

## Prospects for action on obsolete pesticides

**Mark Davis**

Pesticide Action Network - UK

Eurolink Centre, 49 Effra Road, London SW2 1BZ, United Kingdom

Phone: +44 207 274 8895, Fax: +44 207 274 9084, Email: markdavis@pan-uk.org

FAO has led the way in raising awareness, providing guidelines and implementing activities to solve the problem of obsolete pesticide stockpiles in developing countries. Now the raised level of awareness is bringing about more activity on the part of other organisations.

UNEP is coordinating negotiations towards an international convention to control the production and use of Persistent Organic Pollutants (POPs) and is now also coordinating a number of research projects to assess the scale of POPs stockpiles globally and the needs of countries in ridding themselves of these stockpiles; WHO is concerned with public health pesticides and obsolete pharmaceuticals; OECD is discussing the problem and in conjunction with FAO and UNEP organised an international workshop that took place in Alexandria, Virginia in September 2000; The Inter-organisational group on the Safe Management of Chemicals (IOMC) has created a subgroup specifically to coordinate activities on obsolete pesticides. The World Bank has funded disposal operations, as have several national development agencies.

Beyond governmental and intergovernmental organisation activities, many NGOs and private sector organisations are working too. GCPF has carried out disposal operations, NGOs have organised and contributed to national and regional workshops and are monitoring disposal activities. Several consultancies are trying to work as intermediaries to generate more activity in the market place.

Does this increased level of activity translate to more cleanup operations or the implementation of new and better solutions to obsolete pesticides problems? What are the barriers to more effective implementation of cleanup operations? What opportunities are created by the increased activity?

### **Inventories of stockpiles and estimated costs of a "clean sweep"**

Quantification of obsolete pesticide stocks is difficult because of their very wide distribution and the remote location of many of the storage points. Nevertheless, it is widely accepted among all organisations that inventories which include details of obsolete pesticide identities, quantities, condition, location and source are an essential pre-requisite to any remediation action.

Inventories have now been completed for 53 countries in Africa and the Near East. These identify a total of between 20-30,000 tonnes of obsolete pesticides and additional very large but largely unquantified volumes of contaminated soil where pesticides have leaked from their containers. In two countries alone (Mali and Botswana) over 30,000 tonnes of contaminated soil have been identified.

The FAO inventory taking programme was expanded to Latin America in 1998 where 33 countries have been invited to carry out inventories of which 5 have already been submitted. In these 5 countries 1,895 tonnes of obsolete pesticides have been identified. FAO is also currently expanding its inventory taking programme to Asia where 21 countries will be invited to participate commencing early 2001.

Experience gained from the FAO programme demonstrates clearly that data gathered through this process is indicative of the situation but not conclusive. In countries where disposal operations have taken place, more detailed inventories completed for shipment and destruction purposes generally identify much larger quantities of obsolete pesticides than the initial inventory, sometimes increasing totals by up to 50%.

In the CIS (Commonwealth of Independent States) region where most countries are not FAO members, work to complete inventories of obsolete pesticides and persistent organic pollutants (POPs) has been supported by UNEP Chemicals following the format developed by FAO. Elsewhere in Eastern Europe there is little coordination of work on obsolete pesticides matters. No inventory data has been published yet for these regions, but early indications suggest that very large stockpiles exist. Anecdotal reports suggest that around 70-100,000 tonnes of obsolete pesticides are held in these countries.<sup>1</sup>

A number of additional bilateral programmes are supporting completion of obsolete pesticide inventories in some countries either as a stand-alone activity or as part of a wider programme. Examples include a Dutch funded programme in Pakistan being carried out by GTZ of Germany that has so far identified 917 tonnes of obsolete pesticides in 133 stores in Punjab. An additional 30-40 stores remain to be surveyed. 317 tonnes from 13 stores will be disposed of shortly<sup>2</sup>; a Danish funded programme in 5 Eastern European countries for which no results are available yet<sup>3</sup>; a self financed programme in Poland that has identified 60,000 tonnes<sup>4</sup>; a World Bank-Finland supported programme

in Nicaragua; a South Pacific Regional Environment Programme (SPREP) programme in a number of Pacific countries which has identified 63 tonnes of obsolete pesticides of which 10 tonnes are DDT<sup>5</sup>.

