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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Forty-fifth Meeting  
Montreal, 4-8 April 2005

**REPORT ON IMPLEMENTATION OF APPROVED PROJECTS WITH SPECIFIC  
REPORTING REQUIREMENTS**

For reasons of economy, this document is printed in a limited number. Delegates are kindly requested to bring their copies to the meeting and not to request additional copies.

## **Introduction**

1. On behalf of the Government of Argentina, UNIDO has submitted for consideration by the Executive Committee at its 45th Meeting a request for a change to the phase-out schedule of the project for phasing out of methyl bromide (MB) in strawberry, protected vegetables and cut flowers.
2. Upon a request by the Secretariat, UNIDO has also submitted completion reports on the implementation of the following two demonstration projects:
  - (a) Botswana: Three alternatives to the use of MB: non-soil cultivation techniques, bio-fumigation with solarization, and application of various mixtures of other chemicals in low doses (UNIDO), approved by the Executive Committee at its 25th Meeting at a total cost of US \$146,300; and
  - (b) Cameroon: Two alternatives to the use of MB: non-soil cultivation techniques and application of various mixtures of other chemicals in low doses in tobacco (UNIDO), approved by the Executive Committee at its 25th Meeting at a total cost of US \$160,600.
3. The Secretariat reviewed the progress reports in light of the original project proposals and ODS data reported by the Governments concerned to the Ozone Secretariat under Article 7 of the Montreal Protocol.
4. The Secretariat has also submitted for consideration by the Executive Committee at its 45th Meeting a report on the release of the second tranche of China domestic refrigeration and compressors sector plan which was approved at the 41st Meeting of the Executive Committee (decision 41/65).
5. This document consists of summaries of the progress achieved so far in the implementation of the project proposals, comments by the Secretariat and related responses by relevant implementing agencies where applicable, and the Secretariat's recommendation.

### **Argentina: Phase-out of methyl bromide (MB) in strawberry, protected vegetables and cut flowers: Change in the phase-out schedule (UNIDO)**

#### Background

6. The Executive Committee, at its 30th Meeting, approved US \$3,183,390 for UNIDO as the total funds available to Argentina to achieve the complete phase-out of MB used in strawberries, flowers and protected vegetables (331 ODP tonnes). Subsequently, at its 36th Meeting, the Executive Committee approved, in principle, an additional US \$3,588,000 for UNDP as the total funds available to Argentina to achieve the complete phase-out of MB used in tobacco and non-protected vegetable seedbeds, excluding quarantine and pre-shipment applications (additional 178.8 ODP tonnes).

7. As stipulated in its agreement with the Executive Committee, through the implementation of the above two projects, Argentina committed to reduce its total national consumption of controlled uses of MB to no more than the following levels of consumption in the years listed below:

| Year | MB phased out per year (ODP tonnes)       |   |                           | Maximum remaining MB consumption excluding QPS (ODP tonnes) <sup>(**)</sup> |
|------|---|---|---------------------------|---|
|      | Strawberries, flowers, vegetables (UNIDO) | Tobacco, non-protected vegetables (UNDP) <sup>(*)</sup> | Total phased out per year |   |
|      |   |   |                           | 505   |
| 2001 | 33.2                                      |   | 33.2                      | 471.8   |
| 2002 | 66.2                                      | 29  | 95.2                      | 376.6   |
| 2003 | 99.2                                      | 21  | 120.2                     | 256.4   |
| 2004 | 132.4                                     | 16  | 148.4                     | 108   |
| 2005 |   | 33.5  | 33.5                      | 74.5  |
| 2006 |   | 56.5  | 56.5                      | 18  |
| 2007 | 0.0                                       | 0.0   | 0.0                       | 18  |

(\*) An additional 22.8 ODP tonnes to be phased out without the assistance from the Multilateral Fund.

(\*\*) The remaining 18 ODP tonnes is used for post-harvest fumigation of cotton and citrus.

#### Request by the Government of Argentina

8. The Government of Argentina has submitted an official request to change the phase-out schedule in the project for the complete phase-out of MB used in strawberries, flowers and protected vegetables together with a revised agreement between the Government of Argentina and the Executive Committee.

9. The revised MB phase-out schedule requested by Argentina is presented in the following table:

| <b>Revised MB phase-out schedule</b>                  | <b>ODP tonnes</b> |
|---|-------------------|
| MB Baseline   | 411.3             |
| 20% reduction 1 January 2005. QPS permitted for use   | 329.0             |
| Anticipated elimination 2007                          | 136.8             |
| Quantities requested in the application for extension | 192.0             |
| Anticipated elimination in 2009                       | 57.6              |
| Quantities to be used until 1 January 2015            | 134.4             |

10. The complete report prepared by the Government of Argentina is appended at the end of the present report for consideration by the Executive Committee.

#### **Secretariat's comments**

11. The Secretariat has reviewed the report by the Government of Argentina in light of decision Ex.I/2 of the First Extraordinary Meeting of the Parties to the Montreal Protocol and the criteria adopted by the Executive Committee for the submission of requests for the prolongation of accelerated MB phase-out agreements pursuant to decision Ex.I/2 (decision 43/14).

12. Through its decision Ex.I/2, Parties, *inter alia*, requested the Executive Committee to adopt a flexible approach when determining an appropriate course of action to deal with instances where a country has not met a reduction step specified in its MB accelerated phase-out agreement as a result of the specified circumstance not envisaged; invited the Committee to consider, upon request by a country, a prolongation of the final reduction step; and also invited the Committee to adopt criteria for the prolongation of accelerated phase-out agreements.

13. Pursuant to decision Ex.I/2, the Executive Committee adopted the following criteria for requests for the prolongation of accelerated phase-out agreements:

- (a) The Committee shall evaluate each project at the request of the Party implementing the project;
- (b) The project shall be under implementation and demonstrate substantive advancements in its implementation;
- (c) The Party implementing the project shall submit its request for reconsideration together with relevant information to justify its case for communication to the Executive Committee;
- (d) The information submitted by the Party shall include, among other things, identification of unforeseen difficulties that affect the development of the project; where the unforeseen difficulty is the lack of technical or economic feasibility of the alternatives, evidence of trials of alternatives to MB with negative results undertaken in the country; and submission of an action plan or alternative schedule for the phase-out of MB;
- (e) The renegotiation of the disbursements shall make it a priority not to affect the continuity of the project; and
- (f) The Committee shall also take into account whether exemptions for critical uses have been granted in non-Article 5 countries facing similar circumstances (the Committee may request the advice of TEAP and MBTOC).

