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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Twenty-ninth Meeting  
Beijing, 24-26 November 1999

**BILATERAL COOPERATION**

The Fund Secretariat received the following requests for bilateral cooperation:

<b>PROJECT TITLE</b>	<b>BILATERAL AGENCY</b>
Refrigerant management plan: training of trainers and refrigeration technicians in Belize	Canada
Refrigerant management plan: monitoring and control of ODS and ODS based equipment/Training customs and other inspection officers in Belize	Canada
Refrigerant management plan: policy dialogue programme on policy and regulatory framework for phasing out ODSs and preparation of the regulatory policies in Belize	Canada
Refrigerant management plan: training of customs in Burkina Faso	Canada
Refrigerant management plan: technician training in Burkina Faso	Canada
Refrigerant management plan: recovery and recycling programme in Burkina Faso	Canada
Terminal phase-out project for the conversion of air-conditioning systems in the hospital sub-sector in Cuba (withdrawn)	Canada
Refrigerant management plan: recovery and recycling equipment for the MAC sector and other in Cuba	Canada
Refrigerant management plan: implementation and enforcement of regulations in Cuba	Canada
Refrigerant management plan: training of technicians in good refrigeration practice in Cuba	Canada
Refrigerant management plan: training of customs officers in Cuba	Canada
Refrigerant management plan: retrofit in Cuba	Canada
Refrigerant management plan: custom training in Panama	Finland
Refrigerant management plan: monitoring and evaluation project in Panama	Finland
Project preparation - phase out of methyl bromide used in grain fumigation in Costa Rica	France
Terminal phase-out project for the conversion of air-conditioning systems in the hospital sub-sector in Cuba (withdrawn)	France

<b>PROJECT TITLE</b>	<b>BILATERAL AGENCY</b>
Project preparation for methyl bromide phase-out in Madagascar (withdrawn)	France
Refrigerant management plan: training of trainers and refrigeration technicians in Madagascar	France
Refrigerant management plan: set up a national recovery and recycling network in Madagascar	France
Refrigerant management plan: etude de reconversion industrielle au Madagascar (withdrawn)	France
Refrigerant management plan: training of personnel in charge of control and monitoring of imports of ODS in Madagascar	France
No clean process improvement training for electronic assemblers which are in process of phasing out CFC-113 - extension of project ASP/MAL/SOL/22/TAS to 15 further SMEs in Malaysia	France
Refrigerant management plan: retrofit demonstration project in Mali (withdrawn)	France
Phase-out of methyl bromide use in the cut flower and banana production in Morocco	France
Refrigerant management plan: 3R equipment in Senegal (withdrawn)	France
Refrigerant management plan: demonstration retrofit in Senegal (withdrawn)	France
Development of halon banking management plan in Syria	France
CFC emission reduction in central air conditioning in Syria	France
Conversion from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Shoukairi and Co. in Syria	France
Conversion from CFC-11 to HCFC-141b and from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Sarkisian refrigerators in Syria	France
Conversion from CFC-11 to HCFC-141b and from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Bashar refrigerators in Syria	France
No clean process improvement training for electronic assemblers in Thailand	France
Terminal phase-out project for the conversion of air-conditioning systems in the hospital sub-sector in Cuba (withdrawn)	Germany
Refrigerant management plan: modification of legal provisions & information system in Egypt	Germany
Refrigerant management plan: implementation of measures to address the informal sector in Egypt	Germany
Refrigerant management plan: implementing solutions for the AC with big chillers sector in Egypt (withdrawn)	Germany
Refrigerant management plan: establishing a national recovery and recycling network in Egypt	Germany
Phase-out of the use of methyl bromide in Jordan	Germany
Refrigerant management plan: national recovery and recycling network in Syria	Germany
Development of halon banking management plan in Syria	Germany
Regional workshop on monitoring and control of ODS consumption for South Asia region	Japan
Regional workshop on control and monitoring of ODS consumption for the South East Asia/Pacific region	Japan
Project preparation assistance for enterprises in the city of Shenzhen for the elimination of ODS (CFC-113 and TCA) in the production lines of LC display and TV picture tube in China	Japan
Regional workshop on control and monitoring of ODS consumption for the South East Asia/Pacific region	Sweden
Preparation of a government strategy to reduce and eliminate the use of CFC refrigerants for servicing and installations on-site for the Philippines	Sweden
Halon management program for Thailand, halon recovery, recycling and banking	Sweden
Refrigerant management plan: hydrocarbon retrofit in Senegal (withdrawn)	Switzerland

1. A total of 47 requests totalling US \$16,617,075 for bilateral cooperation were submitted for consideration at 29<sup>th</sup> Meeting by seven bilateral agencies. Eleven projects were subsequently withdrawn. This document contains, by bilateral agency, those projects that are before the Executive Committee for its consideration.

2. Bilateral agencies are more frequently joining with other bilateral and implementing agencies to implement one project. For accounting and progress reporting purposes, each bilateral agency's participation in an activity is considered a separate project. Therefore, one activity may be repeated in documents before the Committee for each bilateral and implementing agency.

3. Table 1 presents a summary of the value and number of requests submitted by bilateral agency.

**Table 1**

**VALUE AND NUMBER OF PROJECTS FOR BILATERAL COOPERATION, BY BILATERAL AGENCY**

<b>Bilateral Agency</b>	<b>Amount Requested</b>	<b>Number of Projects</b>
Canada	\$1,706,009	12
Finland	\$93,000	2
France	\$3,845,466	18
Germany	\$10,198,970	8
Japan	\$265,550	3
Sweden	\$440,850	3
Switzerland	\$67,230	1
<b>TOTAL</b>	<b>\$16,617,075</b>	<b>47</b>

4. The 2<sup>nd</sup> Meeting of the Parties decided that bilateral cooperation up to 20 per cent could be considered as a contribution to the Multilateral Fund (Decision II/8, para.8). Decision 25/13 allowed flexibility in the year for which bilateral projects were submitted. As a result, the Executive Committee has allowed up to 20 per cent in bilateral contributions during the period 1997-1999. Table 2 presents the amount of total contributions for the period 1997-1999, the value of projects approved since 1997 as bilateral cooperation, the level of requests to the 29<sup>th</sup> Meeting, and the resulting percentage of bilateral cooperation if all projects are approved as submitted excluding those projects that have been withdrawn as at 29 October 1999.

**Table 2**

**AMOUNT OF BILATERAL COOPERATION APPROVED SINCE 1997 AND AMOUNT REQUESTED AT THE 29<sup>TH</sup> MEETING AS A PERCENTAGE OF TOTAL CONTRIBUTIONS (1997-1999)**

AGENCY	Bilateral Cooperation Approved since 1997 (US\$)	Amount Requested at the 29th Meeting (US\$)	Total Approved plus Amount Requested (US\$)	Total Contributions 1997-1999	Percentage requests plus approvals
Canada	1,761,320	792,004	9,683,322	17,102,223	8.2%
Finland	338,920	103,000	441,920	3,403,908	13.0%
France	3,452,791	2,679,096	6,131,887	35,320,710	17.4%
Germany	5,552,459	7,776,255	13,328,714	49,845,885	26.7%
Japan	2,507,500	265,550	2,773,050	85,083,909	3.3%
Sweden	0	440,850	440,850	6,766,473	6.5%

5. As shown in Table 2, if all the projects that have not been withdrawn are approved for Germany as requested, Germany will exceed 20 per cent of its contribution for the period 1997-1999.

## REQUESTS FROM THE GOVERNMENT OF CANADA

### Introduction

6. The Government of Canada submitted requests for bilateral cooperation for projects in Belize, Burkina Faso, and Cuba. The amount requested, including previous approvals offset against Canada's bilateral contributions, does not exceed 20 per cent of Canada's total contributions for the 1997 through 1999 triennium replenishment.

7. Table 3 presents a summary of Canada's requests by project title, country, amount requested, amount recommended, and whether a condition is attached to the recommendation. The total amount recommended, once approved by the Executive Committee, should be offset against Canada's contributions for the period 1997 through 1999 after accounting for Decision 28/11(b) in which the Committee agreed to offset adjustments recorded at the 28<sup>th</sup> Meeting against future approvals.

**Table 3**

### SUBMISSIONS FROM THE GOVERNMENT OF CANADA AND RECOMMENDATION

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
Refrigerant management plan: training of trainers and refrigeration technicians	Belize	54,240	50,850	Yes
Refrigerant management plan: monitoring and control of ODS and ODS based equipment/Training customs and other inspection officers	Belize	33,900	31,640	Yes
Refrigerant management plan: policy dialogue programme on policy and regulatory framework for phasing out ODSs and preparation of the regulatory policies	Belize	18,645	17,575	
Refrigerant management plan: training of customs	Burkina Faso	74,071	Pending	
Refrigerant management plan: technician training	Burkina Faso	62,150	Pending	
Refrigerant management plan: recovery and recycling programme	Burkina Faso	86,150	Pending	
Refrigerant management plan: implementation and enforcement of regulations	Cuba	45,370	22,600	
Refrigerant management plan: training of technicians in good refrigeration practice	Cuba	142,324	90,400	
Refrigerant management plan: training of customs officers	Cuba	88,083	62,150	
Refrigerant management plan: recovery and recycling equipment for the MAC sector	Cuba	187,071	Issue	Yes
<b>TOTAL</b>		<b>792,004</b>		

## **BELIZE: REFRIGERANT MANAGEMENT PLAN**

8. In 1998, the total ODS consumption in the refrigeration sector in the country was estimated at 25 ODP tonnes for servicing domestic and commercial refrigeration equipment (5 tonnes) and MAC units (20 tonnes).

9. A survey conducted in 1999 identified 33 registered companies in the refrigeration servicing sector and approximately 100 technicians. Eight of the largest companies servicing the industrial and commercial sub-sectors, each using an average of 250 kg of CFCs per year (six of them located in the capital city). Five companies specialize in servicing MAC units each using an average of 450 kg of CFCs per year. At present, no CFCs are being recovered or recycled; and it is general practice to vent the remaining refrigerant charge before servicing the equipment .

10. By July 2000, the Government of Belize proposes to increase the import duties on CFC refrigerant, establish a consumption levy and/or import duty adjustments on CFC and CFC-based equipment in accordance with regional trade agreements, issue import permits to monitor and regulate trade in CFCs, introduce product labeling requirements and tariff codes to identify CFC and CFC-based equipment, and ban the use of CFCs on HFC-134a equipment.

11. The Government of Belize currently does not have the expertise or the resources to develop the necessary policies, regulations and monitoring systems regarding ODS. Therefore, the RMP includes two requests to develop the necessary government policies, regulations and standards to ensure a smooth phase-out of CFCs, and to provide training to Government officials (including the Customs and Excise Department staff) to make them aware of different approaches, trends and options available to monitor and control consumption of ODSs as well as to support the establishment of new import policies.

