Regional Policy Development Workshop to Assist Methyl Bromide Phase Out in Eastern and Central Europe

Report

Warsaw, Poland, 25-27 October 2000
Report on Regional Policy Development Workshop to Assist Methyl Bromide Phase Out in Eastern and Central Europe

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1. **Summary**

The Regional Policy Development Workshop to Assist Methyl Bromide Phase Out in Eastern and Central Europe, organised jointly by the UNEP DTIE OzonAction Programme, the Government of Poland and the Research Institute of Vegetable Crops, was held in Warsaw, Poland on 25-27 October 2000. The purpose of the workshop was to assist Eastern and Central European countries in identifying preferred short, medium and long-term policy measures and creating national action plans necessary for meeting the methyl bromide phase out requirements under the Montreal Protocol.

The workshop was attended by representatives from National Ozone Units, Ministries of Agriculture, Ministries of Environment, National Plant Protection Services. The participating countries were: Bulgaria, Croatia, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland and Slovakia. In addition, experts in phasing out methyl bromide and promoting alternatives from UNEP, UNIDO, Italy, United Kingdom and the United States, as well as non-governmental organisations, took part in the workshop.

The presentations and discussions during the workshop were focused on the role of policy and training measures to control methyl bromide, and promote adoption of alternatives. Examples of successful approaches in phasing out methyl bromide and the development of policies in some countries were also given. The workshop provided an opportunity for participating countries to share experiences on their activities concerning the development of policy and training measures for methyl bromide phase out, and to initiate the development of national action plans. Some participating countries expressed their commitment to phase out methyl bromide faster than required by the Montreal Protocol.

Agreed activities leading to policy development at the national level were:
1. Developing national licensing systems to control imports/exports.
2. Modifying existing regulations on methyl bromide phase out to conform with European Union regulations.
3. National training of trainers to implement alternatives.
4. Awareness raising programmes.
5. Economic incentives to promote a shift towards alternatives.
6. Reviewing alternatives for quarantine and pre-shipment uses.
7. Consulting with key methyl bromide users and other stakeholders to develop a methyl bromide phase out plan.

Agreed activities leading to policy development at the regional level were:
1. Regional demonstration project on methyl bromide alternatives for strawberries, tomatoes and peppers.
2. Regional training workshops on alternatives for soil and post-harvest uses.
3. Information exchange to share experiences on alternatives.
2. **Background**

Methyl bromide is a fumigant that has been used to control a range of pests in agriculture and for disinfection of durable and perishable commodities. However, it is also recognised as one of the chemicals that depletes the stratospheric ozone layer, a protective shield that filters out harmful ultraviolet (UV) radiation from the sun. The Meeting of the Parties (MOP) to the Montreal Protocol called for the control of methyl bromide in 1992. In 1997, a revised phase-out schedule for methyl bromide was established by the MOP requiring that developed countries phase out methyl bromide by 2005.

Methyl bromide is predominantly used in Central and Eastern Europe as a soil fumigant on horticultural crops such as peppers, tomatoes, cucumbers and strawberries and for stored product protection on grains and other commodities. Methyl bromide is also used for pre-shipment and quarantine treatments.

The survey conducted by UNEP has shown that the consumption of methyl bromide for non-QPS use in the countries of the region in 1999 amounted to 248 tonnes whereas for quarantine and pre-shipment treatments about 120 tonnes were used.

The UNEP MBTOC (Methyl Bromide Technical Options Committee), in its 1998 report, has identified alternatives for the vast majority of methyl bromide uses. Although no single, in-kind alternative to methyl bromide was identified, effective alternatives for Central and Eastern Europe involve the use of Integrated Pest Management (IPM) systems that utilise a combination of pest management techniques, including crop rotation, natural substrates and compost, biofumigation, soilless culture, solarization, steam, resistant varieties, plant extracts, biological controls and pesticides. Alternatives for the treatment of durables (grains, fruits and nuts, timber) include physical control methods (heat treatments, sanitation and preventative practices) and the use of fumigants and gases (phosphine, controlled and modified atmospheres).

Although most of the countries in Central and Eastern Europe have already ratified the Montreal Amendment, achieving the reduction and phase out of methyl bromide according to the schedule will require the adoption of the appropriate strategies or, in some cases, the modification of the existing national law.

3. **Objectives**

The objectives of the workshop were:

- to review the situation in participating countries on methyl bromide use, existing methyl bromide regulations and status of meeting the 2002 freeze (developing countries) and methyl bromide phase out requirements;
- to assist Central and Eastern European countries in identifying preferred short, medium and long term policy measures to meet the 2005 phase-out and interim reductions;
- to encourage Central and Eastern European countries to develop national and regional action plans for replacing methyl bromide which will complement demonstration and investment projects and utilise existing agricultural resources and programmes;
- to provide an opportunity for Countries with Economies in Transition (CEITs) in Central and Eastern Europe to share experiences on their activities concerning the development of policy for MB phase out, and identification of the alternatives to be promoted; and
to help prevent future growth of methyl bromide and the introduction of methyl bromide for new uses, especially in those countries where the consumption is constant or growing.

4. **Expected results**

The workshop was organised to achieve the following results:

- identification of possible short, medium and long term policies for methyl bromide phase out and an evaluation of their usefulness and relevance to particular circumstances;
- initiation of a national action plan for each country that participated in the workshop;
- better information about methyl bromide alternatives for soil and commodities treatments that are already available;
- increased awareness among policymakers about policy approaches for methyl bromide phase out and how they can be developed; and
- workshop report outlining specific recommendations and actions required for development of action plans and policy measures to meet the timetable for methyl bromide phase out.

5. **Participants**

The participants of the workshop were the representatives of the National Ozone Units, Ministries of Agriculture, Ministries of Environment and State Plant Protection Services from 10 Central and Eastern European countries including Bulgaria, Croatia, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland and Slovakia. Most countries were represented by 2 participants. It is worth mentioning that countries not using methyl bromide at all (Estonia) or using only small quantities for industrial purposes (Slovakia) also sent their representatives to attend the workshop.

There were 20 participants from these countries.

In addition, the representatives of UNEP, UNIDO and invited experts were present.
UNEP was represented by Ms. Corinna Gilfillan from the Division of Technology, Industry and Economics, Energy and OzonAction Unit, Paris, France.

UNIDO was represented by Mr. Sidi M. Si Ahmed, from UNIDO’s Montreal Protocol Branch in Vienna, Austria.