14. The Secretariat noted that the information submitted by the Government of Argentina covers the following key elements:

- (a) The Government is taking actions to revert the increase in MB consumption, including: strengthening agreements with the strawberry sector in order to facilitate the phase-out of MB; promulgating regulatory measures, including implementation of the ODS licensing system (on 17 November 2004, Decree No. 1609/2004 published in the Official Bulletin, established a licensing system for the import and export of ODS, which will be applied from 1 January 2005); and facilitating the registration and marketing of alternative fumigants to MB (the average time required for registration and commercialization of an agro-chemical is between four to five years);

- (b) The phase-out of MB has been successful in some sectors, while in others difficulties have arisen. Significant amounts of MB have been phased out in the tobacco sector as well as in many areas of intensive greenhouse production, such as cut flowers, ornamentals, tomatoes and peppers in north-western and north-eastern Argentina;
- (c) However, the phase-out of MB in strawberry crops, and production of tomatoes and peppers in greenhouses (which are limited to a few geographical areas in the country) has not yet been accomplished. Metam sodium is the only MB alternative chemical available on the market; its application has presented problems in terms of effectiveness in controlling pests because of agronomic conditions in the country (i.e., climate, quality of irrigation water, increase in nematode populations);
- (d) Other cost-effective alternative chemicals to MB, such as metam potassium, metam ammonium and dimethyl disulphide, are not available on the Argentinean market. In 2005, the process of registration and field evaluation of 1,3-dichloropropene in combination with chloropicrin will begin in the country;
- (e) In addition to the process of registering the alternative chemicals, it would also be necessary to make them available on the market. To that end, it will be necessary to conduct promotion and dissemination campaigns and, if good results are obtained during the experimental stages, the technology associated with the application of the chemicals will have to be adapted to local circumstances;
- (f) Based on the above considerations, the Government of Argentina concluded that sufficient time would be required to make cost-effective MB alternatives available in Argentina. Therefore, MB would continue to be used as a soil fumigant to meet the needs of those sectors that are currently experiencing difficulties with its replacement, bearing in mind issues of competitiveness and sustainability and, in particular, the complex social contexts in the various regions of the country. As of 2007, the estimated amount of MB that would be required for this purpose is 192 ODP tonnes per year,
- (g) It is estimated that, in 2009, it will be possible to phase out about 58 ODP tonnes provided that regulations are introduced and that an alternative chemical is available on the market. The remaining MB consumption will be phased out in 2015.

#### Revised draft agreement

15. During the review of the revised agreement between the Government of Argentina and the Executive Committee, the Secretariat noted some data discrepancies with possible implications for compliance with the current agreement. Based on further discussions, UNIDO advised the Secretariat that it would require additional time to address the issue with relevant stakeholders in Argentina and finalize the revised draft agreement.

16. The conclusions of the discussions, together with a revised draft agreement between the Government of Argentina and the Executive Committee for the phase-out of MB in Argentina, will be submitted to the Executive Committee prior to its 45th Meeting having regard to decision 41/80 (submission of additional information to members of the Executive Committee).

#### **Secretariat's recommendation**

17. Pending.

#### **Botswana: Three alternatives to the use of MB: non-soil cultivation techniques, bio-fumigation with solarization, and application of various mixtures of other chemicals in low doses (UNIDO)**

18. At its 25th Meeting, the Executive Committee approved for UNIDO the following demonstration project in Botswana: three alternatives to the use of MB: non-soil cultivation techniques, bio-fumigation with solarization, and application of various mixtures of other chemicals in low dose, at a total cost of US \$146,300.

19. Subsequently, at the 38th Meeting of the Executive Committee, UNDP submitted for consideration by the Executive Committee a technical assistance project for MB reductions and formulation of regional phase-out strategies for low-volume-consuming countries in Africa. Botswana was among the countries for which technical assistance programmes were proposed. However, on the basis of new information that was made available to the Executive Committee when the project was under discussion, the Committee decided to approve the regional phase-out project on the understanding that, *inter alia*, Botswana would not be included in the project proposal since the demonstration project previously approved for UNIDO would result in the complete phase-out of MB consumption in Botswana (decision 38/26).

#### Progress report submitted by UNIDO

20. The project was designed to demonstrate proven alternatives to the use of MB as a fumigant in the horticultural sector, and to provide technical assistance to farmers on the use of the alternatives to MB. As the consumption of MB was very low in Botswana (about 0.4 ODP tonnes in 1997), it was expected that it would be nil by the time the project was completed. The demonstration project also included a technical evaluation of the alternative technologies (i.e., biofumigation, solarization, soil-less culture, and dazomet) and dissemination of the results to all interested farmers.

21. Although the project was approved in July 1998, activities only started in 2000 when project implementation arrangements between the Government of Botswana and UNIDO had been completed. Three farms were chosen to demonstrate three MB alternatives. From the results obtained from a one-year small-scale test where the three alternatives were tested, the most promising alternative was applied on a full commercial-scale operation to evaluate its feasibility and effectiveness.

22. Based on the results obtained from the controlled trials, soil-less culture was identified as a suitable cost-effective alternative for MB in Botswana. This alternative was proven effective

against nematodes and fungal pathogens, and resulted in high yields of high quality tomatoes. Based on these results, the Government of Botswana agreed to completely phase-out the use of MB in tomato production.

### **Secretariat's comments**

23. At their 15th Meeting, the Parties to the Montreal Protocol noted that for 2002 Botswana was in non-compliance with its obligations under Article 2H of the Montreal Protocol (since its 2002 MB consumption was above its MB baseline). The Parties also noted the plan of action submitted by the Government of Botswana through which Botswana committed to phasing out its consumption of MB from 0.6 ODP tonnes in 2002, to 0.4 ODP tonnes in 2003, to 0.2 ODP tonnes in 2004 to complete phase-out in 1 January 2005, and to establishing a system for licensing imports and exports of MB, including quotas (decision XV/31).

24. At their 16th Meeting, the Parties to the Montreal Protocol noted that Botswana (among other countries) still had not reported data for 2003 and, therefore, Botswana (among other countries) was in non-compliance with its data reporting obligations under the Montreal Protocol. Furthermore, the Parties urged Botswana (among other countries) to work closely with the implementing agencies to report the required data to the Ozone Secretariat as a matter of urgency, and requested the Implementation Committee to review the situation of Botswana (among other countries) at its next meeting (decision XVI/17 on data and information provided by the Parties in accordance with Article 7 of the Montreal Protocol).

25. Subsequently, the Fund Secretariat received a copy of the letter sent on 26 January 2005 by the Ozone Secretariat to the Government of Botswana acknowledging receipt of its outstanding ODS consumption data for 2003. In 2003, the Government of Botswana reported a MB consumption of 0.3 ODP tonnes under Article 7 of the Montreal Protocol, which is below the level of MB consumption agreed in the action plan that was submitted to the Parties to the Montreal Protocol. Furthermore, UNIDO indicated that 2004 MB consumption was expected to be zero.

26. The Secretariat noted that UNIDO had submitted a comprehensive final report on the MB demonstration project in Botswana.