12. The RMP also includes a “train the trainers” programme for refrigeration technicians in good management practices, aimed at improving service practices to prevent release of CFCs into the atmosphere and thus making it possible for refrigeration equipment to operate to the end of its useful life. It is expected that these measures will achieve reductions in the consumption of CFC-11 (for flushing) and CFC-12 (leaks and bad servicing practices).

13. The RMP also includes a subproject for the establishment of a recovery and recycling network comprising 11 recovery units for workshops servicing commercial refrigeration equipment and for the MAC service shops, and 1 recycling centre for servicing commercial and industrial refrigeration equipment, at a total cost of US \$61,125. This subproject also provides for one-day workshops for service technicians on practical demonstrations on recovery and recycling equipment.

14. Implementation of these projects will lead to recovery and recycling of 1.7 tonnes of CFC each year. This amount would be additional to the quantity of refrigerant which should be saved from the teaching of good service and maintenance practices at the training seminars.

15. Belize’s Ozone Unit will be responsible for the monitoring, co-ordination and implementation of proposed phase-out activities in the RMP. It will keep records of the amounts

recovered; the quantities of recycled refrigerant stored at the recycling centre and monitor the quality of recycled gas as well as the price structure.

## COMMENTS

16. The RMP is to be implemented jointly by the Government of Canada (all training programmes with the assistance from UNEP DTIE) and UNDP.

17. The Secretariat and UNEP DTIE discussed the level of funding requested for the training programmes. The costs associated with logistical arrangements for the workshops, training equipment and the request for project assistance, monitoring and evaluation were reduced accordingly.

## RECOMMENDATIONS

18. The Fund Secretariat recommends blanket approval of the projects at the funding level indicated below:

	<b>Project Title</b>	<b>Project Funding (US\$)</b>	<b>Support Cost (US\$)</b>	<b>Implementing Agency</b>
(a)	Refrigerant management plan: policy dialogue programme on policy and regulatory framework for phasing out ODSs and preparation of the regulatory policies	15,500	2,015	Canada
(b)	Refrigerant management plan: monitoring and control of ODS and ODS based equipment/training customs and other inspection officers	28,000	3,640	Canada
(c)	Refrigerant management plan: training of trainers and refrigeration technicians	45,000	5,850	Canada
(d)	Refrigerant management plan: implementation of a national programme for recovery and recycling of CFC-12 refrigerant	61,125	7,946	UNDP

19. The Executive Committee may also wish to request the Government of Canada and UNDP not to proceed with the disbursement of funds approved for the customs training programme and the recovery and recycling programme until the regulatory and legislative requirements and fiscal steps proposed by the Government of Belize are put into place.

## BURKINA FASO: REFRIGERANT MANAGEMENT PLAN

20. The annual consumption of CFCs in the domestic refrigeration subsector is estimated at 22 tonnes. However, CFC consumption cannot be measured directly because 99 per cent of imports are made by over 200 small traders who travel overland to Nigeria from Burkina Faso and smuggle refrigerant into the country along with other commodities (referred to locally as the “informal” sector)”. Most of the refrigeration technicians are untrained in good practices; this is the cause for inappropriate maintenance of refrigeration equipment and high consumption of CFCs.

21. Legislation has been enacted whereby the import of ODS and products using and containing ODS is now strictly controlled. A customs coding method based on the Brussels system has been adopted which allows this range of products to be separately identified and recorded. A decree was issued in March 1997 whereby prior approval from the Ozone Office is required for the import of refrigerants and products containing them mostly refrigerators and MAC units. From 1999 onwards, it is intended to use this to prevent the import of second-hand refrigerators and MACs charged with CFC-12.

22. The RMP proposes a training programme for customs officers for policy development and establishment of an import/export licensing system and a “train the trainers” programme for refrigeration technicians in good management practices, aimed at improving service practices to prevent release of CFCs into the atmosphere.

23. The Executive Committee approved at its 22nd Meeting a refrigerant recovery and recycling project (including a training programme on recovery/recycling practices) in Burkina Faso and allocated US \$96,000 to UNIDO for its implementation. The information included in the recovery and recycling project indicates that 54 recovery machines were delivered in October 1998 and some refrigerant recycling was carried in Ouagadougou by the Lice Technique. The Ozone Committee has estimated the need for additional 50 recovery and 4 recycling machines.

#### **COMMENTS**

24. The Fund Secretariat made some observations on the project proposal, including: reliability of CFC consumption figures in the refrigeration servicing sector and the size and scope of the training programmes and the request of additional recovery and recycling units taking into account the activities so far approved by the Executive Committee for Burkina Faso (a workshop on monitoring and control of ODS consumption through customs officers training and a training programme for refrigeration repair technicians approved at the 11th ExCom Meeting).

25. The Fund Secretariat is still discussing these issues with the Government of Canada. The results of the discussions will be communicated to the Executive Committee accordingly.

#### **RECOMMENDATIONS**

26. Pending.

#### **CUBA: REFRIGERANT MANAGEMENT PLAN**

27. In 1999, the Government of Canada developed a refrigerant management plan (RMP) for Cuba through an integrated approach which included the participation of industry, institutions and end-users in the control and eventual phase-out of ODS refrigerants.

28. A recent survey on consumption of ODSs in the country carried out by the Government of Canada, shows an increase in the consumption of CFCs from 150 to 545.4 tonnes in a one



year-period (1994 to 1995) and a steady increase in consumption from 1995 onwards. In 1998, the CFC consumption was estimated at 665 ODP tonnes.

29. There are approximately 2,000,000 domestic refrigerators in operation in the country; 64 large commercial equipment in hospitals operating with CFC-11 refrigerant; 50,000 commercial units using CFC-12 refrigerant and 500 units in hotels using HCFC-22 refrigerant. All industrial refrigeration applications are based on ammonia. In addition, 4,000 tourist buses are equipped with MAC units based on CFC-12 refrigerant.

30. In 1994, a hydrocarbon based refrigerant (LB-12) was developed in the University of Santiago to replace CFC-12 in servicing domestic refrigerators. Since then, approximately 200,000 domestic refrigerators and 6,000 commercial appliances have been retrofitted with this substance, and nearly 700 technicians have been trained in its use. Currently the refinery in the city of Santiago is producing 20 tonnes of LB-12 annually. Cuba is also producing liquid RL95 (petrol based) to replace CFC-11 used in cleaning and flushing equipment.

31. There are 300 refrigeration servicing workshops in the country, all belonging to the public sector, and approximately 3,000 refrigeration technicians.

32. The Government of Cuba, through its Ozone Unit, has prepared a national ODS phase out strategy and has drafted a set of regulations to control import and export of CFCs and CFC-based equipment. The Cuban licensing system has already been published and will come into force by 1 January 2000. However, the RMP identified the need to further develop the current legislation, including a recovery and recycling regulation, a law for environmental abuses (sanctions for violations, administrative sanctions, fines), and a strategy for the substitution of 50,000 CFC-12 based commercial units).

33. The RMP also identified two basic training programmes: (i) training for customs officers in order to identify and develop techniques for collecting and reporting consumption of ODS import and ODS-based refrigeration equipment and development of a database on consumption by importers, users and retailers; and (ii) a "train the trainers" programme for refrigeration technicians in good management practices, aimed at improving service practices to prevent release of CFCs into the atmosphere. It is expected that 2,000 technicians will be trained through this programme.

34. The Executive Committee approved at its 15<sup>th</sup> Meeting a refrigerant recovery and recycling project (including a training programme on recovery/recycling practices) in Cuba and allocated US \$169,000 to UNDP for its implementation. The training programme has been implemented and recovery machines and recycling units have been delivered. However, the RMP included a request for additional recovery/recycling machines for the MAC sector, which was not addressed in the original project and also CFC-11 recovery machines, costed at US \$165,500.

35. The RMP also included a subproject for the retrofit of 10,000 domestic refrigerators and 700 commercial refrigeration systems using the LB-12 refrigerant developed in Cuba (US \$374,000), with the following results: phaseout of 65 tonnes of CFC-12, production of LB-

12 using international standards, publication of operation parameters for systems using LB-12 and criteria for lubricants and redesign of refrigeration systems.

36. Cuba's Ozone Unit will be responsible for the monitoring, co-ordination and implementation of proposed phase-out activities in the RMP.

## COMMENTS

37. The Secretariat sought further clarification on CFC consumption in the country since CFC has increased from 150 to 550 tonnes in one year. The Government of Canada informed the Secretariat that an unusual decrease in imports of CFCs occurred in the country from 1992 to 1994 as a result of the changes in the former Soviet Union; from 1995 onwards, the country has experienced an economic growth.

38. Upon a request by the Secretariat, the Government of Canada provided more detailed information on the refrigeration servicing sector.

39. The Government of Canada agreed to revise the scope of the subproject for implementation and enforcement of legislation in light of the ODS phase out strategy and proposed legislation and regulations related to the control of ODS already in place in the country. The Secretariat and the Government of Canada also discussed the level of funding requested for logistical arrangements for workshops and consultants fees. Subsequently, the costs of the subprojects were adjusted accordingly.

40. Regarding the training programme for refrigeration service technicians, the Secretariat sought an explanation on the need to provide 16 refrigeration demonstration units for the centres where training will be provided. The Government of Canada emphasized the importance of these units to train the service technicians in good practices; it agreed to reduce the number of units to 16 and adjusted the cost accordingly.

41. The Secretariat also discussed the request for additional recovery/recycling units in relation to recovery and recycling project currently under implementation. Based on a progress report submitted by UNDP, it appears that no major problems were encountered during project implementation; furthermore, there were no indications on the need of additional equipment to service the MAC subsector. Regarding the request for recovery machines for CFC-11, the Secretariat indicated that technical discussions with refrigeration experts indicate that it is not normal to use a specific recovery machine to recover and recycle CFC-11, as it is easily handled and stored in its liquid phase. The biggest ODS savings in CFC-11 based equipment can be made by modernizing their purging systems and adding a storage tank to avoid exterior handling. Subsequently, the Government of Canada agreed to remove the request for the CFC-11 recovery machines and reduce the number of the MAC recovery/recycling machines. The revised cost of the subproject is US \$55,000.

42. Regarding the request for retrofitting to LB-12 refrigerant domestic and commercial refrigeration units, the Secretariat informed the Government of Canada that under the Multilateral Fund only the most cost-effective, proven and commercially available technologies could be considered in project proposals; the Secretariat was not aware if LB-12 refrigerant has

been tested and certified by any independent internationally-recognized laboratory. Subsequently, the Government of Canada agreed to withdraw the proposal.

### **RECOMMENDATIONS**

43. The Fund Secretariat recommends blanket approval of the training projects at the funding level indicated above in Table 3.

44. The Executive Committee might wish to consider the request for additional funds for the recovery and recycling subproject covering the MAC sector in the light of the above comments.

