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The International POPs Elimination Project

*Fostering Active and Effective Civil Society Participation in
Preparations for Implementation of the Stockholm Convention*

Tunisia Country Situation Report

Association for Environmental Protection in Kerkennah (APEK)

Tunisia
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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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Tunisia and Stockholm Convention

The Stockholm Convention on Persistent Organic Pollutants (POPs) was adopted in 2001 in response to the urgent need for global action to protect human health and the environment from POPs.

Tunisia became a Party to the Stockholm Convention, in 17 June 2004. Following its signature on 23 May 2001, a wide process of dialogue and information exchange was initiated by the Ministry of Environment with ministries and agencies concerned with the management of dangerous chemicals and wastes, and a number of high level meetings among all stakeholders were held to set the foundations for fruitful collaboration in the development of a National Implementation Plan of the Stockholm Convention to ensure ecologically sound management of POPs. Now that the preliminary inventories of POPs obsolete pesticides, PCBs-containing equipments, stockpiles and wastes containing PCBs, as well as releases of dioxins and furans are completed or under way, Tunisia is starting the preparation of Specific Action Plans for the management of these different POPs products. Ultimately, the National Plan for implementing Tunisia obligations under the Stockholm Convention will be developed, hopefully before 2006.

The POPs are chemicals that are highly toxic, persistent, bioaccumulate and move long distances in the environment. The Convention seeks the elimination or restriction of production and use of all intentionally and unintentionally produced POPs (i.e. industrial chemicals, by products and pesticides). Stockpiles must be managed and disposed of in a safe, efficient and environmentally sound manner. The Convention imposes also certain trade restrictions. The chemicals slated for elimination under Stockholm Convention are the pesticides aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene (HCB), mirex and toxaphene, as well as the industrial chemical polychlorinated biphenyls (PCBs). Countries must make determined efforts to identify label and remove PCB-containing equipment from use by 2025. The Convention also seeks the continuing minimization and, where feasible, ultimate elimination of releases of unintentionally produced POPs such as the industrial byproducts dioxins and furans.

1. Pesticides

| <i>Name of Pesticide</i> | <i>Situation in Tunisia</i> |
|--------------------------|---|
| DDT | Never produced. Use and import prohibited in 1984 |
| Aldrin | Never produced. Use and import prohibited in 1984 |
| Dieldrin | Never produced. Use and import prohibited in 1980 |
| Chlordane | Never produced. Use and import prohibited in 1984 |
| Endrin | Never produced. Use and import prohibited in 1984 |
| Heptachlor | Never produced. Use and import prohibited in 1980 |
| Hexachlorobenzene | Never produced. Use and import prohibited in 1984 |
| Mirex | Never registered or authorized |
| Toxaphene | Never produced. Use and import prohibited in 1984 |

2. Production, distribution, utilisation, import and export of POPs in Tunisia

None of the POPs pesticides were ever produced in Tunisia as needs were covered through imports. At present, 24 companies produce or formulate pesticides, and a huge number of establishments commercialize more than 595 pesticides for agricultural applications, representing 303 registered active substances. All the pesticides used for agricultural purposes are registered and the register is kept up to date. All pesticides used for agricultural purposes are formulated, commercialized and distributed by companies registered with the Ministry of Agriculture (some 300 registered distributors around the country).

Pesticides used for public health purposes are subject to prior authorization from the Ministry of Health. Ninety commercial products representing some 50 registered active substances are used in public health and domestic purposes.

From 1970 to 1985, one company in Tunisia (SACEM, in the Tunis area) was manufacturing transformers to meet national requirements. This company imported 900 tonnes of PCBs for the manufacture of 908 transformers.

Obsolete stocks, contaminated sites, and opportunities for disposal

- *Obsolete stocks*

Preliminary studies in 1997 revealed the existence of a number of stocks of obsolete pesticides, containing mostly HCH, DDT and other organochlorines. These stocks were created mostly through massive overprovision in relation to actual needs for

public health vector control and combating migratory pests such as locusts. Some of these stocks date back more than 45 years.

