

MEDIA RELEASE

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POP pesticides threatening our water resources:

Best practices in the disposal of stored and buried pesticides

An estimated more than one million tons of obsolete pesticides and related production waste are threatening the environment worldwide. Improper use and storage cause up to 98 percent of pesticides to leak into soil and water. Traces of pesticides are found in virtually any body of water today. What all POP (persistent organic pollutants) pesticides have in common is that they continue to be hazardous for decades and even centuries because degradation in the environment is very slow and they may have serious adverse health effects.

Pesticides have been used in agriculture and to combat tropical diseases for many years. Time and again obsolete stocks were simply buried or taken to landfills. The Stockholm Convention, which took effect in 2004 and outlaws the most problematic POP pesticides, now endeavours to locate and safely dispose of these contaminated sites.

With its Water for Life and Peace programme, Green Cross Switzerland supports the preservation of vital water resources and access to clean drinking water by the proper removal and safe disposal of toxic pesticides. To effectively control the risks the transfer of know-how is required on the safe handling of these contaminated materials and sites and on the prevention of a further accumulation of such volumes of pesticide waste in the future. To do this, the FAO (UN Food and Agriculture Organisation) has developed concepts that are in line with the best international practices. Since 2008 Green Cross Switzerland has been coordinating a number of programmes in the former Soviet Union and in West Africa, which are designed to establish institutional capacities to identify and safely dispose of obsolete pesticides.

Thousands of tons of DDT buried in unauthorised dumps

Forestry is an important industry in the Tomsk region of Western Siberia where pesticides were used extensively. Between 1953 and 1957, forests were sprayed by aerial application with vast amounts of highly effective DDT to stop an invasion of silk moth caterpillars. According to former forest workers, tens of thousands of tons of unused pesticides were randomly buried after the DDT ban went into effect. Some of it is still stored in crumbling old warehouses or sitting in waste dumps. Most affected are the districts of Pervomayskoye, Parabel, Teguldet, Kolpashevo and Tomsk where several tens of thousands of tons of obsolete pesticides and contaminated materials are suspected.

Expert training in the REA method for buried POPs

In June of 2012 Green Cross organised a training course in the preparation of pesticide inventories for ten specialists from Tomsk. During the training, a site with 15,000 tons of DDT and contaminated soil was found in Teguldet (northeast of Tomsk). The soil samples that were taken revealed a massive environmental burden in some areas. Remediation efforts are currently underway. After the training, at the request of the government of Tomsk, Green Cross experts developed a strategic plan to identify and take stock of other previously unknown potential DDT sites in the Tomsk region. Between 13 and 17 October 2014 specialists from Tomsk and from various countries are undergoing training in the use of REA (rapid environmental assessment), a technique applied to identify contaminated land. The training focuses on the classification and prioritisation of pesticide dumpsites and

contaminated soil. The REA method is designed to quickly prioritise and diagram risks and thus provide government agencies with a science-based framework for their decision as to which sites need to be addressed first. The clean-up approach varies depending on the toxicity of the pesticide and the composition of the waste deposit and may include digging up old pesticides, packing them into UN-certified plastic or steel drums and taking them to a special waste incinerator in Germany, France or Poland .

In the territory of the former Soviet Union, there are many unauthorized dumpsites with up to ten thousand tons of buried pesticides. For cost reasons the traditional method used to identify a contaminated area through sampling and laboratory analyses and by developing a Conceptual Site Model (CSM) is not feasible. Green Cross Switzerland and the Blacksmith Institute are using the Rapid Environmental Assessment (REA) method to register contaminated sites worldwide. The technique is designed to prioritise the risks based on 50 to 100 easily identifiable criteria. The REA method has been refined for use in pesticide-contaminated areas and training has been offered since 2014 in Tomsk and in a number of other regions of the world.

Since 2009, in cooperation with the FAO and other partners, Green Cross Switzerland has trained 126 experts from 12 countries in a variety of subjects related to the safe storage of obsolete pesticides. In Azerbaijan and Belarus, 218 tons of old pesticides had been packed into UN-certified drums by 2012. Another 180 tons of DDT are expected to be packed up and properly disposed of by 2015. Since 2011 Green Cross Switzerland has been in charge of coordinating a GEF project regarding alternatives to DDT in combating tropical diseases in the Caucasus and in Central Asia. Non-chemical methods to control tropical diseases are being developed by collaboration with UNEP, WHO and other partners.

Pesticides cause different symptoms depending on their ingredients

According to studies conducted in 2001, 50,000 tons of POP pesticides are estimated to be stored in Africa, 30,000 tons in Latin America, and over 250,000 tons in Eastern Europe, Russia, Central Asia, and the Caucasus. Of the 23 now banned POP chemicals lindane accounts for approx. 70 percent of the waste volume of POPs worldwide. Based on an estimate by J. Vijgen this represents about 4.8 to 6 million tons of lindane waste. DDT was one of the most popular pesticides. Not only is it highly efficient, it is also easy and inexpensive to produce. Around two million tons of DDT have been produced worldwide since the 1940s. Starting in the 1970s the use of DDT was prohibited in many countries as adverse health effects became increasingly evident. The Stockholm Convention does not call for an absolute ban on DDT, but it limits the use to tropical diseases. Some 25, mostly African nations have applied this exemption clause.

Worldwide there are several tens of thousands known pesticide formulations with approx. 3,000 active ingredients, such as 2,4-D, glyphosate or mercury. This is the reason why pesticides can cause a wide variety of symptoms. For example, DDT leads to infertility in seals and to the thinning of the eggshells of bald eagles, thus preventing the birds from reproducing. In Greenland, women of childbearing age are advised not to eat whale and seal meat as it contains large amounts of DDT and other POPs and heavy metals. Neurological problems experienced by workers exposed to pesticides include Alzheimer's and Parkinson's. Asthma and an increased risk of some forms of cancer pose additional health threats.

In addition to arsenic, lead, chromium, mercury, and radioactive substances, pesticides are among the six most hazardous environmental toxins causing the most harm to public health overall (source: The six most dangerous toxins to human health 2010, www.greencross.ch).

Green Cross Switzerland is committed to conquering the long-term effects of industrial and military disasters. With its Water for Life and Peace programme, the organisation promotes access to clean water. Top priorities are the improvement of the quality of life of people impacted by chemical, radioactive and other kinds of contamination and the promotion of sustainable advancements in the spirit of cooperation instead of confrontation. The goals of the Zewo-certified environmental organisation are supported by the Green Cross parliamentary group consisting of 25 members of the Council of States and 82 members of the Swiss National Council, all working across party lines. Green Cross International, headquartered in Geneva, was founded in 1993 by Mikhail Gorbachev, former President of the Soviet Union.

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