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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Forty-fourth Meeting  
Prague, 29 November-3 December 2004

**PROJECT PROPOSAL: THAILAND**

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

Fumigant

- National methyl bromide phase-out plan (first tranche) World Bank

**PROJECT EVALUATION SHEET - MULTI-YEAR PROJECTS  
THAILAND**

**PROJECT TITLES****BILATERAL/IMPLEMENTING AGENCY**

(a) National methyl bromide phase-out plan (first tranche)	World Bank
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<b>NATIONAL CO-ORDINATING AGENCY</b>	Department of Agriculture/Department of Industrial Works
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**LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT****A: ARTICLE-7 DATA (ODP tonnes, 2002, as of October 2004)**

Annex E, Methyl bromide	241.8		
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**B: COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes, 2003, as of October 2004)**

ODS	Foam	Ref.	Aerosol	ODS	Solvents	Process agent	Fumigant
				Methyl bromide			177.96

<b>CFC consumption remaining eligible for funding (ODP tonnes)</b>	n/a
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**CURRENT YEAR BUSINESS PLAN:** Total funding US \$1,570,000: total phase-out 73.0 ODP tonnes.

<b>PROJECT DATA</b>	2002 <sup>1</sup>	<b>2004</b>	2005	2006	2007	2008	2009	2010-2012	Total <sup>2</sup>
Montreal Protocol limits		<b>183.14</b>	146.61						
Annual consumption limit	241.8	<b>183.14</b>	146.61	146.61	146.61	146.61	73.26	73.26	
Annual phase-out from ongoing projects									
Annual phase-out newly addressed		<b>58.66</b>	36.53				73.35	73.26	241.8
Annual unfunded phase-out									
Total ODS consumption to be phased out		<b>241.8</b>	146.61	146.61	146.61	146.61	73.26	73.26	241.8
Total ODS consumption to be phased-in (HCFCs)									n/a
Project costs (US \$):									
Funding for World Bank (US \$):		<b>546,991</b>		<b>1,412,214</b>		<b>942,395</b>			<b>2,901,600</b>
Support cost for World Bank (US \$):		<b>41,024</b>		<b>105,916</b>		<b>70,680</b>			<b>217,620</b>
Total cost to Multilateral Fund (US \$)		<b>588,015</b>		1,518,130		1,013,075			3,119,220
Project cost-effectiveness (US \$/kg)									12.00

<b>SECRETARIAT'S RECOMMENDATION</b>	For individual consideration
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- <sup>1</sup> The national methyl bromide phase-out plan will ensure that Thailand returns to compliance with its Montreal Protocol methyl bromide obligations by 2004.
- <sup>2</sup> Totals include consumption and phase-out amounts for 2011 and 2012.

## PROJECT DESCRIPTION

1. The Government of Thailand submitted for consideration by the Executive Committee at its 44th Meeting a national methyl bromide (MB) phase-out plan (MB Plan), at a total cost of US \$4,960,453.

2. The MB Plan proposes the phase-out of 241.8 ODP tonnes, used mainly in the fumigation of grains and commodities by 2013. This represents the total consumption of controlled uses of MB in Thailand. An additional 228.6 ODP tonnes of MB were consumed in 2002 for quarantine and pre-shipment (QPS) applications. The MB baseline for compliance is 183.1 ODP tonnes.

### MB consumption

3. The MB consumption levels reported by the Government of Thailand to the Ozone Secretariat for 1995 and 1996 corresponded to the total amounts that were imported in those years and included both QPS and non-QPS applications. Modifications to the Article 7 data reporting format, adopted after 1996, required Parties to provide quantities of MB used for QPS and non-QPS applications. Based on the best available information provided by the industry and commodity exporters at that time, the Government of Thailand estimated that about 90 per cent of total MB imports in 1997 and 1998 was for QPS applications. These amounts were reported to the Ozone Secretariat accordingly. Thus, the baseline level of 164.9 ODP tonnes was established. The 1995-2002 MB consumption data reported to the Ozone Secretariat is shown in the table below:

