

ANNEXES

EUROPEAN COMMUNITY MANAGEMENT PLAN FOR PHASE-OUT OF CRITICAL USES OF METHYL BROMIDE

This is a living document that will be updated regularly

The Annexes contain information extracted from various available sources. Member States are to inform COM of corrections and updates.

Annex 1. List of Tables to be updated	2
Annex 2. Relevant Decisions of the Montreal Protocol	4
Annex 3. Methyl bromide use trends – historical and current	22
Annex 4. Alternatives that are registered and existing in the EC	30
Annex 5. Registration procedures for chemical MB alternatives.....	37
Annex 6. Registration status of MB alternatives.....	42
Annex 7. Data on rates of adoption of alternatives	48
Annex 8. Blank CULA-CUNA forms for soil and postharvest sectors	54
Annex 9. List of References.....	69

**Information contained in these Annexes comes from different sources,
not necessarily from official Member State's data.**

Annex 1. List of Tables to be updated

The following tables will be reviewed and updated annually to further develop the ECMS, with the objective of phasing out MB as soon as technically and economically feasible alternatives are available as stated in Chapter 5.

Table 1.A. List of tables to be updated in ECMS report

Table 2.1: Methyl bromide nominated, approved, licensed and used in the EC Add data for recent years.
Table 2.3: Comparison of major methyl bromide uses in EC in 1991 and 2006 Replace 2006 data with data for most recent year
Table 2.4: Number of fumigators authorised by Member States to use methyl bromide Replace 2006 data with data for most recent year
Table 3.1: Summary of main pest management components used in commercial practice as MB alternatives in the soil sector Update this summary when new alternatives are added to Annex 4.C database.
Table 3.2: Summary of main pest management components used in commercial practice as MB alternatives in the post harvest sector Update this summary when new alternatives are added to Annex 4.C database.
Table 4.1: Regulatory status of chemical alternatives in soil sector in EC and selected third countries Update this summary using latest information provided in Annex 6 and TEAP/MBTOC reports.
Table 4.2: Regulatory status of chemical alternatives in postharvest sector in EC and selected third countries Update this summary using latest information provided in Annex 6 and TEAP/MBTOC reports.
Table 4.3: Examples of rapid adoption rates of MB alternatives in the EC Update this summary when additional examples are added to Annex Table 7.A. The objective is to indicate the most rapid rate that has been achieved historically for each alternative/crop category.
Table 5.1: Guiding principles New principles can be added in order to encourage more rapid phase-out of MB as soon as technically and economically feasible alternatives are available, as stated in the opening paragraph of Chapter 5. Amendments should not be made if they may weaken or undermine the existing principles.
Table 5.2: Definitions relating to alternatives and the use of the Decision Tree Definitions may be amended in order to encourage more rapid phase-out of MB as soon as technically and economically feasible alternatives are available, as stated in the opening paragraph of Chapter 5.
Table 5.3: Calculated rates of adoption based on historical rates Update this summary when Table 4.3 is updated which indicates more rapid historical rates of adoption.
Section 5.4.1 and 5.4.2: Steps to minimise MB use, emissions and leakage When MBTOC proposes revised guideline doses and formulations, the stated doses and formulations in section 5.4 will be updated. The steps listed in section 5.4.1 and 5.4.2 will be updated to ensure that “all precautionary measures practicable” are taken to prevent and minimise leakages of MB.
Table 5.4: Specific technology transfer activities and supporting activities Add further activities that will encourage more rapid adoption of alternatives and more rapid phase-out of MB.

Annex 1.B. List of tables to be updated in Annex

Annex Table 3.B. Report on Accounting Framework for MB in the EC Insert data for most recent year.
Annex Table 3.C. MB consumption for CUEs, by Member State and Use-category Insert data for most recent year.
Annex Table 3.D. CUEs in EC by Use-category, indicating relevant Member States and Quantity of MB licensed Replace with data for most recent year, to identify the main use-categories in the EC.
Annex Table 3.E. Previous MB uses in the EC Add any MB use-categories which have been phased out or for which no nominations are received
Annex 4.C. EC database of existing MB alternatives (to be kept on Ozone Secretariat website) EC database of existing alternatives is required by Decision Ex.I/4(1) and (2) Update this series of tables, particularly new information relating to registrations, commercial use of alternatives, and alternatives under development. Add data on additional Parties where possible. The Decision requires information from Parties that <u>no longer consume MB</u> , as well as Parties that have CUEs. Submit updates to Ozone Secretariat website.
Annex Table 4.A and 4.B. Leading MB alternatives by pest category in the EC Update this summary, using data from Annex 4.C.
Annex 6. Registration status of MB alternatives Update using information from Annex 4.C.
Annex Table 7.A. Examples of historical rates of adoption that have occurred in practice Update with additional examples of rapid rates of adoption of MB alternatives. The aim is to provide illustrations of rapid rates, as examples that others can emulate within the resources available.
Annex 7.B. Examples of rates of training Update with examples of rapid rates of training in MB alternatives. The aim is to provide illustrations of rapid rates of training, as examples that others can emulate within the resources available.
Annex 7.C. Trends in area treated with MB in Member States that have CUEs Update the tables with data on MB-fumigated area (hectares) in recent years. Also update final column showing total crop area (hectares) for the most recent year available.

Annex 2. Relevant Decisions of the Montreal Protocol

Decision IX/6: Critical-use exemptions for methyl bromide

1. To apply the following criteria and procedure in assessing a critical methyl bromide use for the purposes of control measures in Article 2 of the Protocol:
 - (a) That a use of methyl bromide should qualify as "critical" only if the nominating Party determines that:
 - (i) The specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption; and
 - (ii) There are no technically and economically feasible alternatives or substitutes available to the user that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances of the nomination;
 - (b) That production and consumption, if any, of methyl bromide for critical uses should be permitted only if:
 - (i) All technically and economically feasible steps have been taken to minimize the critical use and any associated emission of methyl bromide;
 - (ii) Methyl bromide is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide, also bearing in mind the developing countries' need for methyl bromide;
 - (iii) It is demonstrated that an appropriate effort is being made to evaluate, commercialize and secure national regulatory approval of alternatives and substitutes, taking into consideration the circumstances of the particular nomination and the special needs of Article 5 Parties, including lack of financial and expert resources, institutional capacity, and information. Non-Article 5 Parties must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes. Article 5 Parties must demonstrate that feasible alternatives shall be adopted as soon as they are confirmed as suitable to the Party's specific conditions and/or that they have applied to the Multilateral Fund or other sources for assistance in identifying, evaluating, adapting and demonstrating such options;
2. To request the Technology and Economic Assessment Panel to review nominations and make recommendations based on the criteria established in paragraphs 1 (a) (ii) and 1 (b) of the present decision;
3. That the present decision will apply to Parties operating under Article 5 and Parties not so operating only after the phase-out date applicable to those Parties;

Decision Ex.I/3. Critical-use exemptions for methyl bromide for 2005

Reaffirming the obligation to phase out the production and consumption of methyl bromide in accordance with paragraph 5 of Article 2H by 1 January 2005, subject to the availability of an exemption for uses agreed to be critical by the Parties,

Recognizing that technically and economically feasible alternatives exist for most uses of methyl bromide,

Noting that those alternatives are not always technically and economically feasible in the circumstances of the nominations,

Noting also that Article 5 Parties have made substantial progress in the adoption of effective alternatives,

Mindful that exemptions must fully comply with decision IX/6, and are intended to be limited, temporary derogations from the phase-out of methyl bromide,

Mindful also that decision IX/6 permits the production and consumption of methyl bromide for critical uses only if it is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide,

Recognizing the desirability of a transparent presentation of data on alternatives to methyl bromide to assist the Parties to understand better the critical-use volumes and to gauge progress on and impediments to the transition,

Recognizing also that each Party should aim at significantly and progressively decreasing its production and consumption of methyl bromide for critical uses with the intention of completely phasing out methyl bromide as soon as technically and economically feasible alternatives are available,

Resolved that each Party should revert to methyl bromide only as a last resort and in the situation when a technically and economically feasible alternative to methyl bromide which is in use ceases to be available as a result of de-registration or for other reasons,

Taking into account the recommendation by the Technology and Economic Assessment Panel that critical-use exemptions should not be authorized in cases where technically and economically feasible options are registered, available locally and used commercially by similarly situated enterprises,

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee,

3. That a Party using stocks under paragraph 2 above shall prohibit the use of stocks in the categories set forth in annex II A to the report of the First Extraordinary Meeting of the Parties to the Montreal Protocol¹ when amounts from stocks combined with allowable production and consumption for critical uses exceed the total level for that Party set forth in annex II A to the present report;

¹ UNEP/OzL.Pro.ExMP/1/3.

4. That Parties should endeavour to allocate the quantities of methyl bromide recommended by the Technology and Economic Assessment Panel as listed in annex II A to the report of the First Extraordinary Meeting of the Parties²;
5. That each Party which has an agreed critical use should ensure that the criteria in paragraph 1 of decision IX/6 are applied when licensing, permitting or authorizing the use of methyl bromide and that such procedures take into account available stocks. Each Party is requested to report on the implementation of the present paragraph to the Ozone Secretariat;
7. Bearing in mind that Parties should aim at significantly and progressively reducing their production and consumption of methyl bromide for critical-use exemptions, that a Party may request reconsideration by the Meeting of the Parties of an approved critical-use exemption in the case of exceptional circumstances, such as unforeseen de-registration of an approved methyl bromide alternative when no other feasible alternatives are available, or where pest and pathogens build resistance to the alternative, or where the use-reduction measures on which the Technology and Economic Assessment Panel based its recommendation as to the level necessary to satisfy critical uses are demonstrated not to be feasible in the specific circumstances of that Party;

Decision Ex.I/4. Conditions for granting and reporting critical-use exemptions for methyl bromide

Mindful of the principles set forth in the report³ by the Chairman of the informal consultation on methyl bromide held in Buenos Aires on 4 and 5 March 2004, namely, fairness, certainty and confidence, practicality and flexibility, and transparency,

Recognizing that technically and economically feasible alternatives exist for most uses of methyl bromide,

Noting that those alternatives are not always technically and economically feasible in the circumstances of nominations,

Noting that Article 5 and non-Article 5 Parties have made substantial progress in the adoption of effective alternatives,

Mindful that exemptions must comply fully with decision IX/6 and are intended to be limited, temporary derogations from the phase-out of methyl bromide,

Recognizing the desirability of a transparent presentation of data on alternatives to methyl bromide to assist the Parties to better understand the critical-use volumes and to gauge progress on and impediments to the transition from methyl bromide;

Resolved that each Party should aim to significantly and progressively decrease its production and consumption of methyl bromide for critical uses with the intention of completely phasing out methyl bromide as soon as technically and economically feasible alternatives are available,

Recognizing that Parties should revert to methyl bromide only as a last resort, in the event that a technically and economically feasible alternative to methyl bromide which is in use ceases to be available as a result of de-registration or for other reasons,

² UNEP/OzL.Pro.ExMP/1/3.

³ UNEP/OzL.Pro.ExMP/1/INF/1, para. 11.

1. That each Party which has an agreed critical use under the present decision should submit available information to the Ozone Secretariat before 1 February 2005 on the alternatives available, listed according to their pre-harvest or post-harvest uses and the possible date of registration, if required, for each alternative; and on the alternatives which the Parties can disclose to be under development, listed according to their pre-harvest or post-harvest uses and the likely date of registration, if required and known, for those alternatives. The Ozone Secretariat is requested to provide a template for that information and to post the said information in a database entitled "Methyl Bromide Alternatives" on its web site;
2. That each Party which submits a nomination for the production and consumption of methyl bromide for years after 2005 should also submit information listed in paragraph 1 to the Ozone Secretariat to include in its Methyl Bromide Alternatives database and that any other Party which no longer consumes methyl bromide should also submit information on alternatives to the Secretariat for inclusion in that database;
3. To request each Party which makes a critical-use nomination after 2005 to submit a national management strategy for phase-out of critical uses of methyl bromide to the Ozone Secretariat before 1 February 2006. The management strategy should aim, inter alia, to:
 - (a) Avoid any increase in methyl bromide consumption except for unforeseen circumstances;
 - (b) Encourage the use of alternatives through the use of expedited procedures, where possible, to develop, register and deploy technically and economically feasible alternatives;
 - (c) Provide information, for each current pre-harvest and post-harvest use for which a nomination is planned, on the potential market penetration of newly deployed alternatives, and alternatives which may be used in the near future, to bring forward the time when it is estimated that methyl bromide consumption for such uses can be reduced and/or ultimately eliminated;
 - (d) Promote the implementation of measures which ensure that any emissions of methyl bromide are minimized;
 - (e) Show how the management strategy will be implemented to promote the phase-out of uses of methyl bromide as soon as technically and economically feasible alternatives are available, in particular describing the steps which the Party is taking in regard to subparagraph (b) (iii) of paragraph 1 of decision IX/6 in respect of research programmes in non-Article 5 Parties and the adoption of alternatives by Article 5 Parties;
4. To request the Meeting of the Parties to take into account information submitted pursuant to paragraphs 1 and 3 of the present decision when it considers permitting a Party to produce or consume methyl bromide for critical uses after 2006;
5. To request a Party that has submitted a request for a critical use exemption to consider and implement, if feasible, Technology and Economic Assessment Panel and Methyl Bromide Technical Options Committee recommendations on actions which a Party may take to reduce critical uses of methyl bromide;
6. To request any Party submitting a critical-use nomination after 2004 to describe in its nomination the methodology used to determine economic feasibility in the event that economic feasibility is used as a criterion to justify the requirement for the critical use of methyl bromide, using as a guide the economic criteria contained in section 4 of annex I to the present report;
7. To request each Party from 1 January 2005 to provide to the Ozone Secretariat a summary of each crop or post-harvest nomination containing the following information:
 - (a) Name of the nominating Party

- (b) Descriptive title of the nomination;
 - (c) Crop name (open field or protected) or post-harvest use;
 - (d) Quantity of methyl bromide requested in each year;
 - (e) Reason(s) why alternatives to methyl bromide are not technically and economically feasible;
8. To request the Ozone Secretariat to post the information submitted pursuant to paragraph 7 above, categorized according to the year in which it was received, on its web site within 10 days of receiving the nomination;
9. To request the Technology and Economic Assessment Panel to:
- (a) Identify options which Parties may consider for preventing potential harmful trade of methyl bromide stocks to Article 5 Parties as consumption is reduced in non-Article 5 Parties and to publish its evaluation in 2005 to enable the Seventeenth Meeting of the Parties to decide if suitable mitigating steps are necessary;
 - (b) Identify factors which Article 5 Parties may wish to take into account in evaluating whether they should either undertake new accelerated phase-out commitments through the Multilateral Fund for the Implementation of the Montreal Protocol or seek changes to already agreed accelerated phase-outs of methyl bromide under the Multilateral Fund;
 - (c) Assess “economic infeasibility”, based on the methodology submitted by the nominating Party under paragraph 6 above, in making its recommendations on each critical-use nomination. The report by the Technology and Economic Assessment Panel should be made with a view to encouraging nominating Parties to adopt a common approach in assessing the economic feasibility of alternatives;
 - (d) Submit a report to the Open-ended Working Group at its twenty-sixth session on the possible need for methyl bromide critical uses over the next few years, based on a review of the management strategies submitted by Parties pursuant to paragraph 3 of the present decision;
 - (e) Review critical-use nominations on an annual basis and apply the criteria set forth in decision IX/6 and of other relevant criteria agreed by the Parties;
 - (f) Recommend an accounting framework for adoption by the Sixteenth Meeting of the Parties which can be used for reporting quantities of methyl bromide produced, imported and exported by Parties under the terms of critical-use exemptions, and after the end of 2005 to request each Party which has been granted a critical-use exemption to submit information together with its nomination using the agreed format;
 - (g) Provide, in consultation with interested Parties, a format for a critical-use exemption report, based on the content of annex I to the present report, for adoption by the Sixteenth Meeting of the Parties, and to request each Party which reapplies for a methyl bromide critical-use exemption after the end of 2005 to submit a critical-use exemption report in the agreed format;
 - (h) Assess, annually where appropriate, any critical-use nomination made after the end of 2006 in the light of the Methyl Bromide Alternatives Database information submitted pursuant to paragraph 1 of the present decision, and to compare, annually where appropriate, the quantity, in the nomination, of methyl bromide requested and recommended for each pre-harvest and post-harvest use with the management strategy submitted by the Party pursuant to paragraph 3 of the present decision;
 - (i) Report annually on the status of re-registration and review of methyl bromide uses for the applications reflected in the critical-use exemptions, including any information on health effects and environmental acceptability;
 - (j) Report annually on the status of registration of alternatives and substitutes for methyl bromide, with particular emphasis on possible regulatory actions that will increase or decrease dependence on methyl bromide;
 - (k) Modify the Handbook on Critical-use Nominations for Methyl Bromide to take the

present decision and other relevant information into account, for submission to the Sixteenth Meeting of the Parties.

Annex I (Report of EMOP1)

Requirements for annual reporting of critical-use exemptions for methyl bromide

A. Introduction

The format proposed here would apply to annual reporting by Parties that have obtained a critical-use exemption for a particular application. It is not intended to replace the format for requesting a critical-use exemption for a particular application for the first time.

It should be noted that, in addition to a reporting format for holders of multiple-year exemptions, Australia proposes that this format would also be used by holders of single-year exemptions to reapply for a subsequent year's exemption (for example, nominees approved for single-year exemptions for 2005 seeking further exemptions for 2006).

