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**STRATEGY AND GUIDELINES FOR INVESTMENT PROJECTS
IN THE METHYL BROMIDE SECTOR**

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Introduction

1. The Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol requested at its Twenty-third Meeting (November 1997) the Secretariat to convene a meeting of implementing agencies and interested bilateral donors, with the participation of the Methyl Bromide Technical Options Committee and some interested non-governmental organizations, for the purpose of developing a strategy and guidelines for investment projects in the methyl bromide sector. It also urged the implementing agencies to present well considered investment projects in the sector during 1998 based on the strategy and guidelines.

2. The meeting was held on 3-4 February 1998 in Montreal, with the participation of representatives from donor countries, experts, universities, NGOs and implementing agencies.

Methyl bromide consumption profile in Article 5 countries

3. Consumption data on methyl bromide in Article 5 countries varies widely. The UNDP/UNEP survey conducted in 1995/1996 for 37 Article 5 countries indicated that the average 1990-1994 imports of 23 of those countries amounted to 4,141 metric tonnes. The 1995 TEAP report estimated consumption by developing countries to be 14,500 metric tonnes per year. Data reported by Article 5 countries to the Ozone Secretariat under Article 7 showed that only 46 countries reported data on methyl bromide for 1995 (consumption about 11,000 metric tonnes and production about 1,000 metric tonnes) and that only 35 countries reported their 1996 data (consumption about 8,000 metric tonnes and production about 1,100 metric tonnes).

4. Some countries which had previously been major users of methyl bromide have now changed to use of alternatives and that use by other long-standing users is diminishing. However, use had been increasing dramatically in the past few years in certain large countries and a number of small countries are high consumers of methyl bromide for intensive agricultural applications.

5. The dramatic increase in use in certain countries may be due to a variety of factors including aggressive marketing by some methyl bromide advocates.

6. A questionnaire on methyl bromide consumption prepared by the MBTOC was sent to all countries, in order to enable updated information to be included in that Committee's 1998 report due to be finalised in October 1998.

7. Discussions held during the two-day deliberation lead to the development of the following Draft strategy and guidelines for investment demonstration and non-investment projects in the methyl bromide sector, which the Group recommends for consideration by the Executive Committee.

DRAFT STRATEGY

8. The intent of the strategy is to assist the Executive Committee in allocating resources to the methyl bromide sector for the next eighteen months. At the end of that time the strategy and guidelines should be reviewed.

9. National policy makers in Article 5 countries need to be better informed of alternatives to methyl bromide and the weaknesses contained in information provided by some methyl bromide advocates. Funding for education programmes and technology transfer should be a priority. Timing is important and restrictions on use of methyl bromide need to be consistent with the availability of alternatives.

Categories of countries

10. Global users of methyl bromide can be categorized as three major groups: (i) those countries that traditionally use methyl bromide for more than quarantine and preshipment purposes¹, (ii) those countries that in recent years have become new users or have rapidly accelerated their use, and (iii) and those countries that use little or no methyl bromide.

Copenhagen Amendment

11. The methyl bromide provisions of the Montreal Protocol only apply to those countries that have ratified the Copenhagen Amendment of the Protocol. Those countries that have not ratified the Copenhagen Amendment should be urged to do so and should be informed about the availability to signatories of funding to support reduction projects for the phase out of methyl bromide. Funding for information transfer and policy development should be made available to countries which have not yet ratified the amendment. However, further demonstration and/or investment projects should proceed only when these countries have demonstrated explicit intent to ratify the Amendment in a specific near term time period.

Major use categories

12. As requested by MBTOC, controlled use of methyl bromide can be classified into two broad categories:

- (a) Soil fumigation: The use of methyl bromide for soil fumigation represents the

¹ The use of methyl bromide for quarantine and preshipment purposes is exempt from controls by the Montreal Protocol. Since the purpose of the Multilateral Fund is "to enable compliance" with the Protocol's provisions, projects addressing quarantine and preshipment uses would not be funded by the Fund, and they are not included in this paper.

largest global use and amounts to 75 per cent or more of total Article 5 countries use.

- (b) Storage and structural uses: The use of methyl bromide for storage and structural uses amounts to 20 to 25 per cent of total Article 5 countries use. In some developing countries, however, the use of methyl bromide for storage dominates the country's use profile. In some other countries a small amount of methyl bromide is used for structural fumigation.