MB (ODP tonnes)	1995	1996	1997	1998	1999	2000	2001	2002
Total import	340.20	230.40	361.20	353.40	447.00	292.20	415.80	470.40
QPS applications	0	0	325.08	300.54	274.80	87.60	124.80	n/a
Non-QPS applications	340.20	230.40	36.12	52.86	172.20	204.60	291.00	n/a

4. During the preparation of the MB Plan, a data collection study was carried out through a set of questionnaires and follow-up discussions with major MB stakeholders, and a review of phytosanitary certification data available at the Department of Agriculture was conducted. Based on this analysis, it was found that, between 1999 and 2002, the amount of MB used for QPS was approximately 43 per cent of the total amount imported (no complete phytosanitary certification data are available for years prior to 1999). It was also found that no major changes in the patterns of MB use or in the export market of Thai commodities have occurred in recent years. Based on these findings, it was assumed that MB use for QPS applications had remained at 43 per cent of the total imports of MB since 1995, resulting in a baseline consumption of 183.14 ODP tonnes. The revised MB consumption data for the 1995-2002 period is shown in the table below:

MB (ODP tonnes)	1995	1996	1997	1998	1999	2000	2001	2002
Total import	340.20	230.40	361.20	353.40	447.00	292.20	415.95	470.40
QPS applications	146.29	99.07	155.32	151.96	268.20	87.66	124.79	228.60
Non-QPS applications	193.91	131.33	205.88	201.44	178.80	204.54	291.17	241.80

5. The Government of Thailand has already submitted to the Implementation Committee, through the Ozone Secretariat, a request to revise the MB data reported between 1995 and 1999, including the baseline for compliance.

6. The main uses of MB in 2002 are shown in the table below:

<b>MB uses (ODP tonnes)</b>	<b>Total</b>	<b>QPS</b>	<b>Non-QPS</b>
Tapioca, starch and rice flour	238.8	109.2	129.6
Rice	137.4	69.6	67.8
Other post-harvest (wheat, feed, maize)	79.8	36.0	43.8
Cut flowers	13.8	13.8	0.0
Other	0.6	0.0	0.6
<b>Total</b>	<b>470.4</b>	<b>228.6</b>	<b>241.8</b>

### MB regulations

7. During the 1995-1998 period, the Ministry of Defence was responsible for controlling imports of MB, while the Department of Agriculture was responsible for controlling MB uses. In 1999, the responsibility to control the import of MB was transferred to the Department of Agriculture. The Department of Industrial Works currently reports data related to MB imports and consumption in consultation with the Department of Agriculture.

8. MB imports into Thailand require import licenses that are issued by the Department of Agriculture. Before each shipment, importers are required to present their licenses to the Customs Department, which records the actual amount of MB that is brought into the country. The Department of Agriculture has an active MB import licensing system and maintains all records of the amounts of the chemical imported every year. Until 2003, however, the system had not been set up to limit yearly imports of MB, and licenses were granted to all importers, as requested.

9. Import of MB without a license can result in a fine and imprisonment. Failure to comply with all the conditions attached to import licenses can result in suspension or cancellation of import licenses, which can be suspended for up to one year. If licenses are cancelled, importers are no longer able to import that particular chemical until a new license is issued by the Department of Agriculture (an application for a new license by importers whose previous licenses were revoked cannot be made within five years after the date of cancellation of the previous license).

10. Once in Thailand, MB is sold to consumers through a distribution chain consisting of distributors and fumigation service companies. Estimating national MB consumption per sector is currently difficult, due to a lack of official records of MB use in the various sectors. The Department of Agriculture issues phytosanitary certificates to importers upon request; the amounts of MB used for controlled uses and for quarantine and pre-shipment (QPS) applications were estimated based on these certificates.

## MB Plan

11. In 2002 and 2003, Thailand was not in compliance with the Montreal Protocol, as MB consumption was greater than its baseline. However, the Government of Thailand is committed to return to compliance in 2004 and to achieving the 2005 control measure, by limiting imports of MB for non-QPS applications to the freeze level (183.14 ODP tonnes) and to 146.5 ODP tonnes in 2004 and 2005, respectively.

