International POPs Elimination Project

Fostering Active and Efficient Civil Society Participation in Preparation for Implementation of the Stockholm Convention

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Country Situation Report on POPs in Syria

Environment Protection and Sustainable Development Society

Syria
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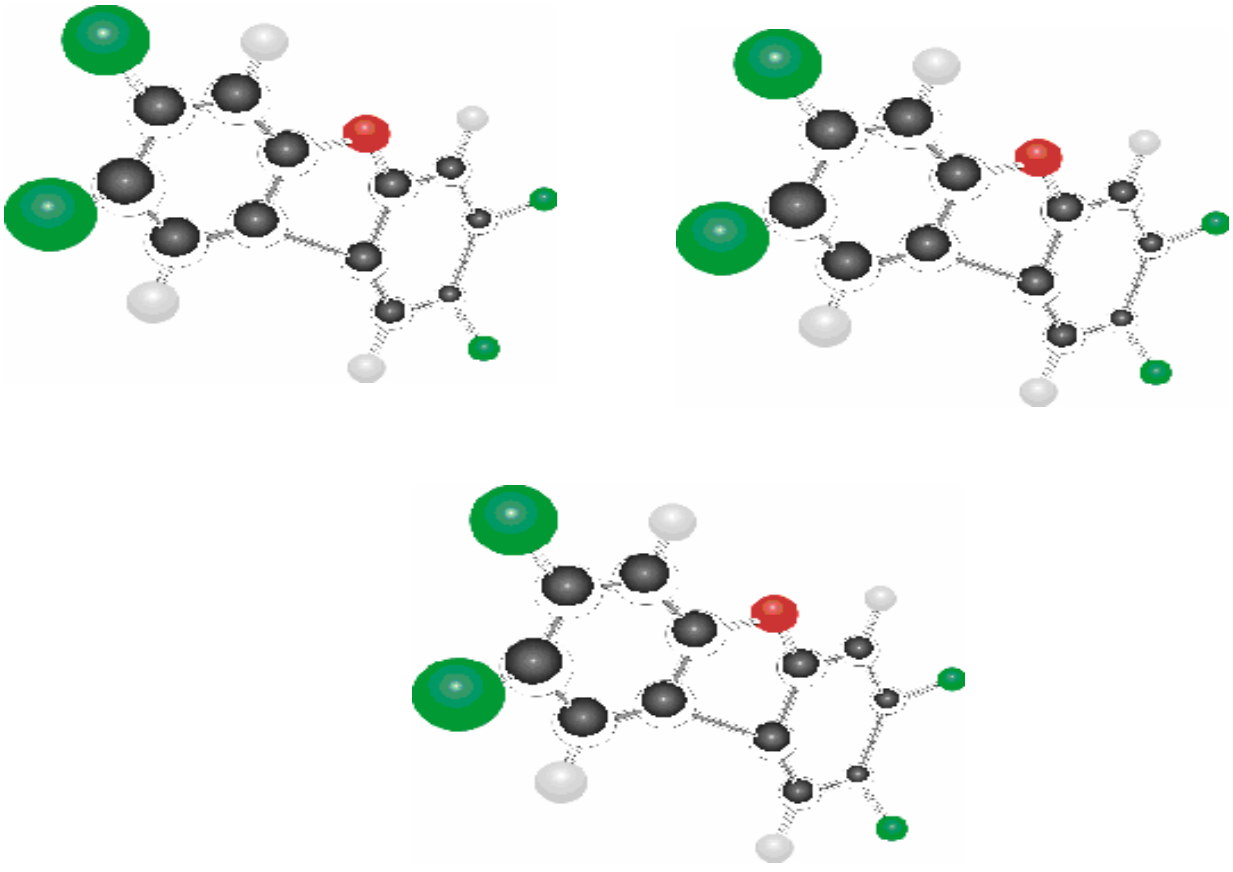

About the International POPs Elimination Project

On May 1, 2004, the International POPs Elimination Network (IPEN http://www.ipen.org) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;

- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;

- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see http://www.ipen.org

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The views expressed in this report are those of the authors and not necessarily the views of the institutions providing management and/or financial support.

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1-Introduction:

Great hazards to human health and the environment can come from Persistent Organic Pollutants (POPs) due to their highly toxic properties, resistance to decomposition, bio-accumulation, and ability to be transported on air currents and through migratory species of birds across international borders. POPs settle far away from where they are launched or produced and they accumulate in the eco-system and move up through food chains.