There were also technical and policy experts involved in matters relevant to methyl bromide phase out who participated in the workshop, including Mr. Robert Taylor from Natural Resources Institute, University of Greenwich (UK), Mr. David Mueller – the president of Insects Limited Fumigation Service and Supply (USA), Mr. Bill Thomas from the US Environmental Protection Agency, Methyl Bromide Phase Out Programme, Professor Maria Lodovica Gullino from University of Torino (Italy), Professor Zbigniew T. Dabrowski from Agricultural University of Warsaw (Poland) and Ms. Ewa Hajduk from the Polish Ecological Club, a non-governmental organisation that is involved in promoting ecological agriculture and environment protection.

For the list of participants see Annex 9.I.
6. **Methodology**

The workshop was arranged in six sessions, three of which focused on the presentation of papers, two of which were devoted to the working group sessions and the closing session which contained conclusions and recommendations. A half-day field trip to several greenhouse farms using methyl bromide alternatives was also included.

7. **Content**

The workshop involved presentations that provided the participants with a wide range of issues related to the methyl bromide phase out and policy development as well as discussions on methyl bromide alternatives. Small group working sessions also took place during the workshop that led to the preparation of recommendations and national action plans for methyl bromide phase out.

7.1 **Presentations**

7.1.1 **Opening session**

The workshop was opened by Dr. Janusz Kozakiewicz, the Head of Poland’s Ozone Layer Protection Unit who welcomed the participants and gave the introductory address.

The keynote opening address on behalf of Poland’s Minister of Environment was given by Mr. Zbigniew Kamienski, Director of the Department of Environment Protection. In his speech he said that the deep concern to protect the stratospheric ozone layer in Poland was a result of fulfilment of the requirements arising from the Montreal Protocol and the purposes outlined in numerous national acts. It was stated that Poland had been obliged to reduce consumption of the methyl bromide since the beginning of the year 1997, i.e. from the moment of ratification of the Copenhagen Amendment to the Protocol. Its requirements could be fulfilled mainly thanks to the system of import-export permits to which all the controlled substances come under. Poland ratified the Montreal Amendment on the 5th March 2000. The use of methyl bromide in Poland has been regulated by numerous acts and regulations concerning plant protection, agricultural crops and public health.

In conclusion Mr. Kamienski added that a draft of the Act on ozone depleting substances (ODS) management, as well as drafts of the executive Ministerial regulations have been worked out by the Ministry of Economy. The Act includes the current regulations and introduces new recommendations and sanctions for breaking the law dealing with ODS. As for methyl bromide, the Act would additionally forbid its use in undesirable sectors as well as inflict a penalty for illegal trading in MB.

Next, the Deputy Director of the Research Institute of Vegetable Crops, Professor Franciszek Adamicki welcomed all the participants of the workshop. He emphasised that Poland is the highest consumer of methyl bromide for soil and space fumigation in Eastern Europe, especially in greenhouse grown vegetables and cut flowers.

Professor Adamicki stated that the majority of Polish family horticulture farms are small or medium sized, still growing vegetables traditionally – in the soil, and therefore from technical, economical and sociological point of view a rapid change to soilless cultures in this sector should not be expected in the near future. For these kinds of farms the implementation of the viable and cost effective
alternatives to methyl bromide is essential. He also expressed his appreciation to UNEP for organising this workshop in Warsaw and providing financial assistance to conduct in Poland UNEP’s Regional Demonstration Project on methyl bromide alternatives in Eastern and Central Europe.

Ms. Gilfillan made a statement on behalf of UNEP DTIE and described in detail the objectives of the workshop and its expected results. She expressed her opinion that the workshop would help establish fruitful co-operation and experience sharing among the countries of the region.

The representative of UNIDO, Mr. Si Ahmed, welcomed all the participants of the workshop and emphasised the role of UNIDO activities in helping fulfil the requirements of the Montreal Protocol concerning methyl bromide phase out and promoting alternatives in many countries world-wide.

### 7.1.2. Methyl bromide phase-out requirements and alternatives

Ms Gilfillan of UNEP DTIE presented an overview of the methyl bromide phase-out requirements under the Montreal Protocol and the decisions by the Parties to the Montreal Protocol relating to methyl bromide. Developed countries are required to eliminate consumption and production of methyl bromide by 2005, while developing countries have until 2015 to phase it out. She highlighted a number of important decisions, including decisions requiring data reporting on both QPS and non-QPS uses of methyl bromide, financial and technical assistance to assist developing countries in phasing out methyl bromide and the importance of ratifying the Copenhagen and Montreal Amendments to the Montreal Protocol.

Mr. Taylor, a member of MBTOC, provided an overview of the 1998 report of MBTOC and its relevance to Central and Eastern Europe. He noticed that considerable progress had been made in the search for chemical and non-chemical alternatives although there were a few direct replacements. Alternative fumigants that had been proposed were not widely registered. Non-chemical alternatives and integrated pest management (IPM) techniques were expected to be the only way forward in many situations, and fortunately techniques could be applied in most countries. Most fumigants of perishable commodities were conducted for quarantine purposes and, although alternatives to methyl bromide fumigation had been identified, their adoption as replacements was expected to take many years. Mr. Taylor also emphasised that there were many alternatives to methyl bromide for soil treatment but these often required a combination of techniques and needed field evaluation to take into account local differences of soil, climate and pest complex. Very few crops had been identified that could not be produced successfully without methyl bromide.

In his lecture entitled “Methyl bromide alternatives for post-harvest uses”, Mr. Mueller of Insects Limited presented the current possibilities of using alternatives for controlling stored products pests of durable commodities, especially of stored cereal grains. Several existing replacements were discussed, including inert gases (carbon dioxide and pressure), phosphine, sulfuryl fluoride (Vikane®, Profume®), ethyl formate, cold and heat treatment. Combinations of existing technologies (heat + sulfuryl fluoride, insect growth regulators + pyrethrin + pheromones, phosphine + diatomaceous earth) can also provide successful pest control. A special emphasis was put on non-chemical alternatives such as cold treatment in stored grains or grain storage structures and heat treatment that can give complete mortality of insects. It was concluded that the number one replacement of methyl bromide for structures and stored products is taking preventative measures so that there is no need to fumigate.
7.1.3 The role of policy and training measures to control methyl bromide and implement alternatives

Ms Gilfillan of UNEP DTIE gave a presentation entitled "Overview of policy and training options to promote the methyl bromide phase out." This presentation identified various policy measures and training and awareness-raising activities that can be implemented to meet the methyl bromide phase-out requirements. Policy options include import restrictions, modifying existing pesticide regulations, economic incentives and labelling requirements. Farmer education and training activities are another important component of a country's strategy to implement methyl bromide alternative and existing agricultural training programmes can be utilised in these efforts.

