



6th FAO Consultation

on

The Prevention and Disposal of
Obsolete, and banned pesticide stocks

Rome, 16 -17 September 2002



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Prevention and Disposal of obsolete and banned pesticides stocks**

List of Contents

Part I: Summary of Discussions from the 6th Consultation

1. Foreword
2. Opening Address
3. Update on FAO activities since the 5th Consultation (May 2001)
4. NGO Monitoring of Prevention and Disposal Projects
5. Effective prevention strategies
6. Frame work for international collaboration
7. Policy statement by FAO on obsolete pesticides
8. Lessons learnt from the Ethiopia disposal project (April 2000 – September 2002)
9. Future disposal operations (2003)
10. Recommendations of the Sixth Consultation
11. Photo Gallery
12. Copies of Presentations

**6th FAO Consultation
Prevention and Disposal of obsolete and banned pesticides stocks**

1. Foreword

The problems facing developing countries and countries in Economic Transition as a result of obsolete, banned and unwanted pesticides are now largely understood. This is largely due to the initiative taken by the Obsolete Pesticide Prevention and Disposal Project based at FAO, Plant Protection Service (AGPP) with the financial support of the Government of the Netherlands. Thanks to efforts which started in 1994 the causes of accumulation and the strategies needed to effectively deal with past accumulations are now better understood. Since the 5 Consultation meeting held at FAO Head Quarters in September 2002 much additional work has been completed. The Obsolete Pesticide Project has continued its efforts to quantify the scale of the problem, offer technical support to courtiers, develop training materials, supervise disposal operations and generally raise awareness on the issue globally. The Project has also now focused on the development of effective strategies for the prevention of future accumulation and their integration with disposal operations, so offering a more holistic approach to the issues of prevention and disposal.

The first section of this document examines the outputs from the Sixth Consultation Meeting held in Rome in September 2002. The document then goes on to examine the progress made in the areas of prevention and disposal since the last meeting. The second half of the report can therefore be regarded as a summary of the presentations to be made at the Seventh Consultation Meeting planned for September 2004. It is hoped that the document will allow participants to focus their minds on the key issues at hand. The subject matter is aimed at thought provoking and it is hoped that all delegates will study the issues and come prepared for open discussion. It is anticipated that the Seventh Consultation Meeting will enable some of the more difficult issues relating to the continuation of the global FAO programme on obsolete pesticides and the need to increase the level of country and Regional activity to be aired openly and constructively.

Objectives of the Sixth Consultation

The Fifth FAO Consultation in 2001 set the following main recommendations:

- Encourage the development of the Africa Stockpiles Programme (ASP);
- Approach the EU for more support to the prevention and disposal issue on behalf of the member states present at the meeting;
- Call upon the ECA and the AU (then OAU) to prioritise the issue with African governments;
- Increased promotion of integrated pest and vector management as a means of effective prevention of future accumulation;
- Increased involvement of the private sector in inventory and disposal projects to facilitate the early identification of their stocks;
- Study the issues of needs assessment, oversupply and need for strategic stocks of pesticides (improved life cycle management of pesticides);
- Examine the issue of container management and determine the key issues preventing effective container management in developing countries;
- Further development of awareness materials via publication of guidelines, establishment of a user friendly web site and in-country seminars and training events.

The objective of the Sixth Consultation was to assess progress in each of the above areas and to identify the areas where the limited resources currently available should be focussed over the coming period leading to the planned Seventh Consultation, timetabled for September 2004.

Section I of this document, therefore, sets out to demonstrate areas where the milestones set at the Fifth Consultation have been met and highlight areas where more effort is needed to meet the aims and objectives set for the FAO Obsolete Pesticide Project. The final element of Section I set out the recommendations for the future.

Section II of this document provides a summary of progress against the recommendations set at the Sixth Consultation. These points will be presented during the meeting and copies of all presentations will be made available to all participants. Section II will be issued at the end of July 2004 for review and comment by participants prior to the September meeting.

Presentations by Participants

The Sixth Consultation provided an opportunity for other stakeholders in the obsolete pesticide field to present their activities. The meeting welcomed inputs from Crop Life International, the Federal Ministry of Agriculture from the Federal Democratic Republic of Ethiopia, GTZ, Ministry of Foreign Affairs of the Government of Japan, Pesticides Action Network UK (PAN-UK), The Embassy of the Netherlands, UNEP Chemicals and USAID. Relevant comments and questions raised by the delegates or presented by them during the meeting have been inserted into the general text below.

A Fond Farewell and Welcome to New Team Members

The Sixth Consultation Meeting marked the end of an era at FAO with the retirement of Dr Alemayehu Wodageneh in October 2002. Dr Wodageneh was responsible for the inception of the Obsolete Pesticides Project at AGPP. He has been the Coordinator and Chief Technical Advisor to the project since it started in 1994. His dedication to FAO and the issue of obsolete pesticides in particular is well documented and, it is as result of his continued efforts over the years that the issue of obsolete pesticides in developing countries is currently so high on the international agenda. FAO extends its warm thanks to Alemayehu and wishes him well in his retirement.

As one career draws to a close, two other staff members join the FAO Obsolete Pesticide Project team in AGPP. From June 2002 Dr Kevin Helps joined FAO Headquarters as Technical Officer to the Obsolete Pesticide Programme. Dr Helps joins the team at Headquarters following the successful management of the Ethiopia Prevention and Disposal project since 2000 as the FAO Project Manager. He has worked in the area of waste management and disposal of obsolete pesticides for over 10 years prior to joining FAO and it is felt that his practical experience of management of projects in the field will add to institutional knowledge at FAO. Kevin is joined in October of 2002 by Mark Davis. Mr. Davis (currently of the international NGO PAN-UK) has a long association with the issue of obsolete pesticides and more recently with the FAO programme. He is the author of many of the more recent guidelines prepared by FAO and has a background in alternatives to chemical pesticides, improved pesticide management and the development for the effective strategies related to the prevention of accumulation. Mark has also more recently been the independent monitor to the Ethiopia obsolete pesticide project.

2. Opening Address

**N.A. van der Graaff
Chief
FAO Plant Protection Service (AGPP)**

On behalf of the Director General of FAO, Dr Jacques Diouf, I welcome you to the Sixth FAO Consultation on the Prevention and Disposal of Obsolete, Banned and Unwanted Pesticides Stockpiles.

Obsolete pesticide stockpiles continue to grow globally. FAO continues to receive many requests from developing countries for assistance to deal with the stocks from developing countries scattered across the globe. No developing region can be considered free from obsolete stocks of pesticide and with the increased awareness on the issue it is foreseen that the numbers of calls for assistance will increase in the immediate future. The negative impact of these chemicals on public health and the environment continues to increase as old containers begin to fail resulting in their contents contaminating storage locations, soils and water sources.

It is a sad realisation that it is often the poorest sectors of the community which are at most risk from the impacts of these chemicals. The poorest rural communities are at risk from improper use of pesticides. As the pressure of food security in many countries increases small scale farmers are increasing looking at inputs such as pesticides to increase productivity. Unfortunately, there still remains a lack of accurate information and training on selection and safe use pesticides for farmers at this grass roots level. Often, farmers in this sector will turn to the cheapest alternative offered. Increasingly this results in the continued use of banned and obsolete pesticides or the use of usable products which are not designed to treat the target pest.

The problems associated with the safe use of pesticides in sectors of society which are often illiterate further compounds the problems. Even when labels are present on pesticide containers they are often not

copied in local languages. The concept of safe and responsible use of the chemicals is not transmitted to the small scale user. The correct application and dose rate of the materials is often left to word of mouth. Practices such as mixing usable pesticides with banned products such as DDT to enhance the efficacy, with no regard to the potential harm to public health or the environment have been reported.

The issue of the continued use of Persistent Organic Pollutant or POPs pesticides is now high on the international agenda. Thanks to the opening of the Stockholm Convention on POPs for signature and ratification in February 2001 the spot light has been focussed on the continued use of the nine banned pesticides covered under the Convention. Increasingly countries have less opportunity to trade in POPs and the production of the pesticides concerned has all but ceased. A notable exception to this is the continued use of DDT for Malaria control. It remains to be seen if the DDT imported for public health purposes under strict guidance from the WHO will not be diverted for use in agriculture. FAO will continue to monitor this situation at the country level with the support of national NGO groups.