### **Secretariat's recommendation**

27. The Executive Committee may wish to take note that the Government of Botswana with the assistance from UNIDO has completed the demonstration project on three alternatives to the use of MB that had been approved at the 25th Meeting of the Executive Committee, which had resulted in the complete phase-out of controlled uses of MB in Botswana.

### **Cameroon: Two alternatives to the use of MB: non-soil cultivation techniques and application of various mixtures of other chemicals in low doses in tobacco (UNIDO)**

28. At its 25th Meeting, the Executive Committee approved for UNIDO the following demonstration project: two alternatives to the use of MB: non-soil cultivation techniques and

application of various mixtures of other chemicals in low doses in tobacco, at a total cost of US \$160,600.

29. As in the case of Botswana, Cameroon was also not included in the technical assistance project for MB reductions and formulation of regional phase-out strategies for low-volume-consuming countries in Africa, approved by the Executive Committee at its 38th Meeting. The reason for excluding Cameroon was that the demonstration project previously approved for UNIDO would result in the complete phase-out of MB consumption in Cameroon (decision 38/26).

#### Progress report submitted by UNIDO

30. The project was designed to demonstrate the use of soil-less cultivation for the production of seedlings and a low-dose application of chemicals as two proven alternatives to the use of MB as a soil fumigant in tobacco seedling production (all tests and trials were carried out in fields of the Cameroon Leaf Tobacco Company). Implementation of the project involved the provision of equipment for soil-less cultivation and use of substrates, training of farmers and dissemination of the results. MB consumption in the tobacco sector in Cameroon was expected to be phased-out by completion of the project.

31. Of the two alternatives tested, the soil-less cultivation (floating tray system) gave the best results. However, the main problem related to soil-less cultivation was the availability and cost of substrates. To address this issue, during project implementation different raw materials that could be used as substrate were tested. As a result, it was found that a mixture of washed sand and fermented cocoa husk could be used as a locally available substrate.

32. During the testing and trials with different substrates, tobacco farmers provisionally phased out the consumption of MB with the application of low-dose chemicals (i.e., basamid). At the same time, the tobacco industry also replaced MB consumption used to fumigate stored tobacco leaves with phosphine.

33. In total, about 8 ODP tonnes of MB have been phased out in the tobacco sector in Cameroon.

#### **Secretariat's comments**

34. At their 15th Meeting, the Parties to the Montreal Protocol noted, *inter alia*, that for 2002 Cameroon was in non-compliance with its obligations under Article 2H of the Montreal Protocol (since its 2002 MB consumption was above its MB baseline). The Parties requested Cameroon to submit to the Implementation Committee a plan of action to ensure a prompt return to compliance with respect to consumption of MB. The Parties also decided to monitor closely the progress of Cameroon with regard to the implementation of its plan of action and phase-out of MB. To the degree that Cameroon was working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing (i.e., Cameroon should continue to receive international assistance to enable it to meet those commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance) (decision XV/32).



35. In 2001 and 2002, the MB consumption reported by the Government of Cameroon under Article 7 of the Montreal Protocol was 25.4 ODP tonnes for each year. By 2003, the reported consumption was 9.9 ODP tonnes, which is 8.2 ODP tonnes below the MB baseline (18.1 ODP tonnes). However, the Government of Cameroon did not submit the plan of action to the Implementation Committee to be considered by the Parties at their 16th Meeting.

36. In the progress report submitted by UNIDO, it is indicated that UNIDO assisted the Government of Cameroon in conducting a survey to identify the current uses of MB in the country. Without such a survey it would not have been possible for Cameroon to submit an action plan to the Parties of the Montreal Protocol.

37. Based on the survey, and with the assistance provided by the “Societe General de Surveillance”, the Customs Department and the “Conseil Interprofessionnel des Sociétés d’Assainissement au Cameroon”; it was found out that, in 2003, MB was used in the following applications;

- (a) Soil fumigation in cultivation of melon and pepper crops and palm nurseries (3.0 ODP tonnes);
- (b) In warehouses for storage of cocoa, coffee and cotton crops (6.9 ODP tonnes); and
- (c) For quarantine and pre-shipment (QPS) applications (8.1 ODP tonnes in 2002).

38. The Secretariat pointed out that, through its decision 38/26, the Executive Committee had decided not to include Cameroon in the regional technical assistance project submitted by UNDP since the demonstration project previously approved for UNIDO would result in the complete phase-out of MB in Cameroon. Subsequently, UNIDO stated that the “decision was taken in November 2002, on the understanding by the UNIDO representative that, according to the available information in that time, the consumption in the country was for soil fumigation in tobacco. It should be noted that Cameroon had not reported data in 2000 and 2001. The data used in the preparation of the demonstration project was based on 12 ODP tonnes from 1997, which was that same in 1998”. UNIDO also indicated that the results of the survey that had been recently conducted have already been submitted to the Ozone Secretariat. Currently, MB is no longer used as a soil fumigant in the tobacco sector in Cameroon; however, MB is currently used as a soil fumigant for other crops and for fumigation of stored products (i.e., 9.9 ODP tonnes in 2003). A project proposal for the phase-out of remaining uses of MB in Cameroon might be submitted to a future meeting of the Executive Committee.

### **Secretariat’s recommendation**

39. The Executive Committee may wish to take note that the Government of Cameroon, with assistance from UNIDO, has completed the demonstration project on two alternatives to the use of MB that had been approved at the 25th Meeting of the Executive Committee, which had resulted in the complete phase-out of controlled uses of MB as a soil fumigant in the tobacco sector.

**China: Report on decision 41/65: Release of second tranche of China domestic refrigeration and compressors sector plan.**

Background

40. At its 41st Meeting the Executive Committee approved funding of US \$2,171,539 plus US \$192,239 in agency support costs for UNIDO for the second and final tranche of the sector plan for CFC final phase-out in China, originally approved in principle at the 38th Meeting. The Committee requested the Secretariat to disburse 50 per cent of the funding at that time, pending completion by the Secretariat and UNIDO of a further examination of the possibility of redeployment of equipment from two cancelled projects to the sector plan, and if necessary to bring in independent experts to assess the condition and the value of the equipment. The Committee further authorised the Secretariat to disburse the balance to UNIDO, upon completion of the examination, after taking in to account the value from re-use of some or all of the equipment (decision 41/65).

41. The two projects referred to in decision 41/65 were cancelled at the 39th Meeting in April 2003 (decision 39/14). Subsequently, UNIDO advised the Secretariat that China had concluded that one of the cancelled projects, for a domestic refrigeration manufacturing enterprise (Bole), could be successful re-activated. Accordingly, a proposal for reactivation of the Bole project has been submitted to the 45th Meeting by UNIDO on behalf of the Government of China. The project has been submitted in accordance with relevant decisions on cancelled projects and is included in the China country project document (UNEP/OzL.Pro/ExCom/45/26). If approved, the equipment purchased for the Bole project will be used as originally intended.