## REQUESTS FROM THE GOVERNMENT OF FINLAND

### Introduction

45. The Government of Finland submitted requests for bilateral cooperation for projects in Panama. The amount requested, including previous approvals offset against Finland's bilateral contributions, does not exceed 20 per cent of Finland's total contributions for the 1997 through 1999 triennium replenishment.

46. Table 4 presents a summary of Finland's requests by project title, country, amount requested, amount recommended, and whether a condition is attached to the recommendation. The total amount recommended, once approved by the Executive Committee, should be offset against Finland's contributions for the period 1997 through 1999.

**Table 4**

### SUBMISSIONS FROM THE GOVERNMENT OF FINLAND AND RECOMMENDATION

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
Refrigerant management plan: custom training	Panama	70,000	70,000	
Refrigerant management plan: monitoring and evaluation project	Panama	33,000	33,000	
<b>TOTAL</b>		<b>103,000</b>	<b>103,000</b>	

### PANAMA: IMPLEMENTATION OF THE REFRIGERANT MANAGEMENT PLAN

47. UNEP prepared a RMP for Panama, which includes: (i) a training programme for customs officers to identify and develop techniques for gathering data on imports of ODSs and ODS-based refrigeration equipment, and to provide ODS identification kits (US \$70,000 as a bilateral cooperation by the Government of Finland); (ii) a "train the trainers" programme for 4,800 refrigeration technicians in good management practices, aimed at improving service practices to prevent release of CFCs into the atmosphere, and a certification programme for the technicians (US \$126,200); (iii) assistance for development of system for legislation monitoring and an ODS import system (US \$10,000); and (iv) a monitoring system for the activities included in the RMP (US \$33,000 as a bilateral cooperation by the Government of Finland).

48. The Executive Committee approved, at its 18<sup>th</sup> Meeting a recovery and recycling project for Panama and allocated US \$172,465 to UNDP for its implementation. The project is underway and includes a network of 70 recovery units and two recycling centres; training workshops for service technicians of refrigeration and air conditioning equipment; and a monitoring system to check the amount of CFC being recovered and recycled by each piece of recovery equipment and

assure the quality of the recycled refrigerant. Through the Global MAC project, Panama also received a set of MAC recovery and recycling machines, covering about 30 per cent of the sector. In total, 22 ODP tonnes of refrigerants have been recovered.

49. The RMP project also includes a project covering the fisheries sector, one of the major users of CFCs in the country (about 30 tonnes) and was not covered under the recovery and recycling project currently under implementation. There are approximately 237 registered and 50 not registered ships and 45 companies which have cold rooms where products are processed and stored. These plants utilise mainly CFC-12, R-502, R-404 and ammoniac refrigerants. This project, which is part of the action plan proposed by the Government, will be submitted at a future meeting of the Executive Committee.

50. The Government of Panama has established regulatory and legislative measures dealing with the protection of the ozone layer; control of ODS imports and the establishment of a licensing system and certification of refrigeration servicing technicians.

51. The Secretariat discussed costs associated with consultants, logistical arrangements and modalities for implementation of the training activities, and also the roles of the Ozone Unit. Subsequently, project costs were adjusted.

#### Fund Secretariat's Recommendation

52. The Fund Secretariat recommends blanket approval of the projects with associated support costs at the funding level shown in Table 4 above.

## REQUESTS FROM THE GOVERNMENT OF FRANCE

### Introduction

53. The Government of France submitted requests for bilateral cooperation for projects in Costa Rica, Cuba Madagascar, Malaysia, Mali, Morocco, Senegal, Syria, and Thailand. (The projects submitted for Cuba and Senegal were subsequently withdrawn and the commercial refrigeration and methyl bromide projects in Madagascar were deferred.) The amount requested, including previous approvals offset against France's bilateral contributions, does not exceed 20 per cent of France's total contributions for the 1997 through 1999 triennium replenishment.

54. Table 5 presents a summary of France's requests by project title, country, amount requested, amount recommended, and whether a condition is attached to the recommendation. The total amount recommended, once approved by the Executive Committee, should be offset against France's contributions for the period 1997 through 1999 after accounting for Decision 28/11(d) in which the Committee agreed to offset adjustments of US \$8,965 recorded at the 28<sup>th</sup> Meeting against future approvals.

**Table 5**

### SUBMISSIONS FROM THE GOVERNMENT OF FRANCE AND RECOMMENDATION

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
Project preparation – phase out of methyl bromide used in grain fumigation	Costa Rica	31,500	31,500	
Refrigerant management plan: training of trainers and refrigeration technicians	Madagascar	75,600	48,310	
Refrigerant management plan: training of personnel in charge of control and monitoring of imports of ODS	Madagascar	27,300	27,300	
Refrigerant management plan: set up a national recovery and recycling network	Madagascar	161,049	86,835	
No clean process improvement training for electronic assemblers which are in process of phasing out CFC-113 – extension of project ASP/MAL/SOL/22/TAS to 15 further SMEs	Malaysia	31,500	31,500	
Phase-out of methyl bromide use in the cut flower and banana production	Morocco	1,432,932	Issue	
Development of halon banking management plan	Syria	11,272	11,272	
CFC emission reduction in central air conditioning	Syria	627,165	150,150	
Conversion from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Shoukairi and Co.	Syria	35,027	Pending	
Conversion from CFC-11 to HCFC-141b and from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Sarkisian	Syria	60,672	Pending	

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
refrigerators				
Conversion from CFC-11 to HCFC-141b and from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Bashar refrigerators	Syria	51,569	Pending	
No clean process improvement training for electronic assemblers	Thailand	133,510	133,510	
TOTAL		2,679,096		

### **COSTA RICA: PROJECT PREPARATION FOR THE PHASEOUT OF METHYL BROMIDE USED IN GRAIN FUMIGATION**

55. The Government of France received a request from the Government of Costa Rica (Ministry of Agriculture) for technical and financial assistance for the elimination of methyl bromide (MB) used in grain fumigation. In 1998, MB consumption in Costa Rica was 527 ODP tonnes mainly used in soil fumigation (99 per cent) and the remaining for fumigation of grains stored in silos. For the first application, the Executive Committee at its 27<sup>th</sup> Meeting approved two demonstration projects for implementation by UNDP. This request is for the preparation of an investment project for the remaining application of MB (5.3 ODP tonnes), to be undertaken in cooperation with the Ministry of Agriculture.

### **RECOMMENDATIONS**

56. The Fund Secretariat recommends blanket approval of the project preparation request in the amount of US \$31,500

57. The Treasurer is authorized to offset the approved amount against the balance of the Government of France as bilateral contribution to the Multilateral Fund for 1999.

### **MADAGASCAR: REFRIGERANT MANAGEMENT PLAN**

58. The economy of Madagascar is essentially based on agro-industries, fisheries, aquaculture and commerce, which require refrigeration and air conditioning equipment. The total ODS consumption in the refrigeration sector in the country is estimated at 24 ODP tonnes for servicing domestic, commercial and industrial refrigeration equipment.

59. Over the last few years, there has been an increase in the demand for refrigeration equipment based on CFC (mostly CFC-115) and HCFC-22 as well for HFC-134a refrigerants. Several of the new development projects being implemented relate to agro-industries, fisheries, aquaculture and tourism, and will further increase the demand for new refrigeration equipment. Therefore, adopting a policy on good servicing practices and providing training to refrigeration technicians on good practices will help reduce the amounts of CFC refrigerants currently used.

60. A survey conducted during the preparation of the RMP identified 500 technicians in the refrigeration servicing sector, which have been trained in the field, working from small workshops. Their practice is very basic with a large consumption of CFC used during servicing and maintenance operations.

61. Currently there are no regulations related to ODSs in the country; however, the Government of Madagascar, through the Environment Ministry is aware of the need to enact laws and regulations to control import of controlled substances under the Montreal Protocol including a ban on importation or manufacturing of new CFC-based refrigeration equipment, import quotas on ODSs, prohibition of new buildings with systems that contain ODS. Through this legislation, the Customs Service will be able to implement precise and rigorous control on import of ODSs.

62. The government is aware of the need to assure the availability and the supply of CFCs for maintenance and operation of refrigeration and air conditioning equipment. It is expected that before 2010 all equipment will be converted or replaced with non-ODS technology. The combination of introducing non-ODS equipment in association with training on good maintenance practices, and an efficient recycling of refrigerants of ODS, should help reduce the consequences of the elimination of ODS on the economy. The evolution of the market, which will increase competition between products of non-ODS equipment and technology, will be important in the consumers' choice mostly in industrial and commercial sectors.

63. The RMP identified two basic training programmes: (i) training for customs officers to establish an import/export licensing system in order to identify and develop techniques for collecting and reporting consumption of ODS import and ODS-based refrigeration equipment; and (ii) a "train the trainers" programme for refrigeration technicians in good management practices, aimed at improving service practices to prevent release of CFCs into the atmosphere and thus making it possible for refrigeration equipment to operate to the end of its useful life. As a result of the programme it is expected to achieve a phaseout of CFC-11 used for cleaning equipment by 2001, a 10 per cent reduction in the consumption CFC-12 by 2001, and an additional 20 per cent reduction of consumption by 2005.

64. The RMP also includes a subproject for the establishment of a recovery and recycling network comprising 40 refrigerant recovery units for servicing commercial and industrial refrigeration equipment, at a total cost of US \$80,000. Implementation of these projects will lead to recovery and recycling of 1.2 tonnes of CFC each year. This amount would be additional to the amount of refrigerant which would be saved from the teaching of good service and maintenance practices at the training seminars.

65. The Ozone Unit will be the focal point for implementation of the activities within the RMP.

66. The Government of France and the Secretariat discussed issues regarding the cost of international consultants and the equipment requested for the training programme. Subsequently, the cost of the refrigeration training programme was adjusted. It was also agreed to replace one reclamation centre for cleaning the CFC-12 to be recovered by smaller recycling units distributed throughout the main cities.



## RECOMMENDATIONS

67. The Fund Secretariat recommends blanket approval of the projects with associated support costs at the funding level shown in Table 5 above.

68. The Treasurer is authorized to offset the approved amount against the balance of the Government of France bilateral contribution to the Multilateral Fund for 1999.

69. The Executive Committee may also wish to request the Government of France not to proceed with the disbursement of funds approved for the customs training programme and the recovery and recycling programme until the regulatory and legislative requirements and fiscal steps proposed by the Government of Madagascar are put into place.

### **MALAYSIA: TECHNICAL ASSISTANCE PROJECT IN THE SOLVENT SECTOR “NO CLEAN PROCESS IMPROVEMENT TRAINING FOR ELECTRONIC ASSEMBLERS”**

70. These technical assistance projects follow on from the bilateral project approved for France at the 22nd Meeting to establish a laboratory and testing centre to provide process improvement training for technicians from small and medium enterprises which are phasing out the use of ODS solvents in the manufacture of electronic circuit-boards by adopting no-clean technology. It is proposed to train personnel from a further 15 enterprises in Malaysia at a total cost of US \$31,500 and personnel from 30 enterprises in Thailand at a total cost of US \$133,510. These amounts include 5 percent agency support costs. A similar project is being submitted by France for Thailand.