Developing countries continue to lack the budget, technology or experience to deal with the problems posed by obsolete pesticides and POPs alone. The FAO project continues to offer practical assistance for countries on an as-needed basis. Funds are however limited and the extent to which FAO can manage and fund disposal operations is restricted. The FAO project has, therefore, focussed its activities in areas related to the continued preparation of guidelines, training programmes, brochures, fact sheets and awareness raising materials. FAOs role as providing impartial advice and support to meet the needs of the member countries remains at

the heart of the obsolete pesticide programme at FAO.

Since the Fifth Consultation the scope of the FAO programme on obsolete pesticides has broadened. FAO not only focuses on the Africa and Near East Region but has started to use the experience gained since the start of the project in 1994 in other regions such as Latin America and Asia. The broadening of the scope of the FAO programme is a result of the continued financial support of the Government of the Netherlands. The core funding from the Netherlands is now supplemented by additional project budgets from the Government of Japan, UNEP Chemicals and from the Office of Disaster Assistance (OFDA) at USAID. The additional resources provided by the donor community have facilitated the widening of the scope of the FAO programme. FAO and AGPP take this opportunity to express their continued thanks to each of the donors for their financial and moral support. Without the support provided from these concerned agencies FAO efforts to provide assistance in the areas of obsolete pesticides would not be possible. At the same time FAO reminds the broader donor community that dealing with the issues related to obsolete pesticides is complex and expensive. FAO to continue to offer the current level of support will require additional funding to that already secured. For the proposed scaling up of activities as is outlined in this document the level of funding must increase by an order of magnitude. At the current low levels of financial support from the donor community the effective management of obsolete pesticides will never be addressed. Obsolete Stocks continue to accumulate faster than

the rate at which they are being removed and destroyed.

The planned Regional initiative for Africa (the ASP) hopes to address this issue in a programmatic way. It is currently believed that the ASP will succeed where past programmes have been unsuccessful in providing a focus for all donor support related to obsolete pesticides. The partnership between FAO, World Bank, International NGO groups, UNEP, Secretariat of the Basel Convention, UNIDO, WHO, ECA, AU and the pesticide manufacturers as represented by Crop Life International (Formerly the Global Crop Protection Federation – GCPF) is committed to providing the necessary technical resources to ensure that the obsolete pesticide related problems faced in developing countries are dealt with safely and to the highest international standards. The ASP and FAO in particular, will accept no dual standards in terms of technology for disposal, health, safety and environmental standards for clean-up operations or promotion of real, workable prevention initiatives. It waits to be seen if the larger donor community is ready, willing and able to support the initiative financially.

The Sixth Consultation is aimed at providing a forum for experts from all stakeholder groups involved with management of obsolete pesticides to actively contribute to the development of an action plan for reducing the impact from these chemicals on the developing world. By working as a partnership it is believed that tangible progress can be made to deal with this real threat to some of our poorest communities.

3. Update on FAO Activities

Dr Alemayehu Wodageneh
FAO Coordinator and Chief Technical Advisor
Prevention and Disposal of Obsolete Pesticides

Dr Kevin Helps
FAO Technical Officer
Prevention and Disposal of Obsolete Pesticides

Introduction

Since the Fifth FAO Consultation in May 2001 the Obsolete Pesticide Project based in the AGPP Service has focussed its limited resources in the following key areas:

- Continued inventory taking in Africa, Asia, Latin America and the Near East;
- Support to formulation of the African Stockpile Programme (ASP)
- Training and awareness raising missions
- Completion and publication of three additional guideline documents:
- On-going management of the Ethiopia Obsolete Pesticide Project;

The activities of the project have benefited from the coordination of the inputs from the budgets from UNEP Chemicals, USEPA / OFDA and the Government of Japan with the on-going Netherlands project.

Inventory Taking

The inventory process for obsolete pesticides is one under constant revision and improvement. The main developments since the last consultation meeting can be summarised as:

1. Broadening of the scope of what categories of materials we include in the inventory;
2. The development of a specific training module / guideline on completion of inventory (see below under Technical Guidelines);
3. Increased focus in regions other than Africa;
4. Development of country level projects for detailed inventory.

Each of the above points is explained in more detail below and in subsequent sections of this report.

1. Broadening of Scope of Inventory

The impact of obsolete pesticide formulations is well understood. What is becoming increasingly apparent is the need to broaden the scope of the inventory process to include other pesticide related wastes which pose a significant threat to public health and / or the environment. The four main categories of materials to be included in the inventory date include:

- i. Banned, unwanted and pesticides past their two year manufacturers expiry date. They may be present as technical grade (pure) products or as a variety of formulation types such as liquids mixed with flammable solvents, granules, powders, emulsions, gases, etc.

- ii. Empty pesticide containers. Containers come in a wide variety of physical forms and include, for example, steel or plastic drums, jerry cans, plastic, paper or jute bags, contaminated carton boxes, etc. These can be considered as being equally as dangerous as pesticides in some instances. In many developing countries a large proportion of pesticide containers are end up being used for domestic purposes for water or food storage potentially resulting in major environmental and public health effects.
- iii. Heavily contaminated soils. In many instances may be considered equally as hazardous as the pesticide contaminant. Contaminated soils pose a major threat to ground water in affected sites. Therefore heavily contaminated soils must be estimated and included in an inventory of obsolete stocks.
- iv. Buried pesticides. Can be found in many countries. The US Superfund has estimated that for every tonne of leaked pesticide / chemical there is a minimum of ten tonnes of associated contaminated soil. This is borne out by recent project studies in areas such as Yemen (See Below).

The inclusion of these additional categories in the inventory plus the continued import of new materials (resulting in new pesticide containers entering the re-use market), the increased incidence of failure of old pesticide containers resulting in their leakage into the environment and the continued improper disposal of pesticides and old containers by illegal burial (as currently advocated in GCPF guidelines on disposal) will undoubtedly increase the amounts of materials listed on country inventories. The impact on public health and environment posed by these toxic materials will continue to increase as the proportion of leaking containers continues to increase with time.

As a direct result of this broadening of the scope of inventory FAO has highlighted a significant quantity of pesticide related products in the Republic of South Africa. Following the purchase of the Sentrachem Group of Companies in South Africa by the DOW Group it can be revealed that the NCP production site based at Chloorkop near Pretoria contains an estimated 50 - 70,000 tonnes of production residues believed to be from the manufacture of *gamma* BHC. The materials are understood to be scattered over three locations at the site and presently there is only minimal environmental control on the potential spread of the waste into the ground water / aquifer.

Preliminary analysis of the materials of the site are believed to indicate the presence of the *alpha* and *delta* isomers of BHC. These isomers of BHC are not used as pesticides due to their high toxicity to mammals. At the time of the Consultation Meeting (September 2002) it was reported that there had been no environmental impact assessment made on the dump site and it only very recently that the presence of the waste mountain has been declared to the Environmental Authorities in South Africa.

It is also understood that following the purchase of the site by DOW a series of international and national disposal companies were invited to present proposals on how the site may be remediated. Since that time (1999) no reports have been disclosed on the proposed strategy for remediation or the associated environmental impact assessment for the site by the owner of the site (DOW). The private sector continues to argue that the materials are not pesticides and so should not be included in any inventory data for the region. Whilst the materials are not used as pesticides they are considered as highly toxic and are believed to be directly associated with the manufacture of pesticides sold in South Africa. As such FAO will continue to press the owner of the site to develop an adequate and transparent remediation plan for the site in collaboration with the national authorities and NGO Groups.

The cost for the complete remediation of the site must be borne in full by the current owner and should not be subject to international donor funds targeted for treating obsolete

pesticides. FAO will continue to monitor this situation closely and report back to the next meeting of this group.

2. Inventory Training Module

The increased scope of the inventory process plus the increasing interest from countries in advice on how to complete the inventory of stocks accurately has resulted in the development of an FAO training package.

The package has been developed in consultation with International NGO Groups (Pesticide Action Network UK, PAN-UK) and technical experts from waste management and disposal companies. A more detailed description of the training programme can be found later in this document in the section related to Guidelines.

The training programme was delivered for the first time in June 2000 to thirty nine assorted staff from the National and Regional Ministry of Agriculture in Ethiopia. The initial feedback on the training and the ongoing peer review of the content of the training have resulted in a series of improvements in course content and delivery technique. It is felt that the training materials are best left as a live, evolving series of presentations and interactive exercises which will eventually become part of a larger web-based system for training in all aspects related to obsolete pesticide management. This will be presented to the next meeting of this group.