The Environmental Protection and Sustainable Development Society participated in preparing a national report on the conditions of POPs in Syria in addition to accomplishing some awareness-raising activities on identifying the Stockholm Convention.

The Convention covers a group of twelve compounds and can be expanded depending on the results of the scientific studies on the hazards of presenting such compounds to the elements of the environment. Currently there are five new candidate substances under consideration. The compounds covered by the Treaty were classified into three main groups, which are:

- Insecticides: Aldrin, Chlordane, DDT, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene (HCB), Mirex, and Toxaphene

- Chemical Industrial Substances: Polychlorinated biphenyls (PCBs) are compounds previously used in transformers, electric condensers, and thermal exchangers and which are also available in paints, carbon photocopy papers, and could result from incomplete combustion of organic materials.

- Source Categories: dioxins, furans, hexachlorobenzene that could result from combustion of organic substances in presence of chlorine and some organic chemical reactions during chemical processes involving chlorine.

The president and teamwork members of the project (POPs) in the Environmental Protection and Sustainable Development Society collected the available data and analyzed it to prepare the presented national report about production, importation, exportation and use of POPs in the Arab Republic of Syria.

2-1- POPs insecticides:

The Stockholm Convention POPs concern the following insecticides:

1. DDT

DDT is considered to be the most popular organochlorine insecticide for its high ability to control agricultural pests, and pests harmful for health. DDT was used mainly in Syria **i**n the Ghab region, and import was stopped in 1976, though it continued to be used until 1978 when it was totally prohibited.

Some stored amounts are available in the warehouses of the Ministry of Health according to the result of the inventory that was done by the Ministry of Local Administration and Environment with the cooperation of the Ministry of Health.

The inventory project of defective and abandoned insecticides in Syria in 2002 showed the availability of 1500 kg of the DDT insecticide stored among new containers, and through the safe storage project for abandoned insecticides which is being executed in cooperation with the Ministry of Agriculture and Agricultural Reform these amounts are being re-contained in regulatory containers according to the standards of the Food and Agriculture Organization (FAO) and stored in the main warehouse in the Tenef area which has been chosen according to the measures of the FAO to safely dispose of it with the help of the donor international organizations and institutions.

2. Dieldrin

This is not being imported currently since its import and exchange has been prohibited since 1990 according to the decision of the Minister of Agriculture and Agricultural Reform number 10 dated 10-4-1990 and there is no stored amount of it in the Ministry of Agriculture and Agricultural Reform.

3. Lindane

Lindane is considered to be an organochlorine insecticide which is being imported into Syria to be used in the control of locusts. It has been imported into the country since 1982. The stock of this insecticide is being distributed in the warehouses of the Ministry of Agriculture and Agricultural Reform in the eastern area (Tenef, Daer Elzour, Elheska) and in the western area (Deraa, Elsewaydaa) and in the coastal area (Allatheqeuya, Tertous) in addition to the availability of some amount in Demisqas and Qonaitara where the average total amount of it according to the evaluation of the Ministry of Environment and local administration in cooperation with the Ministry of Agriculture and Agricultural Reform with the support of the FAO was around 205 tons. It is being re-contained and stored in the main warehouse in Tenef to safely dispose of it with the help of the donor international organizations and institutions.

4. Heptachlor

The reports of the Ministry of Agriculture showed that it has not entered the country according to regulatory forms and no stored amounts of it are available.

5. Toxaphene

It is considered to be one of the organochlorine insecticides. Its import and usage was prohibited according to the decision of the Minister of Agriculture and Agricultural Reform number 1193 dated 25-10-1999 and no stored amounts of it are available.

6. Chlordane
Its import and usage has been prohibited since 1990 according to the decision of the Minister of Agriculture and Agricultural Reform number 10 dated 10-4-1990 and no stored amounts of it are available.

7. Endrin
It is not being currently imported since its import and usage has been prohibited since 1990 according to the decision of the Minister of Agriculture and Agricultural Reform number 10 dated 10-4-1990. No stored amounts of it are available.

8. Mirex
It is considered to be one of the organochlorine insecticides. Its import and usage was prohibited according to the decision of the Minister of Agriculture and Agricultural Reform number 1193 dated 25-10-1999 and no stored amounts of it are available.

9. Aldrin:
Its import and usage has been prohibited since 1990 according to the decision of the Minister of Agriculture and Agricultural Reform number 10 dated 10-4-1990 and no stored amounts of it are available.