## COMMENT

71. The Government of France confirmed that the training activities were directly related to the phase-out activities of the enterprises concerned. The Secretariat noted that in the future, as the phase-out becomes complete, funding of these training activities will need to be taken over by the enterprises concerned since the costs will cease to be eligible.

## RECOMMENDATION

72. The Secretariat recommends blanket approval of the project in the amount of US \$31,500 and this amount should be credited against French bilateral contributions for the period 1997 through 1999.

## **MOROCCO: PHASE OUT OF METHYL BROMIDE USE IN THE CUT FLOWER AND BANANA PRODUCTION**

73. The project is proposed for the phase out of 36 ODP tonnes of methyl bromide (MB) use in banana production and 25 ODP tonnes in cut flower production. These amounts represent the entire consumption of the respective subsectors. The alternative technologies chosen, in coordination with the Moroccan counterpart, are negative pressure steam pasteurization (covering a surface of 9 ha) and alternative chemicals (dichloropropene and metham sodium) combined with soil solarization.

74. In Morocco, banana is cultivated in plastic houses along the Atlantic coast, over a surface area of 3,230 ha. The producers are organized in an association called "Association des Producteurs de la Banane (APROBA)". Banana is a perennial crop with a cultivation period of four years on an average and three production cycles; MB fumigation is only applied once in four years. The renewal of a plantation or the start of a new culture takes place over a period of 3 months (June, July and August).

75. The main cut flowers are carnations, roses, gladioli and sterlitzia. Only carnations are cultivated in plastic houses, the others are either cultivated in plastic houses and in open fields. Five companies cover almost the total production in the country (Clementine in the central region of Azemmour; Arbor, Marispim and Saflor in the southern region of Souss Massa and in the northern region of Abaz Kenitra). The producers are organized in an association called "Association Marocaine des Producteurs et Exportateurs des Fleurs" (AMPEX). The bulk of the cut flower production is exported to the European Union countries or to the eastern countries. The soil of the beds is fumigated between the end of the harvest and the transplanting of the new seedlings in the same beds over a two-month period (May and June).

76. The project includes a training programme in the proposed alternative techniques covering approximately 400 end-users (to be carried out through the 'train the trainers' approach).

77. The project will be implemented by UNIDO, in cooperation with the Direction de la Protection des Végétaux, des Contrôles Techniques et de la Repression des Fraudes and the Institut Agronomique et Vétérinaire Hassan II, under the national coordination of the Ozone Unit of the Ministry of Industry.

78. The Government of Morocco has established a register of methyl bromide importers and re-sellers/distributors. The use of MB is already regulated (only professional applicators under contract with the MB importers are allowed to use the product). Upon completion of the project, the Government will issue a regulation which prohibits the use of MB in the whole cut flower and banana production subsector.

### **COMMENTS**

79. The project is submitted as bilateral cooperation by the Government of France; UNIDO will be the implementing ganecy.

80. The Executive Committee has approved the following two demonstration projects on MB alternative technologies in Morocco:

- (a) Demonstration of four alternatives to the use of MB in horticulture (steam pasteurization, non-soil cultivation, solarization, and low-dose chemicals, in combination with an IPM system), approved at the 22nd Meeting at a cost of US \$487,300 (under UNIDO's implementation);
- (b) Demonstration of three alternatives to the use of MB (enemy plants, organic amendments and grafting on resistant rootstocks in combination with an IPM system in tomato and cucurbits crops, approved at the 26th Meeting at a cost of US \$229,523 (under Germany's implementation).

81. Most of the flowers are exported to non-Article 5 countries and banana production is sold in the local market.

82. The Secretariat has sought clarification on the use of negative pressure steam sterilization which requires additional equipment as compared to "classic" steam pasteurization. UNIDO informed the Secretariat that negative pressure is preferred to classic steam sterilization because it is more effective in the type of soil found in Morocco (clay) and has lower operational costs. The trials undertaken in Morocco showed that classic steam pasteurization loses its effectiveness at a depth of around 10cm and re-infestation occurs frequently. The negative pressure is effective in the Moroccan soil to a depth of more than 30cm and no re-infestation was recorded. The type of soil, the pests and the intensity of infestation as well as the working conditions are critical factors in selecting the most appropriate alternative and these factors are specific to the country considered.

83. Cut flower farmers want to use soil steam sterilization for ecological, effective and sustainability reasons; chemical alternatives are not environmentally friendly and would have to be phased out at some point. However, because of logistical problems and equipment cost, steam cannot be applied on all the surfaces during the project timeframe. Thus farmers want to acquire the technology and use it gradually as a stand-alone alternative or as complementary as possible to the chemical alternatives. Chemical alternatives will be used for a transition period to reach a complete phase out of MB at the completion of the project (4 years). Afterwards, farmers will gradually replace chemical alternatives with steam on their own.

84. Upon a request by the Secretariat on the need for three steam generators, UNIDO said that the 9 ha where the technology is to be implemented are far from each other (500 km between the south and centre sites and 400 km between the centre and the northern locations). Moreover, in each site the farms concerned are not located close to each other and the steam treatment is done at the same time and within a very short period available for treatment (less than 2 weeks). Any delay in treatment and planting leads to a delay in early product marketing and results in considerable losses of sales income.

85. The Secretariat and UNIDO discussed the eligibility of some equipment items requested. The request for 10 rotovators was considered not to be incremental, since this equipment should have been available on the farms. UNIDO indicated that the fumigation injection system is

required since the use of chemicals through the irrigation system in Morocco is forbidden by the Plant Protection Administration. The equipment used for MB belongs to the application companies and not to the farmers and is not suitable for injection of liquid chemicals.

86. The Secretariat also discussed the size of the training programmes and the costs of salaries for local trainers. Subsequently, it was agreed to adjust these costs (from US \$465,000 to US \$406,000).

87. Incremental operating costs were estimated on the basis of differences in costs between MB and alternative chemicals, using the maximum dosage rate recommended by the manufacturers of these products. It was agreed to revise the dosage according to actual circumstances in the country (type of soil and pests to be controlled), and, operating costs were subsequently adjusted (from US \$146,830 operating costs to US \$63,483 operating savings).

88. Taking into consideration the above comments, the Executive Committee may consider whether it wishes to approve the project.

#### **SYRIA - DEVELOPMENT OF HALON BANKING MANAGEMENT PLAN**

89. This is a joint French/German project. This project is for a comprehensive survey of the consumption of different types of halons to identify the users and to collect data about stockpiles/installed capacities of the substances in the country. The project will result in information that will be used to determine the requirements of the country with respect to reclamation, recycling and recovery facilities for halons, training, need for a demonstration projects and the development of a halon bank.

#### **COMMENT**

90. A similar project was approved for France and Germany with respect to halon banking in West Asia.

#### **RECOMMENDATION**

91. The Secretariat recommends blanket approval for this project in the amount of US 11,272 and this amount should be credited against French bilateral contributions for the period 1997 through 1999.

## SYRIA - CFC EMISSION REDUCTION IN CENTRAL AIR CONDITIONING

### COMMENT

92. This project has been reviewed as a component of the Refrigerant Management Plan for Syria, the Secretariat's comments and recommendations on which can be found in the Syria project document, UNEP/OzL.Pro/ExCom/29/45.

### RECOMMENDATION

93. The Secretariat recommends blanket approval of the project in the amount of US \$150,150 and this amount should be credited against French bilateral contributions for the period 1997 through 1999.

#### SYRIA:

- (a) **Conversion from CFC-11 to HCFC-141b and from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Bashar refrigerators**
- (b) **Conversion from CFC-11 to HCFC-141b and from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Sarkisian refrigerators**
- (c) **Conversion from CFC-12 to HFC-134a technology in the manufacture of commercial refrigeration equipment at Shoukairi and Co.**

#### Sector Background

- Latest available total ODS consumption (1998)	1,204	ODP tonnes
- Baseline consumption* of Annex A Group I substances (CFCs)	2,224.6	ODP tonnes
- 1998 consumption of Annex A Group I substances	n.a.	
- Baseline consumption of CFCs in refrigeration sector	775.2	
- 1998 consumption of CFCs in refrigeration sector	753.3	
- Funds approved for investment projects in refrigeration sector as of July 1999	US \$ 8,469,411	
- Quantity of CFC to be phased out in refrigeration sector as of July 1999 (28 <sup>th</sup> Meeting)	556.1	ODP tonnes

\* Baseline consumption of Annex A controlled substances refers to average of the consumption for the years 1995-1997 inclusive.

94. The refrigeration sector in Syria consists of four large enterprises (all have received assistance from the Multilateral Fund) with a consumption of about 354 ODP tonnes, and several medium-sized enterprises, seven of which have received assistance from the Multilateral Fund with a consumption of about 174 ODP tonnes. Additionally, there are estimated to be more than 70 small-sized commercial refrigeration enterprises.

### Project description

95. These three projects are submitted as bilateral co-operation by the Government of France. In 1998, three companies Bashar, Sarkisian and Shoukairi consumed a total of 6.25 ODP tonnes of CFC-11 and 3.82 ODP tonnes of CFC-12 in the production of refrigeration equipment such as domestic refrigerators, chest freezers, display cabinets and bottle coolers. Two enterprises (Bashar and Sarkisian) will convert their foam operations from CFC-11 to HCFC-141b as the blowing agent (as the interim technology, with a later conversion to an ODS-free technology). Shoukairi is using rockwool to insulate the refrigerators and does not need to convert. All three companies will convert their refrigerant operations from CFC-12 to HFC-134a. The total impact of three projects will be phasing out 17.02 ODP tonnes. It is indicated in the project documents that the expected ODP phase out will assist the countries to meet their 50% ODS reduction target.

96. Bashar and Sarkisian operate low pressure foaming machines. All the three enterprises have refrigerant charging equipment, leak detectors and vacuum pumps in the baseline for refrigerant operations. The project will include incremental capital costs covering replacement of two foam dispensers with high pressure foaming machines, as well as replacement of refrigerant charging equipment and leak detectors, and replacement/retrofits of vacuum pumps to handle HFC-134a refrigerant. The projects also include re-design, testing, trials, technical assistance and training. Incremental operating costs are proposed to cover the higher cost of chemicals, including increase in foam density, filter/dryers, condensers and HFC-134a compressors. Bashar and Sarkisian are not requesting incremental operating costs because they would exceed the cost-effectiveness threshold.

### Justification for the Use of HCFC-141b

97. The two companies have selected HCFC-141b technology to replace CFC-11 in foam blowing operations. A letter indicating the Government's decision to use HCFC technology has been received by the Secretariat in accordance with Executive Committee decision 27/13 and is attached to this evaluation together with the justifications and undertakings from each enterprise.