Requests have been made for an editorial system to be developed within the group attending the Consultation meetings. Whilst the idea has some merit FAO reserves the right to publish its own guidance documents and training materials based on its international mandate to provide impartial technical support and guidance to all its member countries. FAO will undertake to ensure that all training materials are factually accurate as far as is possible at the time of publication. Members of the consultation group are welcome to offer their comments and potential revisions / suggestions on improvement at any time. FAO will commit to study the suggestions and adopt them as it sees necessary and in the general benefit of its members. The vast majority of the materials reproduced in the inventory training package are the result of collaboration with specialist consultants and contractors during the successful implementation of the FAO pilot disposal projects completed since 1996. The principles are based on internationally recognised best practice as detailed in US and EU regulations relating to Health, Safety and Environment. All partners in the obsolete pesticide are welcome to use the materials with the provision that due and full recognition is given to FAO for the development of the training package.

3. Inventory Activities Outside Africa

As previously reported, with the financial assistance of the Government of Japan, USAID and UNEP Chemicals FAO has been able to widen the geographical area included in the obsolete pesticide project. The project can now be considered a truly global programme with inventory training and awareness raising workshops being completed in Latin America, Asia, Near East. This effort has been supplemented by the active participation in workshops organised through UNEP Chemicals in the CIS countries and Eastern / Central Europe.

Missions have been completed to Columbia (funded through the FAO Technical Cooperative Programme), Bahrain, Yemen, Bratislava under UNEP (attended by 13 countries from Eastern Europe), Trinidad and Tobago under UNEP (attended by 11 Caribbean countries) and Thailand (attended by representatives from Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Kazakhstan, Korea DPR, Korea S, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Vietnam) and funded through the Government of Japan.

Requests for technical advice, copies of FAO Guidelines and field missions from new countries becoming aware of the issues related to obsolete pesticides continue to arise. The problem of obsolete stocks in developing countries is clearly on the increase and the current rate of disposal and removal of stocks is not keeping pace with the rate of continued accumulation. Only through the continued support of the donor community and the impartial advice given through the international organisations can countries begin to address the issue in a meaningful way.

4. Country Projects on Inventory

With the assistance of the Government of Japan, FAO has been successful in developing a project for inventory of obsolete pesticides in Mozambique. The project is currently under the final stages of development and it is estimated that work in Mozambique will commence in early 2003. The Government of Japan has agreed to support the project through a Unilateral Trust Fund (UTF). In this case the funds for the project are donated to the country and then on to FAO for financial management. The benefit of this mechanism is that the country has a direct role in the development of the project and associated budget whilst the donor has the confidence that the funds are being administered to the highest standards through the fully audited FAO system.

The project in Mozambique will focus on the completion of a comprehensive national inventory of pesticides with an initial review of current crop protection strategies, pesticide management activities, interactions between concerned ministries and the potential for increased uptake of alternative crop protection strategies such as integrated pest management (IPM). The project is scheduled to run for twelve months with the development of a final project document for a prevention and disposal project (similar to that currently operating in Ethiopia) for support by the donor community.

The FAO / Government of Mozambique managed project will differ from previous initiatives (through DANIDA and the private sector) by ensuring the development of a strategy to prevent future accumulation. The project will also include all stakeholders in the issue (including local NGO groups that were previously vocal opponents of the DANIDA project) in an open and transparent manner. The establishment of a national project steering committee comprising representatives from the Ministries of Agriculture, Environment, Health plus donor representatives, national NGOs and FAO will aid the process of open, consultative project management. The appointment of an international, independent project monitor to the project has also been agreed. It is anticipated that a report by the national project manager from Mozambique will be made at the next consultation meeting.

Support to the ASP

Details on the ASP, the partners and the goals of the programme can be found below under the section devoted to development of a "Framework for International Cooperation".

Over the past 12 months the FAO Obsolete Pesticide Project has increased its inputs into the development of the ASP. To date FAO has focussed its inputs on development of the technical specifications to which the ASP should operate. The practical, in the field experience of the FAO team and the institutional knowledge related to plant protection strategies has been an invaluable input into the further development of the ASP.

Recent discussions have focussed on the need for the development of a technical support structure for the oversight of country level activities in the ASP. FAO has proposed that it no longer acts at "country level" via the provision of project managers on the ground but through the utilisation of the experience gained in projects such as Zambia, Yemen and Ethiopia to provide technical overview, guidance and support to country teams. The development of this Quality

Assurance role for FAO in the ASP can be considered as an evolution of the existing FAO activities in Africa. The role again centres on FAO's role to provide impartial advice and support to its member countries in the best interest of the country and not for any benefit to any third party.

FAO has continued to maintain pressure on the pesticide manufacturers (now represented by Crop Life International or CLI, previously known as the Global Crop Protection Federation or GCPF). At the time of the 6th Consultation CLI have failed to come forward with a meaningful contribution to the solution of the problem of obsolete pesticides in developing countries. Only through maintaining pressure on CLI to increase the level of commitment to the issue of obsolete pesticides will a meaningful contribution be made. A close examination of the data released by CLI in 2002 on projects "completed" by or "involving" them as key stakeholders reveals a number of areas where activities were not completed with full involvement of the national government in the project country, where CLI representatives were paid for services provided and instances where projects were limited to CLI member stocks when the opportunity for development of a national project with FAO existed. FAO continues to present all information in a clear and transparent manner. It would request that CLI now adopt the same open, collaborative approach for the future.

The role of CLI in the ASP is, therefore, currently under debate. CLI have been asked to come forward with a firm proposal on how it intends to support the ASP. The potential for a united flexible contribution to the overall ASP project fund (estimated at US\$60M for phase I) remains unlikely.

In October 2001 FAO participated in an ASP partners meeting in London, hosted by WWF.

This meeting was followed by a meeting in Vienna in December 2001, hosted by UNIDO.

Training and Awareness Raising

As mentioned above FAO continues to hold and participate in training and awareness raising workshops across the globe. The project at FAO works in close cooperation with both UNEP Chemicals and UNIDO in the area of persistent organic pollutants (POPs) as defined under the Stockholm Convention. As has been made clear previously, nine of the current twelve POPs are pesticides. As such FAO has an established system for the inventory and disposal of POPs in developing countries. The experience gained over the past 8 years has been of great use to the POPs teams at UNEP and UNIDO and FAO gives an undertaking to continue its support in this area. As with the ASP above, FAO can be considered as having a unique position in the area of POPs inventory and disposal.

Over the previous 8 years the FAO project on obsolete pesticides has successfully assisted in the compilation of inventories of obsolete pesticides in 46 countries in Africa, 8 countries in the Near East, 19 Latin American and Caribbean countries and 13 Asian countries. This data, plus the development, publication, translation and provision free of charge of guidelines associated with improved management of obsolete pesticides has provided a solid foundation on which the POPs and ASP initiatives will be able to build.

In the specific area of Training and Awareness Raising the major activity to report since the last consultation meeting in the completion of a Regional Workshop on Obsolete Pesticides in Asia Pacific Region. The meeting was held at the FAO Regional Office for Asia Pacific in Bangkok, Thailand June 5th to 8th 2001.

The meeting was attended by representatives from Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Kazakhstan, Korea DPR, Korea S, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. The workshop was originally

planned as inventory training for operational plant protection staff from each country. This plan was revised when details of the representatives attending the "training" were made available. This has led to the conclusion that the existing inventory training package should perhaps be remodelled to provide the opportunity to select specific modules of information at varying levels of detail based on the composition and level of the audience. As a result of this the existing guideline on inventory training will be removed from print and plans will be developed to provide a web based package with increased flexibility and broader scope than the printed version. This will also facilitate the on-going revision and improvement of the package and the incorporation of new regulations, working methods and lessons learnt from practical project implementation in the field.

The delegates at the meeting were senior plant protection officials and as a result the workshop focussed on the FAO team listening to the comprehensive reports compiled by each country. The country presentations were interspersed with extracts from the new FAO guideline on inventory taking were appropriate. From the workshop it was confirmed that the major barrier to developing a regional approach, similar to that already under development for Africa, is the wide variation in economic conditions across the region. This has led to the conclusion that the way forward will be for FAO and the countries to seek financial support to provide country level and sub-regional level support to inventory and disposal activities. It is also now planned to complete a training of trainers programme for inventory of obsolete pesticides using the existing limited budget. It is felt that this approach will result in the most positive results given the current low level of donor support available.

One particular point to note is that a number of delegates did express the need to redo inventory work based on the presentations made at the workshop. In some cases this was despite recent advice and involvement from other bodies active in this subject area. This provides a further example, if one were needed, of the importance of impartial advice based on the best interest of the country and resulting from the incorporation of lessons learnt from previous projects (see below).