Accounting for the paucity of data from many regions and individual countries, estimates based on existing inventories and previous experience would indicate that virtually all developing countries and economies in transition hold obsolete pesticides stockpiles. Countries that previously operated centralised supply mechanisms tend to have larger stockpiles, often reaching tens of thousands of tonnes. In total it could be estimated that global obsolete pesticides stockpiles in developing countries and economies in transition amount to something in the order of 400,000-500,000 tonnes.

## **The cost of obsolete pesticides**

There is little available data on the health and environmental impacts of obsolete pesticides. This is not surprising considering the technical difficulties in gathering such data. Even in developed countries there are big gaps in health and environmental monitoring data. In developing countries little research of this type has been carried out. Nevertheless where pesticides can be seen leaking from their containers onto soil where there is a high water table or surface water nearby, it can be safely assumed that water contamination will result. Similarly where human habitation is adjacent to obsolete pesticide stores containing ruptured containers, it is highly probable that people will be exposed to the pesticides and their health will be adversely affected.

Where obsolete pesticides exist, there is also a negative economic impact. The opportunity costs of the original pesticide procurement encompass the lost opportunities that could have been realised had the money been used for other more productive and sustainable purposes. There are also ongoing management costs in maintaining obsolete pesticide stockpiles. These include the store in which they are kept, guarding the store and possible maintenance costs for example in transferring products to new containers when old ones are leaking. There are also replacement costs when new and alternative pest control products need to be bought to replace those that have become obsolete.

The existence of obsolete pesticide stockpiles also acts as a deterrent to alternative pest management systems. The stockpiles generally exist in an ongoing pesticide supply chain. The message that they transmit is that obsolescence is an inevitable part of pesticide supply and use and is to some degree acceptable. The exertion of effort and resources in disposing of obsolete pesticides demonstrates a commitment to resolving these problems and creates opportunities to rethink pest management strategies with a view to shifting to alternatives to chemical pesticides.

Obsolete pesticides also create barriers to sustainable development. Where these chemicals continue to contaminate the environment and natural resources such as water and soil, they prevent sustainable development. Their removal and safe disposal is therefore an integral element of a sustainable development programme.

The final and perhaps most obvious economic impact of obsolete pesticides, is the disposal and cleanup costs. These are substantial at approximately US\$ 3,000-5,000 per tonne of waste. The funds for disposal are generally derived from donor agencies and there is intense competition for these limited funds. In general the disposal of old chemicals is not considered a development priority.

## **What needs to be done?**

A major barrier to progress in dealing with the issue of obsolete pesticides is the lack of available funds. In a decade of work to raise awareness, quantify the problem and implement solutions, less than 3,000 tonnes of waste have been cleared from Africa where attention has been focussed. Smaller quantities have been disposed of from other developing regions. Competition for funds with other development issues is clearly a major barrier.

There is still a need for awareness raising in the developing countries where obsolete pesticides are a problem as well as among the donor and development agencies. This must clearly be done without imposing the values of those concerned with the issue on the developing countries. Nevertheless many decision makers are ignorant of the scale and nature of the problems that obsolete pesticides cause and there is a need to address this particular barrier.

While much has been done to quantify obsolete pesticides in Africa and work has begun in other regions, the need for inventory taking and update cannot be over-emphasised. An inventory is the basis for everything else since it provides the data on which project proposals, costings and plans for action must be based. It is therefore essential not only to complete inventories as accurately as possible, but also to update them regularly to keep the data relevant.