The speech entitled “Results of demonstration projects in Eastern and Central Europe and next steps for implementing alternatives” was given by Mr. Si Ahmed from UNIDO. He presented an overview of UNIDO’s programme to assist Article 5 countries in phasing out methyl bromide. The results of demonstration project on methyl bromide alternatives conducted in Croatia on tobacco, tomatoes and cucumbers were given special attention. All tested alternatives (floating tray systems for tobacco, solarization, biofumigation, dazomet) were comparable in their performance to methyl bromide. The choice of alternatives is a function of crops and markets, climatic conditions, crop rotation, average farm size, number of farmers, effectiveness of farmers’ associations and supervising institutions. The experiences of UNIDO indicate that the seasonal parameter is crucial in the implementation process of demonstration projects and also that overseas training and study tours are instrumental in building the skills of farmers and enterprises in replacing methyl bromide.

Professor Dabrowski from Warsaw Agricultural University gave a speech entitled “The role of training activities to promote adoption of environmentally sustainable alternatives in the region – needs for participatory approach” in which he evaluated the feasibility of incorporating efficient options to replace the use of methyl bromide with IPM by interactive research, extension and training in the Central and Eastern European region. It can be concluded that methyl bromide alternatives are available in the literature but require validation (with the active participation of extensionists and farmers) through on-farm adaptive research and demonstration trials under variable biological, technical and economic conditions of the Central and Eastern European countries. Training of all stakeholders such as decision-makers, trainers (extensionists) and farmers will affect the speed of adoption of methyl bromide alternatives in the region. In addition, training of farmers should use participatory methods developed for other IPM programmes.

Dr. Slusarski from the Research Institute of Vegetable Crops (RIVC) informed the participants about the progress in implementing UNEP’s Regional Demonstration Project on methyl bromide alternatives in Eastern and Central Europe. The project, which has been conducted in Poland since April 2000, is aimed at identification and evaluation of environmentally sustainable alternatives to methyl bromide used on horticultural crops, in greenhouses (tomatoes, peppers), in the open field (tomato, cabbage, celeriac) and in strawberry nurseries. In the first year of the project, 5 demonstration experiments were carried out in different locations. Alternatives tested include chemicals (dazomet, metham sodium, 1,3-D + chloropicrin), and biocontrol agents (Trichoderma viride, Pseudomonas fluorescens, Bacillus subtilis). In greenhouse grown peppers, excellent results in the control of Verticillium-wilt were obtained when soil disinfestation with dazomet was combined with application of Trichoderma viride during the transplant production and at planting time. Also, Trichoderma viride alone was very effective in the control of the disease. The yields from alternative treatments were comparable to those from methyl bromide fumigation. In strawberry nurseries dazomet and 1,3-D + CP applied alone or
integrated with the use of biocontrol agents markedly increased the number of seedlings per area unit in comparison with the untreated control. In field-grown tomato, cabbage and celeriac integrated application of 1,3-D + CP and *Trichoderma* caused yield increases very similar to those of methyl bromide. In 2001, non-chemical alternatives such as amendment of the soil with residues of *Sinapsis juncea* (biofumigation) and a combination of grafting tomato with organic amendments or biocontrol agents will be included in the demonstration experiments with greenhouse tomatoes.

### 7.1.4. Experiences in development of policy measures for methyl bromide

Dr. Darka Hamel from the Institute for Plant Protection in Agriculture and Forestry of Republic Croatia provided an overview of Croatia’s approach in phasing out methyl bromide and lessons learned during implementation of the demonstration project to identify methyl bromide alternatives. She also talked about the past and recent investigations concerning the control of stored product pests and soil disinfestation. According to the 1999 Act about Substances that Deplete the Ozone Layer, a decreasing amount of methyl bromide will be used in Croatia each year by 2005. It was concluded that several factors had to be taken into account when developing a project for the replacement of methyl bromide. The major conclusions were: including key scientists to discuss the project and explain reasons for decreased usage and replacement, including authorised ministries or state agencies for environmental protection that would be responsible for preparation and proclamation of the necessary regulations, supervising the project and giving information to the users, identifying main stakeholders and involving direct users in the project, providing feedback about the advantages and disadvantages of the replaced system and, ensuring the financial support when the decision of the replacement is taken.

“The U.S. Approach to the Methyl Bromide Phase Out and the Lessons Learned” was presented by Mr. Thomas of the U.S. Environmental Protection Agency. In the U.S., regulations play a very important role in the policy on all ODS. As part of the United States’ commitment to implementing the Montreal Protocol, the U.S. Congress amended America’s Clean Air Act (CAA) in 1990, adding provisions (under Title VI) for protection of the ozone layer. Most importantly, the amended CAA required the step-by-step phase out of chemicals that deplete the ozone layer. Finding alternatives to methyl bromide should be co-ordinated with stakeholders, including environmental groups, methyl bromide users, agricultural scientists and the private sector. What can be learned from the approach is that working with all interested parties from the very beginning is crucial, writing policy and laws must be fair and realistic, not favouring one set of stakeholders only, and utilisation of ozone science of the Montreal Protocol as the authority is necessary. Also, such factors as working with methyl bromide users and others to find alternatives as well as regulating supply rather than use are important.

Prof. Gullino from the Department of Plant Pathology, University of Torino, Italy delivered a presentation entitled “Italy’s approach in phasing out methyl bromide: lessons learned and how it is applicable to Eastern and Central Europe”. A prompt implementation of the appropriate methyl bromide alternatives into Italian agriculture is very important since Italy is the biggest European consumer of MB. In reduction of methyl bromide use in Italy regulatory aspects play a significant role, and Italian law is in compliance with E.U. regulations that require Member States to promote the adoption of alternatives to MB, report annually on MB uses, quantity and alternatives to MB, and report annually on measures taken to reduce MB consumption. In addition, national regulations restrict the conditions of methyl bromide application for soil treatment. The Italian Ministry of Environment, aware of the difficulties faced by the Italian growers, has stimulated the research of short and medium-term solutions, suitable to the extremely variable and diversified Italian agriculture. Some regional governments introduced economic incentives, defining provisions to assist financially MB
users in implementing alternative technologies and favoured the phasing out. Most of Italian successfully used experiences connected with methyl bromide replacement can be easily transferred to Eastern and Central Europe.