42. The other cancelled project was for conversion of a compressor manufacturing enterprise (Hangli). The equipment remaining from the project is a computer controlled machining centre, and two smaller items which were installed, together with ancillary equipment at a cost of some US \$450,000 in September 2002.

43. A report written by the equipment supplier following an inspection in May 2004 indicated that the machining centre equipment was dirty and rusty and that a substantial number of parts were missing. The value of the machining centre was estimated by the supplier as US \$12,000.

**Secretariat's comments**

44. There have been extensive discussions between the Secretariat and UNIDO since the approval of the domestic refrigeration and compressor sector plan at the 41st Meeting. UNIDO has advised that it is not possible for the unused equipment to be redeployed to any other Multilateral Fund projects currently under implementation in China. The Secretariat therefore invited UNIDO to examine alternative options that would enable the Fund's investment of some US \$450,000 to be realised for the benefit of the Fund. The Secretariat's request was based on a number of Executive Committee decisions that, while not specifically directed to this situation, indicate an expectation that when projects are cancelled after equipment has already been purchased, the value of the investment, in the form of the equipment, should be recovered wherever possible. A list of the related decisions is attached (Annex I).

45. The options for achieving this included determining a theoretical consumption for the cancelled project (likely to be around 100 ODP tonnes) and deducting this from the remaining consumption eligible for funding in China of 908.3 ODP tonnes, or establishing a normalised value (likely to be between US \$200,000 and US \$300,000) for the equipment based on it being maintained in good order and condition, and deducting this value from the funds still withheld from the domestic refrigeration and compressor sector plan for China.

46. The Secretariat received various responses from China and from UNIDO declining these options. The reasons given for declining the options included:

- (a) That since the domestic refrigeration sector plan provided for complete phase-out in the sector in China, the phase-out from Hangli had already been taken into consideration and any additional deduction of consumption based on Hangli would constitute double counting;
- (b) The Hangli project had been approved and cancelled on an individual basis and funding issues arising from cancellation should not affect the overall domestic refrigeration sector or the country programme, and;
- (c) The remaining eligible consumption is in the pharmaceutical aerosol sector which is already insufficiently provided for and a deduction would create further difficulties in implementing the Protocol.

47. UNIDO indicated that, noting the valuation of the equipment provided by the supplier in May 2004, China could agree to a reduction in the final payment for the sector plan of US \$15,000 being the assessed current value of the machining centre plus the assumed residual value of the two smaller items. The reduction was offered on the basis that the equipment in its current condition would be transferred to a refrigeration company identified by SEPA as Qingjiang Refrigeration Limited, Hangzhou.

48. Under UNIDO's agreement with the Executive Committee as an implementing agency of the Fund, the ownership of equipment purchased for a project is vested in UNIDO for the duration of the project. Following operational completion of a project the ownership is transferred to the appropriate institution or agency in the country. Since the project was cancelled before operational completion, it would appear that ownership of the equipment is still vested in UNIDO.

49. One of the principle issues is how the value of the equipment fell from its purchase price of around US \$450,000 to an apparent US \$15,000 between the end of 2001 and May 2004 while ownership was vested in UNIDO. UNIDO has provided a summary report (copy attached, Annex II) indicating:

- (a) The equipment was delivered in August 2001, commissioned in September 2001 and used until suspension of the project at the end of 2001 when the enterprise was taken over by a new owner;

- (b) As per paragraph 2 of the Working Arrangement between UNIDO, the enterprise and SEPA, all equipment was to be taken care of by the recipient;
- (c) UNIDO conducted several missions until the end of 2002, during which they reminded the new management that all equipment should be well maintained as per the Working Arrangement;
- (d) Later, UNIDO was informed that the entire company had been dissolved, the buildings had been sold and, with the consent of SEPA, the equipment had been moved to another company for storage, and;
- (e) Thus in February 2003 it was decided to request cancellation of the project.

50. After reviewing the circumstances in detail, together with all the decisions that have a bearing on the issue, the Secretariat remains of the view that the Multilateral Fund should not be required to bear the financial burden arising from the apparent loss in value of equipment of over US \$435,000 in a relatively short period of time. No options other than those suggested by the Secretariat for making restitution for this loss in value have been forthcoming. As a consequence the Secretariat has not at this stage released the balance of the funds for the final tranche of China's domestic refrigeration and compressor sector plan under decision 41/65.

#### **Secretariat's recommendation**

51. Noting that it is now over one year since funding for the second tranche of the sector plan had been approved, the Executive Committee might wish to consider whether it is prepared to write off the value of the equipment provided for the Hangli project or alternatively whether it wishes to request UNIDO, in consultation with the Government of China and the Secretariat, to continue to work on an innovative approach to realising the value of the equipment for the benefit of the Fund and to report to the Executive Committee at a future meeting, prior to the Secretariat being authorised to release the balance of funding.

## Annex I

### **decision 39/13**

1. Having considered the comments and recommendations of the Sub-Committee on Monitoring, Evaluation and Finance (UNEP/OzL.Pro/ExCom/39/6, paragraphs 43 to 45), the Executive Committee decided:

- (b) To adopt the following two options:
  - (i) If an enterprise was provided with equipment needed for conversion to non-ODS technology, the full amount of ODS envisioned for phase-out in the approved project should be recorded as the phase-out;
  - (ii) If an enterprise was provided with some items of equipment and such items could not be transferred by the implementing agency concerned to another enterprise(s) in the country or the region, the cost-effectiveness of the approved project should be used to calculate an amount of ODS phase-out proportional to the cost of equipment items and other associated costs, by dividing the amount of funds disbursed to the enterprise by the cost-effectiveness value. The resulting amount should be recorded as the phase-out;

### **decision 39/14**

2. Having considered the recommendations of the Sub-Committee on Monitoring, Evaluation and Finance (UNEP/OzL.Pro/ExCom/39/6, paragraph 47), the Executive Committee decided:

- (f) To cancel the following projects by mutual agreement and request UNIDO to investigate the possibility of redeploying the equipment from those cancelled projects to the sector plan, and to adjust the future work programmes in the light of the redeployment as part of UNIDO's request for the second tranche of the sector plan:
  - (i) Conversion from CFC-12 to isobutane technologies and products at the compressor factory of Hangli Refrigeration Ltd., in Hangzhou, China (CPR/REF/26/INV/256), implemented by UNIDO, noting that US \$674,109 of the net US \$861,000 approved for the project had been disbursed up to 2002 with no direct phase-out of ODS consumption, since this was a compressor project;

**decision 41/65**

China: Sector plan CFC final phase-out: domestic refrigeration and domestic refrigeration compressors (second tranche) (UNIDO) (UNEP/OzL.Pro/ExCom/41/28)

3. Having considered the recommendations of the Sub-Committee on Project Review (UNEP/OzL.Pro/ExCom/41/14, paragraph 123), the Executive Committee decided:

- (a) To approve the second funding tranche of the above project at the level of US \$2,171,539 plus agency support costs of US \$192,239 for UNIDO;
- (b) To request the Secretariat to disburse US \$1,085,770 plus US \$96,120 in support costs, pending completion by the Secretariat and UNIDO of a further examination of the possibility of redeployment of equipment from two cancelled projects to the sector plan, if necessary bringing in independent experts to assess the condition and the value of the equipment;
- (c) To authorize the Secretariat to disburse the balance to UNIDO, upon completion of the examination, after taking into account the value from reuse of some or all of the equipment; and
- (d) To request the Secretariat to report to the Executive Committee on the final disbursement and the return of any unallocated funding.