Technical Guidelines

The need for additional technical guidelines in the area of prevention and disposal of obsolete stocks is constantly under review. Based on requests for information and guidance from the countries the following new documents have been published since the last consultation meeting:

i. **Guideline No. 9: Base Line Study**

The study served as background for the OECD-FAO-UNEP Workshop on Obsolete Pesticide Stocks (September 2000, USA) and the IOMC (Inter-Organisation Programme for the Sound Management of Chemicals) meeting in Brazil, in October 2000.

This baseline study provides a snapshot of the current global situation of obsolete pesticides, and reviews the perspective of the various organisations that have an interest in the issue. It was prepared as the basis for a collaborative plan of action to be carried out by the interagency working group on obsolete pesticide stocks. The interagency group includes the UNEP Chemicals Programme, UNEP Secretariat for the Basel Convention, FAO Programme for Prevention and Disposal of Obsolete Pesticide Stocks, WHO Programme for Chemical Safety, and the OECD Pesticide Programme.

The study has confirmed that very large stockpiles of obsolete pesticides have accumulated in virtually all developing countries over periods that sometimes extend back more than four decades. The accumulation of these stocks has resulted from a variety of causes that will be described in more detail later in this report. Current estimates suggest that up to 500,000 tonnes of obsolete pesticides are held in non-OECD countries. The condition of these pesticides varies from extremely good,

potentially usable products, to unidentifiable mounds of mixed products and heavily contaminated soils into which pesticides have leaked from their containers.

The common feature which binds these stocks, regardless of their condition or location, is the serious threat that they pose to human health and the environment while they remain inadequately managed. The most acute hazards are present close to the stockpiles, but many of the obsolete pesticides can be transported through the global environment to contaminate ecological compartments and organisms far away.

The guideline highlights that the scale and nature of this problem demand urgent action be taken to remove the stockpiles and prevent their recurrence. Such action is technically complex and costly, and requires the support of the international community.

ii. Guideline No. 10: Inventory Training Manual

FAO has assisted in the completion of obsolete pesticide inventories in Africa and the Near East and is now working in Latin America and Asia.

The increased level of activity in the area of inventory has resulted in the development of a bespoke training package to assist countries during the inventory process. The training and associated guideline aim to provide the tools necessary to:

- **Complete effective inventories** – Understand the importance of accurate and safe inventory taking, and adopt standard methods to be followed by all countries.
- **Protect workers, the public & the environment** – Identify the hazards of obsolete pesticides and how to protect those working with them and members of the public and the environment from them.
- **Prioritise sites for action** – Make decisions about which situations are most hazardous and need to be dealt with first.
- **Stabilize & clean storage sites** – How to work safely and effectively to prevent further contamination from leaking pesticides and contaminated material.
- **Prevent future accumulation** – How to prevent similar problems from occurring in the future.
- **Prepare proposals for disposal operations** – What needs to be done to solve existing problems and how can progress be made.

The workshop will run over 5 days. Each day is divided into two sessions: morning and afternoon. Topics are presented as a combination of a lecture plus a demonstration, practical exercise or video. The training programme is aimed at country level operational staff from Crop Protection / Environmental backgrounds.

The subject areas covered by the training / guideline are:

- General introduction
- Health and environmental hazards
- Occupational exposure
- Finding out about pesticides
- Disposal technology options
- Protective Equipment
- Safe working and Risk Assessment
- Stock control / storage / spillage control
- The inventory process
- Sampling and analysis
- Classification, packaging and labelling
- Basic first aid
- Tendering for disposal activities

Since the original development of the package / guideline training has been given in Ethiopia, Nigeria and Bangkok. Following the feedback from these workshops variations in content and delivery are planned. The guideline will be transferred to web based package made up from discrete modules focussing on the key areas. Much of the very detailed background will be formulated into fact sheets with the guidance / training manual focussing more on the critical components of the inventory and associated processes.

iii. Guideline No. 11: Country Guidelines

This document outlines the measures that countries should consider taking before approaches are made for external financial and technical assistance to dispose of obsolete pesticide stocks and put in place measures to prevent their recurrence.

Almost every developing country and economy in transition has stocks of obsolete pesticides. These are pesticides that have no use in their current location or have become unusable for various reasons.

All pesticides are hazardous to some degree and can cause harm to human health and the environment, particularly if they are misused or overused. Obsolete pesticide stockpiles present additional hazards because they often include old chemicals that may have been banned because of their toxic effects, or they may be in a deteriorated condition that causes additional human or environmental exposure.

Preventing the creation of obsolete pesticide stocks is essential and depends on governments, pesticide manufacturers and distributors and other organisations including donors and end users themselves. However, in many countries historical factors have led to the accumulation of obsolete pesticide stockpiles that now need to be dealt with. Delaying action will make the problems worse by allowing further deterioration of stocks and consequently more harm to health and the environment.

The problem of existing obsolete pesticide stockpiles must be addressed with urgency. However, no single organisation can solve the problem on its own. A collaborative effort that includes governments, international organisations, industry, donors, NGOs, pesticide users and other stakeholders is required. Dealing with obsolete pesticides in an appropriate manner is also costly and technically complex so that external assistance is inevitably needed. Recruiting such assistance can be a lengthy process and is sometimes not successful.

While a country is seeking and waiting for external assistance much can be done to prepare for a future comprehensive cleanup operation. This preparatory work can also stabilise the situation so that further environmental contamination and health hazards from leaking pesticides can be halted.

A country taking appropriate action before donors are approached demonstrates commitment to solving the problem of obsolete pesticides and to preventing its recurrence. Donors view this positively. In addition, taking appropriate action early can reduce the cost of a cleanup operation and will help to build capacity in country for the management of pesticides and hazardous waste.

Ethiopia Obsolete Pesticide Disposal and Prevention Project

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Project Review and Current Status

Introduction

The Project on prevention and disposal of obsolete stocks in Ethiopia was originally designed to accommodate the removal and safe disposal by incineration of a maximum of 1500 tonnes of obsolete pesticides, contaminated soils and contaminated spray equipment from a total of about 400 sites in Ethiopia. A detailed Project Document was prepared in 1998 following the completion of an FAO lead Task Force Mission to Ethiopia.

The original project document estimated that the cost of removal and disposal of this quantity of material was over U\$4.6M. Three donors came forward soon after the initial donor meeting to pledge support to cover the vast majority of the estimated budget:

- | | |
|---|----------|
| 1. US AID – Firm pledge of | U\$1M |
| 2. Netherlands Embassy – Firm Pledge of | U\$2.25M |
| 3. Swedish SIDA – Firm Pledge of | U\$1.17M |

Total fund secured under the initial project document U\$4.42M approx.

It should be noted that the budget estimated excluded any potential contribution from the private sector pesticide manufacturers, now represented by the trade association Crop Life International. At the time of formulation of the project document it was estimated that a contribution not less than U\$500,000 would be secured so allowing the full removal of the total 1500 tonnes estimated to be in Ethiopia.

The works to be funded under the initial contribution from the three donors can be summarised as:

- The securing of pledges from the three initial donors and transfer of funds in line with multi-lateral trust fund agreements at FAO head quarters;
- The training of Federal and Regional counterpart staff;
- Procurement of essential equipment;
- The development of a multi-stakeholder National Project Coordination Committee. The Committee comprised representatives from all major stakeholders to the project including the Ministries of Agriculture, Environment, Health, Economic Development and Foreign Affairs, international organisations such as FAO, UNIDO and WHO, local NGOs, international NGOs and local and international representatives of Crop Life International;
- The completion of a revised detailed inventory of all sites used to store obsolete pesticides including chemicals, contaminated containers and equipment, heavily contaminated soils and buried pesticides;
- The upgrade of existing laboratory capacity at the Crop Production, Protection, Technology and Regulatory Department at the Federal Ministry of Agriculture;
- Disposal of a total of 1500 metric tonnes of obsolete, banned and unwanted pesticides from sites scattered over Ethiopia;
- The upgrade of specific storage locations to comply with FAO Guidelines for effective, safe pesticide storage;
- The development of a national framework for integrated pest management (IPM) in Ethiopia;

Phase I of the Prevention and Disposal Project: Status Report

The initial contract for the disposal of 1500 tonnes of obsolete pesticide stocks was subject to international tender according to FAO procurement rules. The initial contract for 1500 tonnes has been awarded to Ekokem Oy Ab of Finland. Ekokem operate a series of hazardous waste high temperature incinerators in Finland. Ekokem have also gained experience in pesticide disposal operations internationally.

