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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
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**DESK STUDY ON METHYL BROMIDE PROJECTS**

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## I. Background

1. The evaluation of methyl bromide (MB) projects is part of the 2004 Monitoring and Evaluation Work Programme. A desk study was undertaken, considering in detail the four largest consuming sectors in Article (5) countries: horticulture (including strawberries and bananas), floriculture, tobacco and post harvest uses. The desk study is to be followed by a full evaluation report based on field visits and case studies in various countries, scheduled to be submitted to the 45<sup>th</sup> Meeting of the Executive Committee in March 2005. The main objective of this desk study is to identify issues and questions needing follow-up for the full evaluation. Comments on the draft received by UNEP, UNIDO and Environment Canada were taken into account in finalizing the present document.

2. The MLF has early on recognized the importance of phasing out methyl bromide and has begun to fund non-investment projects, mainly demonstration and technical assistance projects from 1994 onwards, with a marked increase of the number of projects approved in 1998. Many demonstration projects were followed by investment projects, which in recent years took more and more the form of multi-year agreements leading to advanced phase-out of MB (earlier than the established deadline of 2015 for A5 countries). Under these agreements funding tranches are released annually against proof that the targeted phase-out has been realized. A statistical overview of investment and non-investment projects (by year of approval, size, implementing agency, region, sub-sector, etc. is attached in Annex I).

3. Methyl bromide projects are complex and unique in the sense that their success depends on many stakeholders and factors. Compared to the industrial sector, their sustainability is less guaranteed by changing the equipment used but depends on the technical and commercial viability of the alternatives and the enforcement of production, import and use restrictions. Farmers could always, even for one season, go back to using MB if this would look more advantageous to them. Often the number of users is very large and decision making decentralized which implies the need for both research and extension services to be fully involved in the promotion of MB alternatives. Extension services provide training and awareness programmes, collaborate with research on technology generation and demonstration and take responsibility for its dissemination and adoption. Farmers tend to be reluctant to change established practices if the superiority and safe application of new methods have not been clearly demonstrated for their particular situation. They are also exposed to lobbying efforts of some methyl bromide producers, importers or large scale users who question the reliability of scientific studies on the subject and oppose the reduction schedules of the Montreal Protocol.

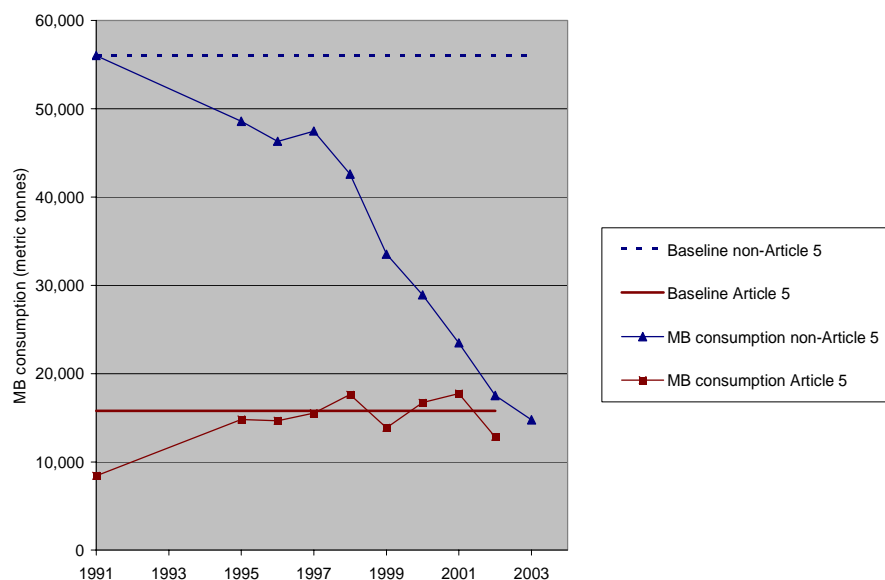
4. A careful evaluation of the peculiarities of each country, its needs and plans are required to establish the most suitable alternatives, which vary with climate and soil differences. The technical analysis and identification of suitable alternatives has been largely achieved by now with the completion of demonstration projects covering all sectors and regions. With very few exceptions (ginseng and fresh dates), sufficient prove of the technical feasibility of alternatives has been achieved and documented worldwide (see 2002 assessment report of the MBTOC). To build a national consensus for a participatory strategy and to convince the majority of stakeholders and users is not an easy challenge but it is the right way for the successful phase out of MB and its replacement with MB alternatives, fine-tuned to local conditions.

## II. Methyl Bromide Consumption Trends and Countries' Compliance

5. The reduction schedule for Article 5 countries foresees a freeze of methyl bromide consumption on the average of 1995-98 levels from 2002 onwards, followed by a 20% reduction as of 2005, until total phase-out by 2015. For the large majority of countries, these reduction steps do not present major problems; however, for some countries they are not easy to achieve.

6. Global consumption of MB for controlled uses was estimated to be more than 64,460 metric tonnes (MT) in 1991 and remained above 60,000 MT until 1998. On the basis of Ozone Secretariat data available in April 2004, global consumption fell to about 41,240 MT in 2001 and about 30,350 MT in 2002. In aggregate, Article 5(1) countries have reduced MB consumption below the baseline level, following the steady increase that occurred until 1998. MB consumption was more than 17,750 MT in 2001 and fell to about 12,830 MT in 2002. This represents a reduction of 19% from the total baseline (see Figure 1 below) (about 15,765 MT in A 5 countries according to the revised Ozone Secretariat data.).

**Figure 1. Baselines and trends in reported MB consumption in non-Article 5(1) and Article 5(1) regions, 1991 – 2002 (metric tonnes)**



Source: MBTOC estimates calculated from Ozone Secretariat data of April 2004

7. 59 countries, including four countries that have not yet ratified the Copenhagen Amendment, have met the 2002 freeze already and 43 have no consumption and thus pose no problem. 58 countries have already met the 20 % reduction target for 2005. This includes several countries that have not yet ratified the Copenhagen Amendment and are thus legally not bound to phase out MB. Eight countries will likely achieve the freeze level and the 20 % reduction through implementing approved projects; four of them are large users (Egypt, Guatemala, Honduras, and Lebanon). Another 10, mostly small consumers, except for Thailand, Uganda and Yemen will need additional approvals for 89.3 ODP tonnes to achieve the freeze. The same countries plus six more which are already in compliance with the freeze will need

approvals for an additional 108 ODP tonnes to achieve the 20 % reduction in 2005 (see Table 1 below and more details in Annex II). A large part of the remaining consumption, after the 20% reduction, is already taken care of by approvals in principle for multi-year agreements (MYA) for most large consuming countries. The 20 Article 5 countries that have not yet ratified the Copenhagen Amendment, have a combined reported consumption of only 103.3 ODP tons (in 2002 or 2003, using the latest available figure). This overall positive and encouraging situation is the result of the activities implemented by numerous approved projects plus substitution efforts without funding from the MLF.

**Table 1: Methyl Bromide Compliance Overview**

	Countries that have ratified the Copenhagen Amendment	Countries that have not ratified the Copenhagen Amendment	Total
Countries that appear to be in compliance	55	4	59
Countries that could achieve compliance with implementation of approved projects	8	0	8
Countries that may need additional actions to achieve compliance	10	2	12
Countries with no consumption	33	10	43
Countries with insufficient data	5	4	9
<b>Total</b>	<b>111</b>	<b>20</b>	<b>131</b>

Source: Country Programme and Art. 7 Data, Inventory and Progress Reports, Compliance Model

8. Nevertheless, there remains a long way to go to achieve full phase out by 2015 and ensure sustainability of the phase out so far achieved. In 2002, total consumption in Article 5 countries was 7,584.8 ODP tons. The largest part of the remaining consumption (81%) takes place in 16 countries listed in table 2 below. All of them have ratified the Copenhagen Amendment but some reported significant increases in consumption in 2002 (Thailand, Turkey) or in 2003 (Argentina, Morocco while Thailand strongly reduced). The latest consumption in these countries, which is not yet covered by approved projects but to a very large extent by approvals in principle of MYA, adds up to 3,946.0 ODP tonnes; for all Art. 5 countries it amounts to 4,192.9 ODP tonnes.

**TABLE 2: COUNTRIES WITH THE LARGEST  
CONSUMPTION OF METHYL BROMIDE**

Country	MB Baseline	Reported Consumption			Maximum Allowable Consumption for Countries with Multi-Year Agreements*	Total MB Consumption Approved for Funding for Countries with Multi-Year Agreements	Remaining Unfunded Consumption for Countries with Multi- Year Agreements
		2001 (A7 Data)	2002 (A7 Data)	2003 (A7 or CP Data)			
Argentina	411.3	358.8	168.6	325.8	527.8	509.8	18.0
Brazil	711.6	257.6	238.5	248.4			
Chile	212.5	239.0	165.2	N/A	198.0	76.2	121.8
China	1,102.1	1,567.8	1,087.8	N/A			
Costa Rica	342.5	390.0	280.0	N/A	426.9	426.9	0.0
Ecuador	66.2	369.8	40.8	N/A			
Egypt	238.1	432.0	270.0	238.2			
Guatemala	400.7	786.6	709.4	546.6			
Honduras	259.4	510.9	412.5	309.6			
Lebanon	152.4	219.0	197.3	N/A	236.5	236.5	0.0
Mexico	1,130.8	1,100.1	1,067.5	N/A			
Morocco	697.1	1,621.4	387.0	697.2	767.4	602.5	164.9
Syria	188.6	165.1	152.7	129.0	113.0	105.0	8.0
Thailand	164.9	291.2	470.5	178.0			
Turkey	479.7	43.8	280.8	N/A	342.6	322.2	20.4
Zimbabwe	557.0	544.2	250.2	97.4	598.0	182.6	415.4

\* As per agreed conditions between Government concerned and the Executive Committee.

### III. Executive Committee Strategy and Guidelines

9. Subsequent to the introduction of controls on MB and considering the level of funding available for MB demonstration and investment projects, the Executive Committee convened a meeting of experts for developing a strategy and guidelines for projects in this sector (23rd Meeting, November 1997). In March 1998, at the 24<sup>th</sup> meeting, the Executive Committee adopted a strategy to assist in allocating resources for MB projects (for a period of 18 months).

10. The strategy and guidelines were subsequently reviewed and revised by the Executive Committee in December 2000 at its 32<sup>nd</sup> meeting (decision 32/80). They cover all aspects of MB phase out: determination of MB consumption data, definition of major use categories and priority areas for MLF projects, instructions for project preparation, categories of incremental cost, and eligibility criteria.

11. The evaluation results of the second phase might be used to suggest amending the guidelines, as required.

#### IV. Results of the Desk Review

12. In order to cope with the heterogeneous nature of methyl bromide users, four consultants were hired to prepare reviews of projects in the four sub-sectors which cover practically all applications of MB (see statistics in Annex III):

- (a) horticulture (vegetables, strawberries, bananas)
- (b) cut flowers
- (c) tobacco seedlings
- (d) post harvest, storage, and structures

13. During the course of this desk review, all project documents, progress and completion reports available were analyzed by the consultants. The main findings are presented in the following section. Sub-sector specific findings, recommendations and suggested follow-up are contained in the sub-sector studies which are available on request and on the Secretariat's web site in the Executive Committee's section. Due to the nature of a desk study, the findings are preliminary and need further corroboration and discussions with Implementing Agencies (IA) and other stakeholders.