### **COMMENTS**

98. The Secretariat discussed with the Government of France the prevailing market prices of chemicals and compressors, and the justification for the increase in foam density. In particular, it was recognized that the experience in France is that the costs of CFC-12 and HFC-134a compressors are similar. It was agreed also that the difference in prices of chemicals used for CFC-based operations and the respective substitutes is lower than was initially requested in the proposals. As a result, the project documents have been revised and relevant cost items have been adjusted in calculations of incremental operating costs. The eligible level of grant has been recalculated accordingly for Shoukairi project since Bashar and Sarkisian are not requesting IOC.

99. Syria has not yet ratified London amendment. Since the 1999 freeze came into effect in July this year, the three projects are referred for individual consideration by the Sub-Committee on Project Review.

## **RECOMMENDATIONS**

100. Pending.

### **THAILAND: TECHNICAL ASSISTANCE PROJECTS IN THE SOLVENT SECTOR “NO CLEAN PROCESS IMPROVEMENT TRAINING FOR ELECTRONIC ASSEMBLERS”**

101. This project has the same project description as the one for Malaysia.

## **COMMENT**

102. Similar to the comments on the project from Malaysia.

## **RECOMMENDATION**

103. The Secretariat recommends blanket approval of the projects in the amount of US \$133,510 and this amount should be credited against French bilateral contributions for the period 1997 through 1999.

## REQUESTS FROM THE GOVERNMENT OF GERMANY

### Introduction

104. The Government of Germany submitted requests for bilateral cooperation for projects in Cuba, Egypt, Jordan, and Syria. (The project submitted for Cuba was subsequently withdrawn.) The amount requested, including previous approvals offset against Germany's bilateral contributions, exceeds 20 per cent of Germany's total contributions for the 1997 through 1999 triennium replenishment. Some of Germany's projects are still classified as pending. As a result of ongoing discussions, the final amount recommended by be within 20 per cent of Germany's contributions for the 1997 through 1999 triennium.

105. Table 6 presents a summary of Germany's requests by project title, country, amount requested, amount recommended, and whether a condition is attached to the recommendation. The total amount recommended, once approved by the Executive Committee, should be offset against Germany's contributions for the period 1997 through 1999.

**Table 6**

### SUBMISSIONS FROM THE GOVERNMENT OF GERMANY AND RECOMMENDATIONS

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
Refrigerant management plan: modification of legal provisions & information system	Egypt	93,170	Issue	
Refrigerant management plan: implementation of measures to address the informal sector	Egypt	516,065	Issue	
Refrigerant management plan: establishing a national recovery and recycling network	Egypt	1,673,217	Issue	
Phase-out of the use of methyl bromide in Jordan	Jordan	4,400,000	Issue	
Refrigerant management plan: national recovery and recycling network	Syria	1,081,672	Pending	
Development of halon banking management plan	Syria	12,131	12,131	
<b>TOTAL</b>		<b>7,776,255</b>		

### EGYPT: REFRIGERANT MANAGEMENT PLAN

#### Background

106. The Government of Germany has prepared the RMP for Egypt through an integrated approach, which includes the participation of industry, institutions and end-users in the phase out of ozone depleting substances. As such this will be a good example for private-public partnership.



### Servicing sector

107. In 1998, the ODS consumption in the refrigeration servicing sector in Egypt was estimated at approximately 450 ODP tonnes with the following distribution: 300 tonnes for domestic, commercial and industrial refrigeration, 50 tonnes for central air conditioning, 50 tonnes for MAC units and 50 tonnes for other equipment.

108. There are approximately 10,000,000 domestic refrigerators in operation in the country. This equipment is usually serviced by small workshops. Also, there is considerable large commercial refrigeration equipment in the country, mostly operating with CFC11 or HCFC 22 refrigerants, and also some very small units using CFC 12 and R-502 refrigerants (HFC-134a refrigerant is still in its initial stage and those users who have converted to HFC-134a, are still not undertaking maintenance work on their equipment). Owners of large commercial refrigeration equipment companies have their own maintenance technicians but only a small number of them undertake recovery exercises prior to maintenance work.

109. It has been estimated that there are 950 refrigeration servicing workshops in the country and approximately 1,900 refrigeration technicians. The maintenance of domestic refrigerators is performed by registered service companies (formal sector) and small workshops (in the informal sector). There are 11 major manufacturers for domestic refrigeration equipment with their own service workshops, servicing 130,000 units per year. More than 100 companies in the country are directly or indirectly involved in maintaining central air conditioning systems for building complexes, motels, hotels, hospitals, cinemas and some factories and companies. They are also often involved in maintaining cold stores and industrial refrigerators. The main refrigerants used in these units are HCFC-22 (in the majority of the units) and CFCs (CFC-11, CFC 12 and R-502).

110. Use of MAC units in automobiles and buses is also relatively common in the country. There are about 220,000 vehicles in the country with CFC-12-based MAC units. New cars are now fitted with equipment using HFC-134a refrigerant. There are also four main public transport companies and two major manufacturers of buses in the country that have replaced CFC-12 MAC units with HFC-134a. Air conditioner maintenance is carried out in about 40 workshops, 20 of these are considered specialised in the field while the remainder work on a seasonal basis. The majority of the garages do not practice recovery even though they might have the equipment. Leaks are detected by using soap and water and sometimes by charging oil with existing refrigerant.

111. Approximately 830 technicians work as freelancers without a license (informal sector); they lack adequate training on good servicing practices. As a result, leaks are often detected after charging the systems and CFCs are then vented during maintenance; recharge of the systems may be done more than once, releasing large quantities of CFCs into the atmosphere. Some technicians flush the system with CFC 12 and vent the flushed CFC prior to final charging. These technicians basically make house calls for maintenance of domestic refrigerators (on average, four house calls per day using 0.8 kg of CFC-12). CFC-12 packed inside cans of 0.4 kg and 1 kg capacity is used for house calls as they weigh and cost less. Furthermore, these technicians are not keen on training since they feel that training would be a waste of time and money as they earn much more during house calls.

112. Refurbishing workshops, which are part of the informal sector, also produce cheap domestic refrigerators. Compressors from old refrigerators are removed and a complete unit is assembled using a second hand compressor (a new compressor is the most expensive part of a refrigerator). Thus, by using a second-hand compressor, the price of this "new" refrigerator is considerably less than that of one containing a new compressor.

113. There are several Vocational Training Centres in Egypt that are providing training in refrigeration maintenance. However, there is a need to update the existing training programmes as information on technological advances have not reached these centres.

114. Ministerial Decrees have been the most important legal instrument used to control the use of ODS in the country. These include a ban on importation of products containing ODS except MDIs, suspension of industrial licenses for new activities based on ODS, establishment of a monitoring system, together with checking by the Customs and Excise Department for ODS entering into the country.

#### Approach for the RMP

115. As a means of ensuring a gradual transition from CFC based technology to non-ODS technology without excessive disruption to the existing situation, a system is needed that encourages the practice of recovery and recycling of CFCs within the maintenance sector. In order to tackle this issue the RMP will be a comprehensive approach that incorporates various tools that will ensure that Egypt can meet its international obligations under the Montreal Protocol.

116. An important aspect of the RMP will be to bring about a change in the existing practices of service companies and their technicians who are at present the main consumers of CFCs. Moreover, the RMP will provide a legal framework for controlling the entry of new ODS and equipment containing ODS. A monitoring system for the trade in ODS will also be established. The RMP also incorporates various forms of incentives to facilitate the phaseout process:

- (a) A certified technician training course: There is a need for a training course on good practices in refrigeration for technicians working in the maintenance sector. However, as an incentive to encourage participation, the technician would be certified on completion of the training course. It is expected that technicians from the informal sector would be keen to be certified so as to improve their skills. Similarly, service companies too would be keen to have their technicians certified and thus would willingly send them on the training course. A nominal fee will also be charged for the certification process. Technicians from the informal sector participating in the training course will receive a retrofit tool kit to increase efficiency and this would also act as an incentive for the informal sector to participate in the training course.
- (b) Recovery and recycling scheme: Technicians from the commercial and MAC servicing sub-sectors (with a consumption over 250 kg per year) will receive a recovery unit; however technicians have to first attend the training course on good

practices before a recovery machine could be made available. The recovery units would be handed over to the service centres only after the price of CFCs rise above US \$5 per kg, then the service centres would be interested in recovering maximum amounts of CFCs to decrease operating costs (workshops would not have to purchase new CFCs but could charge the customers for the recycled CFCs). If a technician in the informal sector converts his operations to the formal sector and establishes a service centre, he would also be entitled to receive a recycling unit. The recycling units will be given with an agreement that the service centre will recover at least 100 kg of CFC annually. When this condition is not met the unit could be taken away and given to another service centre.

- (c) Creation of a revolving fund: As soon as the technicians from the informal sector are certified, they would be entitled to approach a revolving fund for financial assistance for specific activities. The activities which would be covered by the revolving fund would be payment of fees for training courses, new equipment and tools, establishing of a service centre, etc. The money would be lent (at very low rates) and help the informal sector to convert to the formal sector. Through the establishment of a revolving fund for replacement of chillers, low cost loans to commercial chiller owners will be provided (a certain amount of money will be lent out for replacement of CFC chillers for a specific period of time at the end of which the beneficiary must repay the amount which then becomes available for lending to another chiller owner). The revolving fund system will be established through funds acquired from the GEF, in the range of US\$ 2 million.

117. As Egypt is among the large consumers of CFCs, the planned recovery, recycling and reclamation activities should lead to the regional availability of large quantities of recycled CFCs. The surplus recycled CFCs available in Egypt could then be made available to other countries of the region. Therefore, the entire region is likely to benefit from the activities initiated in Egypt. The translated technical documents on new developments in refrigeration prepared by Egypt would also prove extremely useful for other Arab countries.

#### Proposed subprojects under the Multilateral Fund

118. The following subprojects are included under the RMP for which the Government of Egypt is seeking assistance from the Multilateral Fund for implementation

- (a) Modification of legal provisions: The objective of this activity is to ensure that there are regulations in place which allow for controlling and monitoring ODS use in the country, setting up the basis for taking action in specific areas. Implementation of this activity will result in policy development for tariff changes for ODS and publishing of the policy paper, modifying the ministerial Decree on the import of second hand equipment containing CFCs, establishing an import/export licensing system, modifying the existing customs monitoring procedures and publishing new ones, training of customs officials and a national awareness programme. The Government of Egypt is requesting US \$77,000 for implementation of this activity.