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| Page 1 of ...1...Page(s)  |  |

*Feb 24/05*

*T. Gróf*

*Mr. Hetherington*

Officer: .....

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**Subject: Cancelled Projects in China - Hangli**

Dear Mr. Tony Hetherington,

Reference is made to the Fax of 22 February 2005 from the Secretariat on the titled subject. Please find the brief below to respond to your query.

The project was approved at the 26<sup>th</sup> Meeting of the Executive Committee in November 1998. The project was implemented in close cooperation between UNIDO, the enterprise and SEPA through various field visits and exchange of correspondence. It experienced no delay till the end of 2001. The CNC machining centre was procured through international bidding. It was delivered to the project site in August 2001 and commissioned in September 2001. It was used till the suspension of the project by end 2001. As per the Working Arrangement between UNIDO, the Enterprise and SEPA, all equipment was taken cared of by the recipient. (Working Arrangement Para 2. Scope of supply and services to be provided by Hangli Refrigeration Ltd: item h. Adequate care, in plant transpotation, lifting and storage of equipment at the point of delivery, storage and project sites and between them, prior to and during the period of erection until final acceptance).

By end 2001, almost all activities were completed, the only remaining work was to produce prototypes of compressors for isobutane refrigerant. At this stage, however, the enterprise was taken over by another Chinese owner (Serena). The new owner demonstrated no clear interest in the project and suspended the implementation of the project.

UNIDO continued to monitor the project until end 2002. It conducted several missions immediately after getting to know the change of the situation and observing the halt of the project in close cooperation with SEPA. UNIDO reminded the enterprise's new management that all the equipment should be well maintained as per the Working Arrangement quoted above.

SEPA was also carefully investigating the situation of the enterprise. Later, UNIDO was informed that the entire company was dissolved, the buildings were sold and the equipment with the consent of SEPA/CHEAA was moved out to another company for storage. Thus, in February 2003 it was finally decided to cancel the project, since no progress was made by the enterprise. The cancellation of the project was approved at the 39<sup>th</sup> ExCom in March 2003.

With best regards,

  
Sidi Menad Si Ahmed  
Director  
Multilateral Environmental Agreements Branch  
Programme Development and Technical Cooperation Division  
UNIDO Vienna



**APPLICATION FOR EXTENSION PURSUANT TO DECISION 43/14 OF THE  
EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL**

The Argentine Republic has a particular interest in the protection of the ozone layer because, owing to its geographical situation, which is close to the zone most affected by the deterioration of the ozone layer, a large area of the country, particularly Patagonia, is vulnerable to ultraviolet radiation.

Argentina is therefore party to the multilateral environmental agreements which deal with these issues, such as:

- The Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer, as well as the London, Copenhagen and Montreal Amendments to the Protocol. The Beijing Amendment was recently approved by the Senate and we hope to deposit our instrument of ratification in the first half of 2005.

Although Argentina faces some difficulties in its efforts to replace methyl bromide in certain productive sectors, in other sectors such as greenhouse vegetable production and flower and tobacco production, these efforts are generating positive results, and we believe that we are in a position to meet the commitments entered into.

In the tobacco sector, central Government, the governments of tobacco-producing provinces and institutions of producers and harvesting companies are making significant joint efforts to eliminate methyl bromide by 2007.

Using resources both from the Multilateral Fund for the Implementation of the Montreal Protocol and from producers and companies themselves, more than 18,000 producers have already been trained and have received direct technical assistance relating to alternatives.

The results show a sustained reduction in methyl bromide use:

- In 2000, the sector's initial consumption was 268 metric tons;
- In 2002, this figure had already fallen significantly, to 155 tons, as a result of the action taken;
- In 2003, despite the growth of the tobacco-producing area, consumption fell again to 106 tons;
- Final figures for 2004 are not available, but preliminary information indicates that already more than 65 per cent of the tobacco-producing area is being sown without methyl bromide.

The most widely used alternatives have been the floating tray system and metam sodium. Heat treatment, solarization and steaming have also contributed to the fall in methyl bromide use.

A significant event in this process has been the declaration this year that the Province of Misiones is "methyl bromide-free". The Province of Misiones is the largest tobacco-producing region in the country and includes about 17,000 small producers, all of which are already using the floating tray system. Next year, it is planned to introduce a system of certification of "methyl bromide-free tobacco" to encourage the adoption of alternatives. In this regard, international market recognition is essential to reward the efforts of those sectors which are investing to protect the environment.

As mentioned above, technical, structural, agroclimatic and market problems persist in some sectors such as strawberry production, making it difficult to adopt alternatives. A report is presented below on the progress of methyl bromide replacement in the disinfection of soil for greenhouse cultivation of strawberries, vegetables and ornamentals in Argentina.

In the strawberry, vegetable and ornamentals sector, a demonstration project for the testing of alternatives (MP/ARG/97/186) was carried out in 1997-2000, and since 2000 the project for the phasing-out of methyl bromide in the same sector (MP/ARG/00/33) has been under way. Project operations are organized by a national coordinating agency and nine regional technical teams located strategically in the regions where methyl bromide has been in use in the productive sectors mentioned.

The regional technical teams carry out various tasks aimed at adjusting technologies locally and informing and training producers, their workforce and professional advisers, with a view to eliminating methyl bromide. One of the cornerstones of these efforts is the introduction into each region's production systems of a large number of alternatives to be used for substitution/demonstration on a commercial scale. It will thus be possible to see quickly the impact of the alternatives proposed under the project and to familiarize the relevant actors with the replacement technology.

#### **Activities carried out during 2002 and 2003**

| <b>Type of activity</b>                   | <b>2002</b> | <b>2003</b> |
|---|-------------|-------------|
| On-site assistance (visits) to producers  | 3,270       | 3,598       |
| Information days with producers           | 71          | 81          |
| Demonstration batches on producers' farms | 203         | 248         |
| Office consultations, informal meetings   | 502         | 552         |
| Technical meetings with professionals     | 40          | 59          |
| Communication activities                  | 126         | 215         |

Various substitute technologies have been selected for their effectiveness and market availability, although the emphasis has been placed on a chemical fumigant (metam sodium), the cost of which is lower and steaming, which is of equivalent cost. Use of the latter is limited to particular situations: problems that cannot be resolved using other technologies, product differentiation or production systems in which substrates are used.