##### IV.1 Availability and quality of information in project progress and completion reports

14. For all but 10 of the 80 non-investment projects completed until the end of 2003, PCRs have been received. Another 25 non-investment projects were still on-going, according to the Progress Reports for 2003. 41 non-investment projects are demonstration projects for which the IA's also prepare final reports on the results of the trials conducted focusing on the technical feasibility of the various alternatives tested. Some of these technical reports are provided to the Secretariat. On the other side, only 7 out of 47 approved investment projects had been completed by the end of 2003, and for three of them PCRs were submitted. For the 10 on-going multi-year agreements, the implementing agencies provided reports on the results achieved by each phase, jointly with the request for funding for the subsequent annual tranche. Another 13 on-going investment projects also have agreed phase-out schedules but the disbursement schedule is administered by the implementing agencies. For some of these projects, annual progress reports were submitted, in addition to the data contained in the general annual progress report of each IA.

15. In spite of these various reports, the consultants had for many projects difficulties to get a clear picture on the results achieved, the problems faced and overcome and the lessons learnt during implementation. While the final reports on demonstration projects are usually fairly detailed on results of tests conducted, they mostly lack information on non-technical aspects, in particular, on the economic feasibility and sustainability of the various alternatives tested, as well as the institutional set-up, technology transfer activities and policy measures taken and required for lasting phase out. It would be helpful if information on these issues would be summarized in the PCRs and progress reports on demonstration and investment projects; the reports should provide key indicators such as cost comparisons for various treatments, possible barriers to

commercial adoption and also provisions made for assuring long term maintenance of equipment provided by the projects.

16. The periodic progress reports by IA on multi-year agreements vary a lot in terms of quantity of information and quality of analysis provided. For example, whilst some give detailed descriptions of training sessions and meetings held and even include questionnaires posed to growers with the aim of characterizing the sector involved, others hardly touch on these activities (although they may have taken place) and focus mainly on the technical feasibility of the alternatives proposed. Sometimes it is not clear what lessons were learnt from the demonstration project, which are being used for the investment stage.

17. Summaries of reports on selected multi-year agreements on MB phase-out were provided to several recent meetings of the Executive Committee, for example in doc. 38/37 where several reports were presented, doc. 42/14 on projects in Guatemala and Honduras, both implemented by UNIDO, suggested a revision of the agreed upon phase out schedules which were approved in decision 42/14. For the 41<sup>st</sup> meeting, progress reports were submitted by the Governments of Macedonia, Malawi and Uruguay and UNDP for the regional programme in Africa, inviting the Executive Committee to take note of the reports. Progress reports were also submitted by the Governments of Uganda and Zimbabwe and for UNEP's global training programme, seeking the Committee's guidance for certain issues which was provided in decision 41/78. The reports mentioned above will be considered for the second stage of the study. A summary of multi-year agreements can be found in Annex IV at the end of this report.

18. The Fund Secretariat introduced in 2002 for the general progress report of the IA's a new table summarizing progress achieved in implementing multi-year agreements. As funding for these agreements is approved and registered in the inventory under different project numbers for each tranche it had become difficult to monitor their overall progress. The new format allows to see the figures for all related projects in one table and to collect supplementary information from the IA's. The questions of the Secretariat and the answers from the IA's were useful for the desk study as they provided the most up-to-date feedback, in particular for agreements for which no annual reports had been received.

19. The Fund Secretariat is currently preparing a standard format for all annual reports of multi year projects, including MB projects. The proposal will be submitted to the 43<sup>rd</sup> Meeting of the Executive Committee. In the follow-up, specific indicators for the performance of MB projects might be developed, with an input from the second stage of the evaluation as described in Section 3 of this report.

#### IV.2 MB use and phase-out patterns

20. For the four completed individual investment projects and the three completed tranches of MYA the annual progress report 2003 confirmed that the MB phase-out was achieved as planned (183.1 ODP tonnes for the four individual projects and 45.3 ODP tonnes for the three tranches). In addition, one non-investment project (a demonstration project in Malawi implemented by UNDP) also reported phase-out of 19.3 ODP tonnes as planned. The cost-effectiveness of the projects and the cost of various alternatives applied varied a lot; there is no threshold established although lately common standards emerge. The average cost-effectiveness



of all investment projects approved so far is 13.4 US\$/tonnes of ODP, thanks to several very large projects with low cost-effectiveness values (See Annex V).

21. Although most countries use similar formulations and application methods of methyl bromide, there exist large variations among the dosage rates and field implementation practices applied. Some projects report that Virtual Impermeable Film (VIF), which reduces emissions, is used when applying MB and others do not.

22. The main goal of the investment projects is to fully replace MB use by their target groups. Most projects foresee a government regulation forbidding MB use during the last year before project completion. However, transition strategies with regulations making MB use more restricted, safer and/or more expensive are missing, except for Guatemala which has imposed an additional tax on MB imports, increasing MB cost from 2.6 to 3.1 US\$/kg (April 1004).

23. In many project documents, the core of the strategy for replacing MB is to transfer the alternative technologies (buying inputs, training growers or workers, making investments, etc.). Most of them quote something like “at the completion of the project, the Government will issue a regulation forbidding the use of MB...”. Thus, it is assumed that they will successfully transfer the alternative to the growers, and, at the end, and only then, they will forbid MB use. This is a risky assumption. What if at the end of the project a substantial percentage of the growers did not adopt the alternatives? The definite end to the availability of MB must be indicated to the growers earlier during the project implementation. However, the reports available say little about policy regulations and there seems to be no progress in this field.

24. Although investment projects necessarily carry a requirement for establishing policy measures that will enforce MB phase-out, it is very possible that additional measures could be implemented, particularly during the transition period until total phase-out. These could include limiting maximum MB rates/dosages and establishing regional agreements in order to standardize regulations and avoid or at least minimize illegal trade. The impact of these regulations would need to be assessed.

#### IV.3 Delays in project completion

25. Many non-investment projects (demonstration, technical assistance and training projects) have been delayed with respect to their original expected dates of completion, to a lesser or greater degree. An overview is presented in tables 6 and 7 of Part II of Annex I. Delays of up to 12 months occurred for 43 of the 80 completed non-investment projects, and 22 had delays of more than one year. This doesn't compare unfavourably with MLF projects in other sectors but is still significant. For the 7 completed investment projects 3 had been delayed between 7-12 months, two were completed as planned and two others were ahead of time.

26. In many cases, delays have been due to administrative or organizational causes including difficulties in identifying a suitable counterpart agency, slow feedback or communication, staff changes and others. In a few instances climatic conditions or the cropping season have interfered with successful establishment of alternatives. Changes of technology may have played a role in some cases which need to be further explored.

#### IV.4 Demonstration projects

27. Demonstration projects have played an important role in preparing the ground for methyl bromide reduction and compliance of countries with the stipulations of the Montreal Protocol. This is why a sound project design with a proper choice of alternatives and appropriate measures of technology transfer (e.g. workshops, training courses and advisory field activities) are essential, when preparing investment projects building on the lessons learnt from demonstration projects and leading to full phase-out of methyl bromide used by the defined target group.

28. Demonstration projects made a substantial contribution to the promotion of non-chemical, not yet commercially accepted MB alternatives. While private sector stands behind the chemical alternatives as well as behind marketable non-chemical alternatives such as biological control, grafting, steaming, soilless culture and resistant cultivars, demonstration projects tested not only those but addressed also practices such as crop rotation, sanitation, biofumigation and solarization which could be supported only by public funding and involve public sector research and extension.

29. The need for demonstration projects depends on the circumstances of each country and the kind of technologies tested. For all technologies and circumstances, tests in various locations were necessary. For example, the outcome and applicability of solarization depends on a combination of various local factors (sunlight, degree of cloudiness, temperature, duration of good conditions, crop cycles, soil type, pathogens populations, etc). On the other hand, it may be that in the case of floating tray systems which are an artificial means of growing plants, the local environment is less important, but it is essential that local technical staff learns how to manage this usually new method before it can be transferred to the growers. In this particular case, such was the role of demonstration projects.

30. The regional and local specificity appears less pronounced for post harvest applications than for field crops. Therefore, experiences from Art. 2 countries are more easily transferable. Well designed demo projects can be the ideal pre-condition for successful investment projects, provided that they focus on the aspects that are most essential for preparing the ground. For the post harvest sub-sector these aspects are economics, pest management and the attitude of the stakeholders which seem to have received less attention in the demo projects as compared to technical matters (substitute chemicals, equipment etc).

31. An important and often under-reported aspect of demonstration projects is the participation of many local stakeholders in the planning and implementation of the various alternatives. In line with the guidelines for MB projects (see Section III above) this sets out the political and institutional groundwork for faster introduction of accepted alternatives during following investment projects and for their sustainable use.

#### IV.5 Alternatives chosen

32. A large variety of alternatives have been tested in the demonstration projects. However, the specific local circumstances and experiences of the country (soil, climate, crop and others) are not always reflected in project proposals, at least at the demonstration stage. On occasion, it seems that the same alternatives and descriptions were proposed and presented for many

demonstration projects. While some lessons can be learned from testing the same alternatives in different locations, in hindsight some duplication of efforts might have occurred.

33. The evaluation of the demonstrated MB alternatives' performance in the fields and their effect on soil-borne pathogens, nematodes, insect pests and weeds is done in various ways. Although much professional effort is invested in these evaluations in many projects, the direct effect of MB alternatives on the actual rate of diseased plants is not counted but soil samples analyzed. Horticultural parameters are not regularly evaluated.

34. The variety of alternative technologies chosen remains large also for investment projects which, in most cases, apply several alternatives (see tables 6-7 in part 1 of Annex I). It is accepted knowledge now that for most applications several substitutes exist, often a combination of chemical and non-chemical methods and with even better results if applied in the context of integrated pest management (IPM). For tobacco, one alternative, floating trays, is the most widely accepted substitute technology for small and large farmers alike.

35. If alternatives are not specifically fine-tuned to a sector and location, commercial adoption will be deficient. In this sense, it is important, as foreseen in the MYA, that investment projects maintain a certain degree of flexibility so that alternative choices may be made if deemed necessary during the course of project implementation.

36. Participation of major stakeholders and beneficiaries in project planning procedures, especially in identifying alternatives has proven to have positive effects on ownership, willingness to change habits and attitudes and preparation of a well targeted project design.

#### IV.6 Economic feasibility/sustainability

37. Most demonstration projects focused on technical aspects of the chosen alternatives. More attention must be given to the inclusion of economic aspects, awareness raising and training, not only in the project concept but also during implementation.