In addition, Australia notes that it may be useful for the following format to be prefaced by cover pages similar to those detailed in the 2003 critical use handbook, which summarize the critical-use nomination and provide the contact details of the nominating Party.

From 2005 onwards, Parties' experience in the submission and assessment of reporting on critical-use exemptions may reveal improvements that could usefully be made to the reporting parameters outlined in the present document. Acknowledging this potential, and to ensure continuous improvement of the exemption reporting process, it is noted that Parties will have the opportunity to review the annual reporting parameters at a future date to ensure that they continue:

- (a) To meet their expectations regarding the provision of transparent and adequate data on exemption holders' progress in achieving transition;
- (b) To provide a streamlined format that does not compromise the level of data required for scrutiny by the Parties, but also does not place an unnecessarily onerous burden on nominating Parties.

Table 1: Report on transition efforts and activities

Transition efforts and activities	A. Description and implementation status	B. Outcomes to date	C. Impact on critical-use nomination/required quantities	D. Actions to address any delays/obstacles	E. Any re-changes to trials/other efforts
1. Trials of alternatives					
2. Technology transfer, scale-up, regulatory approval					
3. Commercial scale-up/deployment, market penetration					

4. Any other broader transition activities					
--	--	--	--	--	--

B. Reporting requirements

1. Implementation of the Parties’ mandate on continued efforts to find alternatives

Column A requires a description of the implementation of any trials, technology transfer activities and/or other transition activities that were identified in the earlier nomination, including advice on whether the activity is complete or still underway.

Column B requires a report on the results of the transition activities (e.g., trials of alternatives – yield results achieved with the alternative in comparison to those achieved through methyl bromide treatment; deployment – percentage of users represented in a nomination covered by deployment activities and now able to transition to alternatives). In the case of trials of alternatives, reporting would include attaching copies of formal scientific trial reports. Where formal trial reports are not available (for example, where an exemption holder’s transition efforts focus on grower trials), the exemption holder could include a description of all relevant parameters of the trials that are available. These could include data, as specified in the Technology and Economic Assessment Panel Handbook on Critical Use Nominations for Methyl Bromide, such as soil and climate types in which the trials were conducted, plant-back times observed, the rate of methyl bromide and alternatives application (kg/hectare or g/m²), the proportionate mix of methyl bromide and chloropicrin, etc.

Column C requires a summary of the implication of the trial and activity results and outcomes, such as what impact they would have on the quantity of methyl bromide required for the critical-use nomination. For example, positive results from technology transfer or deployment activities could lead to the nominating Party identifying a reduction in the quantity required for the subsequent year of the exemption.

Column D: where any obstacles or delays beyond the control of the exemption holder arose to hinder their transition activities, this column requires a description of those obstacles or delays and a detailed plan, including time-specific milestones, for actions to address such problems and maintain the transition momentum.

Column E: where trials, technology transfer or other transition activities have been undertaken but have yielded negative results (e.g., trials demonstrated technical problems with an alternative, deployment activities revealed unanticipated economic infeasibility, etc), column E requires a description of the new or alternative transition activities to be undertaken by the exemption holder to overcome such obstacles to transition.

Row 4: “Any other broader transition activities” provides a nominating Party with the opportunity to report, where applicable, on any additional activities which it may have undertaken to encourage a transition, but need not be restricted to the circumstances and activities of the individual nomination. Without prescribing specific activities that a nominating Party should address, and noting that individual Parties are best placed to identify the most appropriate approach to achieve a swift transition in their own circumstances, such activities could include market incentives, financial support to exemption nominees and exemption holders, labelling, product prohibitions, public awareness and information campaigns, etc.

Notes: For an exemption holder or nominee to qualify for an exemption, a commitment must be demonstrated to finding technically and economically viable

alternatives and achieving a transition to the use of alternatives. In particular, decision IX/6 requires the following of an exemption nominee:

“It is demonstrated that an appropriate effort is being made to evaluate, commercialize and secure national regulatory approval of alternatives and substitutes... Non-Article 5 Parties must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes. Article 5 Parties must demonstrate that feasible alternatives shall be adopted as soon as they are confirmed as suitable to the Party's specific conditions...”

Section 1 provides the means by which exemption holders and nominees can report on their current progress in implementing that mandate. The nature of the information provided would vary according to the specific actions that had been outlined in each original nomination, but for ease of review the information should be structured as presented in table 1 above.

2. Registration of an alternative

Where a nomination identified that an alternative was not yet registered at the time of the original nomination's submission, but it was anticipated that one would be subsequently registered, the nominating Party should report on the progress of the alternative through the registration process. This report should include any efforts by the Party to “fast track” or otherwise assist the registration of the alternative.

Where significant delays or obstacles have been encountered to the anticipated registration of an alternative, the exemption holder should identify the scope for any new/alternative efforts that could be undertaken to maintain the momentum of transition efforts, and identify a time-frame for undertaking such efforts.

Where an alternative was de-registered subsequent to submission of the original nomination, the nominating Party would report the de-registration, including reasons for it. The nominating Party would also report on the de-registration's impact (if any) on the exemption holder's transition plan and on the proposed new or alternative efforts that will be undertaken by the exemption holder to maintain the momentum of transition efforts.

Notes: It is understood that progress in registration of a product will often be beyond the control of an individual exemption holder as the registration process must be undertaken by the manufacturer or supplier of the product. The speed with which registration applications are processed also falls outside the exemption holder's control, resting with the nominating Party. Consequently, this section requires the nominating Party to report on any efforts it has taken to assist the registration process, noting that the scope for expediting registration will vary from Party to Party.

In recognition of the fact that it would be unreasonable to revise exemption holders' nomination because of registration delays beyond their control, this section also requires a report on the actions that are being taken to continue transition despite registration delays.

3. Implementation of recommendations of the Methyl Bromide Technical Options Committee and the Technology and Economic Assessment Panel

In developing recommendations on exemption nominations submitted in 2003, the Methyl Bromide Technical Options Committee and the Technology and Economic

Assessment Panel in many cases recommended that nominees should explore and, more appropriate, implement:

- (a) Options for reducing the quantity of methyl bromide required; or
- (b) The use of particular alternatives not originally identified by the exemption holder as part of its transitional plan, but considered key alternatives by the Methyl Bromide Technical Options Committee and the Technology and Economic Assessment Panel.

Where the approval granted by the Meeting of the Parties' for exemptions included conditions incorporating those recommendations, the exemption-holder should report on its progress in exploring or implementing them as part of its annual reporting obligations.

Where a condition required the testing of an alternative or adoption of an emission minimization measure, reporting should be structured in the same format as table 1 (report on transition efforts and activities).

Where a condition related to an assessment of the economic viability of an alternative or measure to minimize use or emissions, the reporting should address the relevant economic data requirements identified in section 4 below.

4. Economic feasibility

Where a nomination has been approved on the basis of the economic infeasibility of an alternative, the exemption holder should report any significant changes to the underlying economics. This could include any changes to:

- (a) The purchase cost per kilogram of methyl bromide and of the alternative;
- (b) Gross and net revenue with and without methyl bromide, and with the next best alternative;
- (c) Percentage change in gross revenues if alternatives are used;
- (d) Absolute losses per hectare/cubic metre if alternatives are used;
- (e) Losses per kilogram of methyl bromide requested if alternatives are used;
- (f) Losses as a percentage of net cash revenue if alternatives are used;
- (g) Percentage change in profit margin if alternatives are used.

Notes: Where an exemption has been approved on the basis of the economic infeasibility of an alternative, the exemption holder must have clearly described the nature of the economic infeasibility in its original nomination.

The economics of methyl bromide and of alternatives can be subject to changes over time, and it is possible that those changes could have an impact on the exemption holder's claim that an alternative is not economically viable and on its continuing eligibility for an exemption.

Given that criteria for assessing the economic feasibility of alternatives have not yet been agreed by the Parties, at the current time the seven data points identified above represent suggested guidance only. As criteria are developed and approved by the Parties for inclusion in the Technology and Economic Assessment Panel/MBTOC Handbook, the data to be provided in annual reporting would reflect those criteria and any accompanying new data requirements.

5. Reduction in quantity of methyl bromide required

Exemption holders should indicate whether the number of hectares or cubic metres identified in their earlier nominations has changed. Where the number has been reduced, the exemption holder should quantify any resultant change in the quantity of methyl bromide required.

Notes: The Critical Use Nomination Handbook requests pre-planting Parties making nominations to provide information on the number of hectares or cubic metres to be treated with methyl bromide.

In some cases, it is possible that the number of hectares or cubic metres to be treated could vary over time. As such variations can also change the quantity of methyl bromide required for the exemption, this section provides the means to monitor such variations.

Exemption quantity details

Quantity requested in original nomination: _____

Quantity recommended by Methyl Bromide Technical Options Committee Technology and Economic Assessment Panel: _____

Quantity approved by Parties: _____

Quantity required for [year]: _____

Decision XVI/4. Review of the working procedures and terms of reference of the Methyl Bromide Technical Options Committee

Reaffirming that each Party should aim significantly and progressively to decrease its production and consumption of methyl bromide for critical uses with the intention of completely phasing out methyl bromide as soon as technically and economically feasible alternatives are available for critical uses in the circumstances of the nominations according to decision IX/6,

To adopt the elements related to procedures and terms of reference of the Methyl Bromide Technical Options Committee related to the evaluation of nominations for critical uses of methyl bromide as set out in annex I to the report of the Sixteenth Meeting of the Parties.

Annex I (Report of MOP16)

A. Working procedures of the Methyl Bromide Technical Options Committee relating to the evaluation of nominations for critical uses of methyl bromide

1. The schedule for the MBTOC assessment of critical-use exemptions will be revised as set out in the following table: [shown on next page]
2. Standard presumptions that underlie MBTOC recommendations of critical-use nominations need to be transparent and technically and economically justified, and should be clearly stated in its reports, and submitted to the Parties for approval at the Seventeenth Meeting of the Parties, and thereafter on an annual basis. *Reaffirming* that the individual circumstances are the primary point of departure for an assessment of a nomination,

MBTOC should not apply standard presumptions where the Party has demonstrated that the individual circumstances of the nomination indicate otherwise.

3. In the event that a nomination has been recommended for rejection or reduction as assessed under action 6 above, MBTOC will give the nominating Party the opportunity to send detailed corroborating information taking into account the circumstances of the nomination. On the basis of this additional information (and possible consultations with the nominating Party by pre-arranged teleconference) MBTOC will reassess this nomination.
4. Although the burden of proof remains with the Party to justify a request for a critical-use exemption, MBTOC will provide in its report a clear explanation of its operation with respect to the process of making determinations for its recommendations, and clearly state the approach, assumptions and reasoning used in the evaluation of the critical-use nominations. When cuts or denials are proposed, the description should include citations and also indicate where alternatives are technically and economically feasible in circumstances similar to those in the nomination, as described in decision Ex.1/5, paragraph 8.
5. Communications between the nominating Party and MBTOC will be based on the principles of fairness and due process, on the basis of corroborating written documentation, and will be properly reflected in the MBTOC and TEAP reports.

Actions	Indicative completion date
Parties submit their nominations for critical-use exemptions to the Secretariat	24 January
The nominations are forwarded to MBTOC co-chairs for distribution to the subgroups of appointed members	7 February
Nominations in full are assessed by the subgroups of appointed members. The initial findings of the subgroups, and any requests for additional information are forwarded to the MBTOC co-chairs for clearance	28 February
MBTOC co-chairs forward the cleared advice on initial findings and requests for additional information on to the nominating Party concerned and consult with the Party on the possible presumption therein	7 March
Nominating Party develops and submits its response to the MBTOC co-chairs	28 March
MBTOC meets as usual to assess nominations, including any additional information provided by the nominating Party prior to the MBTOC meeting under action 5 and any additional information provided by nominating Party through pre-arranged teleconference, or through meetings with national experts, in accordance with paragraph 3.4 of the terms of reference of TEAP, advises the nominating Party of any outstanding information regarding the information requested under action 3 for those critical-use nominations where it was unable to assess the nomination, and provides its proposed recommendations to TEAP	11 April
TEAP meets as usual in May, among other things, to assess the MBTOC report on critical-use nominations and submits the finalized report on recommendations and findings to the Secretariat	early May
The Secretariat posts the finalized report on its web site and circulates it to the Parties	mid-May
Nominating Party has the opportunity to consult with MBTOC on a bilateral basis in conjunction with the Open-ended Working Group meetings	early July
The nominating Party submits further clarification for the critical-use nomination in the “unable to assess” category or if requested to do so by the Open-ended Working Group, and provides additional information should it wish to appeal against a critical-use nomination recommendation by MBTOC	early August
MBTOC meets to reassess only those critical-use nominations in the “unable to assess” category, those where additional information has been submitted by the nominating Party and any critical-use nominations for which additional information has been requested by the Open-ended Working Group	late August
MBTOC final report is made available to Parties through TEAP	early October

6. The role of the Secretariat should be central in regard to assistance in organizational, administrative and technical aspects of the process whereby the efficiency, operations and communications could be enhanced.
7. MBTOC is requested to develop and keep up to date an expanded matrix describing the conditions under which alternatives are technically and economically feasible. The matrix should include detailed references, such as citations of trial reports demonstrating this feasibility or case studies of commercial operation. Before application, the Parties should approve the matrix and any subsequent changes.
8. MBTOC, when holding its meeting, can consult the nominating Party through pre-arranged teleconference or through face-to-face discussions with national experts, in accordance with paragraph 3.4 of the terms of reference for the Technology and Economic Assessment Panel, in order to facilitate a transparent exchange of information and understanding between MBTOC and the critical-use exemption applicant.

9. It is recalled that paragraphs 9 (f) and 9 (g) of decision Ex.I/4 request TEAP to recommend an accounting framework and to provide a format for a critical-use exemption report.
10. Despite the opportunities given to the nominating Party to supply any additional information required in support of its nomination, MBTOC should categorize the nomination as “unable to assess” if there is insufficient information to make an assessment, and clearly explain what information was missing. [...]

C. Further guidance on the criteria for the evaluation of nominations for critical uses of methyl bromide

1. On the availability of technically and economically feasible alternatives, and economic feasibility

11. Pending further consideration by the Meeting of the Parties, MBTOC shall continue to define:
 - (a) “Alternatives” as any practice or treatment that can be used in place of methyl bromide;
 - (b) “Existing alternatives” as those alternatives in present or past use in some regions; and
 - (c) “Potential alternatives” as those alternatives in the process of investigation or development.
12. Understanding of the concept of “availability” shall be primarily guided by the alternative’s market presence in sufficient quantities and accessibility, taking into account, among other things, regulatory constraints.
13. To the factors already listed in annex I, part B, paragraph 4 of the report of the Extraordinary Meeting of the Parties, with regard to paragraphs 6 and 9 (c) of decision Ex.I/4, the following are added:
 - (a) The difference in purchasing costs between methyl bromide and the alternatives per treated areas, mass, or volume, and related costs such as new equipment, labour costs and losses resulting from closing the fumigated object for an extended period of time;
 - (b) Difference in yield per hectare, including its quality, and harvest time, between the alternative and methyl bromide;
 - (c) Percentage change in net revenue if alternatives are used.
14. In line with paragraph 4 above, in any case in which a Party makes a nomination which relies on the economic criteria of decision IX/6, MBTOC should, in its report, explicitly state the central basis for the Party’s economic argument and explicitly explain how it addressed that factor, and, in cases in which MBTOC recommends a cut; MBTOC should also provide an explanation of its economic feasibility.
15. As regards significant market disruption, it is recalled that paragraph 1 (a) (i) of decision IX/6 provides that a use of methyl bromide should qualify as “critical” only if the nominating Party determines that the specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption. Parties are invited to include in their nominations, information on their determination referred to in paragraph 1 (a) (i) of decision IX/6.

2. On the duration of critical-use nomination of methyl bromide

22. It is recalled that the Sixteenth Meeting of the Parties adopted decision XVI/3, related to the duration of critical-use nominations of methyl bromide.

3. On aggregation of nominations

23. It is reaffirmed that applications shall be considered on a case-by-case basis. In that context, MBTOC shall continue its current approach as regards the level of aggregation or disaggregation.

4. On individual circumstances of nominations

24. In the interest of fair and equal treatment, nominations should be assessed in the light of compliance with the criteria of decision IX/6 and other relevant decisions, irrespective of the size or number of tonnes in the nomination. MBTOC is invited to propose a streamlined method for assessing small nominations to the degree that the method is consistent with the principle stated above.
25. If a particular product is not registered or subject to national or local regulatory restrictions, or if it becomes de-registered, MBTOC should recommend a critical-use exemption, provided there are no other feasible alternatives according to decision IX/6 for the specific situation. MBTOC should request written advice from the nominating Party, which may include advice from the manufacturer of an alternative.
26. In cases where alternatives are currently in the registration process, MBTOC should note this fact. It is acknowledged that a Party does not always have the capability to influence the registration of alternatives. A nominating Party should inform MBTOC when registration occurs and MBTOC should take this kind of information into account when recommending critical-use exemptions, as is already requested by the Parties in decision IX/6, paragraph 1 (b) (iii).