The data collected during the new inventory of stocks confirmed that over 2900 tonnes of obsolete chemicals plus a minimum of 1000 tonnes of contaminated soils exist in over 900 sites across Ethiopia. Huge quantities of empty containers and contaminated spray equipment also exist. All of this material poses a serious threat to the environment and population of Ethiopia. Following upgrade, commissioning of equipment and training of personnel the Crop Protection laboratory was utilised to identify stocks of chemicals included in the inventory which may be used, so reducing the quantity sent for disposal. The analysis programme undertaken confirmed that 400 tonnes of stocks classed originally as obsolete could be used as a strategic stock to combat outbreaks of migratory pests such as desert locust and army worm. This reduction in the quantity of obsolete stocks requiring immediate disposal resulted in approx. 1000 tonnes of confirmed obsolete pesticides requiring safe disposal in addition to the initial 1500 tonnes covered by the original project.

This additional stock is not confined to a single Region or owner but distributed over the entire country. All stakeholders (State Farms, Ministry of Agriculture, Large corporations such as AISCO etc) have additional stocks in new locations. A wide variety of pesticides are present in Ethiopia, including large quantities of banned Organo-Chlorine pesticides such as DDT and other persistent organic pollutants or POPs.

The project has successfully repackaged over 1000 tonnes of obsolete pesticides as of September 1st. It is currently estimated that the repackaging of the remaining 500 tonnes of obsolete pesticides covered under the initial contract for project will be completed by the end of March 2003. The current estimate for final transportation and disposal of the waste in Finland is May 2003.

In addition to the progress made in the disposal operation the aims as outlined above have all been successfully addressed under the project. Activities such as the formulation of a National Framework for IPM, upgrade and commissioning of the laboratory, training of national counterparts etc. have all been addressed. As a result of funding limitations there is still the opportunity to improve on the initiatives which have already been started and to build upon the foundations laid so far under the initial project on prevention and disposal (hereafter called Phase I).

The funding of the Phase I of the project was based on a level of contribution from the pesticide manufacturers. It is understood that an agreement to contribute to the cost of disposal of the stocks supplied by their members has now been finalised. This contribution only covers approx. one third of the unit cost of disposal for every kilo of stocks identified and verified in the store. The contribution to disposal is considered by the manufacturers as a voluntary act and is the current limit of their contribution to the disposal effort. It is estimated that the final value of contribution from the pesticide industry will be approx. US\$500,000 for Phase I of the project. This is in line with the estimated contribution made at the time of the formulation of the original project document in 1998.

Phase II of the Prevention and Disposal Project

During the completion of activities under Phase I of the Project work continued on securing additional funds to allow the removal of all obsolete pesticides in Ethiopia. This resulted in two

donors entering into negotiations with FAO and the Ministry of Agriculture on the funding of the disposal of the additional approx. 1000 tonnes of obsolete pesticides plus further development of effective prevention initiatives.

Phase II will focus on:

- Disposal of pesticides (approx. 1000 tonnes);
- Disposal of soils at high priority sites using local treatment;
- Container management;
- Removal and disposal of sites where it is known that Buried Pesticides exist;
- Review of Regulation;
- Review of Pesticide Management practices (life cycle management);
- Preparation and implementation of four IPM Pilot Projects;
- Awareness Raising and Education on pesticide issues through close collaboration with national NGO groups;
- Capacity Building and Institutional Strengthening to allow the management of the project by national staff.

Phase II of the disposal operation will continue to be managed by the team established under Phase I of the project, based at the Ministry of Agriculture (MoA) department of Crop Production, Protection, Technology and Regulation (CPPTR). FAO will continue to oversee all technical aspects of the project and coordinate activities with relation to donor inputs, supervision of field activities and overall guidance of the project. The day-to-day management of the project under Phase II will lie with the national counterpart staff at the CPPTR. The capacity built under Phase I of the project will be fully utilised under Phase II making the second phase of the project more country managed and country driven.

To date two donors have expressed interest in supporting the phase II project in Ethiopia. These are Finland and Belgium. It is also understood that the Government of Japan may be willing to fund prevention related activities. It is anticipated that the necessary agreements between FAO and the MoA, FAO and Finland and the Government of Ethiopia and the Kingdom of Belgium will be concluded before the end of December 2003. This will facilitate the necessary funds to become available as close as possible to the projected end date of Phase I of the Project (March 2003). All parties are committed to ensure that delays in starting Phase II activities are kept to an absolute minimum. All parties aim to ensure that Phase II operations will start in April / May 2003.

It is hoped that a contribution from the Government of Japan be used to cover the cost of some of the following key components. There will be a requirement for the formulation of detailed project around these components and a firm budget in the appropriate FAO format to facilitate the finalisation of a Unilateral Trust Fund (UTF) agreement. The final budget will be finalised when agreement is reached as to the specific components included from the list.

The specific components where the fund from the Government of Japan may be used are in the areas of soil clean-up, development of IPM pilot projects, review of pesticide management including areas such as proper storage of pesticides and development of mechanisms for effective distribution and use of pesticides and in training in safe pesticide use.

4. NGO Monitoring of Prevention and Disposal Projects

Mark Davis
Pesticide Action Network – UK (PAN-UK)

5. Effective Prevention Strategies

Mark Davis
Pesticide Action Network – UK (PAN-UK)

Need to include something here on pesticide supply for emergency as this was raised by Netherlands PR at the meeting.

6. Framework for International Cooperation

ASP PROGRAMME OVERVIEW

The urgent cleanup of stockpiles of obsolete pesticides and associated waste and the prevention of further accumulation in African countries requires a coordinated, multi stakeholder approach.

The challenge. Virtually every African country has stockpiles of obsolete pesticides and associated wastes that have accumulated over periods as long as 40 years. At least 50,000 tonnes of obsolete pesticides, as well as tens of thousands of tonnes of contaminated soil, have accumulated in African countries. These pesticides pose serious threats to the health of both rural and urban populations, especially the poorest of the poor, and contribute to land and water degradation. The stockpiles consist of toxic pesticides and associated contaminated materials. An estimated 30 percent of the waste mixtures are believed to be persistent organic pollutants (POPs)--a recent international and GEF concern under the Stockholm Convention.

Reasons for stockpile accumulation. Chemical pesticides have contributed to the protection of crop, human, and animal health for over a half century. Because of the potential toxicity of pesticides, their production, trade, and use are tightly regulated and managed in many industrialized nations. In developing countries, however, management of pesticides is often inadequate due to a lack of available resources. Many of these countries suffer from weak import controls, poor storage and stock management, and a lack of training and education on appropriate pesticide use.

Past and current cleanup. In nearly a decade of cleanup activity, less than 5 percent of the estimated stockpiles have been disposed of. Despite the committed efforts of the Food and Agriculture Organization (FAO) and others to address this problem, obsolete pesticides continue to accumulate. Efforts on the part of FAO, as well as other intergovernmental organizations, bilateral donors, and NGOs have succeeded in raising awareness and in providing preliminary information on the extent of the problem. In some countries disposal operations have taken place and programmes to improve pesticide controls and promote sustainable alternatives have been implemented. The impact on a regional or global scale of these individual activities is small and it is probable that stockpiles of obsolete pesticides and other pesticide-related problems are growing more quickly than they are being alleviated.

What needs to be done? A special initiative to deal with this problem is urgently needed. Removal of old chemicals rarely receives priority as a development issue. Both recipient countries and donor agencies are often reluctant to divert funds allocated to poverty reduction, food security, or other elements of sustainable development to the issue of waste disposal. The linkage between wastes, health impacts, and poverty issues is not fully recognized. Yet new funds dedicated to pesticides management and disposal would reduce the public health impacts which disproportionately affect the poor, and thereby address a barrier to poverty reduction and sustainable development. Such dedicated funds would also facilitate the capacity building that would prevent recurrence of the current stockpiles situation.

The Africa Stockpiles Programme (ASP) aims to clear all obsolete pesticide stocks from Africa and put in place measures to prevent their recurrence. The concept of a continent-wide stockpiles project grew out of informal discussions between NGOs and several inter-governmental organizations. Since December 2000, the Africa Stockpiles Programme has evolved substantially as a multi-stakeholder partnership. ASP's objective is to

- clean up stockpiled pesticides and pesticide-contaminated waste (e.g., containers and equipment) in Africa in an environmentally sound manner;
- catalyze development of prevention measures; and
- provide capacity building and institutional strengthening on important chemicals-related issues.