2-1- Polychlorinated biphenyls (PCBs)
Polychlorinated biphenyls (PCBs) are considered to be one of the common POPs that are hazardous to human health and the environment. They are under international prohibition according to the Stockholm Convention which has been signed by the Arab Republic of Syria dated 15-2-2002 and ratified on 08-05-2002.

Starting from the Arab Republic of Syria's concern for executing its responsibilities towards this agreement and perform the suitable procedures to protect citizens and the environment from the hazards of these compounds, it initiated technical support from the chemical program that is an associate of the United Nations Environment Programme according to the memorandum of agreement number PO/3100-97-49-2220/ dated 27-2-2002. The Project concerned execution of a primary inventory for the electrical supply that probably contains PCBs compounds, in the period between 1-7-2002, and 15-2-2003, through the supervision of a team shaped by the Ministries of Environment, Electricity and Oil and the Center of Scientific Research and Studies, and sub-team work was organized in all the governorates to collect data about electrical supplies that could contain the PCBs compounds. This inventory was developed by 1-8-2005 and the results were as follows:

The total amount of the electric transformers that contain PCBs compounds is 91. The oil used in these transformers is 1384.25 tons.

2-3- Dioxins and Furans:

These compounds are considered to be unintentionally produced POPs that are formed and emitted unintentionally from industrial sources and especially thermal operations that contain organic substances with chlorine as a result of combustion or secondary chemical reactions. In the following, we introduce the industrial sources that participate in launching these chemicals to the environment and an estimation of the amount spread from these sources based on the help offered from UNEP Chemicals.

The purpose from managing the Persistent Organic Pollutants (POPs) inventory:

Knowing the great damages that could result from not controlling garbage generally and especially POPs, their effect on the environment and its elements (earth, water, and air), and its negative effects on the health of humans animals and plants.

The importance of this project is highlighted in that it helps:

1. Identify the size of the environmental and health problems that are caused by these pollutants through determining the size and the issues of the POPs and its inventory.
2. Identify the systems of these substances that exist with the public parties for:
    - Studying the harmony between the systems and the organization between the parties.
    - Determine the problems and negative effects existing in these systems.
    - Studying the effectiveness of applying these systems and the problems that would prevent their application.
    - Determining and developing the role of each concerned party in managing the POPs substances.
    - Determining the resulting problems from the incompletion of these substances and not harmonizing them.
3. Prepare the required recommendations to develop the monitored systems and the proper administration of the POPs substances.
4. Prepare to make a national plan and execution programs to implement proper administration of the POPs substances.
5. Aim to get technical help that is offered by international organizations and the parties related to the proper administration of the POPs substances and with what suits the priorities of the government plan to minimize the issuance of these hazardous substances and replacing them with substances that are safe for the health and the environment.
6. Help in providing the required information for the decision makers and people working in monitoring the chemical substances.

The priorities concerning managing the POPs

a. Water pollution:

Syria's region is divided into seven water pools and the main probable source of pollution of these pools is from draining water and industrial drain water as well as the random usage of the fertilizers and insecticides

Levels of pesticides in the ground water of Tartous district

Name of pesticide / Province	Sample no.	α – HCH (α – BHC)	Lindane (γ - BHC)	α - Endosulfan	Endosulfan Sulfate	Aldrin	2.4 – DDT	4.4 – DDT	2.4 – DDD	4.4 – DDD	4.4 – DDE
Tartous	1	0.0106	0.0227	n.d	n.d	n.d	0.0047	n.d	n.d	0.0400	n.d
	2	0.0170	0.0202	n.d	n.d	n.d	n.d	n.d	n.d	0.0516	n.d
	3	0.0110	0.0241	n.d	n.d	n.d	n.d	n.d	n.d	0.0705	n.d
	4	0.0214	0.0307	n.d	n.d	n.d	n.d	n.d	n.d	0.0473	0.0085
Lattakia	1	0.0134	0.0214	n.d	n.d	n.d	0.0018	n.d	n.d	n.d	n.d
	2	0.0269	0.0323	n.d	n.d	n.d	n.d	n.d	n.d	0.0663	n.d
	3	0.1360	0.0537	n.d	n.d	n.d	n.d	n.d	n.d	0.0515	0.0072
	4	0.0748	0.0442	n.d	n.d	n.d	0.0057	n.d	n.d	0.0076	0.0084
Detection limit (mg/kg)	DB-225	0.0012	0.0014	0.0027	0.0054	0.0020	0.0053	0.0042	0.0048	0.0052	0.0031