5. On the handbook on critical use nominations for methyl bromide

27. The handbook is a general reference for all those involved in the critical-use exemption process, in part owing to the convenience of using the handbook as a general reference volume for methyl bromide decisions, as well as the critical-use nomination procedure. Therefore, the handbook should be reframed to become a comprehensive “one-stop shop” that includes information on methyl bromide decisions, working procedures and terms of reference of MBTOC, the critical-use nomination process, agreed standard presumptions and other related topics. The text should be taken as far as possible, however, directly from decisions of the Meeting of the Parties or other language that has been approved by the Parties.
28. The onus remains on the nominating Party to provide sufficient information in order for MBTOC to be able to assess whether critical-use nominations comply fully with decision IX/6. The handbook should inform Parties which information requirements are needed.
29. TEAP and its MBTOC should be responsible for updating the handbook. TEAP and its MBTOC should not put any new proposals in the handbook which do not have a basis in a decision of the Meeting of the Parties. Factual updates of the handbook incorporating the specific language of the decisions of the Parties do not require prior approval from the Parties. Otherwise, updates require approval from the Parties.

6. On approach, assumptions and reasoning to be used in the evaluation

30. Decision IX/6 is the basis for the assessment of critical-use exemptions by MBTOC.
31. While the burden of proof remains with the nominating Party to justify the request for a critical-use exemption, MBTOC, in its report, should indicate whether the nominating Party has provided the information in order for MBTOC to determine that the Party has met the applicable criteria set out in decision IX/6 and related decisions.
32. Exemptions must fully comply with decision IX/6 and other relevant decisions, and are intended to be limited to the levels needed for critical-use exemptions, temporary derogations from the phase-out of methyl bromide in that they are to apply only until there are technically and economically feasible alternatives that otherwise meet the criteria in decision IX/6. MBTOC should take a precise and transparent approach to the application of the criteria, having regard, especially, to paragraphs 4 and 20 above.

7. On similar circumstances

33. When MBTOC makes differentiated recommendations on nominations that cover the same use, it should clearly explain why one country's nomination is being treated differently than the nominations of other countries or the nominations of the same country, based on more information and citations of feasible alternatives relevant to these nominations, thus eliminating unjustified inconsistencies in assessments and ensuring equal treatment of nominations.

8. On market penetration of alternatives

34. When considering the market penetration of an alternative in a nominating Party, MBTOC should evaluate the critical-use nominations based on information provided by the Parties and other information, in accordance with the terms of reference of TEAP, and in the light of likely implementation time in the circumstances of the nomination, and provide recommendations. In evaluating, MBTOC should request written advice from the nominating Party, which may include further information from the manufacturer of an alternative.
35. In situations where MBTOC recommends a nomination on grounds that it is necessary to have a period for adoption of alternatives, the basis for calculating the time period must be explained fully in the TEAP report and take fully into account the information provided by the nominating Party, the supplier, the distributor or the manufacturer. Relevant factors for such a calculation include the number of enterprises that need to transition, e.g., the number of fumigation and pest control companies, estimated training time assuming full effort, opportunities for importing alternative equipment and expertise if not available locally, and costs involved.
36. A case-by-case approach by MBTOC for each specific nomination (on the basis of information provided according to paragraph 35 above) is necessary above a one-size-fits-all approach when considering penetration of alternatives and transition times. [...]

Decision XVI/6. Accounting framework

Noting with appreciation the work undertaken by the Technology and Economic Assessment Panel, pursuant to decision Ex.I/4, paragraph 9 (f), in developing an accounting framework,

Mindful that after the end of 2005 each Party which has been granted a critical-use exemption is requested to submit information on the quantities of methyl bromide produced, imported and exported by Parties under the terms of the critical-use exemptions,

Aware that such information must be submitted with a Party's nomination using the accounting framework format,

1. To adopt the accounting framework, as set out in annex II to the report of the Sixteenth Meeting of the Parties;
2. To request the Technology and Economic Assessment Panel to include the accounting framework in the next version of the Handbook on Critical Use Nominations for Methyl Bromide;

[Accounting framework is presented on next page]

Decision XVII/9: Critical-use exemptions for methyl bromide for 2006 and 2007

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee,

Noting with appreciation that some Parties have made substantial reductions in the quantities of methyl bromide authorized, permitted or licensed for 2005 and have significantly reduced the quantities for 2006,

Noting that Parties submitting requests for methyl bromide for 2007 have supported their requests with a national management strategy,

1. For the agreed critical-use categories for 2006, set forth in table A of the annex to the present decision for each Party, to permit, subject to the conditions set forth in the present decision and decision Ex.I/4, to the extent that those conditions are applicable, the levels of production and consumption for 2006 set forth in table B of the annex to the present decision which are necessary to satisfy critical uses;
2. For the agreed critical-use categories for 2007, set forth in table C of the annex to the present decision for each Party, to permit, subject to the conditions set forth in the present decision and in decision Ex. I/4, the levels of production and consumption for 2007 set forth in table D of the annex to the present decision which are necessary to satisfy critical uses, with the understanding that additional levels of production and consumption and categories of uses may be approved by the Meeting of the Parties to the Montreal Protocol in accordance with decision IX/6;
3. That a Party with a critical use exemption level in excess of permitted levels of production and consumption for critical uses is to make up any such differences between those levels by using quantities of methyl bromide from stocks that the Party has recognized to be available;
4. That Parties shall endeavour to licence, permit, authorize or allocate quantities of critical-use methyl bromide as listed in tables A and C of the annex to the present decision;
5. That each Party which has an agreed critical use renews its commitment to ensure that the criteria in paragraph 1 of decision IX/6 are applied when licensing, permitting or authorizing critical use of methyl bromide and that such procedures take into account available stocks of banked or recycled methyl bromide. Each Party is requested to report on the implementation

of the present paragraph to the Ozone Secretariat by 1 February for the years to which this decision applies;

6. That Parties licensing, permitting or authorizing methyl bromide that is used for 2007 critical uses shall request the use of emission minimization techniques such as virtually impermeable films, barrier film technologies, deep shank injection and/or other techniques that promote environmental protection, whenever technically and economically feasible;
7. To request Parties to endeavour to use stocks, where available, to meet any demand for methyl bromide for the purposes of research and development;
8. To request the Quarantine and Pre-shipment Task Force of the Technology and Economic Assessment Panel to evaluate whether soil fumigation with methyl bromide to control quarantine pests on living plant material can in practice control pests to applicable quarantine standards, and to evaluate the long-term effectiveness of pest control several months after fumigation for this purpose, and to provide a report in time for the twenty-sixth meeting of the Open-ended Working Group;
9. That each Party should ensure that its national management strategy for the phase-out of critical uses of methyl bromide addresses the aims specified in paragraph 3 of decision Ex.I/4;
10. To request the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee to report for 2005 and annually thereafter, for each agreed critical use category, the amount of methyl bromide nominated by a Party, the amount of the agreed critical use and either:
 - (a) the amount licensed, permitted or authorised; or
 - (b) the amount used.

Annex II
Reporting accounting framework for critical uses of methyl bromide
(all quantities expressed in metric tonnes)

Party: _____

A	B	C	D		E (C + D)	F (B - E)	G	H (G + E)	I	J	K² (H - I - J)
Year of Critical Use	Quantity Exempted for year of Critical Use¹	Quantity Acquired by Production for CU	Quantity Acquired for Critical Use by Import and Country(ies) of Manufacture		Total Quantity Acquired for Critical Use	Quantity Authorised but not Acquired	Amount on Hand at Start of Year²	Available for Use in Current Year	Amount Used for Critical Use	Amount Destroyed⁴	Amount on Hand at End of Year³
			Amount	Country(s)							

Notes:

1. Exempted by the Parties to the Montreal Protocol. Note that the critical use for a particular year may be the sum of quantities authorized by decision in more than one year.
2. Where possible, national Governments should include quantities on hand as of 1 January 2005 and for each year thereafter. National Governments that are not able to estimate quantities on hand as of 1 January 2005 can track the subsequent inventory of methyl bromide produced for critical uses (column L).
3. Carried forward as “Amount on hand at start of year” for next year.
4. MBTOC Handbook notes that Destruction of MB must be done by an approved process.

Annex 3. Methyl bromide use trends – historical and current

Table 3.A. Major methyl bromide uses and consumption in the EC (tonnes), 1993 compared to 2006

Crops/uses	1993 (estimated for 8 major Member States)	2006 (approved CUEs for 25 Member States)
Tomato	[4,270] (29%)	532 (32%)*
Strawberry (fruit + runners)	3,055 (21%)	618 (37%)
Flowers, bulbs, ornamentals	1,049 (7%)	140 (9%)
Cucumber	847 (6%)	0*
Melon	775 (5%)	38 (2%)
Vegetables, salad – unspecified	731 (5%)	-
Fruit – unspecified	>715 (5%)	-
Pepper, eggplant	697 (5%)	163 (10%)
Nurseries	487 (3%)	6 (<1%)
Potting soil	298 (2%)	0
Tobacco seedbeds	125 (1%)	0
Potato, lettuce, citrus, mushrooms	165 (1%)	0
Postharvest uses	[...]	145 (9%)
Miscellaneous	170 (1%)	0
Total tonnage MB	[14,385] (100%)	1,655 (100%)

* 2006 CUE of 36,500 kg for tomato-cucumber cropping system in Greece included in the 2006 Tomato CUE figure.

Table 3.B. Report on Accounting Framework for Critical Uses of Methyl Bromide in the EC in 2005 (version 10 February 2006)

1	2	3	4	5	6	7	8	9	10	11	
A					B	B2		C	C2	D	
						From ODS Website		From ODS Website	From ODS Website	From ODS Website	
Year of critical use, 1 Jan - 31 December 2005	European Community	Quantity approved by the Parties at ExMOP1 (kg)	Quantity approved by the Parties at MOP16 (kg)	TOTAL quantity approved by the Parties (see footnote 1) (kg)	Quantity authorised in the Commission Decision for 1 Jan - 31 Dec 2005 (kg)	Stocks (kg)	Quantity available for importation or for production for critical use (kg)	Quantity acquired by import for critical use (ODP-kg)	Quantity acquired by import for critical use (kg)	Quantity acquired for critical use by import & countr(y)(ies) of Manufacture	
										kg	Country(s)
										Israel	2,209,508
										USA	220,190
		4,010,048	382,514	4,392,562	2,777,083	216,198	2,561,023	1,458,484	2,430,807		2,429,698

12	13	14	15	16	17	18	19
E	F	G	H	I	J	K	L
(C2)	(B - E)	(B2)	(E + G)				(H - I - J - K)
Total quantity acquired for critical use (kg)	Quantity authorised but not acquired (kg)	Amount on hand at start of year (see footnote 2) (kg)	Amount available for use in current year (kg)	Amount used for critical use (kg)	Amount exported (kg)	Amount destroyed (kg)	Amount on hand at end of year (see footnote 3) (kg)
2,430,807	346,276	216,198	2,647,005	2,530,035	0	0	116,511

¹ Exempted by the Parties to the Montreal Protocol. Note that the critical use for a particular year may be the sum of quantities authorized by decision in more than one year.

² Where possible, national Governments should include quantities on hand as of 1 January 2005 and for each year thereafter. National Governments that are not able to estimate quantities on hand as of 1 January 2005 can track the subsequent inventory of methyl bromide produced for critical uses (column L).

³ Carried forward as "Amount on hand at start of year" for next year.

Table 3.C: MB consumption for CUEs, by Member State and use-category

Based on licensed CUEs for 2005 and 2006, and quantity nominated for 2007

Member State	Soil (S)/ Post Harvest (PH) Critical Use category	MB (kg) licensed in 2005 ⁴	MB (kg) used in 2005	MB (kg) licensed in 2006 ⁵	MB (kg) nominated for 2007 ⁶
Belgium	(S) Asparagus	225	97	0	0
	(S) Chicory	0	0	0	0
	(S) Cucumber	549	346	0	0
	(S) Cut flowers chrysanthemum	896	896	0	0
	(S) Cut flowers excl roses and chrysanthemum	2,794	626	0	0
	(S) Endive	2,190	760	0	0
	(S) Leeks and onions (plantlets)	660	0	0	0
	(S) Lettuce - protected	23,000	11,456	0	0
	(S) Nursery	630	0	0	0
	(S) Berryfruit, orchard pome fruit berries replant	1,350	0	0	0
	(S) Pepper and eggplant - protected	3,000	897	0	0
	(S) Strawberry runners	2,306	0	0	0
	(S) Tomatoes - protected	4,846	833	0	0
	(S) Tree nursery	230	0	0	0
	(PH) Mills and processors	200	200	0	0
	(PH) Electronic equipment	50	50	0	0
	(PH) Wood working premises	101	101	0	0
	(PH) Food processing facilities	300	300	0	0
	(PH) Food storage (dry) facilities	120	120	0	0
	(PH) Old buildings, monuments & houses	438	438	0	0
	(PH) Empty silo	43	43	0	0
	(PH) Food processing premises	15	15	0	0
	(PH) Old buildings	282	200	0	0
	(PH) Antique structures & furniture, objects	199	188	0	0
	(PH) Flour mill (Rentokill)	72	0	0	0
	(PH) Flour mills	4,264	4,078	2,752	0
	(PH) Structures and objects (churches, houses, food processing structures)	307		307	

⁴ According to Commission Decision (23 August 2005) determining the quantities of methyl bromide permitted to be used for critical uses in the European Community from 1 January to 31 December 2005 pursuant to Regulation (EC) No 2037/2000 of the European Parliament and of the Council on substances that deplete the ozone layer (notified under document number C(2005) 468) (2005/625/EC).

⁵ Based on outcome of the 20 December 2005 Meeting of the Management Committee on the implementation of the European Parliament and Council regulation (EC) No. 2037/2000 on "Substances that deplete the ozone layer".

⁶ Based on outcome of bilateral meetings of MSs and COM November – December 2005, which discussed the licensing and nomination figures per Member State for 2006 and 2007 respectively, subject to further review by MBTOC/TEAP and EC licensing for 2007.

Member State	Soil (S)/ Post Harvest (PH) Critical Use category	MB (kg) licensed in 2005 ⁴	MB (kg) used in 2005	MB (kg) licensed in 2006 ⁵	MB (kg) nominated for 2007 ⁶
	(PH) Churches, monuments, ships quarters	59	12.4	0	0
	(PH) Structures and objects (churches, houses, food processing)	307	13.5	0	0
Total Belgium		49,433	21,670	3,059	0
France	(S) Carrots (sandy-soil)	8,000	7,950	5,000	2,000
	(S) Cut flowers, bulbs	21,785	21,764	12,000	5,000
	(S) Forest nurseries	2,000	2,000	1,500	0
	(S) Orchard replant	10,000	9,951	7,500	0
	(S) Orchard and raspberry nurseries	2,000	1,905	2,000	2,000
	(S) Pepper	0		0	0
	(S) Strawberry fruit	34,000	34,000	0	0
	(S) Strawberry runners	37,600	37,433	35,000	28,000
	(S) Tomato and eggplant	33,250	33,225	0	0
	(S) Cucurbits, cucumber	21,140	21,141	0	0
	(S) Melon seeds	0	0	0	0
	(PH) Chestnuts	2,000	1,500	1,800	1,800
	(PH) Mills and processors	21,440	21,376	8,000	5,000
	(PH) Seeds	135	135	121	100
(PH) Rice	1,400	1,400	0	0	
Total France		194,750	193,780	72,921	43,900
Germany	(PH) Artefacts	250	100	0	0
	(PH) Mills and processors	19,350	0	0	0
Total Germany		19,350	100	0	0
Greece	(S) Cucurbits	24,000	23,869	36,500	0
	(S) Tomato	92,000	91,999		
	(S) Cut flowers	8,000	2,000	0	0
	(PH) Commodity dried fruit	3,081	3,081	2,931	900
	(PH) Mills and processors	16,000	16,000	8,000	1,340
Total Greece		143,081	136,949	47,431	2,240
Ireland	(PH) Flour mills	0		888	611
Total Ireland		0		888	611
Italy	(S) Cut flowers, bulbs	162,000	139,766.5	74,000	30,000
	(S) Eggplant	96,000	88,499.1	40,000	15,000
	(S) Melon	112,000	95,939.4	38,000	10,000
	(S) Pepper	111,000	100,142.5	73,000	67,000
	(S) Strawberry fruit	130,000	111,286.7	75,000	35,000
	(S) Strawberry runners	78,000	57,773.8	60,000	35,000
	(S) Tomato	671,000	614,838.6	495,000	418,000
	(PH) Artefacts	4,180	3,009.8	5,000	5,000
	(PH) Mills and processors	89,600	94,528.0	55,000	25,000
Total Italy		1,453,780	1,305,784.5	915,000	640,000
Netherlands	(PH) Strawberry runners	120	138	120	120
Total Netherlands		120	138	120	120
Poland	(S) Strawberry runners	34,600	33,908	28,000	25,000
	(PH) Coffee and cocoa	0		1,836	2,000

Member State	Soil (S)/ Post Harvest (PH) Critical Use category	MB (kg) licensed in 2005 ⁴	MB (kg) used in 2005	MB (kg) licensed in 2006 ⁵	MB (kg) nominated for 2007 ⁶
	(PH) Herbs and dried mushrooms	3,500	3,465	2,700	1,800
Total Poland		38,100	37,373	32,536	28,800
Portugal	(S) Cutflowers	35,000	35,000	0	0
Total Portugal		35,000	35,000	0	0
Spain	(S) Cutflowers Andalusia	47,700	41,102	39,000	35,000
	(S) Cutflowers Catalonia	18,000	17,787	15,000	12,840
	(S) Peppers	150,000	150,000	50,000	45,000
	(S) Strawberry fruit	330,000	319,776	180,000	80,000
	(S) Strawberry runners	230,000	217,427	230,000	230,000
	(PH) White rice processing storage	0		36,000	0
Total Spain		775,700	746,092	550,000	402,840
United Kingdom	(S) Ornamental tree nurseries	5,000	3,650	2,500	0
	(S) Cut flowers	0		0	0
	(S) Raspberries	3,700		1,500	0
	(S) Strawberry fruit	32,000	35,150	10,000	0
	(S) Topsoil	0		0	0
	(PH) Aircraft	0		0	165
	(PH) Cheese stores traditional	1,561	590	1,248	1,248
	(PH) Whitworths structures	880	0	450	257
	(PH) Whitworths commodities	1,571	508	900	0
	(PH) Spices structures	1,080		1,591	908
	(PH) Food processing Ryvita	1,787	1,787	839	479
	(PH) Mills	10,195		7,900	4,509
	(PH) Cereal processing plant	8,131		6,098	3,480
				11,464	
	(PH) Spices and pappadums	46	0	37	30
	(PH) Spices processing (Pataks)	1,000	0	0	0
	(PH) Spices structures (Newly Weds Foods)	1,125	0	0	0
	(PH) Stored spices	0	0	0	0
(PH) Tobacco (product machinery)	0	0	0	0	
(PH) Woven baskets	0	0	0	0	
Total United Kingdom		68,076	53,149	33,063	11,076
Overall Total		2,777,640	2,530,035	1,655,018	1,129,587

Footnote: Nominations by the EC for 2007 have been submitted to the Ozone Secretariat for review by MBTOC and the Parties of the Montreal Protocol. Subsequent review for licensing at EC level will take account of any further developments in alternatives and stocks, as described in Chapters 3 – 5 of the ECMS.