- (b) Training programme for servicing refrigeration technicians: The training programme will cover inadequacies in existing knowledge at Vocational Training Centres and among servicing technicians. A comprehensive training programme would be developed for maintenance technicians using the ‘train the trainers’ approach. The trainers will be responsible for assembling demonstration units which they will use for the training courses. All participants will receive certificates upon completion of the training course (a nominal fee for the certification process is proposed). Passing the training course will allow technicians from the informal sector to be registered as a refrigeration maintenance company with a legal status to obtain loans from a revolving fund for setting up a service centre, transport facilities, further training course fees and tools. As part of the training programme, on completion of the course each technician will receive a servicing tool set that will assist them in following good practices during maintenance services. The informal maintenance sector has been identified as the most important sector that needs to be tackled to ensure the phase out of CFCs in the refrigeration sector. The objective of this activity will be to bring about the conversion of the informal sector into the formal sector. Technicians trained would be recognised as certified. The cost proposed for this activity is US \$435,000, including 84 demonstration units to be established in each one for the training centres.
- (c) Establishing a national recovery and recycling network: The national recovery and recycling network includes four sub-components: (i) provision of recovery units for 250 commercial refrigeration servicing workshops and 44 recovery and recycling units for workshops specialised in MAC units; (ii) provision of transport for the recovered CFCs from the service centres to the reclamation centres; (iii) establishment of a reclamation centre; and (iv) setting up of a CFC destruction centre. It is estimated that about 100 tonnes of CFC is expected to be recovered and recycled every year. Also all the technicians working in these sectors can participate in the technician training course, once the technicians from the informal sector have been trained. The training course would provide training for the technicians from these sectors in recovery and recycling and the equipment would be given to the service centres. The cost proposed for this activity is US \$1,383,000.
- (d) Retrofit of 15 commercial refrigeration units: The RMP identified 15 refrigeration systems that will be retrofitted under the guarantee that the compressor will be replaced if any damage is observed during the retrofit process. The cost proposed for this activity is US \$150,000.

#### Operating cost/savings analysis

119. The RMP is proposing that the project will cover initial operating costs during the first two years of implementation. The recovered and recycled CFC-12 will be sold to distributors for US \$2.00/kg, while the market price will be between US \$4.00 and US \$5.00/kg.

120. The following table provides the calculation of the operating costs/savings:

Annual costs	US\$
Earnings (100 tonnes at US \$2.00/kg)	200,000
Maintaining database of refrigeration companies	-5,000
Transport system for recovered CFCs	-25,000
20% losses of recovery devices	-15,000
Running costs reclamation centres	-125,000
Balance	30,000

#### Contribution by the Government of Egypt to the RMP

121. The budget for the entire RMP has been estimated to be approximately US\$ 4 million. However, Egypt has indicated that some of the activities that are to be covered by the RMP will be undertaken by Egypt as part of the country's commitment to the Montreal Protocol. In financial terms, the total Egyptian commitment has been estimated to be approximately US\$ 1 million.

#### **COMMENTS**

122. The development of a refrigerant management plan (RMP) for Egypt was approved by the Executive Committee at its 27<sup>th</sup> Meeting.

123. The Secretariat sought further clarification of the description on the servicing sector since in 1998 about 800 tonnes of CFCs were still used in the refrigeration sector although all domestic and commercial refrigeration manufacturing companies had been converted to non-CFC technologies. The Government of Germany informed the Secretariat that the survey carried out during the preparation of the RMP established that the amount of CFCs used for servicing refrigeration equipment (450 ODP tonnes) is correct. It has also been reported that not all of the refrigeration manufactures have yet fully converted to non-ODS technology and, therefore, are still using CFCs.

124. Upon a request by the Secretariat on how the resource material on legislation/regulations produced by UNEP could be used during implementation of the RMP, the Government of Germany stated that this material will be the main source for developing the legal framework in Egypt. The practice to be followed will be similar to what is currently being implemented for RMPs in South Eastern African countries. Also the Secretariat discussed the requests for the development of an information system (US \$35,000) and the creation of a national awareness programmes (US \$10,000) taking into account that over the years the Ozone Unit has undertaken several studies to collect ODS consumption data, created an information system and implemented public awareness campaigns and information dissemination programmes. Subsequently, the cost of the activity was adjusted (US \$60,000).

125. Regarding the training programme for refrigeration service technicians, the Secretariat sought an explanation on the need to provide 84 refrigeration demonstration units (US \$3,000 each) for the centres where training will be provided. The Government of Germany emphasized

the importance of these units to train the service technicians in good practices; it agreed to reduce the number of units to 50 and adjust the cost accordingly.

126. The Government of Germany and the Secretariat discussed the effectiveness of either establishing three reclamation centres for cleaning the CFC-12 or only one centre and several smaller recycling units distributed throughout the main cities. It was agreed to modify the project taking into account the latter approach. The request for a destruction plant for CFCs (US \$70,000) was agreed to be withdrawn, taking into consideration that inclusion is premature in advance of any evidence of the recovery rate and alternative means of disposal, and that similar requests have not been funded under the Multilateral Fund. The development of a transport system included in the proposal was considered ineligible (US \$25,000). Taking into consideration these observations and using unitary cost of equipment items included in the similar projects so far approved, the overall cost of the subproject was adjusted to US \$774,275.

127. Regarding the request for retrofitting to non-CFC refrigerant 15 commercial refrigeration units (US \$150,000), the Secretariat informed the Government of Germany that the success of the overall RMP project is closely related to the cost of refrigerants; currently, the cost of CFC-12 is considerably cheaper than HFC-134a, and is also widely available and therefore the proposed retrofit is not justifiable at the current time, even as a demonstration. Moreover, it has not been demonstrated that the retrofit projects proposed comply with the guidelines on end-user conversion (decision 28/44). Subsequently, the Government of Germany agreed to withdraw the proposal.

128. The Secretariat notes that the incremental operating savings, calculated as being US \$30,000 per year, have not been taken into account in the total project cost. However more importantly, the savings are based on the selling price of the recycled CFCs of US \$2.00/kg. In fact, while this revenue offsets the cost of operating the recycling scheme, at the country level, the savings will be based on the cost of imported, new CFCs which will not need to be purchased because recycled CFCs are available. This cost will be between US \$4.00 and US \$5.00 per kg, because the Government of Germany has indicated that the project will not be implemented until the price of CFCs has reached this figure. Using a figure of US \$4.00/kg, incremental operating savings for four years (NPV) are US\$680,000. If this figure was deducted from the agreed project costs the net level of grant would be US \$490,000.

129. The Government of Germany and the Secretariat have agreed on the cost of the activities included in the RMP as shown below:.

- (a) Refrigerant management plan: modification of legal provisions & information system, US \$67,800
- (b) Refrigerant management plan: implementation of measures to address the informal sector, US \$211,875
- (c) Refrigerant management plan: establishing a national recovery and recycling network, US \$869,445.

130. The Executive Committee may wish to consider the project in light of the above comments.

131. The Executive Committee may also wish to request the Government of Germany not to proceed with the disbursement of funds approved for the customs training programme and the recovery and recycling subproject until the regulatory and legislative requirements and fiscal steps proposed by the Government of Egypt are put into place. Also, as proposed by the Government of Germany, the recovery and recycling subproject should be commenced only when the cost of CFC-12 has exceeded US \$4.00/kg.

## **JORDAN: PHASE OUT OF METHYL BROMIDE**

### Background

132. In the Middle East, Jordan is considered a large producer and exporter of vegetable crops to the neighboring Gulf states. Fresh fruit and vegetables are deemed high-value cash crops for growers and an important source of hard currency for the country. Cash crops (tomatoes, strawberries, watermelons, pepper, cucumber and eggplant) are grown in and out of season mainly in the Jordan valley and in the irrigated uplands. During the summer season, they are grown under field conditions, but off-season they are grown in plastic houses.

133. Data reported by the Plant Protection Department of the Ministry of Agriculture indicates that in 1995, about 184 ODP tonnes of methyl bromide (MB) were imported and by 1998, import of this substance increased to 260 ODP tonnes. Currently, the most intensive use of MB is observed in the Jordan Valley (about 90 per cent), where the agricultural season extends from October to May. There are a few large farms and several thousand small-scale farmers, land tenants, and share-croppers. MB intensive crops are tomato, cucurbits, sweet pepper and strawberry. Between June to September temperatures in the Jordan Valley are too high for intensive vegetable production but is suitable for soil solarisation. Each greenhouse treated with MB uses an average of 27 kg of the gas. The majority of farmers own about 20 greenhouses and thus consume about 540 kg per farm.

134. The second crop season in Jordan is in the uplands, with mild summers and cool winters. The season extends from March to October. As agriculture is rapidly intensifying in these areas, consumption of MB is increasing. Solarisation as it is practiced in the Jordan Valley is not an alternative technology in this region; thus, the technique needs to be modified (which is possible), or another alternative needs to be introduced.

135. The majority of the MB in Jordan is used by 100 large farms (more than 10 ha), hundreds of medium farms (2.5-10 ha), and thousands of small holder farms (less than 2.5 ha). Some of the largest farms have already started to use soil solarisation as an economic alternative to MB. The biggest challenge to the phase out of the substance is to reach out to the small-scale farmers, who use MB infrequently as it is dependent on available cash resources.

136. MB prices fluctuate relative to its availability. During the 1997 season, the prices for a 1.5-lb can range from US\$ 1.80 to US \$3.15. Small farmers refrain from purchasing MB at high

price levels. Instead they attempt to implement soil solarisation as they know it from local talk, albeit with considerable mistakes. However, when the price of MB drops many farmers abandon their solarisation attempts and revert to MB.

137. In Jordan, research to find alternatives for MB started as early as 1981. Since then a sound knowledge and expertise has accumulated. Extended field trials and on-farm research led many farmers to adopt variations of these methods on their farms.

138. Since 1995, a bilateral Jordanian-German Integrated Pest Management (IPM) project has been under implementation (GTZ jointly with the Jordanian National Centre for Agricultural Research and Technology Transfer). Through this project, several agricultural engineers have been trained on how to approach farmers to stimulate their interest in new plant protection technologies. In July 1998, the Executive Committee approved a demonstration project on three alternatives to the use of MB (steam pasteurization, non-soil cultivation and optimal use of soil fumigants in combination with an IPM) and allocated US \$385,000 to UNIDO for its implementation; and in November 1998, the Committee also approved a project for a comprehensive approach to disseminate soil solarization technology for MB substitution as a bilateral contribution project by the Government of Germany (US \$232,789).

#### Project objectives and scope

139. The project is to establish the necessary frame conditions, *inter alia*, institutional activities, legislative and policy approaches) to ensure a timely phase out of MB, and to enable farmers to use viable MB alternatives. As a result, it is proposed that a stage-wise reduction of import of MB be introduced (freeze in 2001; 60% of freeze point in 2002; 30% of freeze point in 2003; 15% of freeze point in 2004); by end of 2002, national policies will be in place to facilitate MB phase out.

140. The phase-out of MB in Jordan requires co-ordination among various sectors. Farmers have to learn about suitable alternatives. Emphasis has to be placed on spreading soil solarization technology to the majority of MB end-users. However, this method in its current form is not applicable in the Jordanian uplands. Farmers in those areas will have to rely on other alternatives to MB. Before going into full-scale technology transfer, applicable methods will be implemented first by selected upland farmers. These will later serve as "expert farmers" who will relate their know-how to other farmers in their areas. This approach will prevent an increase in the use of MB in new areas, while it is being phased out in the Jordan Valley.