The wide range of activities on the part of IGOs, Donors and Others should be coordinated to ensure that there is no duplication or, worse, contradiction of efforts. In the past, obsolete pesticide stocks were created in some cases because of lack of coordination resulting in oversupply of pesticides. It is crucial that in dealing with the obsolete stocks now and preventing their recurrence, efforts are coordinated. There may be a need for a new role to address this issue, or it may be fulfilled by existing bodies such as the IOMC.

It has already been mentioned that obsolete pesticides are a development issue. This point needs to be highlighted to development agencies so that they understand the importance in dealing with obsolete pesticides, and the relevance in using funds to address the problem.

Prevention of obsolete pesticide accumulation depends on several factors. Among these are better product stewardship, management and regulation. The effective implementation of these depends on governments and industry. In reality, despite the existence of written regulations and codes of conduct, implementation of the prescribed measures is commonly weak. This may be due to resources or lack of commitment at a sufficiently high level.

NGOs have a valuable role to play in awareness raising about the problems of pesticides in relation to health and the environment and about the impact of obsolete pesticides, and also in promoting alternatives to chemical pesticides in agriculture and healthcare where relevant and where possible.

Dealing with obsolete pesticides is one part of dealing with hazardous waste in developing countries. The stockpiles issue is an acute problem that requires particular solutions such as export for destruction. However, countries generate hazardous waste on an ongoing basis, and there is a need for solutions based on waste minimisation or environmentally sound management of the waste. In the context of dealing both with the acute stockpiles problems and the ongoing hazardous waste, proposals for solutions should not compromise environmental, health and technological standards in the interests of cost or speed.

An integral element of effective prevention strategies accompanying disposal should also be promotion of alternatives to intensive pesticide use. This might include Integrated Pest Management (IPM) and Integrated Vector Management (IVM), organic agriculture and the use of indigenous methods that have frequently been forgotten as pesticides have been heavily promoted.

## The ideal scenario

Based on a broad understanding of the obsolete pesticides issue, it seems that a range of measures could help to generate significant action on the current stockpiles problem:

- **Regional or sub-regional action** - the country-by-country approach taken thus far, seems not to be working. Progress is too slow. Working regionally or sub-regionally might provide economies of scale and efficiencies in planning and implementation that could allow greater progress to be made more quickly.
- **Risk assessment for prioritisation** - if the obsolete pesticide problems of several countries are to be addressed simultaneously, there will be a need for prioritisation based on an assessment of the nature and severity of the problem in each country. This assessment should be based on accepted and replicable principles of risk assessment.
- **Dedicated funds to remove obsolete stockpiles** - the competition for funds with other development issues needs to be removed and therefore funds need to be dedicated to the disposal and prevention of obsolete pesticides.
- **Reduced reliance on pesticides** - a key element of effective prevention measures must be reduced reliance on pesticides. There are many ways in which progress can be made in this area including IPM, IVM, and organic agriculture.
- **Comprehensive regulation & management of pesticides** - must be led by government and supported by industry and other stakeholders. The measures taken must also be effectively implemented and appropriate resources made available to achieve this.
- **Hazardous waste prevention and management** - once obsolete pesticide stockpiles have been disposed of, measures should be put in place to deal with the ongoing generation of hazardous waste in the form of pesticide containers and small quantities of unwanted or unusable pesticides. Current (FAO) guidelines recommend that this type of waste is removed from pesticide end-users and passed on to pesticide suppliers who are better able to deal with it safely.
- **Better options than export for incineration** - the shipment of obsolete pesticides to industrialised countries for incineration is the most common form of disposal currently employed. This is not ideal since the transport created environmental risks and incineration generates POPs and other forms of contaminants on communities local to the incineration facilities. Efforts should be made to explore and where possible use technologies which help to avoid the transport or incineration of chemicals without creating other problems.
- **Effective in-situ soil treatment** - contaminated soil occurs in such large quantities in many countries that export for treatment is not a viable option. There is therefore a need for effective treatments that can be applied in developing countries at relatively low cost and within the technological capacity of the countries.

## References

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