1 and 2 are Non IPM samples 3 and 4 are IPM samples

Levels of Pesticides in the Halab district

Pesticide	Concentration (mg/l)	Detection Limit (mg/l)	MRL in tap water (mg/l)		
			WHO	EU	Syria
Lindane	n.d	0.0005	2	0.1	2
Heptachlor	n.d	0.001	0.03	0.1	
Aldrin	n.d	0.001	0.03	0.1	0.03
Heptachlor epoxide	n.d	0.001	0.03	0.1	
Endosulfan	n.d	0.001			
DDE + Aroclor 1254	n.d	0.0005			
Dieldrin	n.d	0.001	0.03	0.1	0.03
Endrin + TDE	n.d	0.0005		0.1	
DDT	n.d	0.001	2	0.1	1
Methoxychlor	n.d	0.001	30		20

n.d = not detected (below the detection level).

Levels of pesticides in drinking water in the Souydai District

Pesticide	Concentration (mg/l)									Detection Limit (mg/l)	MRL in tap water (mg/l)		
	Alroom Dam		Almoshnif Dam		Jabal Alarab Dam		Houbron Dam		Alghaita Dam		WHO	EU	Syria
	Input	Output	Input	Output	Input	Output	Input	Output	Barrage				
Lindane	n.d	n.d	n.d	0.001	n.d	0.001	n.d	n.d	n.d	0.001			
Heptachlor	0.007	0.02	n.d	n.d	0.004	0.003	n.d	0.002	n.d	0.002	0.03	0.1	
Aldrin	0.004	0.003	n.d	n.d	n.d	n.d	n.d	n.d	n.d	0.002	0.03	0.1	0.03
Heptachlor epoxide	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	0.002	0.03	0.1	
DDE	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	0.001			
Dieldrin	0.006	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	0.004			
TDE	0.008	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	0.001	0.03	0.1	0.03
Endrin	0.005	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	0.001		0.1 2(USEPA)	
DDT	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**0.007**	**2**	**0.1**	**1**
Methoxychlor	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**n.d**	**0.001**	**30**		**20**

n.d = not detected (below the detection level).

Table showing levels of pesticides in drinking water in Halab district

Pesticide	Concentration (mg/l)			Detection Limit (mg/l)	MRL in tap water (mg/l)		
	Al Safira	Al Assad Dam	17 April Dam		WHO	EU	Syria
Lindane	0.025	n.d	n.d	0.0005	2	0.1	2
Heptachlor	0.00224	n.d	n.d	0.001	0.03	0.1	
Aldrin	0.00263	n.d	n.d	0.001	0.03	0.1	0.03
Heptachlor epoxide	n.d	n.d	n.d	0.001	0.03	0.1	
Endosulfan	n.d	n.d	n.d	0.001			
DDE + Aroclor 1254	0.0024	n.d	n.d	0.0005			
Dieldrin	n.d	n.d	n.d	0.001	0.03	0.1	0.03
Endrin + TDE	0.00077	n.d	n.d	0.0005		0.1	
DDT	0.00215	n.d	n.d	0.001	2	0.1	1
Methoxychlor	n.d	n.d	n.d	0.001	30	0.1	20

n.d = not detected (below the detection level).

Table showing levels of pesticides in drinking water from the Furat River

Pesticide	Concentration (mg/l)	Detection Limit (mg/l)	MRL in tap water (mg/l)
Lindane	n.d	0.001	2
Heptachlor	0.004	0.002	0.1
Aldrin	n.d	0.002	0.03
DDE	n.d	0.001	NA
Dieldrin	n.d	0.002	0.03
DDD	n.d	0.001	NA
Endrin	n.d	0.001	0.1
DDT	n.d	0.002	1
Methoxychlor	n.d	0.002	20

b. Air pollution:

1. Resurgences of warm gases:

Which is produced from the fuel usage in the sectors of industry, agriculture, transportation, and electrical power generation, and from the main pollutants that result from these sectors are /CH4-NOX-Co-Co2/.