Mobile soil and substrate disinfection units are to be provided for the purpose of promoting steam technology in the sector. These units were obtained using funds from the Tierra Sana (Healthy Earth) Project. The special feature of the units is that they can be moved to each place where treatment is needed. Through a process of public bidding among producer organizations (usually cooperatives) to operate the service, the equipment is awarded to one applicant in each region, which must provide the service to every farmer in the region who requires it and also undertake to maintain the equipment while it is being used. Once the project is concluded, the equipment will be donated to each operator that is to provide the service. Of the 20 units available under the project, 12 have been awarded to date and are in operation. Of the remainder, four are ready for operation but are still in the process of being awarded, and the other four are being assembled. It is envisaged that all the units will be in operation by the end of 2005. This technology has a high impact on substitution in the ornamentals and cut flowers sector.

**Methyl bromide (MeBr) use by region and by production activity (2000-2003)**

| Region             | Type of production   | MeBr (ton)    |               |               |               |
|--------------------|----------------------|---------------|---------------|---------------|---------------|
|                    |                      | 2000          | 2001          | 2002          | 2003          |
| Tucumán            | Greenhouse           | 10.00         | 9.00          | 6.00          | 3.20          |
|                    | Strawberry (fresh)   | 49.50         | 45.50         | 39.60         | 55.00         |
|                    | Strawberry (nursery) | 23.00         | 22.00         | 10.00         | 1.20          |
|                    | <b>TOTAL</b>         | <b>82.50</b>  | <b>76.50</b>  | <b>55.60</b>  | <b>59.40</b>  |
| Córdoba            | Greenhouse           | 2.39          | 1.89          | 1.45          | 5.72          |
|                    | <b>TOTAL</b>         | <b>2.39</b>   | <b>1.89</b>   | <b>1.45</b>   | <b>5.72</b>   |
| Salta—Jujuy        | Greenhouse           | 9.50          | 5.50          | 0.50          | 0.40          |
|                    | <b>TOTAL</b>         | <b>9.50</b>   | <b>5.50</b>   | <b>0.50</b>   | <b>0.40</b>   |
| Corrientes         | Strawberry           | 11.90         | 11.40         | 9.00          | 7.12          |
|                    | Greenhouse           | 56.40         | 50.00         | 32.00         | 1.35          |
|                    | <b>TOTAL</b>         | <b>68.30</b>  | <b>61.40</b>  | <b>41.00</b>  | <b>8.47</b>   |
| Mendoza            | Greenhouse           | 17.94         | 16.00         | 9.40          | 9.67          |
|                    | Nursery              | 8.80          | 8.50          | 7.90          | 8.75          |
|                    | Cut flowers          | 4.00          | 3.00          | 1.80          | 0.37          |
|                    | <b>TOTAL</b>         | <b>30.74</b>  | <b>27.50</b>  | <b>19.10</b>  | <b>18.78</b>  |
| Mar del Plata      | Strawberry           | 7.90          | 8.90          | 6.37          | 16.50         |
|                    | Greenhouse           | 9.40          | 8.40          | 6.63          | 6.76          |
|                    | <b>TOTAL</b>         | <b>17.30</b>  | <b>17.30</b>  | <b>13.00</b>  | <b>23.21</b>  |
| Gran Buenos Aires  | Greenhouse           | 245.00        | 202.00        | 170.00        | 125.00        |
|                    | Cut flowers          | 20.00         | 17.00         | 13.00         | 12.00         |
|                    | <b>TOTAL</b>         | <b>265.00</b> | <b>219.00</b> | <b>183.00</b> | <b>137.00</b> |
| Santa Fe           | Strawberry           | 71.28         | 65.00         | 25.78         | 48.18         |
|                    | Greenhouse           | 3.75          | 3.60          | 2.90          | 1.35          |
|                    | Cut flowers          | 0.72          | 0.70          | 0.67          | 0.30          |
|                    | <b>TOTAL</b>         | <b>75.75</b>  | <b>69.30</b>  | <b>29.34</b>  | <b>49.83</b>  |
| Chaco-Formosa      | Greenhouse           | 0.08          | 0.07          | 0.05          | 0.04          |
|                    | Cut flowers          | 0.48          | 0.40          | 0.17          | 0.10          |
|                    | Other                | 0.05          | 0.04          | 0.01          | 0.00          |
|                    | <b>TOTAL</b>         | <b>0.60</b>   | <b>0.51</b>   | <b>0.23</b>   | <b>0.14</b>   |
| <b>GRAND TOTAL</b> |                      | <b>552.08</b> | <b>478.90</b> | <b>343.22</b> | <b>302.95</b> |

As can be seen from the above table, the progress of substitution/elimination varies considerably according to sector and region:

- In the ornamentals sector (pot plants and cut flowers), high levels of substitution have been attained. Substitution technologies, especially steaming, have produced very good results, considering that the substitution of methyl bromide is a consolidated process. It should be noted that, since activities in this sector are concentrated in urban belts, the adoption of steaming has the potential to make a positive impact on environmental pollution control.
- In the horticulture sector (greenhouse tomatoes and peppers), the situation with regard to substitution varies according to the area in question. Substitution targets have been achieved in the north-western, central and western regions, but, in other regions with a high level of production, the process of substitution has been adversely affected by the increase in populations of the *Nacobbus aberrans* and *Meloydogine incognita* nematodes in tomato and pepper greenhouses. This phenomenon has occurred in the Province of Buenos Aires (Mar del Plata and La Plata) and the Province of Corrientes (Bella Vista, Goya, Saladas and other

localities), where metam sodium has achieved little impact. As a result, the rate of adoption of metam sodium has dropped. Because of this difficulty, other techniques—such as solarization, biofumigation and supplementing metam sodium with nematicides—are being evaluated and diffused in Corrientes and new fumigants and nematicides are being evaluated in all regions in collaboration with agrochemical companies. In some cases, it is the technical staff of the National Institute of Agricultural Technology (INTA) who carry out tests for the registration of new products such as metam ammonium, metam potassium, dimethyl disulphide and 1,3-dichloropropene. Nationally, methyl bromide use in this sector is decreasing, although, because of the difficulties described, it has increased in localities that have experienced the problem of a growing nematode population.

- The greatest difficulties in replacing methyl bromide in soil fumigation have been encountered in the strawberry sector in Argentina. Between 2002 and 2004, the area of land cultivated in the sector increased significantly, from 777 hectares to 1,418 hectares. Fumigation using methyl bromide thus increased in almost direct proportion to the increase in the area cultivated, despite the efforts made under the Tierra Sana Project run by INTA and UNIDO (MP/ARG/00/033).

