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Consolidated Work Programmes of UNDP, UNEP and the World Bank

OVERVIEW

Introduction

1. Pursuant to the request of The Executive Committee (UNEP/OzL.Pro/ExCom/5/16, paragraph 46), The Fund Secretariat prepared this document from information provided by the implementing agencies in their 1992 Work Programmes. This 1992 Consolidated Work Programme Document incorporates the "sectoral approach" through the presentation of the activities by sector, country, and region with associated costs.

2. The format of the fact sheets included in the Consolidated Document was developed by The Fund Secretariat. Data from the draft work programmes were compiled into fact sheets listing activities and budgets by sector and agency for each country covered by the Work Programmes. The fact sheets were submitted to the implementing agencies for review and updating. A synthesis was subsequently made from these fact sheets which yielded the information included in Tables 1 - 5.

3. The components of the document were determined at the Third Co-Ordination Meeting of the implementing agencies and The Fund Secretariat and include the following sections:

- . Overview
- . Budget Summary
- . Activity Tables by Sector and Region
- . Annex I - Country Activity Tables
- . Annex II - Agency Work Programmes

4. An account of all expenditures is presented in the Budget Summary. There are two sets of "Activity Tables." One provides an account of all activities/projects by sector, and the other, by country in Annex I. The individual Work Programmes of the implementing agencies are found in Annex II.

General

5. The cost of activities in the Work Programmes of the implementing agencies amount to approximately \$105 million for 1992 activities: \$3.18 million for UNDP, \$1.92 million for UNEP, and about \$100 million for the World Bank.

6. By region, most of the budget is allocated to countries in Asia and the Pacific (\$56 million), followed by Latin America and the Caribbean (\$36 million), Africa (\$4 million), and Europe (\$4 million). By country, the two largest consuming nations, China and Brazil, receive the two largest country allocations (about \$16 million each). The next largest allocations are for:

<u>Country</u>	<u>Allocation</u>	<u>ODS Consumption</u>
Thailand	\$15.8 million	7,500 MT
Malaysia	\$13.1 million	6,675 MT
The Philippines	\$10.5 million	4,150 MT
Venezuela	\$10.2 million	5,500 MT

Initial studies are foreseen for other comparatively high ODS-consuming countries such as Iran (4,400MT ODS), Argentina (4,000MT ODS), and Nigeria (3,500MT ODS). Civil unrest in Yugoslavia (7,400MT ODS) will preclude activities there in the short term.

Cross Sector Activities

7. The term, "cross sector," refers to activities that impact upon multiple sectors. Cross Sector activities include project financing; project preparation; country programmes; and multi-sectoral workshops, seminars, and public awareness projects. All of the World Bank and UNEP activities are found in this Cross Sector category (excluding Administrative Costs). About 23 percent of the UNDP budget is found in this category.

Country Programme Preparation

8. Country Programmes are important in the development of a co-ordinated approach to implementing the Montreal Protocol. Table 3, "Cross Sectors: Country Programmes," indicates that provisions are being made for the preparation and/or completion of 23 country programmes in CY92: 11 by the Bank (\$1.2 million), seven by UNDP (\$285,000), and six by UNEP (\$180,000). In most instances, additional funds are requested beyond that which was provided for the completion of these tasks in the CY91 budget.

Project Preparation and Financing

9. Almost \$2.1 million is requested for the completion of project preparation studies in 14 countries; 12 of the 14 countries were funded in the CY91 budget. Additional funding requests in CY92 (\$1.8 million) exceed the amount allocated for their completion in CY91 (\$1 million).

10. The largest amount of funds was allocated for the twelve project financing programmes of the World Bank. All but \$6.1 million of the approximate \$100 million Bank budget will be allocated for project financing with the remainder going to country programmes, project preparation, and \$1.4 million¹ for demonstration and engineering projects. However, no description of the remaining \$93.9 million designated as project financing is provided in the Bank's Work Programme. For this reason, these activities are listed under the category of cross sector projects.

11. As shown in Table 4, "Cross Sectors: Project Preparation and Project Financing," the majority of project financing is for the Asia and the Pacific region (\$54.4 million) with China and Thailand receiving approximately \$15 million each. The country projected to receive the largest allocation of project financing funds is Brazil with \$16 million.

Workshops, Seminars, and Public Awareness

12. Table 5, "Cross Sectors: Workshops and Seminars," shows the distribution of workshops and seminars by region and country. The UNDP budget provides funds for 14 countries to participate in international/regional meetings at a total cost of \$140,000. It also allocates funds for three national policy-maker workshops (\$45,000), two study tours for officials and industry (\$50,000), and institutional strengthening linked to demonstration/investment projects (\$150,000). UNEP plans to convene its fourth regional workshop in Africa. UNEP is also requesting \$365,000 for support of training activities for unspecified Article 5 countries. Public awareness and information dissemination will be provided through the \$750,000 request from UNEP for information exchange activities.

Sector Activities

13. As mentioned above, most of the funds in the CY92 budget request are for project financing. Since there is no description of these projects linked to a budgetary figure or an industrial sector, the sectoral analysis is very limited. Projects that are clearly identified as pertaining to one industrial sector represent only two percent of the total amount of funding requested in the Work Programme budgets. In fact, the estimated budget is less than \$1 million for any one sector. There are only five countries for which funds have been requested for projects that fit into one identifiable sector. Only China has projects in all sectors totalling \$545,000.

14. The 1992 Work Programmes provide for co-ordination and technical assistance on a sectoral basis. UNDP is planning to retain 'sector experts' at a total cost of \$460,000. Sector

¹This amount was actually disbursed with 1991 funds.

experts will co-ordinate activities with other implementing agencies, governments and industry, organize demonstration projects, assist in the design of national programmes and feasibility studies, and prepare training and outreach programmes.

