



a toxics-free future

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International SAICM Implementation Project (ISIP)

In 2010, in an effort to demonstrate SAICM implementation via IPEN Participating Organizations, IPEN launched an International SAICM Implementation Project, also known as ISIP. ISIP aims to mobilize resources for initial enabling activities pertaining to national priorities, in keeping with the work areas set out in the strategic objectives of section IV of the SAICM Overarching Policy Strategy.

In particular, the ISIP supports the Governance objective of SAICM's Overarching Policy Strategy paragraph 26, which calls for enhanced "cooperation on the sound management of chemicals between Governments, the private sector and civil society at the national, regional and global levels."

In addition, ISIP builds on the 2008-2009 Global SAICM Outreach Campaign to raise awareness about SAICM and strengthen collaboration among the public interest, health and labor sectors.

ISIP Objectives

ISIP's four objectives include:

- Promoting the need for sound chemicals management
- Advancing National SAICM Implementation
- Promoting global SAICM implementation by global civil society
- Building capacity among NGOs developing countries and countries with economies in transition

Title of activity: Facilitate the promotion of non-combustion technologies of obsolete pesticide phase-out in Russia

NGO: Volgograd-Ecopress

Country: Russia

Date: November 2010

Elements of SAICM Covered:

Identify, explain problem, make initial recommendations on how to address the problem, may be linked to public awareness-raising about the issue; Facilitate the identification and disposal of obsolete stocks of pesticides and other chemicals (47, 68)

Provide a physical description of the site

This region, located in the southeastern part of the East European Plain, is a connecting link between all Russian regions, the CIS countries, and the whole world. It shares a border with many neighbors, including Voronezh, Saratov, Astrakhan, and Rostov regions, the Republic of Kalmykia, and Kazakhstan. The Volga River divides the region into the high Right Bank (elevations to 358 m) and the low Left Bank (or Trans-Volga). The Volga and the Don are the

region's main rivers. Volgograd Region has an area of 113 900 km² (0.67% of the Russian Federation).

The region is made up of 33 districts, 19 cities, and 29 towns. The cities of Volzhsky (founded in 1954), Kamyshin (1668), Mikhailovka (1948), Uryupinsk (1929), and Frolovo (1936) are under regional administration, while Dubovka (formed in 1734), Zhirnovsk (1958), Kalach-on-Don (1951), Kotelnikovo (1955), Kotovo (1966), Krasnoslobodsk (1955), Leninsk (1963), Nikolaevsk (1967), Novoanninsky (1956), Pallasovka (1967), Serafimovich (1933), and Surovikino (1966) are under district administration. Volgograd, Volzhsky, and Kamyshin are the region's main cities.

The region has a continental climate with hot, dry summers and cold winters with little snow. Annual precipitation varies from about 500 mm in the northeast to 250 mm in the southeast. The average January temperature ranges from -8 °C to -12 °C, and the average July temperature is +23 °C. Most of the region is located in the dry steppe and semidesert zones. Soils are divided into five different zones: steppe black earth (chernozem), dry steppe light chestnut, dry steppe chestnut, semidesert light chestnut, and Volga-Akhtuba floodplain.

Hazardous environmental emissions from stationary sources exceed 180 000 tons, and atmospheric pollution levels in Volgograd and Volzhsky have remained high over a period of many years. Industrial production activities result in emissions of more than 1 million tons of toxic wastes into the atmosphere, only 18% of which are recovered and neutralized. Authorized dumps and waste disposal sites occupy 5200 hectares of land. Effluent discharge into small water bodies totals 268 million m³, including 51.6 million m³ of polluted water. Seventy-three companies with 114 on-site water outlets where scientific investigations are carried out are currently being monitored, as are the Volga and Don rivers. A mechanical sludge dewatering plant with a capacity of 50 tons per day, which started up in 1996, allows a reduction in the area of sludge fields, the curtailment of polluted water discharge into the Volga River, and the briquetting of wastes. Damaged land covers an area of 2800 hectares; 800 hectares of land are reclaimed each year. Forest regeneration work is being carried out on 2600 hectares of land.

In recent decades, an environmental emergency developed at the southern outskirts of Volgograd due to the wastewater collection/evaporation ponds of Khimprom and Kaustic companies. These wastewater collection ponds with their overall area of 160 km² caused air, soil and groundwater pollution in the area of 720 km². More than 50 chemicals compounds were identified in the pollution zone (chlorine, organofluorine compounds, phenols, arsenic, lead, vinyl chloride, 1664, etc.). As a result, residents of numerous settlements of Svetloyarskiy district of Volgograd oblast cannot use their local drinking water sources and have to rely on trucked water - the situation may induce social tensions.

Give a history of the site

According to official data about 300 tons of obsolete and banned pesticides are stored there. The storage facilities belong to the regional authorities.

