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OBSOLETE PESTICIDES

A TICKING TIME BOMB AND WHY WE HAVE TO ACT NOW



Playing on obsolete pesticides, these children are exposed to enormous dangers.

Photograph: Courtesy of Berto Collet, Tauw, The Netherlands (2007).

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Obsolete pesticides stocks not only present a hazard to public health but can also contaminate natural resources and stand in the way of socio-economic development. ...The more we wait to address the problem with effective measures, the more expensive and difficult will be the solution later.

Danuta Hübner, EU Commissioner for Regional Policy (Hübner, 2007).

The German Farmers Association (Deutscher Bauernverband) estimated that the direct and indirect damages due to the Nitrofen food scandal exceeded €500 million (Brennpunkt LebensmittelSicherheit, 2002).

Unless serious actions are quickly taken to tackle these very monumental problems with commitment in an internationally concerted manner, any delayed efforts would be only too little, too late.

Alemayehu Wodageneh, former Coordinator of the Global Programme on Obsolete Pesticides of the FAO (Wodageneh, 2007).

If nothing is done to counter this, many of the stockpiles will sooner or later end up in the soil, in the water table and be released into the atmosphere. Their release into the environment increases clean-up costs and multiplies the risks.

The Commission is committed to tackling the problem of obsolete pesticides.

Stavros Dimas, EU Commissioner for Environment (Dimas, 2007).

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Preface

We need to take action on obsolete pesticides.

The problem of obsolete pesticides is of considerable urgency. And it is not a new one. Please allow me to refer to my previous report on obsolete pesticides that was included in the book of my colleague, Mr. Wieslaw Kuc, *Caution, Dangerous Chemicals - Obsolete Pesticides*.

The book clearly shows that politicians need to take action now due to the worsening situation of obsolete pesticides. Luckily, it seems that the new EU member states have taken action in their respective countries and maybe the problem will even be solved in those regions over the coming years. But what about the countries of the European Neighbourhood Policy, Russia and Central Asia? We cannot afford to sit by and watch another food scandal unfold or leave them to solve their problems on their own.

In my report, I have written about the consequences of the 2002 nitrofen scandal that hit Denmark and other EU countries. A new disaster would be unbearable and will show that we did not take the warning seriously and did not learn from the previous experience.

I have also indicated that we should concentrate our efforts on two main objectives:

- eliminating current stocks of obsolete pesticides, and
- preventing the accumulation of new stocks.

These objectives could be met with the establishment of a collective agency and/or a fund responsible for dealing with obsolete pesticides. I have also briefly described how such an agency should be part of the United Nations, for example, working in close cooperation with the Food and Agricultural Organisation, which actually has the UN mandate to deal with obsolete pesticides.

I therefore welcome the latest initiatives of the FAO dealing with the Central Asia study and the workshop organised in December 2008 in Azerbaijan. The new statistics on obsolete pesticides revealed at that workshop are shocking.

It is clear to me that the EU needs to act and I will therefore strive to make sure that this problem is dealt with in the coming legislature of the European Parliament. The work needs to be undertaken in the Committee on Environment and in bilateral meetings with the responsible Commissioner with a view to agree on concrete initiatives, such as the agency or fund mentioned above.

I call upon my colleagues of the European Parliament – regardless of party affiliation – to support these necessary initiatives. The problem of obsolete pesticides needs careful attention – and solutions. Today, rather than tomorrow.



Dan Jørgensen
Member of the European Parliament
Brussels, May 2009

Foreword

This report, entitled “Obsolete Pesticides: A ticking time bomb and why we have to act now”, makes an important contribution to the analysis of the growing dangers associated with obsolete pesticides (OPs) in the former Soviet Union, the Southern Balkans and – although diminishing – in the new EU member states. Having been deeply involved with this issue for some time now, I can only repeat: it is time to act now, and decisively. This is the message I would like to convey, a message that is mainly addressed to the European Commission, which is the critical institution dealing with these problems – together with the countries that are threatened by them.

In 2007, I organised a public meeting in the European Parliament together with a large exhibition documenting the risks. In addition, the exhibition was shown in the World Bank/Global Environmental Facility (GEF) in Washington, D.C., the International HCH (Hexachlorocyclohexane) and Pesticides Forum in Chisinau, Moldova, and in Vienna at the UNIDO bi-annual meeting. I have received numerous reactions that confirm the great concern about the effects of obsolete pesticides on human beings, their impact on food safety and their increasing dangers to the environment. All of the above have convinced me of the necessity to continue to press ahead with this campaign until these problems are solved.

I must also express gratitude to the International HCH & Pesticides Association (IHPA) for its untiring efforts to bring together more and more stakeholders. These include the European Commission, the European Parliament, EU member states and non-EU countries in Eastern Europe, the Food and Agricultural Organisation of the United Nations (FAO), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organisation (UNIDO), the World Bank, the Secretariats of the Stockholm Convention and the Basel Convention, the GEF and many non-governmental organisations (NGOs) as well as the pesticide-producing industry.

At the ground level, things are starting to move forward with the first regional projects starting up. Acting on behalf of the FAO, IHPA will start to manage the GEF programme on “Capacity-Building on Obsolete and POP Pesticides”, in cooperation with its partners, including Milieukontakt International, the Green Cross and representatives of nine countries. The programme began in early 2009. The project comprises awareness-raising and capacity-building in these countries and aims to strengthen regional cooperation and the exchange of know-how and experiences. The project will connect countries and experts, and facilitate the preparation and implementation of clean-up actions in all of the countries in the region.