7.1.5. Professional field trip

On the second day of the workshop, a half-day field trip to visit several greenhouse farms in the vicinity of Warsaw was organised. The main aim of the trip was to show the participants different levels of progress and farmers’ awareness in implementing methyl bromide alternatives on greenhouse farms. Four farms were visited. Participants first went to 3 farms located north of Warsaw in the area of Jabłonna – a site with a long history of growing greenhouse vegetables (cucumber, lettuce, and tomato) traditionally in the soil. On the first farm visited (Pelka’s Farm), the grower still uses methyl bromide and although he knows that will be banned, for the time being he does not think about replacing it. The two other growers in the same village (Jablonski’s Farm and Stankiewicz’s Farm) have already stopped using methyl bromide and apply soil treatment with dazomet integrated with grafting of tomatoes or cucumbers on resistant rootstocks, soil steaming, or organic substrates. These growers have found that soil treatment with dazomet and/or grafting plants on resistant rootstocks compared to MB fumigation is much cheaper and provides sufficient protection of plants from soil-borne diseases. Then the participants visited Milczarek’s Farm located south of Warsaw in a new growing area of modern greenhouse production where vegetables, mainly tomatoes, are grown in rockwool only. The owner of this farm learned about rockwool production system several years ago during a study tour in the Netherlands. In Karczew commune, a new growing area emerged less than 10 years ago and only soilless culture methods are used there. The growers in this region are convinced that such methods are the most important measures to avoid problems with soil-borne pests and diseases and they do not even think of growing their vegetables in the soil again.

7.2. Working group sessions

Before the first working session, Ms. Gilfillan informed about the ratification of London, Copenhagen and Montreal Amendments by particular countries of Central and Eastern Europe. Then, she compared methyl bromide consumption for non-QPS and QPS use in those countries in the years 1991-1999. Next, the predictions on methyl bromide consumption in the years 2000-2005 were discussed. It can be concluded that Poland has the highest consumption of methyl bromide for both non-QPS and QPS uses. After that, the main commodities and major commodity pests requiring methyl bromide fumigation were discussed. The current cost of methyl bromide in different countries was also presented. Finally, Ms. Gilfillan pointed out potential alternatives to methyl bromide for commodity use and preplant soil fumigation. In addition, reasons for methyl bromide expansion were described. In most of the countries consumption of methyl bromide is either decreasing (Bulgaria, Hungary, Slovakia) or stable (Moldova). In Latvia, and Poland the expansion of methyl bromide is increasing in different industrial and agricultural areas, whereas in Lithuania QPS uses are increasing. As a final point of her speech, Ms. Gilfillan informed about barriers to the adoption of alternatives and how they could be overcome. Although there are some obstacles while promoting alternatives to methyl bromide, the appropriate assistance could help eliminate them.

During the first working session entitled “Current regulations related to methyl bromide use in Eastern and Central Europe” discussions in small groups were held to review the situation with regard to methyl bromide use (i.e. existing methyl bromide regulation in each country, status of meeting the methyl bromide phase out requirements) and to identify problems encountered in developing policy
measures to control methyl bromide. Then a representative of each working group reported to the plenary on the situation in particular countries.

Before the second working session, Ms. Gilfillan from UNEP gave a presentation on creating a national action plan for methyl bromide phase out. First she briefly described what tools and targets were needed while creating such plan, and also emphasised that crucial issue was the ratification of the Copenhagen Amendment, because only countries that have ratified it are eligible for financial assistance under the Multilateral Fund. Then, the stages for creating a national plan were presented.

There are seven of them:

- assessing methyl bromide use
- identifying appropriate alternatives
- encouraging stakeholder participation
- establishing a policy framework
- raising awareness
- implementing alternatives
- reviewing progress

In addition, policy options were also presented.

The second working session was aimed at initiation of the development of national action plans for methyl bromide phase out. Each country team identified preferred short, medium and long-term policy measures for meeting the 2005 methyl bromide phase out, such as restrictions, training activities, awareness raising and other activities. Based on the work done in working groups, each country delegation prepared a draft national action plan for methyl bromide phase out. After the session, each working group gave a report to the plenary session.

8. Conclusions and recommendations

8.1. Observations from the Workshop

8.1.1. Alternatives to methyl bromide

The consumption of methyl bromide in Eastern and Central Europe varies substantially from country to country. The main users in the region are Poland (175 t. in 1999), Hungary (57 t.) and Bulgaria (47 t.), whereas in Estonia methyl bromide is not used and Slovakia uses it only as a feedstock in the pharmaceutical industry. Four countries, namely Bulgaria, Croatia, Hungary and Poland apply methyl bromide both for commodity treatment and soil fumigation.

Existing alternatives to methyl bromide for soil treatments are both chemical and non-chemical. Regarding chemical alternatives, methylisothiocyanateous fumigants such as dazomet (Basamid), metham sodium or Ipam are already available and the most important replacement for methyl bromide used in protected cultivation in Bulgaria, Hungary and Poland. For nematode control insecticide Vydate (oxamyl) has been recommended. As a potential chemical alternative for pre-plant soil fumigation in the open field, 1,3-dichloropropene + chloropicrin (1,3-D + CP) are being evaluated. This product (mixture of 1,3-D + CP), however, has not been registered in any country of the region yet and needs further evaluation under commercial conditions.
The non-chemical alternatives recently used on commercial scale in protected cultivation include: growing on rockwool (soilless culture method), grafting tomatoes and cucumbers onto resistant rootstocks, cultivation on bales of wheat or rye straw, tomato cultivars resistant to nematodes and soil-borne pathogens, organic substrates and soil steaming. The floating tray system has shown to be a good alternative in production of tobacco seedlings (Croatia, Hungary). Soil solarization proved to be effective in Bulgaria and Croatia but the timing of crop production is an important factor limiting the applicability of this method. In the case of biocontrol agents, organic amendments and some cultural practices additional studies are necessary to incorporate these measures into IPM systems. Recently, UNEP Regional Demonstration Project is in progress in Poland to evaluate environmentally sustainable alternatives for methyl bromide used on horticultural crops (pepper, tomato, cabbage, celeriac and strawberries). This project will be completed by the end of 2001. The results of this project are expected to be applicable for other countries of the region.

In the region, the most common alternatives to methyl bromide used for stored products pest control are phosphine and insecticides. Non-chemical methods and IPM systems should be identified.

8.1.2. Data collection and reporting

The systems that enable to collect accurate data on methyl bromide consumption exist in all participating countries except for Georgia, where the process of data collecting and reporting needs to be developed.