15. The following is a brief analysis of the activities of each sector:

Aerosols

16. About \$150,000 is requested for this sector. Over half of the money in this sector will be spent for activities in China including \$60,000 for consultant fees. Investment projects are foreseen for hydrocarbon substitution projects there. Technical assistance is forecasted for the design and implementation of pre-investment feasibility studies for six countries. A hydrocarbon deodorization feasibility study is planned for Jordan.

Refrigeration

17. Projects in this sector are planned for three countries. The majority of the investment projects are for recovery and recycling. Five refrigeration recovery, recycling, and redesign projects are envisioned for Egypt but the funding is part of the Bank's project financing and thus their costs are not known. A prefeasibility study on the commercialization of portable recycling equipment for domestic refrigeration is planned for Brazil through UNDP assistance.

18. Projects such as the installation of purge units for chillers are planned. Quality control testing projects on CFC-12 substitutes are foreseen for China. Mobile air conditioning (MAC) recycling projects in Mexico, Thailand, and the Philippines have been cleared by the Bank's internal procedures including technical reviews and respective government approval is pending prior to project implementation. Also, a feasibility study on the application of CFC-134a technology in MACs in China will be undertaken.

19. Training materials on the use of recovery and recycling equipment will be developed by UNDP in connection with planned investment projects. Regional programmes on centrifugal chillers are planned for East Asia, South Asia, Africa, Latin America, and the Caribbean at a cost of \$40,000 each. Regional training in MACs is planned for Latin America, Middle East, and Asia. UNEP workshops planned for Latin America and Africa will provide technical information to participants from these two regions in this sector.

Foams

20. Activities focus mainly on China with one demonstration project and technical assistance. Projects are, nevertheless, foreseen in the Philippines and Tunisia in this sector as part of the Bank's project financing. The total requested level of funding for this sector is \$462,500 including consultant fees. Demonstration programmes on alternatives to polyurethane foams are foreseen in Latin America, and one for Africa and the Middle East. UNEP

workshops planned for Latin America and Africa will provide technical information to participants from these two regions in this sector.

Solvents

21. A feasibility study on the phase-out of CFC-113 in the electronics industry in China is anticipated. A UNDP sector expert will be assigned, among other things, to provide technical assistance to China and other interested Article 5 countries. UNEP workshops planned for Latin America and Africa will provide technical information to participants from these two regions in this sector.

Halons

22. Most of the activities in this sector pertain to training and workshops. Inventory/standards projects in China and Mexico will be undertaken by UNDP which will also stage two regional workshops in Latin America and the Middle East. About \$265,000 is requested in this sector. UNEP plans to convene its fourth regional workshop in Africa. UNEP is also requesting \$365,000 for support of training activities for unspecified Article 5 countries.

Regional and Demonstration Activities

23. Regional activities involve training programmes and demonstration projects for replication in other countries. Most regional activities involve training workshops such as the African workshop planned by UNEP and patterned after the two workshops already staged by UNEP during 1991. UNEP's work programme indicates that it will also assist other Agencies in their training programmes.

24. **Some projects are slated as model projects for replication in other countries. The following demonstration projects are candidates for replication elsewhere:**

- . The Mexican CFC-12 aerosol conversion to hydrocarbons project and associated safety program (funded in CY91 World Bank Work Programme);
- . Training materials developed for the Mexican mobile air conditioning training programme (funded in CY91 World Bank Work Programme);
- . Refrigeration recovery, recycling, and redesign projects are envisioned for Egypt and China;
- . A training workshop for service managers and technicians for centrifugal chillers and domestic refrigeration planned for China;
- . The Malaysian and Mexican halon recycling projects; and,
- . The Thai solvent substitution project.

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- . A training workshop for service managers and technicians for centrifugal chillers and domestic refrigeration planned for China;
- . The Malaysian and Mexican halon recycling projects; and,
- . The Thai solvent substitution project.

Table 1

BUDGET SUMMARY (US \$)