Having the UN mandate on the management of OPs, the FAO has simultaneously initiated a study on the problems of OPs in Central Asia and the Caucasus. During the workshop from 2–4 December 2008 in Baku in Azerbaijan, the organisation clearly underlined the seriousness of the situation and sent a strong appeal to the world to take action now.

I feel these recent developments are extremely positive and create a unique opportunity for the European Commission to become more involved in extending the platform. I therefore invite the Commission to participate in a roundtable meeting to discuss and exchange views for the establishment of a future Action Plan as soon as possible..

Wieslaw Stefan Kuc
Member of the European Parliament
Brussels, May 2009

Executive Summary

Pesticides become obsolete when they can no longer be used for their intended purpose because they have been banned on account of their prolonged impact on the environment and/or because they cannot be used due to age, deterioration or a change of specification of currently applied pesticides. This problem has been addressed by the Stockholm Convention on Persistent Organic Pollutants (POPs), which was ratified by most EU member states and many but not all non-EU countries from Central and Eastern Europe and the former Soviet Union. It entered into force in 2004.

The Convention and the subsequent National Implementation Plans (NIPs) drawn up by signatories have addressed the problems to some extent, notably within the EU. Within the EU, producers have been legally obliged to manage obsolete pesticides (OPs), including organising their collection and destruction according to EU laws applicable to hazardous waste management. With EU enlargement, EU law has consequently become applicable to the new member states as well. The process has been accelerated by EU programmes such as PHARE or national programmes established by some member states.

However, implementation of the provisions of the Stockholm Convention on their own is hardly sufficient to effectively deal with the risks associated with OPs. The Convention only deals with nine specific OPs (hereafter called Persistent Organic Pollutant or POP pesticides), which represent a small proportion of the total number that are obsolete. In addition, and in close geographical proximity to the EU, problems remain, especially in South-East Europe and the countries of the former Soviet Union.

There are considerable risks of not acting. Unprotected sites – estimated to number in the tens of thousands – constitute a lethal danger for humans and animals alike. OPs seriously risk undermining agricultural trade between the EU and non-EU countries from Europe and the former Soviet Union. The estimated direct and indirect damages as a result of the Nitrofen food scandal in Germany from 2002 alone have been estimated to exceed €500 million. OPs in non-EU countries also constitute an imminent risk for the EU because stocks are often stored near watercourses. OPs risk being washed into floodwaters especially in times of floods such as those in Germany in 2002 or in Romania, Ukraine and Moldova in 2008.

At the same time, the clean-up costs for OPs are relatively low, around €3,000 per tonne. With a total volume of an estimated 256,000 to 263,500 tonnes in the new EU member states, the accession countries, the countries of the European Neighbourhood Policy (ENP), the Russian Federation and Central Asia, the total required cost would be between some €770 and €790 million.

There are signs that some countries are willing to act. With the help of the World Bank, the Republic of Moldova has eliminated 1,150 tonnes of POP pesticides. In Ukraine, efforts are ongoing to export 1,000 tonnes of OPs to Germany for destruction and the elimination of a further 2,000 tonnes is already planned.

To further accelerate destruction, EU financial and technical assistance will be needed. At the same time, this will increase awareness, provide technical knowledge, generate domestic co-financing and in the medium term, possibly generate national legislation, where it is still missing.

We call upon the European Commission to lead and develop an Action Plan – in partnership with the EU member states, European Parliament, non-EU countries such as those falling under the European Neighbourhood Policy or those from Central Asia, international organisations such as the FAO, UNEP, UNDP, UNIDO, World Bank and GEF, agricultural organisations,

NGOs, consumer organisations and industry including chemical industry and food retailers – consisting of the following steps:

- The Council led by the Presidency should address OPs in the Council Working Party on International Environment Issues.
- The European Parliament should:
 - a. request an amendment to the pesticides strategy with a binding requirement to report stocks of OPs and
 - b. feature OPs in the coming New Neighbourhood Strategy.
- The countries that still possess OPs should:
 - a. make their removal a priority in their national Environment Plans,
 - b. add their destruction to the agenda of negotiations with donors and
 - c. make national funds available for co-funding.
- The European Commission, the European Parliament and EU member states should improve the dialogue on the scale and urgency of the problem and possible solutions.
- New EU member states should urgently comply with rules on reporting of OP stocks, quality of pesticides storage, etc.
- Plant protection associations, in cooperation with all national and international stakeholders, should consider designing and ultimately establishing so-called ‘empty container programmes’ to collect and destroy OPs following the example of France and Poland.

1. Introduction

Pesticides become obsolete when they can no longer be used for their intended purpose. They are then banned, because of their prolonged impact on the environment and/or because they cannot be used due to age, deterioration or a change of specification of currently applied pesticides. Hence, the Obsolete Pesticides (OPs) problem does not concern the use of pesticides. Rather the problem is caused by pesticides that have *not* been used and thereby have become obsolete. The problem – in particular the associated risks stemming from their inadequate management and storage – relates to:

- Public health and environmental quality and
- Agricultural production and trade.