In most countries, Ministries of Environment and/or of Agriculture are responsible for data collection, and the importers of methyl bromide have to report the data to the Ministries of Environment. In some countries (Latvia, Lithuania) the companies using MB are obliged to report the information directly to the Ministry of Environment. The Bulgarian companies are obliged to report not only to the ME, but also to the Ministry of Agriculture. For cross-checking purposes, customs authorities are also obliged to provide information on imported quantities.

Most countries have collected separate data on MB use for QPS treatments – at least during the last few years. In Georgia only approximate data on methyl bromide consumption is available.

8.1.3. Ratification of the Copenhagen and Montreal Amendments

Bulgaria, Croatia, Georgia, Hungary, Latvia and Poland have ratified both the Copenhagen and Montreal Amendments. Estonia and Lithuania have ratified only the Copenhagen Amendment. The ratification of the Montreal Amendment by those countries is expected in 2001. However, Lithuania adopted its legislation in August 2000, so that the national regulations are already in full compliance with the requirements of the Montreal Amendment. Only Moldova has not ratified the Copenhagen or Montreal Amendments, but national ratification procedure is awaiting governmental approval.

8.1.4. Existing regulations on methyl bromide

All Eastern and Central European countries have regulations and legislation on the use and control of pesticides. As a rule, methyl bromide is listed as a toxic substance and can be used only by authorised operators, and special conditions for using MB with regard to the protection of health and the environment are required as well.
In most countries of the region, the use of methyl bromide is restricted to a list of permitted uses. For example, in Bulgaria, Croatia, Hungary and Poland only crops listed in the registration documents can be grown in the soil treated with methyl bromide. There are also some other restrictions on the application of MB, such as limiting the frequency of soil fumigation (Croatia) or requiring a safety zone of 50 m between fumigation site and any residential area (Bulgaria).

Licensing systems and permits for the import of methyl bromide are compulsory in all countries of the region, except for Georgia, where there are no restrictions on the import, export, use and production of MB. However, steps are being taken by the Georgian Ministry of Agriculture, Ministry of Environment and State Customs Office to introduce appropriate restrictions.

In Bulgaria, Croatia, Hungary, Poland and Slovakia, the existing pesticide regulations are sufficient to restrict the use of MB, to prevent from new uses and to ensure that phase out is achieved on time. In Latvia and Moldova some adjustments of existing regulations are necessary in order to comply with EU Regulation 2037/2000.

In Slovakia, economic incentives have played an important role in eliminating use of methyl bromide and promoting methyl bromide alternatives. Slovakia has a regulation requiring that a fee be charged on all ozone-depleting substances that are imported into the country. Due to this fee, the cost of using methyl bromide became higher than using other alternatives and this resulted in users to shift towards alternatives.

8.1.5. Strategies developed for meeting reductions and 2005 phase out

Restrictions on the import and uses in some sectors, as well as strengthening requirements for the conditions of MB application were recognised by all participating countries as the most appropriate short-term policy measures for meeting the interim reductions and 2005 phase out. Some countries (Latvia, Bulgaria) intend to phase out methyl bromide faster than required by the Montreal Protocol. Moldova is going to prohibit the use of methyl bromide for soil treatment in 2002. To achieve this goal, national regulations in some of these countries have to be modified.

To ensure that the scheduled phase out of methyl bromide will not cause significant economical and technological disturbances to its users, the identification and implementation of alternatives need special attention.

Recently, demonstration projects on alternatives to methyl bromide for soil treatment have been in progress in two countries of the region (Croatia and Poland). The project in Croatia, implemented by UNIDO, is aimed at the evaluation of non-chemical and chemical alternatives in tobacco production. UNEP has launched in Poland the Regional Demonstration Project to evaluate a range of alternatives on horticultural crops. Both demonstration projects are considered as an essential step in selecting and introducing alternatives.

To implement alternatives effectively, national programmes will be set up for training of trainers and other stakeholders. It is especially important for training of farmers’ activities to use participatory methods that have been developed for other IPM programmes.

Regional co-operation should be strengthened and regular information exchange activities should be implemented to share experiences on alternatives. It was agreed to organise regional workshops on alternatives to methyl bromide for soil treatment and for post-harvest uses.
Awareness raising campaigns to be undertaken by the participating countries will include information programmes on the radio and TV, seminars and training for MB users to provide more information on alternatives, printing and distribution of technical manuals and leaflets for growers and other users, publications in newspapers, magazines and bulletins, and training in IPM.

8.2. National action plans

During the working sessions, each small group identified preferred policy measures and national action plans for phasing out methyl bromide. The national action plans for each group are attached.

Table 1. National Action Plan for Methyl Bromide Phase Out
- Lithuania, Latvia and Estonia *

<table>
<thead>
<tr>
<th>Action</th>
<th>Government Agencies/Other organisations to involve</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing MB use and data collection</td>
<td>Ministry of Environment Ministry of Agriculture</td>
<td></td>
<td>- Exist or almost completed (Lithuania)</td>
</tr>
<tr>
<td>Identification of alternatives</td>
<td>Ministry of Agriculture Ministry of Environment Plant Protection Service</td>
<td>2000-2002</td>
<td>- Alternatives should be viable and cost effective</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Practical demonstrations</td>
</tr>
<tr>
<td>Encouraging stakeholder Participation</td>
<td>Ministry of Agriculture Ministry of Environment Users of MB Plant Protection Service Fumigation companies</td>
<td>2001-2003</td>
<td>- UNEP Demonstration project (Latvia)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Voluntary agreements with fumigation companies to speed up MB phase out</td>
</tr>
<tr>
<td>establishing a policy framework</td>
<td>Ministry of Agriculture Ministry of Environment Plant Protection Service</td>
<td>2000-2002</td>
<td>- Ratification of the Montreal Amendment (Lithuania)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Amend Ozone Layer Protection Regulations in compliance with EU Reg. 2037/2000 and Act on the Use of Plant Protection Products (Latvia)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Reviewing QPS treatments</td>
</tr>
<tr>
<td>Raising Awareness</td>
<td>Ministry of Agriculture Ministry of Environment Agriculture Advisory Centres Public media</td>
<td>2001-2005</td>
<td>- Information for the public</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Training in IPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Economic incentives</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Eco-labelling</td>
</tr>
<tr>
<td>Implementation of alternatives</td>
<td>Extension Service Research institutions</td>
<td>After testing appropriate alternatives under commercial conditions</td>
<td>- Training, demonstration Projects</td>
</tr>
</tbody>
</table>
Reviewing Progress

Continuously

- Regional workshops
- Sharing information with other countries having the same problems, discussions with industry and farmers