Tools of intervention

13. For countries that use little or no methyl bromide, the Fund should strive to support activities in these countries with the intent of ensuring that these countries do not begin or increase their use or become dependent on this substance. To achieve this goal, the focus in these countries is to facilitate a policy dialogue for consideration and implementation of policies banning the import and or use of methyl bromide through information exchange programmes, and technically related non-investment activities. For these countries, according to the priorities set out below for non-investment projects, development of projects should focus on creating and disseminating information and/or educating stakeholders, and may include, inter alia, development and dissemination of information materials, holding of targeted, structured workshops and the provision of assistance, where needed, for the creation of policy instruments to restrict or ban the use and/or import of methyl bromide. An information package should be developed for use by these countries to facilitate consideration and implementation of import bans or use restrictions.

14. For countries which are new users of methyl bromide, or have rapidly accelerated their use, in addition to the policy dialogue and information exchange programmes, specific demonstration and investment projects targeted on certain crops and viable technologies should be demonstrated in order to arrest the growth in consumption.

15. For countries that are traditionally users of methyl bromide, the full range of tools of intervention will be required. These include policy development, information exchange, and demonstration and investment projects.

16. All demonstration and investment projects should have a strong evaluation and information transfer component to ensure that the results of those projects are widely disseminated and understood both within the country and in countries with similar crops or uses of methyl bromide. In addition, in countries that use little or no controlled methyl bromide non-investment activities will dominate.

Priority areas

17. The initial goal of both demonstration and investment projects should be the demonstration of alternatives through a process that facilitates widespread understanding among users and related agencies on how the alternative (if proven successful) may be applied to related

uses throughout the industry. For the duration of the strategy, projects should be prioritized on the basis of global benefits. Crops and processes which represent significant global use, and/or on which alternatives are most well understood should be given priority.

Soil fumigation

18. Because of their contribution to global use, the following crops, including seed beds and nursery crops, should be given priority in the development of projects: flowers, tobacco, tomato, strawberries and cucurbits. While projects for these crops should receive priority, projects in crops other than those listed may be considered in cases where the use in a country is expanding, and the demonstration is deemed necessary to stop the growth.

19. Similarly, priority should be given to the use of one or a combination of several of the following proven and viable alternative technologies for soil fumigation: integrated pest management (IPM), solarisation, organic amendments, crop rotation/fallow, resistant varieties, grafting, chemical products (chloropicrin, dazomet, metham sodium, 1-3-D, and other nonfumigant pesticides). Consideration should also be given to technologies that have been demonstrated as appropriate alternatives to methyl bromide for particular crops/conditions (in such cases, the burden is on the proponent to provide information on the demonstrated feasibility of the proposed alternative). While non-chemical techniques would be preferable, chemical alternatives may be more effective in certain country and/or crop contexts and may be essential to the phase out for some countries.

20. For those alternatives which have been recommended by MBTOC for either limited or widespread commercial use, demonstration projects should be approved for adaptation to local conditions and, in some cases, investment projects could also be considered.

Storage and structural uses

21. For storage and structural uses, phosphine is the widely documented replacement fumigant and is ready for investment projects where appropriate. Demonstration projects may be required for other alternatives indicated by MBTOC as viable.

Project categories

22. Project proposals on alternatives to methyl bromide could be categorized as follows:

- (a) **Demonstration projects:** Projects whose primary objective is the demonstration of alternatives or alternative technologies that have proven effective elsewhere in a controlled setting. While such projects may, in the course of field testing, bring about small reduction in methyl bromide use, their primary purpose is to demonstrate the efficacy of alternatives to facilitate the broader scale implementation of informed investment projects. These projects should include a dissemination project and a discussion of how this demonstration project can be

scaled up to an investment project. In accordance with existing Multilateral Fund guidelines, incremental cost of related demonstration projects is considered to be the full cost of the project.

- (b) Investment projects: Projects whose primary objective is the reduction of methyl bromide consumption. These projects be undertaken in sectors or for uses where there are clearly available efficacious alternatives or alternative technologies available. They should be accompanied, to the greatest degree possible, by a package of policy measures that the country has committed to ensure that the use being phased out will not merely be replaced by an increase from other similar users shortly after the projects are completed (i.e., bans and import restrictions). Incremental costs for such investment projects could be determined in the manner typical of all Multilateral Fund projects (i.e., capital costs of conversion plus incremental operational costs/savings for a period to be determined, taking into account, *inter alia*, the relative cost of the technology and available alternatives). In addition, the size of the eligible grant could be reduced depending on the degree of export to non Article 5 countries of the finished product or the participation of multinational corporations. This could have an impact on the eligibility and viability of a large number of projects.
- (c) Non-investment projects: Projects focused on creating and disseminating information and/or educating stakeholders. Such projects may include, *inter alia*, development and dissemination of information materials, holding of targeted structured workshops and the provision of assistance, where needed, on the creation of policy instruments to restrict or ban the use and/or import of methyl bromide.