Table 3.D: CUEs in EC in 2006, by use-category, indicating relevant Member States and quantity of MB licensed for 2006

Percentages relate to the total quantity of MB licensed

Soil		Post-Harvest
<i>Nursery</i>	<i>Crop production</i>	
<u>Strawberry runners (soil)</u> (22%) France: 35,000 kg Italy: 60,000 kg Poland: 28,000 kg Spain: 230,000 kg	<u>Tomato (31%)</u> Greece: 36,500 kg for tomato-cucumber cropping system Italy: 495,000 kg <u>Strawberry Fruit (16%)</u> Italy: 75,000 kg Spain: 180,000 kg United Kingdom: 10,000 kg <u>Cutflowers (9%)</u> France: 12,000 kg Italy: 74,000 kg Spain: 54,000 kg <u>Pepper (8%)</u> Italy: 73,000 kg Spain: 50,000 kg <u>Eggplant (2%)</u> Italy: 40,000 kg <u>Melon (2%)</u> Italy: 38,000 kg <u>Orchard Replant (<1%)</u> France: 7,500 kg <u>Carrots (<1%)</u> France: 5,000 kg <u>Raspberry (<1%)</u> United Kingdom: 1,500 kg	<u>Mills, food processing facilities and related structures (5%)</u> Belgium: 2,752 kg France: 8,000 kg Greece: 8,000 kg Italy: 55,000 kg Ireland: 888 kg United Kingdom: 16,085 kg <u>Commodities / food stuffs (3%):</u> <u>Chestnuts</u> France: 1,800 kg <u>Coffee & cocoa</u> Poland: 1,836 kg <u>Herbs & dried mushrooms</u> Poland: 2,700 kg <u>Herbs & spices</u> United Kingdom: 37 kg <u>Miscellaneous (grains, nuts, beans, dried fruits, seeds)</u> Greece: 1,347 kg United Kingdom: 900 kg <u>Rice</u> Greece: 1,584 kg for rice and legumes Spain: 36,000 kg <u>Strawberry runners (plantlets)</u> Netherlands: 120 kg <u>Seeds</u> France: 121 kg <u>Artefacts / artistic heritage and musea (<1%)</u> Belgium: 307 kg Italy: 5,000 kg
Total 359,000 kg MB (21%)	Total 1,151,500 kg MB (70%)	Total 144,518 kg MB (9%)

Table 3.E: Previous methyl bromide uses in the European Community

MB uses for which CUEs were not requested, and nominations that were not approved because alternatives are available

Soil Sector	Phase-out year
Aromatic plants	n.d.
Artichoke	n.d.
Asparagus, nurseries and replant	2006
Basil	2005
Beans	n.d.
Chicory	2005
Citrus fruit	n.d.
Courgette (zucchini)	2005
Endive	2006
Herbs	n.d.
Leeks	2006
Lettuce	2006
Mushrooms	n.d.
Nut trees	n.d.
Onions	2006
Potato	n.d.
Pot plants	n.d.
Potting soil, top soil	2005
Radish	2005
Seedbeds for vegetables	n.d.
Substrate disinfestation	n.d.
Tobacco crop	n.d.
Tobacco seedbeds	n.d.
Vineyards	n.d.
Watermelon	n.d.
Various unspecified nursery uses	n.d.
Post-Harvest Sector	Phase-out year
Antiques (moveable objects)	2005
Artefacts (moveable objects)	2005
Crafts	n.d.
Dried fish	n.d.
Domestic dwellings, houses	n.d.
Electronic equipment	2006
Empty silos	2006
Feathers	n.d.
Fodder	n.d.
Fur	n.d.
Furniture (moveable objects)	n.d.
Tea	n.d.
Tobacco	n.d.
Ships	n.d.
Wood-working premises	2006
Woven baskets	2005

Annex 4. Alternatives that are registered and existing in the EC

Table 4.A. Leading MB alternatives by pest category in the EC, soil sector

For information on availability, refer to series of Tables in Annex 4.C

Pest category	Existing leading MB alternatives
Nematodes (mainly <i>Meloidogyne</i> spp. and <i>Pratylenchus</i>)	<ul style="list-style-type: none"> • Chemicals <ul style="list-style-type: none"> ○ 1,3-dichloropropene – especially by drip application ○ Dazomet ○ Ethoprophos (Sonimul-L, Mocap) ○ Enzone ○ Metam sodium ○ Other specific nematicides • Grafting (on resistant rootstock) • Replacement substrates (various and free of pests) – for specific crops • Replacement soil/sand (free of pests) • Resistant varieties • Rotating crops • Soil-less cultivation • Soil steaming (modern method) • Soil solarisation (especially for protected crops and seedling production) <p>+ Combinations of the above</p>
Soil borne pathogens	<ul style="list-style-type: none"> • Chemicals <ul style="list-style-type: none"> ○ Azoxystrobin ○ Carbendazin ○ Chloropicrin ○ Dazomet ○ Metam sodium ○ Other specific fungicides • Grafting (on resistant rootstock) • Replacement substrates (various and free of pests, particularly for container produced nursery and protected plants) • Replacement soil/sand (free of pests) • Resistant varieties • Soil-less cultivation • Soil steaming (modern) • Soil solarization (especially for protected crops and seedling production) <p>+ Combinations of the above</p>
Weeds	<ul style="list-style-type: none"> • Chemicals <ul style="list-style-type: none"> ○ Metam sodium ○ Specific herbicides, e.g. R fluazifop-p-butyl, nalofoxop-r, quizalofop • Mulches • Soil-less cultures • Soil solarisation (especially for protected crops and seedling production) • Soil steaming (modern) • Sterile substrates and soils (particularly for container produced)

Pest category	Existing leading MB alternatives
	nursery stock and protected crops) + Combinations of the above

Table 4.B. Leading MB alternatives by pest category in the EC, post-harvest sector

For information on availability, refer to series of Tables in Annex 4.C

Pest category	Existing leading MB alternatives
Dry-rot fungi	<ul style="list-style-type: none"> • Heat • High frequency technique • Wood preservatives - foam formulation of fungicides <p>+ Combinations of the above</p>
Insects (wood boring, stored product, and other groups of insects)	<ul style="list-style-type: none"> • Controlled atmospheres (CO₂ fumigation) • Cooling or freezing • Heat + controlled humidity • Heat + IPM • High pressure + CO₂ • Hot water • Humidified nitrogen, with heat if necessary, in fixed chambers or mobile cocoons or bubbles • Hydrogen cyanide • Integrated pest management, including sanitation (cleaning, scrubbing surfaces, prevention of infestation, selected use of insecticides) • Irradiation • Magnesium phosphide • Oxygen absorber sachet (iron + activator) + barrier plastic film used for individual wrapped artefacts • Phosphine + moderate heat or CO₂, combined with corrosion avoidance practices when necessary • Specific insecticides, such as pyrethroids • Steam • Sulfuryl fluoride for non-food uses • Vacuum-hermetic treatments <p>+ Combinations of the above</p>
Mites (in general)	<ul style="list-style-type: none"> • Cold temperature storage for some species • Controlled atmospheres (CO₂ fumigation) • Freezing • Irradiation • Magnesium phosphide • Phosphine + moderate heat • Sanitation / Integrated pest management (cleaning, scrubbing surfaces, prevention of infestation, wax coating on cheeses) • Specific acaricides • Steam treatment <p>+ Combinations of the above</p>
Cheese mite (<i>Acarus siro linmarus</i>)	<ul style="list-style-type: none"> • Integrated pest management, incl sanitation (cleaning, scrubbing surfaces, prevention of infestation, wax coating on cheeses)

Pest category	Existing leading MB alternatives
	<ul style="list-style-type: none"> • Ozone + UV light + Combinations of the above
Strawberry mite	<ul style="list-style-type: none"> • Acaricides • Pure phosphine gas • Steam treatment + Combinations of the above
Rodents	<ul style="list-style-type: none"> • Controlled atmospheres (CO₂ fumigation) • Heat (not accepted in some Member States for ethical reasons) • Hydrogen cyanide • Rodenticides (e.g. Sodium mono-flouracetate (1080), zinc phosphide, anticoagulants) • Rodent-proofing and trapping + Combinations of the above

Annex 4.C. EC Database of existing MB alternatives

This Annex provides a series of tables, one for each critical use category (e.g. nursery trees, strawberry fruit), listing the key pests and examples of available alternatives. These Tables can be found on the Ozone Secretariat website of [soil and postharvest databases](#) and are intended to be living documents and updated annually.

Two examples of summary tables are provided below, for tree nurseries (soil sector, nurseries) and artefacts (postharvest), but the **FULL TABLES ARE SHOWN ON THE CIRCA WEBSITE**

Example: Table 4.C.1. Soil sector – Nursery: Tree Nurseries (Forest, Orchard-fruit trees, Ornamental trees)

Member State	Key pests controlled by this alternative	Examples of existing alternatives, including combinations (R = Registered, U = Used commercially)
Belgium <ul style="list-style-type: none"> • MB phase-out: 1-1-2006 • Crop area: 81 ha (51 ha tree nursery, 30 ha nursery) in 2004 	Nematodes only (<i>Meloidogyne</i> spp., other nematodes)	<ul style="list-style-type: none"> • 1,3-D (R) • Dazomet (R), using uniform distribution equipment • Metam sodium (RU) • Steam
	Soil borne fungi only (<i>Phytophthora</i> spp., <i>Verticillium</i> spp. replant diseases)	<ul style="list-style-type: none"> • Chloropicrin (RU) • Dazomet (R), using uniform distribution equipment • Metam sodium (RU) • Steam
	Combination of nematodes, soil borne fungi and weeds (species as listed above)	<ul style="list-style-type: none"> • Dazomet (R), using uniform distribution equipment • Metam sodium (RU) • Steam • 1,3-D and chloropicrin, not mixed (R as separate products) • Metam sodium and Chloropicrin, not mixed (R as separate products) • Metam sodium and Dazomet, not mixed (R as separate products)
	Soil borne fungi (<i>Phytophthora</i> spp., <i>Verticillium</i> spp. replant diseases)	<ul style="list-style-type: none"> • Chloropicrin (R) • Metam sodium (R)
	Combination of nematodes, soil borne fungi and weeds (species as listed above)	<ul style="list-style-type: none"> • Metam sodium (R) • 1,3-D and chloropicrin, not mixed (R as separate products) • 1,3-D and Metam sodium, not mixed (R as separate products) • Metam sodium and Chloropicrin, not mixed (R as separate products)
Alternatives under development for this crop		<ul style="list-style-type: none"> • Substrates, containerised plants, potting mix, growth media used in many countries in Europe

Example: Table 4.C.13. Post Harvest sector – Artefacts, artistic heritage and museums

Member State	Key pests controlled by this alternative	Examples of currently existing alternatives, including combinations (R = Registered, U = Used commercially)
Germany	<i>Anobium punctatum</i> , <i>Hylotrupes bajulus</i> , <i>Lyctus brunneus</i> , <i>Xestobium rufovillosum</i> , termites, beetles (Dermestidae, Anobiidae, Lyctidae, Cerambycidae), Psocoptera, Dictyoptera (Blattoidea)	<ul style="list-style-type: none"> • Sulfuryl fluoride for non-food uses, combined with heat if necessary (RU for historic buildings and churches) • Hydrogen cyanide (R until 31-8-2006, U) • Controlled atmospheres (N2 and CO2) (U) • Heat (U) • Surface application or injection of insecticides (RU)
	Movable artefacts (termites, beetles (Dermestidae, Anobiidae, Lyctidae, Cerambycidae), Psocoptera, Dictyoptera (Blattoidea), <i>Anobium punctatum</i> , <i>Xestobium rufovillosum</i>)	<ul style="list-style-type: none"> • Sulfuryl fluoride for non-food items (RU) • Phosphine, combined with moderate heat when necessary (RU when sensitive metals are not present) • Hydrogen cyanide (RU) • Humidified nitrogen, combined with moderate heat if necessary, in fixed chambers or mobile cocoons or bubbles (U for museum artefacts, archives and heritage items – not against fungi)
	Dry-rot fungus in historical buildings and fixed artefacts	<ul style="list-style-type: none"> • Wood preservatives (boric acid) (R, U except for vulnerable pieces of art) • Heat (available, U except for vulnerable pieces of art) • High frequency technique (available, U except for vulnerable pieces of art) • Fungicides (propiconazol, carbendazim, isothiazolone, etc) (R, U except for vulnerable pieces of art)
Alternatives under development for this crop		<ul style="list-style-type: none"> • Sulfuryl fluoride for non food uses (info Dow: currently no further registrations planned, but in case of commercial interest , this can be done)

Sources used for compiling the tables:

MBTOC reports, registration information provided by experts and Member States, EC draft database of available alternatives

([http://hq.unep.org/ozone/Information_for_the_Parties/Decisions/Decs_MeBr/Dec_Ex_I_4\(1\)/index.asp](http://hq.unep.org/ozone/Information_for_the_Parties/Decisions/Decs_MeBr/Dec_Ex_I_4(1)/index.asp)), and information provided in CULA-CUNA forms of 2006-7, and other technical reports.

ANNEX 4.D. CERTIFICATION REQUIREMENTS AND STANDARDS RELATING TO PERMITTED LEVELS OF PEST CONTAMINATION, ETC.

5.D.1. Strawberry runner health certification requirements in the Netherlands (source: Certificeringsreglement Aardbeiplanten NAKB, 1996, subject to update in 2006)

General health requirements for strawberry runners:

1. Crop produced on field without rootknot nematode infestation
2. 0-Tolerance for the following diseases: Arabis mosaic virus, *Colletotrichum acutatum*, *Phytophthora fragariae* pv. *fragariae*, raspberry ringspot virus, strawberry crinkle virus, strawberry latent ringspot virus, strawberry mild yellow edge virus, tomato black ring virus, *Xanthomonas fragariae*
3. Practically no to no symptoms of the following pests: *Aphelenchoides* spp., *Caetosiphon fragariae*, *Ditylenchus* spp., Tarsonemidae, *Tetranychus urticae*, *Alternaria alternata*, *Gnomonia comari*, *Sphaerotheca alchemillae*, *Verticillium* spp., *Phytophthora cactorum*.
4. Practically no to no symptoms of the following weeds: *Cyperus esculentum*, other persistent weeds.

Specific health requirements, leading to classification in SEE, SE, EE or E (S = Supreme; E = Elite):

Pest	Maximum tolerance off field (%)			
	SEE	SE	EE	E
Aphids, a.o. <i>Chaetosiphon fragaefolii</i>	0	0	0.5	1
<i>Steneotarsonemus fragariae</i>	0	0	0	0
<i>Aphelenchoides</i> spp.	0	0	0	0.5
<i>Ditylenchus dipsaci</i>	0	0	0	0.5
<i>Pratylenchus</i> spp.	0	0	0	0.5
Virus diseases	0	0	0	0
<i>Gnomonia comari</i>	0	0	0.5	1
<i>Alternaria alternata</i>	0	0.5	1	1
<i>Rhizoctonia solani</i>	0	0.5	0.5	1
<i>Botrytis cinerea</i>	0	0.5	0.5	1
<i>Phytophthora cactorum</i>	0	0	0	0.5
<i>Verticillium</i> spp.	No symptoms			

5.D.2. Strawberry runner health certification requirements in Poland (source: Polish Journal of Laws # 59, item 565, 9 April 2004)

Strawberry runners are certified as SE (super elite) – pre-basic material; E1 and E2 (elite, basic material); O (original, certified material). Field inspection takes place in summer, before lifting of plants or before sale of potted plants.

General crop and health requirements for strawberry runners in Poland:

1. Crop produced at sufficient distance from wild plants of genus *Fragaria* spp. (50 to 200 m distance);
2. Pure species and variety;
3. Crop produced on field not planted to strawberry, potato, cucumber, tomato, flax, currant bush, gooseberry, raspberry or blackberry bush over the previous 4 years;
4. Crop should be free from quarantine organisms;
5. No visible symptoms of the following:
 - i. Pathogens: Arabis mosaic virus, Raspberry ringspot virus, Tomato black ring virus, Strawberry mild yellow edge virus, Strawberry mottle virus; Strawberry vein banding virus, Strawberry green petal phytoplasma, Aster yellows phytoplasma, pathogen causing strawberry june yellows, *Phytophthora cactorum*, *Verticillium dahliae*, *Colletotrichum* spp.,

Mycosphaerella fragariae, *Sphaeroteca macularis* ssp. *fragariae*, *Diplocarpon earliana*, *Meloidogyne* spp., *Ditylenchus dipsaci*.