There are various reasons for the low levels of methyl bromide substitution in this sector:

1. The fact that, on the domestic agrochemical market, only one chemical alternative with the potential for mass use is available: metam sodium. This means that there is a limited range of options for responding to the various problems currently experienced.

Since the introduction of the elimination projects managed by INTA, enormous efforts have been made to promote the development of new fumigants on the domestic market. At the same time, where agroecological conditions have permitted, the use of other substitution technologies such as solarization and biofumigation has been promoted.

In order to make other fumigants available on the market, contacts have been established with companies which supply these products at the international level. In 2003, the process of registering various products that were not available on the domestic agrochemical market began. These products included dimethyl disulphide, metam potassium and metam ammonium, for which the technical staff of INTA, at the expense of the respective companies, conducts the experimental tests necessary for the records at the National Agrochemical Registry of the National Service for Health and Agro-food Quality (SENASA). In addition, an agreement was reached with the company Agroquímicos del Levante (East Coast Agrochemicals) in Valencia, Spain, to begin experiments in 2005 to evaluate the 1,3-dichloropropene + chloropicrin mixture for use in drip irrigation and in direct injection into soil during furrowing, with a view to making the technology available to the sector as quickly as possible. Given the precedents<sup>1</sup> set in other strawberry-producing regions of the world, it is hoped that this mixture will perform well in Argentina.

2. Adverse conditions in the 2003-2004 cycle made it necessary to use metam sodium to achieve good results in soil disinfection in the two major strawberry-growing regions, Coronda and Tucumán.

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<sup>1</sup> “[The] fumigant mixture 1,3-D/Pic [1,3-dichloropropene + chloropicrin] (Telone C-35), whether injected into soils or drip applied, has been consistently effective across major production regions in USA, Spain and Australia. In all three countries, the product has already been successfully adopted for a substantial proportion (>20%) of strawberry fruit production in each country. It has been so successful in Australia that no application for a CUE [critical use exemption] was made for use in 2006.” Porter et al., “Strawberry fruit production: summaries of alternatives to methyl bromide fumigation and trials in different geographic regions”, in *Proceedings of the Fifth International Conference on Alternatives to Methyl Bromide*, Lisbon, 27-30 September 2004.

In the past two years, weather conditions and changes in the quality of the water used for irrigation have caused difficulties. This has affected the adoption of the proposed alternative.

Tucumán: In this region, it has proved difficult to apply metam sodium on a large scale and far enough in advance of transplanting to be able to adhere to the optimum planting date (the first weeks of April), owing to the frequent and intense monsoon-like summer rains that fall during the period of soil preparation and fumigation. Because of the rains, soil preparation must be carried out well in advance, since otherwise the time available between fumigation and transplanting is reduced. As metam sodium takes 15 days to act, whereas methyl bromide takes only five days to achieve the same effect, the former is at a disadvantage. It is known that delays beyond the optimum planting dates cause a drop in yields.

**Recorded precipitation over the strawberry-growing area of Tucumán (Lules)  
during the pre-planting period in 2002 and 2003**

| Month                    | 2002  | 2003  |
|--------------------------|-------|-------|
| December (previous year) | 118.0 | 296.5 |
| January                  | 81.5  | 10.0  |
| February                 | 15.0  | 165.5 |
| March                    | 92.5  | 96.0  |
| Period total             | 307.0 | 568.0 |

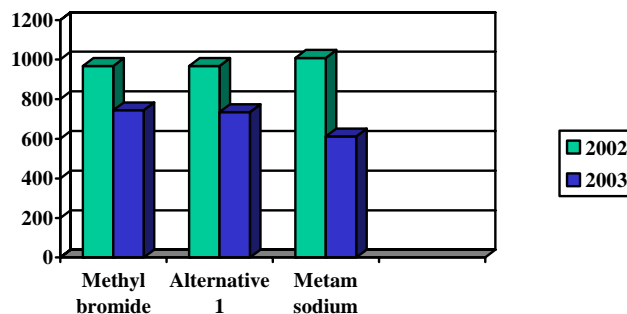
It can be seen that, in 2003, the amount of precipitation that fell during the period of soil preparation and fumigation was almost double that of the previous year. Moreover, the rainfall frequency was almost once every other day. This reversed the progress made in 2002. The unpredictability of the climate and the randomness of the results create uncertainties for producers. Therefore, while the production data recorded in the strawberry-growing area of Tucumán—with soil treatments using metam sodium applied at the end, on a commercial scale on plots of 2,000 to 10,000 square metres—show that there are no differences in yields compared to those obtained using methyl bromide, problems arose when large areas were tackled because of the climate difficulties mentioned above. Other factors also come into play. For example, most of the land used for growing strawberries is leased, and the tenancy and availability of the land are determined annually at the end of the season. This makes it difficult to plan the next crop and to carry out preparation work, even though most of the land in question has already been used for growing strawberries for many years. These factors, together with others which will be mentioned below, have resulted in a very low level of adoption of the metam sodium alternative in Tucumán.

Coronda: This region had achieved the greatest progress in substitution using metam sodium. However, an unforeseen change in the condition of the waters of the River Coronda, which are used for irrigation, impacted on the effectiveness of the metam sodium alternative in the 2003 cycle. Serious flooding in the city of Santa Fe and neighbouring areas during the first half of 2003 caused the waters of the River Salado (with high salinity) to be diverted towards the River Coronda and its tributaries, increasing their salinity. The crops of Coronda are irrigated by these waters, and one section of the river continued to have a high level of salinity for a prolonged period. Some 50 per cent of the region's strawberry-growing area is situated on this section of the river. The river water is very important for irrigation in the area because the groundwater—which has high electrical conductivity owing to the soluble salts it contains—is of poor quality. The electrical conductivity of the groundwater can reach 3.5 dS/m<sup>2</sup>, sometimes with high sodium content. When there is no choice but to use water from this source, salinization becomes a considerable problem, and the situation is even worse when rainfall is scarce and the land requires more frequent irrigation.

In these conditions, yields from the plots of land treated with the main alternative (metam sodium) were considerably lower than yields from the control areas where methyl bromide was used. This result can, presumably, be attributed to a change in the chemical reaction whereby metam sodium in the soil is converted into methyl isocyanate, the gas which ultimately acts as a biocide. In these circumstances metam sodium would be significantly less effective because it would be generating less methyl

isocyanate. This is reflected in the adverse results obtained on one of the plots where it was used as a substitute in 2003.

Graph 1. Strawberry sector. Changes in production (grams per plant) of the Camarosa variety between 2002 and 2003 in the locality of Coronda (Santa Fe, Argentina) with different soil fumigation treatments. The bars in the middle of the graph represent one of the new fumigants being evaluated.



