildings and installation on the site;

ii. Siting of areas for reception, storage and decontamination of PCB containing equipment and waste;

iii. Siting of storage of raw materials and auxiliary materials;

iv. Siting of outlets;

v. Siting of noise and vibration sources;

vi. Drainage facilities including drains, oil separators, sand traps, junctions to the municipal sewer system and tanks;

(d) Description of the installation and the applied technology for PCB decontamination or disposal:

i. Detailed description of the applied technology including a process layout drawing;

ii. Description of types and quantities of equipment that may be treated annually;

iii. Documentation of destruction efficiency of the applied process;

iv. In the case of decontamination, a description of replacement fluid and Material Safety Data Sheet of applied replacement fluid;

v. In the case of mobile installations, a description of the vehicle;

(e) Information on use of raw and auxiliary materials, other substances and energy:

i. Use of raw materials and auxiliary materials;

ii. Use of energy by energy source;

(f) Information on emission from the installation to each medium and measures for preventing or reducing the emissions:

i. Description of operations that may give rise to emission of PCBs and other pollutants to the air and measures for reduction of the emission;

ii. If the undertaking applies for discharge of waste water: for each type of waste water, a description of expected quantities, composition and concentration of pollutants, cleaning methods and capacity of oil separators and sand traps.

iii. Description of measures taken for reduction of pollution of soil and ground water;

(g) Information on major sources noise and vibration and measures to reduce the noise and vibration;

(h) Information on generation and disposal of waste:

i. Quantities of waste generated annually by waste type;

ii. Quantities expected to be stored at the site by waste type and information on how the waste is stored;

iii. Disposal method by waste type;

iv. Measures for the prevention of generation of waste.

(i) Measures for prevention of accidents and limiting their consequences;

(j) Measures planned to monitor emissions into the environment.

3. The PCB decontamination or disposal permit shall cover:

(a) the types and quantities of PCB waste;

(b) the technical requirements, in particular those listed in Annex V Part A;

(c) the safety precautions to be taken, in particular those listed in Annex V Part B;

(d) the treatment method, in particular those listed in Annex V Part C;.

(e) other general requirements, in particular those listed in Annex V Part D;.

4. Permits are granted for a period of five years, with the possibility of renewable. The permit is subject to the conditions and obligations in this Article. If the intended method of decontamination or disposal did not correspond with the requirements of the environmental legislation in force, the permit shall not be issued

Chapter VIII Administrative provisions

Article 18

1. For State Ecological control and for the enforcement of the provisions of this Regulation the provisions of the existing legislation shall apply.

Article 19

1. State Ecological Control and enforcement of the provisions in Chapter II concerning production, placement on the market, use and maintenance of the PCBs and PCB contaminated equipment shall be carried out by the State Environmental Inspection”

Annex I Inventory form

For the purpose of Article 9, the following form shall be used as a basis:

Record Number:	
Date:	
Responsible person:	

A	Information about the company and its location	
1.	Name of the company:	
2.	Address of the company (central office):	
3.	Address of sub-division: *(other then A2)*	
4.	Phone number:	
	Fax number:	
	E-mail:	
5.	Name and position of the contact person	
6.	Type of the company (producer, transporter, distributor)	
7.	Public or private company?	
8.	Location	Industrial Zone
		Urban Area
		Rural Area
9.	Number of staff	> 50
		10-50
		< 10
10.	Total number of electro-energy equipment at the site	Transformers
		Capacitors
		Other

B	**Information related to the PCB contaminated equipment** **To be filled in for each unit (for capacitors for each assembly with units of the same type)**			
1.	Name of manufacturer and country of origin			
2.	Type of equipment: *a. Transformer* *b. Capacitor* *c. Others (e.g. liquid filled barrel)*			
3.	Serial Number(s)			
4.	Date of fabrication			
5.	Power rating (voltage)			
6.	Weight	Equipment dry weight in (kg)		
		Oil / liquide (L or kg) including liquid absorbed in paper, wood, etc.		
		Size of equipment	Height, m 	Lenght, m
7.	In case of capacitors: number of units of same type in the assembly			
8.	Name of liquid (if known)			

9.	PCB content of liquide	> 10 % PCB
		> 0.05 % PCB or 500 ppm
		> 0.005 % PCB or 50 ppm
		< 0.005 % PCB or 50 ppm
		No PCB (according to plaque)
		PCB content not known
		Equipment emptied of liquide
10.	PCB analysis performer: if yes, which metod and when	
11.	Source of information related to electric equipment (a plaque with inscriptions, etc.)	
12.	Operational status of equipment in terms of: in use / stend-by	In use. yes / since
		On stand-by
		Decommissioned
13.	Condition of equipment	Leaking
		Immediate actions are needed
		Storage situation (open air, enclosure, etc.)

14.	Operation related to the management of oil	Was the oil changed / added?
		If yes, then when was the last change (add) of oil done?
		Responsible person for the change / Adding oil
		Type of oil changed / added?
15.	Planned date of next technical mentenance action, change / adding oil?	
16.	Planned treatment method	
17.	Planned time for treatment	
18.	Planned time for taking the equipment out of service (if not decontaminated)?	
19.	The equipment has been marked (date)	
20.	Other observations	
C	**Information to be filled in when the equpment has been disposed of to a licenced PCB waste undertaking**	
1.	Date of notification	
2.	Responsible person	
3.	Date of disposal	
4.	Name and address of licenced company taking over the responsibility of the equipment	

Annex II Requirements for storage by holders of equipment containing PCB cf Article 11, Paragraph 1, letter b

The holder shall ensure that the following conditions are met:

1. The area designated for temporary storage shall either be a building, room, shipping container or other structure or an area that is enclosed by a woven mesh wire fence or any other fence or wall with similar security characteristics, where the fence or wall is at least 1.80 m high;
2. The area designated for temporary storage shall have roof and walls and shall be adequate to prevent rainwater from reaching the stored PCBs and PCB items.
3. The entrance to the PCB storage site shall be locked or guarded and only authorized persons shall have permit to enter the site.
4. The storage site should be designed to ensure that PCBs will not be released to the environment.
5. PCB containing equipment (capacitors, ballasts, etc.) shall be placed in a polyethylene bag and in a sealable metal container.
6. This container must be clearly marked with the details of the contents and must be maintained in good order (that is, no visible signs of damage or corrosion).
7. If some of these materials are leaking, the container should be partially filled with an absorbent material, such as a commercial absorbent, kitty litter or a diatomaceous earth. The plastic wrapped leaking components can then be placed in the container.
8. All containers are to be stored in an area that prevents any discharge of the PCBs to the environment (no drains and the area must contain any leaks).
9. The containers should be stored in a separate location, well away from any flammable liquids and from food storage and preparation areas.
10. PCB containing waste shall be stored together, and separate from other stored materials and the PCB equipment and containers with PCB-containing waste shall be stored in a manner that makes them accessible for inspection.
11. Absorbent materials for clean-up shall be stored near the PCB storage site.
12. In case of storage of PCB-containing transformers, a fire protection and emergency procedures plan shall be developed the operator and Exceptional Situation Authority notified recognising that PCB-containing waste in the event of fire may form dioxins and furans. The plan shall provide information on:
    - emergency actions that should be taken in the event of a PCB spill or fire;
    - personal protection equipment that should be used during an emergency response;

- corporate personnel who can be contacted on a 24-hour basis to supervise emergency actions; and
- regulatory notification requirements detailing who must be notified in the event of an emergency.

Annex III A : Labelling of PCB contaminated equipment

Each item of PCB contaminated equipment, as identified after the inventory, must be clearly marked with an indelible and embossed or engraved sign which must include the following information:

ATTENTION!

Dangerous chemicals for humans and environment

That equipment contains PCB in the quantity more than 50 ppm

that the equipment shall be disposed of to a licensed PCB waste management undertaking

In case of emergency call: _____

Annex III B: Labelling of doors of the premises where PCB contaminated equipment is placed

Each door of the premises where PCB contaminated equipment is placed must be clearly marked with an indelible and embossed or engraved sign which must include the following information:

ATTENTION!

Dangerous chemicals for humans and environment

In that premises is placed equipment which contains PCB in the quantity more than 50 ppm

In case of fire toxic smoke could be formed

In case of emergency call: _____

Annex III C: Labelling of decontaminated PCB equipment

Each item of decontaminated equipment must be clearly marked with an indelible and embossed or engraved sign which must include the following information:

DECONTAMINATED PCB EQUIPMENT

Fluid containing PCBs was replaced
- with .....[name of the substitute fluid]
- on ..... [date]
- by ..... [undertaking].

Concentration of PCBs in
- old fluid ..... % by weight
- new fluid ..... % by weight.

Annex III D: Labelling of equipment determined not to contain PCB

Items of equipment determined not to contain PCB during inventory, cf. Article 10 shall marked with an indelible and embossed or engraved sign which must include the following information:

NON PCB Does not contain PCBs

Annex IV Reference methods for analyses of PCB

European standards EN 12766-1 and prEN 12766-2 and subsequently upgraded versions shall be applied as the reference method for the determination of PCBs in petroleum products and used oils.

European standard IEC 61619 and subsequently upgraded versions shall be applied as the reference method for the determination of PCBs in insulating liquids.

Annex V Permitting PCB waste undertakings pursuant to Article 17, paragraph 2.

Part A Technical requirements

I. Operation log

The undertaking shall keep an operation log over received equipment stating:

- Each equipment decontaminated with information on:

  a. Equipment type;
  b. Process used for the decontamination;
  c. Amounts of PCB decontaminated or replaced;
  d. PCB concentration of the equipment after decontamination;
  e. Name, address and Central Enterprise Register number of the holder of the equipment;

- All waste disposed of with information on:

  - Waste type and quantities;
  - Name, address and Central Enterprise Register number of the companies to which the waste has been disposed of;

- Date and result of inspection of fire alarms and security systems;

- Date and result of inspection of impermeable floors, curbing, sides, drains, drainage systems, weatherproof roofs or barriers, fences, containers and drums;

By each quarter of a year the undertaking shall take stock of each type of PCB-containing waste stored;

The operation log shall be kept for no less than 5 years and be available for the authorities.

II. Releases to the environment and waste water

- The PCB concentration in off-gas from the operation shall be below 0.0001 mg/normal m^3 as a daily average.

- Waste water from the operations shall, before discharge to the municipal sewage system, be treated with a oil separator. Sludge form the oil separator shall be collected regularly and ultimately disposed of in accordance with the hazardous waste legislation.

III. Waste

- It is prohibited to mix or dilute any PCB liquid, PCB solid or PCB substance with any other substance except for cleaning of flushing PCB out of transformer parts;

- All drained fluids from decontamination operations containing more than 0.005 % by weight PCBs shall be filled into drums approved for transport

of PCB-containing liquid waste in accordance with the transport of dangerous goods regulation.

- Solid waste containing more than 0.005 % by weight PCBs shall be filled into drums approved for transport of PCB-containing solid waste in accordance with the transport of dangerous goods regulation.

IV Storage site

- PCB containing waste shall be stored at a site that is (i) a building, room, shipping container or other structure; or (ii) an area that is enclosed by a woven mesh wire fence or any other fence or wall with similar security characteristics, where the fence or wall is at least 1.80 m high;

- The entrance to the PCB storage site shall be locked or guarded;

- At the site, a register that contains the name of each person, and the name, address and telephone number of that person's place of business, who is authorized by the owner or manager to enter the site shall be kept;

- Only authorized persons shall have permit to enter the site.

V. Closure and after-care provisions

- All waste stored at the site shall be disposed of in accordance with the prevailing regulation before closure of the operation.

Part B the safety precautions to be taken

1. By decontamination of transformers and handling of PCB liquid and contaminated materials the following precautions shall be taken:

2. Ensure adequate ventilation in the working area;

   - Wear full protective clothing, i.e.:
     - One-piece chemical resistant suit;
     - PCB resistant gloves;
     - Boots, or disposable covers for shoes;
     - Fully approved face breathing mask, with a positive air flow from remote air compressor or bottles for high level exposure;
     - Full face mask with replacement canister optimized for PCBs for low level exposure;

3. Under no circumstances must any operatives or observers smoke in the area where PCB is being handled;

4. Adequate amount of absorbent materials for clean-up shall be stored near the site of decontamination operations and PCBs storage sites;

5. Should any spillage of PCBs occur, the spill must be contained with absorbent materials, which would be placed in steel drums for subsequent disposal as described in section 0;

6. All employees who are authorized to undertake decontamination operations shall be made aware of the hazards of PCBs and shall be familiar with the use of protective equipment and clothing and clean-up procedures.

7. Before start of the decontamination operation at each new site, a fire protection and emergency procedures plan shall be developed by the operator and the Exceptional Situation Authority notified recognising that PCB-containing oils in the event of fire may form dioxins and furans;

8. The plan shall provide information on:

   - emergency actions that should be taken in the event of a PCB spill or fire;

   - personal protection equipment that should be used during an emergency response;

   - corporate personnel who can be contacted on a 24-hour basis to supervise emergency actions; and

   - regulatory notification requirements detailing who must be notified in the event of an emergency.

9. Copies of the plan shall be deposited with the local fire department, at the PCB storage site and at the owner or manager's place of business;

10. Any indoor room for transformer decontamination or storage of PCBs and PCB-containing equipment shall be equipped with a fully operative fire alarm system that is maintained, inspected and tested in accordance with fire regulation, portable fire extinguishers that meet the standards of the fire regulation and an automatic fire suppression system.

Part C the treatment method

I. For decontamination

1. The objective of the decontamination of the transformer must be to reduce the level of PCBs to less than 0,05 % by weight and, if possible, to no more than 0,005 % by weight. European standard IEC 61619 and subsequently upgraded versions shall be applied as the reference method for the determination of PCBs in the fluids.

2. Only replacement fluids that entail markedly lesser risks than PCBs must be used for replacement of PCBs;

3. After the replacement or dechlorination, the PCB concentration of the fluid in the transformer should contain less than 0,05 % and preferable less than 0,005 % by weight of PCBs;

4. The concentration shall be measured immediately after the replacement operation and again after a 90-day energized period. The PCB concentration of both samples should be less than 0,05 % and preferable less than 0,005 % by weight of PCBs;

5. The transformer shall be considered PCB-containing and managed accordingly until it after a 90-day energized period has been demonstrated that the fluid contain less than 0,005 % by weight of PCBs;.

II. For disposal

1. By disposal, PCBs in the waste should be destroyed or irreversible transformed so that they do not exhibit the characteristics of persistent organic pollutants;

2. By use of biological or physico-chemical treatment the destruction efficiency (DE) of the applied method for PCBs shall be greater than 99.999 per cent;

Part D packaging and containment

1. In order to reduce the need for repacking, PCB-containing waste shall be stored in containers approved for transport of the waste in accordance with the ADR requirements,

2. All PCB equipment and containers/drums that contains PCB liquid shall be stored on a floor or surface that is made of steel, concrete or any other similar durable material, and that is constructed with curbing or sides that are capable of containing:

    a. where one piece of equipment or one container is being stored, 125% of the volume of the PCB liquid in the equipment or container, and

    b. where more than one piece of equipment or more than one container is being stored, the greater of twice the volume of the PCB liquid in the largest piece of equipment or the largest container or 25% of the volume of all the PCB liquid stored on the floor or surface;

3. The material of the floor or surface or the curbing or sides shall be capable of absorbing any PCB liquid or PCB substance or the floor, surface, curbing or sides shall be sealed with an impervious, durable, PCB-resistant coating;

4. All floor drains, sumps or other openings in the floor or surface shall be

    a. closed and sealed to prevent the release of liquids, or

b. connected to a drainage system suitable for liquid dangerous goods that terminates at a location where any spilled liquids will be contained and recovered and where the spilled liquids will not create a fire hazard or a risk to public health or safety;

5. Containers with PCB-containing waste, other than drums, may be stacked only if the containers are designed for stacking, and containers of PCB liquid shall be stacked not more than two containers high;

6. Where drums containing PCB-containing waste are stacked, the drums shall be separated from each other by pallets and, in the case of drums of PCB liquid, the drums shall not be stacked more than two drums high;

7. PCB equipment and containers with PCB-containing waste shall be stored in a manner that makes them accessible for inspection;

8. PCB containing waste shall be stored in a manner that prevents it from catching fire;

9. PCB containing waste shall be stored together, and separate from other stored materials;

10. Where PCB equipment or containers of PCB liquid are stored outdoors, all PCB equipment that is not in a container shall be covered by a weather-proof roof or barrier that protects the PCB equipment or containers and prevents rain or snow from entering the curbing or sides of the floor or surface under them;

11. PCB containing waste shall not be stored for more than 2 years before it is disposed of for final disposal by the operations D 8 (biological treatment), D 9 (physico-chemical treatment), D 10 (incineration on land).

Part D Other general requirements

1. A copy of the permit for the installation shall at any time be available at the site of operation for the personnel responsible for the organisation and operation of the installation;

2. The undertaking shall have written instructions and procedures covering

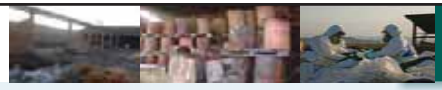
   a. Reception, decontamination, storage, and shipment of PCB containing transformers and PCB containing waste including safety procedures;

   b. Clean up of packaging, vehicles, floors, curbing, wells, etc.;

   c. Supervision and self inspections;

   d. Fire safety and emergency situations.

3. All instructions and procedures shall be available to the staff and the authorities.



Caspian Regional POPs workshops

Legislation to support implementation of the Stockholm Convention

Considerations and examples

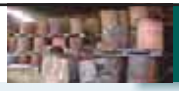
Baku 7 – 11 December 2009

Output on legislation

We have prepared a note on Legislation

- to support implementation of the Stockholm Convention
- to assist the Caspian countries in your implementation of the basic obligations of the Stockholm Convention
- general recommendations and examples on how the basic obligations of the Stockholm Convention could be implemented in your countries, focussing on the POPs pesticides obligations

The content of the note



- General recommendations and examples
  - on how the basic obligations of the Stockholm Convention could be implemented in your countries
  - focussing on the POPs pesticides obligations

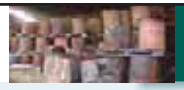
Recommendations – longer term

- **To address the management of POPs** as a part of the general management framework for hazardous substances and waste, and
- **To develop the legal framework for sound management of these substances** based on existing international legislation concerning:
  - Restrictions of the marketing and use of certain dangerous substances
  - Regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances;
  - Authorization system for plant protection products placed on the market;
  - Import/export of dangerous chemicals and hazardous waste;
  - Hazardous waste management;

Other priority problems

- You may as a priority regulate other specific "technical" POPs or obsolete pesticides problems, such as:
  - Empty pesticides containers
    - (e.g. by requiring "distributors/importers" to set up a return system based on deposit for containers)
  - Management of OP stores and contaminated sites, including contaminated soil.

Examples on how the basic obligations of the Stockholm Convention could be implemented



We have listed some examples of key provisions POP - including POP pesticides:

1. First included the key definitions (section 3.1.1).
2. Followed by examples of substantial POPs provisions (in section 3.1.2)
   - ready to be included in your legislation

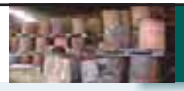
Not all aspects of POPs management are covered by these provisions

- but the most important Convention obligations on intended production and use of POP

Examples of key POPs/hazardous waste provisions

- Some examples of key provisions on hazardous waste – focussing on POPs waste (obsolete pesticides) have also been included in the note
- We have first included the key definitions (section 3.2.1)
- These are followed by examples of substantial POPs waste management provisions (in section 3.2.2).
- We would like to underline, that not all aspects of POPs management are covered by these provisions, but the most important Convention obligations on POPs stockpiles and POPs waste management.

Examples on how the basic obligations of the Stockholm Convention could be implemented

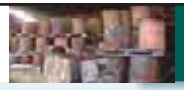


- In addition provisions would have to be included based on your country specific legal tradition:
  - on scope of the final legal measure and
  - administrative/final provisions
    - on e.g. inspections/control and sanctions
- Some of them would need to be adjusted to reflect the specific situation in your respective countries.
- We have placed square brackets […] around certain provisions or parts thereof - where certain policy decision, including deadlines for application, and/or institutional decisions will have to be taken by you. square brackets.

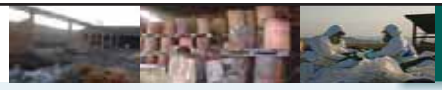
Specifically about PCBs

- The Stockholm Convention requirements for phase out of use and safe destruction of PCBs were not one of the Workshop subject.
- We have however provided an example of a complete regulation on PCB
- The Regulation was prepared by COWI in collaboration with the MENR of Moldova under a World Bank POPs Project.
- We believe it can be of inspiration for you when preparing legislation on PCB.
- It should be noted that the Regulation was introduced just prior to a national inventory of PCB and PCB containing equipment

References to international guidelines



- A number of guidelines have been developed to facilitate implementation of the Stockholm Convention and related international legislation.
- For ease of reference, link to several of these have been included in this note.
- Where available, links to both the English and Russian version have been indicated
- See section 4



Caspian Regional POPs workshops

Introduction to the workshop on

legal & institutional aspects of (P)OPs

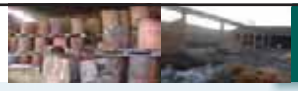
Baku 7 – 11 December 2009

Before we go into details on the legal institutional and policy aspects…

We would like you to look back on Monday

- Reflections
- Observations
- What worked well or not so well

Overall theme for today

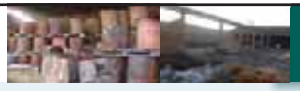


How can the necessary legal, policy and institutional framework be developed most effectively

- to support the technical priority actions (POP and OP hotspots, burial sites, contaminated storages and soil)
- avoid stockpiles of new obsolete pesticides

in the short, mid and long(er) term?

Programme and milestones



1. Brief status of implementation of SC
   - legislation and policy for (P)OP pesticides management
   - responsible ministries and agencies
   - lessons learnt, including problems encountered
2. Country gap analysis – and actions planning
   1. legislation
   2. policy
   3. institutional strengthening
   4. enforcement problems and issues

1. Brief status of implementation of SC - legislation and policy development

Each country representative sum up on:

1. what legislation and policy/strategies are in place for (P)OP pesticides management
2. who are the (main) responsible ministries and agencies
3. what are the main lessons learnt, including problems encountered

10 minutes per country

2nd Programme session Gap analysis session and discussion

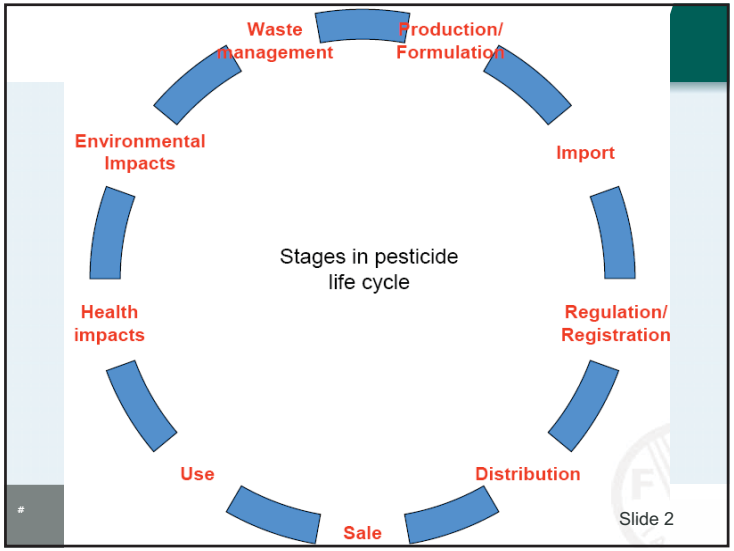
1. Legislation
   - Each country identify 5 main gaps
   - Presentation and discussion
   - Each country identify the actions/measures to bridge each gap

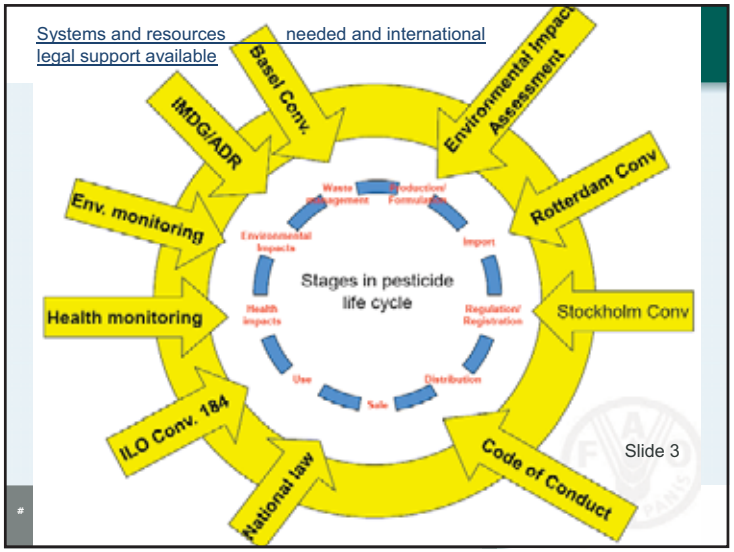
Similar round for:

2. (P)OPs (pesticides) policy
3. Institutional framework for POPs management
4. Enforcement problems/issues

Recommendations – longer term

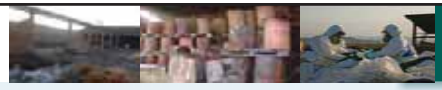
- **To address the management of POPs** as a part of the general management framework for hazardous substances and waste, and
- **To develop the legal framework for sound management of these substances** based on existing international legislation concerning:
  - Restrictions of the marketing and use of certain dangerous substances
  - Regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances;
  - Authorization system for plant protection products placed on the market;
  - Import/export of dangerous chemicals and hazardous waste;
  - Hazardous waste management;





3nd Programme session
Prioritisation of gaps and actions

- Prioritise the gaps and actions
- Next steps
- How to bring the proposals forward
  - Ministry(ies)
  - Towards donors



Caspian Regional POPs workshops

Introduction to the Programme

Baku 7 – 11 December 2009

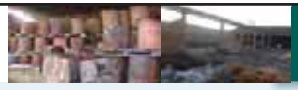
Today and the coming four days

- Address Stockholm Convention POPs pesticides management obligations
- Parallel provisions in the UNECE POP Protocol
- We will not cover other Convention obligations – e.g.
  - Restrictions on use of PCB
  - Releases of unintentionally produced by-products listed in Annex C (dioxins, furans, PCBs and HCB)

Identify resolutions to storages like this one

Identify resolutions to contaminated sites like this one

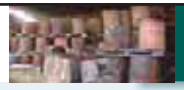
How?