Region Country	ODS (Mton)	Sector Budget (SB)						TOTAL COST	SB Breakdown by Agency		
		Cross sector	Aerosols	Foams	Halons	Refrig.	Solvents		UNDP	UNEP	World Bank
AFRICA											
Burkina F.		30,000						30,000		30,000	
Botswana		30,000						30,000		30,000	
Cameroon	175	30,000						30,000		30,000	
Egypt	1,830	3,025,353						3,025,353			3,025,353
Gambia		30,000						30,000		30,000	
Ghana	140	10,000						10,000	10,000		
Kenya	420	35,000						35,000	35,000		
Malawi		30,000						30,000		30,000	
Nigeria	3,500	425,333						425,333	10,000		415,333
Togo	300	30,000						30,000		30,000	
Tunisia	720	175,000						175,000			175,000
Uganda											
Zambia											
Region		210,000		52,500		80,000		342,500	132,500	210,000	
Subtotal	7,085	4,060,686		52,500		80,000		4,193,186	187,500	390,000	3,615,686
ASIA AND THE PACIFIC											
Bangladesh	200	35,000						35,000	35,000		
China	40,000	15,490,000	75,000	205,000	40,000	185,000	40,000	16,035,000	855,000		15,180,000
Fiji	70										
Iran	4,400	235,000						235,000	45,000		190,000
Jordan	500	80,000	12,000					92,000	22,000		70,000
Malaysia	6,675	13,120,000						13,120,000			13,120,000
Maldives											
Philippines	4,150	10,510,000						10,510,000	10,000		10,500,000
Sri Lanka	100	40,000						40,000	40,000		
Syrian A. R.											
Thailand	7,500	15,760,000						15,760,000	10,000		15,750,000
Region				52,500		125,000		177,500	177,500		
Subtotal	63,595	55,270,000	87,000	257,500	40,000	310,000	40,000	56,004,500	1,194,500		54,810,000
EUROPE											
Turkey	4,267	3,741,202						3,741,202	10,000		3,731,202
Yugoslavia	7,400										
Region											
Subtotal	11,667	3,741,202						3,741,202	10,000		3,731,202
LATIN AMERICA AND THE CARIBBEAN											
Argentina	4,000	149,337						149,337			149,337
Brazil	10,647	16,325,666				15,000		16,340,666	25,000		16,315,666
Chile	1,030	1,191,878				25,000		1,216,878	25,000		1,191,878
Costa Rica	300	20,000						20,000	20,000		
Ecuador	700	4,171,128						4,171,128			4,171,128
Guatemala		30,000						30,000		30,000	
Mexico	8,388	4,292,076			25,000			4,317,076	25,000		4,292,076
Panama		30,000						30,000		30,000	
Trinidad & T	380	25,000						25,000	25,000		
Uruguay	430	10,000						10,000	10,000		
Venezuela	5,500	10,178,849						10,178,849	10,000		10,168,849
Region				52,500	60,000	125,000		237,500	237,500		
Subtotal	31,375	36,423,734		52,500	85,000	165,000		36,726,234	377,500	60,000	36,288,734
Other Costs											
Experts		35,000	60,000	100,000	80,000	150,000	70,000	495,000	460,000	35,000	
Other act(*)		1,310,000			60,000	45,000		1,415,000	200,000	1,215,000	
Subtotal		1,345,000	60,000	100,000	140,000	195,000	70,000	1,910,000	660,000	1,250,000	
Tot. sector	113,722	100,840,622	147,000	462,500	265,000	750,000	110,000	102,573,122	2,429,500	1,700,000	98,445,622
ADMINISTRATIVE COST								2,318,445	749,895	221,000	1,347,550
Total agency cost									3,179,395	1,921,000	99,793,172
TOTAL COST								104,893,567			

(*) Other activities refer to budgetary allocations that are not specific to a geographic unit. They include workshops, information services, and networking.

The total cost includes US \$93.9 million for project financing by the World Bank, which is listed under cross sector for lack of information on its specific sector distribution.

Table 2

CROSS SECTORS: BUDGET SUMMARY (US \$)

Region Country	ODS (Mton)	Agencies			Total cost
		UNDP	UNEP	WB	
AFRICA					
Burkina Faso			30,000		30,000
Botswana			30,000		30,000
Cameroon	175		30,000		30,000
Egypt	1,830			3,025,353	3,025,353
Gambia			30,000		30,000
Ghana	140	10,000			10,000
Kenya	420	35,000			35,000
Malawi			30,000		30,000
Nigeria	3,500	10,000		415,333	425,333
Togo	300		30,000		30,000
Tunisia	720			175,000	175,000
Uganda					
Zambia					
Region			210,000		210,000
Subtotal	7,085	55,000	390,000	3,615,686	4,060,686
ASIA AND THE PACIFIC					
Bangladesh	200	35,000			35,000
China	40,000	310,000		15,180,000	15,490,000
Fiji	70				
Iran	4,400	45,000		190,000	235,000
Jordan	500	10,000		70,000	80,000
Malaysia	6,675			13,120,000	13,120,000
Maldives					
Philippines	4,150	10,000		10,500,000	10,510,000
Sri Lanka	100	40,000			40,000
Syrian Arab Rep.					
Thailand	7,500	10,000		15,750,000	15,760,000
Region					
Subtotal	63,595	460,000		54,810,000	55,270,000
EUROPE					
Turkey	4,267	10,000		3,731,202	3,741,202
Yugoslavia	7,400			170,000	170,000
Region					
Subtotal	11,667	10,000		3,901,202	3,911,202
LATIN AMERICA AND THE CARIBBEAN					
Argentina	4,000	25,000		149,337	174,337
Brazil	10,647	10,000		16,315,666	16,325,666
Chile	1,030			1,191,878	1,191,878
Costa Rica	300	20,000			20,000
Ecuador	700			4,171,128	4,171,128
Guatemala			30,000		30,000
Mexico	8,388			4,292,076	4,292,076
Panama			30,000		30,000
Trinidad & Tobago	380	25,000			25,000
Uruguay	430	10,000			10,000
Venezuela	5,500	10,000		10,168,649	10,178,649
Region					
Subtotal	31,375	100,000	60,000	36,288,734	36,448,734
ALL REGIONS					
Subtotal (*)		95,000	1,250,000		1,345,000
Sector total	113,722	720,000	1,700,000	98,615,622	101,035,622

(*) Includes 2 study tours; and 3 national policy workshops, by UNDP. It also includes information exchange; training/networking; and an advisory group meeting by UNEP