The problem dates back to the 1950s and 1960s when the use of pesticides in what were then Communist countries was increased in order to raise agricultural production. Pesticides were distributed free of charge to farmers, leading not only to overuse and but also to unsound management of residuals and packaging materials. To date, it is estimated that approximately 260,000 tonnes of OPs are at tens of thousands of locations in the countries of the former Soviet Union, the Southern Balkans and new EU member states – a region stretching from Poland to Kyrgyzstan (see Fedorov & Yablokov, 2004 and Appendix 1).¹

2. International agreements

There are four major international agreements that regulate OPs: the 2001 Stockholm Convention on Persistent Organic Pesticides (POPs), the 1989 Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, the 1979 UNECE Convention on Long-Range Trans-boundary Air Pollution (the 1998 Protocol on POPs) and the 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals.

The principal international agreement is the Stockholm Convention,² which was ratified by 152 countries and entered into force in 2004. To date ratification is still pending in the US, Russia, Turkey, Bosnia and Herzegovina, Montenegro, Serbia and also EU member states such as Italy, Ireland and Malta.

The Stockholm Convention only bans the use of a selected number of POPs and barely addresses OPs. The main lines of action called for include:

- a ban on the production and use of listed substances,
- enforcement of strict import restrictions,
- identification and safe management of stockpiles,
- recognition of particular needs of developing countries and countries in transition, including provisions for technical assistance and financial support and
- preparation of National Implementation Plans (NIPs) to achieve the objectives of the Convention.

¹ In *Caution, Dangerous Chemicals, Obsolete Pesticides* (Kuc, 2007), 45 authors including Commission President José Manuel Barroso (Barroso, 2007), four Commissioners (Dimas, 2007; Hübner, 2007; Kyprianou, 2007; Michel, 2007); nine Members of the European Parliament as well as five Ministers of the countries affected by obsolete pesticides, document the urgent need for corrective action.

² The Stockholm Convention on Persistent Organic Pollutants is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically and accumulate in the fatty tissue of humans and wildlife (see <http://chm.pops.int/>).

The EU has transposed the provisions of the Stockholm Convention into Community Law, and its requirements are therefore binding for the EU member states and EU institutions (see European Community Implementation Plan on POPs) (POPCIP, Chapter 2.4).

The Basel Convention, which regards all POPs' wastes as hazardous waste, aims to protect human health and the environment against the adverse effects resulting from the generation, management, trans-boundary movements and disposal of hazardous and other wastes.³

The UNECE Protocol on POPs⁴ has a somewhat different focus. It covers a list of 16 substances comprising 11 pesticides, 2 industrial chemicals and 3 by-products from the production of chemicals. The objective of the Protocol is to eliminate any discharges, emissions and losses of POP substances. It bans the production and use of some pesticide products immediately (aldrin, chlordane, chlordane, chlordane, dieldrin, endrin, hexabromobiphenyl, mirex and toxaphene). Others are scheduled for elimination at a later stage (Dichloro-Diphenyl-Trichloroethane (DDT), heptachlor, hexachlorobenzene (HCB) and polychlorinated biphenyls (PCBs)). The UNECE Protocol on POPs severely restricts the use of DDT, hexachlorocyclohexane (HCH) (including Lindane) and PCBs.

Finally, the Rotterdam Convention⁵ promotes cooperation among Parties in international trade of certain hazardous chemicals. This consists mainly of exchanging information on chemicals among Parties. It covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by Parties. There are currently 39 chemicals listed in the Convention, including 24 pesticides, 4 severely hazardous pesticide formulations and 11 industrial chemicals.

In the EU OPs fall under Regulation (EC) No. 850/2004. This regulation aligns EU law with the provisions of the international agreements on POPs by banning production, placing on the market and use of the 13 intentionally produced POP substances listed in the Stockholm Convention and the UNECE Protocol on POPs. The regulation obliges member states to draw up and maintain comprehensive release inventories for dioxins, furans, PCBs and polyaromatic hydrocarbons (PAH) and to establish action plans in order to minimise the total release of these substances. The European Commission is monitoring the progress through national progress reporting. The Regulation goes further than the international agreements emphasising the aim to eliminate the production and use of the internationally recognised POPs. In addition, the objectives of the UNECE Protocol and the Stockholm Convention have been gradually integrated in different EU strategies, policies and programmes at the member state level.

Each Party to the Stockholm Convention has to establish an Implementation Plan to show the concrete action that will be taken against the POPs listed in the Convention. The European Community Implementation Plan (POPCIP) was adopted on 9 March 2007 (European Commission, 2007).

The overall purpose of the POPCIP is not only to fulfil the legal requirements of the Stockholm Convention but also to take stock of actions taken and to lay down a strategy and Action Plan for further Community measures related to POPs included in the Stockholm Convention and/or in the UNECE Protocol on POPs. Accordingly, the POPCIP aims to:

³ Adopted in 1989 and entered into force in 1992 (see <http://www.basel.int>).

⁴ Adopted by the Executive Body to the UNECE Convention on Long-Range Trans-boundary Air Pollution (CLRTAP) on 24 June 1998 in Aarhus, Denmark (see http://www.unece.org/env/lrtap/pops_h1.htm).

⁵ The Convention entered into force on 24 February 2004 (see <http://www.pic.int>).

- identify the existing Community level measures related to POPs,
- assess their efficiency and sufficiency in meeting the requirements of the Stockholm Convention,
- make out needs for further Community-level measures,
- establish potentially necessary additional measures,
- recognise and strengthen links and potential synergies between POP management and other environmental policies or any other related policy field and
- increase awareness on POPs and their control measures.