2. Industrial pollution:

Among the industries that produce pollutants are:

- Cement industry: Considered to be one of the most polluting industries for its high production of dust and toxic gases from the furnaces according to the kind of fuel used in this industry (pale ontological fuel or organic fuel) although some of these factories are equipped with electrostatic precipitating devices to treat the resulting dust. A special concern is the formation of POPs that comes from using hazardous waste as a fuel. This is described by the Stockholm Convention as a practice that has, "…the potential for high formation and release of these [POPs] chemicals to the environment.
- Oil refining industry: we realize that these issues are generally in the surrounding areas of the oil refiners which negatively affects the surrounding cities according to the type of fuel used, the most important compounds produced from the oil refining industry are /H2S-SO2-NOX/ Refining of waste oils are listed as a possible source of POPs in Annex C of the Stockholm Convention.
- Electric power generating stations: the amount of pollutants that result from burning the fuel used in the electric power generators differ in a general way from the most important pollutants that are generated from energy generators / warm gases- So2-NOX-CO/ and some hangings that contain heavy metals and these stations are placed near some inhabited places as the case in Panias. Fossil-fuel fired utility and industrial boilers are listed as a possible source of POPs in Annex C of the Stockholm Convention.

3- Evaluating the health and environmental effect for the slowly decomposing POPs:

To evaluate the health and environmental effects from slowly decomposing POPs in the environment, research, analysis of the available data related to the concentrations of the POPs substances in the environment and vital media has been examined. It has also depended on the reports of the POPs substances, the inventory of PCB compounds and other POPs, and the emission reports of the dioxin and furan compounds. Preparing this report also required referring to a large amount of references.

To facilitate dealing with this issue, evaluating the hazards has been divided into three groups, the first included evaluating the hazards of the POPs insecticides, the second included evaluating the hazards of the PCBs, and the third included evaluating the hazards of the dioxin and furan compounds. In each group, the identity, properties and toxicity of each substance has been identified.

In Syria, several national committees have been formed that are interested in cases of managing chemical substances. These include several members from different concerned parties:

- The National Committee for Chemical Safety (located in the Ministry of Local Administration and Environment)
- The National Committee for Hazards Disposal (located in the Ministry of Local Administration and Environment)
- The Private Committee for the Public Health purposes Insecticides (located in the Ministry of Health)
- The High Consultant Committee for Agricultural Insecticides
- The Committee of Environment and Labor in the Chamber of Industry in Dimisquas.

The governmental institutions main role in the life cycle of chemical substances through the current agreed legislations in the Arab Syrian Region

1. Ministry of Local Administration and Environment

The local administration does not deal with chemical lsubstances unless in they exceed regulatory limits. Its role is mainly concentrated as a coordinating role between the concerned parties to form a harmonized complete system to manage chemical substances, and in the same time it has a monitoring role.

2. Ministry of Health

- Offers permission for the possession, import, export, selling, and buying medicine, medical supplies, and chemical substances.
- Forms the records and inspection procedures and storing conditions related to chemical substances.
- Convenience for the previous and final invoices related to importing chemical substances as well as following the chemical safety card with it.
- Organizing the importing and handling of insecticides for public health purposes.
- Keeping records of household chemical substances.

3. Ministry of Agriculture

- Organizing the trade of chemical substances in the agricultural field.
- Organizing the import of agricultural insecticides and the conditions of offering the license.
- Organizing the operation of offering the license to import insecticides and fertilizers.
- Monitoring the import of agricultural fertilizers and banning the entry of the internationally prohibited substances from them.
- Responsible for recording and testing the vitality of theses insecticides.

- Not allowing the import of prohibited insecticides.
-

4. Ministry of Industry

- Keeping record of the factories that produce and use chemical substances and categorizing them according to the industrial sector.
- Cooperates with concerned institutions about projects and evaluates their commitment to the regulations of public safety.
- Developing emergency plans for the industrial institutions that deal with hazardous substances.
- Participating by providing industrial licenses for construction projects.
- Committing large industrial institutions to having an industrial security department.

5. Ministry of Finance (Customs)

- Monitoring the entry processes of the substances and checking them in the laboratories.
- Returning the merchandise to its sources in case it does not meet the Syrian standard specifications, and protecting the country from the entry of hazardous substances and illegitimate trade of it.

6. Ministry of Local Affairs and Labor (as in Social Securities Pubic Institutions)

- Preparing and courses and training in the sector of health and job safety for different sectors.
- Studying the working environment and evaluating the physical, chemical, biological, and engineering job hazards, and suggesting the required solutions to improve the conditions of work through the inspection of industrial institutions.

7. Ministry of Economics and Commerce

- Offering the trade record for the careers
- The process of the final agreement of the license
- Monitoring food substances and drugs and performing the role of the justice officer whenever there are violations.
- Performing checks on the samples taken from the merchandise to match it with the Syrian standard specifications.