Several guiding principles important to the programme's success have been agreed upon:

- ASP will be available to all countries that meet the basic criteria as part of their overall sustainable development strategies;
- activities will be country-driven;
- ASP will work in conjunction with existing activities related to prevention and disposal of obsolete pesticides so as to prevent duplication;
- prevention of future accumulation is as important as disposal of existing stockpiles;
- management and destruction of POPs pesticides will be in full compliance with the Stockholm and Basel Conventions and other relevant international regimes.

ASP activities will also create opportunities to address broader hazardous waste management issues and evaluate new, cleaner disposal technologies.

A phased long-term approach is needed, implemented in at least three tranches spread over 10 to 15 years. The pilot tranche of 3 to 4 years will be implemented through a “strategic partnership” involving multiple stakeholders. To participate in the programme, countries would identify countrywide cleanup and prevention projects.

The ASP framework will help ensure full coordination of effort across the continent and help catalyze a wider group of stakeholders and interested parties. The key elements of this approach will be

- up-front approval of funds and commitments by donors to establish a predictable envelope of grant financing to which beneficiary countries and co-financiers have access;
- bundling together of critical investment needs to promote higher political visibility and interest; and
- taking advantage of existing expertise and on-the-ground learning to replicate and transfer investment experiences throughout the African continent.

Current partners include financial institutions and specialized executing agencies, and efforts are being made to fully engage NGOs and the private sector.

The Global Environment Facility (GEF), given its role as the interim financial mechanism for the Stockholm POPs Convention, was urged to provide ASP with dedicated funds for development and implementation. The commitment to POPs was reinforced when the GEF Assembly adopted a new focal area on POPs. In addition to direct health and environment benefits, ASP can provide global benefits in two other GEF focal areas--biodiversity and international waters--and also benefit efforts to fight land degradation. For planning purposes, the GEF has approved PDF grants for ASP totaling nearly US \$800,000. In October the GEF Council approved Phase 1 of the Africa Stockpiles Programme. The Council also pledged US \$25 million for Phase 1 activities with the understanding that \$35 million in co-financing will be contributed by government aid agencies, the private sector, and other donors, and that participating countries will ratify the Stockholm POPs Convention. For the development phase, Pesticide Action Network-UK is the ASP coordinator.

Cleanup, Disposal, and Prevention Costs. Since no adequate hazardous waste destruction facilities exist in Africa, waste is usually exported to an approved facility in a developed country at a cost of approximately US\$3,500 per tonne of waste. Based on these figures, the total cost for clearing the entire continent of its stockpiles of obsolete pesticides is estimated to be US\$150-175 million. Because prevention is as important as disposal, ASP will help develop suitable measures to prevent the recurrence of obsolete pesticide accumulation. The range of prevention measures will include pesticide use reduction and improved management of pesticides, and will vary with the needs of individual countries. The total budget for prevention measures is estimated at US\$50-75 million. Thus, the total ASP fund needed to cover programme costs is expected to be US\$200-250 million.

Funding. In addition to the GEF funding, the World Bank (as Implementing Agency) and WWF (as Executing Agency for the programme’s development) will play a key role in raising the additional funding. ASP will also benefit from the assistance and fundraising capabilities of its other

participants. Funds will be sought from bilateral and multilateral donor agencies, private foundations, and the corporate sector, including pesticide manufacturers, transporters, and waste disposal operators. Substantial effort, energy, and resources are being devoted to making ASP an operational reality as expeditiously as possible.

The Africa Stockpiles Programme brings together the skills, expertise, and resources of a diverse group of stakeholders, enabling national leadership to carry out country-led activities. This exciting, innovative project offers real on-the-ground solutions to a difficult problem. By reducing and removing long-standing toxic threats throughout Africa, ASP promotes improved public health, poverty reduction, and environmental safety—critical elements of sustainable development.

7. Policy Statement by FAO

**N.A. van der Graaff
Chief
FAO Plant Protection Service (AGPP)**

The extensive experience of FAO in this field has brought about recognition of the severe health and environmental risks posed by the existence of obsolete pesticide stockpiles. These stockpiles are known to exist in virtually all developing countries and countries with economies in transition.

The FAO programme on obsolete pesticides has worked intensively to raise awareness to the issue of obsolete pesticides among developing country governments and donors. The emphasis of the programme is on preventing the creation of new obsolete stocks and assisting in the disposal of existing obsolete pesticides in an environmentally sound manner.

FAO remains committed to resolving problems associated with obsolete pesticides in the context of its mandate on the wider management of pesticides and crop protection. In this regard FAO makes the following statements and commitments:

- FAO maintains its commitment to collaboration with all stakeholders involved in matters related to the prevention and disposal of obsolete pesticide, pesticide management and the promotion of ecologically based crop production and pest management systems as embodied by practices such as integrated pest management;
- FAO is committed to remain the focal point for the coordination and management of issues relating to the safe management of pesticides through their entire life cycle;
- FAO remains the organisation with an international mandate to deal impartially with issues related to pesticide management and to act in accordance with and in the best interest of the member countries, international community and other agencies;
- FAO continues to work with the member countries to harmonise legislation and promote the countries to ratify the international Conventions on waste (Rotterdam, Stockholm and Basel). FAO continues to actively promote the International Code of Conduct on the Distribution and Use of Pesticides and to encourage countries to follow its guiding principles;
- FAO is pleased to be a partner in the Africa Stockpiles Programme and to host the planned Africa Stockpiles Programme (ASP) Technical Support Unit. The ASP and the Technical Support Unit will benefit from the unique and extensive experience gained by the existing obsolete pesticide disposal project and will build on its success;
- There remains a need for the core, normative activities to remain at FAO in addition to the activities of the ASP and FAO remains committed to maintaining the existing project on obsolete pesticide disposal and prevention.

8. Lessons Learnt From the Ethiopia Disposal Project

Since the inception of the FAO project on obsolete pesticides project in 1994 a number of valuable lessons have been learnt which will benefit countries embarking on developing a solution to their pesticide related problems. The FAO project has endeavoured to incorporate the lessons into the guidelines and advice provided to countries as part of an on-going review of activities.

The experience and lessons learnt since 1994 have been a key factor in the design and development of the Africa Stockpiles Programme (ASP). It is important to ensure that lessons, mistakes and / or omissions from past projects are not repeated when the amount of country level activity increases with the start of the ASP. FAO has in the past eight years developed a tried and tested formula for the development, implementation and execution of prevention and disposal projects for obsolete pesticides, from initial awareness raising, through inventory, stakeholder involvement, repackaging, transport and final disposal of the stocks.

The current project in Ethiopia gives a valuable example of the types of lessons which need to be taken into account by other countries in the future. The section below gives more detail on key lessons learnt since the start of the project in Ethiopia.

Technical Lessons

The main technical lessons of importance can be summarised as:

1. The accuracy of inventory data. Past projects have clearly demonstrated that inventory data is only valid for up to a period of 12 months. Following this period the level of confidence in the data decreases greatly as new obsolete stocks are added or stocks disappear due to inappropriate use and / or theft. It is also true that inventory data varies greatly in its accuracy based on the competence of the person collecting the data. The FAO training guideline attempts to address this by making the collection process as objective as possible with clear instruction to personnel. By eliminating the subjective component it is anticipated that the “human” factor affecting the inventory process can be affectively managed;
2. Training needs of national staff. Related to point 1 above the competence of staff trained to collect the inventory data will vary greatly. The selection of the trainees is a critical factor in minimising the “human” factor in the inventory process. The FAO training has been well received by the country teams to date and the quality of the data collected continues to improve as the training is revised and strengthened based on feedback from the country teams. The FAO training also only currently examines the needs of inventory. Activities such as repackaging, transport, storage and disposal are all areas where additional, specialist training is needed. FAO is currently examining the potential to expand on the modular revision of the inventory training to include these areas. This will require the development of detailed training programmes which call on a wide variety of subjects. It is unlikely that any training developed will be of sufficient detail and depth to make staff competent to work alone. It is more likely that a mentor approach be adopted where the limited consultant / disposal contractor resources (see below in point 4) are used to train and supervise national counterpart staff. There will, nevertheless, remain the need for the development of country specific training plans to cover a minimum set of core skills. In many cases the training will need to be delivered by additional specialist training agencies / organisations outside FAO. Generally, trainees are receptive to the training and respond well to the demands placed upon them;
3. The need for analysis. The inventory process defines all stocks past the manufacturers’ expiry date (two years post manufacture) as obsolete. In Ethiopia this resulted in the doubling of the quantity of stocks initially identified as in need of disposal. From careful examination by the country team and based on the actual needs of the country