38. With few positive exceptions, economic feasibility is not fully assessed in these reports on demonstration projects, except for some calculations on the cost of some alternatives, mainly chemicals. However, this information is of paramount importance to any grower and directly related to commercial adoption. Some constraints to adoption have been identified but these factors are many times not addressed by the projects. The extent to which such hurdles can be solved is in direct proportion to the acceptance of alternatives. The monitoring of adoption barriers at end user level is an extension role.

39. A number of alternatives such as the Floating Tray System (FTS) for tobacco or steam pasteurization proposed for flowers and in some cases vegetables involve the use of expensive equipment or inputs, as well as imported supplies, which unless available at reasonable costs will impair adoption. While FTS has many advantages justifying its introduction and has been adopted worldwide by small and large farmers alike, the maintenance of steam engines looks more problematic, and the Fund Secretariat has for several project proposals questioned its sustainability. Alternative sourcing of local materials or suppliers of equipment is not always systematically explored. Operating savings play a crucial role in determining whether

alternatives adopted are commercially viable and therefore likely to be sustainable in the long-term.

#### IV.7 Training and technology transfer

40. Training and technology transfer are important components of all projects, which is appropriate. The “training of trainers” model is being implemented in a good number of projects. There is also frequent reference to preparation of manuals and awareness raising materials to support the projects. Numerous publications, workshops, field schools, discussions, regional networks, a joint UNEP/UNIDO web site and other measures have promoted the dissemination of information. Nevertheless, training programs and their results should be further documented and assessed which is foreseen for the second phase of the evaluation.

41. Project proposals have to develop detailed plans especially for the technology diffusion and adoption components. In this context, clientele should be surveyed and targeted, a wider variety of extension-advisory methods be deployed to meet clientele’s specific needs and a monitoring and evaluation system of the technology adoption process be developed. The technology diffusion component of project proposals and on-going projects should explore practical models for accelerated on-farm testing and delivery of registered MB alternatives, and the accelerated formulation of recommendations to growers. Through extension programs, monitoring of adoption rates and barriers in the adoption of MB alternatives by end users could be integrated into new and on-going projects.

42. Particularly in the flower sector, several projects mention study tours for project participants. While study tours are indeed a useful means of acquiring hands-on experience on practical implementation of alternatives, there is no description of what such tours involved or how the information or training acquired were transferred or made available to other stakeholders involved.

#### IV.8 Lessons learned

43. Although not many project reports specifically address this point, some lessons are apparent from all projects, in particular those that have been completed to date. These are:

- (a) Technically effective alternatives to MB have been found for almost all pests and diseases. However, their economic viability and overall sustainability has not regularly been documented.
- (b) The capability to adapt to site-specific conditions is essential to the success of any alternative.
- (c) Successfully evaluated alternatives can be introduced in developing countries within periods of 2-3 years. In fact, activities related to demonstration projects have led larger or more technically prepared growers to adopt alternatives at their own initiative.

- (d) Project implementation and follow-up is better when growers' associations, growers' cooperatives or large enterprises take part in them.

## V. Evaluation Issues Identified

44. The desk study has identified the following main issues that should be further analyzed during the second stage of the evaluation.

### V.1 Phase-out achieved and compliance with agreed schedules

45. Field visits and data collection conducted during the second stage should help to confirm the level of phase-out achieved and the compliance with the agreed phase-out schedules, in particular for multi-year projects some of which recently experienced delays and re-scheduled phase-out targets. This includes checking the reliability of previous and latest consumption figures for MB and the sources of import data.

### V.2 Sustainability of phase-out achieved and commercial adoption constraints

46. This is the key issue for field visits, because there is not enough information transpiring from the existing progress and completion reports with regard to the various aspects of sustainability:

- (a) Technical: while the feasibility of the technical alternatives identified seem to be reasonably well established, their large scale application might reveal unforeseen difficulties. Some alternatives like steam engines might also run into maintenance problems. New alternatives that become available or new application methods that enhance their performance should also be considered for the investment projects – even during project implementation for which the flexibility clause in the agreements provides the appropriate basis.
- (b) Economic/commercial: only if the alternatives are both technically feasible and economically viable their application by the farmers and other users will be maintained. It will be attempted to further identify constraints, such as additional capital and operational cost and maintenance requirements, on one side, and incentives, such as operational savings and quality improvements, on the other. One important aspect is to check sourcing of local materials and supplies, in view of the foreign exchange scarcity in many countries that often renders imported substitutes and materials more expensive and less sustainable than local ones. The contribution of awareness raising and training activities to the commercial adoption of alternatives will also be analyzed.

- (c) Institutional: this relates to the viability of institutional arrangements made for project implementation, like for example the creation of farmers' cooperatives, or marketing agreements, as well as extension services and government sponsored research, training and public awareness support activities. Issues to be addressed include the role of stakeholders in project preparation, in the selecting, testing, demonstration and validation of alternatives, and the dissemination of information on results and experiences. Key stakeholders could include farmers' associations, cooperatives, commercial companies, extension workers and various government authorities.
- (d) Political: without limiting the supply of MB via effective import controls and worldwide reduction of MB production, there is a risk for users to return to MB use as soon as any difficulties appear. This includes analysis of regional trade policies and illegal trade. In most projects, no progress is reported on establishing controls on MB use and imports, and registration of alternative chemicals. Commercial/official recognition of ODS-free status through eco-labels for products like flowers and tobacco may also support replacement of MB.

#### V.3 Impact of demo projects on effective technology transfer

47. The logic of the technology research-transfer process indicates that successful alternatives tested during demonstration projects would be selected for phase-out projects. In effect, this has generally been the case and successful alternatives identified during the demonstrations stage have been selected whilst those appearing to be not effective have been eliminated. However, some countries with good results in the trials and demonstrations did not submit investment projects later. The reasons for this would need to be clarified, in order to evaluate the efficacy of the demonstration stage.

48. The evaluation will also look into national systems for technology diffusion (research and extension services, their capabilities, collaboration, involvement and support to the project) and technology adoption (target clientele, their capabilities, education and expertise, organization). These aspects do not seem to get the attention needed in the existing project documentation.

#### V.4 Format/ Structure of reports

49. One of the main problems encountered during this desk study were weaknesses in the appraisal, reporting and monitoring system of the projects. Introducing a reporting scheme that allows a regular and timely follow up of every project is thus suggested. The format presently under development by the Fund Secretariat for reporting of multi-year agreements will serve this purpose, and the evaluation will attempt to develop specific indicators for MB projects, for example for yields and quality of products obtained with alternatives and their cost effectiveness over time.

## **VI. Evaluation Approach and Work Plan**

50. The evaluation will focus on projects with MB phase-out that means completed and on-going investment and some technical assistance projects. Demonstration projects will be analysed with respect to the extent they have provided the ground work and proven the alternative technology and whether their results have also been used in other countries with similar conditions and crops. Training, public awareness and policy advice activities will be evaluated with regard to the support they extended to the implementation of phase-out projects.

51. Field visits should include discussions with growers and growers' representatives, as well as with staff of extension, research and regulatory agencies involved in project development and MB phase out.

52. Suggestions for countries to be visited by evaluation consultants were made in the sub-sector reports prepared for this desk study. A list of 10-12 countries will be established in consultation with the Ozone Units of the countries concerned, the IA's for the projects selected and the regional MB officers of the CAP teams of the respective regions.

53. Specific questions will be formulated for each project to be visited, based on an analysis of all documents available (project documents, progress reports, PCRs and technical reports) as well as discussions with Ozone officers and IA's at the margins of the meetings of the Executive Committee and the Open-Ended Working Group in Geneva in July 2004. After these discussions, the final list of field visits will be prepared.

54. It could be useful to document both successful and unsuccessful case studies which will serve as valuable information and training/extension material. What factors influenced success? Or failure? If the latter, what corrective actions can be taken?

55. The information obtained during the field visits will be presented for each project in a project and/or country evaluation report. The role of related policy regulations as well as the remaining tasks in the sector to achieve full phase out will be analyzed. Common features of the projects and policies will be summarized in a synthesis report with conclusions and recommendations for the 45th meeting of the Executive Committee.





**ANNEX I: STATISTICAL OVERVIEW**

**PART I: INVESTMENT PROJECTS**

**Table 1: Investment Projects Overview**

(According to the Inventory)

	1998	1999	2000	2001	2002	2003	2004	Total
Number of Projects Approved	2	5	7	12	9	10	2	47
Total Funds Approved	1,730,002	7,017,574	8,846,336	7,087,873	12,758,874	8,471,572	394,557	46,306,788
Average Size of Projects Approved	865,001	1,403,515	1,263,762	590,656	1,417,653	847,157	197,279	985,251

**Table 2: Completed Investment Projects By Region**

(According to the 2003 Progress Reports)

Agency	Africa	Asia and the Pacific	Europe	Latin America and the Caribbean	Total
IBRD			1		1
UNIDO	1	2	1	2	6
<b>Total</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>7</b>

**Table 3: Investment Projects Completed up to December 2003**

Agency	Projects Approved	Projects Completed	PCR Received	PCR Due
Canada	1	0	0	0
France	1	0	0	0
Germany	3	0	0	0
IBRD	3	1	0	1
Italy	1	0	0	0
UNDP	12	0	0	0
UNIDO	26	6	3	0*
<b>Total</b>	<b>47</b>	<b>7</b>	<b>3</b>	<b>1</b>

\* No PCR required for three completed tranches of multi-year projects by UNIDO.

**Table 4: Approved Investment Projects by Category and IA**

(According to the Inventory)

Category	Canada	France	Germany	IBRD	Italy	UNDP	UNIDO	Total # of Projects Approved	Total # of Projects Completed	Total Funds Approved (US\$)	Average Size of Project (US\$)
Individual	1	1	1	3	1	3	18	28	4	34,014,542	1,214,805
Multi-Year*			2			9	8	19	3	12,292,246	646,960
<b>Total</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>12</b>	<b>26</b>	<b>47</b>	<b>7</b>	<b>46,306,788</b>	<b>985,251</b>

\* Tranches approved for projects in 10 countries (for details see Annex IV)

**Table 5: Preparation Projects Approved**  
(According to the Inventory)

Agency	Number of Projects Approved	Total Funds Approved (US\$)	Average Size of Project (US\$)
France	1	30,000	30,000
Germany	5	145,560	29,112
IBRD	10	310,000	31,000
UNDP	23	550,202	23,922
UNIDO	56	1,355,420	24,204
<b>Total</b>	<b>95</b>	<b>2,391,182</b>	<b>25,170</b>

Note: This table excludes 8 Cancelled Projects

**Table 6: Technology Choice For Approved Investment Projects By Agency**  
(According to the Inventory)

ODS Replacement	Canada	France	Germany	IBRD	Italy	UNDP	UNIDO	Total
MB to Alternative chemicals		1	2				3	6
MB to Biofumigation							3	3
MB to Carbon dioxide under pressure				1				1
MB to Floating tray system						2	7	9
MB to Grafting				1	1		2	4
MB to Negative pressure steam							2	2
MB to Phosphine	1						5	6
MB to Solarization			1				3	4
MB to Solarization with chemicals					1	3	3	7
MB to Steam						1	6	7
MB to Steam pasteurization		1					2	3
MB to Various alternative technologies				1		6	4	11
<b>Total</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>12</b>	<b>40</b>	<b>63</b>