- ii. Pests: *Aphelenchoides ritzemabosi*, *Aphelenchoides fragariae*, *Phytonemus pallidus* ssp. *fragariae*, Aphididae, Jassidae, Thripidae, *Tetranychus urticae*.

Annex 5. Registration procedures for chemical MB alternatives

Annex 5.A. Overview of Plant Protection Products Directive and Biocidal Products Directive

The Plant Protection Products Directive (91/414/EEC) harmonizes the placing on the market of plant protection products *i.e.* agricultural pesticides. The Biocidal Products Directive (98/8/EC) harmonizes the placing on the market of biocidal products *i.e.* all other non-agricultural pesticides.

The following table provides a brief overview and comparison of both Directives – full information is available on the websites listed below.

Table 5.A. Comparison of Biocidal Products Directive and Plant Protection Products Directive

	<u>Biocidal Products Directive (BPD)</u> 98/8/EC	<u>Plant Protection Products Directive (PPPD)</u> 91/414/EEC
Definition	<p>Biocidal Products are active substances and preparations containing one or more active substances, put up in the form in which they are supplied to the user, intended to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect on any harmful organism by chemical or biological means.⁷</p> <p>An exhaustive list of 23 product types with an indicative set of descriptions within each type is given in Annex V to this Directive.</p>	<p>Plant Protection Products are active substances and preparations containing one or more active substances, put up in the form in which they are supplied to the user, intended to:</p> <ol style="list-style-type: none"> 1. protect plants or plant products against all harmful organisms or prevent the action of such organisms, in so far as such substances or preparations are not otherwise defined below; 2. influence the life processes of plants, other than as a nutrient, (e.g. growth regulators); 3. preserve plant products, in so far as such substances or products are not subject to special Council of Commission provisions on preservatives; 4. destroy undesired plants; or 5. destroy parts of plants, check or prevent undesired growth of plants.⁸

⁷ According to Article 2(1)(a) of BPD.

⁸ According to Article 2(1) of PPPD.

Key criteria	<p>Authorization only if the biocidal product:⁹</p> <ul style="list-style-type: none"> (i) is sufficiently effective, (ii) has no unacceptable effects on the target organisms, such as unacceptable resistance or cross-resistance or unnecessary suffering and pain for vertebrates, (iii) has no unacceptable effects itself or as a result of its residues, on human or animal health, directly or indirectly (e.g. through drinking water, food or feed, indoor air or consequences in the place of work) or on surface water and groundwater, (iv) has no unacceptable effect itself, or as a result of its residues, on the environment having particular regard to the following considerations: <ul style="list-style-type: none"> • its fate and distribution in the environment; particularly contamination of surface waters (including estuarial and seawater), groundwater and drinking water, • its impact on non-target organisms. 	<p>Authorisation only if the plant protection product:¹⁰</p> <ul style="list-style-type: none"> (i) is sufficiently effective; (ii) has no unacceptable effect on plants or plant products; (iii) does not cause unnecessary suffering and pain to vertebrates to be controlled; (iv) has no harmful effect on human or animal health, directly or indirectly (e.g. through drinking water, food or feed) or on groundwater; (v) has no unacceptable influence on the environment, having particular regard to the following considerations: <ul style="list-style-type: none"> • its fate and distribution in the environment, particularly contamination of water including drinking water and groundwater, • its impact on non-target species.
-----------------	--	--

Annex 5.B. Plant Protection Products Directive (91/414/EEC)

Underlined phrases in this Annex have hotlinks to relevant websites.

The European Commission DG SANCO has provided an overview of the Plant Protection Products Directive (PPPD, [Council Directive 91/414/EEC](#)) on the [PPPD overview website: http://europa.eu.int/comm/food/plant/protection/evaluation/index_en.htm](http://europa.eu.int/comm/food/plant/protection/evaluation/index_en.htm)

Protection of human health and the environment is a major concern for European Commission policy on the authorisation of active substances of plant protection products. In 1992, the European Commission started a Community-wide review programme for all active ingredients used in plant protection products that were on the market within the European Union on or before 25 July 1993 (existing active substances). This review is based on scientific assessments and applicants have to demonstrate that the use of the active substances poses no unacceptable risks to human health and the environment. This review programme will be completed by 2008.

Principle of **mutual recognition** (Article 10 of PPPD): A plant protection product authorised in one Member State shall be authorised upon application also in any other Member State unless there are specific grounds to derogate from this principle of mutual recognition.

According to Article 12 of Directive 91/414/EEC (PPPD), Member States shall within a period of one month at the end of each quarter at least, inform each other and the Commission in writing of any plant protection products authorized or withdrawn, in accordance with the provisions of this Directive, indicating at least:

- (a) the name or business name of the holder of the authorization,

⁹ According to Article 5(1)(b) of BPD – see further criteria in other subparagraphs of this Article.
¹⁰ According to Article 4(1)(b) of PPPD – see further criteria in other subparagraphs of this Article.

- (b) the trade name of the plant protection product,
- (c) the type of preparation,
- (d) the name and amount of each active substance which it contains,
- (e) the use or uses for which it is intended,
- (f) the maximum residue levels provisionally established where they have not already been set by Community rules,
- (g) where relevant, the reasons for withdrawal of an authorization,
- (h) the dossier needed for the evaluation of the maximum residue levels provisionally established.

A Commission Excel table called [Status of active substances under EU review \(doc. 3010\)](#) contains more than 1000 chemical substances including the existing and the new active substances. Based on information provided by the Member States, it indicates which MS had authorised uses prior to 25 July 1993, and which country is the responsible Rapporteur Member State (RMS) for this substance (dossier). It does not include details of the specific uses, authorisations and tonnages applied. It also provides details of the priority listing and the notification status of each substance. It does not take account of possible derogations for essential uses.

The European Commission provides a [List of Guidance Documents](#) for the implementation of the PPPD. The list below provides examples of documents relevant to the registration of alternatives under PPPD:

- ‘**Description of the Process**’ in chapter 3 of the [Technical annex](#) (Doc. SANCO/2692/2001), 25 July 2001: Flowcharts and textual explanations illustrate the different steps during the process of registering substances under the PPPD.
- **Guideline on the Preparation and Presentation of Complete Dossiers for the Inclusion** of Active Substances in Annex I of Directive 91/414/EEC (Article 5.3 and 8.2): this document briefly describes where to find templates and which formats to follow when submitting dossiers to support an active substance.
- [Instructions for industry on dossier submission](#) gives practical advice to industry.
- [Completeness check](#) evaluation forms.
- [List of contact points](#) in the Member States and in the Commission for the implementation of PPPD.

An overview of the state of main works in DG Health and Consumer Protection with regard to the implementation of PPPD is contained in the Document called [SANCO/629/00](#).

5.C. Biocidal Products Directive 98/8/EC

The [Biocidal Product Directive 98/8/EC \(BPD\)](#) aims to harmonise the European market for biocidal products and their active substances. At the same time it aims to provide protection for humans, animals and the environment. To achieve these aims the Directive lays down rules and procedures for approval of the active substances used in biocidal products at Community level and authorisation of biocidal products in the Member States. The scope of the Directive encompasses 23 [product types](#) divided into the four major areas, disinfectants, preservatives, pest control and other biocidal products.

The harmonisation of the biocidal products market is achieved by having a common set of data requirements for both active substances and biocidal products containing those active substances, and by assessing and evaluating the submitted data in accordance with harmonised evaluation criteria, the so-called “uniform principles” (see Annex VI of the Directive).

The Directive defines a biocidal product as active substances or preparations containing one or more active substances, put up in the form in which they are supplied to the user, intended to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect on any harmful organism by chemical or biological means.¹¹ When products fall within the definition above, the products are required to be authorised before they can be placed on the market for a specific use. Member States shall authorise a biocidal product only if it fulfils the following criteria:

- the active substance is listed in one of the Annexes to the Directive: Annex I (active substances in biocidal products) or IA (active substances in low-risk biocidal products)
- the biocidal product, under normal conditions, is sufficiently effective
- has no unacceptable effects (itself or as a result of its residues) on human or animal health or the environment.¹²

Principle of **mutual recognition**: When a biocidal product has been authorised in one Member State, the manufacturer can apply for mutual recognition in other Member States. Other Member States may, only under exceptional circumstances, derogate from the principle of mutual recognition.¹³

The Directive established a 10 years' transitional period from its entry into force, 14 May 2000, for the purpose of conducting a systematic examination of "existing" active substances. After such an examination, a decision is taken whether or not to include the active substance in Annex I or IA to the Directive. Following such a decision, Member States shall ensure that authorisations for biocidal products containing that active substance are in compliance with the provisions of the Directive and where necessary the authorisations are granted, modified or cancelled as appropriate. Details of the review programme have been laid down in Commission Regulations [1896/2000](#) and [2032/2003](#).

According to Article 18(1) of Directive 98/8/EC (BPD), Member States shall, within a period of one month from the end of each quarter, inform each other and the Commission of any biocidal products which have been authorised or registered within their territory or for which an authorisation or registration has been refused, modified, renewed or cancelled, indicating at least:

- (a) the name or business name of the applicant for, or the holder of, the authorisation or registration;
- (b) the trade name of the biocidal product;
- (c) the name and amount of each active substance which it contains, as well as the name and amount of each dangerous substance in the meaning of Article 2(2) of Directive 67/548/EEC and their classification;
- (d) the product-type and the use or uses for which it is authorised;
- (e) the type of formulation;
- (f) any proposed limits on residues which have been established;
- (g) conditions of the authorisation and where relevant, the reasons for the modification or cancellation of an authorisation;
- (h) an indication of whether the product is of a special type (e.g. within a frame-formulation, low-risk biocidal product)."

According to Article 24 (1) of Directive 98/8/EC (BPD), Member States have to take the necessary arrangements to monitor whether biocidal products placed on the market comply with the requirements of the Directive. Every three years after the entry into force (14 May 2000), Member States shall forward to the Commission by 30 November of the third year a report on their action in these matters together with information on any poisonings involving biocidal products. The Commission shall within one year of receipt of this information prepare and publish a [composite report](#).

¹¹ Article 2(1)(a) Directive 98/8/EC.

¹² Article 5 Directive 98/8/EC.

¹³ Article 4 Directive 98/8/EC.

The [Commission website on Directive 98/8/EC](#) is the major source of information about the progress done under the review program of the Directive.

European Commission DG ENV:

<http://europa.eu.int/comm/environment/biocides/index.htm>

- Basic Principles
- Scope/Borderline documents, manual of decisions

European Chemicals Bureau web page on Biocides Directive: <http://ecb.jrc.it/Biocides>

- provisional list of identified and notified substances
- Technical Notes for Guidance on Annex I inclusion:
 - TNG on data requirements
 - TNG on dossier preparation
 - TNG on product evaluation
 - TNG on environmental emission scenarios/on human exposure

Table 5.B: [BIOCIDAL PRODUCT TYPES](#)
 – as defined in Annex V to Directive 98/8/EC

For each main group, the left column provides the code for the relevant product type.

MAIN GROUP 1: Disinfectants and general biocidal products		MAIN GROUP 2: Preservatives		MAIN GROUP 3: Pest control		MAIN GROUP 4: Other biocidal products	
1	Human hygiene biocidal products	6	In-can preservatives	14	Rodenticides	20	Preservatives for food or feedstocks
2	Private area and public health area disinfectants and other biocidal products	7	Film preservatives	15	Avicides	21	Antifouling products
3	Veterinary hygiene biocidal products	8	Wood preservatives	16	Molluscicides	22	Embalming and taxidermist fluids
4	Food and feed area disinfectants	9	Fibre, leather, rubber and polymerised materials preservatives	17	Piscicides	23	Control of other vertebrates
5	Drinking water disinfectants	10	Masonry preservatives	18	Insecticides, acaricides and products to control other arthropods		
		11	Preservatives for liquid-cooling and processing systems	19	Repellents and attractants		
		12	Slimicides				
		13	Metalworking-fluid preservatives				

Annex 6. Registration status of MB alternatives

These tables are intended to be living documents and will be updated regularly:
Member States are requested to provide additional information and updates.

Table 6.A. Overview of registration status of chemical alternatives in soil sector

Some products are registered for specific crops or situations; in other cases they are registered for general soil fumigation.

Annex 4.C Database of alternatives provides details on registration status for specific crops.

Country	1,3-dichloropropene	Chloropicrin	Dazomet	Dimethyl disulphide	Ethanedinitrile	Enzone	Iodomethane	Metapottassium	Metasodium	Methylisothiocyanate	1,3-D+PIC	1,3-D+MITC	Nematicides	Fungicides	Herbicides
EC MSs															R
Belgium	R	R (e)	R						R				R	R	R
Czech R.															
France	R	I	R	I	-	R	-	-	R	[...]	-	-	R	R	R
Greece	R	R (d)	R						R		R (d)		R	R	R
Hungary			[R]						R				R	R	R
Ireland	R	R	R						R				R	R	R
Italy	R	R	R					R	R		I		R	R	R
Netherlands			R						R				R	R	R
Poland			R						R				R	R	R
Portugal	R		R						R		R (df)		R	R	R
Spain	R	R	R			R		R (h)	R		R (bd)		R	R	R
UK	R	R	R						R				R	R	R
Non-EC															
Australia	R	R	R		I				R		R		R	R	R
Canada	R(a)	R	R			-		-	R	[R]	R	R	R	R	R
Japan	R	R	R	-	-	-	-	-	R	R	R	R	R	R	R
USA	R(a)	R	R (c)			R(g)	I	R	R		R		R	R	R

Key to Table 6.A

R	registered
I	in process of registration
1,3-D	1,3-dichloropropene
PIC	chloropicrin
Enzone	sodium tetrathiocarbonate (enzone)
MITC	methyl isothiocyanate (MITC)
nematicides	various nematicide products, eg. oxamyl
fungicides	various fungicide products – normally specific to certain groups of fungi
herbicides	various herbicides – normally specific to certain types of weeds

Footnotes to Table 6.A

- (a) not on areas of karst topography or similar
- (b) for strawberry, tomato, pepper, carnation, tobacco, onion
- (c) registered for non-food crops, in process of registration for strawberry and tomato
- (d) provisional pending finalisation of re-registration of fumigants in the EC.
- (e) open fields only.
- (f) for tomato, strawberry, flowers, tobacco.
- (g) orchard replant and several other uses
- (h) nurseries [possibly several other uses in Spain]

Sources: TEAP May 2005, TEAP Oct 2005, information provided by MSs and experts.

Table 6.B. Overview of registration status of chemical alternatives in post-harvest sector

Some products are registered for specific situations; in other cases they are registered for more general purposes.

Annex 4.C Database of alternatives provides details on registration status for specific CUE uses.

Country	Carbon yl sulfide	Ethane dinitril e	Ethyl format e	Ethyl format e in CO ₂	Hydro gencya nide	Iodo methan e	MITC	Phosph ine - solid	Phosph ine - gas	Phosph ine +CO ₂ or N ₂	Propyl ene oxide	Sulfury l fluorid e	SF + MITC	insecti cides
EC MSs														
Austria					R (b)			R				R (a)		R
Belgium								R				[R]		R
Czech R.					R (ai)									R
Denmark								R	R (f)	R				R
France		-	-		S (i)	-	-	R	[I]	-	-	I (R soon (b)	-	R
Germany								R	R	R		R (abf)		R
Greece								R						R
Ireland								R				[I]		R
Italy								R				R (b)		R
Netherland														
Poland								R						R
Spain					R			R				[I]		R
Sweden								R				R (a)		R
UK								R				R (b)		R
Non-EC														
Australia	I (d k n)	I (a n)	R (k)	R(cdk)	-	-	-	R	R	R (a d k)	-	-	-	R
Canada					R (l)			R	R	R		R(m)		R
Japan	-	-	-		R	R (j)	R	R	-	-	-	R	R (j)	R
Switzerland								R				R (b)		R
USA								R	R	R	R (d)	R (ac)		R

Key to Table 6.B

R	registered
I	in process of registration
CO₂	carbon dioxide
MITC	methyl isothiocyanate
N₂	nitrogen
Phosphine - solid	solid formulations, phosphine-generating products
Phosphine - gas	gaseous phosphine in carbon dioxide or nitrogen (cylinders)
SF	sulfuryl fluoride
Insecticides	various residual or aerosol insecticides suitable for use in IPM programmes

Footnotes to Table 6.B

- (a) non-food structures, eg. historic buildings
- (b) empty food structures eg. mills.
- (c) mills, food processing sites, dried fruits, tree nuts, cereal grains.
- (d) stored agricultural commodities, nutmeats, cocoa, spices. PPO mixed with CO₂ is registered for stored nuts in USA.
- (e) permitted for herbs and spices.
- (f) dried fruit.
- (g) some fresh fruits and vegetables for disinfestation.
- (h) some grains and cereals or flour
- (i) not registered, but can be used for aircraft on special permission by Health Authorities
- (j) imported timber. Quarantine schedule is in preparation in Japan.
- (k) stored grains, oilseeds, grain storage premises, equipment, horticultural products.
- (l) for fumigating bee hives and for controlling bacteria and fungi
- (m) for uses without food contact.
- (n) timber

Sources: TEAP May 2005, TEAP Oct 2005, information provided by MSs and experts.