8. Ministry of Petroleum and Gases

- Setting the technical conditions records for the required chemical substances through the specialists (determining the substance, the place of usage, the chemical compound for the substance)
- Checking the samples for the chemical substances before storing them and assuring they fit with the conditions record.
- Storing and mobilizing them in regulatory means.

- Determining means of dealing and precaution from the chemical substances through the Department of Industrial Security.

9. Civil Defense

- Increasing the workers efficiency in institutions in dealing with emergency cases through performing courses for civilian defense.
- Offering first aid for the injured and moving them to the hospitals and health clinics.
- Evacuation of the threatened areas with chemical pollution.
- Controlling fire and explosions in case they happen
- Determining and performing private courses in case a fire attack occurs in the places that have PCBs available.

The following schedule shows the intersection of the responsibilities between the governmental ministries throughout the life cycle of chemical substances:

Ministries or concerned parties	import	production	storage	transportation	Distribution and marketing	usage	disposal
Local Administration and Environment	X	-	X	X	X	X	X
Health	X	-	X	-	X	X	X
Agriculture	X	X	X	-	X	X	X*
Labor	-	-	X*	-	-	X*	-
Economics and trade	X	-	-	-	X	-	-
Industry	X	X	X	X	X	X	-
Transportation	-	-	-	X	-	-	-
Civil defense	-	-	X	X	-	X	-
Customs	X	-	-	-	-	-	X
Petroleum and Oil	-	X	X	X	X	X	-

(X) Related, (-) not related, (*) involved in the work environment

The government's agreement on Stockholm Convention and the National Implementation Plan (NIP)

Syria participated in preparing for the Stockholm Convention through governmental negotiations since 1998, and participated in the party conference in April 2001, and signed and ratified the Treaty in 2002.

As to fulfilling its commitments stated in the Treaty, Syria has worked with UNEP Chemicals in Geneva and the GEF/UNEP program to get technical aid to prepare the

National Implementation Plan (NIP) and increase its capabilities to fulfill this agreement. The GEF/UNEP program has agreed to provide help to the region according to the project number GEF/2732-02-4560. Under project committee are establish to do research & studies to implementation this treaty

The importance of the NIP

1. Identify the size of the economic and health problems that are caused by these pollutants through identifying the size of import and export and usage of the POPs and their stockpiles.

2. Identify the systems that mange these substances that exist with the concerned parties for:

    - Studying the harmony, organizing and compliance between parties.
    - Identify the problems and negatives that exist in these systems.
    - Identify the effectiveness of applying these systems and the difficulties in applying them.
    - Determining and developing the role of each concerned party with the POPs
    - Determining the problems resulting from these systems not being in harmony.

3. Prepare the required recommendations to develop the systems of monitoring and proper management for the POPs and creating harmony between them and their means of application which grants protection to the country's environment and the health of civilians.

4. Prepare to make a NIP and executive programs to implement the agreement and properly manage the reduction of POPs with the goal of complete elimination.

5. Work on getting technical help that is provided by the Treaty, organizations, agencies, and international parties that are related to the proper management of the POPs, within what suits the priorities of the governmental plan and public interest to decrease the issuance of these hazards substances to the environment, and replacing them with safer alternatives.

6. Provide accurate information for the decision makers and the workers in monitoring the chemical substances.

The work on preparing this document started in the date 1/8/2005, through reviewing the UNITAR national profile that shows the information that should be collected when preparing a POPs profile and the workforce required for that. A national work team has been formed to gather information, and several meetings have been set to begin work.

Recommendations to dispose of the Persistent Organic Pollutants

The Syrian Arab Republic has signed several agreements and treaties of different levels (dual, Arabian, regional, and international) in different fields (industrial, agricultural, economic,,, etc) and among these agreements, it has signed and ratified the Stockholm Convention from the United Nations Environmental Program (UNEP) that is specific for POPs. The Treaty aims to protect human health and the environment by eliminating POPs.

This agreement has been ratified by the legislative decree number 54 in 2005. The Treaty offers help from international programs to Syria on technical information that helps avoid the possible hazards of these toxic substances and for conducting the required procedures to manage them with the required forms. In addition, the Treaty provides for technical and financial support to execute these programs and that eventually leads to raising the national capabilities.

The Ministry of Local Administration and Environment has been delegated to follow up executing this Treaty, since it concerns the safety of the environment. The Ministry will develop national work plans and training courses about attaining the proper management and elimination of POPs.

According to that the Ministry of Local Administration and Environment has specified a group of goals to achieve the environmental safety for POPs.