12. The Government of Thailand has developed a national MB phase-out plan aimed at achieving progressive reductions of MB consumption until complete phase-out is reached in 2013. The Department of Agriculture will be the lead agency responsible for implementing the MB Plan.

13. Given that sufficient laws and regulations are already in place in Thailand to control the use of MB, the MB Plan proposes to strengthen the operational procedures and the capacity of the agencies to monitor and enforce those regulations. Specifically:

- (a) Establishment of an import schedule for non-QPS applications of MB for the period 2004 to 2013, and a ban on the use of MB in new applications to ensure that non-QPS MB consumption in other sectors does not increase once MB for controlled uses has been phased out;
- (b) Mandatory certification of MB users, for both QPS and non-QPS applications, by the Department of Agriculture (certifications will be renewed on a yearly basis upon receipt of detailed records of MB use);
- (c) Strengthening the import quota system through the development of a national management information system on MB, standards and criteria for agricultural storage facilities, and establishment of MB distribution controls;
- (d) Training of inspectors and regulators of the Department of Agriculture on new procedures and alternatives to MB; and
- (e) Monitoring MB consumption.

14. The MB Plan comprises the following four components:

- (a) Regulations and capacity building (US \$644,600), which includes the development of a management information system, pest control standards and hygiene requirements for storage facilities, and an accreditation programme for storage facilities for the Department of Agriculture; an overseas training programme to facilitate effective implementation, monitoring, and enforcement of MB regulations; and the establishment of an insect resistance control unit;
- (b) Investment sub-projects (US \$2,353,757), to convert MB users to viable alternative technologies. Four groups of MB users have been identified:

- (i) Known MB user companies (US \$1,494,822), which include the 53 larger companies with a total consumption of about 175 ODP tonnes of MB (72 per cent of the total consumption). Each company will receive fumigation material and equipment proportional to their MB consumption, as well as training;
  - (ii) Unknown MB user companies (US \$605,319), which include 37 small-to-medium-sized fumigation companies with a total consumption of 69 ODP tonnes of MB. The level of funding was based on a cost-effectiveness value of about US \$8.80/kg;
  - (iii) Fumigation servicing companies (US \$253,616); which include 22 registered companies, some of which perform fumigation for both QPS and non-QPS applications. Each company will receive fumigation material and equipment (based on the range of fumigation services they provide), and training;
  - (iv) Unidentified MB users, located throughout the country, which are to be identified in later stages of the programme. Technical assistance and training will be provided through the training centres to be established as part of the technical assistance and training component of the MB Plan;
- (c) Technical assistance and training programmes (US \$791,104), including preparation of training materials, implementation of train-the-trainer programmes, implementation of training workshops for all MB users, a certification programme for all fumigators and an outreach programme;
  - (d) Project implementation support unit (US \$528,000), which will be located within the Department of Agriculture and will be responsible for, *inter alia*, implementing MB regulatory measures, preparing implementation procedures for eligible enterprises that will seek funding from the Multilateral Fund; assisting eligible MB users in obtaining financial support; reviewing and approving proposals submitted by eligible enterprises; coordinating the establishment of training centres; and acting as a coordinator for the conversion of small-to-medium MB users.

15. The estimated time frame for project implementation is eight years.

## **SECRETARIAT'S COMMENTS AND RECOMMENDATION**

### **COMMENTS**

16. The Secretariat reviewed the phase-out plan in light of the report of the Implementation Committee at its 32nd Meeting, held in Geneva in 17-18 July 2004. The Secretariat notes the well documented and thorough project that has been prepared by the Government of Thailand with the assistance of the World Bank.

Status of non-compliance with the 2002 MB limit

17. The Secretariat noted that the 2002 and 2003 levels of consumption of controlled uses of MB are above the current MB baseline (164.9 ODP tonnes) and the revised MB baseline to be considered by the Implementation Committee at its 33rd Meeting (183.1 ODP tonnes). As such, Thailand is in non-compliance with the 2002 freeze.