Table 6.C: Registration status of MB in the EC, by sector

[MSs are requested to submit list of MB uses registered nationally in soil sector and postharvest sector]

EC MSs	Registered MB uses – soil sector	Registered MB uses – postharvest sector
Austria		
Belgium		
Cyprus		
Czech R.ep.		
Denmark	None	
Estonia		
Finland		
France		
Germany	None	Only by specific request/authorization of authorities (no authorisations were made in 2005)
Greece		
Hungary		
Ireland		
Italy		
Latvia		
Lithuania		
Luxembourg		
Malta		
Netherlands	None	
Poland		
Portugal		
Slovakia		
Slovenia		
Spain	Cucumber, eggplant, melon, nurseries, pepper, strawberry, tomato	
Sweden		
UK		

Table 6.D: Registration status of non-chemical alternatives in soil sector

Country	Grafting	Resistant varieties (b)	Crop rotation	Solar or bio-fumigation	Steam or heat	Substrate or soil-less
Belgium	P	P	P	P	P (a)	P
Czech Rep.	P	P	P	P	P	P
France	P	P	P	P	P	P
Greece	P	P	P	P	P	P
Hungary	P	P	P	P	P	P
Ireland	P	P	P	P	P	P
Italy	P	P	P	P	P	P
Poland	P	P	P	P	P	P
Portugal	P	P	P	P	P	P
Spain	P	P	P	P	P	P
UK	P	P	P	P	P	P

Key to table 6.D

- P Permitted, i.e. can be used without need for pesticide registration
- U used in commercial practice
- (a) when mobile boilers are moved, inspection is required prior to use
- (b) Permitted when registered according to national crop variety registration lists

Table 6.E: Registration status of non-chemical alternatives in post-harvest sector

Country	CO ₂ , CA or MA	cold	sanitation	heat	N ₂	pressure	vacuum
Austria	P	P	P	P	P	P	P
Belgium	P	P	P	P	P	P	P
Czech Rep.	P	P	P	P	P	P	P
Denmark	P	P	P	P	P	P	P
France	P	P	P	P	P	P	P
Germany	R	P	P	P	P	P	P
Greece	P	P	P	P	P	P	P
Ireland	P	P	P	P	P	P	P
Italy	P	P	P	P	P	P	P
Netherlands	U	P	P	P	P	P	P
Poland	P	P	P	P	P	P	P
Spain	P	P	P	P	P	P	P
Sweden	P	P	P	P	P	P	P
UK	P	P	P	P	P	P	P

Key to table 6.E

- CA controlled atmosphere
- MA modified atmosphere
- P permitted, can be used without need for registration
- R registered as pesticidal method/procedure
- U used in commercial practice

Annex 7. Data on rates of adoption of alternatives

Table 7.A. Examples of historical rates of adoption of alternatives

The objective is to identify rapid rates of adoption that have occurred historically, to provide examples for other MB users to emulate

Alternative technologies	Crop/use	Examples of cases where alternatives were adopted rapidly	Adoption rate
Fumigants (e.g. 1,3-D, pic, metam)	Strawberry fruit (Italy)	1,3-D EC was registered Nov. 2001, Pic was registered in 2002 (Spotti 2004). Fumigation company provided some extension services to growers (Spotti 2003). Use of alternatives increased from 130 ha in 2002 to 910 ha in 2003; additional 930 ha adopted by mid-2004 in Italy. Reductions in MB area continued at the rate of 630 – 650 ha/year by end 2005. This alternative is applied by fumigation company/contractor, not by growers themselves.	about 900 ha/year immediately after registration. 630 – 650 ha/year recently.
	Strawberry fruit (Spain)	1,3-D/pic was registered in 2000 in Spain. Adopted on 800 ha in 2001 and 1120 ha in 2002 (Carrera et al 2004), indicating 800 ha/year in 1 st year after registration. Alternative is applied by fumigation company. MB-treated area was reduced from 5981 ha in 2004 to 3198-4845 ha in 2005 and 1800-2727 ha in 2006, indicating reduction of at least 1627 ha/year average (Spain CUNA data). In fact reductions were 1500-2000 ha/year according to comments from the government of Spain (March 2006).	At least 1627 ha/year, or up to 2000 ha/year recently. 800 ha in 1 st year after registration.
	Strawberry fruit (USA)	1,3-D (often combined with other fumigant) increased from 43 ha in 2000, to 412 ha in 2001, to 1240 ha in 2002 in California (CDPR PUR database). Often applied by drip irrigation. Use of 1,3-D, pic and metam (various formulations) increased from estimated 1167 - 2000 ha in 2001 to at least 6128 ha (or probably about 9700 ha which is 31% of strawberry crop) in 2003 in California (Trout and Damodaran 2004; California Strawberry Commission & CMCC 2003; California Strawberry Commission 2004). Often applied by drip irrigation.	828 ha/year 2064 ha/year
	All crops (USA)	1,3-D use increased from 1824 t in 2001 to 2455 t in 2002 for all crops in California. Metam increased from 5147 t to 7039 t, largely as a MB alternative (PUR CDPR database).	
	Strawberry runner plants (Italy)	MB is used in alternate years in Italy, so rates of reduction are calculated for odd and even years. Use of MB for runners was 977 ha in 2001 reduced to 280 ha in 2003, giving reduction of 697 ha/year. In even years the MB area was 1150 in 2002 and 280 in 2004, giving reduction of 870 (Italy CUNA, CUN data).	697 – 870 ha/year

	Cut flowers (Italy)	MB is used in alternate years in Italy. MB-treated area for cut flower reduced from 570 ha in 2003 to 466 ha in 2005, and from 560 in 2004 to 247 ha in 2006. Main alternatives are fumigants, possibly some other types of alternatives (e.g. substrates) (Italy CUNA, CUN data).	104 – 313 ha/year
Fumigants and other alternatives	Tomato (Italy)	The area using MB was 2650 ha in 2003, 2488 ha in 2004, 2049 ha in 2005 and 1650 ha licensed for 2006. MB is used in alternate years, indicating reductions of about 600 and 838 ha/year	600 – 838 ha/year
	Peppers (Spain)	Use of MB for peppers in Spain was 1400 ha in 2004 and 1000 ha in 2005, indicating a reduction of 400 ha. An additional reduction of 350 ha was achieved in the previous year.	400 ha/year
	Cut flowers (Spain)	The Cataluña region of Spain reduced use of MB in cut flowers from about 167 ha in 2004 to about 74 ha in 2005 (calculated on rate of 240 kg/ha), a reduction of about 93 ha.	93 ha/year
	Cut flowers (France)	Use of MB for cut flowers in France was reduced from 247 ha in 2000 to 167 ha in 2001, representing a decrease of 80 ha.	80 ha/year.
Grafting	Eggplant (Italy)	Increase from about 2.2 million grafted eggplant in 2003 to about 6.5 million plants in 2004 in Italy (De Ruiter 2004). This is almost 100% of crop according to De Ruiter. “Veritable explosion” in grafted eggplant in last 2 years in Italy (Spotti 2004).	4.3 million/year, estimated at 130 ha / year
	Melon (France)	Grafted melon has increased to about 1000 ha in France (Miguel 2004a).	
	Melon (Italy)	Increased from 5 million to about 9 million grafted plants in Italy recently; increase continues (Syngenta 2004).	4 million in several years
	Tomato (Italy)	Increased from about 2-3 million to 10-12 million grafted plants in Italy recently (de Ruiter; Miguel 2004b).	At least 8 million in several years
	Tomato (Spain)	Increased from <1 million to 45 million grafted plants in 4-5 years in Spain (Miguel 2004b: 143) – most growth was in last 2 years	>10 million plants per year
	Tomato (France)	Increased to about 2800 ha in France (Miguel 2004b). Use of MB for tomato reduced from 410 t in 1997 to 141 t in 2000 (Fritsch 2002) for all alternatives, mainly grafting + other.	90 t MB/year [calculate as ha.]
	Tomato (Morocco)	Increased to 2000 ha (ie. 20 million grafted plants) in Morocco (Miguel 2004b)	
Substrates (e.g. peat/coir) or hydroponic	Strawberry fruit (France)	Increased from 178 ha in 2002 to about 300 ha in 2004 (France LA 2004)	61 ha per year average
	Strawberry fruit (Spain)	Rate of adoption of 40-80 ha/year in strawberry fruit in Spain (comments from Spain, Mar 06).	up to 80 ha/year
	Tomato (France, Netherlands)	Adopted on about 950 ha tomato in France, especially in northeast (Fritsch 2002); Adoption on 1570 ha in the Netherlands in 1998 (pers comm LEI, 2006 and www.statcom.nl)	Up to 950 - 1570 ha/year
	Cucumber (France, Netherlands)	Increased to 400 ha in 2002/3 in France; continues to increase (CUN 2004). In the Netherlands in 1998, adoption on 507 ha in one year (pers comm. LEI, 2006 and www.statcom.nl)	Up to 400 - 507 ha/year

	Various crops	Increased from 1 ha in 1985 to 3150 ha by 2000 (Jiang et al 2000 in MBTOC 2002:60).	
Steam	Cutflowers (Netherlands)	Adoption of steam on 70% of the total area (1310 ha) of carnation, chrysanthemum, freesia and amaryllis in 1983	Up to 917 ha/year
All types of alternatives	Cut flowers (EC)	Total MB-treated area for cut flowers in EC was reduced from about 1660 ha in 2002 to about 855 ha in 2005, giving reduction rate of 268 ha/year. The main types of alternatives were fumigants and substrates.	268 ha/year (EC total)
Postharvest examples			
Heat treatment	Airplanes and silos (Netherlands)	Application increased from 130,320 m ³ in 2004 to 153,900 m ³ in 2005 The Netherlands (data ECO ₂)	Adoption on 22,500 m ³ in recent year
	Mills and food processors (Italy)	In Northern Italy, heat treatment will be taken up in 2006 by 6 more flour mills and pasta industries with a total volume of 296,117 m ³ (data ECO ₂); additional uptake is feasible in a year.	> 296,117 m ³ per year
	Mills and food processors (Netherlands, Germany)	The capacity of heat treatment is max 100,000 m ³ in 48 hrs (pers comm. ECO ₂ in the Netherlands and Thermonox in Germany)	100,000 m ³ / 48 hrs
Modified atmosphere	Structures (rodent control) (Netherlands)	Application increased from 1,149,680 m ³ in 2004 to 1,356,100 m ³ in 2005 in the Netherlands (data ECO ₂); additional uptake is feasible in a year because this technology has been rapidly adopted in earlier years.	Adoption on 200,000 m ³ in recent year
Sulfuryl fluoride, and heat +IPM etc.	Mills and food factories (Germany)	Germany reduced MB use in mills and food facilities from 53 tonnes in 2004 to zero in 2005. Assuming a dose rate of 12.5 to 15 g/m ³ , this represented 3,500,000 – 4,600,000 m ³ in a year (CUN data)	up to 3,500,000 – 4,600,000 m ³ / year

Annex 7.B. Examples of rates of training

Examples of rapid training carried out for MB alternatives:

- In the first year of a project in Argentina about 3000 farmers were trained in the effective use of MB alternatives, alternative systems were installed on these farms, and as a result the MB consumption in this sector was reduced quickly and substantially (MBTOC 2004).

The CULA assessment in 2004 indicated that most Member States that applied for CUNs had not organised training or on-farm technical assistance to help MB fumigators and users to adopt alternatives. Yet it is clear from projects of the Multilateral Fund that training and other forms assistance provide useful ways to ensure that alternatives can be adopted rapidly.

Article 2 countries have pressed or encouraged Article 5 countries to carry out MLF projects to implement large-scale training and installation programmes to achieve MB phase-out, but the Article 2 countries do not apply the same standard by organising equivalent training and adoption programmes in their home territory.

Annex 7.C. Trends in area treated with methyl bromide in Member States that have CUEs

Table 7.C.1. France: Historical trend in crop area treated with MB (hectares)

Crop / year	1995	1998	2001	2002	2003	2004	2005	Total crop area
Source of data:	CULA	CUN	CUN	CUN	CUN	CUN		
Carrots		10	12	16	14.2	14.2		
Cucumber (cucurbits)		200	150	150				
Cut flowers	320	264 (in 1998)	167	163				
Eggplant		110	70	65				
Forest nursery		35	20	20				
Orchard replant		220	220	220				
Melon (seeds)		56	17	17				
Nursery: orchard, raspberry	20	20	20	15				
Pepper		110	70	65				
Strawb fruit		500 - 570	400	400				
Strawb runners		140	100	100				
Tomato		220	140	130				

* Nursery: about 200 ha of total 400 ha is checked under French Fruit Certification.

Table 7.C.2. Greece: Historical trend in crop area treated with MB (hectares)

Crop / year	1995	1997	1998	2000	2001	2002	2003	2005	Total crop area
Source:		CUN	CUN	CUN	CUN	CUN	CUN		
Tomato protected		600	600	600	520	520	520		
Cucumber protected									
Cut flowers	30.3	-	34.6	37.2	39.3	39.8	-		

Table 7.C.3. Italy: Historical trend in crop area treated with MB (hectares)

Crop / Year	1993	1995	2001	2002	2003	2004	2005	Total crop area 2004
Source:	calc from MBTOC 95	calc from MBTOC 95	CUN	CUN	CUN	CULA, CUN		CUN
Cut flowers bulbs	1,400	1,188	604	604	570	560		3200 18%
Melon	1,400	996	514	506	500	480		2200 22%
Eggplant		1,164	600	594	460	400		1350 30%
Pepper	2,100	1,562	580	570	510	500		1600 31%
Strawberry fruit	2,100	2,404	1,206	1,236	1000	900 (600)		4300 21%
Strawberry runners			300	300	280	280		300 93%
Tomato	5,600	5,650	3,050	2,888	2650	2540 (2488)		7600 33%
Potting soil	420							
Nurseries	700							
Other	280							

Table 7.C.4. Spain: Historical trend in crop area treated with MB (hectares)

Crop / Year	1994	1995	1998	1999	2000	2001	2002	2003	2005	Total crop area 2002
Source of data:	Vares 1997	CUN	CUN	CUN	CUN	CUN	CUN			
Cut flowers Andalusia	500						1,012 (92% of total crop area)			1,100
Cut flowers Catalonia		470	521	456	356	265	252 (66% of total crop area)			300
Peppers	2,300	1,920	1,915	1,940	1,910	1,970	1,820 (90% of regional crop area)			2,012 Murcia & Valenciana (National: 24,500 in 1996)
Strawberry fruit							5,560 (84% of total area)			6,600
Strawberry runners	1,000		949	1,114	1,045	977	1,150 (100% of total)			1,150

Annex 8. Blank CULA-CUNA forms for soil and postharvest sectors

Annex 8.A. CRITICAL USE LICENSING ASSESSMENT (CULA) - CRITICAL USE NOMINATION ASSESSMENT (CUNA) - SOIL SECTOR

GENERAL INSTRUCTIONS

Any Member State applying for CUNs-CUEs is requested to update the latest CULA-CUNA form, as follows:

1. Download the latest completed CULA-CUNA form (from the previous round of assessments) from CIRCA website;
2. Add any new sections from this form into the previous CULA-CUNA, and complete the new sections;
3. Update previous information where relevant, except parts where the COM/assessor is required to complete information;
4. If a CULA or CUNA does not exist, use the forms in this Annex (one for soil sector, another for postharvest sector);
5. Append to the Form any additional information necessary, making it clear in the Form the link to any additional information.

Member State:

Title of Nomination [If existing, use the same title as shown in the Commission Decision for 2005 or 2006]:

Quantity of MB licensed in the COM decision in previous year: _____ kg

Quantity MB requested for year xxx: _____ kg

File Code [Assessor to complete]: _____ CULA [or CUNA] 200x-

Confirm that all attachments mentioned in the CULA are present [Assessor to complete]:

Step 1. The lack of MB for this use would result in significant market disruption? (Refer to Annex 1 for guidance attached) - Decision IX/6 paragraph 1(a)(i) and Exl/4 paragraph 6):

Determination of significant market disruption	Status	Action
Has the Member State provided calculations that demonstrate significant market disruption?	[Assessor to complete]	
Has this statement been signed?	[Assessor to complete]	

Step 2. Summary of pest species and information relevant to Step 3

Main pests	List target pest species Region A	Region B (if relevant)	Region C (if relevant)
Nematodes			
Soilborne fungi			
Weeds			
Other			
Comments on crop circumstances			

Information about crop area and alternatives in use

Total crop area last year (ha)	
--------------------------------	--

% of total crop area treated with MB last year	
Area proposed for MB use in future CUN (ha)	
Area treated with MB in last 5 years (ha per year)	
Quantity of MB used in last 5 years (kg per year)	
Alternatives used for this specific crop in Member State	
*Alternatives used for this crop in countries where the same pest species are present	
<i>*Alternatives used by similar farms that sell to the same markets as MB users (TEAP report May 2003 and Decision Ex.I/3)</i>	

Step 3. Assessment: Are there no technically feasible alternatives available to MB users and suitable to the crops and circumstances (Decision IX/6, para. 1(a)(ii)) and 'no adequate alternatives... available in any Party'? (EC Regulation Art. 3, 2 (ii))

Main alternatives (assessed in bold)	List <u>reasons</u> why <u>applicant states</u> alternative is not available, not suitable, etc.	Is alternative <u>registered</u> and commercially <u>available</u> for this crop / circumstance?	Is <u>efficacy</u> (in terms of reduced pathogen populations) and <u>yield</u> adequate compared to MB? – for <u>target pest species</u>	Is alternative <u>suitable</u> / adequate for all or part of this crop and <u>circumstance</u>?	Comments
Main chemical alternatives (refer to previous CULA-CUNAs for this application and use those examples)					
Example 1: 1,3-dichloropropene (1,3-D, Telone)					
Example 2: Chloropicrin (Pic, Tripicrin)					
Example 3: Dazomet (Daz, Basamid)					
Example 4: Metam sodium (MS, Nemasol; Sistan)					
Example 5: 1,3-D + Chloropicrin (1,3-D/Pic, Telone C35, Agrocelhone)					
Example 6: Metam + pic, or other fumigant + fumigant					

Main alternatives (assessed in bold)	List reasons why applicant states alternative is not available, not suitable, etc.	Is alternative registered and commercially available for this crop / circumstance?	Is efficacy (in terms of reduced pathogen populations) and yield adequate compared to MB? – for target pest species	Is alternative suitable / adequate for all or part of this crop and circumstance?	Comments
Combination chemical + non-chemical					
Examples: Grafted plant + fumigant					
Resistant variety + fumigant					
Solarisation + fumigant					
Main non-chemical alternatives					
Substrates (please focus on low-cost systems)					
Steam					
Grafted plants					
Resistant varieties					
Conclusion: MB alternatives that are available, technically feasible / adequate and suitable for the specific circumstances:					

Step 3a. Calculation of feasible rate of adoption of alternatives

Member State is requested to provide answers, in the table below, to allow calculation of the feasible rate of adoption of alternatives, assuming full effort / that MB will be phased out as soon as alternatives are available.