For countries outside the European Union, assistance in maintaining inventories and cleaning up OPs has been granted through the PHARE programme (for South-East Europe). Additional tools for clean up could be created in the European Neighbourhood Policy (ENP), but assistance on OPs is conditional of their being explicitly included as a priority in the bilateral agreement between the EU and each partner.

3. The scale of the problem

It is difficult to estimate exact quantities of OPs. Many of the products are very old and documentation is often lacking. Larger HCH dumps are usually known and recognised as a result of the Stockholm Convention. Individual countries are in the process of collecting information on the 9 POPs as required. This is not the case, however, for smaller sites. In particular, estimates for OPs that do not fall under the Stockholm Convention, i.e. HCHs and Lindane, remain vague and can only be roughly calculated. The UNEP (2000) estimates – based on experience in Africa and the Middle East – that on average POPs make up only around 30% of all existing OPs. Hence, OPs amount to more than three times the volume of POPs.

Other data on obsolete pesticide stocks are established through updated field inventories, comprising inspection of individual sites and characterisation of types and amounts of OPs. Country-by-country assessments by IHPA suggest that in the EU (excluding ‘old’ member states), the volume of OPs could amount to between 256,000 and 263,500 tonnes (see Appendix 1) in accession countries, the countries of the ENP, the Russian Federation and Central Asia.

Table 1. Estimated tonnes of OPs, by region

Region	Estimated tonnes	Estimated costs (€million)*
ENP & Russian Federation	151,500	454.5
Central Asia	47,500	142.5
EU accession countries	36,000 to 41,5000	108 to 124.5
(New) EU member states	21,000 to 23,000	63 to 69
Total	256,000 to 263,500	768 to 790.5

* Assuming €3,000 per tonne destroyed or safely stored.

Source: IHPA data, POPs Convention NIPs (see Appendix 1 – small differences in Appendix 1 are due to rounding).

Such stocks can particularly be found in four main forms:

1. Stocks in and around former storage facilities, or their remains, with relative small amounts varying from several kg to tens or hundreds of tonnes (in exceptional cases up to a thousand tonnes at individual locations). They are distributed in tens of thousands of locations.
2. Stocks at collection points in particular in the former Soviet Union area, so-called ‘polygons’ or burial sites. These are special landfills designed for the controlled storage of outdated pesticides and other hazardous waste. The landfills were commonly fenced and

guarded and all amounts have been accurately registered. However with the collapse of the Soviet Union's central control system, polygons were abandoned, fences were torn down and pesticides were illegally excavated, repackaged and sold on to local markets or exported by organised crime. Polygons – in the sheer nature of the concept – comprise a limited number of very large sites, often in combination with other hazardous wastes.



Children have been playing for many years at the storage site of HCH waste residuals near Porto Romana, Albania, which was cleaned up in 2006 with the support of the Dutch government.
Photograph: Courtesy of Mr. Aleksander Kolaci (2001).



Illegal digging and burning of OPs at large burial sites. These pesticides are shamelessly repackaged and provided with new labels and sold at regular markets.
Photograph: Courtesy of Mr. Abdusalim Juraev, Tajikistan, 2005.

3. Waste originating from the production of pesticides; the main component is HCH (hexachlorocyclohexane) waste stemming from the production of Lindane (Vijgen, 2006). HCH⁶ waste is distributed on a limited number of sites, but with large amounts of waste varying from several tens of thousand tonnes to sometimes more than hundred(s) thousand tonnes.
4. Hexachlorobenzene (HCB) waste, used as pesticides or as waste from by-products of the manufacture of perchloroethylene (also known as tetrachloroethene, PER, or PERC), carbontetrachloride and trichloroethylene. A small number of large HCB stockpiles can be found in the Czech Republic (Heinisch, 2006 and 2007, Holoubek et al., 2006) and Ukraine (see also Box 3).

The costs for cleaning up of all OPs are relatively low. The results of projects undertaken by IHPA suggest that the cost for cleaning up, repackaging, transport and final destruction of OPs to be at €3,000 per tonne. The FAO assumes roughly similar figures. For Africa it estimates the costs to be in the order of \$3,000–\$5,000. Based on the IHPA estimates, the total costs for doing away with all OPs in the EU, accession countries, the countries of the ENP, the Russian Federation and Central Asia would amount to between €770 and €790 million. Using FAO estimates, total costs could be somewhat higher. It is very likely that the costs of inaction by far exceed the costs of cleaning up. As underlined in a publication by the European Environment Agency (EEA), downplaying the costs of inaction is a frequent phenomenon (Koppe & Keys, 2001).

Box 1. Costs of inaction

In 2002, Germany and the EU were confronted with the consequences of the contamination of organic produce with Nitrofen in what was formerly East Germany. Food has been stored in a former pesticides storage building. Due to remaining contaminants in the soil of the storage facility, the stored food was contaminated. The German Farmers Association estimated in 2002 that direct and indirect damages due to the Nitrofen food scandal amounted to over €500 million.

Source: Brennpunkt LebensmittelSicherheit (2002).

⁶ Technical HCH was the first product, which came to the market around 1948. The very strong and disagreeable smell that was taken up by the crop made HCH practically useless for food crops, and the application of technical HCH was gradually decreased and replaced by Lindane. HCH-isomers formed as a by-product in the Lindane production are important, as technical HCH is the most widely used pesticide in the world. For each ton of Lindane produced around 8–10 tonnes of HCH have been created. Li (1999) estimated in 1999 that the global technical HCH usage from 1948 to 1997 was around 10 million tonnes, far more than the tonnage of any other pesticide used in history (Vijgen, 2006).