23. It is noted that some project submissions may include components of all three categories.

Possible model for project development

24. The project development process should be open and transparent to enable all appropriate expertise in a country or a region to participate.

25. Where appropriate, carefully structured workshops involving methyl bromide importers, competent and relevant government agencies, farmers and farmers' associations, exporters, research institutions, universities, NGOs, etc., should be mounted at the outset of activities in a country to decide on the most appropriate alternative. The resource persons should be chosen as far as feasible from local experts or experts from neighboring countries to obviate any cultural barriers. Specifically, main users of methyl bromide for the specified use(s) should be brought together with relevant agriculture, certification and environment agencies, and farmers who have already used the likely alternatives (designated group).

26. Target pest should be determined and available alternatives should be discussed in terms of their costs and benefits, including environmental and human health impacts.

27. The group should together select the alternative(s) field testing. It should participate in application of the alternative, periodic review of results, final evaluation of projects and their potential for more widespread application within the country.

28. A fact sheet summarizing the results of the project should be prepared for widespread dissemination both within the country and to other countries. Evaluation and reporting components of the project should include a delineation of costs and benefits, and outline the actions that the country intends to take to implement the alternative (if proven feasible) on a wider scale.

29. The Implementing Agencies should hold discussions with the competent government agencies, including the NOU, in the implementation of the project. The Implementing Agencies and their in-country counterparts should make every effort to collect data on the consumption of methyl bromide and the history and pattern of its uses in the concerned country. Where possible, exporting countries are encouraged to develop labels and appropriate certification procedures to attest the absence of the use of methyl bromide where their exports were produced without the fumigant.

30. Extensive coordination of work among Implementing Agencies and bilateral partners will be essential in order to avoid costly duplication of travel or other efforts. This will be important particularly for demonstrating methyl bromide eliminated by the introduction of the alternative and for data collection purposes.

Revised Guidelines for demonstration projects

31. The goal of demonstration projects should be demonstration of alternatives through a process that would facilitate wider understanding among users on how the alternative being demonstrated, if proven successful, might be applied to related uses throughout the country and perhaps throughout the surrounding region.

32. Preparation of demonstration projects should commence with a participatory transparent process to identify all the promising alternatives for a specific target crop or use in a specific region, consistent with the recommendations of the MBTOC report. Priority should be given to the alternatives indicated in the strategy. Main users of methyl bromide for the specified uses should be brought together with relevant agricultural and environmental agencies, farmers who have already used the likely alternatives and other stakeholders. Target pests should be determined by this group and available alternatives should be considered in terms of their costs and benefits (including environmental impacts). The group should together select the alternative(s) to be field tested. In the controlled setting, which could be an existing respected agricultural research and demonstration facility, or a working farm setting, wherever practicable, these alternatives could be adapted to local conditions, applied, and evaluated. In order to

produce results which might lead to widespread adoption of alternatives which prove successful, these demonstrations should be on plots sufficiently large to employ locally-used practices and equipment, while small enough to allow evaluation of a number of different alternatives.

33. If necessary, for crops in a parallel crop cycle, one or two of the most successful alternatives could be applied in nearby working farm settings where methyl bromide is currently being used. These applications would be relatively small, with the aim of demonstrating the effectiveness and efficiency of the alternative(s) in a commercial agricultural production setting.

34. Initial demonstration projects should focus on the widespread crop uses, to ensure the widest possible relevance of the results and include a process for disseminating the results of the project. In order to ensure this, it is suggested that initial projects should be limited to Article 5 countries which have important crops for which substantial amounts of methyl bromide are used for soil fumigation, and in countries and on important crops where the use of methyl bromide for soil fumigation is growing rapidly. It is hoped that by focusing in on crops on which the use of methyl bromide is widespread, that the results would be applicable to a large number of countries.

35. To the extent not redundant with other already proven technologies, demonstration projects on stored commodities as recommended by MBTOC and indicated as priority areas in the strategy could also be eligible.

