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

**PROJECT PROPOSAL: BRAZIL**

This document consists of the comments and recommendation of the Fund Secretariat on the following project proposal:

Fumigant

- Total phase-out of methyl bromide used in flowers, ornamentals, strawberries and other uses
- Total phase-out of methyl bromide used in flowers, ornamentals, strawberries and other uses

UNIDO

Spain

**PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECTS  
BRAZIL**

<b>PROJECT TITLES</b>		<b>BILATERAL/IMPLEMENTING AGENCY</b>
(a)	Total phase-out of methyl bromide used in flowers, ornamentals, strawberries and other uses	UNIDO
(b)	Total phase-out of methyl bromide used in flowers, ornamentals, strawberries and other uses	Spain

<b>NATIONAL CO-ORDINATING AGENCY</b>	Ministry of the Environment
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**LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT****A: ARTICLE-7 DATA (ODP TONNES, 2003, AS OF MARCH 2005)**

Annex E	218.56		
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**B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2004, AS OF MAY 2005)**

ODS Name	Sub-sector/quantity	Sub-sector/quantity	Sub-sector/quantity	Sub-sector/quantity.
Methyl bromide	280.24			

<b>MB consumption remaining eligible for funding (ODP tonnes)</b>	n/a
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<b>CURRENT YEAR BUSINESS PLAN ALLOCATIONS</b>		Funding US \$	Phase-out ODP tonnes
	(a)	1,075,000	73.3
	(b)	655,841	

<b>PROJECT TITLE:</b>	<b>(a)</b>	<b>(b)</b>
<b>ODS use at enterprise (ODP tonnes):</b>	218	
<b>ODS to be phased out (ODP tonnes):</b>	218*	
<b>ODS to be phased in (ODP tonnes):</b>	n/a	
<b>Project duration (months):</b>	24	
<b>Initial amount requested (US \$):</b>	3,852,961	1,000,000
<b>Final project cost:</b>		
Incremental Capital Cost (US \$)	1,846,037	
Contingency (10%) (US \$)	184,604	
Incremental Operating Cost (US \$)		
Total Project Cost (US \$)	1,450,251	580,390
<b>Local ownership (%):</b>	n/a	
<b>Export component (%):</b>	0	
<b>Requested grant (US \$):</b>	1,450,251	580,390
<b>Cost-effectiveness (US \$/kg):</b>	14.50	
<b>Implementing agency support cost (US \$):</b>	108,769	75,451
<b>Total cost of project to Multilateral Fund (US \$):</b>	1,559,019	655,841
<b>Status of counterpart funding (Y/N):</b>	n/a	
<b>Project monitoring milestones included (Y/N):</b>	Y	

<b>SECRETARIAT'S RECOMMENDATION</b>	For individual consideration
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\* Including 79 ODP tonnes in the tobacco sector which will be phase-out without funding from the Multilateral Fund

## PROJECT DESCRIPTION

1. The Government of Brazil has submitted for consideration by the Executive Committee at its 46th Meeting a project proposal to phase out 218 ODP tonnes of methyl bromide (MB) used as a soil fumigant in the production of tobacco, flowers, ornamentals and strawberries by the end of 2006. This represents the total consumption of controlled uses of MB in Brazil.
2. The total cost of the project, as submitted, is US \$4,942,721 (US \$22.67/kg). The project will be jointly implemented by the Government of Spain (as a bilateral contribution to the Multilateral Fund) and UNIDO. The total funding is being requested in one tranche since the total project duration is only two years.
3. Brazil's MB baseline for compliance is 711.6 ODP tonnes.

### MB consumption

4. MB consumption in Brazil has decreased from 844.6 ODP tonnes in 1996 to 218.6 ODP tonnes in 2003. The distribution of the current MB consumption by crop is as follows: 100 ODP tonnes in flowers and ornamentals; 79 ODP tonnes in tobacco and about 39 ODP tonnes in horticultural uses including the production of strawberries.

### National policy

5. In 2002, the Government of Brazil issued an administrative rule establishing a phase-out schedule of controlled uses of MB by type of crop with a complete ban in all agricultural uses by 2007. The technical and financial assistance provided through the project proposal submitted to the 46th Meeting will facilitate the Government's enforcement of its administrative rule while supporting farmers' efforts to phase out MB.