Policy issue related to MB baseline

18. At their 15th Meeting, the Parties to the Montreal Protocol noted that Thailand (among other Article 5 countries) had reported annual data for MB above their requirement for a freeze in consumption. In the absence of further clarification, Thailand (among other Parties) is presumed to be in non-compliance with the control measures under the Protocol. The Parties also requested Thailand to submit to the Implementation Committee, for consideration at its next meeting, an explanation for its excess consumption, together with plans of action with time-specific benchmarks to ensure a prompt return to compliance. The Parties also decided to monitor closely the progress of Thailand (among other Parties) with regard to the phase-out of MB. To the degree that Thailand (among other Parties) is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as Parties in good standing (Decision XV/25).

19. At its 32nd Meeting, the Implementation Committee considered a request by the Government of Thailand to correct its 1997 and 1998 consumption figure, which would lead to a change in its baseline consumption to 183.14 ODP tonnes instead of 164.89 ODP tonnes, and lead its 2002 MB consumption to be recorded as 241.8 ODP tonnes. Subsequently, through its recommendation 32/17 and pursuant to paragraph 2 (a) of decision XV/19 of the Parties to the Montreal Protocol (i.e., methodology for submission of requests for revision of baseline data), the Implementation Committee requested Thailand to submit (through the Ozone Secretariat), a copy of a survey report, which will include the full survey findings, together with an explanation of the methodology used in collecting and verifying the proposed new baseline data. On the basis of this report, the Implementation Committee will review, at its 33rd meeting in November 2004, Thailand's request for a revision to its baseline data.

20. The World Bank informed the Secretariat that the data collection report, which provided the basis upon which the MB Plan had been prepared, was updated and reviewed by both the Department of Industrial Works and the Department of Agriculture. The original document was revised to ensure consistency in the data presented, and included a section on the methodology used for data collection and analysis, as well as a detailed explanation of the methodology used to calculate the proposed baseline. On the basis of the report submitted by the Government of Thailand, the Parties, at their 16th Meeting, will consider the request for the change in the level of MB consumption reported by the Thailand in 1997, 1998 and 2002.

Issues related to MB consumption

21. The Secretariat sought an explanation for the reasons for preparing the MB Plan on the basis of 2002 MB consumption (470.4 ODP tonnes for all uses) rather than 2003 consumption (402.6 ODP tonnes), considering that all sectoral phase-out plans that have recently been

approved by the Executive Committee have been based on the latest consumption (i.e., the year prior to the submission of the proposal). The World Bank indicated that the MB Plan had been prepared in 2003 and 2004. The survey conducted during the preparation of the MB Plan focused on obtaining the most reliable data available for 2002. The only reliable 2003 figures that were available at that time were the total amounts of MB imported and amounts used for QPS applications (based on phytosanitary certificates); however, the breakdown of controlled uses of MB was not known. The 2002 MB consumption data has been checked against the Department of Agriculture, Customs Department, and other stakeholder records and the level of confidence in the values is high. Furthermore, the 2003 data was only compiled in mid-2004, towards the end of consultations, and therefore a comparable level of agreement on those data from all stakeholders could not be reached. Given the sensitive nature of the MB discussions with stakeholders, revising the current proposal to include 2003 data would involve a new round of consultations, which would further delay the start of the MB plan.

22. The World Bank also reported that the long-term patterns of MB use are subject to year-to-year variations due to unpredictable seasonal changes. However, the Department of Agriculture does not currently have the capacity to document instances of increase or decrease of pest incidence, and the associated consumption of pesticides. In this regard, in the MB Plan it is proposed to provide the Government with the adequate infrastructure and capacity to monitor changes in MB consumption and to assess if they are caused by external conditions.

#### Level of funding requested

23. The Secretariat noted that the total cost of the MB Plan as submitted (US \$4,317,461) was higher than similar projects already approved by the Executive Committee. The MB Plan included a comprehensive integrated pest management system, an extensive capacity building and training programme to address both pest control issues and training in the use of phosphine as a replacement for MB, and the establishment of a project monitoring unit. Some of the project cost components appeared not to be incremental and the costs of some eligible project components were high. Through further discussions, the Secretariat and the World Bank agreed to a level of funding of US \$2,901,600 for the MB Plan (US \$12.00/kg). This level of funding is in the range of similar MB phase-out projects (post-harvest applications) that have been approved by the Executive Committee.