The stock of obsolete or unwanted pesticides was estimated, in 2001, to be 882 tons. This figure was updated, in 2003, to 84000 liters and 1472 tons of obsolete pesticides spread all over the country in some 132 sites, belonging to the Ministry of Agriculture or the Ministry of Public Health.

As for pesticides POPs, the following obsolete products and quantities were identified:

- Dieldrin: 2000 Kg.
- Aldrin : 160 Kg.
- DDT : 45 Tons.
- Toxaphene: 65 Kg.
- 340 Tons of HCH were also found in different parts of the country.

- ***PCB contaminated wastes***

PCBs have been widely used in Tunisia since the 1970s in electrical transformers. Since 1969, Tunisia manufactured (from the imported quantities of PCB), or imported PCB-containing transformers for the needs of industry, hospitals and public or private buildings, as well as for the national electricity company (Société tunisienne de l'électricité et du gaz -STEG).

In 1986, the import into Tunisia of transformers or any equipment containing PCBs was banned. Moreover, the use of PCB-containing transformer oils after maintenance and repair was also prohibited.

However, a large number of transformers containing PCBs are still used or presently stored in unsatisfactory conditions and pose risks to human health and the environment. This number continues to increase.

In 2004, a preliminary study, which started in 2001, identified 1079 PCB contaminated transformers in Tunisia, representing 720 tons of liquid PCBs and 2900 tons of contaminated equipments. These figures are being updated to include all the transformers and condensers out of service held by the different users, as well as the estimation of the contaminated wastes and soil.

- ***Contaminated sites***

There is no detailed inventory of contaminated sites in Tunisia. However, a preliminary identification of contaminated or potentially contaminated sites is underway.

The first results of this study indicate that about 150 sites are potentially contaminated by ether pesticides or chemicals.

- **Sources of by-products (PCDD/PCDF, HCB and PCBs)**

No inventory of these compounds was ever made in Tunisia. However, because there are no waste incinerators in Tunisia, this does limit the magnitude of potential sources. The only pulp and paper plant in Tunisia that makes paper from Alfa uses elemental chlorine for bleaching, which could be a source of PCDDs/PCDFs.

Other potential sources are:

- Fossil fuel powered power plants;
- Cement kilns;
- The one waste oil refinery (capacity 16000 tons / year);
- Textile and leather industries;
- Certain thermal processes in the metallurgical industry;
- Motor vehicles, particularly those burning leaded gasoline; and
- Biomass burning.

The detailed preliminary inventory started in November 2004, according to the UNEP “Standardized Toolkit for the Identification and Quantification of Dioxin and Furan Releases”.

Evaluation of opportunities for the disposal of wastes

- ***Landfilling***

Currently, landfilling is the main method of disposal, essentially for costs reasons. Since 1996, a national plan is under implementation, to close pirate landfills and to establish controlled waste treatment centers.

- ***Incineration***

There are no waste incinerators in Tunisia for either domestic or industrial wastes. A few medical wastes incinerators of limited capacity and performance exist in a few hospitals. A central incinerator for hospital wastes, for the Tunis area, was planned but the project has been abandoned. An action plan for the management of the medical wastes, based on the sterilization treatment, is being prepared.

- ***Other capacity***

A hazardous waste treatment centre is under preparation with an annual capacity of 65,000 tons. No incineration is planned to occur at this center.

Picture 1. Sterilization unit for medical waste



Legislation and regulations

- ***Pesticides***

The trade, distribution and use of pesticides for agricultural purposes have been systematically regulated since 1961. Any pesticide that is imported or formulated in the country has to be registered with the Ministry of Agriculture. After the technical committee confirms that the product is safe and effective, authorization is given for one or more specific applications. However, the implementation of these regulations is not always rigorous, particularly the regulations that govern the labeling, conditioning, handling, transport and storage of these products.

