COUNTRY REPORT

Assessment of the Management of Obsolete Pesticides

Republic of Turkmenistan

Food and Agriculture Organisation of the United Nations

IHPA
International HCH & Pesticides Association

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Country Report

Assessment of the management of obsolete pesticides Republic of Turkmenistan

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The European Union and the Food and Agriculture Organization of the United Nations (FAO) have invested € 7 million to assist countries in Central Asia and Eastern Europe to foster an environment of cooperation and capacity development to eliminate the risks from obsolete pesticides and Persistent Organic Pollutants (POPs) and to develop a more sustainable agriculture in the future. This report was prepared by the International HCH and Pesticides Association (IHPA) under a contract from FAO to assess the need for, and legal and technical capacity for, the sound management of hazardous waste in the country and to develop a "road map" for achieving self-sufficiency in sound hazardous waste management in the region.

Content

Data, Annexes and Working Document

The original data and Annexes are available in a separate document: 'Working Document, Legal Assessment of the Management of Obsolete Pesticides, Republic of Turkmenistan".

Annexes:

Annex 1: Terms of Reference for IHPA for coordination of a Disposal Study for Obsolete Pesticides in the Former Soviet Union
Annex 2: Status of Ratification of the Tehran Convention

The Working Document can be found in the library of IHPA at http://www.ihpa.info/resources/library

Foreword

The implementation of the works for this report has not been very easy. Due to the fact that official letters have never been answered, no official information was available as well as no dialogue with the concerned competent authorities could be started. Also the recruitment of the national legal and waste management experts has been difficult. At the end the legal expert has been employed and no waste expert was found.

Therefore the waste management part is missing and in alternative bits of information have been gathered and compiled in the next chapter.

In the legal assessment it was stated on pesticides waste that: “Official information on this matter is not available. State Concern “Turkmenhimiya” carried out work on the disposal of pesticide waste on their own without the involvement of foreign aid.”
IHPA respects of course this approach, but emphasizes on the other hand that we live in a world where chemicals are transported and in consequence have their impact across borders. Safe handling of chemicals, whether in use or in the stadium of waste can only be achieved by collective international cooperation. In spite of the limits on information obtained in this report, IHPA has decided to publish it as a step towards enhancing future cooperation in the field of chemicals and specifically obsolete and POPs pesticides and challenges the Republic of Turkmenistan to become party to, ratify and implement in the National legislation the definitions of the three Conventions: Basel, Rotterdam and Stockholm, dealing with safe handling of chemicals and hazardous waste.

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We give special thanks for the methodological support, general coordination and encouragement of the work to FAO, Mr. Kevin Helps, former Project Coordinator of FAO-EU Partnership, Mr. Richard Thompson, present Project Coordinator of FAO-EU Partnership Project, Mr. Lalaina Ravelomanantsoa, Legal Officer, Development Law Branch, FAO Legal Office, Ms. Oxana Perminova, Agricultural Officer (Social and Economic Impact) of FAO-EU Partnership Project, Milieukontakt International, Green Cross Belarus and Blacksmith Institute.

We give special thanks for the methodological support, general coordination and encouragement of the work to FAO, Mr. Kevin Helps, former Project Coordinator of FAO-EU Partnership, Mr. Richard Thompson, present Project Coordinator of FAO-EU Partnership Project, Ms. Lalaina Ravelomanantsoa, Legal Officer, Development Law Branch, FAO Legal Office, Ms. Oxana Perminova, Agricultural Officer (Social and Economic Impact) of FAO-EU Partnership Project, Milieukontakt International, Green Cross Belarus and Blacksmith Institute.