Table 3

CROSS SECTORS: COUNTRY PROGRAMME

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)		
					Project	Country total	\$/Mton
AFRICA							
Burkina Faso		Country Programme		UNEP	30,000	30,000	
Botswana		Country Programme		UNEP	30,000	30,000	
Cameroon	175	Country Programme		UNEP	30,000	30,000	171
Egypt	1,830	Country Programme	04/91-01/92	WB	27,526	27,526	15
Gambia		Country Programme		UNEP	30,000	30,000	
Ghana	140	Country Programme		UNEP	(*)		
Kenya	420	Country Programme formulation		UNDP	25,000	25,000	60
Malawi		Country Programme		UNEP	30,000	30,000	
Nigeria	3,500	Country Programme	07/92-04/93	WB	271,255	271,255	78
Togo	300	Country Programme		UNEP	30,000	30,000	100
Tunisia	720	Country Programme	01/92-08/93	WB	125,000	125,000	174
Uganda		Country Programme		UNEP	(*)		
Zambia		Country Programme		UNEP	(*)		
Subtotal	7,085					628,781	
ASIA AND THE PACIFIC							
Bangladesh	200	Country Programme formulation		UNDP	25,000	25,000	125
China	40,000	Country Programme formulation		UNDP	150,000	300,000	8
		Clearing house for NEPA		UNDP	150,000		
Fiji	70	Country Programme		UNEP	(*)		
Iran	4,400	Country Programme	04/92-07/92	WB	150,000	185,000	42
		Country Programme formulation		UNDP	35,000		
Jordan	500	Country Programme	01/91-04/92	WB	70,000	70,000	140
Malaysia	6,675						
Maldives		Country Programme		UNEP	(*)		
Philippines	4,150						
Sri Lanka	100	Country Programme, reconn. study		UNDP	30,000	30,000	300
Syrian Arab Rep.		Country Programme		UNEP	(*)		
Thailand	7,500	Country Programme		WB	160,000	160,000	21
Subtotal	63,595					260,000	
EUROPE							
Turkey	4,267	Country Programme		WB	13,515	13,515	3
Yugoslavia	7,400						
Subtotal	11,667					13,515	
LATIN AMERICA AND THE CARIBBEAN							
Argentina	4,000	Country Programme	01/92-03/93	WB	149,337	149,337	37
		Assistance Country Programme prep.		UNDP	(*)		
Brazil	10,647	Country Programme	02/91-07/92	WB	123,788	123,788	12
Chile	1,030	Country Programme		WB	(*)		
Costa Rica	300	Country Programme		UNDP	20,000	20,000	67
Ecuador	700	Country Programme		WB	76,102	76,102	109
Guatemala		Country Programme		UNEP	30,000	30,000	
Mexico	8,388						
Panama		Country Programme		UNEP	30,000	30,000	
Trinidad & Tobago	380	Country Programme (**)		UNDP	25,000	25,000	66
Uruguay	430	Country Programme		UNDP	(*)		
Venezuela	5,500	Country Programme	02/92-03/92	WB	61,591	61,591	11
Subtotal	31,375					515,818	
Sector total	113,722					1,418,114	

(*) Allocations approved in 1991 Work Programmes.

(**) \$53,000 were allocated in 1991.

Table 4

CROSS SECTORS: PROJECT PREPARATION, PROJECT FINANCING (*)

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830	Project preparation	03/92-06/92	WB	227,827	2,997,827
		Project financing		WB	2,400,000	
		Demonstration		WB	370,000	
Gambia						
Ghana	140					
Kenya	420					
Malawi						
Nigeria	3,500	Project preparation	09/92-12/92	WB	144,078	144,078
Togo	300					
Tunisia	720	Project preparation	06/92-11/92	WB	50,000	50,000
Uganda						
Zambia						
Subtotal	7,085					3,191,905
ASIA AND THE PACIFIC						
Bangladesh	200					
China	40,000	Project preparation		WB	180,000	15,180,000
		Project financing		WB	15,000,000	
Fiji	70					
Iran	4,400	Project preparation	06/92-09/92	WB	40,000	40,000
Jordan	500					
Malaysia	6,675	Project preparation		WB	120,000	13,120,000
		Project financing		WB	13,000,000	
Maldives						
Philippines	4,150	Project preparation		WB	100,000	10,500,000
		Project financing		WB	10,000,000	
		Engineering design		WB	400,000	
Sri Lanka	100					
Syrian Arab Rep.						
Thailand	7,500	Project preparation		WB	120,000	15,590,000
		Project financing		WB	15,000,000	
		Engineering design		WB	470,000	
Subtotal	63,595					54,430,000
EUROPE						
Turkey	4,267	Project preparation		WB	217,687	3,717,687
		Project financing		WB	3,500,000	
Yugoslavia	7,400					
Subtotal	11,667					3,717,687
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647	Project preparation	03/92-09/92	WB	191,878	16,191,878
		Project financing		WB	16,000,000	
Chile	1,030	Project preparation	02/92-05/92	WB	191,878	1,191,878
		Project financing	02/92-12/92	WB	1,000,000	
Costa Rica	300					
Ecuador	700	Project preparation		WB	95,026	4,095,026
		Project financing	07/92-12/92	WB	4,000,000	
Guatemala						
Mexico	8,388	Project preparation	11/91	WB	292,076	4,292,076
		Project financing		WB	4,000,000	
Panama						
Trinidad & Tobago	380					
Uruguay	430					
Venezuela	5,500	Project preparation		WB	107,058	10,107,058
		Project financing	07/92-12/92	WB	10,000,000	
Subtotal	31,375					35,877,916
Sector total	113,722					97,217,508

(*) Undetermined.