* Methyl bromide is not used in Estonia

Table 2. National Action Plan for Methyl Bromide Phase Out - Georgia and Moldova

<table>
<thead>
<tr>
<th>Action</th>
<th>Government Agencies/Other organisations to involve</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing MB use and data collection</td>
<td>Ministry of Environment Ministry of Agriculture</td>
<td>2001</td>
<td>- Evaluation of current situation regarding import, export and consumption of MB and Organising data collection system (Georgia)</td>
</tr>
<tr>
<td>Encouraging stakeholder Participation</td>
<td>Ministry of Agriculture Ministry of Environment</td>
<td>2 years</td>
<td>- Support of users to adopt Alternatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Seminars and training to provide more information</td>
</tr>
<tr>
<td>Establishing a policy framework</td>
<td>Ministry of Agriculture Ministry of Environment</td>
<td>1 year</td>
<td>- Existing regulations need to be changed (Georgia)</td>
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<tr>
<td></td>
<td></td>
<td>2002</td>
<td>- Harmonisation of regulations with EU (Moldova)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Ban on methyl bromide application for soil treatment in Moldova</td>
</tr>
<tr>
<td>Raising Awareness</td>
<td>Ministry of Environment Plant Protection Association NGOs</td>
<td>Depending on financial support</td>
<td>- Raising awareness of methyl bromide users about alternatives and development of a public awareness - raising campaign through the mass-media</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Leaflets for the public</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Radio and TV programmes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Translation of materials on methyl bromide alternatives into Georgian language</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Workshops and seminars</td>
</tr>
<tr>
<td>Implementation of alternatives</td>
<td>Ministry of Agriculture Ministry of Environment</td>
<td>2 years</td>
<td>- Creating technical base for alternatives</td>
</tr>
</tbody>
</table>
**Reviewing Progress**

<table>
<thead>
<tr>
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<th>Government Agencies/Other</th>
<th>Timetable</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Assessing MB use and data collection</td>
<td>Ministry of Agriculture and Forestry, Ministry of Environment and Water</td>
<td>2000</td>
<td>Completed</td>
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</table>

**Identification of alternatives**

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<th>Government Agencies/Other</th>
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<th>Comments</th>
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<tbody>
<tr>
<td>Encouraging stakeholder Participation</td>
<td>Ministry of Agriculture and Forestry, Institute for Plant Protection, Tobacco Institute</td>
<td>2001-2002</td>
<td>Seminars and training, Dissemination of the results from the UNIDO Demonstration Project, Involvement of big tobacco producers in introducing alternatives (Croatia)</td>
</tr>
</tbody>
</table>

**Establishing a policy framework**

<table>
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<tr>
<th>Action</th>
<th>Government Agencies/Other</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising Awareness</td>
<td>Ministry of Agriculture and Forestry, Ministry of Environment and Water</td>
<td>2001-2002</td>
<td>Raising awareness on the radio and TV, Translation and dissemination of selected UNEP materials concerning MB, Regular publications in the Bulletins issued by Regional Services for Plant Protection</td>
</tr>
</tbody>
</table>

Table 3. National Action Plan for Methyl Bromide Phase Out - Bulgaria, Croatia
### Implementation of alternatives

<table>
<thead>
<tr>
<th>Action</th>
<th>Government Agencies/Other organisations to involve</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing MB use and data collection</td>
<td>Ministry of Environment Plant Protection Inspection Fumigation companies NOU</td>
<td>2000</td>
<td>Up to date information is available</td>
</tr>
<tr>
<td>Identification of alternatives</td>
<td>Ministry of Agriculture Research institutions Agricultural Universities Users of methyl bromide</td>
<td>2000-2001</td>
<td>Organising a workshop to identity alternatives for post – harvest treatments - UNEP Regional Demonstration Project is being carried out in Poland to identify and evaluate environmentally sustainable alternatives for methyl bromide used on horticultural crops</td>
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</table>

### Reviewing Progress

<table>
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<tr>
<th>Action</th>
<th>Government Agencies</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOU UNEP</td>
<td>2001-2005</td>
<td>Regional Workshops - Participation in the discussions on the projects in the Neighbouring countries</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4: National Action Plan for Methyl Bromide Phase Out

- **Hungary, Poland and Slovakia** *

<table>
<thead>
<tr>
<th>Action</th>
<th>Government Agencies</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing MB use and data collection</td>
<td>Ministry of Environment Plant Protection Inspection Fumigation companies NOU</td>
<td>2000</td>
<td>Up to date information is available</td>
</tr>
<tr>
<td>Identification of alternatives</td>
<td>Ministry of Agriculture Research institutions Agricultural Universities Users of methyl bromide</td>
<td>2000-2001</td>
<td>Organising a workshop to identity alternatives for post – harvest treatments - UNEP Regional Demonstration Project is being carried out in Poland to identify and evaluate environmentally sustainable alternatives for methyl bromide used on horticultural crops</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
<th>Government Agencies</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>All stakeholders</td>
<td>2001-2002</td>
<td>Preparation for local production of biocontrol agents (Poland) - Voluntary reductions by users - Seminars and training sessions to inform methyl bromide users about alternatives</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
<th>Government Agencies</th>
<th>Timetable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Environment Ministry of Agriculture Ministry of Economy</td>
<td>2001-2002</td>
<td>The “Act on inspection of using ozone – depleting substances” has been prepared (Poland) - Hungary has to modify existing regulations - Reviewing QPS treatments - Phase out according to the schedule required by the Montreal Protocol</td>
<td></td>
</tr>
</tbody>
</table>
Raising Awareness

National Ozone Units
Ministry of Environment
NGOs
Agricultural Extension
Service

2001-2005
- Informing growers on effective alternatives
- Technical manuals and leaflets for farmers and other methyl bromide users
- Information in newspapers and magazines
- Consumer education
- Eco-labels

Implementation of alternatives

Research institutions
Agricultural Extension
Service
Inspection for Plant
Protection

2001-2005
- Demonstration experiments on farms
- Training of trainers
- Dissemination of results from demonstration experiments to the stakeholders involved
- Regional training workshops on alternatives for soil and post-harvest uses

Reviewing Progress

Ministry of Environment
NOUs
UNEP
Other stakeholders

2001-2005
- Updating plans
- Sharing information with other countries in the region
- Regional workshops