Through workshops addressing the 3 inter-related aspects of POPs pesticides management:

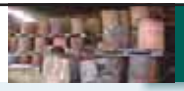
- **Technical problems and priorities**
  - determine the scale of the problem
  - inventories – reflect the current situation
  - identify realistic solutions
- **Develop the necessary legal and institutional framework**
  - to support the technical actions
  - avoid stockpiles of new obsolete pesticides
- **Plan and implement public awareness campaigns**

The scale of the POPs pesticides problems – an example from Ganja



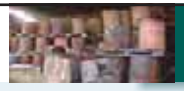
Estimates for DDT stockpiles at the Ganja site vary:

- The draft NIP (2007)
  - 3,0 tons
- Monitoring report issued by the Working group of POPs pesticides (Nov 2008)
  - 200,0 tons
- First rough estimate by the TAUW consortium under the World Bank inventory training team:
  - 30 tons



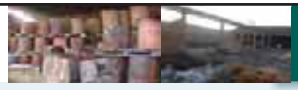
Avoid exposure and contamination

Public awareness …



- Some of the aspects we will address:
  - Safeguard the inventoried POP pesticides in the stores until repackaged
  - Safeguard repacked POP pesticides until safe disposal
    - avoid situations like the ones we have seen in too many instances
      - that POP pesticides are being moved around
      - Ganja example 3 times within 8 months – contaminating 3 instead of 1 site
  - Prevent that contaminated storehouses are demolished to use as construction material for schools, food storages or private homes
  - Prevent that empty container are used for other purposes

How?



Through workshops addressing the 3 inter-related aspects of POPs pesticides management

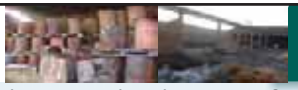
1. **Today's workshop:**

   update on implementation of the int nat requirements

   - status of ratification & implementation of the POPs treaties
   - including NIP - focus on lessons learnt
     - success stories and obstacles challenges when addressing POP pesticides problems

2. **Tomorrow: developing the legal & institutional framework**
   - Focus gaps and short comings – how to bridge those?
   - Identify realistic short term legal/institutional action plan
     - need to have – nice to have in the short – medium term

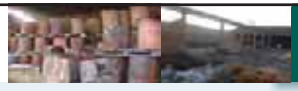
How?



Through workshops addressing the inter-related aspects of POPs pesticides management

3. **Wednesday: Public awareness**
   - status – what has been done and what need to be done?
   - Communication plans
   - success stories and obstacles challenges
4. **Thursday : Technical**
   - Areas in your country where most stocks and stockpiles are found;
   - What kind of state the sites are in. (in good maintenance, half destroyed, totally disappeared);
   - Hot spot burial sites;
   - Successful actions & difficulties;

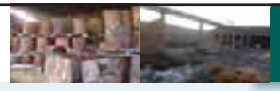
How?



Through workshops…

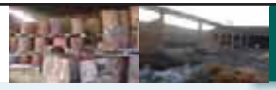
- **Prepare priority action plans for**
  - legal/institutional framework
  - public awareness
  - technical
  - taking into account available resources – staff and finances
- **Friday – wrap up – next steps**
  - Synthesis of actions plans
  - Exchange of lessons learnt
  - Provide a platform for bringing recommendations on the table in your respective countries

POP pesticides and related terms



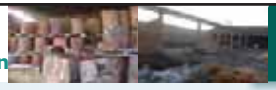
- **Obsolete pesticides are**
  - a group of stocked pesticides that can no longer be used for their intended purpose or any other purpose and therefore require disposal.
- **OP waste pesticide waste** (pesticide-containing waste) is broader than just OP
  - also includes waste generated during the production and storage of pesticides - therefore
  - empty containers, pallets, shelves, elements of storage constructions and soil contaminated due to, leakage of pesticides are also considered as pesticide waste

POP pesticides and related terms



- **Unwanted pesticides**
  - also broader than just OP
  - it includes the pesticides that could still be used in principle
  - but are not being used and are regarded as being in excess of what is needed by their owners.
  - these stocks run a high risk of becoming obsolete as a result of prolonged storage.
- **The term POPs pesticides (POPs-containing pesticides)**
  - makes up a fraction of all OP with active ingredients.
  - the "dirty dozen", i.e. the twelve most harmful persistent organic pollutants addressed by the Stockholm Convention.
  - **However**, stocks of POPs pesticides (e.g., DDT) are kept in a number of countries and are thus "wanted" under certain circumstances.

POP pesticides and the Convention



The Stockholm Convention

- Foresees ***identification and safe management of stockpiles*** containing or consisting of POPs.
- ***Waste*** containing, consisting of or contaminated with POPs should be disposed of in such a way
  - that the POP content is destroyed or irreversibly transformed so that it does not exhibit POPs characteristics.
- ***Disposal operations*** that may lead to recovery or re-use of POPs are explicitly forbidden.
- *For* ***shipment of POPs waste***, relevant international rules, e.g Basel Convention on apply

Some key issues of the Stockholm Convention

John Vijgen
International HCH & Pesticides Association

What is the Objective of Stockholm Convention on POPs?

Protect human health and environment from POPs

Persistent Organic Pollutants

Article 3 – Measures to reduce or eliminate releases from intentional production and use

- Annex A
  - Pesticides and PCBs
- Annex B
  - DDT

Secretariat of Stockholm Convention

For PCBs there is a very clear Plan

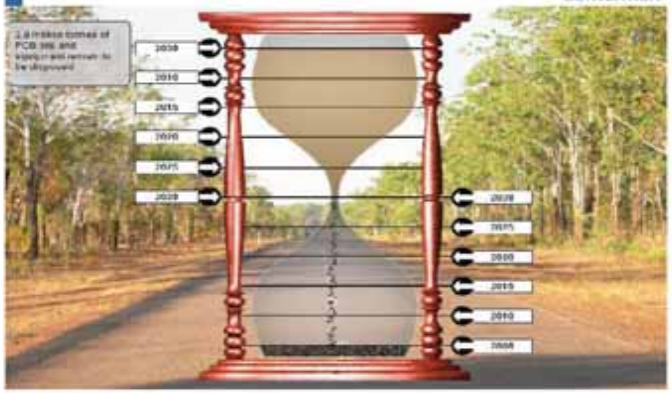
Article 3
Annex A – Elimination of PCBs

Main obligations :

- Production is prohibited;
- Use restricted in part II of Annex A:
  - Eliminate use in equipment by 2025;
  - Achieve environmentally sound waste management (ESM) of PCBs by 2028;
  - Report every five years on progress of PCB elimination to the COP;
- Technical assistance:
  - Projects (preliminary inventories and ESM);
  - Secretariat training workshops.

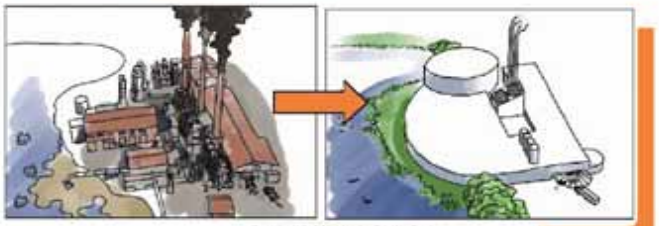
Secretariat of Stockholm Convention

PCBs countdown
Preliminary estimate of remaining PCBs



Article 5 – Measures to reduce or eliminate releases from unintentional production

- Annex C – Dioxins and furans
  - Standardized toolkit
  - Guidelines on BAT/BEP



Secretariat of Stockholm Convention

Article 6 - Wastes and stockpiles

1. Develop appropriate strategies for identifying stockpiles, products and articles in use that contain or are contaminated with POPs;
2. Identify such stockpiles based on the strategies above;
3. Manage stockpiles in an environmentally sound manner;
4. Dispose of waste so that the POPs content is destroyed or irreversibly transformed;
5. Collaborate with the Basel Convention on the control of the transboundary movement of POPs waste and their disposal.

Secretariat of Stockholm Convention

Stockholm Convention

Full screen

What are Persistent Organic Pollutants (POPs)?

Currently, there are twelve POPs listed in the Stockholm Convention. These are:

CHEMICAL	PESTICIDES	INDUSTRIAL CHEMICALS	UNINTENTIONAL PRODUCTION
Aldrin	+		
Chlordane	+		
Dieldrin	+		
DDT	+		
Endrin	+		
Heptachlor	+		
Mirex	+		
Toxaphene	+		
Hexachlorobenzene (HCB)	+	+	+
PCBS		+	+
Dioxins			+
Furans			+

exit previous next Index Guidelines in pdf

Pesticide Stockpile

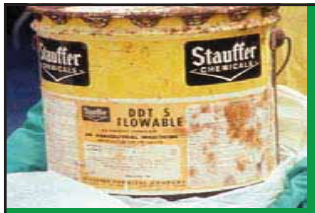
Updated general technical guidelines for the environmentally sound management of: wastes consisting of, containing or contaminated with persistent organic pollutants (POPs)

PCB Stockpile

Dioxin examples

- Burning of electronic waste which produces high amount dioxins (chlorines and bromides). They show also the kids that are exposed directly to dioxin emissions

Dioxin stockpiles



DDT

Aldrin & Dieldrin

POPs

Pesticides

Chlordane

Heptachlor

New POPs since May 2009: important for new updates

Chemical	Pesticides	Industrial chemicals	Byproducts
Alpha Hexachlorocyclohexane	+		+
Beta Hexachlorocyclohexane	+		+
Chlordecone	+		
Commercial pentabromodiphenyl ether		+	
Commercial octabromodiphenyl ether		+	
Hexabromobiphenyl		+	
Lindane	+		
Pentachlorobenzene	+	+	+
Perfluoroctane sulfonic acid, its salts and perflurooctane sulfonyl fluiride (PFOs)		+	

Be prepared for the new Pesticide POPs

•Endosulfan: 2006

Lindane: 1999, 2003

•HCH Isomers (a, b): 2006

•Chlordecone

Do not forget .....obsolete pesticides are also:

- Those pesticides that are forbidden according to your own national laws
- Who has the national list of forbidden pesticides brought to Baku???
- Watch many National lists are very similar to the ones listed in the Rotterdam Convention (PIC)

How can we then work with OP stockpiles ?

- Obsolete Pesticides → OPs
- Pesticide POPs →

- Technically OPs and Pesticide POPs you cannot separate and both you have to clean up, but .....
- Question is who pays!

Stockpiles

- Determination volume of POPs!!!!
- Then each country can have a better discussion on contribution of GEF

Can you tell me what is OPs and Pesticide POPs?

IHPA

OPs and Pesticide POPs

Remember:

- OPs and Pesticides POPs are both problems you have to solve
- Mostly you find them together
- So when you make the inventory you have to record both and not only Pesticide POPs
- Also the risk assessment of both as you must assess to total problem

What are you going to do with this training?

- Hang the certificate on the wall in your office and tell everybody that you are very clever now??
- No.....No.....
- **You** have now a task for the next years:
- **You** need to convince your colleagues, politicians and decision-makers that this problem has to be tackled better now than tomorrow

Remember this work you do for them that really need your help!

On many sites children are playing

What if it would be ...your child?

IHPA

Appendix

5

Country presentations legal issues

Islam Mustafayev-CENN- **Azerbaijan**

NGO role in addressing chemical safety problems in the Azerbaijan

Caspian Regional POPs Workshop

07-11 December 2009, Baku, Azerbaijan

По данным FAO каждый год 34% мирового потенциального урожая стоимостью 75 млрд. долларов США уничтожается под воздействием вредителей и сорняков. 50% этих потерь приходится на страны отстающего экономического развития.

В 70-90-е годы прошлого столетия в Азербайджане годовое производство хлопка составило – 700-800 тыс. тонн, зерна- 1.4 млн. тонн, винограда – свыше 1 млн. тонн, овощей – 1.2 млн. тонн, фруктов – 400 тыс. тонн.

ПРОИЗВОДСТВО ГЕКСАХЛОРАНА В АЗЕРБАЙДЖАНЕ

Годы	*Пр-во, тон*	*Годы*	*Пр-во, тон*
1951	*48*	**1966**	*1362*
1952	*94*	**1967**	*1054*
1953	*270*	**1968**	*1225*
1954	*550*	**1969**	*892*
1955	*724*	**1970**	*1149*
1956	*1110*	**1971**	*927*
1957	*1234*	**1972**	*475*
1958	*1094*	**1973**	*788*
1959	*1302*	**1974**	*927*
1960	*1502*	**1975**	*887*
1961	*1583*	**1976**	*737*
1962	*1630*	**1977**	*928*
1963	*1619*	**1978**	*625*
1964	*1650*		
1965	*1580*		

ПРОИЗВОДСТВО ЛИНДАНА В АЗЕРБАЙДЖАНЕ

Годы	*Производство, тонн*	Примечание
1986	*10*	100% Экспорт
1987	*64*	100% Экспорт
1988	*107*	100% Экспорт

5

ДДТ В АЗЕРБАЙДЖАНЕ

Годы	Количество, тонн	Примечание	Использование в с/х.
1958	1216		
1959	5412		
1960	19939		
1961	18874		
1962	25647		
1963	27061		
1964	36200		
1965	35093		22974
1966	29102		23579
1967	21823		25341
1968	27717		25923
1969	21293		26221
1970	25122		25748
1971	12496		26228
1972	14805		25167
1973	11133		26342
1974	21931		26691
1975	21133		15362
1976	22257		8794
1977	26221		4028
1978	23400		1278
1979	27428		437
1980	5246		404
ВСЕГО	480549		284517

Количества пестицидов, использованных в Азербайджанской Республике в 1984-2003 гг.

№	Годы	*Количества пестицидов*	№	Годы	*Количества пестицидов*
1	1984	*56705*	11	1994	*9582*
2	1985	*53237*	12	1995	*8600*
3	1986	*45107*	13	1996	*6320*
4	1987	*46030*	14	1997	*5920*
5	1988	*44186*	15	1998	*5270*
6	1989	*38589*	16	1999	*4800*
7	1990	*33967*	17	2000	*4200*
8	1991	*29673*	18	2001	*3700*
9	1992	*16290*	19	2002	*2980*
10	1993	*11710*	20	2003	*2720*

ПОТЕНЦИАЛ СИСТЕМНОГО УРОВНЯ

Законодательные и нормативные акты Азербайджанской Республики по внедрению пестицидов и агрохимических веществ.

1. «О пестицидах и агрохимических веществах» (1997)
2. «О растительном карантине» (1996)
3. «О защите растений» (1997)
4. «Закон о производственных и бытовых отходах» (30.06. 1998)
5. Закон «Об Экологической безопасности» (08.06.1999)
6. «Закон об охране здоровья населения» (26.06.1997)

8

Постановление №120 от 20 октября 1997 г.

Нормативно-юридические акты :

1. Инструкция государственных испытаний пестицидов и агрохимических веществ.
2. Правила регистрации пестицидов и агрохимических веществ.
3. Правила сертификации пестицидов и агрохимических веществ.
4. Санитарные правила хранения, транспортировки, применения и продажи ядовитых химических препаратов в сельском хозяйстве.
5. Правила обеззараживания и вторичной переработки запрещенных и негодных к применению пестицидов и агрохимических веществ.
6. Правила вторичной переработки, обеззараживания и уничтожения непригодных к использованию пищевых и сельскохозяйственных продуктов.
7. Список токсико- экологически особоопасных пестицидов и агрохимических веществ.

9

Национальные и Государственные Программы

- **Государственная Программа по искоренению бедности и экономическому развитию (2002)**
- **Национальная программа по экологически устойчивому социально- экономическому развитию (2003)**
- **Национальная программа по восстановлению и расширению лесов Азербайджана (2003)**
- **Указ Президента об основных направлениях социально-экономического развития (2003)**
- **Государственная стратегия Азербайджанской Республики управления опасными отходами (2004)**
- **Программа развития регионов (2004)**
- **Программа развития аграрного сектора (2004)**

10

Международные Конвенции по регулированию использованию химических веществ

1. **Базельская Конвенция по контролю за межграничной транспортировкой и загрязнением окружающей среды опасными отходами (2001).**
2. **Стокгольмская Конвенция о стойких органических загрязнителей (2003)**

11

ПОСТАНОВЛЕНИЯ КМ АЗЕРБАЙДЖАНА

«О правилах транспортировки опасных грузов по автомобильным дорогам (27.01. 2000)

«О правилах транспортировки опасных грузов по железным дорогам (20.11. 2000)

«О правилах паспортизации опасных отходов» (31.03. 2003)

12

ПОТЕНЦИАЛ ИНСТИТУЦИОНАЛЬНОГО УРОВНЯ

Заинтересованные стороны:

Министерство Экологии и Природных Ресурсов

Министерство Здравоохранения

Министерство Экономического Развития

«Азерхимия»

Министерство Сельского Хозяйства

Министерство Промышленности и Энергетики

Министерство Транспорта

Министерство Юстиция

Милли Меджлис

Таможенный Комитет

Комитет Статистики

Исполнительная власть города Баку

НПО

СМИ

13

Основные организации, занимающиеся производством, импортом, торговлей и хранением пестицидов в Азербайджанской Республике

1. **Компания «EMA»**
2. **Компания «Агрохимия»**
3. **Компания «Товуз-Балтия LTD»**
4. **Производственно- коммерческая фирма «MKT»**
5. **Собственная фирма «Nusraddin»**
6. **Производственно- коммерческое общество с ограниченной ответственностью «TEM-DTD»**
7. **Фирма «Avropa+»**
8. **Малое предприятие «Iman-N»**
9. **Малое предприятие «Savalan»**
10. **Фирма «Mayak-98»**
11. **Фирма «Kulak»**
12. **Малое предприятие «Flora»**

14

Местоположение имеющихся в республике пестицидных складов, перечень и санитарные условия содержания в них пестицидов

1. Евлахская межрайонная база обеспечения химическими продуктами
2. Мюсуслинская межрайонная база обеспечения химическими продуктами
3. Далимамедлинская межрайонная база обеспечения химическими продуктами
4. Дяллярская межрайонная база обеспечения химическими продуктами
5. Шекинская межрайонная база обеспечения химическими продуктами
6. Джалилабадская межрайонная база обеспечения химическими продуктами
7. Ленкоранская межрайонная база обеспечения химическими продуктами
8. Сабирабадская межрайонная база обеспечения химическими продуктами
9. Горадизская межрайонная база обеспечения химическими продуктами
10. Дашбурунская межрайонная база обеспечения химическими продуктами
11. Сальянская районная железнодорожная станция и Дайикендские амбары

15

ПОЛИГОН ДЛЯ УНИЧТОЖЕНИЯ УСТАРЕВЩИХ И ЗАПРЕЩЕННЫХ ПЕСТИЦИДОВ




ОБ УСТАРЕВШИХ И ЗАПРЕЩЕННЫХ К ПРИМЕНЕНИЮ ПЕСТИЦИДОВ В АЗЕРБАЙДЖАНЕ

- В 1958 году в республики был построен завод по производству препарата ДДТ в городе Сумгаите недалеко от Баку (53 км от города Баку)
- ДДТ использовался в обширных территориях республики, в частности на плантациях хлопчатника
- Период с 1969 по 1976 года в Азербайджане каждый год использовался около 20 тысяч тонн препарата ДДТ
- В конце 80-х годах началось накопление непригодных пестицидов в республике
- В 1980-1995 годы в республике использованы ядохимикаты более 84 наименований в количестве 40 тысяч тонн

- В 1989-1990- годах на расстояние 53 км от города Баку на скалистой местности было построено кладбище для запрещенных и непригодных к применению пестицидов.
- В 1989-1990- годах в 183-х специальных бункерах было захоронено около 8,0 тысяч тонн различные пестицидов.
- За прошедшие с 1996 до 2005 года эти бункера были открыты, а их содержимое вынесено и вывезено неизвестными. Во время мониторинга, который проводился в 2006 году, по примерным подсчетам в бункерах оставалось около 4,0 тысяч тонн пестицидов.
- При проведение первичного мониторинга в 2006 году в регионах страны, где имелись базы снабжения химических продуктов и в хозяйствах по грубым расчетам имелось около 2,5 тысяч порошкообразные и до 400 тонн жидкие пестициды.

Список пестицидов выявленных в республике,

2005-2006 годах

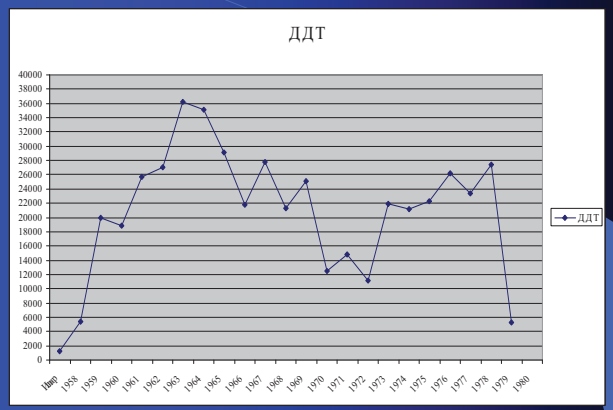
№№	НАЗВАНИЕ ПЕСТИЦИДОВ	КОЛИЧЕСТВО (В ТОННАХ)
ПОРОШКООБРАЗНЫЕ ПЕСТИЦИДЫ		
1	ДДТ 5%	ОКОЛО 2010
2	ГРАНОЗАН	5,95
3	ИЗОФЕН	1,0
4	ДАЛАПОН	81,3
5	СМЕСЬ УДОБРЕНИЙ	144,0
6	ТРЕФЛАН	0,2
7	ЦИНЕБ	8,5
8	СЕРА МОЛОТАЯ	0,3
9	ГЕКСАХЛОРАН	5,6
10	ТИОДАН 5 %	2,5
11	ХОМЕЦИН	14,2
12	СМЕСЬ СЕРЫ, ИЗОФЕНА	5,0
13	СМЕСЬ ИЗОФЕНА, ХОМЕЦИНА	120,0
ИТОГО:		2398,55
ЖИДКИЕ ПЕСТИЦИДЫ		
14	ПОЛИДОФЕН 60%	380,0
15	НИТРАФЕН	12,0
ЗАРАЖЕННАЯ ПОЧВА С ПЕСТИЦИДАМИ		
16		3551,0
ОБЩИЙ ИТОГ:		6341,55

- При проведение 2008-2009 годах повторных мониторингов по уточнению количество и места захоронения остатков пестицидов были найдены новые места захоронение с большим количеством остатков пестицидов, которые не были выявлены ранее.

Согласно «Комплексного плана Мероприятий по улучшение экологического состояния Азербайджанской Республики на 2006-2009 годы» настоящее время полигон полностью реконструирован и из разных регионов республики перевезены и захоронены на полигоне около 2000 тонн остатков пестицидов.

- Данное время в республики после проведения работ по захоронение еще остается не захороненными около 4000 тонн в твердом и около 400 тонн в жидком состояние запрещенных, непригодных к использованию остатков пестицидов.

Производство препарата ДДТ в Азербайджанской республики



Причины по которым происходило накопление непригодных химических средств защиты растений в Азербайджанской Республике

- Большие объемы поставляемых в то время препаратов, которые стоили дешево и распространялись по разнарядкам;
- Неэффективное планирование закупок и распределение препаратов;
- Запрещение к использованию уже приобретенных препаратов из-за повышенной токсикологической и экологической опасности;
- Снижение спроса на пестицида из-за их недостаточной эффективности
- Длительное хранение пестицидов с коротким сроком хранения;
- Запрещение их к использованию в процессе плохой организации хранения.