Table 5

CROSS SECTORS: WORKSHOPS AND SEMINARS

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830					
Gambia						
Ghana	140	Participation intern./regional meetings		UNDP	10,000	10,000
Kenya	420	Participation intern./regional meetings		UNDP	10,000	10,000
Malawi						
Nigeria	3,500	Participation intern./regional meetings		UNDP	10,000	10,000
Togo	300					
Tunisia	720					
Uganda						
Zambia						
Region		Regional workshop		UNEP	210,000	210,000
Subtotal	7,085					240,000
ASIA AND THE PACIFIC						
Bangladesh	200	Participation intern./regional meetings		UNDP	10,000	10,000
China	40,000	Participation intern./regional meetings		UNDP	10,000	10,000
Fiji	70					
Iran	4,400	Participation intern./regional meetings		UNDP	10,000	10,000
Jordan	500	Participation intern./regional meetings		UNDP	10,000	10,000
Malaysia	6,675					
Maldives						
Philippines	4,150	Participation intern./regional meetings		UNDP	10,000	10,000
Sri Lanka	100	Participation intern./regional meetings		UNDP	10,000	10,000
Syrian Arab Rep.						
Thailand	7,500	Participation intern./regional meetings		UNDP	10,000	10,000
Region						
Subtotal	63,595					40,000
EUROPE						
Turkey	4,267	Participation intern./regional meetings		UNDP	10,000	10,000
Yugoslavia	7,400					
Region						
Subtotal	11,667					10,000
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647	Participation intern./regional meetings		UNDP	10,000	10,000
Chile	1,030					
Costa Rica	300					
Ecuador	700					
Guatemala						
Mexico	8,388					
Panama						
Trinidad & Tobago	380					
Uruguay	430	Participation intern./regional meetings		UNDP	10,000	10,000
Venezuela	5,500	Participation intern./regional meetings		UNDP	10,000	10,000
Region		Regional workshop	May 1992	UNEP	(*)	
Subtotal	31,375					30,000
ALL REGIONS						
		Advisory group meeting		UNEP	75,000	75,000
Subtotal						75,000
Sector total	113,722					395,000

(*) Allocation approved in UNEP 1991 Work Programme.

Table 6

AEROSOLS

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830					
Gambia						
Ghana	140					
Kenya	420					
Malawi						
Nigeria	3,500					
Togo	300					
Tunisia	720	Conversion from CFC to LPG		WB		
Uganda						
Zambia						
Region						
Subtotal	7,085					
ASIA AND THE PACIFIC						
Bangladesh	200					
China	40,000	Demonstration project		UNDP	75,000	75,000
Fiji	70					
Iran	4,400					
Jordan	500	Feasib. study: deodorization of local gas		UNDP	12,000	12,000
Malaysia	6,675					
Maldives						
Philippines	4,150					
Sri Lanka	100					
Syrian Arab Rep.						
Thailand	7,500					
Region						
Subtotal	63,595					87,000
EUROPE						
Turkey	4,267					
Yugoslavia	7,400					
Region						
Subtotal	11,667					
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647					
Chile	1,030					
Costa Rica	300					
Ecuador	700					
Guatemala						
Mexico	8,388					
Panama						
Trinidad & Tobago	380					
Uruguay	430					
Venezuela	5,500					
Region						
Subtotal	31,375					
Support costs						
		Expert retainer fees, travel, etc.		UNDP	60,000	60,000
Subtotal						60,000
Sector total	113,722					147,000

Table 7

FOAMS

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830					
Gambia						
Ghana	140					
Kenya	420					
Malawi						
Nigeria	3,500					
Togo	300					
Tunisia	720	Non-CFC blowing agent		WB		
Uganda						
Zambia						
Region		Low-CFC foam demonstration program		UNDP	52,500	52,500
Subtotal	7,085					52,500
ASIA AND THE PACIFIC						
Bangladesh	200					
China	40,000	Tech. assistance demo. plant: rigid foam		UNDP	70,000	205,000
		Tech assistance demo plant: flexible		UNDP	70,000	
		Quality control test CFC-11 sub. tech		UNDP	65,000	
Fiji	70					
Iran	4,400					
Jordan	500					
Malaysia	6,675					
Maldives						
Philippines	4,150					
Sri Lanka	100					
Syrian Arab Rep.						
Thailand	7,500					
Region		Low-CFC foam demonstration program		UNDP	52,500	52,500
Subtotal	63,595					257,500
EUROPE						
Turkey	4,267					
Yugoslavia	7,400					
Region						
Subtotal	11,667					
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647					
Chile	1,030					
Costa Rica	300					
Ecuador	700					
Guatemala						
Mexico	8,388					
Panama						
Trinidad & Tobago	380					
Uruguay	430					
Venezuela	5,500	Substitution of CFC12 as blowing agent		WB		
Region		Low-CFC foam demonstration program		UNDP	52,500	52,500
Subtotal	31,375					52,500
Support costs						
		Expert retainer fees, travel, etc.		UNDP	100,000	100,000
Subtotal						100,000
Sector total	113,722					462,500

Table 8

HALONS

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830	Demo. prog. on reduction/recycling (*)		UNDP	15,000	15,000
Gambia						
Ghana	140					
Kenya	420					
Malawi						
Nigeria	3,500					
Togo	300					
Tunisia	720					
Uganda						
Zambia						
Region						
Subtotal	7,085					15,000
ASIA AND THE PACIFIC						
Bangladesh	200					
China	40,000	Preparatory study: inventory, standards		UNDP	40,000	40,000
Fiji	70					
Iran	4,400	Demo. prog. on reduction/recycling (*)		UNDP	15,000	15,000
Jordan	500	Demo. prog. on reduction/recycling (*)		UNDP	15,000	15,000
Malaysia	6,675					
Maldives						
Philippines	4,150					
Sri Lanka	100					
Syrian Arab Rep.						
Thailand	7,500					
Region						
Subtotal	63,595					70,000
EUROPE						
Turkey	4,267	Demo. prog. on reduction/recycling (*)		UNDP	15,000	15,000
Yugoslavia	7,400					
Region						
Subtotal	11,667					15,000
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647					
Chile	1,030					
Costa Rica	300					
Ecuador	700					
Guatemala						
Mexico	8,388	Inventory, revision of existing standards		UNDP	25,000	25,000
Panama						
Trinidad & Tobago	380					
Uruguay	430					
Venezuela	5,500					
Region		Demo. program on reduction/recycling		UNDP	60,000	60,000
Subtotal	31,375					85,000
Support costs						
		Expert retainer fees, travel, etc.		UNDP	80,000	80,000
Subtotal						80,000
Sector total	113,722					265,000

(*) For Middle East countries.