Additional problematic OPs identified are e.g. Lindane and alpha- and beta- HCH-waste isomers. These compounds are not yet classified as POPs, even though they have the same characteristics. Because of the risks and the amounts of the compounds used, final recommendations by the (OPs Reviewing Committee (POPRC) – the body to the Stockholm Convention for reviewing chemicals proposed by the Parties for listing in the Convention – have been made. It is expected that these chemicals will be listed as POP at the 4th COP (Conference of the Parties) in May 2009.

Box 2. Risks of inaction

The German Advisory Group on Economic Reform in 2002 wrote: “It is not unlikely that some agro-chemicals that have been banned for some time in the West continued to be used in the Soviet Union and later Ukraine. It is also safe to assume that some such chemicals were (are) less than ideal from a technical standpoint. Hence, it is not possible to reject out of hand the possibility of food contamination such as occurred with Nitrofen in Germany also occurring in Ukraine. Food industry insiders warn, in private, that a food safety time bomb is ticking in Ukraine.”

Source: S. von Cramon-Taubadel (2002).

Ukraine is assumed to host nearly 13,000 sites that already are or potentially are contaminated with OPs. According to the Ukrainian authorities, total stocks amount to about 32,000 tons in 5,000 recognised sites. Many of the sites are freely accessible, posing a danger to trespassers and in particular to children and livestock grazing in the vicinity. Often, locations are in the countryside and therefore interface with agricultural production with residues leaching into the surrounding soil and groundwater, posing a threat to nearby water supplies.

Source: Antonov & Gamera (2007).

Box 3. Ticking HCB time bomb in Kalush in Oblast Ivano-Frankisk in Western Ukraine

Along the banks of the Savka River, a tributary of the Dniester, which flows from Ukraine to Moldova, lies Europe’s largest HCB stockpile. The Dniester River basin is home to more than 7 million people, and the river itself is the main source of drinking water in the Republic of Moldova and parts of Ukraine. The site is described as one of the national priority sites for treatment of POPs with the destruction of the burial site of 10,000 tonnes of HCB. It is estimated that this site alone contains about 30% of the total OP problem of Ukraine. The draft NIP (ready for official approval since 2006) proposes to destroy this stockpile. As the NIP is not approved, no action has been taken.

Sources: Environment and Security, 2007; UNECE, 2004; National Environmental Policy of Ukraine 2007; Antonov & Gamera, 2007; CLU-IN, 2008.

4. Progress on obsolete pesticides clean-up

4.1 Activities in EU member states

The problem of obsolete pesticides is a recognised issue in all EU member states. ‘Return to sender’ of unused and/or outdated products is common practise in the EU, whereby the ownership of any obsolete stocks is clearly defined. Under EU law, producers are legally obliged to manage OPs, including their collection and destruction. EU enlargement has extended this obligation to new member states. During the transition, immediately before membership, EU and member state programmes such as PHARE (Appendix 2) or DANCEE (Danish Environmental Assistance to Eastern Europe)⁷ have assisted the eight accession countries from Central and Eastern Europe in dealing with the problem (see also Appendix 2). For example, in September 2002, after the Nitrofen case (see Box 1) the European Commission

⁷ DANCEE Baltic States and Russia (2000-2002); DANCEE, Latvia (2001); DANCEE (2002-2004); DANCEE Latvia (1999-2004); DANCEE Lithuania (1995-2002); DANCEE Eastern and Central Europe (2001); DANCEE (2003); DANCEE (1994-2001); DANCEE (2004-2006).

(Directorate General for Environment) published a report on “Obsolete Pesticides Status in Candidate Countries (European Commission, 2002). The studies covered the ten accession countries that became members in 2004, i.e. the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, and Slovenia. It provided a status report in each of the applicant countries of stockpiled OPs, including POPs, and their management. Further, the study identified issues and future challenges related to meeting the requirements of the Stockholm Convention on POPs. To date no such report currently exists for ENP countries. The FAO is planning to publish in the course of 2009 a report on the Central Asia countries.



Ongoing clean-up actions in Lithuania.

Photo: SAVA, Germany (2008).

4.2 Outside the EU: Only marginal progress

The situation has been and continues to be different across non-EU member states, mainly in South-East Europe and the ENP countries. National legislation is less developed, ownership of land is not always defined, producers have disappeared or cannot be held accountable, and an adequate infrastructure for effective remedial treatment is non-existent. If legislation exists, it is often not enforced, amongst other reasons because of – in general – very limited public sector resources.