141. The project will work with agricultural supply companies to ensure local availability of any input required for the new technologies. Eventually, Jordan will have to ban the use of MB. In order to facilitate and support phase-out activities, current regulations have to be reviewed and adjusted. Therefore, the project will assist the concerned government bodies to formulate suitable policies and legislation to this effect. The project will also implement a broad awareness campaign to create public pressure in favour of a phase-out of MB.

#### Planned results

142. The results of project implementation are:



- (a) Farmers will be able to use economically and ecologically acceptable (sustainable) MB alternatives: list of applicable MB alternatives for all relevant agro-ecological zones in Jordan will be available by 2002; selected technologies for upland areas will be commercially introduced on farms of expert farmers by September 2001; 10 per cent of technology transfer for users and potential users of MB in the Jordan Valley will be accomplished by end of 2000; 30 per cent by February 2001, 50 per cent by end of 2002 and 90 per cent by end of 2003; 5 per cent of technology transfer for MB users in the uplands will be accomplished by September 2001, 30 per cent by September 2002 and 70 per cent by September 2003;
- (b) The institutional timeframe for the promotion of MB phase-out and the action plan will be established by end of 2000; MB phase out activities within institutions will be initiated in June 2001;
- (c) Legislative framework will be analyzed and relevant proposals regarding MB will be considered; the MB phase out policy will be adopted by end of 2001 and at least one effective legislative amendment aiding sustainable MB phase out will be in place by end of 2002;
- (d) Further education and training of personnel will be implemented in relevant fields. Technical project staff will be fully knowledgeable on MB alternatives by end of 2001; by the end of 2000, about 20 selected extensionists will know how to transfer MB alternatives effectively to farmers;
- (e) The private sector will be advised on the dangers of MB and available alternative methods and products to MB. Local agricultural supply companies will offer MB-alternative products by July of 2002; and will continue with public awareness campaigns on problems of MB and its alternatives. The local media will publish features relating dangers of MB and possible alternative technologies.

143. In summary, at the end of the project, the use of MB for soil treatment should have almost ceased because farmers will have adopted effective alternatives on a large scale; registration of MB as a soil fumigant will have been cancelled and customs personnel will be aware of the ban.

#### Project timeframe and budget

144. The time frame for project implementation is estimated at 4 years and 6 months. The total project cost is US \$4.4 million with the following breakdown:

Item	Amount	Unit cost(US \$)	Total cost(US \$)
Personnel (person months)			
International staff (1)	54	13,200	712,800
Local technical staff (4)	216	1,700	367,200
Expert farmers (320 field days)	320	180	57,600
Local trainers (20)	1,080	1,100	1,188,000

<b>Item</b>	<b>Amount</b>	<b>Unit cost(US \$)</b>	<b>Total cost(US \$)</b>
Local administrative staff (2)	108	1,200	129,600
Subtotal			2,455,200
Travel expenditure			
International travel	4	5,000	20,000
Regional travel	8	1,000	8,000
Regional group visits	2	15,000	30,000
Invited regional visitors	2	10,000	20,000
Subtotal			78,000
Materials and Equipment			
Field demo materials	8,000	125	1,000,000
Audio-visual materials	1	2,000	2,000
Literature	1	2,000	2,000
Subtotal			1,004,000
Local Operations			
Office rent/month	54	0	0
Utilities/month	54	0	0
Transportation	54	1,050	56,700
Communication costs/month	54	100	5,400
Maintenance/month	54	200	10,800
Stationary, etc./month	54	50	2,700
Subtotal			75,600
Services/co-operations			
Training	20	1,000	20,000
Contracted expertise	15	8,000	120,000
Information supply/month	52	100	5,200
Printing materials	1	20,000	20,000
Production of videos	1	40,000	40,000
Media exposure	1	20,000	20,000
Subtotal			225,200
Miscellaneous		125,964	125,964
Subtotal			3,963,964
Administrative costs			436,036
Total			4,400,000

### Production of MB in Jordan

145. The project proposal indicates that there may be local production of MB after a planned bromine extraction plant at the Dead Sea starts operations in 2001. Appropriate policies and regulations proposed by the project should be effective before the termination of support. Any farmers reverting to the use of MB can be revisited by some of the numerous professionals trained throughout the duration of the project, to advise them on suitable solutions for their problems. In case of repeated violations, the delinquent could be prosecuted under existing law.

### **COMMENTS**

146. The Secretariat reviewed the project in light of the Executive Committee's strategy and guidelines for methyl bromide projects (adopted at the 24th Meeting), preliminary discussions by members of the working group established by the Executive Committee to revise the existing guidelines on the MB sector, and the report of the meeting of experts on MB alternative technologies (Montreal, June 9-10, 1999). The Secretariat also reviewed the project taking into account the two demonstration projects on MB alternatives in Jordan currently under implementation, one by GTZ and the other by UNIDO.

147. The Secretariat indicated that with the knowledge and experience acquired in the use of alternative technologies in Jordan over the last 18 years, the work performed by Government of Germany (through GTZ) over the last 5 to 6 years, and results of the Multilateral Fund's demonstration projects, it would be expected that a modest level of additional funding might be necessary to assist the country with further extension services to move forward towards complete elimination of MB. However, the main core of this project proposal is the establishment of an extensive institutional framework.

148. The Secretariat has also mentioned that based on the proposed budget table, it seems that the project is for the establishment of a permanent, long-term and well-equipped office in Jordan to oversee the country's effort to phase out MB (about US \$2.6 million is for international and national staff; US \$ 1 million for field demo material; US \$ 0.375 million for travel, transportation, communication, maintenance and miscellaneous; and US \$0.44 million as administrative costs).

149. In addition, the Secretariat pointed out that the proposal contains several elements which are either ineligible (maintenance, stationary, media exposure, etc.), whose eligibility is questionable since they have already been covered under the institutional strengthening project or the MB demonstration projects (production of videos, printing info materials, travel, transportation, communications, etc.), or unknown costs (i.e., field demo materials, miscellaneous, contracted expertise, administrative staff, etc.).

150. In response to the comments by the Fund Secretariat, the Government of Germany indicated that the project complies very well with the current guidelines on MB projects for the following reasons: Jordan is a traditional user of MB and has ratified the Copenhagen Amendment. As such, the country is eligible for the full range of tools of intervention (policy development, information exchange, and demonstration and investment projects); the MB-using crops are tomatoes, cucurbits, strawberries (priority crops); it will replace the use of MB with IPM and solarisation (priority alternative technologies); the policy and awareness-raising work proposed is in compliance with the guidelines for investment projects (it needs to be demonstrated that the country was committed to a package of policy measures directed to eliminating MB use and to sustaining the alternative methodologies on a permanent basis); the institutional capacity should be in place to enable the alternative technology used in an investment project to be adopted on a nation-wide basis; the investment project should be supported by policy, awareness or promotional activities and should have a strong evaluation and information transfer component. The extension and training method proposed in the project will also ensure that farmers will become committed to sustainable reductions in MB use.

151. The Government of Germany also indicated that the core of the project is to organize and conduct field days during which the farmers are enabled to change from MB to alternative technologies through lectures and subsequent technical assistance. Part of this effort is also to take measures to prevent upland farmers from commencing the use of MB in the first place. Therefore, the aim is to establish a network and create awareness among those stakeholders at a very low cost, mainly consuming some extra time during periods of less activity of the existing project staff.

152. The intention of the project is not to establish an office to oversee the country's effort to phase out MB. However, keeping about 25 technical staff active in the field and organizing a large number of field days (320) to reach about 8,000 farmers requires a co-ordinating base with minimum staffing. Calculations on costs are very reasonable, especially, since the availability of the existing GTZ-infrastructure is considered. Personnel are absolutely essential to spread the alternative technologies to the farmers; the training material is essential to provide an incentive for the farmers to actually start using the alternative. This is especially important, considering the fact that Jordan is expected to phase out MB. If the farmers are not well prepared there is a definitive risk of them reverting back to MB. This would cancel out the efforts taken and money spent and risk the country's efforts to meet its commitments. This project is the first of its kind and is aimed to implement a concept for technology transfer in the MB sector. Rather than serving as a precedent, it may be used to gather concrete experience on a large scale as a guide for implementation needs of future projects.

153. Taking into consideration some of the remarks by the Fund Secretariat on eligibility of several cost items, the Government of Germany adjusted the project accordingly. The revised project budget, including 3.3 per cent as contingency and 11 per cent administrative costs is US \$3.85 million.

154. Taking into consideration the above comments the Executive Committee might wish to consider the request by the Government of Germany.

## **SYRIA - REFRIGERANT MANAGEMENT PLAN: NATIONAL RECOVERY AND RECYCLING NETWORK**

### **COMMENT**

155. This project has been reviewed as a component of the Refrigerant Management Plan for Syria, the Secretariat's comments and recommendations on which can be found in the Syria project document, UNEP/OzL.Pro/ExCom/29/45.

### **RECOMMENDATION**

156. Pending.

**SYRIA - DEVELOPMENT OF HALON BANKING MANAGEMENT PLAN**

157. This is a joint French/German project. The project description is found under the French section of this document.

**COMMENT**

158. A similar project was approved for France and Germany with respect to halon banking in West Asia.

**RECOMMENDATION**

159. The Secretariat recommends blanket approval for this project in the amount of US \$12,131 and this amount should be credited against German bilateral contributions for the period 1997 through 1999.

## REQUESTS FROM THE GOVERNMENT OF JAPAN

### Introduction

160. The Government of Japan submitted requests for bilateral cooperation for projects in China and the Asia and Pacific region. The amount requested, including previous approvals offset against Japan's bilateral contributions, does not exceed 20 per cent of Japan's total contributions for the 1997 through 1999 triennium replenishment.

161. Table 7 presents a summary of Japan's requests by project title, country, amount requested, amount recommended, and whether a condition is attached to the recommendation. The total amount recommended, once approved by the Executive Committee, should be offset against Japan's contributions for the period 1997 through 1999.

**Table 7**

### SUBMISSIONS FROM THE GOVERNMENT OF JAPAN AND RECOMMENDATION

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
Project preparation assistance for enterprises in the city of Shenzhen for the elimination of ODS (CFC-113 and TCA) in the production lines of LC display and TV picture tube	China	56,500	Pending	
Regional workshop on monitoring and control of ODS consumption for South Asia region	Region: Asia and the Pacific	135,600	107,350	
Regional workshop on control and monitoring of ODS consumption for the South East Asia/Pacific region	Region: Asia and the Pacific	73,450	62,150	
<b>TOTAL</b>		<b>265,550</b>		

### **CHINA - PROJECT PREPARATION ASSISTANCE FOR ENTERPRISES IN THE CITY OF SHENZHEN FOR THE ELIMINATION OF ODS (CFC-113 AND TCA) IN THE PRODUCTION LINES OF LC DISPLAY AND TV PICTURE TUBE**

#### **PROJECT DESCRIPTION AND COMMENT**

162. The Government of Japan submitted this project preparation request to the 28<sup>th</sup> Meeting of the Executive Committee at which time the Committee decided to defer consideration of the project pending its submission to the 29<sup>th</sup> Meeting, at which time the Sub-Committee on Project Review would judge the proposal on its own merits. Based upon such action on bilateral project proposals as might be recommended by the Sub-Committee, the Executive Committee at its 29<sup>th</sup> Meeting would better clarify the relationship between these projects and China's solvent sector strategy.