List of acronyms

BAT	Best Available Techniques
BEP	Best Available Practices
CIS	Commonwealth of Independent States
DDT	Dichlorodiphenyltrichloroethane
EA	Environmental Assessment
EC	European Commission
EECCA	Eastern Europe, Caucasus and Central Asia
EMTK	Environmental Management Tool Kit for Obsolete Pesticides (FAO)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
HCH	Hexachlorocyclohexane
IHPA	International HCH & Pesticides Association
IPEN	International POPs Elimination Network
NIP	National Implementation Plan
OP	Obsolete pesticides
PCB	Polychlorinated biphenyl
POP	Persistent Organic Pollutant
PSMS	Pesticide Stock Management System (FAO)
SAICM	Strategic Approach to International Chemicals Management
UNITAR	United Nations Institute for Training and Research
Velayat	Turkmen name for region

Introduction

Within the EC / FAO project GCP/RER/040/EC "Improving capacities to eliminate and prevent recurrence of obsolete pesticides as a model for tackling unused hazardous chemicals in the Former Soviet Union" the International HCH & Pesticides Association (IHPA) has been tasked to develop capacity for management of hazardous wastes through the example of OPs and POPs pesticides. There is an estimated 200,000 tonnes of these materials known to be affecting the countries of the Former Soviet Union. Much of the previous work on disposal of waste from the countries has looked to export thousands of tonnes of pesticide stockpiles to high temperature incinerators operated commercially in EC member states. Whilst this strategy meets all international environmental compliance requirements it is prohibitively expensive. The vast distances involved for transport of waste from Central Asian Countries to facilities in Europe makes the option of finding a local solution appealing based on both risk management and cost considerations. Moreover, the huge volumes of hazardous waste generated in the region increases the need for local destruction hazardous waste capacity. Based on the national Legal and Technical assessment reports of the management of OPs that were produced in 2014, the "Road Map to Establishing Environmental Sound Management of POPs Pesticides and other Hazardous Waste in the EECCA region", was published at the end of 2015.

The Disposal Study involved (see Terms of Reference in Annex 1 of the Working document) the following activities:

- Review of existing policy framework for the management and elimination (including inventory, assessment and transport) of POPs and OPs in line with the requirements of the respective EU Directives/Stockholm Convention;
- Conduct benchmarking of current POPs management (including (temporary) storage and destruction) against international best practice on BAT/BEP as set out by the Basel / Stockholm Convention working groups; highlight and describe best ongoing practices in the country;
- Review of existing and planned treatment options for POPs pesticides, OPs and related hazardous wastes, contaminated containers and contaminated land;
- Assess potential treatment facilities such as existing modern cement kilns, as well as planned and/or implemented pilot plant investigations which can develop in the next years to important market players;
- Assess the Russian-Belarus-Kazakhstan customs union and its implications for hazardous waste in and through Russia, including an assessment of 1) experiences over the last years practical implementation and of 2) alternative transport routes from the republics avoiding Russian territory. This was completed with due reference to the requirements of the Basel Convention;
- Assess access (by road, train or water) to treatment options and economics of transport of waste across the region to treatment facilities/alternative storage facilities; and,
- Review existing POPs data (OPs and PCBs) as far as available, and make efforts to collect, if possible, total hazardous waste stream data as set out in national profiles such as the UNITAR chemicals profile. This was collated for the country in order to assess the potential need for future investment per country/region. Provide estimates of the scale of investments (in terms of tonnes of POPs for disposal) and a rough estimation of their national distribution, tonnes of other OPs, distribution and quantities of contaminated land and contaminated containers;
- Assess status of recycling options for empty containers or already planned or ongoing programs and initiatives;
- Prepare country summary sheets on findings and identify the gaps in information;
- Compile report of study findings, including recommendations for filling the information gaps.

Expected Outputs based on the Terms of Reference:

i. Summary report of existing policy framework for the elimination and management of POPs and OPs (12);
ii. Analysis of barriers (technical, legal, economic) to the development of national and regional waste management capacity;
iii. Report on opportunities for introduction of new technologies (thermal and non-thermal) e.g specific stockpiles (DDT and HCH waste);
iv. Summary report of existing and potential treatment facilities, pilot plant facilities and empty container recycling facilities/initiatives (12 countries);
v. Report on POPs waste in relation to total hazardous waste market and approaches for Investment plan for

POPs destruction for the region;

vi. Presentation of the draft report to the SC meeting in February 2015, finalization of the report incorporating received comments.