* In Slovakia methyl bromide is not being used for agricultural purposes

8.3. Regional co-operation

Table 5. Baltic countries – Latvia and Lithuania

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Approach</th>
<th>Regional Organisations to Involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange of information on policy, legislation and technical measures; Promoting alternatives</td>
<td>Regional workshops, demonstration projects, training</td>
<td>Ministries of Environment Regional Environment and Plant Protection Organisations UNEP</td>
</tr>
</tbody>
</table>

Table 6. Balkan and Eastern European Countries – Bulgaria, Croatia, Georgia, Moldova

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Approach</th>
<th>Regional Organisations to Involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness raising policy development;</td>
<td>Regional project, training (Georgia, Moldova)</td>
<td>UNEP and Canada</td>
</tr>
<tr>
<td>Promoting alternatives</td>
<td>Regional workshops, participation on discussions of the projects conducted in the neighbouring countries</td>
<td>Extension Service Plant Protection Service UNEP</td>
</tr>
</tbody>
</table>
Table 7. Central European Countries – Hungary, Poland, Slovakia

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Approach</th>
<th>Regional Organisations to Involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of problems connected with alternatives used for soil treatment – their advantages and disadvantages</td>
<td>Regional training workshop (for countries using methyl bromide as a soil fumigant)</td>
<td>Plant Protection and Conservation Service&lt;br&gt;Extension Service&lt;br&gt;Research institutions&lt;br&gt;UNEP&lt;br&gt;Participating countries: BG, HU, PL, CRO</td>
</tr>
<tr>
<td>Identification of alternatives for structures and durable commodities</td>
<td>Regional training workshop</td>
<td>Plant Protection Service&lt;br&gt;Extension Service&lt;br&gt;Research institutions&lt;br&gt;Key country’s grain-store Operators&lt;br&gt;UNEP</td>
</tr>
</tbody>
</table>

8.4. Support expected from UNEP

The Central and Eastern European countries expect UNEP to continue and intensify its institutional and financial support for developing national action plans for methyl bromide phase out and implementing alternatives. The following policy measures directed to timely phasing out of methyl bromide will need special support at the regional and national levels:

? Financial assistance in creation and development of monitoring and data collection systems for Georgia.
? Organisation of workshops, exchange visits and training activities using a participatory approach.
? Support for participation of the scientists from CEITs involved in implementation of alternatives in international conferences and symposia on relevant topics.
? Translation of some UNEP materials regarding implementation of alternatives and reports on demonstration projects.
? Promotion of alternatives and implementation of IPM techniques.
? National awareness raising programmes; financing projects for development of awareness raising programmes in Bulgaria, Georgia, and Moldova.
? Awareness raising and policy development.
? Financial support for the implementation of demonstration projects.

Final conclusions

1. Existing regulations in most of the countries of Central and Eastern Europe are sufficient to meet the methyl bromide phase out by 2005.
2. Some countries, however, need to develop national licensing systems to control imports/exports and to modify existing regulations on methyl bromide phase out to conform with European Union regulations.
3. It is necessary to organise training of trainers to implement alternatives and to establish awareness raising programmes.
4. Introduction of economic incentives would be helpful to promote the adoption of alternatives and IPM systems.
5. Alternatives for quarantine and pre-shipment uses need to be reviewed.
6. Development of national action plans for methyl bromide phase out should be done in consultation with key methyl bromide users and other stakeholders from the beginning of development.
7. Regional demonstration project on methyl bromide alternatives for strawberries, tomatoes and peppers will be continued and results will be disseminated.
8. Regional training workshops on alternatives to methyl bromide for soil treatment and post-harvest uses.
9. Information exchange to share experiences on alternatives will be given special attention and support.
10. The participating countries expect UNEP to provide assistance in phasing out methyl bromide by helping in data collection and reporting and in awareness raising and training activities.
9. **Annexes**

9.1. **Annex I**

List of Participants

Methyl Bromide Policy Development Workshop, Warsaw, Poland 25-27 October 2000

<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Title/Position</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
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<td>+359-21-980 39 26</td>
<td><a href="mailto:ozon@mb.biA-bg.com">ozon@mb.biA-bg.com</a></td>
</tr>
<tr>
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<td>Mrs. Lyubka Koleva</td>
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<td>17, Hn Boter Berd, 1606 Sofia</td>
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<td>+0359 2 52 51 61</td>
<td>e-mail</td>
</tr>
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</tr>
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</tr>
<tr>
<td></td>
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<td>82 Tchavchadvde Str. Tbilisi</td>
<td>+995 32 231 044/293 044</td>
<td>+995 32 293 044</td>
<td>e-mail</td>
</tr>
<tr>
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<td>Fo u-44-50, H-1011 Budapest</td>
<td>+36-1-457 33 00</td>
<td>+36-1-201 30 56</td>
<td><a href="mailto:tothr@mail.ktm.hu">tothr@mail.ktm.hu</a></td>
</tr>
<tr>
<td></td>
<td>Mr. Jozsef Surjan</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Country</td>
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<td>Address</td>
<td>Telephone 1</td>
<td>Telephone 2</td>
<td>Email</td>
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</tr>
</tbody>
</table>
| Senior Councillor, Ministry of Agriculture and Regional Development, Department for Plant Protection and Agri-environment Management; 1055 Budapest, Kossuth ter 11, Budapest | Tel: 36-1 301 44 76  
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Fax: 370 2 61 96 17  
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e-mail: vaaja@vaat.lt | Moldova | Mr. Anatol Oz Tarita  
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Fax: 373 2 22 68 44  
e-mail: Environment@ozon.moldnet.com | Mrs. Julia Gavrilita  
Consultant; Ministry of Agriculture; MD, 2004 Chisinau, 162, Stefan cel More Str. | Tel: 373 2 24 60 25  
Fax: 373 2 23 23 33 |
<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Title/Position</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
</table>
| Poland  | Mrs Jadwiga Makosa          | ODS Specialist, Ozone Layer Protection Unit, Industrial Chemistry Research Institute; Rydygiera 8; 01-793 Warsaw | Tel: 48 22 633 92 91  
Fax: 48 22 633 92 91  
e-mail: jamak@ichp.waw.pl |                        |                         |                        |
|         | Mrs. Agnieszka Sahajdak     | Senior Specialist; Main Inspectorate of Plant Protection; 30, Wspólna St. 00-939 Warsaw | Tel: 48 22 623 23 54  
Fax: 48 22 623 23 02  
e-mail: wo@pior.gov.pl |                        |                         |                        |
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e-mail: dabrowskiz@alpha.sggw.waw.pl |                        |                         |                        |
|         | Mr. Janusz Kozakiewicz      | Head of Ozone Layer Protection Unit, Industrial Chemistry Research Institute, Rydygiera 8; 01-793 Warsaw | Tel: 48 22 633 92 91  
Fax: 48 22 633 92 91  
e-mail: kozak@ichp.waw.pl |                        |                         |                        |
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e-mail: slusarsk@inwarz.skierniewice.pl |                        |                         |                        |
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| Slovakia| Mr. Peter Tomlein           | Expert SZ CHKT;900 41 Rovinka | Tel: +421 7 4598 0420  
Fax: +421 7 4598 0420  
e-mail: zvazchkt@isternet.sk |                        |                         |                        |
<table>
<thead>
<tr>
<th>SPEAKERS</th>
</tr>
</thead>
</table>
| **Croatia** | Ms. Darka Hamel  
Head of Export and Quarantine Department, Institute for Plant Protection in Agriculture and Forestry of Republic of Croatia; Rim 98, 10000 Zagreb  
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| **USA** | Mr. Bill Thomas  
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Tel: -1 202 564 9179  
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|  | Mr. David Mueller  
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Monteral Protocol Operations; UNIDO; Vienna International Centre, PO Box 400; A-1400 Vienna,  
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Fax: 43 1 21131 6804 e-mail: ssiahmed@unido.org |
Annex II