**Table 7: Technology Choice For Approved Investment Projects by Country**  
(According to the Inventory)

Country	ODS Replacement												
	MB to Alternative chemicals	MB to Biofumigation	MB to Carbon dioxide under pressure	MB to Floating tray system	MB to Grafting	MB to Negative pressure steam	MB to Phosphine	MB to Solarization	MB to Solarization with chemicals	MB to Steam	MB to Steam pasteurization	MB to Various alternative technologies	Total
Argentina	1										1	2	4
Bolivia												1	1
Bosnia and Herzegovina		1		1				1					3
Brazil				1									1
Chile												1	1
China												1	1
Costa Rica												1	1
Cote D'Ivoire							1						1
Croatia				1									1
Cuba				1									1
Dominican Republic				1				1		1			3
Ecuador					1								1
Egypt												1	1
Guatemala	1				1					1			3
Honduras	1			1	1								3
Indonesia							1						1
Iran							1						1
Jordan								1					1
Kenya	2									1			3
Lebanon						2		3		1			6
Macedonia				1				1					2
Malawi				2									2
Morocco	1	1						2	1	1			6
Peru												1	1
Romania					1			1					2
Senegal							1						1
Syria							2						2
Turkey			1									3	4
Uganda										1			1
Uruguay		1						1	1				3
Zimbabwe										1			1
<b>Total</b>	<b>6</b>	<b>3</b>	<b>1</b>	<b>9</b>	<b>4</b>	<b>2</b>	<b>6</b>	<b>4</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>11</b>	<b>63</b>

**Table 8: Approved Duration of Investment Projects**

(According to the Inventory)

Agency	Duration in Months					Total
	1-12	13-24	25-36	37-48	49 and More	
Canada					1	1
France					1	1
Germany	1	1			1	3
IBRD			1	2		3
Italy					1	1
UNDP	4	5		1	2	12
UNIDO	3	5	4	3	11	26
<b>Total</b>	<b>8</b>	<b>11</b>	<b>5</b>	<b>6</b>	<b>17</b>	<b>47</b>

**Table 9: Completed Investment Projects with Implementation Delays**

(According to the 2003 Progress Report)

Agency	Delays in Months			
	Early Completion	On Time	7-12	Total
IBRD			1	1
UNIDO	2	2	2	6
<b>Total</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>7</b>

**Table 10: ODS Phase-Out For Completed Investment Projects**

(According to the 2003 Progress Report)

Agency	Type	Number of Projects Completed	Total ODS phase-out approved (ODP tonnes)	Total ODS phase-out Reported (ODP tonnes)	Planned average cost per kg of ODP phase-out (US\$/kg)	Actual average cost per kg of ODP phase-out (US\$/kg)*
IBRD	Individual	1	50.0	50.0	7.33	7.33
UNIDO	Individual	3	133.1	133.1	30.43	30.14
	Multi-Year	3	45.3	45.3	39.12	9.31
<b>Total</b>		<b>7</b>	<b>228.4</b>	<b>228.4</b>	<b>27.10</b>	<b>21.02</b>

\* Differences between planned and actual cost per kg of ODP phased-out (US\$/kg) result from less disbursements than planned, given that the planned phase-out was reported as fully achieved.

**ANNEX I**

**PART II: NON-INVESTMENT PROJECTS**

**Table 1: Non-Investment Projects Overview**  
(According to the Inventory)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Number of Projects Approved	2	7	2	10	34	14	14	9	8	2	3	105
Total Funds Approved	402,234	615,972	95,000	3,089,397	8,491,131	2,081,712	905,064	517,467	1,130,290	550,000	1,105,000	18,983,267
Average Size of Projects Approved	201,117	87,996	47,500	308,940	249,739	148,694	64,647	57,496	141,286	275,000	368,333	180,793

Note: This table excludes 2 Cancelled Projects

**Table 2: Completed Non-Investment Projects by Region and IA**  
(According to the 2003 Progress Reports)

Agency	Africa	Asia and the Pacific	Europe	Global	Latin America and the Caribbean	Total
Australia	1					1
Canada		1	1		1	3
Germany	3	1		1		5
Israel				1		1
UNDP	3	4			4	11
UNEP	12	5		12	6	35
UNIDO	6	7	3		8	24
<b>Total</b>	<b>25</b>	<b>18</b>	<b>4</b>	<b>14</b>	<b>19</b>	<b>80</b>

**Table 3: Size Distribution of Completed Non-Investment Projects**  
(According to the Inventory and the 2003 Progress Reports)

Agency	0-50,000	50,001-100,000	100,001-250,000	250,001-500,000	Total
Australia	1				1
Canada		1	1	1	3
Germany	1		3	1	5
Israel	1				1
UNDP	1	2	5	3	11
UNEP	19	10	5	1	35
UNIDO	5		1	18	24
<b>Total</b>	<b>28</b>	<b>13</b>	<b>15</b>	<b>24</b>	<b>80</b>

**Table 4: Approved Non-Investment Projects By Type**  
(According to the Inventory)

Type	Australia	Canada	Germany	IBRD	Israel	Spain	UNDP	UNEP	UNIDO	Total # of Projects	Total Funds Approved (US\$)	Average Size of Project (US\$)
Demonstration		3	4	2			10		22	41	12,679,709	309,261
Technical Assistance	1	3	1	2		1	7	25	4	44	4,725,318	107,394
Training			1		1		1	13	4	20	1,578,240	78,912
<b>Total</b>	<b>1</b>	<b>6</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>18</b>	<b>38</b>	<b>30</b>	<b>105</b>	<b>18,983,267</b>	<b>180,793</b>

**Table 5: Approved Duration of Non-Investment Projects**  
(According to the Inventory)

Agency	Duration in Months					Total
	1-12	13-24	25-36	37-48	49 and More	
Australia	1					1
Canada	1	3	2			6
Germany	1	1	3	1		6
IBRD		1	2		1	4
Israel	1					1
Spain			1			1
UNDP	5	3	6	3	1	18
UNEP	33	1	4			38
UNIDO	2	5	21	1	1	30
<b>Total</b>	<b>44</b>	<b>14</b>	<b>39</b>	<b>5</b>	<b>3</b>	<b>105</b>

**Table 6a: Completed Non-Investment Projects with Implementation Delays**  
(Using original planned completion dates, according to the 2003 Progress Reports)

Agency	Delays in Months						Total
	Early Completion	On Time	1-6	7-12	13-24	25 and More	
Australia	1						1
Canada	1				2		3
Germany	1	1	1	2			5
Israel	1						1
UNDP		1	3	2	2	3	11
UNEP	5		8	15	5	2	35
UNIDO	2		6	5	8	3	24
<b>Total</b>	<b>11</b>	<b>2</b>	<b>18</b>	<b>24</b>	<b>17</b>	<b>8</b>	<b>80</b>

**Table 6b: Completed Non-Investment Project with Implementation Delays**  
(Using revised planned completion dates according to the 2003 Progress Reports)

Agency	Delays Revised						Total
	Early Completion	On Time	1-6	7-12	13-24	25 and More	
Australia	1						1
Canada	1		1		1		3
Germany	1	1	1	2			5
Israel	1						1
UNDP		1	3	2	2	3	11
UNEP	6	1	8	15	4	1	35
UNIDO	2		6	5	9	2	24
<b>Total</b>	<b>12</b>	<b>3</b>	<b>19</b>	<b>24</b>	<b>16</b>	<b>6</b>	<b>80</b>

**Table 7: Delays in Completed Non-Investment Projects**  
(According to PCRs)

Code	Delays in Months					
	Early Completion	0	1-6	7-12	13-24	25 and More
AFR/FUM/16/TRA/10	X					
AFR/FUM/27/TRA/24	X					
ASP/FUM/17/TRA/18	X					
CRO/FUM/25/DEM/08	X					
GLO/FUM/24/TAS/157	X					
GLO/FUM/37/TRA/240	X					
LAC/FUM/17/TRA/13	X					
PAN/FUM/36/TRA/16	X					
SYR/FUM/24/DEM/30	X					
TUR/FUM/25/DEM/46	X					
VEN/FUM/27/TRA/67	X					
EGY/FUM/26/DEM/69		X				
MLW/FUM/32/DEM/15		X				
AFR/FUM/21/TRA/18			X			
AFR/FUM/27/TRA/23			X			
ARG/FUM/23/DEM/71			X			
ARG/FUM/26/DEM/79			X			
ASP/FUM/17/TAS/19			X			
BKF/FUM/34/TRA/14			X			
CHI/FUM/15/DEM/06			X			
COL/FUM/26/DEM/32			X			
COS/FUM/27/DEM/14			X			
COS/FUM/27/DEM/15			X			
CPR/FUM/22/DEM/201			X			
DRK/FUM/25/TAS/09			X			
EGY/FUM/26/DEM/70			X			
GLO/FUM/23/TAS/151			X			
GLO/FUM/24/TAS/155			X			
GLO/FUM/27/TRA/178			X			
GLO/FUM/30/TAS/211			X			
GUA/FUM/22/DEM/15			X			
LAC/FUM/17/TAS/14			X			
LAC/FUM/27/TRA/30			X			
LAC/FUM/27/TRA/32			X			
LEB/FUM/26/DEM/24			X			
URU/FUM/25/DEM/28			X			
BRA/FUM/22/DEM/73				X		
CHI/FUM/30/TAS/141				X		
COS/FUM/30/TAS/22				X		
CPR/FUM/22/DEM/199				X		



Code	Delays in Months					
	Early Completion	0	1-6	7-12	13-24	25 and More
CPR/FUM/24/TAS/238				X		
DOM/FUM/26/DEM/19				X		
DOM/FUM/30/TAS/25				X		
ETH/FUM/30/TAS/08				X		
GLO/FUM/24/TAS/156				X		
GLO/FUM/25/TRA/161				X		
GLO/FUM/27/TRA/179				X		
IDS/FUM/26/DEM/94				X		
JOR/FUM/26/DEM/41				X		
KEN/FUM/30/TAS/22				X		
MDN/FUM/26/DEM/09				X		
MLW/FUM/30/TAS/13				X		
MOR/FUM/26/DEM/26				X		
PHI/FUM/30/TAS/61				X		
TUN/FUM/24/DEM/29				X		
ZAM/FUM/30/TAS/10				X		
ZIM/FUM/27/DEM/17				X		
ZIM/FUM/30/TAS/19				X		
GLO/FUM/19/TRA/94					X	
GLO/FUM/24/TAS/160					X	
GLO/FUM/29/TAS/187					X	
JOR/FUM/25/DEM/40					X	
MOR/FUM/22/DEM/11					X	
THA/FUM/30/TAS/126					X	
ZIM/FUM/23/DEM/13					X	
AFR/FUM/17/TAS/15						X
CPR/FUM/12/TAS/60						X
GLO/FUM/19/TAS/93						X
GLO/FUM/23/TAS/150						X
KEN/FUM/24/DEM/17						X

**Table 8: Budget and Phase-Out for Completed Non-Investment Projects**  
(According to PCRs)

Agency	Approved Budget and Expenditure (US\$)	Actual Budget and Expenditure (US\$)	Actual as Percentage (%) of Approved	Approved Phase-Out (ODP Tonnes)	Actual Phase-Out (ODP Tonnes)
Canada	462,000	462,000	100%	0.0	0.0
Germany	1,100,312	1,019,312	93%	0.0	0.0
Israel	108,130	38,106	35%	0.0	0.0
UNDP	2,014,950	1,865,936	93%	19.3	19.3
UNEP	2,202,500	2,173,100	99%	0.0	0.0
UNIDO	6,211,380	5,978,114	96%	0.0	0.0
<b>Total</b>	<b>12,099,272</b>	<b>11,536,568</b>	<b>95%</b>	<b>19.3</b>	<b>19.3</b>

Note: This table excludes one cancellation report submitted by Australia.