Part I of the study on the assessment of the legal framework for pesticides waste management is structured into five main sections:

I. General background information (Participation in international treaties)

The introduction includes general information about international cooperation and the state's participation in international treaties in the waste management field. The purpose of this section is to identify and clarify the state's position in the field of waste management at an international level.

II. Regulatory framework on waste management

The first chapter is about the political and legal framework that determines the policies or strategies at the national/federal level aimed at the prevention of waste generation and minimization of risks associated with wastes. Also this section provides a general overview of all national laws and regulations that govern hazardous waste management.

The second chapter on specific laws and regulations that govern waste management is focused on the determination of all laws regarding waste management across different sectors such as: import/export, landfill of waste, incineration, shipment of waste and general waste management.

The third chapter on "Institution(s) involved in waste management (focus on pesticides)" studies the relevant institutions that are involved in waste management, and their obligations and responsibilities, in order to identify the competent organizations that are responsible for waste management planning.

III. Analysis of existing national waste management legislation

This section is dedicated to an analysis of existing national waste management legislation that reflects the legal framework regarding the different activities of waste management such as:

- Register of pesticides waste and general classification of waste
- Licensing
- Trans-boundary movement, import/export rules
- Economic initiatives regarding transport
- Labelling requirements
- Packaging and containers
- Emergency procedures
- Disposal obligations
- Incineration
- Recording, monitoring, and reporting
- Offences and penalties
- Official controls and inspection
- Research and development

IV. Information supplementing legal analyses – from other experts includes three main topics:

- Pesticides manufacturing industry
- Management of OP Stocks – legal provisions regarding the conditions/methods for inventory/storage/disposal activities related to obsolete stocks.
- Methods used for treatment of pesticides wastes

V. Disposal, storage recycling and recovering facilities – practical information from other experts is composed of four topics:

- Disposal facilities
- Storage facilities
- Recycling facilities
- Recovery facilities

This section aims to identify the legal norms that apply to any disposal/storage/recycling/recovery facilities of pesticides waste.

Part II of the study, the national technical assessment (waste management report)

We realized that in order to fulfil the specific conditions on capacity building and benchmarking in each country, as specified in the terms of reference, an adequate analysis of the whole cycle on how to deal with OPs was required. This applies from the very beginning of the process, including who is responsible and who is involved in every step from finding the OPs to the final step of complete elimination. Having carefully worked this out, it was then necessary to design a clear and standardized structure that all national waste management consultants could simply follow in order to assess each step. It was also important to allow comparison between the assessments of each country and therefore it was decided to develop a standardized template for each report using a tabular format. For clarity and brevity the entries have been made as concise as possible.

The report has been built up in four main sections containing a large number of individual items that have been assessed, these being:

1. Benchmarking of current POPs management against international best practice

This section includes detailed information on each step of all actions necessary for elimination of OPs and POPs pesticides:

1. **Institutional arrangements** that include the responsibilities of the concerned organisations in the country.
2. **Inventory** with all national/regional inventory updates, data sources and existing inventories, first National Implementation Plan (NIP), recent NIP update (specifically on new POPs), UNITAR Chemicals Profile, if existing, National Pesticides and/or POPs Inventory, FAO PSMS Inventory and other information.
3. **Environmental Assessment** consistent with national requirements, and also with International experience often implemented by the UN and other agencies. This includes the capacity of the government and private

sector to develop such an Environmental Assessment, as well as the FAO stages in Environmental Assessment (EA) and Environmental Management Plans (EMP) experiences from the FAO Toolkit EMTK v 3.