The negative results caused a drop in the level of adoption of the alternative proposed under the project in the following season (2004). It is therefore vital to test and adapt possible technical solutions such as water treatment and new chemical alternatives (metam potassium, metam ammonium, dimethyl disulphide) that are in the process of being registered and are not yet available on the market, using various forms of application, depths, concentrations, etc.

3. The availability of methyl bromide on the national market and its reduced price (10 per cent lower) place the other possible alternatives at a disadvantage, because they are less readily available and/or more expensive.

4. The increasing number of requests for critical use of methyl bromide in the strawberry sector in countries operating under article 2 of the Montreal Protocol is a disincentive to use substitutes, as is the increase in the volume used in strawberry cultivation in Chile, a country which is a direct competitor of Argentina, essentially owing to investment in the strawberry sector).

This point illustrates the unsettled situation in local productive sectors, the substantial volumes requested by article 2 countries for “critical uses” and the approval of most of these requests, particularly in the strawberry production sector in the United States of America, Spain and other countries. Moreover, in Chile, cultivation is expanding considerably, as is methyl bromide use in soil fumigation.

It has been concluded that the combination of all the factors mentioned has had a negative impact on the substitution process and caused the increase in methyl bromide use in 2003 and particularly in 2004.

The Argentine Government, in collaboration with provincial governments, is working to implement a series of measures which, it is hoped, will reverse the trend, such as:

1. Strengthening agreements with the strawberry sector in order to advance the substitution process;

2. Promulgating regulatory measures for methyl bromide use, such as a requirement to be authorized and registered to buy and use methyl bromide, prohibition of the use of pure or almost pure forms for treating soil, and implementation of a system of licensing for import of methyl bromide.

With regard to the latter point, it should be noted that, on 17 November 2004, Decree No. 1609/2004 was published in the Official Bulletin, establishing a system of licensing for the import and export of

substances that deplete the ozone layer, as required by article 4B of the Montreal Protocol. The licensing system will be applied from 1 January 2005 and is governed by Resolution No. 953 of the Ministry of the Environment and Sustainable Development;

3. Facilitating the registration and market availability of new fumigants or formulations that are undergoing agronomic evaluation. Given that the experimental agronomic evaluation of agrochemicals during the registration process takes more than two years and that companies may not embark on commercial development in the producing regions until after that date, the time normally taken for a product to become available can vary from four to five years.

### **Considerations and proposals with regard to the timetable for the elimination of methyl bromide in the Republic of Argentina<sup>2</sup>**

With regard to the establishment of a timetable for methyl bromide elimination, taking account of the progress made and difficulties that have arisen in the various productive sectors that are using this technology for soil and substrate disinfection, the following considerations and proposals may be put forward:

1. The plan to eliminate methyl bromide has been successful in some sectors, while in others difficulties have arisen.

Significant progress has been made in the tobacco sector, with strong support from the tobacco market—which has signalled its support clearly—and from other important actors, such as a number of provincial governments that have undertaken strong commitments: one province even declared itself “methyl bromide-free” recently. The tobacco sector itself has also shown its commitment by collaborating with the adoption of substitution technology.

Substitution is also well advanced in many areas of the intensive greenhouse production sector, such as cut flowers, ornamentals, tomatoes and peppers in north-western and north-eastern of Argentina, and has been sustained by the smooth functioning of the substitution technologies established and transferred by INTA, such as metam sodium, steaming and solarization.

2. In other sectors, such as the strawberry sector in Tucumán and Santa Fe, and the greenhouse tomato and pepper sector, which is limited to a few geographical areas (Gran Buenos Aires, Mar del Plata), the main chemical alternative promoted and available on the market—metam sodium—has presented certain problems in terms of effectiveness and random results because of changing agronomic conditions (climate, quality of irrigation water, increase in nematode populations).

3. Other chemical fumigants which are alternatives to or supplements for metam sodium, and which are known to be potential competitors of methyl bromide in terms of cost and effectiveness, are not even available on the Argentine market.

Two groups can be identified in this category: (1) Metam potassium, metam ammonium and dimethyl disulphide, which were the first to undergo the process of experimental registration and scientific evaluation of their effectiveness (in 2003 and 2004). (2) In 2005, the process of registration and experimental evaluation of 1,3-dichloropropene + chloropicrin will begin.

It should be borne in mind that products not only need to be registered but also need to be made available on the market. To that end, it will also be necessary to conduct promotion and dissemination campaigns. However, even if good results are obtained in the experimental stages, the technology will

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<sup>2</sup> Buenos Aires, 14 December 2004.

essentially have to be adapted—in terms of the time, form and conditions of application and the dose applied—to the levels required for large areas and different agroecological conditions.

The points mentioned above lead us to conclude that sufficient time will have to be scheduled in order to establish alternatives to methyl bromide in production activities, and that a quantity of methyl bromide for soil fumigation will have to be retained to meet the needs of those sectors that are experiencing difficulties with substitution, bearing in mind issues of competitiveness and sustainability and, in particular, the complex social contexts in the various regions of our country.

The estimated methyl bromide requirement is about 320 tons per year, to be used in the sectors mentioned above that are finding it difficult to envisage achieving the elimination of methyl bromide as of 2007.

We anticipate that, in 2009, it will be possible to substitute 30 per cent of the 320 tons, provided that the regulations described above are introduced and that one of the chemical alternatives is available on the market. The discrepancy would be eliminated in 2015.

**Proposed timetable for substitution**

| <b>Year</b> | <b>Tons of methyl bromide to be substituted</b> |
|-------------|---|
| 2009        | 96  |
| 2015        | 224   |

**Considerations with regard to the commitment entered into by the Republic of Argentina under the Montreal Protocol**

|  |                                       |            |
|--|---------------------------------------|------------|
| Baseline   | 411.3 ozone depletion potential (ODP) | 685.5 tons |
| With 20% reduction 1 January 2005. Quantities permitted for use        | 329 ODP                               | 548.4 tons |
| Anticipated elimination 2007 (Tierra Sana Project and Ozone Programme) | 136.8 ODP                             | 228 tons   |
| Quantities requested in the application for extension                  | 192 ODP                               | 320 tons   |
| Anticipated elimination 2009   | 57.6 ODP                              | 96 tons    |
| Quantities to be used until 2015                                       | 134.4 ODP                             | 224 tons   |

Pursuant to the commitment entered into under the Montreal Protocol, permitted consumption of methyl bromide between 2005 and 2010 would be 548.4 tons. Argentina has received funds for projects aimed at achieving elimination in soil treatment. Owing to the difficulties in the process outlined in the report, the Argentine Government considers it necessary to retain 320 tons, so as to avoid affecting the competitiveness of the productive sectors involved. It should be noted that the quantity requested is much lower than the consumption level permitted under the Montreal Protocol control measures.

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