### Project proposal

6. The alternative technologies proposed to phase out MB are: steam using locally manufactured boilers powered by eucalyptus wood for the flower sector; solarization using locally manufactured solar heater systems for the fumigation of substrate for the production of flowers; methan sodium applied by an injection device, followed by solarization for the production of strawberries; and the floating tray system for the tobacco sector, through the construction of micro-tunnels containing 67 trays of 288 cells each. The total capital cost of the project is US \$9,513,326.
7. The project also includes a training programme in the use of the alternative technologies for flowers, ornamentals and strawberries (US \$284,700); training costs associated with the use of the floating tray system in the tobacco sector will be covered by the Government of Brazil. Ten per cent contingency is also requested (US \$979,803). Overall operating savings are estimated at US \$5,835,108.

8. The total cost of the project is US \$4,942,721 with the following breakdown:

Description	Cost (US \$)
<b>Capital costs</b>	
Tobacco sector	7,808,289
Flowers and ornamentals	1,623,437
Strawberry crops	81,600
Total capital cost	9,513,326
<b>Training component</b>	
Tobacco sector	0
Flowers, ornamentals, strawberries and ants control	284,700
Total for training component	284,700
<b>Contingency costs</b>	979,803
<b>Operating costs</b>	
Tobacco sector	(5,824,976)
Flowers: soil treatment	157,608
Flowers: substrate treatment	(135,738)
Strawberry crops	(32,002)
Total operating costs	(5,835,108)
<b>Total project cost</b>	<b>4,942,721</b>

9. The estimated project implementation time frame is two years with the following phase-out schedule:

Year	Tobacco	Flower/ornamental	Strawberry/others	Total
2005	79.2	48.5	6.1	133.9
2006	-	51.6	32.6	84.2
2007	-	-	-	-
<b>Total</b>	<b>79.2</b>	<b>100.1</b>	<b>38.7</b>	<b>218.0</b>

10. The project will be implemented jointly by UNIDO and the Government of Spain, under national coordination by the Ozone Unit located within the Ministry of the Environment of Brazil. In the tobacco sector, UNIDO will work closely with farmers, the “Associação Dos Fumicultores do Brasil” (AFUBRA) and the Sindicato da Industria do Fumo (SINDIFUMO). In the flowers sector, UNIDO will work closely with growers and the main grower’s associations (i.e., AFLORD, VELILING HOLAMBRA, COOPERFLORA and FLORAPE).

## SECRETARIAT’S COMMENTS AND RECOMMENDATION

### COMMENTS

#### Modification to the project proposal

11. After the project was officially submitted for consideration by the Executive Committee, the Secretariat was informed that the Government of Brazil had revised the original project proposal to exclude the tobacco sector since the use of MB in this sector has been banned since

1 January 2005. The Government of Brazil will concentrate all its efforts in phasing out MB in the horticulture, flower and strawberry sectors, where MB will be banned as of 1 January 2007.

12. In view of the above, UNIDO resubmitted the project proposal removing the project component for the phase-out of MB in the tobacco sector. As the Government of Brazil requested an accelerated phase-out of MB in all other crops, additional pieces of equipment and additional training to farmers was included in the revised project proposal.

13. The total cost of the revised project is US \$3,263,601 with a cost-effectiveness of US \$14.97/kg, including the 79.2 ODP tonnes used in the tobacco sector, which will be phased out without funding from the Multilateral Fund before the end of 2006.

#### 2004 MB consumption in Brazil

14. The project proposal was based on 2003 MB consumption. Therefore, the Secretariat requested UNIDO to revise the project on the basis of 2004 consumption. UNIDO reported that at the time of preparation of the project proposal, the Government of Brazil had not submitted data consumption to the Fund and/or Ozone secretariats for 2004. However, based on preliminary estimates provided by the Ozone Unit, the total amount of MB consumed in 2004 was 224 ODP tonnes plus 31 ODP tonnes used for QPS applications. Therefore, the 2003 and 2004 levels of consumption are very similar.

#### Export component

15. In response to the Secretariat's question regarding the total volume of crops (as a percentage of total production) exported to non-Article 5 countries, UNIDO reported that there are no significant exports of flowers and other horticultural crops in the areas included in the project. Some flowers are exported to non-Article 5 countries from a region where MB is not used for flower production.

#### Technical and cost issues related to the flower and horticultural sectors

16. The Secretariat and UNIDO discussed and satisfactorily resolved a number of technical issues. The Secretariat also expressed its concern regarding the sustainability of the steam technology. As reported in the project proposal, the use of steam to pasteurize the soil is very expensive; many variables influence the success and cost-effectiveness of steam; some problems may also arise in association with steaming itself if not done properly (i.e., accumulation of soluble salts, ammonium toxicity and recontamination); and the steam process can end up being a frustrating and extremely costly experience. UNIDO responded as follows:

- (a) During the project preparation stage, UNIDO had discussions with farmers who are already using the steam technology in Brazil. Farmers considered it to be a very cost-effective alternative technology. The use of wood (Eucalyptus) instead of gasoline or diesel fuel makes the process only slightly more costly than MB and therefore more sustainable than any other alternative;

- (b) Based on the experience with other similar projects under current implementation, the boilers will be operating between 5 and 7 months per year;
- (c) The quality of the water available in the region is very good; moreover, appropriate filters to enhance the quality of the water (remove dissolved salts) are included in each boiler;
- (d) The issue of the transportation of boilers among the farms was also discussed with farmers; they agree to cover the transportation costs, as is currently being done.