- protect them from migratory pests it was agreed that some stocks should be sampled and analysed to determine if they were still within specification as defined by the FAO Code of Conduct. Ethiopia was lucky to have a local laboratory which was equipped to complete the analysis. The process resulted in over 400 tonnes of stocks being redefined as usable over a **limited time period** (2 years) for treatment of specific pests by **Government** teams. The estimated cost saving to the project was in excess of US\$ 1,200,000 at current disposal rates.
4. Availability of suitable contractors. The overcapacity for disposal by high temperature incineration in Europe is often cited as a reason for the decrease in disposal costs for hazardous wastes. Unfortunately for projects of this type the disposal component is only part of the total project scope. Approximately two thirds of the disposal costs can be attributed to mobilisation of materials and equipment such as new packaging, the hiring of specialist teams with field experience to repackage and centralise the stocks and general overall project management. In this facet of the disposal exercise only limited experience exists. Of the many (currently over 20) incineration providers only 5 can be considered as having field teams with the necessary level of expertise and experience to complete a project as complex as the one in Ethiopia. In turn, the companies with field teams are continually examining their profitability and it is possible in the future that the number of potential service providers will decrease. The expertise and experience necessary to work in developing countries is not available “off the shelf”. Companies need to invest significant sums in training of staff before they can be considered as technically competent. This, combined with the challenges posed to staff working in developing countries for extended periods of time, makes this area a potential risk to any increase in the level of activity proposed under initiatives such as the ASP. By focussing the activities increasing on national counterpart staff it may prove possible to develop a system of knowledge / skills transfer from specialist consultants / contractors to national teams, rather than the current practice of disposal companies sending large field teams to a country. This will assist greatly in the development of national capacity in the area of hazardous waste management in general;
 5. On-going storage of pesticides. A common feature to all projects of this type is the lack of adequate storage of pesticides (obsolete or otherwise). The project will therefore need to make provision for the construction of new stores or, as was completed in Ethiopia, the upgrade of existing locations. Currently, no format exists for the environmental assessment of such stores and FAO will work on developing guidance in this area in the future. Store upgrade offers an affordable, practical solution to storage needs in developing countries. The resultant stores will not be perfect but will meet a minimum standard in terms of safety, construction and training of store keepers.
 6. Execution of project activities in the field. This aspect poses the greatest risk to workers, public health and the environment. This issue can be addressed by the development of an effective project management system based on supervision in the field by competent staff, briefing and recording of all work activities, independent monitoring of the project and regular project planning meetings to assess progress vs. work plan. To be effective in this process there is a need for the development of a partnership approach between all stakeholders. In Ethiopia the process was coordinated by a resident FAO Project Manager. The role of the Project Manager was to facilitate the day-to-interactions between the many government departments, specialist contractors, donor representatives and community groups such as local NGOs. The process was beneficial as it has allowed a far greater first hand insight in to the many issues which need to be addressed during the implementation and execution of such a project. The reality of the experience is that the technical issues, whilst critical in terms of health, safety and environment, are far easier to manage than issues related to financial matters and institutional issues detailed below.

Financial Lessons

The main financial lessons can be summarised as:

1. Tendering for specialist disposal contractors. As indicated above there are many disposal companies operating in the international market. Unfortunately, not all potential suppliers operate to the same standard. Many organisations exist which offer very low prices for disposal but which do not meet what is termed the “Best Environment Option” and “Best Available Technology” (BEO and BAT) as detailed in the Basel Convention concerning the trans-boundary movement of hazardous wastes. There is, therefore, a risk that countries which may be unaware of the broader international regulatory framework for waste disposal, may opt for a low cost solution resulting in the inadvertent contravention of international conventions and recognised best practice in terms of health, safety and environment. Based on this the donors for the Ethiopia project decided to use the experience and financial management skills of the FAO Procurement Branch. The project did, however, highlight areas where this process should be made more inclusive of the country team. It has therefore been agreed that the Technical Assessment of any bids will be in future a combined effort between the lead technical unit (LTU) at FAO and the country team. This process will result in the ranking of all bidders based on technical aspects of the project as previously set by the LTU. Based on a minimum standard set by the LTU the FAO Procurement Branch will then proceed with the assessment of the Financial bids of the companies which have met the minimum technical standard for the tender. There are currently no plans to involve the LTU or the country team in this stage of the assessment process, so avoiding any potential conflict of interest;
2. Donor support. The need to secure additional donor support in Ethiopia has highlighted a number of issues related to donor support. Most notable are:
 - Potential change of emphasis in donor support. Many donors may shift their focus dependant on policy set at a head quarters level. Environmental issues are not key areas with many donors with funds more likely to be targeted at the governance, food security, budget support and gender sectors. This makes the funding of disposal operations increasing difficult;
 - Donors may change their policy for support from a centralised to a country / embassy focussed strategy. In such cases long term support in this area may be lost with a need for more energy being expended on a country-by-country approach;
 - Donor personnel may leave a country. In Ethiopia the long project time frame resulted in new staff entering the project from two of the original donors. In one instance this resulted in the project no longer being of interest and the potential for addition support disappearing overnight;
 - Some donors may link support to use of consultants / companies from the donor country or may restrict the use of the funds to the purchase of goods and materials from their own country.

All of the above makes funding of a disposal and prevention operation increasing difficult. The costs associated with such a project are often too high for a single donor to consider. As a result there is a need for development of a project envelope comprising a series of separate but complimentary project proposals. What is increasing found is that donors remain willing to support the prevention components to a project but are less likely to support the clean-up and disposal element. Many remain worried about adverse publicity which may result from international NGO groups linked to the issue of waste importation. This concern remains despite increasingly closer links with NGO groups internationally (including those in both developing and developed countries). The key to this issue lies in ensuring all project related activities are conducted in a transparent manner and in full consultation with all interested and affected parties. In projects where these principles have not been followed problems have developed. This is dealt with in more detail under Awareness Raising below.

3. Fund management. The need to manage more than one funding source for projects places an increasing burden on the project management team. In the case of Ethiopia the fund management was passed by the country to FAO. This move facilitated the automatic

- preparation and distribution of all financial reports to the donors. One problem identified is the lack of automatic reporting to the recipient country through the FAO system. Currently, this is only completed at the end of a project when certified accounts are released indicating the actual expenditures incurred. It has been agreed that there is a need to explore how this system can be improved to provide recipient countries with the data they required whilst still maintaining the financial reporting requirements to the donor;
4. Costs for disposal. As previously mentioned the cost per unit (metric tonne) for disposal of hazardous waste has decreased significantly over time. Prices for destruction in European based licensed incinerators are at an all time low, with a maximum of US\$ 1000 per tonne being quoted by most operators. This has, however, been more than offset by a corresponding increase in the cost of repackaging and transportation. The overall unit rate for the supply of a turn-key repackaging and disposal operation has, therefore, at best remained in the US\$ 2000 to US\$ 3,500 per tonne region depending on location and the amount of work to be completed by the field teams. This situation is likely to worsen with time unless more competition in the repackaging and transport component develops;
 5. Need for contingencies. To date most disposal projects have resulted in a contract for disposal being placed through an international tender. Invariably, the quantity of waste for disposal is greater than the original estimate. This may be the result of poor inventory but is just as likely to be the result of owners of stocks declaring them when they see the operation in action in the field. As a result there is a need when designing the disposal project to have either additional funds to cover the increased cost of disposal (unlikely to be readily available) or have funds which are flexible. In the latter instance the increase in cost for the disposal will result in funds having to be diverted from other activities in the prevention component of the project. This can only be done through open discussion and debate by all stakeholders and only in cases where the decision is fully endorsed by the country.

Institutional Lessons

The main institutional lessons can be summarised as:

1. Awareness raising. No project will be possible without awareness within the country of the threat posed by obsolete pesticides to public health and the environment. FAO's work since 1994 has been successful in raising the awareness of the governments and NGOs in many developing regions. It is as a result of this work that countries increasingly turn to FAO to assist in the development of projects to resolve their problems in this area. Awareness raising should not, however, be limited to workshops and events prior to the project starting. Awareness is closely linked with the development of a coherent communications strategy for the entire project to as broad a group of stakeholders as possible. The strategy may include (but not be limited to):
 1. The development of a national project steering committee where representatives of government departments (Agriculture, Environment, Health, Development etc) plus NGOs, the private sector and international organisations can review project progress and resolve issues in a consultative manner. Establishing a forum where the line ministries meet and discuss issues openly has proved a challenge but the benefits from adopting this approach have proved worth the effort.
 2. Mass media announcements via radio and television (may be of limited use given proportion of people with access to these media).
 3. Outreach through NGO / Community groups including meetings at village / town level with local leaders.
 4. Development of messages for distribution by the Agriculture extension service to pesticide users.