Nevertheless, some activities take place. In the framework of the Arctic Council Action Plan to Eliminate Pollution of the Arctic (ACAP), around 2,000 tonnes of OPs have been repackaged in North-Western Russia (ACAP, 2008). In 2002, Albania received financial support from the EU PHARE programme to eliminate all OPs. And the World Bank has initiated the clean-up of around 1,150 tonnes of POPs together with 1,060 tonnes of PCBs and PCB-contaminated soils in the Republic of Moldova (Plesca et al., 2008). This project was concluded by the end of

2007. The Dutch Ministry of Foreign Affairs has financed a project to eliminate acute risks of OPs in Moldova, Kyrgyzstan and Georgia⁸ from 2005 to 2008, together with the Dutch Foundation DOEN and PSO (Capacity-Building in Developing Countries). Up to the end of 2008, apart from awareness-raising and capacity-building, more than 400 tonnes of OPs had been repacked and safely stored. At present a new project covering capacity-building and repacking in Ukraine is in progress under the same programme. This project is planned to continue through 2009. Between 1999 and 2003, the Danish government supported a specific programme on OPs with funds of around €1.56 million (DANCEE, 2003). The first phase of activities dealt with the development of an “Action Plan for Reduction of Risks of OP Stockpiles in Ukraine” and implementation of pilot projects for further implementation of technical aspects of the Action Plan. The second phase included the implementation of pilot projects, support for local implementing organisations and support for public participation, training of survey teams and mobilisation of financial resources from internal and external sources (WECF, 2006). In Ukraine, work is ongoing to eliminate 1,000 tonnes of OPs and export them to Germany for destruction. The project is approved and funded by the State Nature Protection Fund. Another tender is in progress for the elimination of a further 2,000 tonnes.

But activities remain partial. There is no systematic approach across all countries concerned and not all potential sources are targeted. The biggest problems remain with HCH6 waste, a hazardous OP. Outside EU member states, the main HCH stocks are found in the former Yugoslav Republic of Macedonia and Azerbaijan. Countries in question often lack the legal, institutional and financial capacity and possibility – and maybe also the political will – to act.

5. Elements for the way forward

There have been success stories of many countries catching up with their legacy and destroying OPs. This has been the case in the EU and other industrialised countries, including the new EU member states. In these countries, there is awareness, legislation, technical knowledge and funding. Some or all of these are missing in the ENP countries.

Yet even in this region, there is progress. The first regional project has been approved by the GEF Council. IHPA will start – on behalf of the FAO – to manage the GEF programme “Capacity Building on Obsolete and POPs Pesticides in Eastern European Caucasus and Central Asian (EECCA) countries” and will cooperate with the partners Milieukontakt International and Green Cross and the representatives of nine countries. The programme is to start in 2009. The project comprises awareness-raising and capacity-building in the following nine countries: Albania, Armenia, Azerbaijan, Belarus, FYR Macedonia, Georgia, Republic of Moldova, Mongolia and Romania. It will attempt to strengthen regional cooperation and exchange of know-how and experiences by e.g. connecting countries and experts, and facilitating preparation and implementation of clean-up actions in any of the countries in the region.

At the same time, the FAO, backed by an UN mandate to manage OPs, is intending to publish a study on the problems of OPs in Central Asia and the Caucasus. The study results were presented at a workshop from 2–4 December 2008 in Baku, Azerbaijan. The host, the Minister of Agriculture of Azerbaijan, underlined the seriousness of the situation and sent a strong appeal to take action now.

Other regional initiatives are currently being taken by the World Bank, which recently dispatched a special mission to Tajikistan, Kyrgyzstan, Uzbekistan and Georgia. In addition, the drawing up of a regional GEF project implemented by UNEP-WHO-Milieukontakt

⁸ <http://milieukontakt.net/en/?p=480>

International and Green Cross for DDT covering the Caucasus and Central Asia should be mentioned. The DDT project deals with future breakouts of malaria cases in these regions and tries to identify ways of using alternatives and to destroy stockpiles of DDT.

IHPA will in parallel with the GEF project continue to work on awareness-raising activities in the region, i.e. supporting individual initiatives such as MEP Wieslaw S. Kuc's travelling photo exhibition describing the situation at selected OP locations. But more is needed:

1. In order to achieve coverage in all the countries at the same time, it is proposed that the EU, possibly together with other donors, should finance more awareness-raising and capacity-building measures. Within the GEF, such a programme exists, but it would need to be expanded to cover all 30 and not only the present eight countries concerned: Albania, Armenia, Azerbaijan, Belarus, FYR Macedonia, Georgia, Republic of Moldova and Romania.
2. In parallel, on the political level, the EU should insist that those countries that have not yet done so should ratify the Stockholm Convention, namely Bosnia and Herzegovina, Montenegro, the Russian Federation, Serbia and Turkey.
3. A third step would be to build up reliable inventories. Inventories are the only sound basis for planning, budgeting and executing removal actions. Recently, Romania has started with an EU-funded programme to facilitate the preparation of inventories on a country-wide basis. Inventories, however, need capacity and capacity requires training. Training materials are already available at the FAO and other UN institutions, and a special training programme could be adapted for general use. The European Commission has profound experience with training programmes in the EU and non-EU countries. IHPA has assisted Romania in developing policies and strategies for preventing the emergence of new OP stocks. This is important work in the individual country and is ideally suited to being shaped in the same way as in the EU, where the 'return-to-sender' policy is imbedded in European and national legislation. Recently the World Bank solicited expressions of interest in the implementation of a technical study on obsolete pesticides in Kyrgyzstan, Tajikistan and Uzbekistan, which would deal with all aspects of inventory, risk assessment, feasibility of safeguarding, transport and elimination /disposal of OPs at three pilot sites plus a feasibility study of in-situ remediation and containment alternatives, based on training of locals for all components. These initiatives could start up as early as the end of 2009.
4. The most expensive part of OP clean-up is the removal of stocks for destruction or, if that is not possible, safeguarding. Currently, there is only support under the Stockholm Convention supplemented with incidental initiatives. Private financing on the other hand will depend on whether public financing will be available and notably whether reliable data on sites and inventories exist.