**Table 9: Non-Investment Projects Completed up to December 2003**

Agency	Projects Approved	Project Completed	PCR Received*	PCRs Due
Australia	1	1	0	1
Canada	6	3	2	1
Germany	6	5	5	0
IBRD	4	0	0	0
Israel	1	1	1	0
Spain	1	0	0	0
UNDP	18	11	10	1
UNEP	38	35	31	4
UNIDO	30	24	21	3
<b>Total</b>	<b>105</b>	<b>80</b>	<b>70</b>	<b>10</b>

\* Excludes one cancellation report submitted by Australia.

**Table 10: Overall Assessment of Completed Non-Investment Projects by the Implementing Agencies**  
(According to PCRs)

Assessment	Canada	Germany	Israel	UNDP	UNEP	UNIDO	Total	% of Total
Highly Satisfactory			1		8		9	13%
Satisfactory	2	2		2	16	3	25	36%
Satisfactory, though not as planned				2	7		9	13%
Not Applicable*		3		6		18	27	38%
<b>Total</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>31</b>	<b>21</b>	<b>70</b>	<b>100%</b>

\*Methyl Bromide Demonstration Projects

Note: This table excludes one cancellation report submitted by Australia.



**METHYL BROMIDE COMPLIANCE ANALYSIS**  
(in ODP tonnes)

UNEP/OzL.Pro/ExCom/43/8

Annex II

As at May 15, 2004

Column Number	Region	Status	Latest Consumption		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Country			Year	Source	Methyl bromide baseline	Latest consumption	Amount needed to meet the freeze	Phase-out approved but not yet implemented (as of May 2004)	Date for completion of approved projects	Future phase-out needed to meet the freeze	ODS phase-out in Final 2004 business plan	Allowable consumption in 2005 after 20% reduction	Balance from approved projects	Additional phase-out needed to meet 20% methyl bromide reduction	Received assistance from Fund	Methyl Bromide Agreement Phase-out or Project
							(2) - (1)			(3)-(4)		(1)*.80	(2)-(4)	(9)-(8)		
<b>COUNTRIES THAT HAVE RATIFIED THE COPENHAGEN AMENDMENT</b>																
<b>Countries that appear to be in compliance</b>																
Algeria	AFR	Non-LVC	2002	A7	4.7	4.2	0.0	0.0	N/A	0.0		3.7	4.2	0.5	Yes	No
Argentina	LAC	Non-LVC	2003	CP	411.3	325.8	0.0	127.6	100% by 2004	0.0	38.3	329.0	198.2	-130.8	Yes	Yes/Agreement*
Bahamas	LAC	LVC	2002	A7	0.1	0.0	0.0	0.0	N/A	0.0		0.1	0.0	-0.1	Yes	No
Bolivia	LAC	LVC	2002	A7	0.6	0.3	0.0	1.5	100% by 2005	0.0		0.5	-1.3	-1.7	Yes	Yes/Agreement*
Brazil	LAC	Non-LVC	2003	CP	711.6	248.4	0.0	0.0	N/A	0.0		569.3	248.4	-320.9	Yes	Partial/Project
Cameroon	AFR	LVC	2003	A7	18.1	9.9	0.0	0.0	N/A	0.0		14.5	9.9	-4.6	Yes	Yes/Project*
Chile	LAC	Non-LVC	2002	A7	212.5	165.2	0.0	61.2	100% by 2006	0.0	70.0	170.0	104.0	-66.0	Yes	Partial/Agreement
China	ASP	Non-LVC	2002	A7	1,102.1	1,087.8	0.0	389.0	100% by 2006	0.0	207.7	881.6	698.8	-182.8	Yes	Partial/Agreement
Colombia	LAC	Non-LVC	2003	CP	110.1	0.0	0.0	0.0	N/A	0.0		88.1	0.0	-88.1	Yes	No
Congo, DR	AFR	Non-LVC	2003	CP	1.4	1.2	0.0	0.0	N/A	0.0		1.1	1.2	0.1	Yes	Partial/Project
Costa Rica	LAC	LVC	2002	A7	342.5	280.0	0.0	84.4	100% by 2004	0.0	170.8	274.0	195.6	-78.3	Yes	Yes/Agreement*
Croatia	EUR	LVC	2002	A7	15.7	-0.9	0.0	10.0	100% by 2005	0.0		12.6	-10.9	-23.5	Yes	Yes/Agreement*
Cuba	LAC	Non-LVC	2002	A7	50.5	21.1	0.0	0.0	N/A	0.0	24.0	40.4	21.1	-19.3	Yes	Yes/Project*
Dominican Republic	LAC	Non-LVC	2002	A7	104.2	77.1	0.0	141.0	100% by 2006	0.0		83.4	-63.9	-147.3	Yes	Yes/Agreement*
Ecuador	LAC	LVC	2002	A7	66.2	40.8	0.0	52.2	100% by 2005	0.0	32.0	53.0	-11.4	-64.4	Yes	Partial/Project
El Salvador	LAC	LVC	2003	CP	1.4	0.0	0.0	0.0	N/A	0.0		1.1	0.0	-1.1	Yes	No
Fiji	ASP	LVC	2002	A7	0.7	0.3	0.0	0.0	N/A	0.0		0.5	0.3	-0.2	No	No
Georgia	EUR	LVC	2003	CP	13.7	10.2	0.0	6.0	100% by 2006	0.0		10.9	4.2	-6.7	Yes	Yes/Project*
Guyana	LAC	LVC	2002	A7	1.4	0.0	0.0	0.0	N/A	0.0		1.1	0.0	-1.1	No	No
Indonesia	ASP	Non-LVC	2002	A7	135.6	37.8	0.0	37.8	100% by 2007	0.0		108.5	0.0	-108.5	Yes	Yes/Project*
Iran	ASP	Non-LVC	2002	A7	26.7	5.4	0.0	12.4	100% by 2004	0.0	35.0	21.4	-7.0	-28.4	Yes	No
Jamaica	LAC	LVC	2003	CP	4.9	1.5	0.0	0.0	N/A	0.0	1.2	3.9	1.5	-2.4	Yes	No
Jordan	ASP	Non-LVC	2002	A7	176.3	90.6	0.0	180.0	100% by 2006	0.0		141.0	-89.4	-230.4	Yes	Yes/Agreement*
Kenya	AFR	LVC	2002	A7	217.5	139.1	0.0	27.0	100% by 2006	0.0	29.1	174.0	112.1	-61.9	Yes	Yes/Agreement*
Korea, DPR	ASP	Non-LVC	2003	CP	30.0	0.0	0.0	0.0	N/A	0.0		24.0	0.0	-24.0	Yes	Yes/Project*
Kyrgyzstan	ASP	LVC	2003	CP	14.2	13.8	0.0	14.2	100% by 2008	0.0		11.3	-0.4	-11.7	Yes	Yes/Project*
Macedonia	EUR	Non-LVC	2003	A7	12.2	0.0	0.0	7.8	100% by 2006	0.0		9.8	-7.8	-17.6	Yes	Yes/Agreement*
Madagascar	AFR	LVC	2003	A7	2.6	0.1	0.0	0.0	N/A	0.0		2.1	0.1	-2.0	No	No
Malawi	AFR	LVC	2002	A7	112.7	55.4	0.0	41.1	100% by 2004	0.0	37.0	90.2	14.3	-75.9	Yes	Yes/Agreement*
Malaysia	ASP	Non-LVC	2002	A7	14.6	8.8	0.0	0.0	N/A	0.0	3.0	11.7	8.8	-2.9	Yes	No
Mauritius	AFR	LVC	2002	A7	0.1	0.0	0.0	0.0	N/A	0.0		0.1	0.0	-0.1	Yes	Yes/Project*
Mexico	LAC	Non-LVC	2002	A7	1,130.8	1067.5	0.0	162.3	100% by 2006	0.0	76.8	904.6	905.2	0.6	Yes	No
Moldova	EUR	LVC	2003	CP	7.0	0.0	0.0	0.0	N/A	0.0		5.6	0.0	-5.6	Yes	No
Namibia	AFR	LVC	2002	A7	0.8	0.0	0.0	0.0	N/A	0.0		0.6	0.0	-0.6	No	No
Nicaragua	LAC	LVC	2003	CP	0.4	0.0	0.0	0.0	N/A	0.0		0.3	0.0	-0.3	Yes	No
Nigeria	AFR	Non-LVC	2002	A7	2.8	2.0	0.0	0.0	N/A	0.0		2.3	2.0	-0.3	Yes	Partial/Project
Oman	ASP	LVC	2003	A7	1.0	0.0	0.0	0.0	N/A	0.0	3.0	0.8	0.0	-0.8	No	No
Pakistan	ASP	Non-LVC	2002	A7	14.0	0.0	0.0	0.0	N/A	0.0		11.2	0.0	-11.2	Yes	No
Paraguay	LAC	LVC	2002	A7	0.9	0.9	0.0	0.0	N/A	0.0		0.7	0.9	0.2	No	No
Peru	LAC	LVC	2002	A7	1.3	0.1	0.0	3.0	100% by 2004	0.0		1.0	-2.9	-3.9	Yes	Yes/Project*
Philippines	ASP	Non-LVC	2002	A7	8.0	7.8	0.0	0.0	N/A	0.0	7.0	6.4	7.8	1.4	Yes	No
Romania	EUR	Non-LVC	2002	A7	111.5	70.9	0.0	57.8	100% by 2005	0.0		89.2	13.1	-76.1	Yes	Yes/Agreement*
Saint Kitts and Nevis	LAC	LVC	2002	A7	0.3	0.3	0.0	0.0	N/A	0.0		0.2	0.3	0.1	No	No
Senegal	AFR	LVC	2002	A7	53.2	0.0	0.0	0.0	N/A	0.0		42.6	0.0	-42.6	Yes	Yes/Project*
Sierra Leone	AFR	LVC	2002	A7	2.6	1.2	0.0	0.0	N/A	0.0		2.1	1.2	-0.9	Yes	Partial/Project
Somalia	AFR	LVC	2003	A7	0.5	0.0	0.0	0.0	N/A	0.0		0.4	0.0	-0.4	Yes	No
Sudan	AFR	Non-LVC	2003	CP	3.0	1.8	0.0	0.0	N/A	0.0		2.4	1.8	-0.6	Yes	Partial/Project

