

Destruction of prohibited and deteriorated pesticides in Kyrgyzstan

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At the end of the 80-s there was more than 1 million hectares of tilled agricultural fields, which consumed 5,000 tonnes of pesticides. But by the end of 90-s the consumption of pesticides declined to 1,100 tonnes used by a tilled area of 423 thousand hectares. Such decrease was attributed to the lack of financial resources for purchase and change of tilling structure.

Before 1985, the Republic of Kyrgyzstan was mostly supplied with chlororganic and organophosphorus pesticides at an application rate of more than 10 kg which induced more than 5 kg pesticide load / hectare. By the end of 90s with the use of peritroids the load was decreased to 2-3 kg / hectare. At the beginning of 60-s, it was thought that the chemicals could solve all the agricultural production problems associated with vermin, weeds and plant diseases. However, this optimism faded after characterisation of these chemicals which indicated their long persistence and accumulation in the environment that lead in the end to negative affects on human beings who consumed agricultural products or involved in pesticide application. This led to the prohibition of some of the most hazardous groups of pesticides from production and use, which created another problem of prohibited pesticides that could not be destroyed due to the lack of finances.

As a consequence, 171 tonnes of prohibited pesticides (basudin, nitrophen, tiotan, butaphos, atrazin, agelon, propasin, granosan, TMTD and others) were stored at the end of 1994 in the Republic of Kyrgyzstan. Although the usage of the mentioned pesticides was prohibited in the republic, some of them were illegally used. Lack of corresponding control, due to the collapse of the kolkhos-sovkhoz system and the reorganisation of Selkshokhimia service, was the reason that the stocktaking of pesticides and the reports to the higher authorities had stopped. Due to the absence of the control of the kept chemicals, the storages for these chemicals became useless. Their chemical composition changed which increased their dangerous effect.

It is generally known that storage of the unused pesticides in the developing countries and countries with transfer economies represents a serious and a recognised long-term threat to human health and environment. The impact of this process is not only local but also global where environment and wild life on a larger scale are affected, as these chemicals are persistent toxic organic pollutants.

We know that the globe consists of many small local structures. Kyrgyzstan has the 198,500 km² territory and thus has a little meaning to the world on a global scale. But the threat of environmental pollution is big because these prohibited pesticides were kept in each of the 400 farms belonging to the republic. After their collapse, a few small peasant farms were founded in which no pesticides were kept.

Also, our small Kyrgyzstan became the source of pollution not only for its own territory, but also to the surrounding environment where prohibited pesticides can be transferred from their original release point through air, water and animals transfer and finally will be accumulated in the soil and water of the neighbouring ecosystems.

This ecological problem is a catastrophe, mainly for the developing countries with the lack of financial support, equipment or experience for handling such problems. Therefore, UNEP experts recommended the participating countries (mainly CIS countries) to hold a meeting in order to develop national plans for pesticide control and conduct an inventory of the prohibited and deteriorated pesticides according to the format suggested by FAO. Also, UNEP was requested to provide technical assistance to CIS-countries for establishing inspection organisation bodies and running expertise, as well as evaluation of technologies for destruction of the prohibited and deteriorated pesticides.

Currently, no information is available about quantity, quality and the places where prohibited pesticides were kept, since the storage was carried out by individuals at their private farms and not by an organisation. That is why the experts of UNEP have stated how important it is to solve the problem of prohibited pesticides on the global, national and regional level.

Thus, the main purpose of project was the complete elimination of the danger on the environment that could arise from the pollution by these pesticides. This can be achieved by the fulfilment of the following tasks:

- Conducting inventory of the prohibited and deteriorated pesticides at the storage sites and develop a database;
- Determining their chemical and physical characteristics and toxicity category;
- Determining methods of their utilisation and then develop technology of landfilling and technological documentation;
- Conducting an economical evaluation of the expenditures associated with utilisation of such pesticides.

The only organisation in Kyrgyzstan that is capable of accomplishing this work is the Department of Chemicalisation and Plant Protection. The Department has a staff of professionals with the first-hand experience and knowledge and the structure that enable them to organise the work on the inventory of the prohibited and deteriorated pesticides at their places.

The second organisation participating in the project is the State Scientific Research Institute of Organic Chemistry and Technology (GosNIIOKhT). GosNIIOKhT has a unique experience in destruction of highly toxic materials and is the leading research and development organisation in chemical demilitarisation.

The institute has all the necessary capabilities for running analytical and technological studies, corrosion tests, risk analysis as well as testing of the destruction and utilisation technologies.

The landscapes of the nearby territories are of an incomparable and unique beauty. Also the pearl of our republic lake Issyk-Kyl, with its great frozen zones, forming the drains of the Aral and Issyk-Kyl sea basin, are a clear proof of how important it is to advance strongly in the combat against the pollution in order to assure and sustain a clean environment. This complies with the duties of our country, such as the signature of the Basel Convention, which Kyrgyzstan joined in 1996.