17. The Secretariat and UNIDO also discussed issues related with the costs of the locally made boilers (US \$47,000 each including ancillary equipment) and solar dryers; the training programme to be provided to only 522 growers (US \$596,400, including US \$161,000 for international consultants, US \$254,400 for trainers, US \$76,000 for training materials, and US \$78,000 for travel and transportation); and the parameters used to calculate the operating costs for each crop. Subsequently, UNIDO adjusted the costs of the project as follows: US \$1,705,037 for capital costs, US \$141,000 for training and US \$184,604 as contingency costs. The cost effectiveness of the revised project, covering the flowers, ornamentals and strawberry sectors is US \$14.50/kg (the cost effectiveness of the project including the tobacco sector is US \$9.31/kg).

Agreement between the Government of Brazil and the Executive Committee

18. A draft agreement between the Government of Brazil and the Executive Committee on the modalities for implementing the MB phase-out project is contained in Annex I to the present document.

**RECOMMENDATION**

19. The Executive Committee may wish to consider approving the project proposal in the light of the Secretariat's comments, at the level of funding indicated in the table below, on the understanding that no more funding will be provided from the Multilateral Fund for the phase-out of controlled uses of MB in Brazil:

	<b>Project Title</b>	<b>Project Funding (US \$)</b>	<b>Support Cost (US \$)</b>	<b>Implementing Agency</b>
(a)	Total phase-out of methyl bromide used in flowers, ornamentals, strawberries and other uses	1,450,251	108,769	UNIDO
(b)	Total phase-out of methyl bromide used in flowers, ornamentals, strawberries and other uses	580,390	75,451	Spain

**AGREED CONDITIONS FOR PHASE-OUT OF METHYL BROMIDE IN BRAZIL  
(DRAFT)**

1. The Executive Committee at its 46th Meeting approved US \$2,030,641 (US \$1,450,251 for UNIDO and US \$580,390 for the Government of Spain) plus agency support costs of US \$184,220 (US \$108,769 for UNIDO and US \$75,451 for the Government of Spain) as the total funds that will be available to Brazil to phase-out 218.6 ODP tonnes of methyl bromide (MB) used for soil fumigation in strawberries, flowers and ornamentals and other uses representing the total consumption of MB excluding quarantine and pre-shipment applications.

2. As reported to the Ozone Secretariat, and consistent with information in the project document presented to the Executive Committee, the MB baseline for Brazil has been established at 711.6 ODP tonnes. Brazil has also reported a MB consumption of 218.6 ODP tonnes for the year 2003, excluding quarantine and pre-shipment applications. Accordingly, Brazil is in compliance with the 2005 Montreal Protocol 20 per cent reduction.

3. Reductions in accordance with the terms of this project and other commitments presented in the project document will ensure that Brazil will apply and enforce administrative measures to comply the reduction schedule listed below. In this regard, Brazil will reduce the national consumption of controlled uses of MB to no more than the following levels of consumption in the years listed below:

Year	ODP tonnes
2005	84.0
2006	0.0

Note: A total of 133.9 ODP tonnes of MB will be eliminated in 2005.

4. The Government of Brazil has reviewed the consumption data identified in this project and is confident that it is correct. Accordingly, the Government is entering into this agreement with the Executive Committee on the understanding that, should additional MB consumption of controlled uses be identified at a later date, the responsibility to ensure its phase-out will lie solely with the Government.

5. Funding disbursement for the project will be conditional upon that project achieving its milestones and the individual reduction schedule listed above. In case of unjustified delays, UNIDO and the Government of Spain will inform the Executive Committee and will cancel any further release of funds until all problems are solved and the schedule is brought back on track. If unjustified delays continue, the projects may be cancelled.

6. The Government of Brazil, in agreement with UNIDO and the Government of Spain will have the flexibility in organizing and implementing all project components which it deems more important in order to meet MB phase-out commitments noted above. UNIDO and the Government of Spain agree to manage the funding for the project in a manner designed to ensure the achievement of the specific MB reductions agreed upon. UNIDO and the Government of Spain shall report back to the Executive Committee annually on the progress in meeting the reductions required by this project.

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