**METHYL BROMIDE COMPLIANCE ANALYSIS**  
(in ODP tonnes)

UNEP/OzL.Pro/ExCom/43/8

Annex II

As at May 15, 2004

Column Number	Region	Status	Latest Consumption		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			Year	Source	Methyl bromide baseline	Latest consumption	Amount needed to meet the freeze	Phase-out approved but not yet implemented (as of May 2004)	Date for completion of approved projects	Future phase-out needed to meet the freeze	ODS phase-out in Final 2004 business plan	Allowable consumption in 2005 after 20% reduction	Balance from approved projects	Additional phase-out needed to meet 20% methyl bromide reduction	Received assistance from Fund	Methyl Bromide Agreement Phase-out or Project
							(2) - (1)			(3)-(4)		(1)*.80	(2)-(4)	(9)-(8)		
Syria	ASP	Non-LVC	2003	CP	188.6	129.0	0.0	29.8	100% by 2005	0.0	23.6	150.8	99.2	-51.6	Yes	Yes/Agreement*
Tonga	ASP	LVC	2002	A7	0.2	0.0	0.0	0.0	N/A	0.0		0.2	0.0	-0.2	No	No
Trinidad and Tobago	LAC	LVC	2003	A7	1.7	0.4	0.0	0.0	N/A	0.0		1.4	0.4	-1.0	No	No
Turkey	EUR	Non-LVC	2002	A7	479.7	280.8	0.0	167.2	100% by 2005	0.0	60.0	383.8	113.6	-270.2	Yes	Partial/Agreement
Vanuatu	ASP	LVC	2003	A7	0.2	0.0	0.0	0.0	N/A	0.0		0.2	0.0	-0.2	No	No
Venezuela	LAC	Non-LVC	2003	CP	10.3	0.0	0.0	0.0	N/A	0.0		8.2	0.0	-8.2	Yes	No
Vietnam	ASP	Non-LVC	2002	A7	136.5	48.0	0.0	0.0	N/A	0.0		109.2	48.0	-61.2	Yes	No
Zimbabwe	AFR	Non-LVC	2002	A7	557.0	250.2	0.0	91.0	100% by 2004	0.0	15.0	445.6	159.2	-286.4	Yes	Partial/Agreement
<b>Countries that could achieve compliance with implementation of approved projects</b>																
Bosnia and Herzegovina	EUR	LVC	2002	A7	3.5	11.8	8.3	11.8	100% by 2006	0.0		2.8	0.0	-2.8	Yes	Yes/Agreement*
Cote D'Ivoire	AFR	LVC	2002	A7	8.1	12.0	3.9	8.5	100% by 2006	0.0	8.5	6.5	3.5	-3.0	Yes	No
Egypt	AFR	Non-LVC	2003	A7	238.1	238.2	0.1	185.6	100% by 2005	0.0		190.4	52.6	-137.8	Yes	Partial/Project
Guatemala	LAC	LVC	2003	A7	400.7	546.6	145.9	242.0	100% by 2008	0.0		320.6	304.6	-16.0	Yes	Partial/Project
Honduras	LAC	LVC	2003	CP	259.4	309.6	50.2	170.5	100% by 2005	0.0		207.5	139.1	-68.4	Yes	Partial/Project
Morocco	AFR	Non-LVC	2003	CP	697.1	697.2	0.1	246.4	100% by 2006	0.0	116.8	557.7	450.8	-106.9	Yes	Partial/Agreement
Sri Lanka	ASP	Non-LVC	2003	CP	4.1	4.5	0.4	5.2	100% by 2005	0.0		3.3	-0.7	-4.0	Yes	Yes/Project*
Uruguay	LAC	LVC	2003	CP	11.2	13.0	1.8	11.0	100% by 2005	0.0		9.0	2.0	-7.0	Yes	Yes/Agreement*
<b>Countries that may need additional actions to achieve compliance</b>																
Bahrain	ASP	LVC	2003	CP	0.0	1.0	1.0	0.0	N/A	1.0		0.0	1.0	1.0	No	No
Barbados	LAC	LVC	2002	A7	0.1	0.4	0.3	0.0	N/A	0.3		0.1	0.4	0.3	Yes	Partial/Project
Botswana	AFR	LVC	2002	A7	0.1	0.6	0.5	0.0	N/A	0.5		0.1	0.6	0.5	Yes	No
Congo	AFR	LVC	2003	CP	0.9	1.2	0.4	0.0	N/A	0.4		0.7	1.2	0.5	Yes	Partial/Project
Mozambique	AFR	LVC	2002	A7	3.4	4.5	1.1	0.0	N/A	1.1		2.7	4.5	1.8	Yes	Partial/Project
Papua New Guinea	ASP	LVC	2002	A7	0.3	1.3	1.0	0.0	N/A	1.0		0.2	1.3	1.1	No	No
Thailand	ASP	Non-LVC	2003	CP	164.9	178.0	13.1	0.0	N/A	13.1	73.0	131.9	178.0	46.0	Yes	No
Tunisia	AFR	Non-LVC	2002	A7	8.3	10.8	2.6	0.0	N/A	2.6		6.6	10.8	4.2	Yes	No
Uganda	AFR	LVC	2003	CP	6.3	24.0	17.7	12.0	100% by 2005	5.7		5.0	12.0	7.0	Yes	Yes/Agreement*
Yemen	ASP	Non-LVC	2002	A7	1.1	52.8	51.8	9.1	100% by 2006	42.7		0.8	43.7	42.9	Yes	Partial/Project
<b>Countries with No Consumption</b>																
Antigua and Barbuda	LAC	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Bangladesh	ASP	Non-LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Belize	LAC	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Benin	AFR	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Burkina Faso	AFR	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Burundi	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Chad	AFR	LVC	2001	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Comoros	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Djibouti	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Gabon	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Ghana	AFR	LVC	2002	A7	0.0	0.0	0.0	6.3	100% by 2005	0.0		0.0	-6.3	-6.3	Yes	No
Grenada	LAC	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Guinea Bissau	AFR	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Haiti	LAC	LVC	2003	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Kuwait	ASP	Non-LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Liberia	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Maldives	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No

**METHYL BROMIDE COMPLIANCE ANALYSIS**  
(in ODP tonnes)

UNEP/OzL.Pro/ExCom/43/8

Annex II

As at May 15, 2004

Column Number	Region	Status	Latest Consumption		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Country			Year	Source	Methyl bromide baseline	Latest consumption	Amount needed to meet the freeze	Phase-out approved but not yet implemented (as of May 2004)	Date for completion of approved projects	Future phase-out needed to meet the freeze	ODS phase-out in Final 2004 business plan	Allowable consumption in 2005 after 20% reduction	Balance from approved projects	Additional phase-out needed to meet 20% methyl bromide reduction	Received assistance from Fund	Methyl Bromide Agreement Phase-out or Project
							(2) - (1)			(3)-(4)		(1)*.80	(2)-(4)	(9)-(8)		
Marshall Islands	ASP	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Micronesia	ASP	LVC	2000	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Mongolia	ASP	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Niger	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Palau	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Panama	LAC	Non-LVC	2003	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Qatar	ASP	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Rwanda	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Saint Lucia	LAC	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Saint Vincent	LAC	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Samoa	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Seychelles	AFR	LVC	2003	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Solomon Islands	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Tanzania	AFR	LVC	2003	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Togo	AFR	LVC	2003	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Tuvalu	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
<b>Countries with insufficient data</b>																
Cape Verde	AFR	NDR			NDR	NDR			0.0	N/A					No	No
India	ASP	Non-LVC	2002	A7	NDR	0.0			0.0	N/A	20.0				Yes	No
Lebanon	ASP	Non-LVC	2003	CP	152.4	NDR		100.0	100% by 2005		38.3				Yes	Yes/Agreement*
Mali	AFR	LVC	2002	A7	NDR	0.0			0.0	N/A					Yes	No
Sao Tome and Principe	AFR	NDR			NDR	NDR			0.0	N/A					Yes	No
<b>COUNTRIES THAT HAVE NOT RATIFIED THE COPENHAGEN AMENDMENT</b>																
<b>Countries that appear to be in compliance</b>																
Ethiopia	AFR	LVC	2002	A7	15.6	12.0	0.0	0.0	N/A	0.0		12.5	12.0	-0.5	Yes	No
Libya	AFR	Non-LVC	2001	A7	94.1	77.8	0.0	0.0	N/A	0.0		75.3	77.8	2.5	No	No
Myanmar	ASP	LVC	2002	A7	3.4	0.0	0.0	0.0	N/A	0.0		2.7	0.0	-2.7	No	No
Zambia	AFR	LVC	2002	A7	29.3	12.6	0.0	0.0	N/A	0.0		23.5	12.6	-10.9	Yes	No
<b>Countries that may need additional actions to achieve compliance</b>																
Lesotho	AFR	LVC	2002	A7	0.1	0.2	0.1	0.0	N/A	0.1		0.1	0.2	0.1	No	No
Swaziland	AFR	LVC	2002	A7	0.6	0.7	0.1	0.0	N/A	0.1		0.4	0.7	0.3	No	No
<b>Countries with No Consumption</b>																
Albania	EUR	LVC	2001	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Brunei Darussalam	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Cambodia	ASP	LVC	2003	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Central African Republic	AFR	LVC	2002	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Dominica	LAC	LVC	2003	CP	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Gambia	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Kiribati	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Mauritania	AFR	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	Yes	No
Nepal	ASP	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
Suriname	LAC	LVC	2002	A7	0.0	0.0	0.0	0.0	N/A	0.0		0.0	0.0	0.0	No	No
<b>Countries with insufficient data</b>																

METHYL BROMIDE COMPLIANCE ANALYSIS  
(in ODP tonnes)

UNEP/OzL.Pro/ExCom/43/8  
Annex II  
As at May 15, 2004

Column Number	Region	Status	Latest Consumption		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			Year	Source	Methyl bromide baseline	Latest consumption	Amount needed to meet the freeze	Phase-out approved but not yet implemented (as of May 2004)	Date for completion of approved projects	Future phase-out needed to meet the freeze	ODS phase-out in Final 2004 business plan	Allowable consumption in 2005 after 20% reduction	Balance from approved projects	Additional phase-out needed to meet 20% methyl bromide reduction	Received assistance from Fund	Methyl Bromide Agreement Phase-out or Project
							(2) - (1)			(3)-(4)		(1)*.80	(2)-(4)	(9)-(8)		
Angola	AFR	LVC	2003	CP	NDR	0.0		0.0	N/A						Yes	No
Guinea	AFR	LVC	2002	A7	NDR	0.0		0.0	N/A						Yes	No
Lao People's Democratic Rep	ASP	LVC	2002	CP	NDR	0.0		0.0	N/A						No	No
Serbia and Montenegro	EUR	Non-LVC	2003	CP	NDR	0.0		0.0	N/A						No	No
*Countries with approved projects for complete Methyl Bromide phase out.																