Table 9

REFRIGERATION

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830	Demo. programme on recycling (*)		UNDP	11,250	11,250
Gambia						
Ghana	140					
Kenya	420					
Malawi						
Nigeria	3,500					
Togo	300					
Tunisia	720	Improve service procedure Modified foam insulation		WB WB		
Uganda						
Zambia						
Region		2 Demo prog on com./industrial chillers		UNDP	80,000	80,000
Subtotal	7,085					91,250
ASIA AND THE PACIFIC						
Bangladesh	200					
China	40,000	Feas.: application of HFC134a in MAC Demo: technician service, home/chiller Quality control CFC-12 substitution		UNDP UNDP UNDP	40,000 75,000 70,000	40,000 75,000 70,000
Fiji	70					
Iran	4,400	Demo. programme on recycling (*)		UNDP	11,250	11,250
Jordan	500	Demo. programme on recycling (*)		UNDP	11,250	11,250
Malaysia	6,675					
Maldives						
Philippines	4,150					
Sri Lanka	100					
Syrian Arab Rep.						
Thailand	7,500					
Region		Demo. programme on recycling 2 Demo prog on com./industrial chillers		UNDP UNDP	45,000 80,000	125,000
Subtotal	63,595					332,500
EUROPE						
Turkey	4,267	Demo. programme on recycling (*) Recovery and recycling facility Modified foam insulation Recovery and recycling of CFC-12		UNDP WB WB WB	11,250	11,250
Yugoslavia	7,400					
Region						
Subtotal	11,667					11,250
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647	Prefeas: recycling equip for home ref.		UNDP	15,000	15,000
Chile	1,030	Model demo prog. for technician serv.		UNDP	25,000	25,000
Costa Rica	300					
Ecuador	700					
Guatemala						
Mexico	8,388					
Panama						
Trinidad & Tobago	380					
Uruguay	430					
Venezuela	5,500					
Region		Demo. programme on recycling 2 Demo prog on com./industrial chillers		UNDP UNDP	45,000 80,000	125,000
Subtotal	31,375					165,000
Support costs						
		Expert retainer fees, travel, etc.		UNDP	150,000	150,000
Subtotal						150,000
Sector total	113,722					750,000

(*) For Middle East countries.

Table 10

SOLVENTS

Region Country	ODS (Mton)	Project description	Timetable	Agency	Cost (US \$)	
					Project	Country total
AFRICA						
Burkina Faso						
Botswana						
Cameroon	175					
Egypt	1,830					
Gambia						
Ghana	140					
Kenya	420					
Malawi						
Nigeria	3,500					
Togo	300					
Tunisia	720					
Uganda						
Zambia						
Region						
Subtotal	7,085					
ASIA AND THE PACIFIC						
Bangladesh	200					
China	40,000	Feasib. study: phase-out CFC-113		UNDP	40,000	40,000
Fiji	70					
Iran	4,400					
Jordan	500					
Malaysia	6,675					
Maldives						
Philippines	4,150					
Sri Lanka	100					
Syrian Arab Rep.						
Thailand	7,500					
Region						
Subtotal	63,595					40,000
EUROPE						
Turkey	4,267					
Yugoslavia	7,400					
Region						
Subtotal	11,667					
LATIN AMERICA AND THE CARIBBEAN						
Argentina	4,000					
Brazil	10,647					
Chile	1,030					
Costa Rica	300					
Ecuador	700					
Guatemala						
Mexico	8,388					
Panama						
Trinidad & Tobago	380					
Uruguay	430					
Venezuela	5,500					
Region						
Subtotal	31,375					
Support costs						
		Expert retainer fees, travel, etc.		UNDP	70,000	70,000
Subtotal						70,000
Sector total	113,722					110,000

Annex I
Country Fact Sheets

ARGENTINA

ODS Consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						4,000
Per cent (%)						

Source: UNDP, 1991.

ODS Consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						4,000
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	01/92-03/93		149,337	Assistance in Country Programme preparation			(*)					
				149,337									149,337
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				149,337									149,337

OTHER AGENCIES:

Country Study: Available. Environment Argentina. 1991.

(*) US \$25000 brought forward from 1991 UNDP Budget.

BANGLADESH

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
Mton (ODST)						200
Per cent (%)						
Source: UNDP, 1991.						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
Mton (ODST)						200
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Country Programme formul.			25,000					
					Participat int./reg. meetings			10,000					
								35,000					35,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								35,000					35,000

OTHER AGENCIES:

Country study: Available. The World Bank. April 1991.

It was envisaged by the 1991 World Bank Work Programme to complete the Country Programme by December 1991. US \$25,564 were allocated to this end.

BOTSWANA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

BRAZIL

ODS consumption in 1989						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	100	4,400	147	5,200	800	10,647
Per cent (%)	0.94	41.33	1.38	48.84	7.51	100.00
Source: UNEP, Refrigeration Technology Option Report, 1991.						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	100	4,400	147	5,200	800	10,647
Per cent (%)	0.94	41.33	1.38	48.84	7.51	100.00
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	02/92 - 07/92		123,788									
	Project preparation (*)	03/92 - 09/92		191,878	Particip. int/reg. meetings			10,000					
	Project financing (*)			16,000,000									
				16,315,666				10,000					16,325,666
Aerosols													
Foams													
Halons													
Refrig.					Preferenceability commerc reacyc machines in domestic refig.			15,000					
								15,000					15,000
Solvents													
TOTAL				16,315,666				25,000					16,340,666

OTHER AGENCIES: US EPA.