In order to standardise the calculation method, calculations of equipment/training needs will assume that half of the CUN hectares would adopt each specific alternative listed in the conclusion of Step 3. It is recognised that the proportion adopting each type of alternative may vary in reality.

Alternatives from conclusion of Step 3	Issues to consider when calculating rate of adoption	Estimated quantity or time (in weeks) for completion of activities, assuming full effort (estimates to be provided by applicant)
First most likely alternative name: [MS write name of	Identify companies/technicians that supply equipment and know-how for the effective application of this particular technology	
	Number of fumigators/applicators that provide this alternative in this crop at present	

alternative here, starting with any alternatives in Conclusion of Step 3]	Number of additional fumigators/applicators that would be needed to allow half of the MB hectares to be replaced	
	Additional equipment or supplies needed by fumigators or others, so this alternative can be used to replace half of the MB hectares. Indicate quantity and type of equipment, and time (weeks) for delivery of equipment	
	Calculate time (in weeks) needed to train applicators how to use this alternative, assuming full effort	
	Calculate time (in weeks) needed to train half of users how to use this alternative (if training is needed), or time to produce other information for users, assuming full effort	
	Time (weeks) for other key activities (if any), assuming full effort	
	Total time (weeks) for carrying out the activities listed above, assuming full effort	
Second most likely alternative name: [MS write name of alternative here]	Identify companies/technicians that supply equipment and know-how for the effective application of this particular technology	
	Number of fumigators/applicators that provide this alternative in this crop at present	
	Number of additional fumigators/applicators that would be needed to allow half of the MB hectares to be replaced	
	Additional equipment or supplies needed by fumigators or others, so this alternative can be used to replace half of the MB hectares. Indicate quantity and type of equipment, and time (weeks) for delivery of equipment	
	Calculate time (in weeks) needed to train applicators how to use this alternative, assuming full effort	
	Calculate time (in weeks) needed to train half of users how to use this alternative (if training is needed), or time to produce other information for users, assuming full effort	
	Time (weeks) for other key activities (if any), assuming full effort	
	Total time (weeks) for carrying out the activities listed above, assuming full effort	
Third most likely alternative name: [MS write name of alternative here]	Identify companies/technicians that supply equipment and know-how for the effective application of this particular technology	
	Number of fumigators/applicators that provide this alternative in this crop at present	
	Number of additional fumigators/applicators that would be needed to allow half of the MB hectares to be replaced	
	Additional equipment or supplies needed by fumigators or others, so this alternative can be used to replace half of the MB hectares. Indicate quantity and type of equipment, and time (weeks) for delivery of equipment	
	Calculate time (in weeks) needed to train applicators how to use this alternative, assuming full effort	
	Calculate time (in weeks) needed to train half of users how to use this alternative (if training is needed), or time to produce other information for users, assuming full effort	
	Time (weeks) for other key activities (if any), assuming full effort	

	Total time (weeks) for carrying out the activities listed above, assuming full effort	
--	---	--

Step 4. Make an economic assessment of alternatives identified in Step 3 and/or 3-4 leading alternatives to determine if there are no economically feasible / adequate alternatives (Decision IX/6 para. 1(a)(ii) and EC Regulation Art. 3,2(ii)).

Alternatives from conclusion of Step 3	Costs for years 1,2,3 (data from applicant)	Gross and net revenue (data from applicant)	Cost and revenue data from other sources (data from assessor)	Assessment of cost or net revenue over several years (assessor)	Comments
Conclusion: MB alternatives that are economically feasible / adequate:					

Step 5: Identify all technically and economically feasible steps to minimise MB use and emissions (Decision IX/6 1(b)(i)) and all precautionary measures to prevent and minimise leakages of MB (EC Regulation Article 17, 2)

Steps to minimize emissions / leakage	Information relating to requested CUN (information from MS or applicant)	Assessment of steps to minimise emissions / leakage	Calculation of MB reductions (Kg or %)
Quantity MB requested(Kg)			
MB treated area requested (ha)			
Any proposed increase in MB use since previous year? (give data)			
MB dosage rate (a.i. only)			
Percentage using (a) broad acre and (b)			

strip fumigation?			
Application method e.g. injection, hot gas			
Formulation (% MB/Pic)			
Frequency of MB fumigation			
Area where VIF is used (%)		VIF is compulsory under EC Regulation = 100 % of area	
Number of days for which VIF lies on the soil		Further reductions would be feasible	
On-site pest monitoring prior to fumigation		Monitoring system would be expected to reduce MB	
Prior approval for each MB fumigation		Prescription system would reduce MB further	
Other steps...			
Reductions to minimise MB emissions / leakage (Kg or %):			

Step 6: Has applicant demonstrated appropriate effort to evaluate, commercialize and secure regulatory approval of alternatives ? Applicant must demonstrate that research programmes are in place to develop and deploy alternatives (Decision IX/6 para. 1(b)(iii))

Actions by applicant	MS to summarise activities stated by applicant, and append any additional information	COM / assessor to determine whether this demonstrates appropriate effort, and progress since last year (Pass / Fail), and provide comments
Effort to evaluate alternatives		
Effort to commercialise alternatives		
Effort to register alternatives		
Programmes to develop and deploy alternatives		
Plan for stepwise reduction of MB		

Step 7: Assessment: MB is not available in sufficient quantity from existing stocks (Decision IX/6 para. 1(b)(ii)) and 'no recycled or reclaimed MB is available from any of the Parties? (EC Regulation Article 3,2(ii))

Stocks available	Stocks (Kg)
In EC	[to be completed by COM]
In any Party	[to be completed by COM]
Total available	[to be completed by COM]

Step 8: Summary: checklist of compliance with criteria of Decision IX/6 and EC Regulation 2037/2000

Steps	Criteria	Complies fully
Step 1	Member state has certified that there is significant market disruption (Decision IX/6, paragraph 1(a)(i))	
Step 3	There are no technically feasible alternatives available to MB users and suitable to the crops and circumstances (Decision IX/6, paragraph 1(a)(ii)) and no adequate alternatives available in any Party (EC Regulation Art. 3,2(ii))	
Step 4	There are no economically feasible alternatives available to MB users and suitable to the crops and circumstances (Decision IX/6, paragraph 1(a)(ii)) and no adequate alternatives available in any Party (EC Regulation Art. 3,2(ii))	
Step 5	No technically and economically feasible steps can be taken to minimize MB use and emissions (Decision IX/6, paragraph 1(b)(i)) and no precautionary measures to prevent and minimise leakages of MB (EC Regulation Article 17, 2)	
Step 6	Applicant demonstrated appropriate effort to evaluate, commercialize and secure regulatory approval of alternatives. Applicant must demonstrate that research programmes are in place to develop and deploy alternatives (Decision IX/6 para. 1(b)(iii))	
Step 7	MB is not available in sufficient quantity from existing stocks (Decision IX/6 para. 1(b)(ii)) and no recycled or reclaimed MB is available from any of the Parties (EC Regulation Article 3,2(ii))	[to be completed by COM]
Has application met all criteria of Decision IX/6 and EC Regulation 2037/2000?		

Step 9: Summary: quantity of MB eligible for licensing

Steps	Description	MB (Kg)
Quantity of MB licensed in previous year	Licensed by the Commission in previous year, as shown in the COM Decision. Write 'NA' if the application was not included in this Decision.	
Quantity of MB used in previous year	Quantity of MB used in previous year, as shown in Accounting Framework.	
Ceiling established by Montreal Protocol	Maximum quantity of MB approved at the relevant meeting(s) of the Parties for this use-category and year	
Quantity MB requested	Quantity of MB requested by the MS to be licensed	
Reductions for feasible / adequate alternatives	MB reductions to account for available alternatives as identified in Steps 3 - 4	
Reductions to minimise emissions / leakage	Reductions to minimise MB emissions / leakage as identified in Step 5	
Eligible quantity of MB	MB production / imports (Kg) eligible for licensing by EC, before deducting available stocks	
Existing MB stocks	MB available from stocks as identified in Step 7	[to be completed by COM]
Final quantity eligible for licensing	Quantity of MB eligible for licensing for production / importation (Kg)	[to be completed by COM]

Step 10 (if relevant): Summary: quantity of MB eligible for nomination

Requested nomination	MB (kg)
Year for which MB is nominated (e.g. 2007)	To be filled by MS
Quantity of MB requested to be nominated (kg):	To be filled by MS

Crop area proposed for MB use (ha):	To be filled by MS
Comments and additional information needed for assessment of nomination: [to be completed by COM / assessor]	
Decision on nomination	MB (kg)
Reductions for technically and economically feasible alternatives (Step 3-4 applied to year of nomination)	
Reductions to minimise MB use / emissions (Step 5 applied to year of nomination)	
Quantity of MB that complies fully with Decision IX/6 and relevant Decisions relating to CUEs (kg)	[to be completed by COM]

Annex 8.B. CRITICAL USE LICENSING ASSESSMENT (CULA) – CRITICAL USE NOMINATION ASSESSMENT (CUNA) - POST- HARVEST SECTOR

GENERAL INSTRUCTIONS

Any Member State applying for CUNs-CUEs is requested to update the latest CULA-CUNA form, as follows:

1. Download the latest completed CULA-CUNA form (from the previous round of assessments) from CIRCA website;
2. Add any new sections from this form into the previous CULA-CUNA, and complete the new sections;
3. Update previous information where relevant, except parts where the COM/assessors are required to complete information;
4. If a CULA or CUNA does not exist, use the forms in this Annex (one for soil sector, another for postharvest sector);
5. Append to the Form any additional information necessary, making it clear in the Form the link to any additional information.

Member State:

Title of Nomination [If existing, use the same title as shown in the Commission Decision for 2005 or 2006]:

Quantity of MB licensed in the COM decision in previous year: _____ kg

Quantity MB requested in xxxx year: _____ kg

File Code **[Assessors to complete]**: CULA [CUNA] 200x-

Confirm that all attachments mentioned in CULA are present [Assessors to complete]:

Step 1. The applicant determines that the lack of MB for this use would result in significant market disruption? Refer to Annex 1 attached for guidance (Decision IX/6 paragraph 1(a)(i) and Ex/4 paragraph 6):

Determination of significant market disruption	Status	Action
Has the Member State provided calculations demonstrating significant market disruption?	[Assessors to complete]	
Has the statement been signed?	[Assessors to complete]	

Step 2. Summary of treated structure / commodity and pest species relevant to Step 3

Structure / commodity(s) and main pests	Structure / commodity A	Structure / commodity B (if relevant)	Structure / commodity C (if relevant)	Comments
Structure / commodity(ies) fumigated with MB				
List common target insect pest species (as stated by applicant)				
List minor target insects species (as stated by applicant)				
List other target pest species				

(stated by applicant)				
Comments on circumstances of MB use				

Information about volume of commodity / structure and alternatives in use

Total volume of commodity or number of structures in Member State	
% or volume or number treated with MB last year	
% or volume or number proposed for MB use in year of nomination	
Quantity MB requested in nomination (Kg)	
MB consumption in last five years (Kg/year)	
Alternatives used for key target pests in this sector (in Member State)	
*Alternatives used for this commodity / structure in countries where the same pest species are present	
<i>*Alternatives used commercially by similar enterprises that sell to the same markets as MB users (TEAP report May 2003 and Decision Ex.I/3)</i>	

Step 3. Assessment: Are there no technically feasible alternatives available to MB users and suitable to the crops and circumstances (Decision IX/6, para. 1(a)(ii)) and 'no adequate alternatives... available in any Party'? (EC Regulation 2037/2000, Article 3,2(ii))

Main alternatives	List reasons why <u>applicant states</u> alternative is not available, not suitable, etc.	Is alternative <u>registered</u> and commercially <u>available</u> for this structure / commodity / circumstance?	Is <u>efficacy / results</u> (in terms of reduced pest populations) adequate compared to MB? – for target pest species	Is alternative <u>suitable</u> / adequate for all or part of this structure / commodity and <u>circumstance</u> ?	Comments
Main chemical alternatives (refer to previous CULAs for this application and use those examples)					
Example 1: Sulphuryl fluoride* (Sulfuryl difluoride, SF, <i>ProFume</i>)					
Example 2 Phosphine*					
Example 3: Heat + IPM					
Example 4:					

Main alternatives	List <u>reasons why applicant states alternative is not available, not suitable, etc.</u>	Is alternative <u>registered and commercially available</u> for this structure / commodity / circumstance?	Is <u>efficacy / results</u> (in terms of reduced pest populations) adequate compared to MB? – for target pest species	Is alternative <u>suitable / adequate</u> for all or part of this structure / commodity and <u>circumstance</u> ?	Comments
Insecticides + IPM					
Conclusion: MB alternatives that are available, technically feasible / adequate and suitable for the specific circumstances.					
* footnote: combined with heat if necessary					

Step 3a. Calculation of feasible rate of adoption of alternatives

Member State is requested to provide answers, in the table below, to allow calculation of the feasible rate of adoption of alternatives, assuming full effort.

In order to standardise the calculation method, calculations of equipment/training needs will assume that half of the CUN hectares would adopt each specific alternative listed in the Conclusions of Step 3. It is recognised that the proportion adopting each type of alternative may vary in reality.

Alternatives from conclusion of Step 3	Issues to consider when calculating rate of adoption	Estimated quantity or time (in weeks) for completion of activities, assuming full effort
First most likely alternative name: [MS write name of alternative here, starting first with any alternatives listed in Conclusion of Step 3]	Identify companies/technicians that supply equipment and know-how for the effective application of this particular technology	
	Number of fumigators/applicators that provide this alternative at present	
	Number of additional fumigators/applicators that would be needed to allow half of the MB volume to be replaced	
	Additional equipment or supplies needed by fumigators or others, so this alternative can be used to replace half of the MB volume. Indicate quantity and type of equipment, and time (weeks) for delivery of equipment	
	Calculate time (in weeks) needed to train applicators how to use this alternative, assuming full effort	
	Calculate time (in weeks) needed to train half of users how to use this alternative (if training is needed), or time to produce other information for users, assuming full effort	
	Time (weeks) for other key activities (if any), assuming full effort	
	Total time (weeks) for carrying out the activities listed above, assuming full effort	
Second most likely alternative name: [MS write name of alternative]	Identify companies/technicians that supply equipment and know-how for the effective application of this particular technology	
	Number of fumigators/applicators that provide this alternative at present	
	Number of additional fumigators/applicators that would be needed to allow half of the MB volume to be replaced	

here]	Additional equipment or supplies needed by fumigators or others, so this alternative can be used to replace half of the MB volume. Indicate quantity and type of equipment, and time (weeks) for delivery of equipment	
	Calculate time (in weeks) needed to train applicators how to use this alternative, assuming full effort	
	Calculate time (in weeks) needed to train half of users how to use this alternative (if training is needed), or time to produce other information for users, assuming full effort	
	Time (weeks) for other key activities (if any), assuming full effort	
	Total time (weeks) for carrying out the activities listed above, assuming full effort	
Third most likely alternative name: [MS write name of alternative here]	Identify companies/technicians that supply equipment and know-how for the effective application of this particular technology	
	Number of fumigators/applicators that provide this alternative at present	
	Number of additional fumigators/applicators that would be needed to allow half of the MB volume to be replaced	
	Additional equipment or supplies needed by fumigators or others, so this alternative can be used to replace half of the MB volume. Indicate quantity and type of equipment, and time (weeks) for delivery of equipment	
	Calculate time (in weeks) needed to train applicators how to use this alternative, assuming full effort	
	Calculate time (in weeks) needed to train half of users how to use this alternative (if training is needed), or time to produce other information for users, assuming full effort	
	Time (weeks) for other key activities (if any), assuming full effort	
Total time (weeks) for carrying out the activities listed above, assuming full effort		

Step 4. Make an economic assessment of alternatives identified in the Conclusions of Step 3 and/or 3-4 leading alternatives to determine if there are no economically feasible / adequate alternatives (Decision IX/6 para. 1(a)(ii) and EC Regulation Art. 3,2(ii)).

Alternatives from conclusion of Step 3	Economic reasons stated by applicant	Costs stated by applicant for years 1,2,3	Cost data from other sources	Assessment of cost over several years	Comments
Conclusion: MB alternatives that are economically feasible / adequate.					