Цель Инвентаризационной комиссии

- Определение местоположения и выявление на территории республики заброшенных, разрушенных, неучтенных складов химических веществ;
- Определить объемов запрещенных к применению и устаревших пестицидов подлежащих к захоронению;
- Отбор проб пестицидов для их химической идентификации, а также почвы, воды для оценки загрязнения сред препаратами;
- Изучить техническое состояние имеющегося полигона пестицидов

Старые склады химических баз снабжения

Picture 1.Goranboi base

Полигон для пестицидов до реконструкции

Полигон для пестицидов после реконструкции


5 11 2008

Тревого-полидофен


5 12 2008

DAVAMLI ÜZVI ÇIRKLƏNDIRICILƏR ÜZRƏ MILLI FƏALIYYƏT PLANI

M.Qurbanov

BAKI-2009

ÜMUMİ MƏLUMATLAR

- Azərbaycan Respublikası üzvi çirkləndiricilər haqqında Stokholm Konvensiyasının 2003-cü ildə qoşulmuş, 2004-cü ildən konvensiyanın tərəfdaş ölkəsidir.
- Azərbaycan Respublikası Prezidentinin 29 iyul 329 saylı sərəncamı ilə Ekologiya və Təbii Sərvətlər Nazirliyi Konvensiya üzrə Milli əlaqələndirici təyin edilmişdir.
- Respublika Prezidentinin 13 may 2005-ci il tarixli sərəncamına əsasən BMT-nin Sənaye-İnkişaf Təşkilatı (UNİDO) Ekologiya və Təbii Sərvətlər Nazirliyi arasında Stokholm Konvensiyasının həyata keçirilməsi üçün ilkin tədbirlərin icrası üzrə müqaviləyə əsasən DÜÇ-in ilkin inventarizasiyası həyata keçirilmişdir.

ÜMUMİ MƏLUMATLAR

- İnventarizasiya 3 istiqamətdə aparılmışdır:
  1.DDT-in inventarizasiyası
  2.PXB-in inventarizasiyası
  3.Dioksin və furanların inventarizasiyası
- Pestisidlərin olkin inventarizasiyası 2005-ci il oktyabr ayından 2006-cı il iyul ayına kimi keçirilmişdir.
- Pestisidlərin ümumi miqdarı (DÜÇ və qeyri DÜÇ) 4286,3 ton olmuşdur. Bunlardan - 80,187 t (5-5,5%DDT; 3876,1 t DDT qarışmış maddələr; 329,4 t qeyri DÜÇ pestisidləri)

ÜMUMİ MƏLUMATLAR

- Pestisidlərin istehsalı Sumqayıt şəhərində yerləşən səthi aktiv maddələr zavodu tərəfindən 1958-1980-cı illər arasında istehsal edilmişdir. 22 il ərzində tərkibində 5-5,5% DDT düstü olan 480,549 t pestisid istehsal edilmişdir.
- DDT istehsalı 1982-ci ildə dayandırılmışdır.
- Pestisidlərin istifadəsinin qeydiyyatı üzrə əlaqədar təşkilatlar: 1980-cı ilə qədər “Azərkəndtexnika”, 1980-1996-cı illər “Azərkəndkimya” və 1996-cı ildən sonra isə özəl şirkətlər fiziki və ümumi şəxslər tərəfindən aparılır.

ÜMUMİ MƏLUMATLAR

- 2004-cü ildə Respublika Prezidentinin 23 oktyabr 467 saylı sərəncamı ilə KTN-də Dövlət Fitosanitar Nəzarət Xidməti yaradılmışdır.
- Fitosanitar xidmətin bitki mühafizəsi üzrə maddələrin idxalı, ixracı və paylanmasına nəzarət edir və icazə verir.
- Dövlət Gömrük Xidməti də bu maddələrin ixracına nəzarət edir.

ÜMUMİ MƏLUMATLAR

- Pestisidlərin istifadəsi əsasən pambıq və üzümçülük sahələri, habelə səhiyyə məqsədləri üçün həyata keçirilmişdir.
- 1965-1974-cü illərdə ildə 23-27 min ton pestisid istifadı edildiyi halda sonrakı illərdə bu rəqəm azalaraq, 1982-ci ildə 215 ton təşkil etmişdir. Bu illər ərzində 285 min ton pestisid istifadə edilmişdir.
- Səhiyyə sahəsində istifadə malyariya xəstəliyinə qarşı mübarizə üçün 1980-cı ilə kimi istifadə edilmişdir. Sonralar bu məqsədlə xlorosof və heksaxloromoldan istifadə edilmişdir.

MİLLİ FƏALİYYƏT PLANI HAQQINDA

- Milli Fəaliyyət Planı 2006-2020-ci il dövrü əhatə etməklə hazırlanmış və təsdiq üçün Nazirlər Kabinetinə təqdim edilmişdir.
- Milli Fəaliyyət Planı bütün davamlı üzvi çirkləndiricilərin istehsalı və istifadəsi ilə məşğul olan təşkilatların – Kənd Təsərrüfatı Nazirliyi, Sənaye və Energetika Nazirliyi, İqtisadi İnkişaf Nazirliyi, Ekologiya və Təbii Sərvətlər Nazirliyinin iştirakı ilə hazırlanmışdır.
- MFP-nın əsas məqsədi – Beynəlxalq sazişlərə uyğun olaraq tələblərin yerinə yetirilməsi yönümündən DÜÇ üzrə problemlərin müəyyən edilməsi və öhdəlik dövrü ərzində onların tədricən həllinə nail olmaqdır.

MİLLİ FƏALİYYƏT PLANININ HƏYATA KEÇİRİLMƏSİ MƏRHƏLƏLƏRİ

- <u>I mərhələ: 2007-2010-cu illər:</u>

  - DÜÇ tullantılarının və istifadəyə yararsız qalıqlarının ləğv edilməsi üzrə ilkin mexanizmin hazırlanması

  - Bu mexanizm qalıqların və tullantıların daşınaraq xüsusi yerdə saxlanılmasını, daşınma və saxlanma qaydalarının müəyyən edilməsi, tullantı poliqonlarının təhlükəsiz idarə edilməsi.

  -Maliyyə vəsaiti 23 mln manat qiymətləndirilmişdir. Bunun da 40-50%-ni Beynəlxalq Təşkilatlar vasitəsilə maliyyələşdirilməsi nəzərdə tutulmuşdur.

MİLLİ FƏALİYYƏT PLANININ HƏYATA KEÇİRİLMƏSİ MƏRHƏLƏLƏRİ

- **II mərhələ 2011-2015-ci illər:**

  -Kənd təsərrüfatında ekoloji təmiz məhsulların istehsalının dəstəklənməsi

  -Enerji sektorunda yeni texnologiyanın tədqiqi

  -DÜÇ əsaslı avadanlıqların yerləşdirilməsi

  -Tələb olunan maliyyə vəsaiti 47,8 mln manat təşkil edir

- **III mərhələ - 2015-2020-ci illər:**

  -Enerji və tullantılardan idarə edilməsinin təkmilləşdirilməsi

İCTİMAİYYƏTİN MƏLUMATLANDIRILMASI ÜZRƏ PROBLEMLƏR

- DÜÇ-lər üzrə qərar qəbul etmə prosesində ictimaiyyətin zəif iştirakı
- DÜÇ-lər üzrə məlumatların zəif yayılması və tədris prosesinə daxil edilməməsi
- Maraqlı tərəflər arasında məlumatlandırma üzrə əlaqələndirmə mexanizminin olmaması
- Sənaye sektorunda işçilərin DÜÇ əsaslı avadanlıqlar haqqında məlumatların olmaması
- DÜÇ-in ətraf mühitə və insan sağlamlığına mənfi təsiri haqqında məlimatın azlığı
- Regionlarda çirklənmiş ərazilərin nişanlanmasının və ətraf mühitdən təcridi məsələlərinin zəif olması

QANUNVERİCİLİK

- Azərbaycan Respublikasının Konstitusiyası
- Ətraf mühitin mühafizəsi haqqında
- Ekoloji təhlükəsizlik haqqında
- Bitkilərin mühafizəsi haqqında
- **Sənaye və məişət tullantıları haqqında**
- Su təchizatı və tullantı suları haqqında
- Torpaq kodeksi
- Atmosfer havasının mühafizəsi haqqında
- Ekoloji informasiya haqqında
- **Pestisidlər və aqrokimyəvi maddələr haqqında**

ƏLAQƏDAR DİGƏR KONVENSİYALAR

Azərbaycan Respublikası aşağıdakı konvensiyaları təsdiq etmişdir:

- Bazer Konvensiyası
- Bitki aləminin mühafizəsi konvensiyası
- Sənaye qəzalarının sərhədlərarası konvensiyası

Hazırda aşağıdakı konvensiyalar müzakirə olunur:

- Rotterdam konvensiyası
- Orxus konvensiyası “Tullantıların qeydiyyatı və çirkləndiricilərin daşınması” protokolu


DİQQƏTİNİZƏ GÖRƏ
MİNNƏTDARAM

National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants

(2nd Aug. 2008)

Presented by:
Mohsen Morowati, Ph.D.

The Islamic Republic of Iran

December 2009

Legislative Framework & Environmental and Sustainable Development Policies

- Article 50 of the Constitution of the Islamic Republic of Iran states that "any kind of activity which disturbs the environmental balance and cause irretrievable destruction or pollution to the environment, is forbidden"
- Environmental Protection and Enhancement Act (1974)
- Air Pollution Act (1995)
- Waste Management Act (2004)
- Game and Fish Law (1967)
- Plant Protection Act (1967)

List of the International Conventions I. R. Iran is a party to:

Name	Year Ratified
Stockholm Convention on Persistent Organic Pollutants	1384(2005.)
BASEL Convention on Transboundary Movements of Waste	1368(1989)
Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for certain hazardous Chemicals and Pesticides in international trade	1382(2003).
Ramsar convention on wetland protection (convention on wetland of international importance speciality as water foul habit)	1350(1971)
MARPOL 73/78 convention on marine pollution control	1381(2002)
London convention on marine disposal and Dumping	1375(1996)
Convention on International Trade in Endangered Species of wild fauna and flora	1352(1973).
Convention on the conservation of migratory species Bonn	1358(1979).
Kuwait regional convention for co-operation on the protection of the marine environment from pollution	1357(1978.)
Protocol concerning regional co-operation in combating pollution by oil & other harmful substance in case of emergency, Kuwait	1357(1978.)
Protocol concerning marine pollution resulting from exploration and exploitation of the continental shelf, Kuwait	1368(1989).
Protocol on the control of marine transboundary movements and disposal of hazardous waste and other wastes, Tehran	

List of the International Conventions I. R. Iran is a party to (Contd)

- 1377(1998)
- Frame work convention for the protection of the marine environment of the Caspian Sea Tehran
- 1382(2003).
- Vienna convention for the protection of the ozone layer
- 1366(1987).
- Montreal protocol substances that deplete the ozone layer
- 1366(1987).
- United Nation Framework convention on Climate Change
- 1371(1992).
- Kyoto protocol to the United nations framework convention on climate change adopts approved in Iran parliament
- 1377(1998).
- OPRC convention on oil pollution response
- 1381(2002).
- Convention on Biological Diversity
- 1371(1992.)
- Cartagena protocol on bio-safety to the Convention on Biological Diversity, Nairobi
- 1379(2000).
- United nation convention to combat desertification in those countries experiencing serious drought and/or desertification
- 1373(1994)
- International convention relating to intervention on the high seas in case of oil pollution casualties, Brussels
- 1348(1969).
- Protocol related to intervention on the high seas in cases of pollution by substance other than oil, London
- 1352(1973).
- International convention on salvage, London
- 1368(1989.)

• Steps and Considerations for Enhancing the Legal Coverage of POPs in the I. R. of Iran

An appropriate legal framework for covering substances in the Stockholm Convention exists in the I. R. of Iran through Environmental Protection Laws, Wastes Management law, Plant Protection law as well as Executive Regulations for control and monitoring pesticides, hazardous chemical agents and their import & export, as well as regulations covering industrial releases.

However, it appears that it is, in some cases, necessary to formulate more detailed policies, guidelines, terms and regulations to fully conform to the requirements of the Stockholm Convention.

Overall the following deficiencies in the regulatory structure for POPs management have been identified:

- Lack of specific codes and rules to control, generate, store, sale and supply, transport, apply and use of POPs as included in the list of Stockholm Convection (PCBs and obsolete POPs pesticide stocks).

Steps and Considerations for Enhancing the Legal Coverage of POPs in the I. R. of Iran- Contd.

- Lack of specific emission and release limits for industrial and other activities generating POPs, particularly unintentional POPs.
- Lack of specific limit values for POPs contamination in food, feed and various environmental compartments (soil, water, sediment etc)
- Lack of efficient emergency response to counter the ecological effects of possible POPs releases.
- Lack of regulations to punish those who violate the laws and regulations about POPs including unauthorized production, transportation, export & import, transaction and consumption.
- Lack of requirements to monitor POPs releases.

Awareness raising

The Public awareness plan includes development and initiation of POPs information dissemination system for the public and government stakeholders, with an emphasis of targeting key groups as identified under the baseline section, namely:

- Government officials both at policy making and enforcement levels
- Farmers who are exposed directly to POPs pesticides and dioxin
- People living or working in contaminated areas where POPs pesticides or its chemical wastes have been dumped or stored
- Workers directly handling or maintaining power transformers or capacitors that are or may be PCB containing
- Workers and management in high dioxin emitting industries manufacturing cement, aluminum, zinc, copper factories and so on and habitants around these areas
- Workers who handle and transport POPs pesticides or PCBs
- Children and pregnant women
- General Public

Actions to be taken for Information Exchange and Stakeholder Involvement

- Establishment of information exchange mechanism to facilitate cooperation among stakeholders and others in related regional/national/international centers
- Organize POPs data gathering and compilation from regional offices of respective ministries.
- Enable POPs office to compile sector wise data on POPs levels and action.
- Setting up of a network among focal point, stakeholders and key institutions
- Establishment of POPs data and NIP activity dissemination in a periodic newsletter produced by the POPs office.

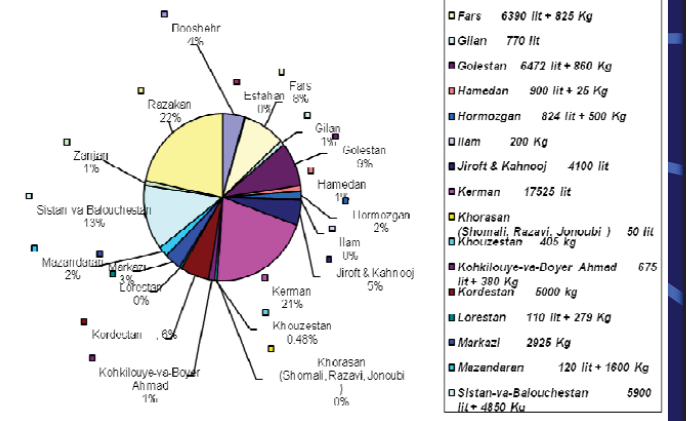
The POPs pesticides identified in storages

No.	Name of pesticide	Amount
1	Aldrin	6,305 L
2	Dieldrin	15,784 L
3	H.C.B	5,859 Kg
4	DDT	18,000 +17,922 Kg
5	Endrin	7,042 L
Total	_____	71,912Kg

Assessment of DDT in public health uses

No.	Medical University (M.U)	Amount (Kg)
1	Beheshti M.U and Iran M. U (Tehran)	214
2	Chaharmahal and	20
3	Hamedan M. U	4725
4	Isfahan M.U	1000
5	Khuzestan M. U	5750
6	Markazi M. U	10
7	Mazandaran M.U	34
8	Orumieh M. U (West Azarbaijan)	6000
9	Sabzevar M. U (Razavi Khorasan)	120
10	Semnan M. U	49
	Grand Total	17922

Regional Distribution of POPs Pesticides in Iran



Recommendations for managing the POPs Pesticides

- Providing an awareness program for the public to educate them about the presence of local risk factors related to POPs pesticides
- Complete/extend POPs pesticide inventory and contamination investigation to all provinces
- Disposal of POPs pesticides in warehouses. Taking into consideration the need for proper Health and Safety Procedures during re-packing transport and disposal.
- Remediation of polluted soil and prevention of further soil contamination around pesticide storage sites.
- Ensure effective control of trafficking of the POPs pesticides.
- Investigate and take necessary action on POPs pesticide contamination in the marine environment (regional seas)

Estimation of PCBs in I. R. Iran

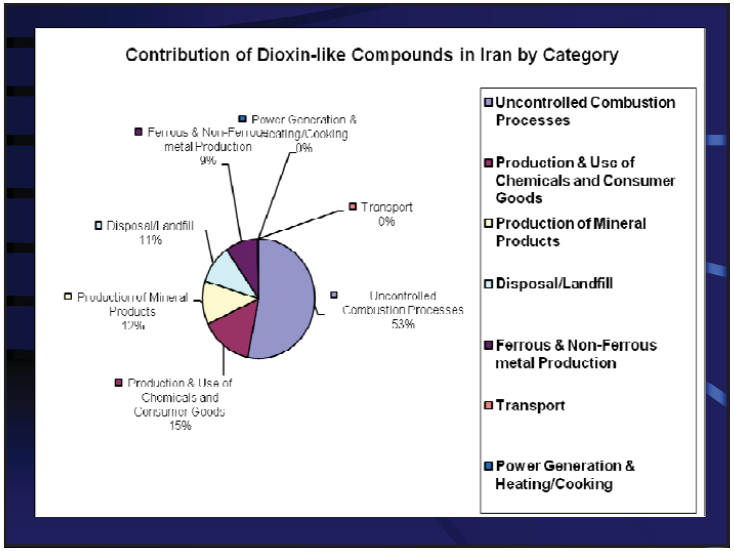
Ministry Or	PCBs (Tons)	PCBs Polluted Oil (Tons)	PCBs Polluted Equipments (#)	PCBs in Use (Tons)	Equipments containing PCBs (#)
Power & Energy	200	1000	2000	600	1000
Industry & Mine	200	200	500	200	200
Oil	150	150	300	150	200
Defense	100	100	250	100	100
Private Sectors	100	100	250	100	100
Total	750	1550	3300	1150	1600

Recommendations for managing the PCBs

1. Awareness raising activities through arranging workshops, trainings and media information such as flyers, articles in newspapers, magazines and documentary films
2. Identification of the objectives for PCB management and disposal plan
3. Strengthening of legislation and institutional infrastructure, PCB regulations covering all stages in the life cycle, including prohibition of the import, export and production of PCBs in the country
4. Better and more detailed identification of the PCBs amounts in the country
5. In-depth training and capacity building in PCB handling in the sectors holding high quantities of PCB equipment
6. Introduction of appropriate PCB management at PCB holder level, including maintenance, temporary storage area before being transferred for disposal etc.
7. Technological assistance and cooperation for disposal and destruction of PCB wastes from old transformers and capacitors and destruction capacity for PCBs.

Unintentional POPs emissions by category

	Source Categories	Annual Releases (g TEQ/a)				
Cat.		Air	Water	Land	Product	Residue
1	Waste Incineration	0.0	0.0	0.0	0.0	0.0
2	Ferrous and Non-Ferrous Metal Production	79.5	0.0	0.0	0.0	66.5
3	Heat and Power Generation	1.5	0.0	0.0	0.0	0.0
4	Production of Mineral Products	184.8	0.0	0.0	0.0	0.0
5	Transportation	3.5	0.0	0.0	0.0	0.0
6	Uncontrolled Combustion Processes	801.7	0.0	31.8	0.0	0.0
7	Production of Chemicals and Consumer Goods	0.0	0.1	0.0	232.4	0.1
8	Miscellaneous	0.0	0.0	0.0	0.0	0.0
9	Disposal/Landfill	0.0	0.0	0.0	166.2	0.0
10	Identification of Potential Hot-Spots					
1-9	Total	1071.0	0.1	31.8	398.6	66.6
	Grand Total	1568				



Recommendations for managing the U-POPs

1. Improved data collection especially in uncontrolled burning of municipal and industrial solid wastes, agricultural lands, consumption of fossil fuels for vehicles, incineration of industrial, hospital and household heating will be needed for future studies.
2. Public awareness
3. Compilation, enforcement and implementation of proper legislation for reduction of dioxin from uncontrolled burning of solid wastes and field burning of agricultural land
4. Improvement of the current solid waste disposal practice and abatement strategies for industrial sources in Iran. Since, municipal solid waste disposal and industrial activities produce 53% and 47% of Dioxin-like compounds in the country.
5. Introduction of Best Available Technology and Best Environmental Practice measures for industrial sectors such as Textile, Cement production, Aluminum production, Iron and Steel plants.
6. Data collection of dioxin–like compounds release from source categories such as: category one (incineration of hazardous waste, medical waste), category three (domestic heating by fossil fuel) and category nine (landfill leachate, open water dumping and waste oil disposal).

Institutional responsibilities for POPs NIP implementation

INSTITUTION	RESPONSIBILITIES
Department of the Environment	• Set-up and ensure daily functioning of the POPs Office • Ensure overall coordination and inter-agency collaboration for POPs NIP projects. • Identify and arrange for remediation of POPs contaminated sites. • Arrange for monitoring of POPs' residues in the environment. • Arrange for the environmentally sound disposal of POPs wastes in collaboration with the responsible ministries and municipalities. • Ensure application of BAT/BEP in different sectors. • Ensure integration of BAT/BEP in environmental permitting legislation and system. • Amend the legislative framework and follow-up on enforcement.

Institutional responsibilities for POPs NIP implementation (Contd.)

INSTITUTION	RESPONSIBILITIES
Ministry of Health & Medical Education	• Enforce adherence to POPs food and feed limit values through monitoring. • Ensure proper storage of DDT stockpiles at medical Universities • Arrange for the environmentally sound disposal of obsolete DDT and DDT wastes (in collaboration with Department of the Environment). • Collaborate with the Department of the Environment on awareness raising activities.

Institutional responsibilities for POPs NIP implementation (Contd.)

INSTITUTION	RESPONSIBILITIES
Ministry of Jihad-e-Agriculture	• Provide information to support the monitoring of POPs pesticides. • Ensure proper storage of identified POPs pesticides in Ministry's warehouses • Arrange for the environmentally sound disposal of obsolete DDT and DDT wastes (in collaboration with Department of the Environment). • Identify and arrange for remediation of 'Annex B' POPs pesticides contaminated sites in collaboration with Department of the Environment.

Institutional responsibilities for POPs NIP implementation (Contd.)

INSTITUTION	RESPONSIBILITIES
Medical Universities, Central Environmental Laboratories, and various research laboratories affiliated to various responsible ministries	• Upgrade and modernize existing laboratories. • Establish analytical capabilities of POPs compounds in organizations dealing with POPs. • Coordinate environmental monitoring programs of POPs' compounds. • Research on the effects of POPs on human health and the natural environment • Research on emission factor for release of Dioxins and Furans from burning of various biomasses.

Institutional responsibilities for POPs NIP implementation (Contd.)

INSTITUTION	RESPONSIBILITIES
Municipalities	• Upgrading the existing waste disposal facilities
Institute of Standards and Industrial Research	• Set up the standards for maximum levels of POPs in the food and feed. • Set BAT/BEP standards for avoiding unintentional POPs emission for selected industrial sectors. • Set up the standards required for the incinerators of medical and waste disposal. • Set up the standards required for the handling, storage and disposal of POPs.