These goals are:

- Spreading the information
- Enlarging the knowledge of government officials and the public
- Specifying the sources, production amounts, and import amounts
- Warning about the hazards from these pollutants
- Determining the way of disposing of it

Realizing the obligations of Syria to prepare to face future problems, the Ministry has held several meetings, and studied the subject of the hazards of POPs and successfully extracted some of the important recommendations that will lead to limiting the hazards of these pollutants and accordingly achieve environmental safety.

The recommendations of the Environment Protection and Sustainable Development Society

The Environment Protection and Sustainable Development Society has developed recommendations within three consecutive phases:

1. The education phase
2. The monitoring phase
3. The participation phase

These phases should occur in the order above and not jump from education to participation without monitoring.

1. The education phase

This phase identifies and provides information about POPs, recognizing the hazards of their production, importation, and exportation and through explaining ways to deal with them and dispose of them. This happens through regular training courses for the users of these substances and involving them with the guiding programs and educating then through all media forms.

2. The monitoring phase

In this phase, we apply and develop the laws that are related to the proper management of the chemical substances in trade, transportation, storage, use, and the ability to dispose of them safely. This includes determining the concentrations of POPs in the environment to reveal the extent of the POPs problems.

3. The participation phase:

This includes consolidating relations with the international information agencies and NGOs that are concerned with chemical safety issues, as well as developing the systems to learn about chemical substances and wastes. In addition this includes learning and implementing safe disposal practices and procedures to protect workers' health.

According to the previously mentioned recommendations, the only way to achieve success in the required goal of this Convention is by exerting efforts to execute these recommendations. This needs continuous tracking from the responsible personnel in the chemical safety division in the Ministry of Local Administration and Environment in organization and cooperation with non governmental organizations (NGOs) concerned with the same issue where the execution of the recommendations is guaranteed according to their priorities.

This will also require national efforts to implement best available techniques and best environmental practices:

- The Ministry of Local Administration and Environment and the Public Organization for Environmental Affairs determined the amounts of POPs related to the production, import, and usage in the Arab Republic of Syria.(done)

1. The Ministry of Local Administration and Environment and the Public Organization for Environmental Affairs initiated with technical support from the chemical program of the United Nations Environmental Program (UNEP Chemicals) an inventory for electrical supplies that could contain PCBs compounds through 1/7/2002 - 15/2/2003. This was done through a team monitoring the project formed from the ministries (Ministry of Environment, Ministry of Electricity, Ministry of Petroleum and Oil, Center of Scientific Research, and subsidiary teams) to gather data about electrical supplies that could contain PCB-contaminated oil.

2. Studying the water pollution in Syria, divided the interior water in Syria into seven pools (Yermok pool, E'aasy pool, Coast pool, Berdi and 'A'ewaj pool, Quaik pool, Degla and Forat pool, and Badeya pool). The possible sources were determined for water testing as an essential health requirement and in addition to testing for pollution by industrial emissions and the random usage of fertilizers and insecticides.

3. Studying the air pollution (the emission of warm gases) volatile gases within the following sectors:

Generating electricity sector	35%
Industrial sector	16%
Agricultural sector	4%
Housing sector	21%
Transportation sector	24%

4. Studying the industrial pollution (the important polluting industries connected to the Persistent Organic Pollutants):

   a) oil repetition industry
   b) electricity generating industries

The following schedule shows the gas emissions resulting from electricity power generating according to the statistics of the year from 1994

Pollutant	CO2	CH4	N2O	NO x	CO	NM-VOC	SO2
Unit	Million tons	Kilo tons	Kilo tons	Kilo tons	Kilo tons	Kilo tons	Kilo tons
Amount	31	2.8	1.27	196	297	40	367

5. National strategies to decrease air pollution in the sectors:

   - Electricity generating sector: replace heavy fuels with natural gases; increase the effectiveness of the old electricity generating stations; using renewable energy.

   - Industrial sector: use natural gases; install devices to treat emissions and use clean technologies

   - Transportation problem: reorganizing traffic; replacing old vehicles with new ones; applying check-ups before renewing the car license

   - Housing sector: using environmentally friendly buildings; using economic lamps for lighting

   - Agricultural sector: increase conservatories; use agricultural wastes in producing vital gases instead of burning them

6. Studying earth pollution: phosphoric and chromatic organic insecticides have been used in environmentally unstable groups throughout the last four decades; organochlorine insecticides still have effects remaining till now in the soil due to their persistence.