The development of messages that can be understood by the various target groups will be a key part of the communications / awareness process. This is best addressed by the development of a working group for communications at the onset of the project. The team should remain responsible for communications throughout the duration of the project and adjust their message to match the completion of significant milestones during the operation.

2. Process needs to be country driven with high level support. It is true to say that to date the successful disposal projects have all benefited from a “champion” in the country. The individual is usually a senior government official from either the ministry of Agriculture or Environment. The imminent coming into force of the Stockholm Convention will add international pressure on countries to address their POPs legacy. It is hoped that this will further encourage senior officials to prioritise the issue of obsolete pesticides and general chemicals management in their country assistance strategies;
3. Large degree of country participation. Initial efforts to address the problems caused by obsolete pesticides relied heavily on inputs from international contracting companies. It is fair to say that many of the early clean up operations did not “leave anything behind” in terms of national capacity for the future. Some disposal operations outside the FAO umbrella were completed without national administrations being involved at all. It is a result of the increasing number of calls for assistance plus the limited resources available in terms of budget and qualified international personnel that FAO has adopted an approach geared more at international development than has been the case previously. Projects are now formulated in a manner which calls heavily on national staff resources to actively contribute to the project implementation and execution. This shift in emphasis results in more skills and knowledge transfer to the country management teams but does result in some variations in the quality of the work completed (as in the accuracy of the inventory data) and the time needed to complete the operations. The approach does however reduce the proportion of donor funds being used to pay international contractors and reduces the overall cost of the project compared to the simple international contractor “turn-key” disposal operation;
4. Specific to meet countries priorities / needs. Unfortunately the development of a project methodology is not a simple “one fits all” scenario. It is fair to say that all projects will have common elements / components related to disposal (stocks / containers / soils / buried materials), prevention (IPM, regulation, storage, awareness) and capacity building (training, laboratory analysis, project management). The challenge lies with prioritising these activities given the often limited funding whilst balancing the need to ensure that disposal and prevention are given equal emphasis. In the final instance the decision rests with the country. FAO will continue to assist countries based on past experience so that a level of consistency of approach is achieved across projects;

9. Future Disposal Projects

List of FAO Projects Planned for 2003 / 2004

As discussed previously FAO continues to work with countries and donors to address the issues related to obsolete pesticides. The following list gives an indication of the countries where FAO will be focussing its activities and limited resources in the next 1 – 2 years:

1. ASP Development:

FAO will continue to lead the technical aspects in the development of the ASP country projects in Ethiopia, Lesotho, Mali, Morocco, Nigeria, South Africa, Tanzania and Tunisia. A series of joint appraisal missions with the World Bank are scheduled for quarter 1 2003.

2. Colombia:

A TCP project for disposal of methyl parathion stocks in Colombia is under preparation. Work is scheduled to start in 2003 subject to security issues.

3. Ethiopia Phase I and II:

As phase I of the disposal operation in Ethiopia draws to a close FAO will continue to offer technical backstopping to the country team now managing the project locally. Since the departure of the FAO project manager in June 2002 the project has been run to the highest standards by the national counterpart team in the Ministry of Agriculture. This is the best demonstration yet of true capacity building in the area of management of obsolete pesticides. The phase II project will build on this capacity and will be a country managed project. FAO will continue in its efforts to assist Ethiopia by management of donor funds and provision of technical backstopping on a periodic basis.

4. Mozambique:

As previously mentioned FAO and the Government of Japan are currently finalising a Unilateral Trust Fund Agreement to support the inventory of obsolete pesticides in Mozambique. The project is scheduled to start operations in the field in early 2003, subject to the transfer of funds to FAO via the Ministry of Agriculture in Mozambique. FAO will identify a suitably qualified Chief Technical Advisor to work with a team of national counterpart staff. The aim is to replicate the success in capacity development seen in Ethiopia. By adopting this approach it is anticipated that a pool of qualified and experienced experts can be developed within the Region to service the needs of neighbouring countries when the time comes.

5. Syria:

FAO has recently received a request for technical assistance from Syria. An assessment of the needs in Syria is due to commence towards the end of this year with development of a more detailed project proposal and possible TCP project planned for 2003 / 2004.

6. Yemen

The project completed by FAO in 1996 highlighted a quantity of buried POPs pesticide in the middle of an irrigation system in Yemen. A project has been formulated and with funding from the Government of the Netherlands it is planned to award a contract for remediation in late 2002 for implementation in 2003.

These country related activities are in addition to the normative activities which will continue in specific areas such as:

1. Guideline revision and preparation

The current series of FAO Guidelines on obsolete pesticide related issues was initiated in 1996. Since that time there have been many developments in the areas of disposal of stocks and improvements to storage and management of hazardous materials. It is therefore planned that three existing guidelines will be revised / updated. These include the guideline on disposal of bulk quantities, prevention of accumulation and storage and stock management. In addition, the guideline on inventory taking will be revised based on feedback from country teams.

There remains a need for translation of the existing documents into official languages. This will continue as funding allows.

2. Inventory and Training of Trainers

Requests for advice and training on inventory continue to come into FAO. The volume of requests far exceeds the capacity of the existing FAO unit. It has therefore been decided to adopt a strategy of training of trainers in three key regions (Africa, Latin America and Asia). These sessions are planned for late 2003 and 2004.

3. Data base of disposal suppliers

From discussions with disposal contractors it is clear that they are looking at great interest at the ASP as a means of sustaining their field team capacity. This has prompted FAO to look further a field and we therefore plan to commission the development of a database of waste management disposal operators, consultants and field teams. The survey will be global and will examine the capacities in developed and developing regions. The database developed will need to be a live system which will allow for new companies to be included. The system will also not just focus on the traditional thermal disposal technologies but will broaden the scope of technologies to the so-called alternative or non-combustion sector.

4. Updated and improved web site

The current obsolete pesticide web site is in need of maintenance and updating. It has therefore been decided that the entire site will be redesigned to allow a focus on future events rather than past activities. Work on the site will be subject to funding and is not scheduled until 2004. Until this time no further development of the existing site will be completed.

5. Response to enquires for technical assistance

FAOs principle role is to respond to requests for technical assistance from its members. The obsolete pesticide project will, therefore, continue to respond to all requests as work load and duty travel allow. In some instances there will be delays in responding to enquiries due to the increasing demands already coming through. The project will work to manage this by broadening the numbers and skill base of consultants which can be used to address some of the requests for assistance. This will, however, increase operating costs and so use of consultants will have to be within current budget limitation.

10. Recommendations of the Sixth Consultation

1. Foster and enhance cooperation with the donor community to continue country projects which are in the pipeline and to maintain the core activity at FAO.
2. Intensify its normative core activities in the area of obsolete pesticide prevention and disposal on a global scale.
3. Explore support for the FAO core project as and before the current support by the Government of the Netherlands approaches the end of 2003
4. Continue to work with the Government of Japan (GOJ) in key target countries (Mozambique, Ethiopia and possibly others through the consultation with FAO and other donor countries) and to offer technical assistance to GoJ on pesticide issues.
5. Provide timely project related reporting in the area of project activities including monitoring and evaluation.
6. Continue to develop guidelines in the areas of training for store keepers, pesticide inspectors and decision makers. In addition there will be a manual on the successful development, implementation and execution of obsolete pesticide prevention and disposal operations in developing countries. Involve other interested parties/experts during the development and review phase of the guidelines.
7. Work in collaboration with all relevant stakeholders to address the increasingly important issue of management of empty, contaminated pesticide containers.
8. Work in collaboration with all relevant stakeholders to address the successful management of small quantities of pesticide and to initiate the development of country programmes to dispose safely of small quantities of unwanted pesticides.
9. Continue to review and improve the rules covering the procurement and supply of pesticides under the FAO Emergency Programme and other relevant programmes.
10. Continue to raise awareness involving relevant stakeholders and various key Government Departments through direct advice, training, seminars, workshops using where possible the media. Develop demonstrative materials on issues and problems of obsolete stocks both for information to the donor community and the countries.
11. Continue to maintain, update and revise inventory of obsolete stocks of all the countries involved and make available to whoever is need of the information and make the same available over the website.
12. Provide technical and development information on regular basis via the programmes through technical news bulletins and progress updates with respect to the recommendations of this consultation every six months.
13. The FAO project will continue to give technical support to the ASP initiative.