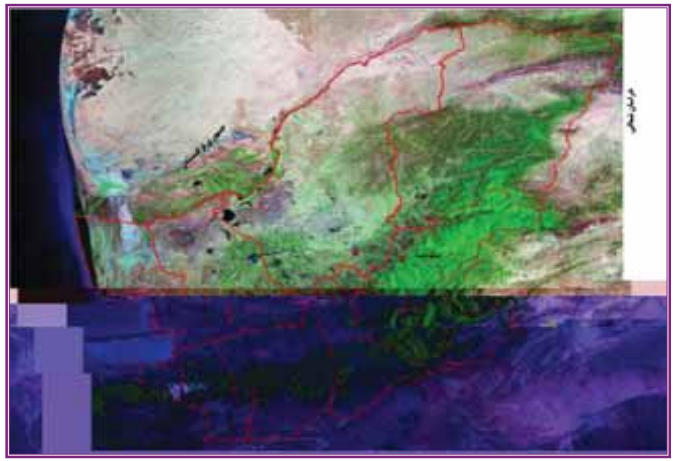
Thank You


IN THE NAME OF GOD

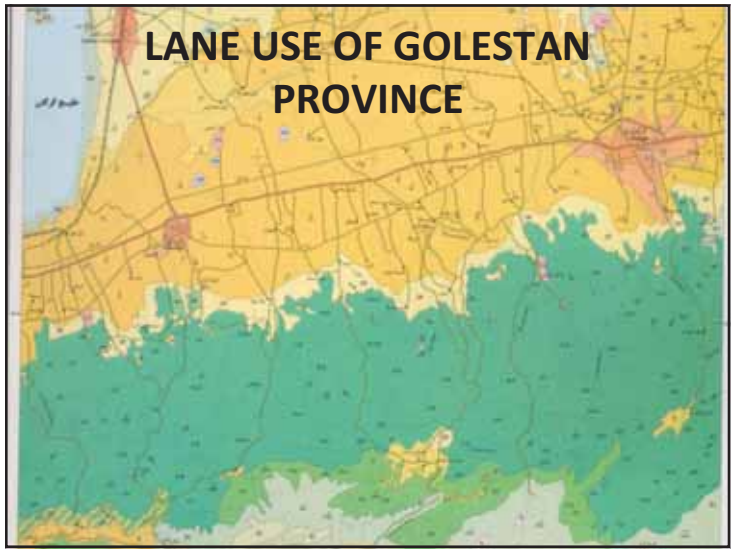

OBJECTIVES

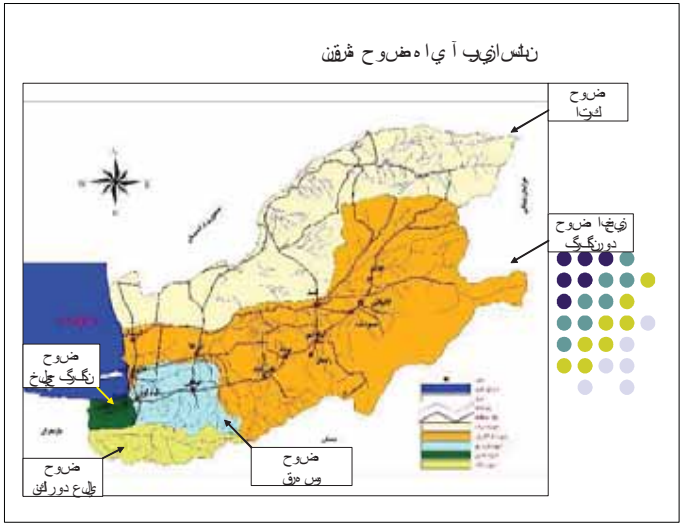

REPACKING OF OBSOLETE • PESTICIDES IN GOLESTAN (FIFTY TONES) PROVINCE AND CAPACITY BUILDING FOR ENFORCEMENT AND AWARENSS RAISING

GOLESTAN PROVINCE POSITION



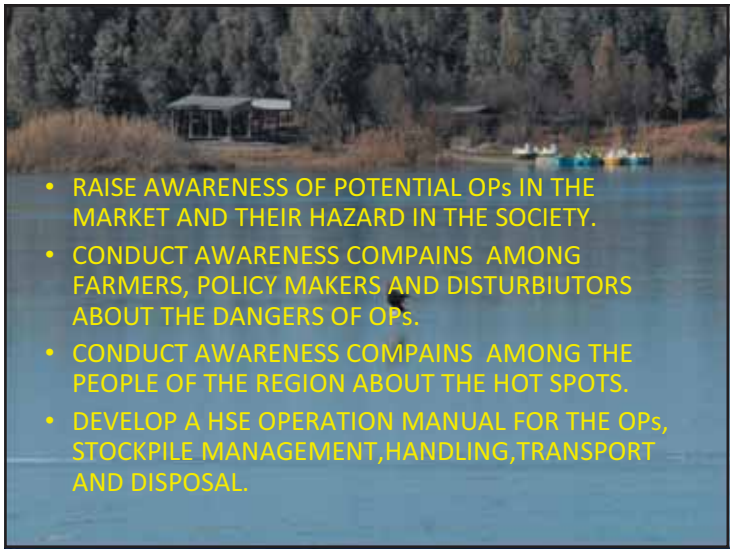
LANE USE OF GOLESTAN PROVINCE





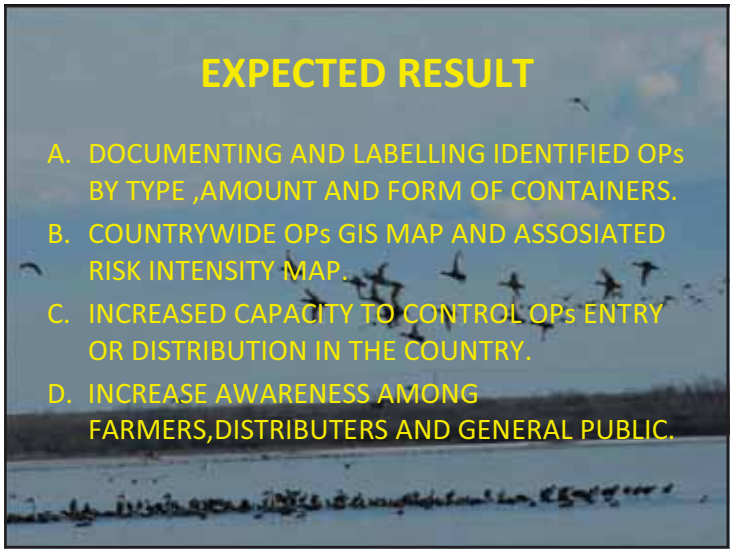
ACTIVITY

- EXTEND THE OBSOLETE PESTICIDES (OPs) SURVEY IN THE REGION TO HAVE A CLEAR AND COMPLETE INVENTORY.
- ANALYZE ALL UNIDENTFIED PESTICIDES FOR POSSIBLE OBSOLETE CONTENT.
- REPACKAGING AND TRANSFERING OF THE OPs TO SAFE STORAGE.
- TRAIN COSTUMS OFFICIALS IN IDENTIFING ILLEGAL TRAFFICING OF OPs



- RAISE AWARENESS OF POTENTIAL OPs IN THE MARKET AND THEIR HAZARD IN THE SOCIETY.
- CONDUCT AWARENESS COMPAINS AMONG FARMERS, POLICY MAKERS AND DISTURBIUTORS ABOUT THE DANGERS OF OPs.
- CONDUCT AWARENESS COMPAINS AMONG THE PEOPLE OF THE REGION ABOUT THE HOT SPOTS.
- DEVELOP A HSE OPERATION MANUAL FOR THE OPs, STOCKPILE MANAGEMENT,HANDLING,TRANSPORT AND DISPOSAL.

- REPACK OPs AT REGIONAL WAREHOUSES.
- UPGRADE A CENTRAL WAREHOUSES FOR SAFE INTERIM STORAGE OF OPs AND ASSOCIATED WASTE.
- TRANSPORT OF OPs AND ASSOSIATED WASTES
- DISPOSE OPs THROUGH EXPORT IF SUITABILTY AND FEASIBILITY IN COUNTRY PROVES NEGATIVE.



EXPECTED RESULT

A. DOCUMENTING AND LABELLING IDENTIFIED OPs BY TYPE ,AMOUNT AND FORM OF CONTAINERS.

B. COUNTRYWIDE OPs GIS MAP AND ASSOSIATED RISK INTENSITY MAP.

C. INCREASED CAPACITY TO CONTROL OPs ENTRY OR DISTRIBUTION IN THE COUNTRY.

D. INCREASE AWARENESS AMONG FARMERS,DISTRIBUTERS AND GENERAL PUBLIC.

E. A HSE OPERATION MANUAL IS DEVELOPED FOR THE SAFE AND MINIMIZED RISK OF SHIPPING,HANDLING,STORAGE AND SAFE KEEPING OF THE OPs.

F. EXPOSURE TO AND RELEASE OF OPs FROM STOCKPILES MINIMIZED.

G. OP AND ASSOCIATED WASTES REPACKED AND TRANSPORTED TO A SAFE TEMPORARY STORAGE.

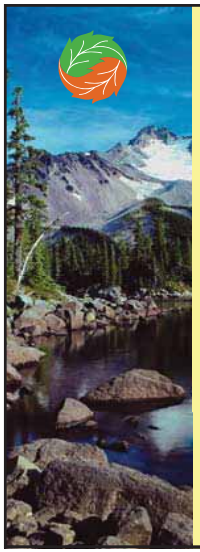
H. ALL IDENTIFIED OPs DISPOSED SAFELY.

RESPONSIBLE ORGANIZATIONS

- DEPARTMENT OF THE ENVIRONMENT.
- MINSTRY OF AGRICULTURE.
- MINSTRY OF HEALTH.
- MINSTRY OF INTERNAL AFFAIRS.

SOURCE OF FINANCING

- GOVERNMENT AND FORIGHN SOURCES.



Министерство охраны окружающей среды Республики Казахстан

Казахстан

Состояние проблемы стойких органических загрязнителей в Казахстане и пути ее решения

Азербайджан

Россия

Туркменистан

Иран

г. Баку, 7-11 декабря 2009 года

Стокгольская конвенция о стойких органических загрязнителях

22 мая 2001 года подписана Стокгольмская конвенция о стойких органических загрязнителях

7 июня 2007 года принят Закон Республики Казахстан «О ратификации Стокгольмской конвенции о стойких органических загрязнителях

Общий объём обнаруженных отходов, содержащих полихлордифенилы, оценивается в *250 тысяч тонн*

Более 1500 тонн устаревших и непригодных к использованию пестицидов

Более 50 тысяч единиц ПХД-содержащего оборудования

Восемь загрязненных полихлордифенилами территорий

Географическое распределение ПХД оборудования в Казахстане

Первоочередные мероприятия

- утвердить Национальный план выполнения обязательств по Стокгольмской конвенции
- провести детальную инвентаризацию СОЗ-содержащих пестицидов, ПХД-содержащего оборудования, выявить территории, загрязненные СОЗ
- создать систему мониторинга и управления запасами и отходами СОЗ, создать лабораторный потенциал, отвечающий международным требованиям по анализу СОЗ (в частности по диоксинам и фуранам)
- создать Учебный центр по обучению специалистов безопасному управлению СОЗ
- начать работы по организации экологически безопасного временного хранения и уничтожения СОЗ-содержащих отходов (пестицидов, оборудования), представляющих наибольшую угрозу здоровью населения и окружающей среде (Дарьял У, захоронение на Семипалатинском полигоне, пруд-накопитель УККЗ)

Выполнение обязательств

Подготовлен проект Национального плана выполнения обязательств по Стокгольмской конвенции, который прошел согласование во всех заинтересованных государственных органах.

Разработан План мероприятий по ее реализации и одобрен на заседании Республиканской бюджетной комиссии республики.

Министерством проведены работы по теме: «Экологическая оценка территорий, загрязнённых полихлордифенилами».

Стратегические документы

Разработаны проекты:

Стратегический план развития Казахстана на период до 2020 года

Государственная программа «Жасыл даму» на 2010-2014 годы

Основные задачи Центра «Жасыл Даму»

Основная задача – создание активов (заводов) по производству технологических комплексов и экологического оборудования по направлениям:

1. Управление отходами производства и ресурсосбережение

- Создание исследовательского комплекса для анализа и оценки полезных ископаемых в ТМО
- Инвентаризация ТМО

2. Управление твердыми бытовыми отходами, очистка сточных вод

- Организация производства оборудования для переработки ТБО в Казахстане
- Строительство заводов по переработке ТБО во всех областных центрах и малых городах;
- Очистка накопителей от донных илов

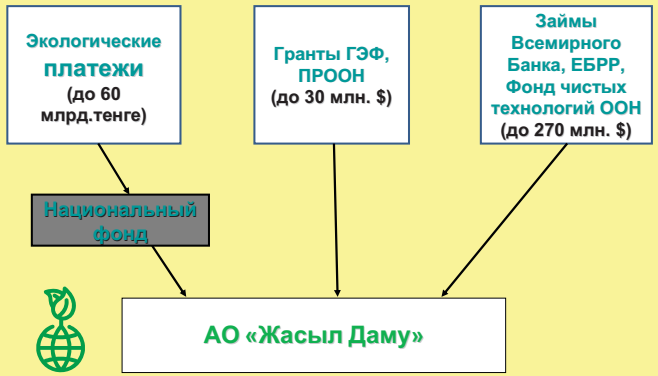
3. Ликвидация стойких органических загрязнителей и химических отходов

- Строительство завода по переработке СОЗ и ядов в Казахстане
- Уничтожение накопленных 250 тыс.тонн ПХД содержащих веществ;
- Уничтожение 1500 тонн пестицидов;

4. Внедрение экологических инноваций

- Организация производства и внедрение технологий Борисенко А.В. по очистке отходящих промышленных газов,;
- Переработка донных илов с дальнейшим производством искусственного гумуса.

Финансирование АО «Жасыл Даму»



Благодарю за внимание!

Қазақстан Республикасы
Парламентіндегі Үкімет сағаты
Астана қаласы, 16 қараша 2009 жыл

Қалдықтарды кешенді қайта өңдеу проблемалары туралы. Киото хаттамасының тетіктерін іске асыру

Қазақстан Республикасы
Қоршаған ортаны қорғау министрі Н.С. Әшімов

Қазақстан Республикасында жинақталған қалдықтардың көлемі

Қалдықтар
Барлығы: 22,1 млрд. тонна

Өндіріс қалдықтары
22 млрд. тонна

Техногендік минералдық түзілімдер (ТМТ)
16 млрд. тонна

Улағыш (қауіпті) қалдықтар
6 млрд. тонна

Тұтыну қалдықтары (ТҚҚ)
96 млн. тонна

- Қағаз, қатырма қағаз – 30 %
- Азықтық қалдықтар – 20 %
- Пластмасса – 13 %
- Өзгелері (оның ішінде улы) – 37 %

2

1 тұрғынға шаққанда жинақталған қалдықтардың көлемі

3

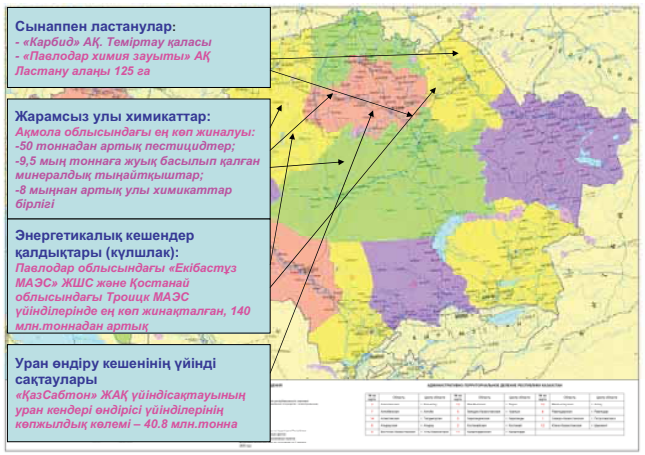
Орталық және солтүстік аймақтар

Сынаппен ластанулар:
- «Кәрбид» АҚ. Теміртау қаласы
- «Павлодар химия зауыты» АҚ Ластану алаңы 125 га

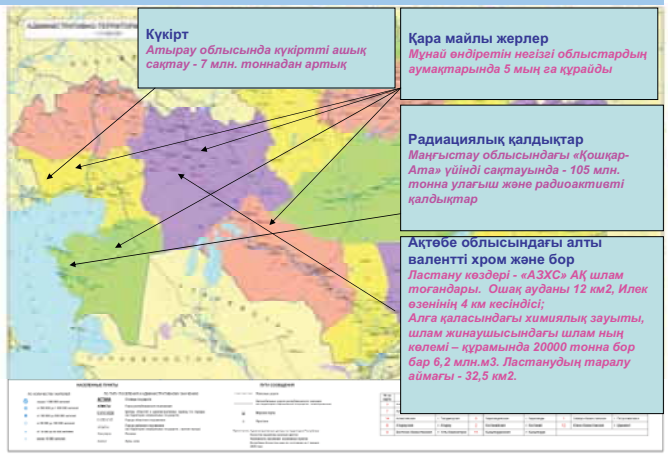
Жарамсыз улы химикаттар:
Ақмола облысындағы ең көп жиналуы:
-50 тоннадан артық пестицидтер;
-9,5 мың тоннаға жуық басылып қалған минералдық тыңайтқыштар;
-8 мыңнан артық улы химикаттар бірлігі

Энергетикалық кешендер қалдықтары (күлшлак):
Павлодар облысындағы «Екібастұз МАЭС» ЖШС және Қостанай облысындағы Троицк МАЭС үйінділерінде ең көп жинақталған, 140 млн.тоннадан артық

Уран өндіру кешенінің үйінді сақтаулары
«ҚазСабтон» ЖАҚ үйіндісақтауының уран кендері өндірісі үйінділерінің көпжылдық көлемі – 40.8 млн.тонна



Батыс аймағы



Күкірт
Атырау облысында күкіртті ашық сақтау - 7 млн. тоннадан артық

Қара майлы жерлер
Мұнай өндіретін негізгі облыстардың аумақтарында 5 мың га құрайды

Радиациялық қалдықтар
Маңғыстау облысындағы «Қошқар-Ата» үйінді сақтауында - 105 млн. тонна улағыш және радиоактивті қалдықтар

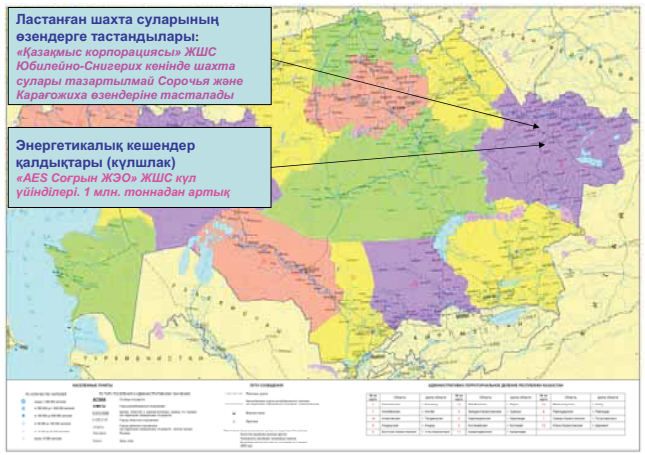
Ақтөбе облысындағы алты валентті хром және бор
Ластану көздері - «АЗХС» АҚ шлам тоғандары. Ошақ ауданы 12 км2, Илек өзенінің 4 км кесіндісі;
Алға қаласындағы химиялық зауыты, шлам жинаушысындағы шлам ның көлемі – құрамында 20000 тонна бор бар 6,2 млн.м3. Ластанудың таралу аймағы - 32,5 км2.

Оңтүстік аймақ

Құрамында фосфор бар қалдықтар (тарихи)
- Оңтүстік Қазақстан облысында 500 мың тоннадан артық;
-Жамбыл облысында 600 мың тоннадан артық

Қорғасын өндірісінің қалдықтары
-Оңтүстік Қазақстан облысындағы «Южполиметалл» ЖШС, 7 млн. тоннадан артық;
- Алматы облысындағы Текелі үйінді сақтауында 8,2 млн. тоннадан артық

Шығыс аймағы



Ластанған шахта суларының өзендерге тастандылары:
«Қазақмыс корпорациясы» ЖШС Юбилейно-Сниегрих кенінде шахта сулары тазартылмай Сорочья және Карагожиха өзендеріне тасталады

Энергетикалық кешендер қалдықтары (күлшлак)
«AES Согрын ЖЭО» ЖШС күл үйінділері. 1 млн. тоннадан артық

Әскери полигондар

Ядродық сынақ полигондарының зардаптары
- Шығыс Қазақстан облысындағы бұрынғы Семей полигоны;
- Батыс Қазақстан облысындағы бұрынғы «Капустин Яр» полигоны.

ЖЖМ қоймаларынан мұнай өнімдері
Ағып кетудің нәтижесінде шамамен 6,5 мың тонна керосин запастары бар 0,42 шаршы км жуық жер асты керосин линзасы пайда болды.

«Байқоңыр» ғарыш айлағы кешені қызметінің зардаптары
- Қызылорда және Қарағанды облыстары аумақтарында ракета тасығыштардың бірінші сатылары құлаған негізгі аудандар орналасқан.

8

Қазақстан Республикасында коммуналдық қалдықтардың жай-күйі

Республикада **6325** елді мекен бар

Қалдықтарды орналастырудың **4525** орны (полигондары)

307 (6.8%) полигон заңдастырылған
(учаскелер бөлінген, мемлекеттік санитарлық және экологиялық сараптаманың оң қорытындылары алынған, қоршаған ортаны қорғауға эмиссияларға рұқсаттар бар)

4218 (93.2 %) полигон заңдастырылмаған
Мұнда күн сайын заңсыз түрде қалдықтар қоймаланады (қоршаған ортаға эмиссияларға рұқсатсыз және төлемсіз)

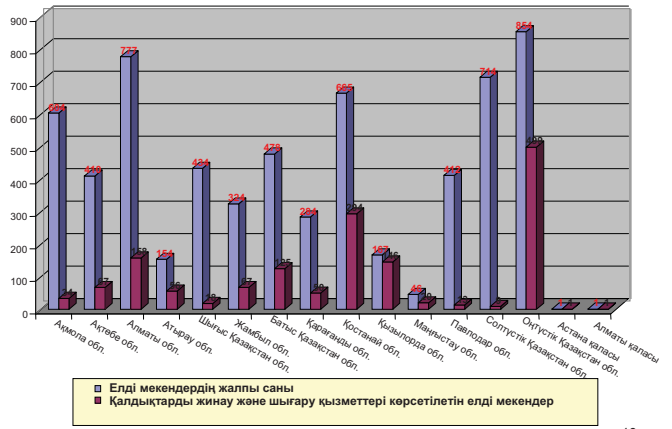
Коммуналдық қалдықтардың жалпы көлемі **96868,9** мың тонна

93.18 мың тонна кәдеге жаратылады
(орта есеппен алғанда **2 %** артық)

2009 жылдың 9 айы ішінде **3482,8** мың тонна қалдық орналастырылған

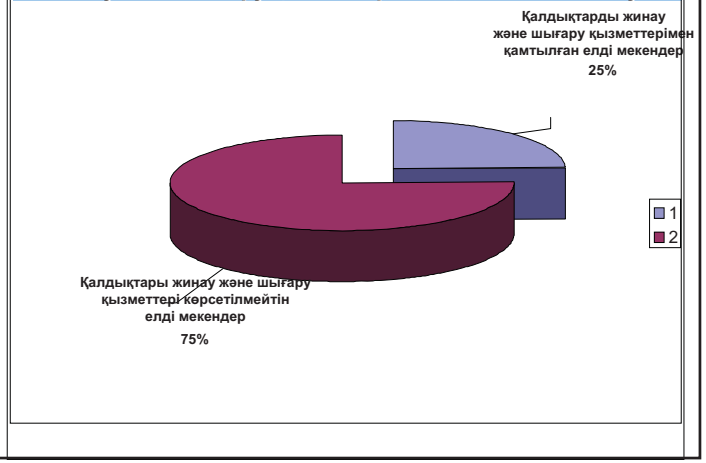
9

Республикада коммуналдық қалдықтарды жинау және шығару



10

Республика елді-мекендерінің коммуналдық қалдықтарды жинау және шығару қызметтерімен қамтамасыз етілуі



«Ресурстарды сақтау стратегиясы және нарыққа өту»

«Қазақстан үшін экологиялық жағдайды, әсіресе өнеркәсіп, металлургия және химия өндіретін кәсіпорындар шоғырланған аудандарда, сауықтыруды қамтамасыз ету аса қажет.»

«…қалдықтар түріндегі қайталама шикізат ресурстарын толық әрі тиімді пайдалану және оны жаңа тұтыну құнына айналдыру...»