Step 5: Identify all technically and economically feasible steps to minimize MB use and emissions (Decision IX/6 para 1 (b) (I)) and all precautionary measures practicable to prevent and minimise leakages of MB (EC regulation 2037/2000 Art 17, 2)

Steps to minimize emissions / leakages	Information about requested CUN (data from MS or applicant)	Assessment of steps to minimize emissions / leakages	Calculation of MB reductions (Kg or %)	Comments
Quantity MB requested (Kg)				
Volume to be treated with MB (m3)				
Any proposed increase in MB use compared to previous year ? (give data)				
MB dosage rate (a.i. only)		Lowest technically feasible doses of MB		
List gas-tightness estimate for each premises		Improve sealing standards Pressure testing of buildings Check gas tightness with smoke or other specialist gases		
Can temperature be raised to reduce MB dose?		Increase temperature		
Frequency of fumigation		High standard of sanitation would reduce the need for fumigation Fumigation every second year instead of every year		
On-site pest monitoring prior to fumigation		Monitoring systems would be expected to reduce MB		
Prior approval for each MB fumigation		Prescription system would reduce MB further		
Monitoring MB levels during fumigation		Monitoring would reduce MB use		
Other steps...				
MB reductions to minimise MB emissions / leakages (Kg)			Reduction:	

Step 6: Has applicant demonstrated appropriate effort to evaluate, commercialize and secure regulatory approval of alternatives? Applicant must demonstrate that research programmes are in place to develop and deploy alternatives (Decision IX/6 para. 1(b)(iii))

Actions by Applicant	MS to summarise activities and append any additional information	COM / assessor to determine whether the information provided demonstrates adequate effort, and progress since last year (Pass / Fail), comments
Effort to evaluate alternatives		

Actions by Applicant	MS to summarise activities and append any additional information	COM / assessor to determine whether the information provided demonstrates adequate effort, and progress since last year (Pass / Fail), comments
Effort to commercialise alternatives		
Effort to register alternatives		
Detailed plan to develop and deploy alternatives		

Step 7: Assessment: MB is not available in sufficient quantity from existing stocks (Decision IX/6 para. 1(b)(ii)) and 'no recycled or reclaimed MB is available from any of the Parties?' (EC Regulation Article 3,2(ii))

Stocks available	Stocks (Kg)
In EC	[to be completed by COM]
In any Party	[to be completed by COM]
Total available	

Step 8: Summary: checklist of compliance with criteria of Decision IX/6 and EC Regulation 2037/2000

Steps	Criteria	Complies fully
Step 1	Member state has certified that there is significant market disruption (Decision IX/6, paragraph 1(a)(i))	
Step 3	There are no technically feasible alternatives available to MB users and suitable to the crops and circumstances (Decision IX/6, paragraph 1(a)(ii)) and no adequate alternatives available in any Party (EC Regulation Art. 3,2(ii))	
Step 4	There are no economically feasible alternatives available to MB users and suitable to the crops and circumstances (Decision IX/6, paragraph 1(a)(ii)) and no adequate alternatives available in any Party (EC Regulation Art. 3,2(ii))	
Step 5	No technically and economically feasible steps can be taken to minimize MB use and emissions (Decision IX/6, paragraph 1(b)(i)), and no precautionary measures practicable to prevent and minimise leakages of MB (EC regulation 2037/2000 Art 17, 2)	
Step 6	Applicant demonstrated appropriate effort to evaluate, commercialize and secure regulatory approval of alternatives. Applicant must demonstrate that research programmes are in place to develop and deploy alternatives (Decision IX/6 para. 1(b)(iii))	
Step 7	MB is not available in sufficient quantity from existing stocks (Decision IX/6 para. 1(b)(ii)) and no recycled or reclaimed MB is available from any of the Parties (EC Regulation Article 3,2(ii))	[information from COM]
Has application met all criteria of Decision IX/6 and EC Regulation 2037/2000?		

Step 9: Summary: eligible quantity of MB for licensing

Steps	Description	MB (Kg)
Quantity of MB licensed in previous	Licensed by the Commission in previous year, as shown in the COM Decision. Write 'NA' if the application	

year	was not included in this Decision.	
Quantity of MB used in previous year	Quantity of MB used in previous year, as shown in Accounting Framework.	
Ceiling established by Montreal Protocol	Maximum quantity of MB approved at the relevant meeting(s) of the Parties for this use-category and year	
Quantity MB requested	Quantity of MB requested by the MS to be licensed	
Reductions for feasible / adequate alternatives	MB reductions to account for available alternatives as identified in Steps 3 - 4	
Reductions to minimise emissions / leakage	Reductions to minimise MB emissions / leakage as identified in Step 5	
Eligible quantity of MB	MB production / imports (Kg) eligible for licensing by EC, before deducting available stocks	
Available MB stocks	MB available from existing stocks as identified in Step 7	[to be completed by COM]
Final quantity eligible for licensing	Quantity of MB eligible for licensing for production / importation (Kg)	[to be completed by COM]

Step 10 (if relevant): Summary: eligible quantity of MB for nomination

Requested nomination	MB (kg)
Year of nomination	To be filled by MS
Quantity of MB requested to be nominated (kg):	To be filled by MS
% or volume or number of structures proposed for MB use	To be filled by MS
Comments and additional information needed for assessment of nomination:	
[to be completed by COM and assessor]	
Decision on nomination	MB (kg)
Reductions for technically and economically feasible alternatives (Step 3-4 applied to relevant year)	
Reductions to minimise MB use / emissions (Step 5 applied to relevant year)	
Quantity of MB that complies fully with Decision IX/6 and relevant Decisions relating to CUEs (kg)	[to be completed by COM]

Annex 9. List of References

- Arvanitakis E, Tjamos E and Batchelor T (1999) International Workshop Alternatives to Methyl Bromide for the Southern European Countries, Proceedings. December 7-10 1999, Heraklion, Greece. Agriculture Ministry of Greece and DGXI European Commission.
- Asthon P and Lange H (2000). Alternatives to Methyl Bromide; Integrated Pest Management in Danish Flour Mills. Danish Environmental Protection Agency, Copenhagen.
www.mst.dk/200009pubs/87-7944-201-3/default_eng.htm
- Batchelor T and Alfarroba F (2004) Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30 2004, Lisbon. Ministry of Agriculture, Lisbon and European Commission, Office for Official Publications of the European Commission, Luxembourg.
- Bello A, González JA, Arias M and Rodríguez-Kábana (1998) Alternatives to Methyl Bromide for the Southern European Countries. Proceedings of International Workshop, April 9-12 1997, Tenerife. CSIS, Madrid and DGXI, European Commission, Brussels.
- Bolivar JM and Batchelor T (2002) Proceedings of International Conference on Alternatives to Methyl Bromide. March 5-8 2002, Sevilla. Ministry of Agriculture, Ministry of Environment, Madrid and European Commission, Office for Official Publications of the European Commission, Luxembourg.
- California Strawberry Commission (2003, 2004) data from website www.calstrawberry.com
- Carrera T, Carrera A and Pedros V (2004) Use of 1,3-dichloropropene / chloropicrin for the production of strawberries in Spain. Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30, Lisbon.
- CDPR (2005) Pesticide Use Reports (PUR), California Department of Pesticide Regulation.
- De Barro P (1995) Strawberry production in the Netherlands without methyl bromide. In: Banks, HJ (ed). Agricultural Production Without Methyl Bromide – Four Case Studies. CSIRO, Canberra.
- De Ruiten (2004) personal communication, De Ruiten Seeds, Bergschenhoek, Netherlands.
- Ducom P (2005) personal communication, Patrick Ducom, Laboratoire National Denrées Stockées, France.
- EC (1991) Council Directive 91/414/EEC concerning the Placing of Plant Protection Products on the Market. Official Journal of the European Communities L 230, 19.8.1991 p.1.
- EC (1998a) Communication from the Commission to the Council and the European Parliament: Strategy for the Phaseout of CFCs in Metered-dose Inhalers. Official Journal of the European Communities C 355. 20.11.1998. p.2-30.
- EC (1998b) Directive 98/8/EC of the European Parliament and of the Council concerning the Placing of Biocidal Products on the Market. Official Journal of the European Communities L 123, 24.4.1998, p.1-63.
- EC (2000) Regulation (EC) No 2037/2000 of the European Parliament and of the Council on Substances that Deplete the Ozone Layer. Official Journal of the European Communities L 244. 29.9.2000. p.1-24.
- EC (2003) Commission Regulation (EC) No 2032/2003 on the second phase of the 10-year work programme referred to in Article 16(2) of Directive 98/8/EC of the European Parliament and of the Council concerning the placing of biocidal products on the market, and amending Regulation (EC) No 1896/2000. Official Journal of the European Communities L 307, 24.11.2003, p.1-96.
- EC (2005a) Commission Decision determining the quantities of methyl bromide permitted to be used for critical uses in the European Community from 1 January to 31 December 2005 pursuant to Regulation (EC) No 2037/2000 of the European Parliament and of the Council on Substances that Deplete the Ozone Layer. Official Journal of the European Communities L 219. 24.8.2005. p.47-53.

- EC (2005b) European Community Database of available alternatives to methyl bromide – soil sector, Submitted to the Ozone Secretariat by the European Community under Decision Ex.I/4 paragraphs 1-2,
[http://ozone.unep.org/Information_for_the_Parties/Decisions/Decs_MeBr/Dec_Ex_I_4\(1\)/EC-Alternatives-to-MethylBromide-Soil.doc](http://ozone.unep.org/Information_for_the_Parties/Decisions/Decs_MeBr/Dec_Ex_I_4(1)/EC-Alternatives-to-MethylBromide-Soil.doc)
- EC (2005c) European Community Database of available alternatives to methyl bromide – postharvest sector, Submitted to the Ozone Secretariat by the European Community under Decision Ex.I/4 paragraphs 1-2,
[http://ozone.unep.org/Information_for_the_Parties/Decisions/Decs_MeBr/Dec_Ex_I_4\(1\)/EC-Alternatives-to-MethylBromide-Postharvest.doc](http://ozone.unep.org/Information_for_the_Parties/Decisions/Decs_MeBr/Dec_Ex_I_4(1)/EC-Alternatives-to-MethylBromide-Postharvest.doc)
- EC (2006) Reporting Accounting Framework for Critical Uses of Methyl Bromide in 2005, European Commission, Brussels.
- Fernández LM (2002) Commercial policies in Spain influencing the use of methyl bromide by growers. Proceedings of International Conference on Alternatives to Methyl Bromide. March 5-8 2002, Sevilla. Office for Official Publications of the European Commission, Luxembourg
- Fritsch J (2002) The current status of alternatives to methyl bromide in vegetable crops in France. Proceedings of International Conference on Alternatives to Methyl Bromide. March 5-8 2002, Sevilla. Office for Official Publications of the European Commission, Luxembourg. 193-196.
- Gyldenkaerne S, Yohalem D and Hvalsøe E (1997) Production of Flowers and Vegetables in Danish Greenhouses: Alternatives to Methyl Bromide. Orientering fra Miljøstyrelsen Nr. 4 1997. Danish Environmental Protection Agency, Copenhagen.
- Hallas T, Gyldenkaerne S, Rasmussen AN and Jakobsen J (1993) *Methyl Bromide in the Nordic Countries – Current Use and Alternatives*. Nord 1993:34. Nordic Council of Ministers, Copenhagen.
- Health Ministry (1994) Ordinanza del Ministro della Sanita 16 giugno 1994: Misure cautelative concernenti I presidi sanitari a base di bromuro di metile. Official Gazette July 1 1994, 152, Rome, Italy.
- Jiang W, Liu W, Yu H, Zheng G (2000) Development of soilless culture in mainland China. Transactions of the Chinese Society of Agricultural Engineering 17,10-15.
- Ketzis J (1992) Case studies of the virtual elimination of methyl bromide soil fumigation in Germany and Switzerland and the alternatives employed. In: Proceedings of International Workshops on Alternatives to Methyl Bromide for Soil Fumigation, October 19-23 1992. Rotterdam and Rome/Latina. UNEP, Nairobi.
- Kristensen M (1997) Alternatives to Methyl Bromide – Control of Rodents on Ship and Aircraft. TemaNord Environment 1997:513. Nordic Council of Ministers, Copenhagen. 30pp.
- Lange H (2005) personal communication. H Lange, Tanaco, Copenhagen.
- López-Aranda JM, Miranda L, Romero F, De Los Santos B et al (2004) Main results of trials on methyl bromide alternatives for strawberry fruit and runners produced in Spain. Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30 2004, Lisbon. Office for Official Publications of the European Commission, Luxembourg.
- MBTOC (1994) Report of the Methyl Bromide Technical Options Committee: 1995 Assessment. UNEP, Nairobi.
- MBTOC (1998) Report of the Methyl Bromide Technical Options Committee: 1998 Assessment of Alternatives to Methyl Bromide. UNEP, Nairobi. Chapter 9 provides case studies on alternatives.
- MBTOC (2002) Report of the Methyl Bromide Technical Options Committee: 2002 Assessment. UNEP, Nairobi.
- MBTOC (2004) Report of the Technology and Economic Assessment Panel. October 2004. UNEP, Nairobi. p.9

- MBTOC (2005) MBTOC Progress Report, in TEAP (2005) Report of the Technology and Economic Assessment Panel. May 2005 Progress Report. UNEP, Nairobi. p.107-139.
- Methyl Bromide Industry Government Working Group (MBIGWG) (1998). Integrated Pest Management in Food Processing: Working Without Methyl Bromide. Sustainable Pest Management Series S98-01. Pest Management Regulatory Authority, Ottawa, Canada. Available at: www.hc-sc.gc.ca/pmra-arla
- Miguel A (2004a) Use of grafted cucurbits in the Mediterranean region as an alternative to methyl bromide. Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30 2004, Lisbon. Office for Official Publications of the European Commission, Luxembourg.
- Miguel A (2004b) Use of grafted plants and IPM methods for the production of tomatoes in the Mediterranean region. Proceedings of International Conference on Alternatives to Methyl Bromide. September 27-30 2004, Lisbon. Office for Official Publications of the European Commission, Luxembourg.
- MoE SR (2000) Survey of Methyl Bromide, Existing and Potential Alternatives and Methyl Bromide Regulation, Report for UNEP. Ministry of the Environment of the Slovak Republic, Bratislava.
- Ozone Secretariat (2005) Production and Consumption of Ozone Depleting Substances under the Montreal Protocol 1986-2004. UNEP, Nairobi.
- Parliamentary Session (1981) Report of the Parliamentary Session, Lower House, 1980-81. 16 400, Chapter XIV 50:1-23. The Hague, Netherlands.
- Porter I, Mattner S, Gounder R, Mann R, Banks J and Fraser P (2004) Strawberry fruit production: summaries of alternatives to methyl bromide fumigation and trials in different geographic regions. Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30 2004, Lisbon. Office for Official Publications of the European Commission, Luxembourg.
- Sansone, JS. (1994) MAKR Process. Annual International Research Conference on MB Alternatives and Emissions Reductions, November 1994, Orlando, Florida.
- Sotiroudas V (2006) personal communication, Vasilis Sotiroudas, AgroSpeCom, Greece.
- Spotti C (2003) Prime esperienze di trasferimento in campo delle alternative al bromuro di metile. SIS fumigation company. Symposium proceedings, October 15-17 2003, Capri.
- Spotti C (2004) The use of fumigants and grafted plants as alternatives to methyl bromide for the production of tomatoes and vegetables in Italy. Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30 2004, Lisbon. Office for Official Publications of the European Commission, Luxembourg
- Smeets L (2004) Update on the review of pesticides in the European Union and implications for methyl bromide and chemical alternatives. Proceedings of International Conference on Alternatives to Methyl Bromide, September 27-30 2004, Lisbon. Office for Official Publications of the European Commission, Luxembourg.
- Syngenta (2004) personal communication, Syngenta Seeds, Italy.
- TEAP (2005a) Report of the Technology and Economic Assessment Panel. May 2005 Progress Report. UNEP, Nairobi. p.107-139.
- TEAP (2005b) Report of the Technology and Economic Assessment Panel. October 2005. UNEP, Nairobi. p.67-71
- TEAP (2005c) Handbook on Critical Use Nominations for Methyl Bromide. UNEP, Nairobi.
- Trout T and Damodaran N (2004) Adoption of methyl bromide alternatives by California strawberry growers. Proceedings of Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reductions. Paper 35.
- UNEP (1992) Proceedings of International Workshops on Alternatives to Methyl Bromide for Soil Fumigation, October 19-23 1992. Rotterdam and Rome/Latina. UNEP, Nairobi.
- UNEP (2000a) Case Studies on Alternatives to Methyl Bromide. UNEP, TIE, Paris.
- UNEP (2000b) Methyl Bromide Alternatives for North African and Southern European Countries. UNEP DTIE, Paris.

- UNEP (2002) Case Studies on Alternatives to Methyl Bromide. Volume 2. UNEP, DTIE, Paris.
- UNEP (2003) Handbook for the International Treaties for the Protection of the Ozone Layer. Ozone Secretariat. UNEP, Nairobi.
- UNEP (2004) Report of the First Extraordinary Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. UNEP/OzL.Pro.ExMP/1/3. UNEP, Nairobi.
- UNEP (2005a) Report of the Second Extraordinary Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. UNEP/OzL.Pro.ExMP/2/3. UNEP, Nairobi.
- UNEP (2005b) Report of the Sixteenth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. UNEP/OzL.Pro.16/17. UNEP, Nairobi.