9.2. Workshop agenda

Regional Policy Development Workshop to Assist Methyl Bromide Phase Out in Eastern and Central Europe Organized by UNEP DTIE OzonAction Programme

Hosted by the Government of Poland

In cooperation with the Research Institute of Vegetable Crops

25 - 27 October 2000, Warsaw, Poland

Day 1 (2000-10-25)

09:00 - 10:00 Registration

10:00 - 10:45 Opening session
- Welcome address by Poland’s NOU, Janusz Kozakiewicz
- Welcome address by director of RIVC, Prof. Franciszek Adamicki
- Keynote opening address by the Ministry of Environment, Director Zbigniew Kamienski
- UNEP addresses: main objectives of the Workshop, Corinna Gilfillan
- UNIDO welcome addresses, Sidi M. Si Ahmed

10:45 - 11:15 Coffee break and UNEP DTIE video "Healthy harvest"

Session I Methyl bromide phase-out requirements and alternatives

11:15 - 11:35 Methyl bromide phase out requirements under the Montreal Protocol (Corinna Gilfillan, UNEP DTIE)

11:35 - 11:55 The 1998 MBTOC Report and its relevance to Eastern and Central Europe (Robert Taylor, Natural Resources Institute)

11:55 - 12:15 Methyl bromide alternatives for post-harvest uses (David Mueller, Insects Limited)

12:15 - 13:00 Discussion

13:00 - 14:30 Lunch

Session II The role of policy and training measures to control methyl bromide and implement alternatives

14:30 - 14:50 Overview of policy and training options to promote the methyl bromide phase-out (Corinna Gilfillan, UNEP DTIE)
14:50 - 15:10  Results of demonstration projects in Eastern and Central Europe and next steps for implementing alternatives (*S.M. Si Ahmed, UNIDO*)

15:10 - 15:30  The role of training activities to promote adoption of environmentally sustainable alternatives in the region(*Prof. Zbigniew T. Dabrowski, Dept. of Applied Entomology, Agricultural University of Warsaw*)

15:30 - 15:50  Coffee break

15:50 - 16:10  Progress in implementing UNEP's Regional Demonstration Project on methyl bromide alternatives in Eastern and Central Europe (*Dr. Czeslaw Slusarski, Research Institute of Vegetable Crops*)

16:10 - 17:30  Discussion

19:00  Welcome party

**Day 2** (2000-10-26)

8:00 - 13:00  Field visit to farm using methyl bromide alternatives

13:00 - 14:00  Lunch

Session III  **First working session: "Current regulations related to methyl bromide use in Eastern and Central Europe"**

14:00 - 14:30  Overview of methyl bromide regulations in Central and Eastern Europe and logistics, and objectives of first working session (*Corinna Gilfillan, UNEP DTIE*)

14:30 - 16:30  Small group discussions on current regulations related to methyl bromide use. *Each country team reports to its working group on existing methyl bromide regulations, status of meeting the methyl bromide phase-out requirements, policy barriers and other problems encountered in phasing-out methyl bromide (3 working groups).*

16:30 - 17:00  Coffee break

17:00 - 18:00  Plenary session

*Each working group reports for 15 minutes to the plenary on existing methyl bromide regulations, status of meeting the methyl bromide phase-out requirements, policy barriers and other problems facing the countries in its group.*
**Day 3** (2000-10-27)

**Session IV**  
**Experiences in development of policy measures for methyl bromide phase-out**

*9:00 - 9:20*  
Croatia's approach in phasing-out methyl bromide: lessons learned (*Darka Hamel, Croatia Institute for Plant Protection in Agriculture and Forestry*)

*9:20 - 9:40*  
United States approach in phasing-out methyl bromide: lessons learned and how it is applicable to Eastern and Central Europe (*Bill Thomas, US Environmental Protection Agency*)

*9:40 - 10:00*  
The Italy's approach in phasing-out methyl bromide: lessons learned and how it is applicable to Eastern and Central Europe (*Lodovica Gullino, University of Torino*)

*10:00 - 10:45*  
Discussion

*10:45 - 11:15*  
Coffee break

**Session V**  
**Second working session : "Developing a national action plan"**

*11:15 - 11:45*  
How to develop a national action plan for methyl bromide phase-out and objectives, and logistics of second working session (*Corinna Gilfillan, UNEP DTIE*)

*11:45 - 13:00*  
Small group discussions on how the participating countries should proceed in creating a national action plan for methyl bromide phase-out.  
*Each country team is asked to draw a scheme of institutional framework that may be used to develop and implement policy measures.*  
*Each country team should identify preferred short, medium and long-term policy measures, training and other activities, and develop draft a national action plan to meet the methyl bromide phase-out requirements.*  
*Each working group reports to plenary on its progress in doing the above. Participants should use UNEP's towards methyl bromide phase-out: A handbook for NOUs as a reference in these efforts.*

*13:00 - 14:00*  
Lunch

*14:00 - 16:00*  
Continue discussion

*16:00 - 16:30*  
Coffee break

**Session VI**  
**Recommendations and closing**

*16:30 - 17:30*  
Plenary session: reports from each working group (15 min each) summarising preferred policy measures, action plans for the phase-out and follow-up actions, followed by discussion.

*17:30 - 18:00*  
Conclusions and closing ceremony.