«…қоршаған ортаның жағдайын жақсартудың жетекші факторы болып табылатын минералдық ресурстарды кешенді пайдалануға қол жеткізу қажет... басқа сөзбен айтқанда қалдықсыз өндірісті қалыптастырады»

Н. Назарбаев. Мәскеу 1992 жыл

«Жаңа әлемдегі жаңа Қазақстан» Президенттің Қазақстан халқына жолдауынан, 2007 жылғы наурыз:

«Табиғи ресурстарды үнемдеу мен ұтымды пайдаланудың мұндай технологиялары мен бағдарламаларын енгізуді экономикалық, әлеуметтік және экологиялық факторларды оңтайлы ұштастыру қағидаттарын сақтай отырып жүзеге асырған жөн»

Қазақстан Республикасы Президенті жанындағы Шетелдік инвесторлар кеңесінің он сегізінші отырысының 2007 жылғы 7 желтоқсандағы 01-10.1 хаттамасының 12-тармағы:

Қазақстан Республикасының Үкіметі:

«Өндіріс және тұтыну қалдықтарын басқарудың Ұлттық орталығын құру бойынша ұсыныстарды енгізсін»

12

12

«2010-2020 жылдарға арналған Қазақстан экологиясы» мемлекеттік бағдарламасының жобасы

Мақсаты: Қоршаған ортаның жағдайын жақсарту және қоғамның экологиялық орнықты дамуының қолайлы деңгейін қамтамасыз ету

Міндеттері:

1. Қоршаған ортаға және халық денсаулығына антропогендік әсерді **төмендету** (атмосфералық ауаның сапасы; су ресурстарының тапшылығы және ластануы; өндіріс және тұтыну қалдықтары; халық денсаулығы)

2. Табиғи экожүйелерді **сақтау және қалпына келтіру** (орнықты дамуға көшу; климаттың өзгеруі; биосаналуандылық, жерлердің азғындауы; экологиялық апат аймақтары және ластанғанаумақтар)

3. Қоршаған ортаның сапасын басқару жүйесін **жетілдіру** (басқарудың заңнамалық тетіктері; халықаралық ынтымақтастық; эколого-экономикалық құралдар; ғылыми қамтамасыз ету; мониторинг жүйесінің дамуы)

«2010-2020 жылдарға арналған Қазақстан экологиясы» мемлекеттік бағдарламасының жобасы

Іске асырылатын бағдарламалар

2008-2010 жылдарға арналған қоршаған ортаны қорғау бағдарламасы
«2007-2009 жылдарға арналған Балқаш-Алакөл бассейнінің орнықты дамуын қамтамасыз ету» бағдарламасы

Әзірленіп жатқан бағдарламалар

2010-2012 жылдарға арналған бұрынғы Семей ядролық полигоны проблемаларын кешенді шешу бағдарламасының жобасы
«Капустин Яр» және «Азғыр» ядролық полигондарының әсерінен зардап шеккен халықты сауықтыру және әлеуметтік көмек көрсету бағдарламасының жобасы
Өндіріс және тұтыну қалдықтарын басқару және кешенді қайта өңдеу бойынша «Жасыл Даму» ұлттық орталығын құрудың жобасы
«Тарихи ластануларды» жою бағдарламасының жобасы
Каспий теңізіндегі қазақстандық секторының экологиялық қауіпсіздігін қамтамасыз етудің ұлттық іс-қимыл жоспарының жобасы

Құрылымы:

1. Паспорт (негізгі параметрлер)
2. Кіріспе
3. Проблемалардың қазіргі жай-күйін талдау
4. Мемлекеттік бағдарламаның мақсаты және міндеттері
5. Іске асырудың негізгі бағыттары және тетіктері
6. Қажетті ресурстар және оларды қаржыландыру көздері
7. Іске асырылудан күтілетін нәтижелер және индикаторлар

Негізгі проблема –
Өндіріс және тұтыну қалдықтарын басқару

«2010-2020 жылдарға арналған Қазақстан экологиясы» мемлекеттік бағдарламасының іске асырылуынан күтілетін нәтижелер

Көрсеткіш	2009 жыл	2020 жыл
Физиологиялық параметрлерге сәйкес ауыз суға жүйелі түрде қол жеткізудегі халықтың үлесі	78,7%	86%
Атмосфераға ластаушы заттардың салыстырмалы жалпы шығарындысы	ІЖҰ млн. теңгесіне 0,3 тонна	ІЖҰ млн. теңгесіне 0,21 тонна
Су көздеріне ластаушы заттардың шығарындылары	ІЖҰ млн. теңгесіне 0,2 тонна	ІЖҰ млн. теңгесіне 0,13 тонна
Энергияны тұтынудың жалпы көлемінде энергияның баламалы көздерін пайдаланудың үлесі	0,02 %	2 %
Қалдықтардың түзілуіне дейінгі оларды қайта өңдеудің көлемі	17 %	25 %

«Жасыл Даму Орталығының» негізгі міндеттері

Негізгі міндеті – технологиялық кешендер және экологиялық жабдықтар өндіру бойынша активтерді (зауыттарды) ашу:

1. Өндіріс қалдықтарын және ресурсты сақтауды басқару

✓ТМТ пайдалы қазбаларды талдау және бағалау үшін зерттеулік кешенін құру;
✓ТМТ түгендеу

2. Тұрмыстық қатты қалдықтарды басқару, ағынды суларды тазарту

✓Қазақстанда ТҚҚ қайда өңдеу үшін жабдықты өндіруді ұйымдастыру;
✓Барлық облыс орталықтарында және кіші қалаларда ТҚҚ қайта өңдеу зауыттарын салу;
✓Жинаушыларды тұңбалардан тазарту

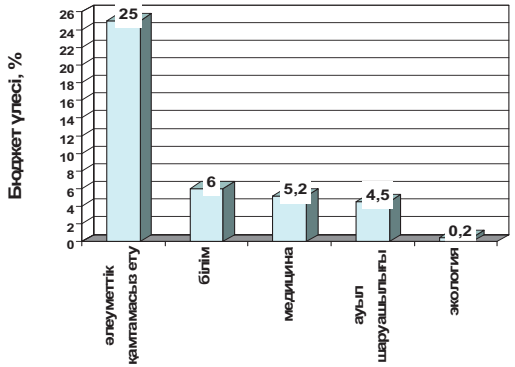
3. Орнықты органикалық ластануларды және химиялық қалдықтарды жою

✓Қазақстанда ООЛ және уларды қайта өңдеу зауытын салу;
✓Құрамында ПХД бар жиналған 250 мың тонна заттарды жою;
✓1500 тонна пестицидтерді жою

4. Экологиялық инновацияны енгізу

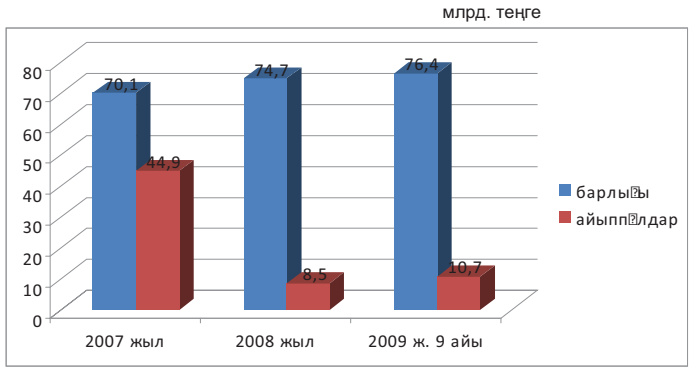
✓А.В. Борисенконың өнеркәсіптік газдарды тазарту бойынша технологиясын өндіруді және енгізуді ұйымдастыру;
✓Қасанды гумус өндіру үшін тұңбаларды қайта өңдеу

2009 жылы Республикалық бюджеттің шығындары



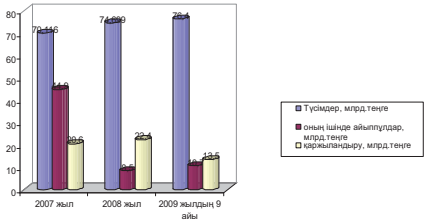
17

Экологиялық төлемдердің көлемі



18

Табиғатты қорғау іс-шараларын қаржыландыру



Жергілікті бюджетке түскен экологиялық төлемдерден табиғатты қорғау іс-шараларына 2007-2008 жылдары бөлінді:
- Ақтөбе облысы 21,3 және 7,5% сәйкесінше,
Батыс-Қазақстан облысы – 20,1% и 3,7%;
Қызылорда облысы 36,7% и 25%;
Павлодар облысы – 9,2% и 9,3%;
Оң түстік-Қазақстан облысы – 9 % и 25%
2009 жылдың I жартыжылдығында табиғатты қорғау іс-шараларын қаржыландыруға жергілікті бюджеттерден 13,5 млрд. теңге бөлінді, (17,6%)

19

Табиғатты қорғау іс-шараларын қаржыландыру

Проблематика

Табиғатты пайдаланудың қолданыстағы экономикалық тетіктері қоршаған ортаның ластануын төмендетуге айтарлықтай әсер етпейді және экологияға инвестицияларды ынталандырмайды

Бизнестің бәсекеге қабілеттілігі үшін жергілікті атқарушы органдардың әрекеттері ставкалардың ұлғаюына әкеледі

2008 жылы қолданған үлгі одан әрі аймақаралық келіспеушіліктерге әкелді (базалық ставка – аймақтар арасындағы орташа ретінде, шекті максималды)

Халықаралық тәжірибені жалпылау:

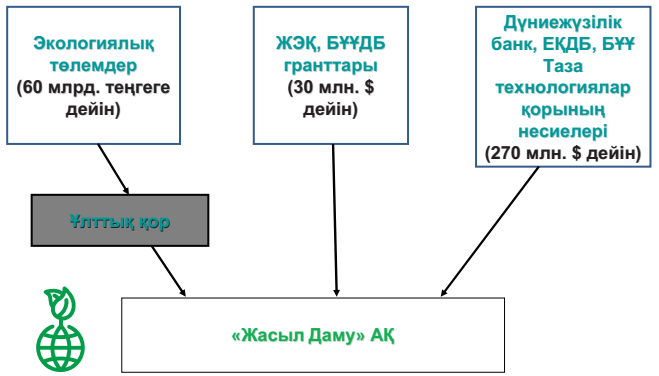
- экологиялық салықтардың (және ұқсас құралдардың) қызметтері болып табылады: экологиялық мақсаттарға қаражат жинау, ынталандыру, өтемақы

- жиналған қаражаттарды белгіленген мақсаттарға тікелей бағыттау ең тиімді болып табылады (earmarking)

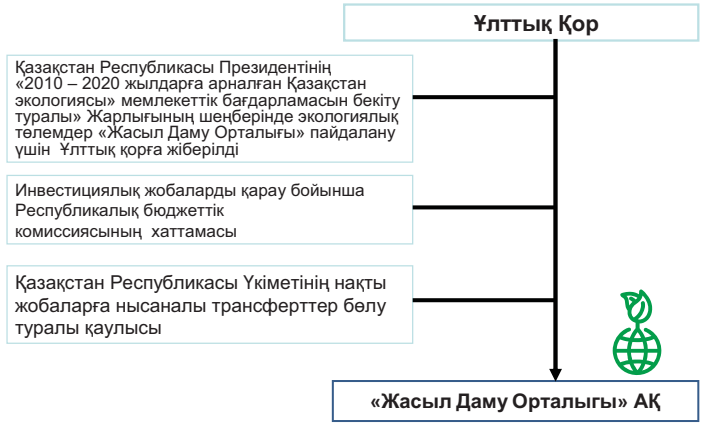
- электірлік пен отынға салықтар экология, климаттың өзгеру, энергияны сақтау үрдістеріне «түбірлі» әсер болып табылады

20

«Жасыл Даму» АҚ қаржыландыру



Басқару сұлбасы



Климаттың өзгеруі бойынша халықаралық үдеріске қатысу

1995 жыл ***БҰҰ Климаттың өзгеруі бойынша Негіздемелік конвенцияның Қазақстанмен ратификациялануы***

1999 жыл ***БҰҰ Климаттың өзгеруі бойынша Негіздемелік конвенцияға Киото хаттамасының Қазақстанмен қол қойылуы***

2009 жыл ***БҰҰ Климаттың өзгеруі бойынша Негіздемелік конвенцияға Киото хаттамасының Қазақстанмен ритификациялануы***

Климаттың өзгеруі бойынша халықаралық үдеріске қатысу

1. Маракештік шешім – Қазақстан – Киото хаттамасы мақсаттары үшін 1 қосымшаның тарабы.

2. Найробилік шешім – Қазақстан үшін 1992 жыл базалық жыл болып анықталды.

3. Познандік шешім – Қазақстан 1992 жылғы деңгейді арттырмау бойынша сандық міндеттемелерді қабылдады.

Шетелдік инвесторлар кеңесінің XXI пленарлық отырысы

Қазақстан Республикасының Президенті Н. Ә. Назарбаев:

Энергия тиімді технологияларды дамытуға және Киото хаттамасы тетіктері бойныша 1 миллиард долларға дейін инвестиция тарту

Қазақстанда парниктік газдар квоталарын сату тетіктерін ендіру және арнайы сату алаңын құру туралы тапсырма берді.

25

2020 жылға дейін парниктік газдар шығарындыларын жоспарлы төмендету

Еуропалық одақ	*1990 жылдан 20-30%*
	2050 жылға 80%
Жапония	*1990 жылдан 25 %*
Ресей Федерациясы	*1990 жылдан 10-15%*
Украина	*1990 жылдан 20 %*
АҚШ	*2005 жылдан 14-18%*

2009 жылғы 4 қарашада Барселона қаласында Қазақстан базалық 1992 жылдан парниктік газдар шығарындыларын 2020 жылға 15 % және 2050 жылға 25 % төмендететінін баяндады.

26

Пост Киото кезеңінде праниктік газдар шығарындыларын төмендету

Жылдар	1992	2012	2020	2050
CO2 млн. тонн	323,64	323,64	275,1	242,7
Базалық жылға % төмендеу	0%	0%	15%	25%

27

Қазақстан Республикасының бастамашылығы

2009 жылғы 22 қыркүйекте Нью-Йорк қаласында БҰҰ Штаб-пәтерінде Климаттың өзгеруі бойынша жоғары деңгейдегі саммитте Қазақстан:

Климаттың өзгеруіне бейімделудің бірыңғай халықаралық стратегия құру

бастамашылығын білдірді.

28

Қазақстанның болашағы

Қазақстанның төмен көміртекті экономикасын құру үшін таза технологиялар негізінде жедел индустрализациялау жүргізуіміз қажет.

Қазақстан «Жасыл даму» жолына тұруы тиіс, яғни, қоршаған орта тұтастығын сақтай отырып, экономикалық өсуге қол жеткізуі тиіс, Киото хаттамасы тетіктерін іске асырудан түскен қаражат тек экологиялық жобаларға жұмсалуы қажет.

Н. Назарбаев

29

Киото хаттамасы тетіктері

17 бап – Шығарындыларды сату (ШС)

Киото хаттамасының Б қосымшасына енген тараптар өз міндеттемелерін орындау мақсатында шығарындылар саудасына қатыса алады. Сауданың мәні - өз міндеттемелерін орындаған және артық квоталары бар мемлекеттер қысқартулар қажет басқа елдерге өз қысқартуларын сата алатындығында. Соңғы кездері осы тетік аясында Жасыл инвестиция сұлбасы үлкен беделге ие болуда. Аталған сұлба бойынша шығарындылардың жобаларды орындауда емес, экономикалық дағдарыс нәтижесінде пайда болған төмендетулері бар тараптар (Ресей, Украина, Беларусь, Шығыс Еуропа елдері) бұл қысқартуларды іске асыра алады және түскен инвестициялар экологиялық жобаларға – парниктік газдар шығарындыларын төмендету бойынша жобаларға басымдылықпен бағытталуы тиіс.

30

Қазақстандық көміртектік сауда алаңы

- Парниктік газдарға түгендеу жүргізілгеннен кейін барлық кәсіпорындар парниктік газдарға лимиттер алады. Базалық жыл – 2008 жыл болады.
- Егер кәсіпорын сынақтық кезеңнің соңында лимитті арттырып жіберсе, оған айыппұлдық санкциялар қолданылатын болады. Еуроодақта бір тонна CO2 100 еуроға тең.
- Айыппұл салдырмау мақсатында кәсіпорын қажетті парниктік газ көлемін сатып алуға болатын нарыққа жүгінеді. Нарықтағы баға құбылмалы және Еуроодақта бір тонна CO2 30 еуроға көтерілген.
- Төмен көміртекті технологияны ендірген және парниктік газдар шығарындыларының төмендеуіне қол жеткізген кәсіпорын артығын нарықта сата алады.
- Қазақстанда еуропалық тауар биржасына бейімделген тауар биржасында парниктік газдар саудасы болжанады.

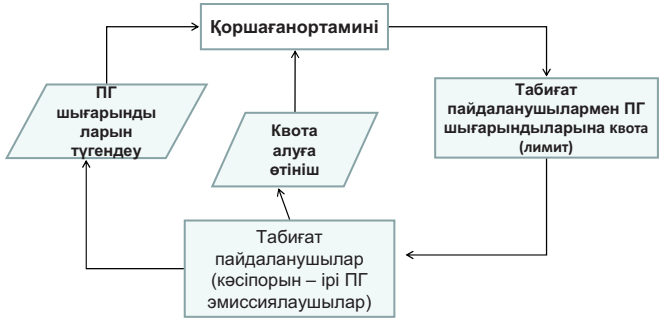
31

- Соңғы тұтынушы үшін 1 тонна CO2 = 15 еуро
- Жобалар бойынша инвестициялар 1 тонна CO2-ға 10 еуроны құрауы мүмкін
- Алдын-ала төмендету есебі үшін 1 кв*сағ = 1,2 кг CO2 пайдалануға болады
- Жоба үлкен болса, CO2 тоннасы бағасы жоғары

32

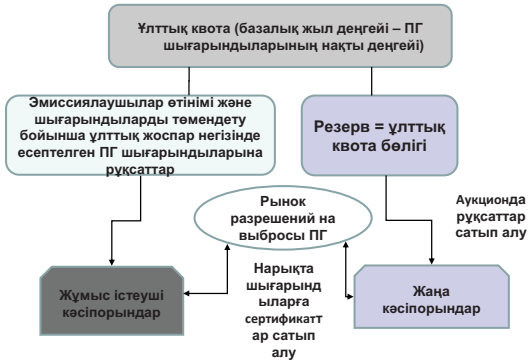
Қазақстан Республикасындағы парниктік газдар шығарындыларына рұқсаттар жүйесі

(Қазақстан Республикасы Үкіметінің 2008 жылғы 11 ақпандағы N 128 қаулысымен бекітілген Ережелерге сәйкес)

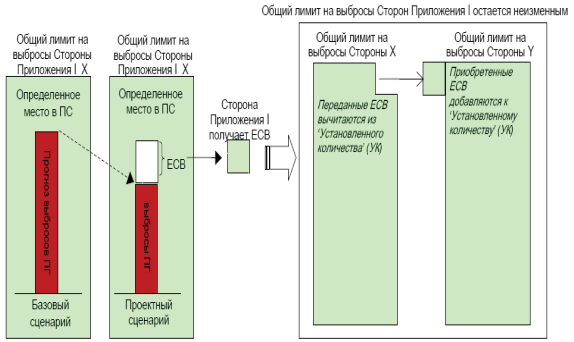


Қазақстанда жаңа кәсіпорындарға ПГ шығарындыларына рұқсаттар беру нұсқасы (жоба)

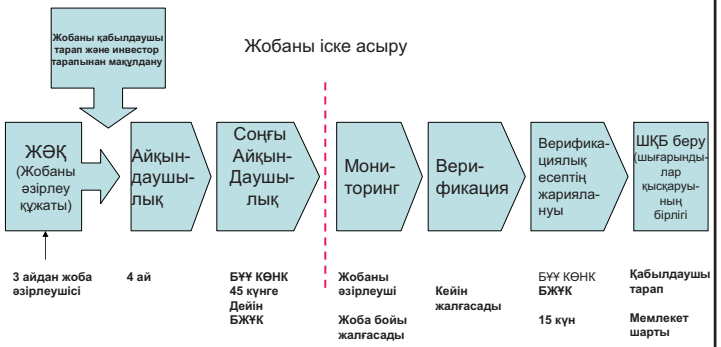
Ішкі квота саудасы жүйесін ендіру барысында резервтен бөлу



Бірлесіп жүзеге асыру тетіктегінің әрекеті



Жобаны іске асыру



ТКШ қайта құру

Жылу және электр энергиясын үнемдеу осы энергияларды жасайтын отынды үнемдейді, сәйкесінше, парниктік газдар шығарындыларын төмендетеді. Бұған:

- Жылу желілерін модернизациялау;
- Газ бөлу жүйелерін модернизациялау;
- Электрлік бөлу желілерінде жоғалуды төмендету;
- Энергия тиімділіктер және үйлердегі энергия үнемдеулер арқылы қол жеткізуге болады.

37

Өндірісті модернизациялау

Өндірісте:

- Өндірістің энергия тиімділігін және энергия үнемдеуді жақсарту
- Өндірістің көміртектік қарқындылығын төмендету
- Ең жақсы төмен көміртекті технологияларды енгізу
- «Арзан = Жақсы» принципін «Таза = Жақсы» принципіне өзгерту есебінен ғана парниктік газдар шығарындыларын төмендету мүмкін.

38

Жобаларды іске асырудағы жалпы әлемдік үрдістер

- Қазіргі таңда дүниежүзінде > 1,670,000,000 тоннадан астам CO2-эквивалентін төмендетуге 1800 артық жобалар іске асырылады
- 140 жуық Киото хаттамасы тетіктерінің Ұлттық кеңселері ашылды

39

Іске асырылған жобалар

- Орал қаласы ЖЭО қайта құру (15 млн. доллар);
- Қарағанды облысындағы тозған жерлерді қалпына келтіру (5 млн. доллар);
- Құмкөл кен орнындағы ілеспе газды кәдеге жарату – газ-турбиналық қондырғы (ГТҚ 40 Мвт);
- Парниктік газдар шығарындыларын төмендету саласында Каспий аймағының мамандарын әзірлеу бағдарламасы – 3 кіші көрсету жобалары

40

Шамамен 100 млн. доллар көлеміндегі сомаға жобалар әзірленді

- Ақтөбе және Оңтүстік Қазақстан облыстрында ілеспе газды кәдеге жарату
- Астана қаласында жылумен қамсыздандыру жүйесінің энергия тиімділігін арттыру
- қоғамдастықтың ақпаратқа қол жетімділігін және 2 ПГ шығарындыларын төмендетуге бағытталған жобалардың орындалуына қатысуын қамтамасыз ету
- Шарын өзеніндегі су электр станцияларын(СЭС): Ақтоғай №2 СЭС (1000 кВт) и Актогай №1 СЭС (800 кВТ)
- жылумен қамсыздандыру жүйесінің тиімділігн арттыру
- жылумен қамсыздандыру жүйесін әзірлеу
- Ерейментау қ. 5 МВт қуаттылықты желдік ферма
- Қарағанды көмір бассейндері шахталарының метанын кәдеге жарату
- Кербұлақ СЭС-і құрылысы
- 500 МВт қуаттылықты Нұрлы жел станциясы

41

Назарларыңызға рахмет

42

Устаревшие и стойкие органические пестициды в Российской Федерации: проблема и возможные пути её решения

М.И.Лунёв
доктор биол. наук
ВНИИ агрохимии
им. Д.Н.Прянишникова
(Москва)
milunev@yandex.ru

СОЗ-пестициды в Стокгольмской конвенции

Химические вещества	Пестициды	Промышленные химические вещества	Побочные продукты
Альдрин	•		
Хлордан	•		
ДДТ	•		
Дильдрин	•		
Эндрин	•		
Гептахлор	•		
Мирекс	•		
Токсафен	•		
ГХЦГ (альфа-, бэта-, гамма-)	•		
Гексахлорбензол (ГХБ)	•	•	•
Полихлорированные бифенилы (ПХБ)		•	•
Полихлорированные дибензо-п-диоксины			•
Полихлорированные дибензофураны			•

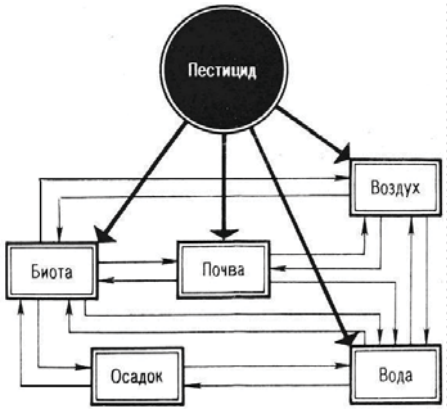
Особенности СОЗ-пестицидов

- продолжение применения СОЗ-пестицидов (ДДТ) до настоящего времени в ряде стран для химической защиты растений от вредителей и болезней и в санитарно-гигиенических целях
- внесение пестицидов в процессе их применения непосредственно в окружающую среду для достижения целевого хозяйственного эффекта
- нахождение СОЗ-пестицидов в общей массе устаревших пестицидов в местах их хранения и захоронения

Динамика поставок и применения пестицидов в России, в среднем за год

Показатель	1986-1990 гг.	1991-1995 гг.	1996-2000 гг.	2001-2005гг.
Поставлено пестицидов, т	215566	51710	**29625**	34420
Внесено пестицидов на 1 га пашни и многолетних насаждений, кг	1,62	0,40	**0,24**	0,29
Проведено защитных мероприятий, тыс.га	68949	34151	**28400**	35966
В т.ч. обработано, тыс.га				
гербицидами	32442	16273	**16007**	20297
инсектицидами	23352	12049	**9273**	12380
фунгицидами	13155	5829	**2924**	3109

Накопление и миграция остаточных количеств пестицидов в окружающей среде



Сводные результаты контроля содержания остаточных количеств пестицидов в почвах сельскохозяйственных угодий Российской Федерации в конце 80-х (А) и конце 90-х (Б) гг. (по данным агрохимической службы)

Группа пестицидов	Число проанализированных проб, шт.		Доля проб от числа проанализированных, %			
			с обнаружением ОКП		с превышением ПДК	
	А	Б	А	Б	А	Б
Инсектициды	20489	5378	25,4	12,7	4,5	0,3
в том числе						
ХОП	17661	3227	26,2	12,2	11,7	0,3
ФОП	2683	1370	20,8	12,3	0,4	0,15
пиретроиды	145	775	16,5	14,5	10,0	0,3
Гербициды	25842	7079	34,7	22,6	4,9	0,7
в том числе						
сим-триазины	16449	1284	34,3	8,6	7,1	1,0
группа 2,4-Д	5370	3398	35,4	11,3	2,5	1,0
прочие	4023	2397	36,2	39,2	2,3	0,13
Фунгициды, протравители	562	139	20,6	0	2,9	0
Среднее для всех пестицидов	46893	12596	**30,5**	15,7	**4,7**	0,4

Результаты лабораторного контроля за содержанием остаточных количеств пестицидов в Воронежской области за 1990-1999 гг.