Country study: Available. US EPA. August 1990.

(*) Undetermined.

BURKINA FASO

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

CAMEROON

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton				95-130		125-175
Per cent (%)				75.00		
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton				95-130		125-175
Per cent (%)				75.00		
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

Country study: Available. The World Bank, 1991.

CHILE

ODS consumption in 1989						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	231	247	167	335	50	1,030
Per cent (%)	22.43	23.98	16.21	32.52	4.85	100.00

Source: Country Study, 1989.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	231	247	167	335	50	1,030
Per cent (%)	22.43	23.98	16.21	32.52	4.85	100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	01/82-02/92		(*)									
	Project preparation (**)	02/92-05/92		191,878									
	Project financing (**)	02/92-12/92		1,000,000									
				1,191,878									1,191,878
Aerosols													
Foams													
Halons													
Refrig.					Model demo programme for technicians refig servicing			25,000					25,000
								25,000					25,000
Solvents													
TOTAL				1,191,878				25,000					1,216,878

OTHER AGENCIES:

Country study: UNEP and Ministry of Wealthfare. 1991.

(*) US \$121,166 was allocated in 1991.

(**) Undetermined.

CHINA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton			4,000			40,000
Per cent (%)			10.00			

Source: UNDP, May 1990. May 1990. UNDP.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton			4,000			40,000
Per cent (%)			10.00			

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Country Programme form.			150,000					
	Projects preparation (*)			180,000	Clearing House for NEPA		Coordination	150,000					
	Project financing (*)			15,000,000	Participat. int./reg. meetings			10,000					
				15,180,000				310,000					15,490,000
Aerosols					Demonstration project			75,000					
								75,000					75,000
Foams					Tech assistance demo plant in rigid foam			70,000					
					Tech assistance demo plant in flexible foam			70,000					
					Quality control test. CFC11 subb. home refrig. product.			65,000					
								205,000					205,000
Halons					Prep study for halon control inventory, standard, subst.			40,000					
								40,000					40,000
Refrig.					Feas-study HFC-134a applicat./recycling in MAC			40,000					
					Demo. program for technic. servicing chiller/home refrig.			75,000					
					Quality control CFC12 subb. Flammab. tes			70,000					
								185,000					185,000
Solvents					Feas-study: phase-out CFC113 in 4 product. lines		Evaluation	40,000					
								40,000					40,000
TOTAL				15,180,000				855,000					16,035,000

OTHER AGENCIES: FINIDA (Finnish Government)

Country study: Available, May 1990 (Cost \$53,230)

(*) Undetermined.

COSTA RICA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						300
Per cent (%)						

Source: UNDP, 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						300
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Country Programme formul.			20,000					
								20,000					20,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								20,000					20,000

OTHER AGENCIES:

Country study: To be completed by March 1992.

ECUADOR

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
Mton						700
Per cent (%)						

Source: US EPA, 13 January 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
Mton						700
Per cent (%)						

Source: US EPA.

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme			76,102									
	Project preparation (*)			95,026									
	Project financing (*)	7-12/92		4,000,000									
				4,171,128									4,171,128
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				4,171,128									4,171,128

OTHER AGENCIES: US EPA.

(*) Undetermined.

EGYPT

ODS consumption in 1991						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	73	512	641	512	92	1,830
Per cent (%)	4.00	28.00	35.00	28.00	5.00	100.00

Source: Country Programme, 1991

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	73	512	641	512	92	1,830
Per cent (%)	4.00	28.00	35.00	28.00	5.00	100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	01/92		27,526									
	Project preparation (*)	03/92-06/92		227,827									
	Project financing (*)			2,400,000									
	Demonstration (*)			370,000									
				3,025,353									3,025,353
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				3,025,353									3,025,353

OTHER AGENCIES: US EPA.

(*) Undetermined.

FIJI

ODS consumption in 1986						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						70
Per cent (%)						

Source: Ministry of Housing and Urban Development, 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						70
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			(*)	
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL													

OTHER AGENCIES:

(*) US \$25,000 brought forward from 1991 UNEP budget.

GAMBIA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

GHANA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton		44		96		140
Per cent (%)		31.43		68.57		

Source: Country study. The World Bank. April 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton		44		96		140
Per cent (%)		31.43		68.57		

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Participat. int./reg. meetings			10,000	Country Programme			(*)	
								10,000					10,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								10,000					10,000

OTHER AGENCIES: UNIDO has undertaken a study on CFC use in Ghana with Swedish financing, which could be useful for Country Programme preparation.

Country study: Available. The World Bank. April 1991.

(*) US \$25,000 brought forward from 1991 UNEP budget.

GUATEMALA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

IRAN

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						4,400
Per cent (%)						

Source: UNEP, 1990.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	04/92-07/92		150,000	Country Programme formul.			35,000					
	Project preparation	06/92-09/92		40,000	Participat. int./reg. meetings			10,000					
				190,000				45,000					
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				190,000				45,000					235,000

OTHER AGENCIES:

JORDAN

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						500
Per cent (%)						

Source: UNDP, 1991

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						500
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	12/91-04/92		70,000									
					Participat. int./reg. meetings			10,000					
				70,000				10,000					80,000
Aerosols					Study: LPG deodorization as propeller in cosmetic prod.			12,000					
								12,000					12,000
Foams													
Halons													
Refriger.													
Solvents													
TOTAL				70,000				22,000					92,000

OTHER AGENCIES:

KENYA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton (*)	150	30		110	130	420
Per cent (%)	35.71	7.14		26.19	30.95	100.00

Source: The World Bank, 12 February 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton (*)	150	30		110	130	420
Per cent (%)	35.71	7.14		26.19	30.95	100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Country Programme formul.			25,000	Assistance CP preparation				
					Programme preparation				(Ozone Secretariat)				
					Participat. int./reg./ meetings			10,000					
								35,000					35,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								35,000					35,000

OTHER AGENCIES: Unep Ozone Secretariat, SIDA (Government of Sweden).