Incremental Cost

36. In the initial phase of projects of the type being proposed, crops would be raised for the purposes of adapting and evaluating alternatives, and would not produce crops of commercial value. In the second phase of such projects, likely savings from the use of alternatives are likely to be insignificant because of the scale of the demonstrations. Moreover, while it is expected that suppliers of alternatives may in some cases provide the alternatives at reduced or zero cost, the extent of such contributions cannot be known at this time. For these reasons, it is proposed that for an initial round of projects, incremental cost be considered as being equal to full project cost. The initial projects would be expected to produce highly useful information to help determine incremental cost for subsequent methyl bromide projects.

37. The group assembled to select the alternatives should also monitor implementation of the demonstration project(s), periodic review of results, final evaluation of projects and their potential for more widespread application.

38. Fact sheets should be prepared so that they are suitable for widespread dissemination both within the country and to other countries. Evaluation and reporting components of the project should include a delineation of costs and benefits, and outline the actions that the country intends to take to implement the alternative (if proven feasible) on a wider scale.

39. Implementing agencies and/or bilateral partners should take the opportunity of working in the country to gather additional information on the use of methyl bromide to encourage the early

adoption of reduced dosages and other good management practices where warranted and to identify key decision makers who will be instrumental in the phase-out of methyl bromide in the country concerned.

Guidelines for investment projects

40. Investment projects can be considered for funding for crops, technologies or applications listed as priority areas in the strategy and for which alternative technologies are well established under similar conditions.

41. It would need to be demonstrated that the country was committed to a package of policy measures directed to eliminating methyl bromide use (i.e., bans and import licensing) and to sustaining the alternative methodologies on a permanent basis or for as long as needed. This will ensure that the consumption being phased out will not merely be replaced by an increase from other similar users shortly after the projects are completed. Farmers should also be committed to sustainable reductions in methyl bromide use.

42. Within the priority areas, emphasis should be placed on projects resulting in significant reduction of methyl bromide use and those whose results are most easily transferable to similar conditions at the national or regional levels (globally applicable).

43. During an open and transparent project preparation process, implementing agencies and/or bilateral donors should provide sound and comprehensive information on alternative technologies to methyl bromide application, including environmental and health impacts. However, selection of the alternative technology(ies) should be the responsibility of the recipient country, and not the implementing agency and/or bilateral partner. This ensures the sustainability of project results.

44. The institutional capacity should be in place to enable the alternative technology used in an investment project to be adopted on a nation-wide, and possibly region-wide basis.

45. Whenever possible, an investment project should be supported by policy, awareness or promotional activities (such as labeling) to enhance the economic viability of the alternative technology and thus the sustainability of the project.

46. More experience is needed before detailed incremental costs of individual projects can be delineated. For the first tranche of projects, a careful review by the Executive Committee should be undertake to determine the level of eligible funding.

47. As experience is gained, templates specific to alternative replacement could be developed.

Guidelines for non-investment projects

48. A wide range of specific non-investment activities are necessary to facilitate the phase out of methyl bromide in Article 5 countries. For the duration of the strategy, priority should be given

to information exchange activities particularly to facilitate ratification of the Copenhagen Amendment, an understanding of the importance of methyl bromide phase out, assistance available under the Multilateral Fund, available alternative technologies and practices to reduce or eliminate the use of methyl bromide in specific applications, and policy options that could assist a country in the phase out process.

49. The focus should be on information exchange on a regional basis, for crops, technologies or applications listed as priority areas in the strategy. Information exchange on a regional basis could be achieved through forums devoted to particular crops in the priority list, in which all stakeholders are involved (including, farmers, government officials, research institutes, pesticide manufacturers, NGOs).

50. Policy dialogue is critically important. Effort should be made to inform relevant high level decision makers, such as Ministries of Agriculture, and should be conducted by the most credible persons, perhaps calling upon the agricultural experts of relevant implementing agencies or other international agencies.

51. Specifically:

- (a) Well compiled case studies on alternative technologies to methyl bromide uses that have been successfully implemented should be prepared as an effective information tool.
- (b) Legislation and regulation models already in place should be compiled to assist Article 5 countries in developing similar policy instruments.
- (c) The lack of awareness that methyl bromide is a controlled substance should be combated. UNEP could work on this through networks and preparation of information documents.
- (d) Although the development of management plans for methyl bromide phase out is premature, the preparation of management plans should not be excluded for countries which are well advanced in reduction of methyl bromide use and planning for phase out.