Годы	Пищевые продукты			Внешняя среда		
	Всего проб	Выше МДУ проб	% нест. проб	Всего проб	Выше МДУ проб	% нест. проб
1990	4792	70	1,5	1890	86	4,5
1991	4897	20	0,4	2484	100	4,0
1992	6434	20	0,3	2667	66	2,5
1993	6314	18	0,29	2185	163	7,0
1994	6717	24	0,4	2438	82	3,4
1995	6094	26	0,4	2587	92	3,6
1996	4339	11	0,25	2865	43	4,5
1997	4662	9	0,2	2563	56	2,2
1998	4913	4	0,1	2476	79	3,0
1999	4992	1	-	2740	42	1,5

Содержание токсикантов в почвах территорий, прилегающих к складам пестицидов и агрохимикатов в Тюменской области (в разрезе районов, 2002-2005 гг.), мг/кг

Район	Hg	As	ХОП	ФОП
Тобольский	*4,2025**	*5,1455*	*10,510*	0,0056
Вагайский	0,2679	*4,2286*	*9,2876*	*0,1627*
Ярковский	0,0555	*2,9225*	*2,4762*	0,0017
Тюменский	*4,5205*	*4,3585*	0,0173	0,0071
Исетский	0,1059	*4,7775*	0,0074	0,0010
Юргинский	0,0251	*5,6688*	0,0254	0,0010
Аромашевский	0,3311	*5,7458*	0,0020	0,0021
Ялуторовский	1,433	*2,5167*	*0,3491*	0,0034
Упоровский	0,1020	*5,6081*	0,0499	0,0042
Викуловский	1,0697	*3,0738*	0,0044	0,0018
Сорокинский	0,0230	*3,5500*	0,0054	0,0010
Голышмановски	0,5286	*4,6086*	0,0006	0,0042
Абатский	0,0301	*3,3200*	0,0049	0,0010
Сладковский	0,0933	*3,9438*	0,0152	0,0010
Казанский	0,0243	*3,1013*	0,0032	0,0034

Результаты определения действующего вещества препарата ДДТ (исх.10%), хранящегося на складе более 25 лет

Проба	Наличие метаболитов в препарате, г/кг			Содержание ДДТ в препарате, %
	п,п′-ДДЭ	п,п′-ДДД	п,п′-ДДТ	
№1	13,15	20,21	66,64	6,7
№2	12,95	20,70	66,35	6,6
№3	12,75	20,24	67,01	6,7
№4	14,05	20,08	65,87	6,6
№5	12,90	20,39	66,71	6,7
№6	12,16	20,83	67,01	6,7
№7	13,07	20,55	66,38	6,6
№8	13,54	20,30	66,16	6,6
№9	12,78	20,71	66,51	6,7
Среднее	**13,04**	**20,45**	**66,67**	**6,66**

Персистентность изомеров ГХЦГ в почвах различного типа

Тип почвы	Содержание гумуса, %	T_{95}, сут.		
		альфа-ГХЦГ	бэта-ГХЦГ	гамма-ГХЦГ
Серозем	1,4	435	2020	670
Темно-каштановая	3,3	550	4360	690
Чернозем	6,6	790	4650	785

Централизованные и региональные данные о наличие устаревших пестицидов (в том числе обезличенных) в России

Регион	Данные Минсельхоза РФ 2002 г.		Данные регионов 2004-2005 г.	
	Всего, кг	В т.ч. неизвестного состава, кг	Всего, кг	В т.ч. неизвестного состава, кг
Архангельская область	43 236	9 374	62 752	14 443
Республика Коми	9 420	нет сведений	18 607	6 100
Республика Алтай	23 000	нет сведений	216 500	48 660
Магаданская область	29 698	14 649	23 353	18 437
Омская область	426 671	121 911	540 038	48 710
Тюменская область	217 702	85 907	270 409	132 129
ВСЕГО:	749 727		1 131 659	268 479

Схема последовательных мероприятий по установлению статуса устаревших пестицидов и действий с ними (ДВ – действующее вещество)

Проблемы инвентаризации устаревших пестицидов

1. Отсутствие информации о местах захоронения пестицидов.
2. Отсутствие документации по местам хранения и захоронения пестицидов.
3. Проблема идентификации пестицидов.
4. Взаимодействие различных служб при проведении работ по инвентаризации и идентификации устаревших пестицидов.

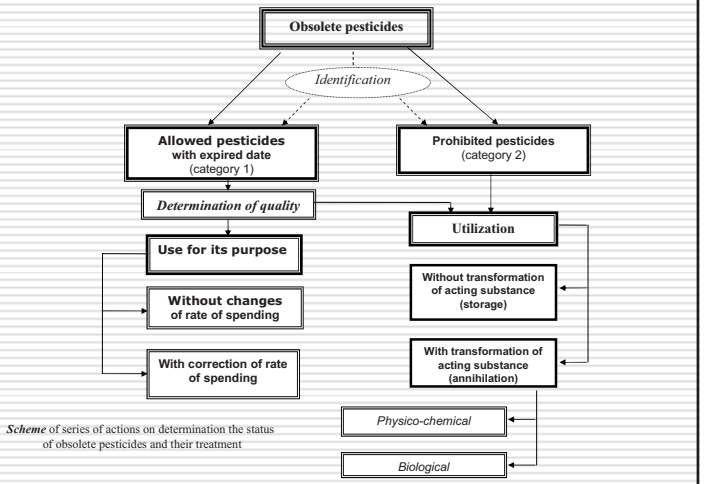
Obsolete pesticides in Russian Federation

- More than 24 thousand tons of spoiled pesticides and agrochemicals exist on the territory of the Russian Federation;
- Pesticides, which belong to the group of persistent organic pollutants (POPs-pesticides), mostly including DDT, create 10-15% of all identified obsolete pesticides;
- About 50% of total obsolete pesticides are unidentified agents and mixtures in which POPs-pesticides can be present.

Obsolete pesticides can be divided into 2 categories:

1) physical obsolete,
2) juridical obsolete.

- Among the first category there are chemicals, permitted for use, but their quality and state have been changed (or could have been changed) during storage after the realization date, violation of storage condition or packing integrity;
- Among the second category there are chemicals, which use in agriculture or in other production branches is prohibited by law;
- If obsolete pesticides packing and labels are damaged or absent, determination of the category can be made only after identification of these chemicals.



Scheme of series of actions on determination the status of obsolete pesticides and their treatment

- Most of the methods used at present in the Russian Federation are not connected with the transformation of active substances, i.e. the process of obsolete pesticide elimination means their burial.
- In this connection monitoring of technological condition of the burial place becomes very important as well as a periodic ecological and toxicological control of the area, neighboring to this burial place.
- Analogous ecological and toxicological control is necessary for those objects where obsolete pesticides are kept (storages, special rooms etc.).

The results which were received after investigation the soil on the areas neighboring to storages with pesticides and agricultural chemicals. Content of organochlorine pesticide (total DDT metabolites and HCH isomers) in West Siberian Region of Russia (Tjumen Area)

North-South

North

South

Region	Residues (sum)
Tobolsk	**10.51**
Vagaisk	**9.29**
Yarkov	**2.48**
Tjumen	0.02
Isetj	0.01
Yurgin	0.03
Aromashev	0.002
Yaluturov	**0.35**
Uporov	0.05
Vikulov	0.004
Sorokin	0.005
Golyshmanovsk	0.001
Abat	0.005
Sladkov	0.02
Kazan	0.003

ТЕХНИЧЕСКОЕ РУКОВОДСТВО ПО ПРОВЕДЕНИЮ ИНВЕНТАРИЗАЦИИ, ИДЕНТИФИКАЦИИ,СБОРУ И ХРАНЕНИЮ УСТАРЕВШИХ И ЗАПРЕЩЕННЫХ ДЛЯ ПРИМЕНЕНИЯ ПЕСТИЦИДОВ

Авторы:
Орехов Д.А. (Госхимкомиссия МСХ РФ);
Лунёв М.И., Трунова Г.С. (ЦИНАО-ВНИИА);
Лотт Д.А. (ВНИМС);
Климова М.Ю. (ЦМП);
Буряк А.К. (ИФХ РАН).

Предназначено для специалистов заинтересованных министерств и ведомств Российской Федерации и республик СНГ, осуществляющих работы по инвентаризации и идентификации устаревших и запрещенных для применения пестицидов

Организация работ по проведению инвентаризации пестицидов

Этапы:

1. Сбор информации об устаревших пестицидах и местах их хранения
2. Оценка реальной и потенциальной опасности
3. Обеспечение безопасных условий труда с устаревшими пестицидами
4. Определение мест и условий дальнейшего хранения пестицидов:
   а) Пригодных к использованию
   б) Выбракованных
5. Идентификация обезличенных пестицидов
6. Перезатаривание и этикетирование идентифицированных пестицидов
7. Подготовка пестицидов к транспортировке и последующему хранению

Условия:

-соблюдение единой нормативно-методической базы;

-соблюдение требований по охране труда и технике безопасности;

-соблюдение требований охраны окружающей среды.

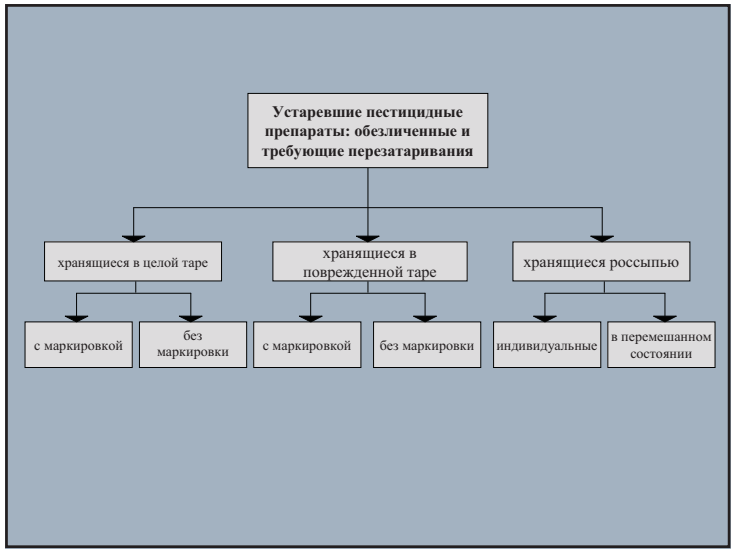
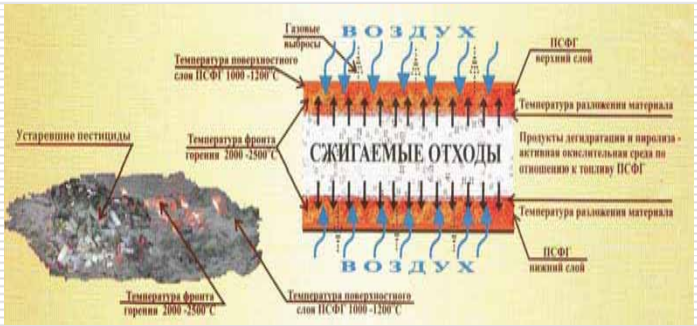


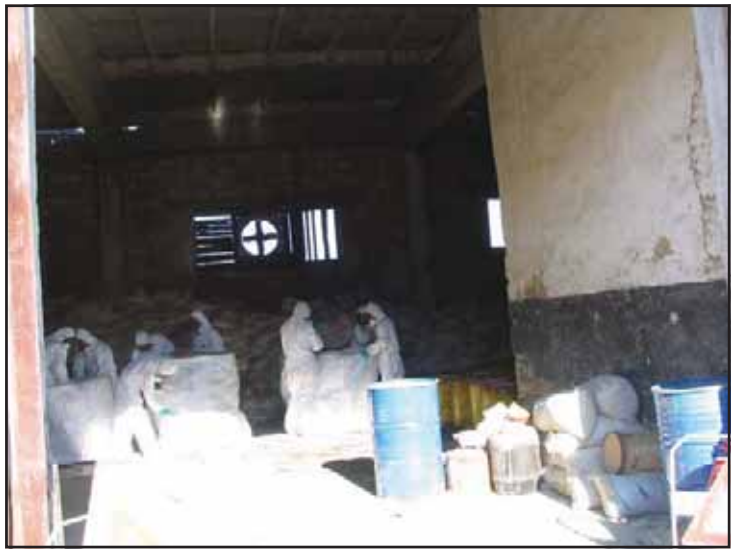
Схема процесса высокотемпературного термохимического пиролиза устаревших пестицидов



Хранение устаревших пестицидов
в металлических контейнерах

Перезатаривание устаревших пестицидов
в пластмассовые бочки

Металлические бункеры для хранения
устаревших пестицидов в бочках



Спасибо за внимание!

Устаревшие и стойкие органические пестициды в Российской Федерации: проблема и возможные пути её решения

М.И.Лунёв
доктор биол. наук
ВНИИ агрохимии
им. Д.Н.Прянишникова
(Москва)
milunev@yandex.ru

Стокгольмская конвенция о стойких органических загрязнителях (СОЗ) – май 2001 г.

Цель конвенции – охрана здоровья человека и окружающей среды от стойких органических загрязнителей

СОЗ-пестициды в Стокгольмской конвенции

Химические вещества	Пестициды	Промышленные химические вещества	Побочные продукты
Альдрин	•		
Хлордан	•		
ДДТ	•		
Дильдрин	•		
Эндрин	•		
Гептахлор	•		
Мирекс	•		
Токсафен	•		
ГХЦГ (альфа-, бэта-, гамма-)	•		
Гексахлорбензол (ГХБ)	•	•	•
Полихлорированные бифенилы (ПХБ)		•	•
Полихлорированные дибензо-п-диоксины			•
Полихлорированные дибензофураны			•

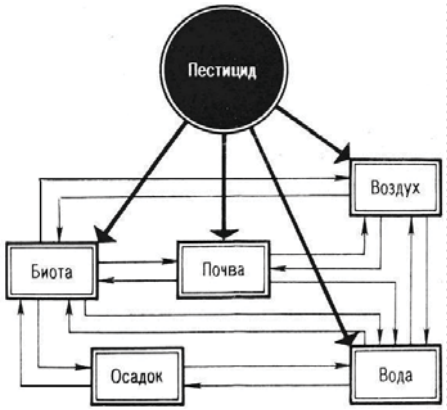
Особенности СОЗ-пестицидов

- продолжение применения СОЗ-пестицидов (ДДТ) до настоящего времени в ряде стран для химической защиты растений от вредителей и болезней и в санитарно-гигиенических целях
- внесение пестицидов в процессе их применения непосредственно в окружающую среду для достижения целевого хозяйственного эффекта
- нахождение СОЗ-пестицидов в общей массе устаревших пестицидов в местах их хранения и захоронения

Динамика поставок и применения пестицидов в России, в среднем за год

Показатель	1986-1990 гг.	1991-1995 гг.	1996-2000 гг.	2001-2005гг.
Поставлено пестицидов, т	215566	51710	**29625**	34420
Внесено пестицидов на 1 га пашни и многолетних насаждений, кг	1,62	0,40	**0,24**	0,29
Проведено защитных мероприятий, тыс.га	68949	34151	**28400**	35966
В т.ч. обработано, тыс.га				
гербицидами	32442	16273	**16007**	20297
инсектицидами	23352	12049	**9273**	12380
фунгицидами	13155	5829	**2924**	3109

Накопление и миграция остаточных количеств пестицидов в окружающей среде



Сводные результаты контроля содержания остаточных количеств пестицидов в почвах сельскохозяйственных угодий Российской Федерации в конце 80-х (А) и конце 90-х (Б) гг. (по данным агрохимической службы)

Группа пестицидов	Число проанализированных проб, шт.		Доля проб от числа проанализированных, %			
			с обнаружением ОКП		с превышением ПДК	
	А	Б	А	Б	А	Б
Инсектициды	20489	5378	25,4	12,7	4,5	0,3
в том числе						
ХОП	17661	3227	26,2	12,2	11,7	0,3
ФОП	2683	1370	20,8	12,3	0,4	0,15
пиретроиды	145	775	16,5	14,5	10,0	0,3
Гербициды	25842	7079	34,7	22,6	4,9	0,7
в том числе						
сим-триазины	16449	1284	34,3	8,6	7,1	1,0
группа 2,4-Д	5370	3398	35,4	11,3	2,5	1,0
прочие	4023	2397	36,2	39,2	2,3	0,13
Фунгициды, протравители	562	139	20,6	0	2,9	0
Среднее для всех пестицидов	46893	12596	**30,5**	15,7	**4,7**	0,4

Результаты лабораторного контроля за содержанием остаточных количеств пестицидов в Воронежской области за 1990-1999 гг.

Годы	Пищевые продукты			Внешняя среда		
	Всего проб	Выше МДУ проб	% нест. проб	Всего проб	Выше МДУ проб	% нест. проб
1990	4792	70	1,5	1890	86	4,5
1991	4897	20	0,4	2484	100	4,0
1992	6434	20	0,3	2667	66	2,5
1993	6314	18	0,29	2185	163	7,0
1994	6717	24	0,4	2438	82	3,4
1995	6094	26	0,4	2587	92	3,6
1996	4339	11	0,25	2865	43	4,5
1997	4662	9	0,2	2563	56	2,2
1998	4913	4	0,1	2476	79	3,0
1999	4992	1	-	2740	42	1,5

Содержание токсикантов в почвах территорий, прилегающих к складам пестицидов и агрохимикатов в Тюменской области (в разрезе районов, 2002-2005 гг.), мг/кг

Район	Hg	As	ХОП	ФОП
Тобольский	*4,2025**	*5,1455*	*10,510*	0,0056
Вагайский	0,2679	*4,2286*	*9,2876*	*0,1627*
Ярковский	0,0555	*2,9225*	*2,4762*	0,0017
Тюменский	*4,5205*	*4,3585*	0,0173	0,0071
Исетский	0,1059	*4,7775*	0,0074	0,0010
Юргинский	0,0251	*5,6688*	0,0254	0,0010
Аромашевский	0,3311	*5,7458*	0,0020	0,0021
Ялуторовский	1,433	*2,5167*	*0,3491*	0,0034
Упоровский	0,1020	*5,6081*	0,0499	0,0042
Викуловский	1,0697	*3,0738*	0,0044	0,0018
Сорокинский	0,0230	*3,5500*	0,0054	0,0010
Голышмановски	0,5286	*4,6086*	0,0006	0,0042
Абатский	0,0301	*3,3200*	0,0049	0,0010
Сладковский	0,0933	*3,9438*	0,0152	0,0010
Казанский	0,0243	*3,1013*	0,0032	0,0034

Результаты определения действующего вещества препарата ДДТ (исх.10%), хранящегося на складе более 25 лет

Проба	Наличие метаболитов в препарате, г/кг			Содержание ДДТ в препарате, %
	п,п′-ДДЭ	п,п′-ДДД	п,п′-ДДТ	
№1	13,15	20,21	66,64	6,7
№2	12,95	20,70	66,35	6,6
№3	12,75	20,24	67,01	6,7
№4	14,05	20,08	65,87	6,6
№5	12,90	20,39	66,71	6,7
№6	12,16	20,83	67,01	6,7
№7	13,07	20,55	66,38	6,6
№8	13,54	20,30	66,16	6,6
№9	12,78	20,71	66,51	6,7
Среднее	**13,04**	**20,45**	**66,67**	**6,66**

Персистентность изомеров ГХЦГ в почвах различного типа

Тип почвы	Содержание гумуса, %	T_{95}, сут.		
		альфа-ГХЦГ	бэта-ГХЦГ	гамма-ГХЦГ
Серозем	1,4	435	2020	670
Темно-каштановая	3,3	550	4360	690
Чернозем	6,6	790	4650	785

Централизованные и региональные данные о наличие устаревших пестицидов (в том числе обезличенных) в России

Регион	Данные Минсельхоза РФ 2002 г.		Данные регионов 2004-2005 г.	
	Всего, кг	В т.ч. неизвестного состава, кг	Всего, кг	В т.ч. неизвестного состава, кг
Архангельская область	43 236	9 374	62 752	14 443
Республика Коми	9 420	нет сведений	18 607	6 100
Республика Алтай	23 000	нет сведений	216 500	48 660
Магаданская область	29 698	14 649	23 353	18 437
Омская область	426 671	121 911	540 038	48 710
Тюменская область	217 702	85 907	270 409	132 129
ВСЕГО:	749 727		1 131 659	268 479

Схема последовательных мероприятий по установлению статуса устаревших пестицидов и действий с ними
(ДВ – действующее вещество)

Проблемы инвентаризации устаревших пестицидов

1. Отсутствие информации о местах захоронения пестицидов.
2. Отсутствие документации по местам хранения и захоронения пестицидов.
3. Проблема идентификации пестицидов.
4. Взаимодействие различных служб при проведении работ по инвентаризации и идентификации устаревших пестицидов.

ТЕХНИЧЕСКОЕ РУКОВОДСТВО ПО ПРОВЕДЕНИЮ ИНВЕНТАРИЗАЦИИ, ИДЕНТИФИКАЦИИ,СБОРУ И ХРАНЕНИЮ УСТАРЕВШИХ И ЗАПРЕЩЕННЫХ ДЛЯ ПРИМЕНЕНИЯ ПЕСТИЦИДОВ

Авторы:
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Этапы:

1. Сбор информации об устаревших пестицидах и местах их хранения
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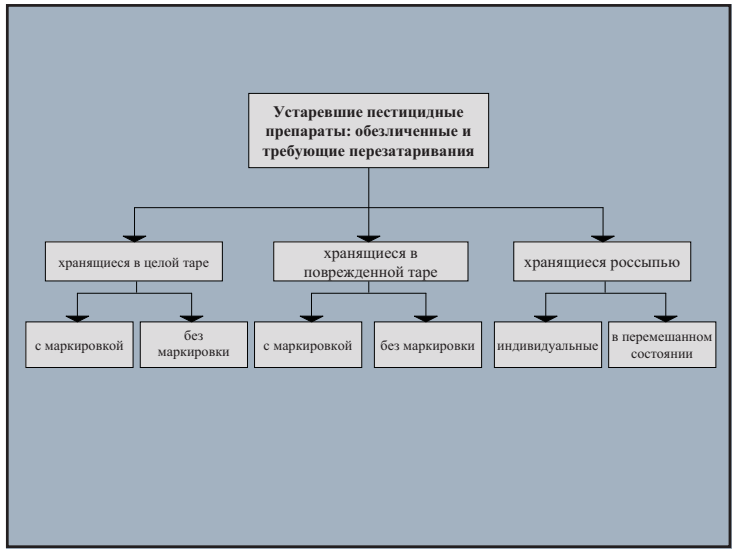
7. Подготовка пестицидов к транспортировке и последующему хранению

Условия:

-соблюдение единой нормативно-методической базы;
-соблюдение требований по охране труда и технике безопасности;
-соблюдение требований охраны окружающей среды.



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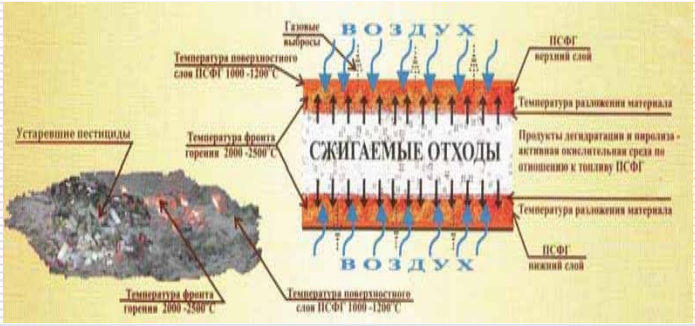

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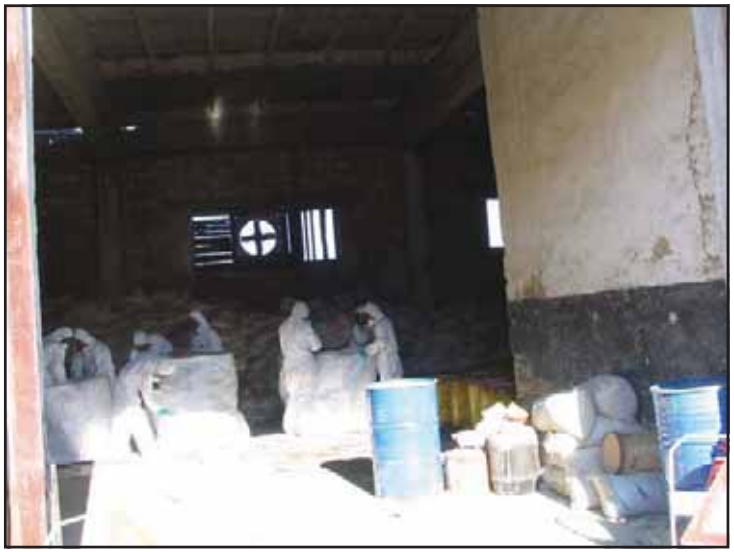


Спасибо за внимание!

Национальный план выполнения Стокгольмской конвенции о СОЗ Российской Федерации

М.Ю. Климова, Е.В. Першина,
Центр международных проектов
Москва, Российская Федерация

Подписание и Ратификация

- Россия подписала Стокгольмскую конвенцию 22 мая 2002 г. (Постановление Правительства Российской Федерации от 18 мая 2002 г. № 320)

ДЕЯТЕЛЬНОСТЬ

- МПР России – компетентный орган по Стокгольмской конвенции о СОЗ
- В сентябре 2002 г. создан НКЦ СОЗ - функции возложены на Центр международных проектов (ЦМП)
- В октябре 2003 г. проведена «Всероссийсская конференция по проблеме СОЗ»
- Разработан Перечень мероприятий по подготовке НПВ
- В октябре 2003 г. утвержден Межведомственный совет НПВ СОЗ

Функции НКЦ СОЗ

- **организация и координация деятельности между партнерами и целевыми группами по разработке НПВ**
- **предоставление отчетности в МВС о ходе выполнения проекта и разработки НПВ**
- **обеспечение эффективного обмена информацией между учреждениями - исполнителями, ГЭФ и заинтересованными сторонами**

Межведомственный совет (МВС)

- Министерство природных ресурсов и экологии Российской Федерации (председатель)
- Государственная Дума Российской Федерации
- Министерство Российской Федерации по делам гражданской обороны, чрезвычайным ситуациям и ликвидации последствий стихийных бедствий
- Министерство иностранных дел Российской Федерации
- Министерство здравоохранения и социального развития Российской Федерации
- Министерство обороны Российской Федерации
- Министерство промышленности и энергетики Российской Федерации
- Министерство сельского хозяйства Российской Федерации
- Министерство экономического развития и торговли Российской Федерации
- Российская академия сельскохозяйственных наук
- Совет безопасности Российской Федерации по вопросам экологической безопасности
- Федеральная служба по гидрометеорологии и мониторингу окружающей среды
- Федеральная служба по надзору в сфере защиты прав потребителей и благополучия
- Федеральная служба по экологическому, технологическому и атомному надзору
- Федеральная таможенная служба
- Центр международных проектов
- Ассамблея народов России
- Российская ассоциация коренных малочисленных народов Севера, Сибири и Дальнего Востока Российской Федерации
- Центр по окружающей среде и устойчивому развитию «Эко-Согласие»
- Российское отделение Всемирного фонда дикой природы (WWF).