Description of the chemical characterization

Based on data submitted for the parliamentary hearings in the State Duma of the Russian Federation in 2004 and on materials to consider pesticides and POPs issues at the Security Council of the Russian Federation (2002-2004) at territory of the Russian Federation, there is a stock of organochlorine pesticides banned for application, about 1,100 tons, including: 151 tons of DDT, 39 tons of HCT (hexachlorocyclogersan), 90 tons of PCK (polychlorokaphen), 28 tons of PCP (polychloripinen) and 305 tons of hexachlorane.

In the Volgograd region 300 tons of obsolete organochlorine pesticides banned for application are stored. The amount consists of DDT, HCT, hexachlorane, HCB, and lindane.

Description of the environmental and health consequences

Obsolete, unwanted and banned pesticides and persistent organic pollutants (POPs) are serious environmental hazards. Leaking and corroding metal drums filled with obsolete and dangerous pesticides dot urban and rural landscapes. These chemical leftovers have become villains in the agricultural world they were designed to help, affecting not only a nation's agriculture and its environment, but also fundamentally the health of its people and consequently development in general, be it in rural areas or under urban conditions. This global environmental tragedy is a direct result of several decades of mishandling and misuse. The unaware therefore draw water from contaminated sites for their own survival and that of their animals.

According to official data, Russia's toxic legacy amounts to more than 40 000 tons of obsolete and banned pesticides. Yet while these pesticides are no longer useful for agriculture, they continue to poison soil and water, while the structures built to contain them are literally collapsing. Pesticide washes away with the snow and rain, and people help themselves to small amounts for use in their gardens and homes, sadly unaware of the high risk to them. Obsolete pesticides enter the environment because of poor storage conditions, theft, flooding, and accidental fires. Since many pesticides contain persistent organic pollutants (POPs), they persist in the environment and are being transported by air or water pathways to areas remote from their original locations, where they enter the environment. In addition to POPs, pesticides often also contain heavy metals. Stocks of obsolete and banned pesticides, especially under poor storage conditions, therefore represent a major global environmental and health threat.

The overwhelming majority of women living nearby pesticide storage facilities and dumps reported cases of reproductive disorders: spontaneous abortions, premature births, alterations of their menstrual cycles, stillborn cases, anemia, fetal asphyxia, birth defects, etc. Additionally, the environmental problems of uncontrolled pesticide pollution are well known. Toxic pesticides in both urban and agricultural settings are responsible for the deaths of many birds, fish, and the smaller aquatic animals that fish depend on for food. More generally, pesticides reduce species diversity in the animal kingdom and contribute to population declines in animals and plants by destroying habitat, reducing food supplies, and impairing reproduction. Our projects have demonstrated soil and food contamination by banned pesticides such as DDT and lindane in different parts of Russia, including private land plots.

Description of who is responsible for the site

Local municipalities (local authorities in the municipalities where the storages are located)

Description of the plans for cleanup

There are no concrete plans for cleanup. Some municipalities are in favour of burning, some prefer long term storage and some prefer transportation to a specialized facility for incineration. Our project is the first step to start the cleaning up process on site using a non-combustion technology of biodegradation.

Project Outcomes:

Description of the activity conducted

A workshop on non-combustion technologies for the elimination of obsolete pesticide stockpiles was held in Volgograd with the participation of local authorities, academia, NGOs, and managers of industrial facilities working on waste elimination, to catalyze the efforts to address the pesticide stockpiles via non-combustion technologies. Based on the scientific analysis conducted in the region, several prospective non-combustion technologies were indicated. One of them is based on the use of bioglaucanite, a substance that breaks down pesticides. Its deposit is located in Volgograd region. Preliminary tests demonstrated high efficiency of the use of bioglaucanite for the elimination of hazardous pesticides.

The following issues were discussed:

- results of bioglaucouonite use for pesticide elimination and remediation of contaminated soils on the experimental plots;
- recommendations and suggestions for a regional policy on pesticide management;
- results of bioglaucouonite use by chemical and petrochemical enterprises; and
- a list of prospective territories in the Volgograd region for introduction of the technology of bioglaucouonit use for pesticide elimination.

A database of non-combustion technologies prepared by Eco-Accord in cooperation with MAMA-86-Kharkiv, Center of Environmental Solutions (Belarus), Volgograd-Ecopress and other organizations was presented. The database contains information on more than 70 modern waste management technologies. It allows interested producers and consumers to get information on all tested industrial-scale technologies; technologies approaching the stage of industrial application; promising laboratory-scale tested technologies with good chances of further development, as well as on underdeveloped technologies with unclear capacity, that are likely to reach an industrial application scale in the case of further research. In addition to brief description of technological processes, the database contains information on relevant economic considerations, waste treatment costs, health and environmental safety data, contact information of developers and equipment suppliers.

The results of the round table were broadly disseminated via media, and they were also put on the websites of Volgograd-Ecopress and Eco-Accord. A newspaper article was published and a radio program was broadcasted to raise the awareness of local citizens on non-combustion technologies of obsolete pesticide elimination.