**RECOMMENDATION**

163. The Fund Secretariat has no issue with the proposal other than its relationship to China's solvent sector strategy, which was dealt with in Decision 28/31.

**ASIA AND PACIFIC REGION: REGIONAL WORKSHOP ON CONTROL AND MONITORING OF ODS CONSUMPTION**

164. The project was reviewed under the bilateral programme of Sweden.

**RECOMMENDATION**

165. The Secretariat recommends blanket approval of the project in the amount of US \$62,150 and this amount should be credited against Japanese bilateral contributions for the period 1997 through 1999.

**ASIA AND PACIFIC REGION: REGIONAL WORKSHOP ON MONITORING AND CONTROL OF ODS CONSUMPTION**

166. The Government of Japan proposes to fund a workshop for the South Asia region on the monitoring and control of ODS at a total cost of US \$107,350 including 13% agency fee. The project is to be implemented by UNEP. The objectives of the workshop are to assist countries in establishing or improving ODS import/export licensing systems and to propose legislation and procedures for this purpose.

**COMMENT**

167. Similar workshops have been approved for West Asia, the Latin America/Caribbean region (two) and english speaking Africa. The Secretariat discussed the proposals with the Government of Japan and as requested, with the implementing agency, UNEP. Amendments were made on the basis of comparison with other approved projects and to avoid possible double counting. To provide context and realise economies, the workshop should be held as part of, or in conjunction with, a meeting of the South Asia regional network.

**RECOMMENDATION**

168. The Secretariat recommends blanket approval of the project in the amount of US \$107,350 and this amount should be credited against Japanese bilateral contributions for the period 1997 through 1999.

## **REQUESTS FROM THE GOVERNMENT OF SWEDEN**

### Introduction

169. The Government of Sweden submitted requests for bilateral cooperation for projects in the Asia and Pacific region, the Philippines, and Thailand. The amount requested, including previous approvals offset against Japan's bilateral contributions, does not exceed 20 per cent of Sweden's total contributions for the 1997 through 1999 triennium replenishment.

170. Table 8 presents a summary of Sweden's requests by project title, country, amount requested, amount recommended, and whether a condition is attached to the recommendation. The total amount recommended, once approved by the Executive Committee, should be offset against Sweden's contributions for the period 1997 through 1999.

**Table 8**

### **SUBMISSIONS FROM THE GOVERNMENT OF JAPAN AND RECOMMENDATION**

Project Title	Country	Amount Requested (US\$)	Amount Recommended (US\$)	Condition
Regional workshop on control and monitoring of ODS consumption for the South East Asia/Pacific region	Region: Asia and the Pacific	73,450	62,150	
Preparation of a government strategy to reduce and eliminate the use of CFC refrigerants for servicing and installations on-site	Philippines	141,400	Pending	
Halon management program for Thailand, halon recovery, recycling and banking	Thailand	226,000	Pending	
<b>TOTAL</b>		<b>440,850</b>		

### **ASIA AND PACIFIC REGION: REGIONAL WORKSHOP ON CONTROL AND MONITORING OF ODS CONSUMPTION**

171. The Government of Sweden proposes to fund, jointly with the Government of Japan, a workshop for countries in the South-east Asia/Pacific region on the control and monitoring of ODS consumption. The workshop would be implemented by UNEP. The total cost of the workshop is US \$124,300 including a 13% per cent agency fee for UNEP. The workshop is proposed to be held over four days and will be attended by representatives from about 10 countries. Five to seven resource persons will be present. A number of countries in the region have already commenced with legislative or regulatory programmes to monitor or control the import or export of ODS. The focus of this workshop is intended to be the linkage between regulation and effective enforcement. The workshop is to be preceded by a preparatory consultancy to compile and review data on ODS control and monitoring systems in network countries and to assemble experience in both developed and developing countries on customs controls and enforcement issues.



## COMMENT

172. The Secretariat discussed the proposals with the Government of Sweden and amendments were made on the basis of comparison with other approved projects and to avoid possible double counting. To provide context and realise economies, the workshop should be held as part of, or in conjunction with, a meeting of the South-east Asia/Pacific regional network, which is supported by Sweden.

## RECOMMENDATION

173. The Secretariat recommends blanket approval of the project in the amount of US \$62,150 and this amount should be credited against Swedish bilateral contributions for the period 1997 through 1999.

### **PHILIPPINES – PREPARATION OF A GOVERNMENT STRATEGY TO REDUCE AND ELIMINATE THE USE OF CFC REFRIGERANTS FOR SERVICING AND INSTALLATION ON SITE**

174. The Government of Sweden is requesting the approval of US \$141,400 as bilateral cooperation funding for preparation of a government strategy to reduce and eliminate the use of CFC refrigerants for servicing and installation on-site in the Philippines. It is suggested that a comprehensive national strategy must be developed in 1999 in order to enable the Philippines to reduce its consumption of Annex A substances to 450 tonnes by 1 January 2007. The strategy is to be based on reducing demand by confining access to CFC refrigerants to service enterprises with the appropriate training, equipment and infrastructure. The project is intended to provide the Philippines with technical assistance to develop all the necessary components of this strategy. In particular the Swedish International Development Agency (SIDA) will assist in developing modalities for the implementation of an envisaged “Chemical Control Order” to control the use of CFC refrigerants for servicing and in setting up an institutional framework for authorisation of service technicians and related activities.

175. The outputs of the project will include: proposal of schemes for certification of service enterprises and technicians, import control on ODS-based products; extension of current vehicle controls, investigation of hazardous waste controls, including the necessary legal requirements for all of the above; identification of measures to ensure compliance; proposal for changes to curricula at training institutions; proposal for scope and content of awareness raising activities; reviewing costs and proposing means of funding, including follow-up projects for the Multilateral Fund.

176. Project costs include US \$110,000 for international consultants at US \$750 per day. It is stated that the Department of Environment and Natural Resources will contribute 205 working days of professional support to the project and other departments will contribute a further 120 working days. Industry involvement is also anticipated.

**COMMENTS**

177. The total ODS consumption in 1998 was reported by the Government of the Philippines as 1680 ODP tonnes. The balance of phase-out from approved investment projects not yet implemented at the beginning of 1999 was 610 ODP tonnes. On the basis of these figures, the total consumption in the country not yet addressed by the Multilateral Fund appears to be not more than 1070 ODP tonnes, including consumption for the refrigeration servicing sector. Other than a pro-rata estimate based on the sectoral distribution prevailing in 1993, no sectoral breakdown of consumption in the Philippines has been reported. The project preparation request is based on a figure of around 2000 ODP tonnes for consumption in the refrigeration servicing sector alone.

178. A US \$550,000 recovery and recycling project to establish a nation wide R&R network, provide 125 recycling machines, train up to 4000 technicians and phase out 60 ODP tonnes was completed by UNIDO in June 1999. A US \$150,000 information exchange project approved in November 1993 is still under implementation by UNEP.

179. The 34-page project proposal has been extensively researched and documented. The Fund Secretariat discussed with the Government of Sweden its concerns that, despite its thoroughness, the proposal was similar to a request for project preparation of an RMP, without a recovery and recycling component (which has already been implemented). The Fund Secretariat also indicated that the Executive Committee approved three project preparation requests at the 27<sup>th</sup> Meeting on a trial basis for RMPs in non-LVCs, one in each major geographic region. The Asia Pacific region was represented by Pakistan and this proposal might therefore be premature.

180. The Secretariat also noted that the project was based primarily on extensive regulatory measures to reduce demand. While these measures can be seen in several developed countries, this regulatory model is not universal and might not be appropriate for some countries. Its applicability in this case should not necessarily be assumed. Attention was also drawn to the high cost of international consultants which made up over 75 percent of project costs.

181. It is also noted that the project will not lead to any direct phase-out nor will it implement directly measures to produce phase-out. Rather, the project will lead to additional funding requests which, if approved at a late date, may assist in reducing consumption.

182. The World Bank has included a project proposal for a "National CFC Phase-out Plan" in its Business Plan for 2000.

183. The Government of Sweden indicated that in its view, measures to control demand were essential and that the proposal was not premature as action of the nature proposed was needed now to achieve the 85 per cent Montreal Protocol reduction levels in 2007. Sweden also considered that the proposal cannot be considered as an RMP and should be viewed as a "national phase-out plan for the refrigeration servicing sector". It was indicated that the Philippines Government would take a decision on the proposed strategy before submission of any further funding requests and is prepared to consider a performance-based agreement as a component of the final output of the project. Sweden noted that its activities would be coordinated with those to be proposed by the World Bank in its national phase-out plan.

## RECOMMENDATION

184. The proposal by Sweden is referred for the consideration of the Executive Committee.

### **HALON MANAGEMENT PROGRAM FOR THAILAND, HALON RECOVERY, RECYCLING AND BANKING**

185. This request is a joint request from the Government of Sweden and the World Bank. This project will lead to a comprehensive national halon management program for Thailand and support the phase-out achieved through the proposed halon manufacturing conversion projects. The project aims at eliminating use and recovering halons from non essential halon fire protection applications, limit the phase-out costs to users and promote the use of non ODS fire protection alternatives. The project will also assist critical and essential halon users in developing their halon phase-out programmes and ensure supply to halons to remaining essential uses. The project will provide reclamation equipment and storage tanks for a central facility and smaller recycling equipment for regional workshops. Technical assistance is requested to support national capacity building.

186. Meeting the 2002 Freeze requirement for halons: The project is supported by national regulations, which will control import of new halons and prevent new uses. The project will ensure that Thailand is able to meet the 2002 freeze target.

## COMMENTS

187. The timing of the halon banking project should be co-ordinated with the timing of the phase-out of the primary halon consumers which are the fire extinguisher manufacturers. The proposal indicates that an umbrella phase-out projects will be submitted for Thailand to the 30th Meeting of the Executive Committee. As with CFC recycling, it is best to phase-out the users to ensure that the recycling activity will be successful.

188. The World Bank indicated that the schedule for implementing the halon banking is consistent with the expected umbrella phase-out project.

189. The World Bank and the Secretariat have agreed to the requested costs, as revised.

## RECOMMENDATIONS

190. The Executive Committee may wish to consider if the projects should be approved prior to the conversion of fire-fighting equipment manufacturers to non-ODS alternatives.