Проблемы

- Отсутствие планов и программ действий по сокращению/уничтожению СОЗ
- Отсутствие оценки риска и мониторинга
- Недостаточный аналитический контроль
- Нехватка компетентных специалистов
- Нескоординированная работа ведомств
- Недостаточный обмен информацией в регионе

НПВ СОЗ

(Статья 7 Конвенции)

- создание потенциала на федеральном и региональном уровнях
- подробное планирование и начало реализации приоритетных мероприятий по проблеме СОЗ

Разработка НПВ СОЗ

- ***PDF-A:*** **Предварительное определение и оценка требований к разработке Национального плана выполнения в качестве первого шага выполнения Российской Федерацией Стокгольмской конвенции о стойких органических загрязнителях (СОЗ)**
  - **Этап 1. Выявление основных заинтересованных сторон и партнеров, выработка необходимых механизмов координации и создание организационной структуры**
- ***PDF-B:*** **Создание в Российской Федерации потенциала для внедрения Стокгольмской конвенции о СОЗ и разработки Национального плана выполнения (НПВ)**
  - **Этап 2. Предварительная оценка, упорядочение и начальный анализ информации, необходимой для разработки краткого проекта к полномасштабному проекту по подготовке НПВ на федеральном и региональном уровнях**
  - **Этап 3. Принятие краткого проекта для полномасштабного проекта по разработке НПВ для Российской Федерации**
- ***PDF-C:*** **Полномасштабный проект**

Участники Проекта

- **Минприроды России**
- **НКЦ СОЗ**
- **Межведомственный совет (МВС)**
- **Рабочая группа МВС**
- **Целевые группы**
- **Регионы Российской Федерации**
- **Эксперты**

Рабочие программы

- **РП1: Стратегия и план действий по созданию законодательных и регулятивных механизмов управления в области СОЗ.**
- **РП2: Инвентаризация, стратегия и план действий по ПХБ.**
- **РП3: Инвентаризация, стратегия и план действий по пестицидам группы СОЗ.**
- **РП4: Инвентаризация, стратегия и план действий в отношении непреднамеренно образующихся СОЗ.**
- **РП5: Инвентаризация, стратегия и план действий прекращения использования ДДТ для борьбы с инфекционными заболеваниями**
- **РП6: Стратегия по идентификации загрязненных территорий.**
- **РП7: Стратегия и План действий в области охраны здоровья.**
- **РП8: Стратегия и План действий по информированию общественности, обучению и исследованиям.**
- **РП9: Стратегия и План действий по созданию потенциала на федеральном и региональных уровнях.**

РП1: Стратегия и план действий по созданию законодательных и регулятивных механизмов управления в области СОЗ

Анализ существующего законодательства и регламентирующих документов

- идентификация пробелов
- выработка предложений по внесению изменений

РП2: Инвентаризация, стратегия и план действий по ПХБ

(Статья 3 и часть II Приложения А Стокгольмской конвенции)

- обновление данных по инвентаризации ПХБ и ПХБ содержащего оборудования
- разработка Стратегии и Плана действий по уничтожению ПХБ с использованием наилучших имеющихся методов

РП3: Инвентаризация, стратегия и план действий по пестицидам группы СОЗ

(Статья 3 и Приложение А Стокгольмской конвенции)

- разработка и реализация планов по инвентаризации в масштабах страны
- выработка стратегии уничтожения запасов пестицидов
- технико-экономическое обоснование работ по уничтожению этих запасов
- механизмы участия частного сектора, промышленности и других заинтересованных сторон

РП4: Инвентаризация, стратегия и план действий в отношении непреднамеренно образующихся СОЗ

(Статья 5 и Приложение С Стокгольмской конвенции)

- инвентаризация непреднамеренно образующихся СОЗ
- разработка Стратегии и Плана действий снижения выбросов СОЗ
  - экономические и социальные аспекты
  - наилучшие имеющиеся методы (BAT)
  - наилучшие виды природоохранной деятельности (BEP)

Мониторинг

- Сеть Росгидромета
  - ДДТ (воздух, моря и почвы) и ГХБ

АККРЕДИТОВАННЫЕ ЛАБОРАТОРИИ

- Башкирский республиканский научно-исследовательский экологический центр (БРЭЦ)
- ХАЦ НПО «Тайфун»
- Российский НИИ чрезвычайных ситуаций (РосНИИЧС)
- Лаборатория аналитической экотоксикологии Института проблем экологии и эволюции им. А.Н. Северцова РАН

РП5: Инвентаризация, стратегия и план действий прекращения использования ДДТ для борьбы с инфекционными заболеваниями

- разработка и реализация планов по инвентаризации ДДТ в масштабах страны
- изучение применения ДДТ
- меры по снижению/прекращению использования ДДТ

РП6: Стратегия по идентификации загрязненных территорий

(Статья 6 Стокгольмской конвенции)

- поддержка заинтересованными сторонами
- использование опыта международных и региональных организаций, и др.

РП7: Стратегия и План действий в области охраны здоровья

- исследование воздействия на здоровье людей, обусловленного применением или выбросами СОЗ
- поиск путей и средств для снижения риска для здоровья

Регистр выбросов и переноса загрязнителей (РВПЗ)

Проект ГЭФ/ЮНЕП/АМАП/РАНС “Стойкие токсичные вещества, безопасность питания и коренные народы Российского Севера”

Федеральные и региональные программы и проекты

- Федеральная программа “Защита окружающей природной среды и населения от диоксинов и диоксиноподобных токсикантов на 1996-1997 годы”;
- Создание регистров выбросов и переноса загрязнителей в 10 пилотных регионах РФ (1999-2003 гг.);
- Программа Республики Башкортостан “Диоксин”, 2003-2005 гг.;
- Программа Республики Татарстан “Обеспечение безопасного обращения с пестицидами и агрохимикатами на территории Республики Татарстан на 2003-2005 годы”;

и др.

Международные проекты

- Проект ЮНЕП/Россия (ЦМП) “Укрепление национального управления в области химических веществ в странах Содружества Независимых Государств”, 1997-2003 гг.;
- Проект АКАП/АМАП-ЦМП “Многосторонний совместный проект по прекращению использования ПХБ и контролю за ПХБ содержащими отходами в Российской Федерации”, с 1998 г. – по настоящее время;
- Проект ЮНЕП/US EPA-ЦМП “Инвентаризация запасов устаревших пестицидов в пилотных регионах России”, 2000-2001 гг.;
- Проект ГЭФ/ЮНЕП/АМАП/РАНС-ЦМП “Стойкие токсичные вещества, безопасность питания и коренные народы Российского Севера”, 2000–2004 гг.;
- Проект АКАП-ЦМП “Экологически обоснованное управление запасами устаревших пестицидов в Российской Федерации”, с 2001 г. – по настоящее время;
- Проект АКАП-ЦМП “Оценка диоксинов и фуранов в Российской Федерации”, с 2002 г.– по настоящее время.

- **Региональные совещания «Проблема стойких органических загрязнителей в Российской Федерации; подготовка Национального плана действий по выполнению Стокгольмской конвенции о СОЗ»**
- *5-6 декабря 2006 года, г. В. Новгород, Российская Федерация*
- *24-25 января 2007 года, г. Омск, Российская Федерация*
- *20-22 февраля 2007 года, г. Анапа, Российская Федерация*

- **Совещание «Технологии уничтожения отходов из числа СОЗ»**
- *2-4 мая 2007 года, г. Московский, Московской области, Российская Федерация*

- **Совещание «Роль и место российских общественных организаций в разработке национального плана выполнения Стокгольмской конвенции о СОЗ»**
- *22-23 мая 2007 года, г. Санкт-Петербург, Российская Федерация*

Результаты

Этап 1	**Результат 1:** Механизмы координации между основными заинтересованными сторонами и организационная структура для осуществления проекта
Этап 2	**Результат 2:** Предварительная оценка национальной инфраструктуры и ее потенциала с точки зрения выполнения обязательств Стокгольмской Конвенции
	Результат 3: Предварительный анализ данных инвентаризации СОЗ
	Результат 4: Предварительная оценка влияния СОЗ на здоровье людей и окружающую среду
Этап 3	**Результат 5:** Принятый основными заинтересованными сторонами краткий проект для полномасштабного проекта по разработке НПВ для Российской Федерации

РП9: Стратегия и План действий по созданию потенциала на федеральном и региональных уровнях

- создание потенциала
  - повышение информированности и квалификации основных заинтересованных сторон и целевых групп
  - активное участие партнеров на региональном и местном уровнях, включая частный сектор и НПО
  - обучение руководителей и лиц, ответственных за принятие решений, на всех уровнях
  - обмен информацией и опытом
  - распространение лучших технических и управленческих решений и наилучших практических методов
- усиление потенциала и возможностей для устойчивого выполнения Стокгольмской конвенции на федеральном и региональном уровнях

БЛАГОДАРЮ ЗА ВНИМАНИЕ !

Правовая и организационная структура и вопросы СТВ

- Соответствующие международные обязательства;
- Оценка законодательства, нормативов, относящихся к СТВ, и их исполнения;
- Оценка организационного потенциала для управления СТВ;

Соответствующие международные обязательства

- Рамочная конвенция об изменении климата (1995 г.),
- Конвенция о биоразнообразии (1996г.);
- Венская конвенция и Монреальский протокол о сохранении озонового слоя (1993г.);
- Конвенция по борьбе с опустыниванием (1996г.);
- Базельская конвенция о контроле за трансграничной перевозкой опасных отходов и их удалением (1996г.);
- Орхусская конвенция о доступе к информации, участии общественности в процессе принятия решений и доступе к правосудию по вопросам, касающимся окружающей среды (1999г.);
- Рамочная конвенция по охране морской среды Каспийского моря (2004 г.);
- Рамочная конвенция по охране окружающей среды для устойчивого развития в Центральной Азии (2006 г.)

Оценка законодательства, нормативов, относящихся к СТВ, и их исполнения;

- Закон об охране природы (1991г);
- Об охране атмосферного воздуха (1996г.);
- О недрах (1992г.);
- Об углеводородных ресурсах(1996г.);
- О предупреждени и ликвидации чрезвычайных ситуаций (1998г.);
- Правила разработки углеводородных месторождений Туркменистана (2000г.);
- Национальный план действий по предупреждению и ликвидации разливово нефти (2001г.);
- Санитраный кодекс Туркменистана;
- Правила охраны прибрежных вод Туркменистана от загрязнения с судов (2005г.);

Промышленные источники загрязнения

- ***Об охране атмосферного воздуха*** Ст. 23 «Требования по переработке и захоранению промышленных и бытовых отходов;
- ***«О недрах»*** Ст 18 «Порядок пользования недрами для захоронения или складирования вредных веществ и отходов, сброса сточных вод»;
- ***Санитарный кодекс Туркменистана*** Ст. 21 Обязанности по утилизации, обезвреживанию и захоронению химических веществ;
- ***Об охране атмосферного воздуха*** Ст.19 – Регистрация химических веществ; ст.20 Требования к способам применения хим. веществ в сель.хоз-ве; Ст.22 Требования к уничтожению запрещенных и пришедших в негодность хим. вещ-в;

Хранилища запрещенных/устаревших агрохимикатов

- ***Об охране природы –***ст.17 Эколгические требования при обращении с радиоактивными и хим. веществами; Ст.20 Охрана природы от загрязнения производственными, бытовыми и др. отходами;

Участки, загрязненные СТВ (включая полигоны)

- ***Об охране атмосферного воздуха*** – ст 24 Обязанности органов местной исполнительной власти по охране атмосферного воздуха при обезвреживаниии пром. и бытовых отходов;
- ***Об охране природы*** – Ст . 20 Охранан природы от загрязнения производственными, бытовыми и др. отходами;

Загрязнение от судов

- ***Водный кодекс Туркменистана***. Ст. 115. Охрана вод от загрязнения и засорения потерями масел, химических, нефтяных и иных продуктов.
- ***ПРАВИЛА охраны прибрежных вод Туркменистана от загрязнения с судов***:
  - подсланевыми нефтесодержащими водами, льяльными сточными, балластными водами, мусором и пищевыми отходами, образующимся в процессе эксплуатации судна;
  - нефтепродуктами при бункеровке судов;
  - нефтепродуктами при грузовых и других операциях, выполняемых на судне;
  - остатками растительных масел и других жиров, перевозимых на судах наливом/

В настоящие Правила могут быть внесены изменения и дополнения в связи с подписанием Международных договоров о статусе Каспийского моря или принятием нормативных правовых актов Туркменистана.

Сброс отходов, загрязненных СТВ в Каспийское море

- ***Уголовный кодекс Туркменистана.*** *Статья 315.* ***Загрязнение морской среды;***
- ***Водный кодекс Туркменистана. Статья 113. Охрана вод от загрязнения отходами и отбросами;***
- ***Водный кодекс Туркменистана. Статья 117. Предотвращение загрязнения вод удобрениями и ядохимикатами.***

Оценка организационного потенциала для управления СТВ

Список ответственных организаций:

Промышленные источники загрязнения
- Министерство энергетики и промышленности

Горная промышленность
- «Туркменгеология»

Нефтегазовая промышленность
- Министерство нефти и газа

Сельское хозяйство (применение агрохимиктов СТВ)
- Министерство сельского хозяйства

Хранилища запрещенных/устаревших агрохимикатов
- Министерство сельского хозяйства
- Министерство охраны природы

Участки, загрязненные СТВ (включая полигоны)
- Отраслевые министерства и ведомства
- Министерство здравоохранения (Санэпидеминспекция)
- Министерство охраны природы

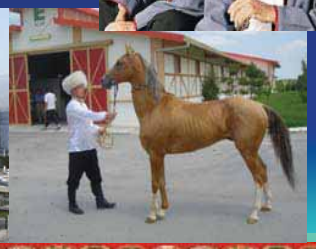
Действующее оборудование, загрязненное ПХБ (например, трансформаторы и конденсаторы)
- Министерство энергетики и промышленности

Загрязнение от судоходства
- «Дениздерьяёллары»
- Министерство охраны природы
- Государственное предприятие по вопросам Каспия

Сброс отходов, загрязненных СТВ, в Каспийское море
- «Дениздерьяёллары»
- Министерство охраны природы

СПАСИБО ЗА ВНИМАНИЕ!

Туркменистан,
г. Ашхабад, ул. Битарап
Туркменистан, 15
Тел. +993 12 35 73 41
Факс +993 12 35 37 16 Эл.почта
gozelcep@gmail.com



Каспийский региональный семинар по СОЗ

г. Баку, 7-11. 2009г

Техническая презентация

Постановка проблемы СОЗ в каспийском регионе

- Результаты биопсии тканей тюленей, осетровых и костистых рыб (*Экотоксикологическое исследование инициированно Всемирным Банком в рамках КЭП; 2002г.)* и выявление их разрушительного воздействия на организм морских животных;
- Иследование морских донных отложений (2005г);
- Разработка РПДС (2006г.)

Вопросы СТВ в контексте СПД

- В основном «СПД/ЦПКОС III: Обеспечить высокое качество поверхностных и подземных вод Каспийского моря»:
- Цель1. Разработать и принять протоколы по сокращению загрязнения Каспия, по Рамочной Конвенции Защиты Окружающей Среды Каспийского моря:
- Цель 2. Усилить взыскания и управление окружающей средой в прикаспийских странах:
  - 3. Способствовать внутриминистерским программам обучения для усиления механизмов взыскания за региональные и международные выбросы опасных веществ, загрязнение моря, управление твердыми загрязняющими веществами и т.д.

Вопросы СТВ в контексте НКПД

- Все мероприятия НКПД по блоку «Качество воды» направленны непосредственно на решение проблемы предотвращения загрязения Каспийского моря и его побережья:
  - Модернизация ТКНПЗ:Реконструкция канализационной системы ТКНПЗ и строительство новых очистных сооружений промышленных сточных вод ТКНПЗ;
  - Реконструкция оборотного водоснабжения технологических установок с внедрением локальных водоблоков и перевода ТКНПЗ с морской воды на опресненную;
  - Разработка технического проекта утилизации нефтешламов и нефтесодержащих грунтов под территорией ТКНПЗ. Строительство установки очистки авиакеросина с блоком нейтрализации щелочных отходов;
  - Разработка мероприятий по поэтапной очистке вод и донных осадков бухты Соймонова от загрязнителей для реабилитации мест обитания видов.

Источники загрязения земель

- Концентрация в почвах ядохимикатов и минеральных удобрений (Ахалский , Марыйский, Лебапский районы);
- Использование для полива воды повышенной минерализации, содержание токсических веществ в которой превышает предельно допустимый уровень; (Дашогузский район)

Проблема СОЗ на туркменском побережье Каспия

- Из-за недостаточного водообеспечения в туркменском прикаспийском регионе (Балканский велаят) в большей степени развито животноводство;
- Площадь пахотных земель составляет 3% от всей площади Туркменистана, используемых под сельхоз посевы;
- Результаты морского исследования в рамках КЭП (2005г.) отмечают низкое содержание пестицидов в туркменской части Каспия;

Обзор состояния СТВ в Туркменистане

- НПДС - инициирован рамках КЭП (2006г.)
- Были рассмотрены вопросы о воздействии СТВ на основные отрасли промышленности, правовую и организационную структуру, к которой относятся вопросы СТВ и оценка вопроса СТВ в Туркменистане;
- Были определены цели и задачи НПДС

Правовая и организационная структура, к которой относятся вопросы СТВ

- Рамочная конвенция об изменении климата (1995 г.),
- Конвенция о биоразнообразии (1996г.);
- Венская конвенция и Монреальский протокол о сохранении озонового слоя (1993г.);
- Конвенция по борьбе с опустыниванием (1996г.);
- Базельская конвенция о контроле за трансграничной перевозкой опасных отходов и их удалением (1996г.);
- Орхусская конвенция о доступе к информации, участии общественности в процессе принятия решений и доступе к правосудию по вопросам, касающимся окружающей среды (1999г.);
- Рамочная конвенция по охране морской среды Каспийского моря (2004 г.).

Промышленные источники загрязнения

- **Нефтегазовая промышленность;**
- **Сельское хозяйство (применение агрохимикатов СТВ);**
- **Хранилища запрещенных/ устаревших агрохимикатов;**
- **Участки, загрязненные СТВ (включая полигоны);**
- **Загрязнение от судоходства;**
- **Сброс отходов, загрязненных СТВ, в Каспийское море;**

Приоритетные проблемы

- Устаревшая лабораторно-техническая база по контролю за состоянием окружающей среды, включая и СТВ;
- Необходимость развития нормативно-методической базы, запрещающей применение СТВ;
- Недостаточность контроля за ПХБ на уровне министерств и предприятий;
- Усиление природоохранного законодательства в отношении контроля использования СТВ;

Решения проблем

- Укрепление организационного потенциала для инспекции исполнения ограничений на применение СТВ;
- Предотвращение утечек нефтепродуктов в бухту Соймонова;
- Проведение работ по извлечению углеводорода в грунтовых водах и почвах Туркменбашинского НПЗ;
- Разработка мер по сокращению и ликвидации сброса в море загрязненных вод;

Планы Действий

- В обзоре были сделаны попытки предложить варианты, по которым должны быть разработаны Планы Действий, направленные на снижение СТВ.
- В качестве образца представлена таблица: Информация о мероприятии/сроки реализации/ответсвенная за реализацию организация/индикаторы успеха/связи с гос. Программами по управлению химикатами.

Предлагаемый НПДС

8 планов действий:

- ПД по снижению СТВ их пром. источников;
- ПД по снижению загрязнения, связанный с нефтегазовой промышленностью;
- ПД по снижению загрязнения, связанного с сельхозяйством;
- ПД по снижению/устранению складов/ хранилищ запрещенных/устаревших пестицидов;
- ПД по восстановлению участков, загрязненных СТВ (включая полигоны);
- ПД по списанию оборудования, загрязненного ПХБ;
- ПД по снижению загрязнения с судов;
- ПД по прекращению сюроса отходов, загрязненных СТВ в Каспийское море.

- Кроме того, три общие главы посвящены следующим вопросам:
- Препятствия на пути мер по смягчению, снижению и устранению выброса СТВ и деятельность по устранению препятствий;
- Механизмы повышения осведомленности общественности и обмена информацией для поддержки выполнения НПДС;
- Меры по наращиванию потенциала, необходимые для успешной реализации НПДС.

Ситуация на сегодня

- Наличие СТВ и СОЗ однозначно;
- Назрела необходимость предоставления вопроса о Стокгольмской конвенции «наверх» для рассмотрения и дальнейшего согласования;

Appendix

6

Technical presentation Tauw POPs project cycle

World Bank Caspian POPs
Introduction to technical workshop

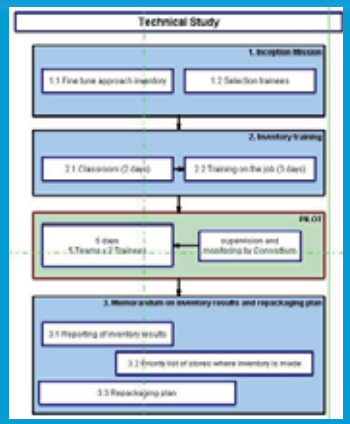
POPs Regional Training Workshops WB 100023633
Technical services for POPs pesticides inventories, feasibility studies and materials disposal for Azerbaijan WB 100023633

December 6th Baku

Tauw

IHPA

The Technical study



Tauw

Classroom training

Tauw

Training on the job

Tauw

Questions for the technical study

- Are there stores and burial sites
- Are there still obsolete stockpiles in the stores?
- Do you want to use PSMS?
  - Data storage
  - Risk assessment
- Are there none hazardous homogeneous quantities?
  - Do we need to develop simple field tests identifying none hazardous homogeneous quantities?
- Are we including soil survey in our inventory?
- Can we start repackaging within half a year?

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Distinction between stores and burial sites




Tauw

Are there none hazardous homogeneous quantities?


What if these piles are fertilizer and repackaged, removed and incinerated for 2,000 US $/ tonne?

Tauw

Is the top soil contaminated?

Tauw

Repackaging




Tauw

PPE and Safety




Tauw

POPs pesticides inventory training and Caspian regional POPs workshop
Baku, Azerbaijan
1-11 December 2009

World Bank ID: 100023638 - The inventory training
World Bank ID: 100023633 - Caspian POPs workshop

Khatuna Akhalaia
Obsolete Pesticides Field Specialist

Tauw

Consortium

The Tauw Consortium (TC) formed by

Tauw bv,
Milieukontakt International (MKI),
International HCH and Pesticides Association
Cowi Denmark

Tauw

Aims of the inventory training

- Develop an understanding of why obsolete pesticides must be prevented and eliminated
- Prepare for completion of a SAFE and EFFECTIVE inventory of obsolete pesticides
- Give the opportunity to complete a practical example as preparation for the real inventory

A cleaner and safer environment

Tauw

Program training
First week training

- **Day 1: Tuesday December 1st**
  - **Opening and introduction** — **Module 1**
  - **Training Health and Environmental hazards** — **Module 2**
  - **process of making an inventory of stores** — **Module 3**
  - **Introduction PSMS** — **Module 3A and 3B**

  Day 2: Wednesday December 2nd
  - **Introduction to field tests** — **Module 3C**
  - **Inventory process polygon** — **Module 3D**
  - **Personal Protection Equipment** — **Module 4**

  Day 3: Thursday December 3rd
  - **Soil survey at stores** — **Module 5**
  - **Introduction Risk assessment** — **Module 6**
  - **Burial site management** — **Module 7**

  packing/preparing things for field work

  Day 4 Friday December 4th
  - **Travel to Ganca, overnight stay at Ganca**

  Day 5 Saturday December 5th
  - **On the job training inventory at the site Ganca**

  Day 6 Sunday December 6th
- **PSMS practical work**

Tauw

Program training
Second week training

- *Second week training*
  Day 7 Monday December 7th
  · On the job training inventory obsolete pesticides at the site Salyan, including groundwater sampling, travel back to Baku
  Day 8 Tuesday December 8th
  · On the job training inventory obsolete pesticides, part of the group sampling soil and groundwater at Dayikend,
- Day 9 Wednesday December 9th
  · Chaking localy availabem materials on market
- Day 10 Thursday December 10th
  · presentation on repackaging together with participants workshop
  · uploading inventory data in PSMS and social event together with workshop participants
  Day 11 Friday December 11th
  · Presentation results inventory
  · Compiling Conceptual Site Model of Dayikend site
  · Evaluation of training

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Module 4
Personal Protective Equipment (PPE)

Tauw

Aims of this module

- Enlarge knowledge About PPE
- To demonstrate how to select PPE
- To demonstrate how to use PPE
- To set a number of exercises selection PPE for inventory

Tauw

Introduction to PPE

Tauw

Why bother?