6. Proposal – Plan of Action

In order to solve the problems, there is a need for more awareness in countries that own OP stocks as well as countries that import food from countries with OP stocks. Further work on better information on OP stocks by means of field inventories or possibly national studies is urgently needed. Moreover, there is a need to identify gaps in legislation, the establishment of Action Plans for elimination of OPs per country, measures to prevent future re-occurrence of OPs and the identification of funding needs.

We call for the European Commission to lead and develop an Action Plan in partnership with the EU member states, the European Parliament, non-EU countries such as those falling under the European Neighbourhood Policy and those in Central Asia, international organisations such

as the FAO, UNEP, UNDP, UNIDO, World Bank and GEF, agricultural organisations, NGOs, consumer organisations and industry including chemical industry and food retailers. In particular, that Action Plan would call upon these institutions to take concrete action, as follows:

- The Council, led by the Presidency, would urgently address OPs in the Council Working Party on International Environment Issues.
- The European Parliament would:
 - a. request an amendment of the pesticides strategy with binding requirements to report OPs stocks,⁹ and
 - b. highlight OPs in the coming New Neighbourhood Strategy.
- The countries that still possess OPs would:
 - a. make their removal a priority in their national environment plans,
 - b. add their destruction to the agenda of negotiations with donors, while
 - c. making national funds available for co-funding.
- The European Commission, the European Parliament and EU member states would improve the dialogue on the scale and urgency of the problem and possible solutions.
- New EU member countries would urgently comply with rules on reporting of OP stocks, quality of pesticides storage, etc.
- Plant protection associations (in cooperation with all national and international stakeholders) would design and ultimately establish so-called 'empty container programmes' to collect and destroy OPs along the lines of recent efforts made in France or Poland.

⁹ As is currently debated within the Framework Directive on the sustainable use of pesticides.

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Appendix 1. Estimates of Obsolete Pesticides by Country

Country/State	Quantity in tonnes (estimated)	Notes
Albania	0	Some 353 tonnes of OPs were eliminated in April to June 2006, financed by the Dutch government. In 2001 and 2002 the EU PHARE financed the elimination of 360 tonnes.
Armenia	800	
Azerbaijan	4,000	
Belarus	6,558	Reported at 9 th International HCH and Pesticides Forum, 20–22 September 2007
Bosnia & Herzegovina	NA	
Bulgaria	14,103	According to Ms. Tsvetanka Dimchieva, Ministry of Environment and Waters of Bulgaria, in 2007, 83.5% (11,773 tonnes) out of a total of 14,103 tonnes OPs are safely stored in 76 newly built and repaired state and municipal warehouses or encapsulated in 1,804 so-called ‘BB-cubes’. Storage for an additional 2,330 tonnes is temporary and not a permanent solution!
Croatia	0	
Czech Republic	0	According to the Ministry of the Environment, the last 141 tonnes of OPs were eliminated in 2007.
Estonia	0	According to the Estonian government, all 700 tonnes of stocks were removed in 2007.
Georgia	3,000	
Hungary	200	In 2005–06, 183 tonnes collected and destroyed for 5 regions. Same action planned for other regions, but delayed due to lack of funding.
Kazakhstan	10,000	
Kosovo	8	
Kyrgyzstan	3,000	Reported at 9 th International HCH and Pesticides Forum, 20–22 September 2007.
Latvia	10	10 tonnes newly collected and 2,000 tonnes have been eliminated.
Lithuania	2,000	During the period of 2002–05, about 3,190 tonnes of old pesticides were transported to Germany for disposal.
FYR Macedonia	33,000 – 38,000	
Montenegro	NA	
Poland	5,000 – 7,000	Reported at 9 th International HCH and Pesticides Forum, 20–22 September 2007.

Republic of Moldova	5,450	World Bank project eliminated more than 1,150 tonnes in 2006–07.
Romania	1,000	With help of EU PHARE programme, more than 2,300 tonnes were eliminated by the end of 2006.
Russian Federation	100,000	
Serbia	200	NIP Status 2008
Slovak Republic	300	
Slovenia	350–400	
Tajikistan	15,160	Tajikistan NIP
Turkey	3,000–3,300	Preliminary NIP info
Turkmenistan	1,671	Estimate; no reliable data available.
Ukraine	31,700	Ukrainian NIP 2007
Uzbekistan	17,718	Reported at 8 th International HCH and Pesticides Forum 26–28 May 2005. According to NGOs, there are more than 40,000 tonnes.
Total	255,519–262,572	

Sources: UNEP/POPs/INC.5/1; IHPA estimates based on various sources (status: 22.11.2008).

Appendix 2. Examples of Activities in and by EU Member States

Lithuania is at present collecting and destroying 2,000 tonnes of OPs and 6,215 m³ of soil that is contaminated with pesticides. 73% of the funding comes from the Cohesion Fund and 27% from national funding.¹⁰ Lithuania transported about 3,190 tonnes of old pesticides to Germany for disposal as part of the governmental pesticide waste management programme from 2002–05 (Lithuanian National Implementation Plan, 2007).

Latvia has made use of PHARE funding for OPs clean-up.

From 2005 to 2006, Romania has, with the help of EU PHARE financial support, eliminated 2,300 tonnes over a period of nearly two years. However, between 500 and 1,000 tonnes still remain in the country.

Through the DANCEE programme, the Danish Government has been supporting Belarus, Latvia and Russia in OP issues.¹¹ The programme has been terminated.