4. **Inventory and Environmental Assessment Management** including vital questions on the inventory and the assessment, and if the organisational capacity is in place to complete the task. For example if the relevant organisation is in place and also operational, and if so whether all managers and coordinators are in place and operational, as well as if all field teams are established and operational. Also if all Inventory data management people are in place and operational, whether the National/Regional Inventory is being updated or not, a National Pesticides and/or POPs Inventory has been established, and if a contaminated sites register exists or not.
5. **Safeguarding** defining what has been implemented at national and international level such as under the FAO projects.
6. **Storage and transport** includes all items on packaging, containerization, storage and transportation with assessment of transport regulations, driver regulations, existence of storage regulations and available storage capacity, and Incident and accident reporting.
7. **Disposal**, assessing the national, international and FAO experience to date, including reporting on the technologies that have been selected, the process on transboundary transport under the Basel Convention and the national transport within the country, disposal capacities in the country, quality and standards applied (national/international), and current ownership of facilities.
8. **Containers** assessing the national and international experience, the FAO supported plans, amounts and type of empty containers and/or packaging materials, and the use of collection centres for empty containers

2. General overview of POPs and other hazardous waste data

This section has been set up around the following six categories:

A. Agricultural chemical waste that includes OP waste, POPs pesticides waste and new pesticides waste such as counterfeit pesticides, waste empty containers, and contaminated sites. These contaminated sites consist of burial sites or polygons (landfills) which often contain huge volumes of waste, storage sites, and sites which are still in use;
B. Industrial chemicals,
C. By-products,
D. Petroleum wastes,
E. Inorganic wastes,
F. Health care high risk waste.

This effectively means the majority of hazardous waste has been listed. It has also to be mentioned that many of the required data are either preliminary or missing as many countries are in a first stage of such an assessment. Often quantities are listed but not verified in the field. The data also change rapidly as new inventory and assessment activities such as the current NIP updates are planned, so the data can be seen as a "snapshots" of the situation and are likely to be updated again in the near future.

3. Existing and planned treatment options for POPs pesticides, OPs and related hazardous wastes, and contaminated land

This section assesses existing and potential destruction plants, planned facilities and planned and/or implemented pilot plants, as well as existing and/or planned empty container (plastic and/or steel) recycling facilities or initiatives in the country. Data that need to be entered are: type of plant or technology, address/location, contact person (name/contact details) and a brief summary of the technical data, with treatment capacity, types hazardous waste permitted for treatment, permit information, and date of permit. However, it should be noted that there are only a very few plants available in most of the countries.

4. Transportation logistics

This section includes five main issues:

1. The assessment of various transport alternatives from main stockpile locations to the existing and or planned treatment facilities including cost estimates;
2. Assessment of possible storage networks: waste transfer stations e.g. at main railway stations or at existing landfills (polygons) or waste handling stations;
3. Assessment of transport capacity;
4. Reference to the requirements of the Basel Convention and previous experience of international export Implications of custom facilities; and
5. A brief description of the cases that should be reported.

Due to its clearly defined structure the report is very easy to update periodically, for the use of the national authorities and donors that are interested to support further actions on the elimination of OPs and POPs in the future.

The main report is available in both English and Russian, and all country reports will be accessible in the library of IHPA at http://www.ihpa.info/resources/library/

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Summary
for the Republic of Turkmenistan

It should be noted that the conclusions and recommendations in this report have been made on the basis of the information collected in 2014. Additionally, this legal assessment of the management of OPs report was followed by a second report: "Road Map for the Development of Hazardous Waste Management in the EECCA Countries". During the work on the last report the country's conclusions and recommendations have been included in the final summaries of legal and waste management issues, which are then specifically addressed for each country in the Road Map report.

Assessment of the legal framework for pesticides waste management in the Republic of Turkmenistan

Major findings

	Kyrgz	Kaz	Uz	Taj	Tmn
SAICM	+	+	-	-	no info
Commission on chemicals regulation	+	-	-	+	no info
National POP's action plan	+	+	-	+	no info
Stockholm convention*	+	+	-	+	no party
Rotterdam convention*	+	+	-	-	no party
Basel convention*	+	+	+	-	accession
National program on waste management	-	in development	-	-	no info
National programs of action with chemicals	in development	-	-	-	no info
National chemical profile	+	+	+	In development	no info

Status on the progress on 3 Conventions in the table for the Central Asia countries, shows Turkmenistan's situation with missing information in 2012 (Ref.8).