Workers will come into contact with toxic materials
- To stay healthy
- Do not take the hazard home

I need to
- Avoid exposure
- Protect myself
- Assess risks on what needs to do
- Eliminate handling if possible

If I enter a store I need PPE

Tauw

How poisons enter the body

- Question:
  - Hhow can a poison enter the body
- Answer:
  - inhalation
  - ingestion
  - Absorption

Tauw

Issues to consider before using PPE

Obsolete Pesticides
- Identify the type of Hazard
- Establish the level of Hazard (WHO class)
- Identify effects on the body
- Identify the potential route(s) into the body
- Assess the likelihood for exposure (RISK)
- What is the duration of exposure?

Tauw

Other factors affecting PPE choice

- Work rate
- Wear time
- Medical fitness of wearer
- Mobility
- Work Environment
- Sweating and Exhaustion
- Compatibility (with other PPE)

Tauw

Types of PPE

- Reusable:
  - Readily available
  - Expensive / unit
  - Total cost relatively cheap
  - Clean
  - Maintain
  - Risk of taking the hazard home
  - Not be suitable for all materials
  - Cumbersome and hot
- Disposable:
  - May have to imported
  - Cheap / unit
  - Total cost expensive
  - Used once or for a specific time
  - No maintenance
  - No cleaning
  - Can select based on actual hazard
  - Many different suppliers

Tauw

Summary

- PPE needed when handling obsolete pesticides
- International standards of performance for PPE
- PPE is not the first line of defense
- A worst-case scenario should be adopted for unknown substances

Tauw

Types of PPE

Coveralls, masks, gloves, eye-protection and footwear

Tauw

Aims

- To allow person to be able to select PPE for inventory supervision and monitoring based on:
  - HAZARD posed by pesticides (toxic, flammable, corrosive, etc.)
  - The ROUTE of exposure (dermal, ingestion, inhalation)
  - The DURATION of exposure
  - The LIKELIHOOD of contact/exposure or.....

  the RISK

Tauw

Locally interesting Type 3 coveralls:

- Liquid jet-proof (commonly used when handling WHO Class 1 & 2 liquid pesticides)

Tauw

Type 4 coveralls:

- Liquid splash proof coveralls
- Typically worn when handling lower hazard liquid pesticides (WHO Class 3 and U)

Tauw

Type 5 / 6 coveralls:

- Dust and low hazard splash proof
- Suitable for use with most solid pesticides
- May be compromised by sweat (Chlorine containing products!)

Tauw

Use of coveralls

- How to put on
- How to monitor
- How to take off

Tauw

Coveralls: What are the mistakes shown here?

Tauw

Mistakes

Tauw

- Not right PEE
- Shows
- Mask
- Gloves

Tauw

Exercises

Tauw

How to put on

Tauw

Coveralls: how to remove safely by yourself

- Assume the outer surfaces are contaminated
- Remove gross contamination
- Do not touch outer surfaces unless you have gloves on
- Follow the sequence

Tauw

Field exercise during real Inventory

How to remove the Coverall

Tauw

Removal of coveralls (summary)

- Assume the outer surfaces are contaminated
- Remove gross contamination
- Do not touch outer surfaces unless you have gloves on
- Remove zip cover if present
- Remove one glove and loosen the other
- Undo zip and remove the ungloved arm (ask assistance if present)

Tauw

Removal of coveralls

- Shake off the other glove
- Reach inside the coverall towards the shoulder with your free arm (ask assistance if present)
- Touching only the inside of the coverall, free the other arm (ask assistance if present)
- The top half of the coverall has now been removed without touching the outer surface

Tauw

Removal of coveralls

- Pull down the coverall to the ankles
- Take care to touch only the inside surfaces of the coverall
- Step out of the coverall
- Fold the coverall into a ball so that the contaminated surfaces face inwards

Tauw

Decontamination of coveralls (Only for reusable items)

- Wash clothing separately
- Use a clean coverall each day/shift
- Inspect for rips and tears after every use
- Dry in sunlight if possible
- Store washed coveralls in a clean, sealed non-porous bag

Tauw

Respiratory Protective Equipment (RPE)

Masks we will use for inventory and supervision and monitoring

Tauw

Aims

- To appreciate how masks protect us
- To understand the different types of masks
- To allow us to select the best mask for the conditions we will be working in

Tauw

Types of respiratory hazard

- All pesticides are toxic
- Dusts/powders
- Organic vapors from pesticides
- Organic vapors from solvents
- May be additional hazards from solvents such as flammability
- May be addition hazards from the chemicals such as irritants for BHC/DDT et cetera

Tauw

Risk of exposure

- Likelihood of contact with the chemical
- Is the chemical leaking
- If yes, the risk of contact is higher
- If no, the risk of contact is low

Tauw

Types of mask

- Two categories of RPE:
  - Air-filtering equipment
  - Air-supplying equipment
- Air filtering:
  - Disposable
  - Reusable
- The type of protection selected depends on the hazard
- We used during inventory, supervision and monitoring
  - Air-filter equipment
  - Reusable full face mask and disposable
  - Disposable filter

Tauw

Types of mask

Tauw

Examples of RPE
disposable dust masks

Tauw

Examples of RPE
disposable vapor mask

Tauw

Examples of RPE
reusable full-face mask

Tauw

Examples of RPE
reusable mask for filtered air units

Tauw

Selection of RPE

- For each hazard there will be a level of protection
- Level of protection is shown by a number
- Each category has a rating of 1, 2 or 3, with 3 offering the greatest protection
- This protection factor relates directly to the published data on hazard

Tauw

Types of masks
for repackaging

- Which type of masks will be used in the Tajikistan project
- Disposable dust mask
- Disposable organic vapour mask
- Reusable organic vapour mask with disposable filters
- We may use full face protection

Tauw

Use of masks….face size &shape…

Tauw

Use of masks….face size & shape, beards, moustaches, …

Tauw

Use of masks

- The supervisor must ensure all used, disposable RPE is packaged for disposal as well
- As with coveralls, do not underestimate the perceived value of used RPE
- Always assume that used RPE is contaminated

Tauw

Storage of masks

- Masks need to be clearly identified with:
  - User's name
  - Start date, if disposable
- After washing/drying they should be stored:
  - Dry
  - Cool
  - Clean
  - In a non-porous bag/container

Tauw

Selection and use of personal PPE

Gloves, eye protection and footwear

Tauw

Gloves

- Must consider:
  - The job to be done
  - Chemical resistance
  - Physical strength
- Gloves must be fit for the purpose

Tauw

Gloves: chemical resistance

- Many different polymers
- Material selected depends on:
  - Pesticide and/or solvent (water or organic)
  - Level of exposure (immersion or splash/drip)
  - Thickness of gloves

Tauw

Gloves: chemical resistance

- Many different types:

Leather **PVC** **Natural** **Nitrile** **Cotton / Latex** **Latex**

Tauw

Gloves: physical strength

- Polymer gloves may have little mechanical strength
- Heavy-duty gloves may be required
- Leather gloves provide no chemical barrier

Tauw

Selection of gloves

- Points to remember when selecting gloves for the fieldwork:
  - What is the exposure route (dermal)
  - What is the hazard - WHO Hazard Class
  - What are the characteristics of the materials to be handled / mechanical strength needed
  - What is the likelihood of contact
  - What is the likely duration of contact
  - Are there any carriers present that may affect the selection
  - Carriers may increase the real risk (formulations may enhance skin absorption)

Tauw

Gloves for inventory

- We have completed the selection based on common pesticide data
- We have completed the selection based on experience
- We have completed the selection based on activity
- We will use nitrile rubber gloves
- We may use thick or thin gloves depending on activity

Tauw

Summary

- Pesticides may be absorbed through skin
- There are many types of gloves
- They protect dermal exposure
- We have selected one type for inventory based on experience

Tauw

Safety footwear

Tauw

Safety footwear

- No leather boots or boots with laces should be worn
- Boots should be chemically resistant
- Coveralls should cover the tops of boots
- Chemical-resistant overshoes are an alternative to boots - when can these be used
- Rinse/vacuum boots before removing

Tauw

Safety footwear




Tauw

Eye protection

- **Safety glasses:**
  - **Good for direct eye protection**
  - **No brow protection**
  - **Does not allow you to wear your own glasses**
  - **No side shields**
- **Improved safety glasses:**
  - **Cover brows**
  - **Side shields**
  - **No steaming-up**
  - **Comfortable to wear**
- **Goggles:**
  - **Cover brows as well, have side shields**
  - **Allows you to wear your own glasses as well**
  - **Only acceptable with non-absorbent strap**
  - **Steam-up**
- **Face shields:**
  - **Good coverage of face**
  - **Only for spray hazards**

Tauw

Eye protection

Goggles:

- Only acceptable with non-absorbent strap
- Steaming up…..

Tauw

Eye protection

Improved safety glasses:

- Covers brows
- Side shields
- Comfortable
- No steaming-up
- You can wear your own glasses at the same time

Tauw

Face shield

Face shields

- Covers face
- Comfortable
- No steaming-up
- You can wear your own glasses at the same time
- Total view
- No vapor protection
- Splash protection

Tauw

Eye protection

Glasses	Shatter-proof Splash-resistant	No vapor protection Easily scratched
Goggles	Eyes totally enclosed Limited view	Steam-up Uncomfortable Limited vapor protection
Face Shields	Comfortable Good total view	Eyes are not enclosed No vapor protection

Tauw

Ear protection

- Only needed for supervision/monitoring teams during collection & repackaging operations (in case of noise of machines, breaking glasses, et cetera)
- Not needed for inventory operations

Tauw

(Ear protection)

Ear plugs:

- Protection against high frequency sounds (breaking glass, drums)
- Protection against dust entering the ears

Tauw

Selection of PPE for Inventory

Practical examples from real stores

Tauw

Practical examples from real stores

Tauw

PPE for Inventory General Rules

Before starting the inventory
- assess risks
- Select proper PPE
- Check PPE
- Apply PPE
- Control each other on PPE

After inventory
- Remove all PPE on leaving the store
- Disposables are obsolete pesticides
- Personal cleaning

Tauw

Risk analysis with PSMS

Tauw

Why PSMS?

?

Tauw

Why PSMS?

- Prioritizing stores based on environmental risk and amount (type) of pesticides
- Inventory information suitable for repackaging

Tauw

Two aspects of risk analysis

- Risk to surroundings/environment
  - Can receptors such as humans or groundwater resources get in contact with pesticides?

- Hazard posed by materials in store
  - How toxic is the pesticide?
  - What is the condition of containers?...

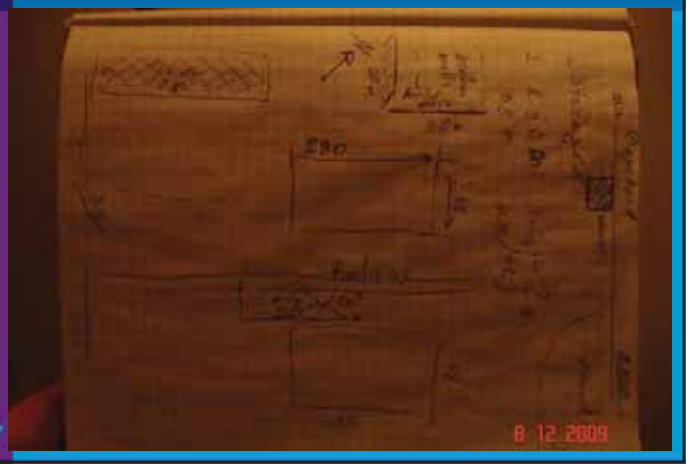
Tauw

How ?

How

Tauw

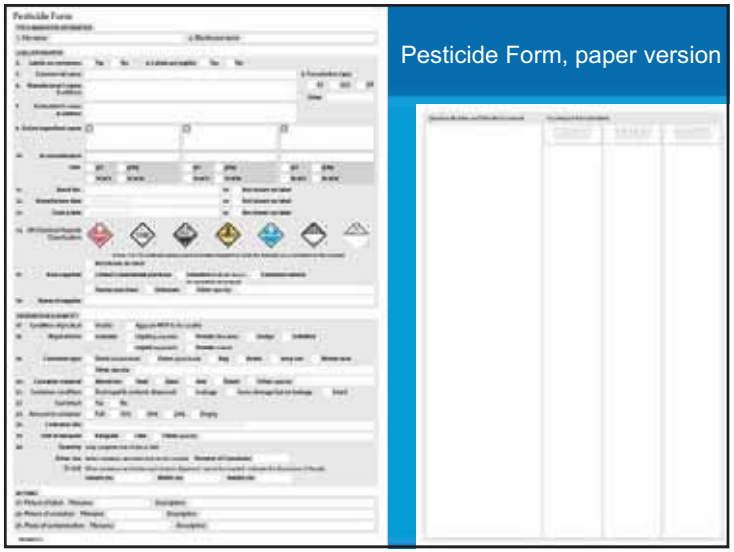
How



and then you put your data in PSMS…

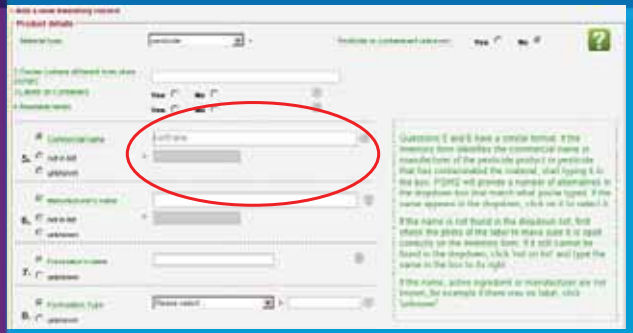
http://psms.fao.org/psms/login.htm

Tauw



Pesticide Form, paper version

Pesticide Form PSMS



If the kind of pesticide is known, select commercial name from list (start typing in field and then select).

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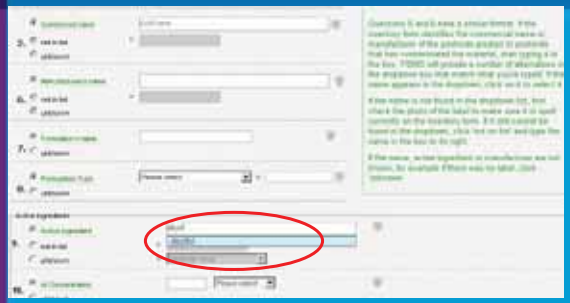
Pesticide Form PSMS



Unfortunately many pesticides from former Soviet origin are not in the PSMS lists.

Tauw

Pesticide Form PSMS

(screenshot of completed forms in PSMS)

Tauw

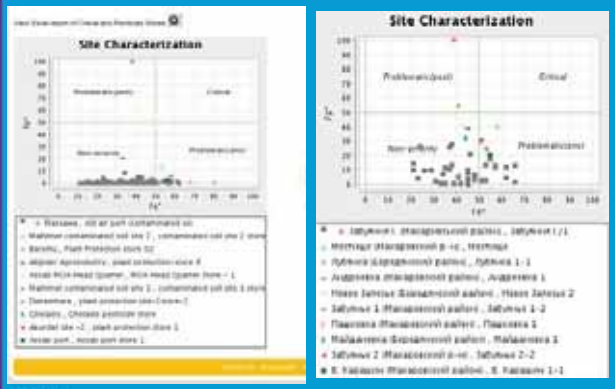
Result of risk ranking with PSMS

PSMS provides a visual ranking by environmental risk & pesticide quantity

HIGH PESTICIDE RISK ONLY	CRITICAL SITES
NON-PRIORITY SITES	HIGH ENVIRONMENTAL RISK ONLY

Tauw

How it looks in PSMS: two examples



Tauw

Different types of stores & different risks

HIGH PESTICIDE RISK ONLY	CRITICAL SITES
NON-PRIORITY SITES	HIGH ENVIRONMENTAL RISK ONLY

?

Tauw

POP project cycle Project

Consultancy on the POPs Pesticides Technical study in the Caspian region

December 2009 Baku

Tauw

Program of the day

• Look back on Wednesday	9.00
• Introduction field training team	9.20
• POPs project cycle	9.30
• Results and impression from technical training	9.45
• Country presentations conditions of stockpiles	10.00
• **Coffee and tea plus expo**	**11.15**
• Country presentations hot spots burial	11.20
• **Lunch**	**13.00**
• Country presentation successful actions, inven, rep, destr	14.00
• Gap analyses and action planning focusing on priority issues	15.00
• **Coffee and tea plus expo**	**15.45**
• Coming up regional projects (Mark Davis FAO)	16.00
• **Break**	**17.00**
• Preparation of presentation of Friday with ass. of all trainers	17.30
• Closure	19.30

Tauw

Why?

DDT

Tauw

Why hotspot removal?

Material	Volume to be treated	Load of POP	Risk reduction	Treatment costs per kg of POP
1,000 kg of POP	+2 cubic meter	1,000 kg	Very high	< € 2
1,000 kg topsoil*	0.59 cubic meter#	1 kg	High	€ 20 - € 30
1,000 kg subsoil**	0.59 cubic meter	0,1 kg	Medium to low	€ 20 - € 300
1,000 kg Groundwater***	1 cubic meter	0.001 kg	Very high-insignificant	€ 3,000 - € 5,000

*Concentration 1,000mg/kg **Concentration 100mg/kg ***Concentration 1,000 ug/l

#1 cubic meter of soil = 1.700 kg

Tauw

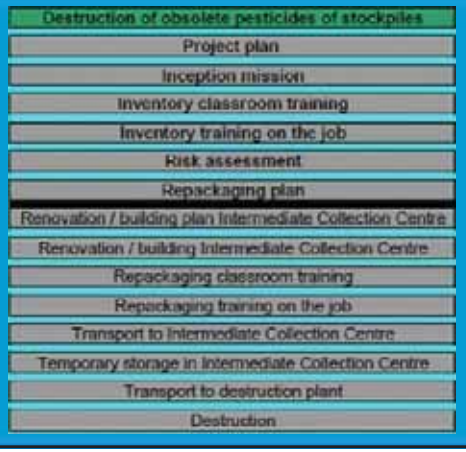
Differences stores and landfills

Stores
- Urban/rural areas
- Differ very much
- Alternative use
- Quantities differ
- Building materials taken for alternative use

Landfills or burial sites
- Remote areas
- Originally well designed
- Large quantities
- Waste mining

Tauw

From Inception to destruction of stockpiles



Tauw

Training

Training the right personnel!

Tauw

Inventory OPs

Tauw

Why field tests, an example

What if this pile of phosphate fertilizer was repackaged, removed and incinerated for 2000 US $/ tonne ?

Tauw

The FAO Pesticides Stock Management System

Paper Forms
- Simple use in the field

Web application
- Server and database at FAO
- Access via internet with web browser
- Password protected user access

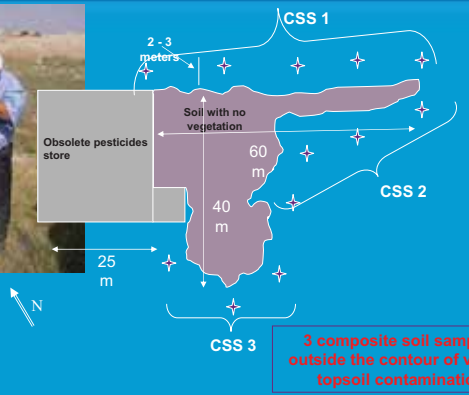
Data
- Data uploading in office
- Data management responsibility user
- FAO just provide the tools

Tauw

Topsoil survey

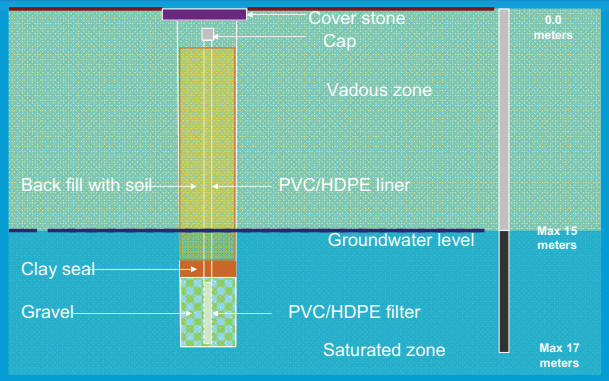
Tauw

Topsoil survey



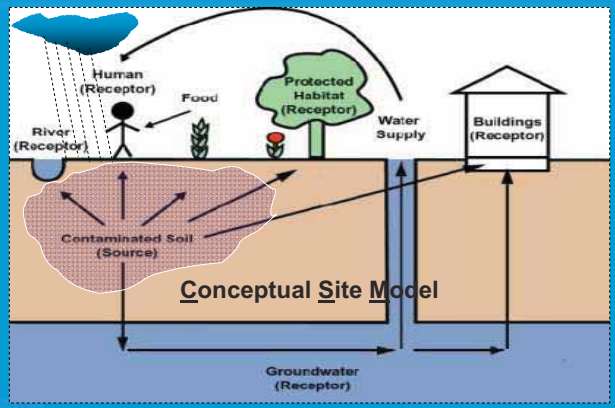
Tauw

Observation well



Tauw

Source-Path-Receptor concept basis for CSM



Tauw

Repackaging

Tauw

Temporary storage

Tauw

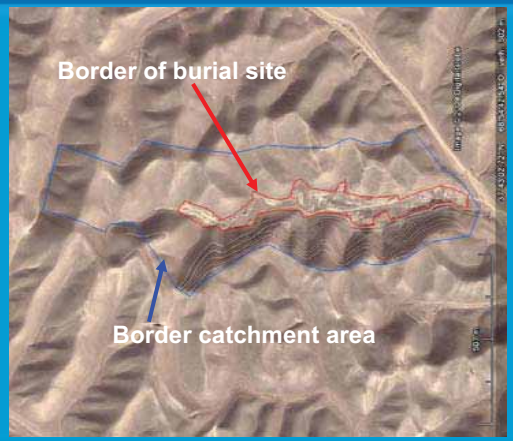
From Inception to remediation burial site

Tauw

Vakhsh Burial

Tauw

Catchment area Vakhsh Burial Site, Khatlon Oblast



Tauw

Plan cross sections

Tauw

Data gathering in representative cross section

Tauw

Field survey burial Site

Tauw

Field investigation

Tauw

Soil profile description and soil sampling

Tauw

Burial Site risks

Receptors

- Environment
- Wildlife
- Cattle
- Human

Migration in the environment

- Runoff
- Wind

Dispersion in subsoil

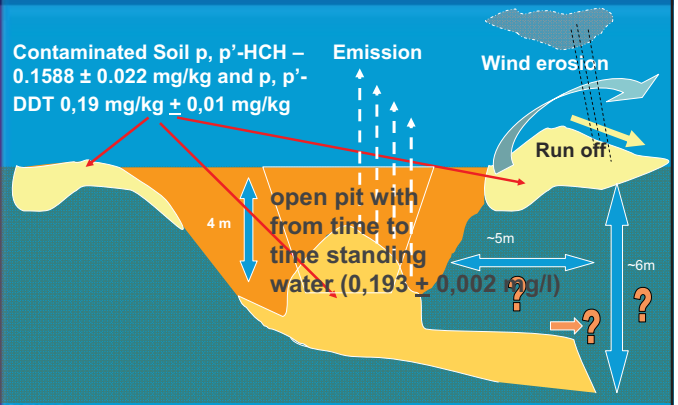
- Infiltrating by rain and melting water.

Entering our food chain

- Trespassing cattle
- Rodent

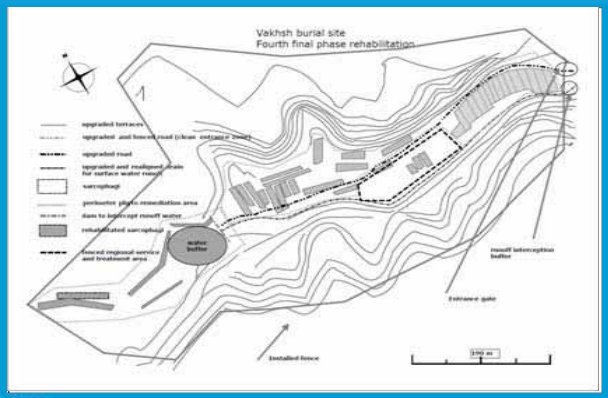
Tauw

Conceptual Site Model (CSM) PIT 1



Tauw

Design rehabilitation option



Tauw

Program of the day

• Look back on Wednesday	9.00
• Introduction field training team (5minutes)	9.15
• POPs project cycle	9.25
• Results and impression from technical training	10.00
• Country presentations conditions of stockpiles	10.20
• **Coffee and tea plus expo**	**11.10**
• Country presentations hot spots burial	10.20
• **Lunch**	13.00
• Country presentation successful actions, inven, rep, destr	14.00
• Gap analyses and action planning focusing on priority issues	15.00
• **Coffee and tea plus expo**	**15.45**
• Coming up regional projects (Mark Davis FAO)	16.00
• **Break**	**17.00**
• Preparation of presentation of Friday with ass. of all trainers	17.30
• Closure	19.30

Tauw