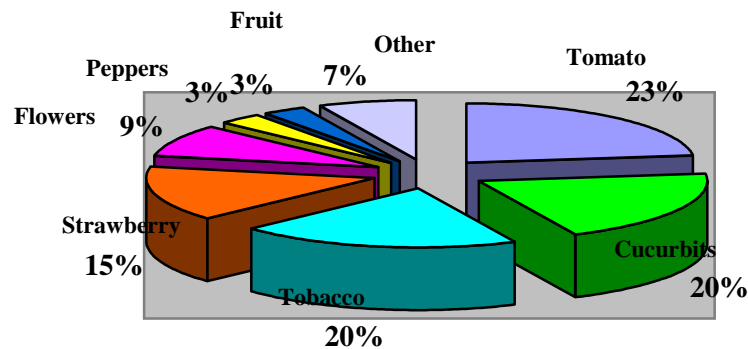
**Annex III**

**SECTORAL AND REGIONAL CONSUMPTION OF METHY BROMIDE  
IN ARTICLE 5 COUNTRIES**

**Major crops using MB in developing countries**

1. According to a survey conducted by MBTOC and Ozone Secretariat data of 2000, and appearing in the MBTOC Assessment of 2002 Article 5(1) countries were estimated to use approximately 22% MB for QPS and 78% for controlled uses. The survey indicated that controlled uses comprised about 87% MB for soil fumigation, approximately 12% for durable products and 1-2% for structures. Figure 1 summarises the survey results for the soil sector, indicating the major crops that utilise MB. Figure 2 presents the breakdown for the durables/structures sector.

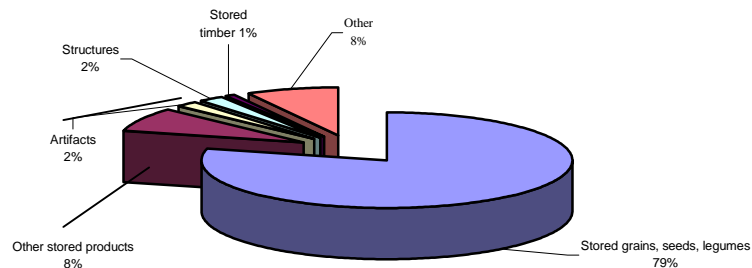
**Fig. 1: Major crops using MB in Art. 5(1) countries (soil sector)**



Source: MBTOC Assessment 2002



**Figure 2. Major MB uses for stored durable products and structures – non-QPS applications in Article 5(1)**

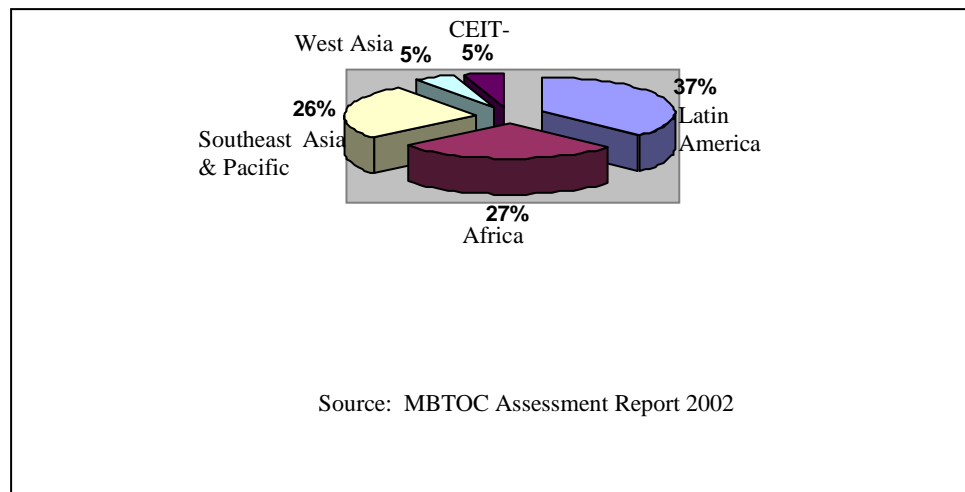


Source: MBTOC Assessment Report, 2002

**MB Consumption by region (Article (5) countries)**

2. Estimates of MB consumption by region (Figure 4) indicate that MB consumption is greatest in Latin America and the Caribbean (37%), followed by Africa (26%), South and Southeast Asia and the Pacific (26%), West Asia (also referred to as the Middle East) (6%) and CEIT/Europe (5%). Use of MB in Latin America/Caribbean was reduced from about 7,030 T in 1998 to about 6,120 T in 2000. Consumption in Africa was reduced from about 5,160 T in 1998 to about 4,460 T in 2000. However, in the same period, MB in the South/Southeast Asia and Pacific region increased from about 3,700 to about 4,270 T, while in West Asia MB consumption increased from about 720 T in 1998 to about 860 T in 2000.

**Figure 3: MB Consumption by region (Article (5) countries)**



OVERVIEW OF MULTI-YEAR AGREEMENTS  
(According to the 2003 Progress Report)

Country	Agency	Sector Plan/National ODS Phase Out Plan	Date Approved	Planned Date of Completion	Number of Tranches Approved	Number of Tranches Completed	Funds Committed by ExCom (US\$)	Funds Released including Present Year by ExCom (US\$)	Funds Disbursed to the Country (US\$)	Total ODP Phase-Out Approved for the Plan (ODP Tonnes)	ODP Phase-Out Approved for Tranches (ODP Tonnes)	ODP Phase-Out Reported in Progress Report (ODP Tonnes)	ODP Allowed for the Reporting Year (ODP Tonnes)	ODP Phase-out Reported by Project (ODP Tonnes)	Remarks (Achievement of Conditions of Approval, Milestones, Relevant Issues concerning next Targets)
Argentina	UNDP	Methyl bromide phase-out in tobacco and non-protected vegetable seedbeds	Mar-02	Dec-06	2	0	3,588,000	2,187,000	1,547,846	156.0	50.0	29.0	256.4	N.A.	In 2003, the project succeeded in eliminating 29.05 ODP T consumption (details presented in PR being submitted to ExCom 43). Training was provided to 1,810 growers and 65 agricultural technicians, and 18,000 growers received inputs and technical assistance. Detailed workplans were prepared for each tobacco-producing region. Additional in-kind contributions were received, an awareness-raising media campaign was launched, and a second national forum was hosted with tobacco producers to discuss national policy development. Procurement for the 2004 season began. Project is meeting targets and is on schedule.
Costa Rica	UNDP	Total methyl bromide phase-out used as a fumigant in melons, cut flowers, bananas, tobacco seedbeds and nurseries, excluding QPS applications	Dec-01	Dec-08	1	0	4,845,283	1,211,321	64,752	426.9	84.4	0.0	342.5	N.A.	Project launched in mid-03 after delays due to concerns of private sector participants overcome. A national Project Manager (former Minister of Agriculture, indicative of high-level commitment by Government and stakeholders to the process) was appointed and the project team was organised. A work plan was approved by the National Steering Committee and the procurement process was launched. After initial delays, the project is now on track.
Kenya	UNDP	Technology transfer leading to methyl bromide phase-out in soil fumigation in cut flower component	Nov-02	Dec-09	1	0	1,021,319	510,660	0	63.0	10.0	0.0	111.0	N.A.	Project approved in Nov. 02. Project implementation delays were incurred in 2003 due to delays in project signature that resulted from a convoluted negotiation process amongst the different national stakeholders. UNDP reminded the Gov't continuously of the performance-based nature of the project & the need to reach specific phaseout levels of MB in order to secure additional funding in future. Interest generated amongst growers at national level during the preparatory phase of the project has nevertheless kept momentum high and growers will be ready to launch project activities as soon as ProDoc signed. Signature & activities launch expected early 2004.
Kenya	Germany	Methyl Bromide (Horticulture)	Apr-03	Apr-06	2	0	574,492	459,594	3,651	34.0	17.0	7.8	34.0	Est. 30.1	No reduction was required for 2003. The actual reduction of consumption in 2003 was estimated to be 7.8 ODP tons reduced through both GTZ and UNDP project components.
Lebanon	UNDP	Sectors phase-out of methyl bromide in vegetable, cut flower and tobacco production	Jul-01	Dec-06	3	0	2,600,000	1,900,000	702,468	186.1	111.6	26.0	158.6	N.A.	In 2003, a total of 1,472.5 dunums converted to the use of alternatives resulting in phaseout of 39.76 ODP T MeBr, exceeding the year's target by 10.44 %. The balance of funds at December 2003 have been committed to procurement activities in early 2004. Elimination of consumption was achieved through an active train the trainers programme and farmers training sessions coordinated with distribution of alternatives (see PR submitted to ExCom 41 for detailed overview). Monitoring and evaluation of results continuous. The 2004 Work Plan was formulated at the end 03. UNIDO implements associated project in strawberries.
Lebanon	UNIDO	Phase-out of methyl bromide for soil fumigation in strawberry production	Jul-01	Dec-04	3	2	1,821,946	1,221,946	358,169	50.4	30.3	16.1	34.3	34.3	Additional equipment and training expected in 2004 with a phase out of 14.20 tonnes.
Malawi	UNDP	National programme for the phaseout of all non-essential and non-quarantine and pre-shipment applications of methyl bromide	Dec-00	Dec-04	3	1	2,999,824	2,150,000	1,259,884	129.0	81.3	40.0	49.3	N.A.	Total of 78 ODP T MeBr were phased out as at December 2003, with 33 ODP T remaining to be phased out in order to meet terms of the Agreement and the accelerated phaseout schedule. In mid-2003, a new Project Manager was engaged. The National Steering Committee met on a regular basis to review project status. Further to the approval of tranche 3 funding by the ExCom in July 2003, the Gov't of Malawi submitted a supplemental report under Decision 40-43 for the consideration of ExCom 41. Momentum remains strong and project activities are on track, despite continued lobbying of tobacco producers by MB lobby.
Morocco	UNIDO	Phase-out of methyl bromide for soil fumigation in tomato production	Jul-01	Dec-04	1	0	3,957,844	400,000	4,262	389.9	109.8	0.0	227.2	389.9	Government is requesting restructuring of the project.
Syria	UNIDO	Phase-out of the use of methyl bromide in grain storage	Jul-01	Dec-05	2	0	1,084,139	651,725	41,759	105.0	34.8	5.0	78.2	108.0	Training is going on. Equipment will be delivered by the end of Apr 2004 and the project is expected to be completed in Dec 2004. Equipment for phase II will be delivered in Jun 2004. Additional training planned.
Turkey	UNIDO	Phase out of methyl bromide in protected tomato, cucumber and carnation crops	Dec-01	Dec-05	2	1	3,408,844	2,000,000	63,778	292.2	87.2	29.2	205.0	263.0	Additional equipment expected for April and June 2004. Training programme will continue.