7. Studying toxic chemicals: the national center is intending and following the exposure to chemical substances of all kinds with a plan being currently developed with using statistical tables.

8. Performing several projects with the help of the international programs with the purpose of developing the management of chemical substances, and these projects are:

9.

The name of the project	International donor	Activities related to the project
Chemical safety program	WHO	Training programs in the governorates- information network
Developing the work in the toxic center	WHO	Financing external scientific statements
Inventory of the PCBs substances and increasing the consciousness of dealing with these hazards substances	UNEP	Proper management of the PCBs substances
Inventory and management of the PTS substances	UNEP	Improving the management of the PTS substances
Slow decomposing persistent organic pollutants POPs	UNEP/GEF	Improving the management of the POPs substances
National information network about the hazards chemical substances	SDC	Developing the management of the hazardous chemical substances in the region
Career health program	WHO	Education through programs about deliberating chemical substances and dealing with it through symposiums and flyers.

10. Several national parties participate in educating workers and the public about the hazards of POPs and protection from them, each in the area of specialization and responsibility. The following are the main parties:

    a) the Ministry of Social Affairs and Labor
    b) the Ministry of Health
    c) the Ministry of Local Administration and Environment
    d) the Civil Defense
    e) the Ministry of Higher Education – Universities
    f) Non-Governmental Organizations

Summary

Although the government tries to improve the management of chemical substances, there remain some gaps. These gaps were studied carefully in a workshop held in 17/12/2005 till 19/12/2005 to discuss the national report on POPs. The workshop also identified the enabling activities to execute the Stockholm Convention and revise the systems and statements of the insecticides inventory in Syria to decreases its effect on the private and public sectors and the non-governmental sector.

And we thereby mention as an example some of these gaps:

1. The hazards resulting from POPs did not take the required priority till now in Syria.

2. There is not yet a united complete statement for the prohibited or constrained chemical substances although there is a primitive statement that needs to be developed.

3. Few scientific research investigations are available about the POPs substances, and there is a lack the required capabilities to perform such researches.

4. Lack of national specifications and standards related to the POPs substances.

5. Lack of the national information basis related to the POPs substances.

6. Lack of the qualified cadre and also the equipment needed to respond to chemical accidents and following them.

7. Lack of private laws related to applying the proper management procedures for the hazardous chemical substances including the POPs substances.

8. Lack of the coordination between Ministries that are related to the issues of the chemical safety

9. Lack of effective mechanisms to transform information between concerned parties with the chemical safety.

10. Lack of educational programs directed to the public about the hazardous chemical substances.

    - Regulating legislations to manage the POPs
    - Till now there is not any legislations directed privately to the POPs substances that regulate the import, storage and usage process, but several legislations and decisions has been made about the procedures and rules concerned with managing the chemical substances from the source till the final disposal of it as a waste passing through

transporting it and storing it, but some public rules has been issued relating to environmental issue about it.

- The law of protecting the environment number /50/ issued on the date /26/6/2002/ which mentioned the issue of decreasing the hazards resulting from the different usage of chemical substances that threaten environmental safety and putting the required standards for protecting it, it also mentions the issue of institutions that harm the environment with suggesting proper solutions to eliminate the hazards.

- The law of cleanliness number /49/ for the year /2004/ which mentioned the issue of the hazardous substances in a general way.

- The Ministry of Local Administration and Environment issued a national regulation for managing hazardous wastes and to dispose of it in a way that is safe and environmentally proper.

- The Syrian Specifications and Standards Agency issued some decisions related to the fertilizers, insecticides, and chemical substances used in industry.

- The Ministry of Health issued some decisions related to some public health insecticides and home chemical substances that regulate the process of importing and producing it.

- The Ministry of Agriculture issued some decisions related to the issue of the agricultural insecticides including their usage, deliberation, and the allowed limits for using these insecticides.

- All the used insecticides by both the Ministries of Health and Local Administration and Environment for fighting disease carriers and public health purposes is being decided on the following basis:
  1. To be reported from the World Health Organization to use in the field of public health
  2. To be recorded and allowed to use in the producing country for the same purpose
  3. To test all the insecticides to be sure of its effectiveness in the local conditions before it would be agreed upon from the permanent technical; committee for insecticides.
  4. The insecticide is for the benefit of both the Ministries of Health and the Local Administration and Environment and is decided according to the need based on the work plan. If a company would like to register its insecticide for this use

it should provide the required documents in addition to all the technical information on the insecticide within the international specifications stated in the World Health Organization (WHO).