* At this moment (Feb 2016) the official site of the Basel, Rotterdam and Stockholm contains the following information: Turkmenistan is not registered as party to the Rotterdam Convention and the Stockholm Convention. For the Basel Convention there is a registered status of 'accession' dating from 25 September 1996. No registrations of more recent information.

A negative aspect consists in the fact that Turkmenistan did not ratify the Conventions that regulate the waste management as:

- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
- The Stockholm Convention on Persistent Organic Pollutants.

On national level, Turkmenistan has not yet developed a special law on waste, providing state regulation organizing the collection and disposal of waste, including hazardous waste. However, in a number of legal acts are separate regulations defined governing waste management.

Also, in Turkmenistan, no specific rules are established governing the transport of dangerous goods.

- In the legislation of Turkmenistan, provisions of the Basel Convention are not adequately reflected. As long as the rules of the transport of dangerous goods, based on the agreement of the CIS countries "on the transit of specific types of cargo" from 1995, apply, there is an obligation to gather information about the transportation of hazardous waste.
- The law does not have provisions expressly prohibiting the export of hazardous waste. However, the Law "On the Chemical Safety" provides articles that prohibit the transfer of chemical weapons to anyone, directly or indirectly, transit through the territory of Turkmenistan (Article 4, part 1). A similar provision is contained in the Constitutional Law of Turkmenistan (1995) (Article 6).
- There is no a legal act that regulates the waste incineration.

For the Caspian Sea Turkmenistan takes a much stronger stand and has fulfilled all obligations for the Tehran Convention /See Annex 2) in relation to:

- the Protocol Concerning Regional Preparedness, Response and Co-operation in Combating Oil Pollution Incidents ("Aktau Protocol"), which was ratified by Turkmenistan on 22/12/2012
- The Protocol for the Protection of the Caspian Sea against Pollution from Land-based Sources and Activities ("Moscow Protocol"), ratified by Turkmenistan on 23/05/2015
- The Protocol for the Conservation of Biological

Diversity ("Ashgabat Protocol"), where Turkmenistan ratified as first country on 23/05/2015. As a result, Turkmenistan has not yet developed a special law on waste, providing state regulation organizing the collection and disposal of waste, including hazardous waste. However, in a number of legal acts are separate regulations governing waste management.

In Turkmenistan are four ministers dealing with waste management: Ministry of Nature Protection; Ministry of Health and Medical Industry; Ministry of Agriculture; Ministry of Public Utilities. Thus, overall coordination and control in the field of hazardous waste is realized by the Cabinet of Ministers of Turkmenistan.

Information collected by IHPA on pesticides waste and waste management

As explained in the foreword, no separate technical assessment of the management of OPs and POPs waste and soil contamination has been made for Turkmenistan. Intensive internet searches confirmed that there is very little public information available.

Following information has been compiled and arranged chronologically. As far as possible, sections of the texts have been exactly taken from the indicated sources.

UNEP -1997 (Ref. 1)

In 1997, it was stated that: "the representative of Turkmenistan stressed that the problems related to POPs which face the country are similar to those in the other states of the region. One of them is lack of information on the issue. The most serious problem in the country is technical support to POPs analytical control, since no related issue can be solved without special monitoring means. The representatives of the developed countries were asked to prove possible technical assistance to the country." (Ref. 1)

Enrin-Grida (1) – 2003 (Ref. 2)

In State of the Environment Turkmenistan (Ref. 2), more information was found, however this information seems from the period between 1994 and 1998 and here is stated:
"In Turkmenistan there are 3 ranges of toxic wastes:
- Mary velayat - "Karipata"
- Lebap velayat - "Zerger"
- Dashkhovuz velayat - "Tagta"

In the specified shooting ranges nowadays 1,350 tons of poisonous chemicals are buried, which are useless or forbidden to use, such as keltan, butifos, methylethylchlorofos and etc. The special alarm is caused by the situation which has been formed in range1 "Zerger". Previously located outside the city, the range having a normative sanitary protective zone is situated at present inside of industrial zone that represents the certain ecological danger to population."