Estonia has covered all clean-up costs from the Estonian state budget without receiving any EU support. In 2001, 110.7 tonnes were exported to Finland, and in 2007, 103.9 tonnes to Germany. The rest of the OPs have been disposed of in Estonia.¹²

The Czech Republic has financed the elimination of OPs by its own funds from State Phytosanitary Administration and Ministry of Agriculture. According to data from 2007, 141 tonnes of OPs were incinerated domestically and/or disposed of.¹³

Poland has used its own funds to destroy OPs, and Hungary has also used smaller amounts to finance destruction. A small pilot demonstration project on inventory has been executed in the Slovak Republic and in Hungary in 2001 with support from the Dutch Ministry of the Environment. In the last few years in Hungary, Cseber Kht, the public company responsible for the collection and packaging of pesticides has collected and disposed 183 tonnes of expired pesticides in five counties. The cost of the action was 80 million HUF (approximately €330,000). 15% of this was paid by Cseber Kht and the owners of the collected pesticides; the remaining 85% was paid by the relevant Ministry.¹⁴ However, no further actions have been taken for the last three years, in spite of efforts of Cseber Kht and the Reflex Association to find financial resources to be able to continue disposal of the remaining estimated 200 tonnes.

In the period 1998-2007, Bulgaria used its own means (totalling €5.516 million) for activities related to OPs. In 2007, 83.5% (11,773 tonnes) out of a total 14,103 tonnes of obsolete pesticides were safely stored in 76 newly built and repaired state and municipal warehouses or encapsulated in 1,804 so-called 'BB-cubes' (these are steel-concrete containers measuring 195 x 195 x 195 cm, hermetically sealed with useful volume 5 m³).¹⁵ Although these activities cannot be considered as permanent solutions, they have temporarily reduced the risks. Around 2,330 tonnes of obsolete pesticide waste in Bulgaria are still stored in 358 warehouses that have not been repaired and are not secured.

¹⁰ Information from Ms. Dalia Papiėvienė, Head of ISPA/Cohesion Projects Subdivision, Ministry of Environment of the Republic of Lithuania, Environmental Projects Management Agency, received 21 October 2008 by IHPA.

¹¹ Danish Environmental Protection Agency DANCEE, Detailed Review of Selected Non-Incineration and Incineration OPs Elimination Technologies for the CEE Region, Final, October 2004, see Chapter 2.1.1 Danish and International Support to the Stockholm Convention within the CEE region (<http://www2.mst.dk/Udgiv/publications/2005/87-7614-543-3/pdf/87-7614-544-1.pdf>).

¹² Information from Ms. Mari-Liis Ummik, Chief Officer of the Waste Department, Ministry of Environment, Estonia, received 23 October 2008 by IHPA.

¹³ Information from Mr. Jaromir Manhart (compiled by Czech Ministry of Agriculture), received 20 February 2008 by IHPA.

¹⁴ Information from Mr. Tibor Kovacs, Reflex Environmental Association, received 20 October 2008.

¹⁵ Presentation made by Tsvetanka Dimchieva at TAIEX workshop, Belgrade, September 2008. See Dimcheva (2008).

Appendix 3. Glossary of Abbreviations

ACAP	Arctic Council Action Plan
CLU-IN	US EPA Hazardous Waste Clean-Up Information
COP	Conference of the Parties of the Stockholm Convention
DANCEE	Danish Cooperation for the Environment in Eastern Europe
DG	Directorate General
DOEN	Dutch Foundation (Dutch expression 'doen' means 'to do')
DDT	Dichloro-Diphenyl-Trichloroethane
EC regulation	European Community regulation
EEA	European Environment Agency
EECCA	Eastern European Caucasus and Central Asia
ENP	European Neighbourhood Policy
ENVI Committee	Committee on Environment, Public Health and Food Safety of the European Parliament
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GEF	Global Environmental Facility
HCB	Hexachlorobenzene
HCH	Hexachlorocyclohexane
IHPA	International HCH & Pesticides Association
MEP	Member of the European Parliament
NGO	Non-Governmental Organisation
NIP	National Implementation Plan (under the Stockholm Convention)
OP	Obsolete Pesticide
PAH	Polyaromatic hydrocarbon
PCB	Polychlorinated biphenyl
PER (PERC)	Perchlorethylene
PHARE	Poland and Hungary: Assistance for Restructuring their Economies (now expanded to cover the 10 new CEEC member states)
POP	Persistent Organic Pollutant
POPCIP	European Community Implementation Plan on POPs
POPRC	POPs Reviewing Committee of the Stockholm Convention
POP pesticide	One of the nine specific OPs dealt with by the Stockholm Convention
PSO	Capacity-Building in Developing Countries (in Dutch: P ersonele S amenwerking met O ntwikkellingslanden)
SAVA	Sonderabfallverbrennungsanlagen-GmbH
TMF programme	Theme-based Cofinancing Programme of the Dutch Ministry of Foreign Affairs (in Dutch: T hematisch M edefinancieringsprogramma)
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organisation
WECF	Women in Europe for a Common Future

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European Climate Platform (ECP)
European Credit Research Institute (ECRI)
European Network of Agricultural & Rural Policy Research Institutes (ENARPRI)
European Network for Better Regulation (ENBR)
European Network of Economic Policy Research Institutes (ENEPRI)
European Policy Institutes Network (EPIN)
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