**METHYL BROMIDE**  
**COST-EFFECTIVENESS OF INVESTMENT PROJECTS**  
 (According to the Inventory and the 2003 Progress Reports)

UNEP/OzL.Pro/ExCom/43/8  
Annex V

Country	Code	Agency	Status	Type	Sector	Project Title	ODP To Be Phased Out	ODP Phased Out	Original Approved Funds	Total Funds Approved including Adjustments	Funds Disbursed	Approved Cost-Effectiveness	Actual Cost-Effectiveness
Argentina	ARG/FUM/30/INV/105	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in strawberry, protected vegetables and cut flower production	331.0	224.4	3,183,390	3,183,390	1,878,661	9.62	8.37
Argentina	ARG/FUM/36/INV/129	UNDP	ONG	INV	FUM	Methyl bromide phase-out in tobacco and non-protected vegetable seedbeds (2001 and 2002 tranches)	29.0	29.0	1,720,000	1,720,000	1,547,846	59.31	53.37
Argentina	ARG/FUM/40/INV/136	UNDP	ONG	INV	FUM	Methyl bromide phase-out in tobacco and non-protected vegetable seedbeds (third tranche)	21.0	0.0	467,000	467,000	0	22.24	
Bosnia and Herzegovina	BHE/FUM/41/INV/17	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in tobacco seedling vegetables and flower production sector	11.8	0.0	229,000	229,000	0	19.41	
Bolivia	BOL/FUM/35/INV/16	UNDP	ONG	INV	FUM	Terminal methyl bromide phase-out, excluding QPS applications	1.5	0.0	221,032	221,032	44,730	147.35	
Brazil	BRA/FUM/28/INV/142	UNIDO	FIN	INV	FUM	Phasing out methyl bromide in the entire tobacco sector	84.4	84.4	2,344,440	2,320,784	2,320,784	27.78	27.50
Chile	CHI/FUM/32/INV/143	UNDP	ONG	INV	FUM	Demonstration and phase-out project for methyl bromide soil fumigation for fruit tree production and replant	76.2	14.0	805,000	805,000	492,245	10.56	35.16
Costa Rica	COS/FUM/35/INV/25	UNDP	ONG	INV	FUM	Total methyl bromide phase-out used as a fumigant in melons, cut flowers, bananas, tobacco seedbeds and nurseries, excluding QPS applications (first tranche)	84.4	0.0	1,211,321	1,211,321	64,752	14.35	
China	CPR/FUM/41/INV/407	UNIDO	ONG	INV	FUM	National phase-out of methyl bromide (first phase)	389.0	0.0	4,086,600	4,086,600	0	10.51	
Croatia	CRO/FUM/35/INV/14	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in tobacco seedlings	16.2	9.4	476,833	476,833	112,142	29.43	11.93
Cuba	CUB/FUM/26/INV/11	UNIDO	COM	INV	FUM	Phasing out methyl bromide in the tobacco sector	48.0	48.0	1,673,324	1,670,378	1,631,484	34.86	33.99
Dominican Republic	DOM/FUM/38/INV/33	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in melon, flowers and tobacco	141.0	40.0	922,900	922,900	1,769	6.55	0.04
Ecuador	ECU/FUM/38/INV/31	IBRD	ONG	INV	FUM	Technology change for the phase-out of methyl bromide in the rose plant nursery sector	37.2	0.0	597,945	597,945	59,795	16.07	
Egypt	EGY/FUM/38/INV/86	UNIDO	ONG	INV	FUM	National phase-out of methyl bromide in horticulture and commodities fumigation	185.6	0.0	2,750,592	2,750,592	3,209	14.82	
Guatemala	GUA/FUM/38/INV/29	UNIDO	ONG	INV	FUM	National phase out of methyl bromide	502.6	260.6	3,257,377	3,257,377	1,036,125	6.48	3.98
Honduras	HON/FUM/37/INV/10	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in melon and banana production sector and tobacco seedling	213.0	102.9	1,977,454	1,977,454	1,327,126	9.28	12.90
Indonesia	IDS/FUM/41/INV/158	Canada	ONG	INV	FUM	Phase-out of the use of methyl bromide in grain storage	37.8		350,000	350,000	0	9.26	
Iran	IRA/FUM/29/INV/57	UNIDO	ONG	INV	FUM	Phasing out of the important non critical, non essential use of methyl bromide for post-harvest treatment	12.4	0.0	260,698	260,698	167,702	21.02	
Cote D'Ivoire	IVC/FUM/42/INV/19	UNIDO	ONG	INV	FUM	Phase-out the use of methyl bromide commodities and storage fumigation	8.5		222,210	222,210		26.14	
Jordan	JOR/FUM/29/INV/54	Germany	ONG	INV	FUM	Complete phase-out of the use of methyl bromide in Jordan	180.0		3,063,000	3,063,000	1,584,300	17.02	
Kenya	KEN/FUM/38/INV/31	UNDP	ONG	INV	FUM	Technology transfer leading to methyl bromide phase-out in soil fumigation in cut flower component (first tranche)	10.0	0.0	510,660	510,660	0	51.07	
Kenya	KEN/FUM/39/INV/33	Germany	ONG	INV	FUM	Technology transfer leading to methyl bromide phase-out in soil fumigation in all other horticulture (first tranche)	5.0	7.8	287,247	287,247	3,651	57.45	0.47
Kenya	KEN/FUM/42/INV/35	Germany	ONG	INV	FUM	Technology transfer leading to methyl bromide phase-out in soil fumigation in all other horticulture (second tranche)	12.0		172,347	172,347		14.36	
Lebanon	LEB/FUM/34/INV/44	UNIDO	FIN	INV	FUM	Phase-out of methyl bromide for soil fumigation in strawberry production (first tranche)	6.0	6.0	350,000	350,000	350,000	58.33	58.33
Lebanon	LEB/FUM/34/INV/46	UNDP	ONG	INV	FUM	Sectors phase-out of methyl bromide in vegetable, cut flower and tobacco production (first tranche)	25.8	26.0	800,000	800,000	702,468	31.01	27.02
Lebanon	LEB/FUM/38/INV/51	UNDP	ONG	INV	FUM	Sectors phase-out of methyl bromide in vegetable, cut flower and tobacco production (second tranche)	31.8	0.0	600,000	600,000	0	18.87	
Lebanon	LEB/FUM/38/INV/52	UNIDO	COM	INV	FUM	Phase-out of methyl bromide for soil fumigation in strawberry production (second tranche)	10.1	10.1	421,946	421,946	8,169	41.78	0.81
Lebanon	LEB/FUM/41/INV/53	UNDP	ONG	INV	FUM	Sector phase-out of methyl bromide in vegetable, cut flower and tobacco production (third tranche)	54.0	0.0	500,000	500,000	0	9.26	
Lebanon	LEB/FUM/41/INV/54	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide for soil fumigation in strawberry production (third tranche)	14.2	0.0	450,000	450,000	0	31.69	
Macedonia	MDN/FUM/32/INV/16	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in tobacco seedling and horticulture production sector	27.2	19.4	1,075,207	1,075,207	971,750	39.53	50.09
Malawi	MLW/FUM/34/INV/16	UNDP	ONG	INV	FUM	Second payment under the national programme for the phase out of all non-essential and non-quarantine and pre-shipment applications of methyl bromide	20.9	21.0	1,000,000	1,000,000	859,884	47.85	40.95

**METHYL BROMIDE**  
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Annex V

Country	Code	Agency	Status	Type	Sector	Project Title	ODP To Be Phased Out	ODP Phased Out	Original Approved Funds	Total Funds Approved including Adjustments	Funds Disbursed	Approved Cost-Effectiveness	Actual Cost-Effectiveness
Malawi	MLW/FUM/40/INV/18	UNDP	ONG	INV	FUM	Phase-out of all non-essential and non-QPS methyl bromide (release of third tranche)	41.1	0.0	750,000	750,000	0	18.25	
Morocco	MOR/FUM/29/INV/37	France	ONG	INV	FUM	Phase-out of methyl bromide use in the cut flower and banana production	61.0		1,006,652	1,006,652	928,063	16.50	
Morocco	MOR/FUM/32/INV/41	UNIDO	ONG	INV	FUM	Phase out of methyl bromide for soil fumigation in strawberry production	155.0	79.4	2,189,729	2,189,729	888,372	14.13	11.19
Morocco	MOR/FUM/34/INV/44	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide for soil fumigation in tomato production (first tranche)	109.8	0.0	400,000	400,000	4,262	3.64	
Peru	PER/FUM/31/INV/28	UNDP	ONG	INV	FUM	Phase-out of methyl bromide in soil fumigation	4.0	4.0	209,770	209,770	206,275	52.44	51.57
Romania	ROM/FUM/34/INV/19	Italy	ONG	INV	FUM	Phase out of methyl bromide in horticulture	93.9	36.1	630,517	630,517	165,804	6.71	4.60
Senegal	SEN/FUM/26/INV/12	UNIDO	FIN	INV	FUM	Phase-out of methyl bromide used in peanut seed fumigation in Novasen Ltd.	0.7	0.7	62,945	59,624	59,624	89.92	85.18
Syria	SYR/FUM/34/INV/80	UNIDO	ONG	INV	FUM	Phase-out of the use of methyl bromide in grain storage (first tranche)	5.0	5.0	300,000	300,000	41,759	60.00	8.35
Syria	SYR/FUM/41/INV/89	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in grain storage (second tranche)	29.8	0.0	351,725	351,725	0	11.80	
Turkey	TUR/FUM/29/INV/56	IBRD	FIN	INV	FUM	Introduction of alternatives to methyl bromide in protected strawberry, pepper and eggplant in East Mediterranean region and in strawberry in Aydm province of Turkey	50.0	50.0	366,440	366,440	366,440	7.33	7.33
Turkey	TUR/FUM/31/INV/69	IBRD	ONG	INV	FUM	Phase-out methyl bromide in the dried fig sector	30.0	0.0	479,040	479,040	357,320	15.97	
Turkey	TUR/FUM/35/INV/74	UNIDO	COM	INV	FUM	Phase-out of methyl bromide in protected tomato, cucumber and carnation crops (first tranche)	29.2	29.2	1,000,000	1,000,000	63,778	34.25	2.18
Turkey	TUR/FUM/41/INV/82	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in protected tomato, cucumber and carnation crops (second tranche)	58.0	0.0	1,000,000	1,000,000	0	17.24	
Uganda	UGA/FUM/34/INV/08	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in cut flowers	12.0	0.0	228,800	228,800	19,694	19.07	
Uruguay	URU/FUM/34/INV/35	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in horticulture (tomatoes and cut flowers)	24.0	13.0	469,370	469,370	256,239	19.56	19.71
Zimbabwe	ZIM/FUM/31/INV/21	UNIDO	ONG	INV	FUM	Phase-out of methyl bromide in cut flowers	132.0	80.6	904,200	904,200	818,834	6.85	10.16
<b>Total</b>							<b>3,463.1</b>	<b>1,201.0</b>	<b>46,336,711</b>	<b>46,306,788</b>	<b>19,345,056</b>	<b>13.38</b>	<b>16.11</b>