UNEP – 1999 (Ref. 3)

In 1999, at the UNEP Subregional Expert meeting in Golitsino, Russia the representative of Turkmenistan gave for the first time a more detailed description of the problem and thoughts about a possible permanent solution:

"There are three burial grounds on the territory of Turkmenistan. As of April 1999, "Turkmenkhimminudobreniye", the company charged with burying of toxic chemicals, has accumulated in its storehouses 1,670.9 tons of harmful chemicals of 58 names. Among them there are 254 tons of phentauram, 459 tons of hexachloran, 0.2 tons of keltan, 0.969 tons of akrex and other toxic pesticides.

The existing burial grounds are at present filled up pesticides being kept in respective warehouses, which is in fact a violation of sanitary norms and regulations, poses a threat to the health of the population and constitutes a danger of environmental and soil contamination. It should be mentioned that, as a result of intensive city designing and building, some burial grounds turned out to be located practically inside the town boundaries. All the above has an adverse effect on the environmental condition. At present the existing burial grounds have practically exhausted their resources, and now we are facing the necessity to provide for toxic pesticides utilization. The utilization stage is the weak point in the "life cycle" of outdated or prohibited pesticides.

Now there is an urgent necessity to acquire a high-temperature ecologically safe plant to do away with prohibited or unfit pesticides and other chemicals. Otherwise the problem of the above-mentioned harmful waste can hardly be settled. Therefore it becomes evident that only investments in the material base and structure of public health services and those of nature conservation on the bases of specific decisions made can bring desirable results and contribute to healthier environment. All contracts signed by Turkmenistan for acquisition of plant protection chemicals undergo compulsory control exercised by the Ministry of Nature Protection and the Ministry of Health and Medical Industry of Turkmenistan" (Ref. 3)

IPEN – 2004 (Ref. 4)

In 2003, it was stated that: "DDT was found in all agricultural districts of the country while four toxic waste burial sites were found to contain 109 tons of residual amounts (Eneev site in Akhalsiy district, Karabota site in Mariiskiy district, Zerger site in Lebepskiy district and Takhta site in Dashoguzmskiy district)" (Ref. 4).

UNEP – 2012(1) (Ref. 5), UNECE – 2012 (Ref. 6) and UNEP -2012(2) (Ref. 7)

UNEP and UNECE, 2012 state: "Turkmenistan is facing a problem of obsolete pesticides and toxic waste. The State Concern TurkmenChemistry was responsible for collecting this waste at abandoned factories and storage sites from the entire territory of Turkmenistan disposing of it in safe storage. Three sites were developed for long-term storage of obsolete pesticides and toxic chemical materials. These are located in:

- Karipata in Mary Province;
- Zerger in Lebap Province;
- Takhta in Dashoguz Province.

These storage sites were rehabilitated by Turkmen Chemistry during the territory clean-up and currently are fenced, guarded and regularly inspected. It is estimated that these sites contain about 1,671 t of obsolete pesticides besides other toxic waste." (Ref. 6)

ZOI – 2013 (Ref. 8)

In 2013 it was stated: "There is also proven capacity for toxic waste clean-up. As demonstrated by the State Concern "Turkmen Chemistry", which has collected hazardous waste from abandoned pesticides storage sites from across the entire country and disposed of it in specially designated sites that are fenced, guarded and regularly inspected. The creation in 2009 of the National Program for Safe Management of Medical Waste in Health Facilities (implemented in 2011) is another remarkable achievement." (Ref. 8)

Latest unofficial information was obtained during the study, that Turkmenistan has in 2010, has finally removed 11,456.7 tons of toxic waste to central landfills. These quantities are much higher as the previous official data collected.

Information collected by IHPA on other waste issues

The State of Environment of Turkmenistan (Ref. 9) states: "The structure of mining industries in Turkmenistan is rather peculiar. There is no large-scale metal mining, and production mostly includes construction materials and hydrocarbons (oil and gas).