A special case study of pesticide elimination using a non-combustion technology of biodegradation based on bioglaucouonite use was presented. The case study is based on the experience of bioglaucouonite technology utilization in Kotelnikovskiy territory of the Volgograd region. The dynamic of the decay process of pesticide degradation was demonstrated. The presentation is attached.

Impact on target groups:

The implementation of this project provided decision makers responsible for obsolete pesticide management with a reasoned, analyzed and research-based approach to address pesticide contamination of the environment.

All stakeholders (control environmental bodies, sanitary and epidemiological services, heads of agricultural and industrial facilities) received detailed information about the technology of pesticide elimination by bioglaucouonite. They then raised problems and asked questions regarding this technology to people who had developed it and to those who implemented the technology in practice at the experimental plots.

After the workshop, chemical and petrochemical enterprises decided to consider the possibility of using the technology at their industrial facilities, including the phase-out of their toxic wastes.

NGOs that participated in the workshop received one more argument for their advocacy work against incineration in favor of biodegradation technique.

Impact on target policies:

The target policy is the elimination of obsolete pesticide stockpiles in the Volgograd region and beyond using a non-combustion technology of biodegradation developed and approved in Volgograd. This relatively cheap, affordable and effective technology proved to be efficient and reliable at experimental land plots in the Volgograd region. The ISIP project helped to make a significant step forward in persuading local authorities about the benefits of the technology, which proved to be environmentally safe and economically feasible. Recommendations and suggestions for the regional legislative body responsible for the adoption of technical regulations on bioglaucouonite use for soil remediation and for obsolete pesticide and oil sludge

elimination were prepared and presented to the workshop participants. Representatives of the local control environmental bodies, sanitary and epidemiological services decided to further consider the recommendations with the goal of utilizing them in their efforts to address the problem of obsolete pesticides in the region.

Outreach to stakeholders:

The workshop was attended by control environmental bodies, sanitary and epidemiological services, heads of agricultural and industrial facilities, and NGOs. Volgograd-Ecopress has a long history of cooperation and partnership with these stakeholders. It continues working with all of them on issues of obsolete pesticide stockpiles and other environmental issues of mutual concern.

Deliverables, outputs and/or products:

- A list of territories where bioglaucouite based technologies will be introduced for obsolete pesticide elimination;
- Recommendations and frameworks for technical regulations on bioglaucouite use (for three types of bioglaucouite use, namely pesticide elimination, remediation of contaminated soils, and elimination of oil sludge);
- Recommendations and suggestions for regional legislative body responsible for adoption of technical regulations on bioglaucouite use for soil remediation and for obsolete pesticide and oil sludge elimination;
- Press-release for local media;
- Radio program on local and regional radio;
- Internet publication;
- Dissemination of project outcomes via Eco-Accord Information Service on Chemical Safety; and
- Information letter for Volgograd industrial facilities (7 enterprises).

Communication Efforts:

- The following information materials were prepared to communicate the results of the workshop to the public:
- Press-release for local media;
- Radio program on local and regional radio;
- Internet publication;
- Information about the project and its deliverables were disseminated via Eco-Accord Information Service on Chemical Safety

SAICM National Focal Point:

There is no SAICM National Focal point in Russia

NGO Recommendations for next steps:

We suggest the organization of a two-day workshop in Moscow that will bring together national and local government staff, scientific researchers, company representatives, communities and NGOs. The workshops will examine the problem and the various possible solutions from the point of view of economic considerations, waste treatment costs, and health and environmental safety data. It is important that Russian Federation Ministry officials support the municipal authorities in their shift to non-toxic alternatives, so this workshop is a key piece of moving that agenda.

Following the workshop in Moscow, we will organize a similar workshop in Volgograd. Officials in Volgograd have worked with us for many years on this problem, and are ready for this final step. As part of the workshop we will demonstrate "Bio-Glaucouite" Preparation as a non-combustion technology developed locally for the elimination of one metric tonne of obsolete pesticides.

Following the demonstration we will prepare a paper describing the process of elimination and the results. In the second year of the program, we will also conduct two one day workshops in Volgograd and Rostov (another city that has worked with us for years on this problem) to discuss how we eliminated a tonne of obsolete pesticides in the Volgograd region. With this practical experience, municipal authorities in both cities will now be able to eliminate this problem which has stymied them for years. We will then develop recommendations and a strategy to promote the use of this technology in other regions of Russia. Our contacts in Moscow, most of whom will attend the first workshop, will be important allies in this process.

This project is an important next step in cleaning up some of the most polluted places on earth. The process has been ongoing for many years, and this project will be key to bringing much organizing, research, and advocacy to fruition. For municipal authorities, knowing that they can be rid of this terrible problem in a cheaper and safer way will be a key catalyst to solving the problem. The result will be the protection of millions of lives and thousands of hectares of land and water from the continued poisoning from these pesticides.