Pesticides used for public health purposes are also subject to registration with the Ministry of Public Health. Texts that govern their uses are under preparation.

- ***Enforcement and illegal use***

The methods used to analyze and control pesticide products are those standardized at the international level (CIPAC). One laboratory of the Ministry of Agriculture (Laboratoire de Contrôle et d'Analyses des Pesticides, created in 1985) has the capacity to test formulations. The laboratory of the National Institute for Nutrition of the Ministry of Public Health (Laboratoire de l'Institut National de Nutrition) and the Central Laboratory of the Ministry of Industry (Laboratoire Central) are responsible for pesticide residue analysis in water and foodstuffs.

In spite of these efforts, however, the National Institute for Statistics (Institut National des Statistiques -INS) revealed the importation of banned compounds that were not authorized by the Ministry of Agriculture or Public Health. This is one example illustrating the limitations of current procedures for the control of imports. Moreover, investigations have shown that banned compounds were still being illegally imported from neighboring countries where their use has not been prohibited.

- **Wastes**

Obsolete pesticides, PCBs and organic by-products having similar characteristics to POPs are considered hazardous wastes under Tunisian regulations (decree n°2000-2339 listing hazardous wastes).

Consistent with waste management and disposal legislation (Law n° 96-41, 10 June 1996), any person whose activities are producing wastes, or who is storing wastes under conditions that may adversely affect human health or the environment, is responsible for their disposal under conditions that do not pose unacceptable risks to human health or the environment.

Companies and establishments that produce hazardous wastes are required to provide to the Ministry of Environment with details of their origin, amounts, characteristics and intended uses as well as associated management and accounting procedures. Records are maintained for 10 years.

New industrial, agricultural, or commercial applications are subject to authorization by the Ministry of Environment following the conduct of an environmental impact assessment study.

Coordination mechanism

Tunisia has not prepared a National Profile for Chemicals Management. However, a framework for coordination among stakeholders concerned with the management of dangerous chemicals was introduced in connection with the preparation of regulations on the management of dangerous chemicals. To this effect, committees, including ministries and government agencies, trade associations, private sector research and academic institutions and non-governmental organizations have been established.

Tunisia became a Party to the Stockholm Convention, in 17 June 2004; Following its signature on 23 May 2001 a wide process of dialogue and information exchange was initiated by the Ministry of Environment with ministries and agencies concerned with the management of dangerous chemicals and wastes., and a number of high level meetings among all stakeholders were held to set the foundations for fruitful collaboration in the development of a National Implementation Plan of the Stockholm Convention to ensure ecologically sound management of Persistent Organic Pollutants. Now that the preliminary inventories of POPs obsolete pesticides, PCBs-containing equipments, stockpiles and wastes containing PCBs, as well as releases of dioxins and furans are

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Evaluation of the effects of POPs on health and the environment in Tunisia

A study conducted in 1987 revealed organochlorine residues, mostly DDT, HCB and γ -HCH (Lindane), in maternal milk, umbilical cord blood and adult blood. For maternal milk, the mean concentration of DDT was reported as 145 $\mu\text{g.l}^{-1}$, the mean concentration of HCB at 30 $\mu\text{g.l}^{-1}$, and the mean concentration of γ -HCH at 39 $\mu\text{g.l}^{-1}$. Residues were also measured in blood samples, at the $\mu\text{g/l}$ level.

Another study was conducted in 1983 to assess the level of organochlorine residues in eggs of peregrine falcons that provides an indication of overall ecosystem health. The following compounds were detected: DDT (and metabolites p-p'-DDE and p-p'-DDD), HCB, Dieldrin, Heptachlor and HCH (mostly γ -HCH). A number of effects were also observed, in particular sterility (no egg laying following mating), eggshell thinning and reduced sizes of eggs that failed to hatch. As a consequence of this contamination, the peregrine falcon in Tunisia is threatened with extinction, and since that time peregrine falcon is protected by law.