The mining industry is responsible for the accumulation of great quantities of wastes, including harmful ones:

- solid wastes formed in the process of mining of mineral resources from the earth and their primary treatment (dumps of overburden, dressing tails, etc.);
- "supplementary" wastes: remnants of production structures, aggregates and materials used by mining enterprises;
- liquid wastes: quarry and mine waters, flotation reagents, edge waters in the oil and gas fields, etc.

The greatest amount of technogenic wastes in Turkmenistan is found near the sulphur plant in Gaurdak. It is equal approximately to 350 million tons (dumps of overburden, poor ores, and dressing tails) with 8 to 10 million tons being added every year.

Buzmeyin, a satellite town of Ashgabat, has the country's largest production association of construction materials and a cement plant, which cause greatest alarm among the public and nature conservation organisations. Under the Decree of the President of Turkmenistan Saparmurat Turkmenbashi, for the purpose of improving the ecological situation in the city of Buzmeyin, at present all large industrial enterprises are being moved away.

Extremely harmful substances in the mining wastes. Today this problem is of a rather localised nature. The accumulation of such harmful metal as thallium in the sorbents used for the extraction of iodine and bromine from the groundwater. In the dumps of the Cheleken chemical plant the average content of thallium is 162 g/t, with the background level being 1.7 g/t. Similar figures can be expected for the dumps of the Balkanabat iodinebromine plant."

It should be noted that the source of this information is rather old and is dated to the period from 1999 to 2003, and therefore the situation can be much different today.

Map of Turkmenistan with indication of Location of dumps of obsolete chemicals and other industrial waste and chemical issues raising public concerns (Ref. 8)

Major findings based on information collected by IHPA

It is obvious that Turkmenistan has implemented activities for clean-up of a number of stockpiles and has transported these materials to three main landfills in the country.

However, documentation on a number of activities is not available: the first step of the implementation of a national inventory is the necessary systematic documentation for example as shown in the FAO PSMS system. PSMS has now been implemented in a number of countries in the region and could help to assess if all former stockpile locations have been included and if the concerned locations have been properly cleaned-up and no remains of soil and or groundwater contamination are present.

Also documentation on the design and the implementation of the mentioned landfills is not available. Such information (as bottom and top cover systems and drainage systems) would be necessary to assess its proper functioning and long-term maintenance in the future. It would be also good to know if the landfills are planned as final disposal option or as a temporary measure for final disposal at a later stage.

Especially ratification of the Basel Convention (present status is accession) and of the Rotterdam and Stockholm Conventions, would be highly beneficiary in order to facilitate international exchange of information and to make specific support accessible for the Republic of Turkmenistan.

Suggestions and recommendations
for future activities

Based on above mentioned findings, it can be recommended for Turkmenistan to:

- enhance the activities for managing the ratification of the Rotterdam and Stockholm Conventions and progress the ratification of the Basel Convention, where Turkmenistan has already signed at the level of accession in September 1996
- demonstrate the same attitude in the ratification of the three mentioned international conventions as shown in the strong and active engagement in the Caspian Sea Convention
- request, while the ratification of the Stockholm Convention is pending, the GEF financial support for the implementation of the National Implementation Plan in order to get a complete overview with field inventories of all POPs incl. new POPs and updates the information on POPs pesticides and develop a National Action Plan for final POPs elimination and include the necessary public awareness campaigns
- make a detailed evaluation of the national legislation of Turkmenistan and thereafter update and improve the legislation for obsolete and POPs pesticides and other chemicals as part of the management of hazardous waste according to the best practises such as for example of the European Union
- assess the existing documentation on the design and the implementation of the mentioned landfills. Such information (as bottom and top cover systems and drainage systems) would be necessary to assess its proper functioning and long-term maintenance in the future and to give evidence to parties that will provide future support and funding.
- develop together with other countries in the region long term strategies for final disposal of obsolete pesticides, POPs waste and other hazardous waste

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