#### Agreement between the Government of Thailand and the Executive Committee

24. A draft agreement between the Government of Thailand and the Executive Committee on the modalities for implementing the MB Plan is contained in Annex I to the present document. This agreement might be modified to reflect any decision that the Parties to the Montreal Protocol might wish to take regarding the change of the MB baseline for Thailand.

## **RECOMMENDATION**

25. The Executive Committee may wish to consider approval of the national MB phase-out plan for Thailand in the light of the Fund Secretariat's comments and any decision the Parties to the Montreal Protocol might take regarding the change in reported MB consumption levels for 1997, 1998 and 2002 submitted by Thailand. The resulting decision taken by the Executive Committee would be without prejudice to the operation of the Montreal Protocol's mechanism for dealing with non-compliance.



**Annex I**

**DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF THAILAND AND THE EXECUTIVE COMMITTEE FOR THE NATIONAL METHYL BROMIDE PHASE-OUT PLAN**

1. At its 44th Meeting, the Executive Committee approved in principle a total of US \$2,901,600, excluding agency support costs, as the total funds that will be available to Thailand to achieve the phased reduction and complete phase-out of all controlled uses of methyl bromide (241.8 ODP tonnes). This amount is being approved by the Executive Committee without prejudice to the operation of the Montreal Protocol's mechanism for dealing with non-compliance.

2. As reported to the Ozone Secretariat, and consistent with information in the project document presented to the Executive Committee, the Methyl Bromide baseline for Thailand is 183.14 ODP tonnes. Thailand's methyl bromide consumption in 2002 was 241.8 ODP tonnes, excluding 228.6 ODP tonnes that was used for quarantine and pre-shipment applications. Accordingly, Thailand must reduce its consumption of methyl bromide in 2004 to 183.14 ODP tonnes to achieve compliance with the Montreal Protocol's 2002 freeze obligation, and to 146.4 ODP tonnes to achieve compliance with the Protocol's 20 per cent reduction in 2005.

3. Through the implementation of the national methyl bromide phase-out plan, the Government of Thailand commits to a permanent reduction in aggregate consumption of controlled uses of MB to no more than the following levels:

Year	Maximum level of consumption of controlled uses of methyl bromide (ODP tonnes)
2002(*)	241.8
2004	183.1
2005	146.6
2006	146.6
2007	146.6
2008	146.6
2009	73.3
2010	73.3
2011	36.6
2012	18.3
2013	-

(\*) Implementation of the national methyl bromide phase-out plan will ensure that Thailand returns to compliance with its Montreal Protocol Methyl Bromide obligations by 2004.

4. The Government of Thailand 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 methyl bromide consumption be identified at a later date, the responsibility to ensure its phase-out will lie solely with the Government.

5. Thailand commits to permanently sustain the consumption levels indicated in the above table through the use of import restrictions and other policies that it may deem necessary. In exchange for the funding level specified below, Thailand commits to eliminate its total national consumption of controlled uses of methyl bromide in accordance with the limits specified in the above table:

Year	Funding (US\$)	Agency support costs( US \$)	Total (US \$)
2004	546,991	41,024	588,015
2006	1,412,214	105,916	1,518,130
2008	942,395	70,680	1,013,075

6. The Government of Thailand, in agreement with the World Bank, will have the flexibility to organize and implement the project components that it deems most important in order to meet the methyl bromide phase-out commitments noted above. The World Bank agrees to manage the funding for the project in a manner designed to ensure the achievement of the specific methyl bromide reductions agreed upon. The World Bank shall also report back to the Executive Committee annually on the progress in meeting the reductions required by this project.

7. The funding components of this agreement shall not be modified on the basis of future Executive Committee decisions that may affect the funding of any other consumption sector projects or any related activities in Thailand.

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