Country study: Available, February 1991 (Cost \$212,802).

(*) UNEP estimation of ODS consumption is 240 Mton (1989).

MALAWI

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

MALAYSIA

ODS consumption in 1991						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	290	464	342	4,226	1,352	6,674
Per cent (%)	4.35	6.95	5.12	63.32	20.26	100.00

Source: Country Programme, 1991

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	290	464	342	4,226	1,352	6,674
Per cent (%)	4.35	6.95	5.12	63.32	20.26	100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Project preparation (*)			120,000									
	Project finan. phase I (*)			3,000,000									
	Project finan. phase II (*)			10,000,000									
				13,120,000									
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				13,120,000									13,120,000

OTHER AGENCIES: US EPA.

(*) Undetermined.

MALDIVES

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			(*)	
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL													

OTHER AGENCIES:

(*) US \$25,000 brought forward from 1991 UNEP budget.

MEXICO

ODS consumption in 1989						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	993	1,629	260	4,796	710	8,388
Per cent (%)	11.84	19.42	3.10	57.18	8.46	100.00

Source: Country Programme, 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	993	1,629	260	4,796	710	8,388
Per cent (%)	11.84	19.42	3.10	57.18	8.46	100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Project preparation (*)	11/91		292,076									
	Project financing (*)			4,000,000									
				4,292,076									4,292,076
Aerosols													
Foams													
Halons					Inventory preparation standard			25,000					
								25,000					25,000
Refriger.													
Solvents													
TOTAL				4,292,076				25,000					4,317,076

OTHER AGENCIES: US EPA.

Country study: Available. US EPA and SEDUE.

(*) Undetermined. The Fifth Meeting of the Executive Committee approved US \$4 million, subject to resubmission of the Country Programme and Project Proposals.

NIGERIA

ODS consumption in 1991						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	1,225	875		1,400		3,500
Per cent (%)	35.00	25.00		40.00		100.00

Source: The World Bank, 112 February 1991. The World Bank.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	1,225	875		1,400		3,500
Per cent (%)	35.00	25.00		40.00		100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	07/92 - 04/93		271,255									
	Project preparation (*)	09/92 - 12/92		144,078	Participat. int./reg. meetings			10,000					
				415,333				10,000					425,333
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				415,333				10,000					425,333

OTHER AGENCIES:

Country study: Available. February 1991 (Cost \$212,802).

(*) Undetermined.

PANAMA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

PHILIPPINES

ODS consumption in 1990						
ODS	Aerosol	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	410	695	50	1,795	1,200	4,150
Per cent (%)	9.88	16.75		43.25		69.88

Source: Country Study, ECC, 1991.

ODS consumption in 1992						
ODS	Aerosol	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	410	695	50	1,795	1,200	4,150
Per cent (%)	9.88	16.75		43.25		69.88

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme (*)				Participat. int./reg. meetings			10,000					
	Project preparation (**)			100,000									
	Engineering project (**)			400,000									
	Project financing (**)			10,000,000									
				10,500,000				10,000					10,510,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				10,500,000				10,000					10,510,000

OTHER AGENCIES: ECC.

Country study. Available. May 1991. ECC.

(*) The Philippines Government has requested the ECC to provide US \$100,000 for the preparation of its Country Programme.

(**) Undetermined.

SRI LANKA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						100
Per cent (%)						

Source: Preliminary data. Preliminary estimates by UNDP.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						100
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Reconnaissance study and Country Programme			30,000					
					Participat. int./reg. meetings			10,000					
								40,000					40,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								40,000					40,000

OTHER AGENCIES:

SYRIA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			(*)	
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL													

OTHER AGENCIES:

(*) US \$25,000 brought forward from 1991 UNEP budget.

THAILAND

ODS consumption in 1990						
ODS	Aerosol	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						7,500
Per cent (%)						

Source: UNDP, 1991.

ODS consumption in 1992						
ODS	Aerosol	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						7,500
Per cent (%)						

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme (*)			160,000									
	Project preparation (**)			120,000	Participat. int./reg. meetings			10,000					
	Engineering project (**)			470,000									
	Project financing (**)			15,000,000									
				15,750,000				10,000					15,760,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL				15,750,000				10,000					15,760,000

OTHER AGENCIES: ECC.

Country study. Available. May 1991. ECC.

(*) US \$16,294 was allocated in 1991.

(**) Undetermined.

TOGO

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						300
Per cent (%)						
Source: UNEP, 1990.						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						300
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			30,000	
												30,000	30,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL												30,000	30,000

OTHER AGENCIES:

TRINIDAD AND TOBAGO

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						< 360
Per cent (%)						

Source:

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						< 360
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR BY SECTOR ACTIVITIES													
SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Country Programme formul.			25,000 (*)					
								25,000					25,000
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								25,000					25,000

OTHER AGENCIES:

(*) US \$53,000 brought forward from 1991 budget.

TUNISIA

ODS consumption in 1989						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	290	190		240		720
Per cent (%)	40.28	26.39		33.33		100.00

Source: Country study. The World Bank. 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	290	190		240		720
Per cent (%)	40.28	26.39		33.33		100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	01/92 - 08/92		125,000									
	Project preparation (*)	03/92 - 09/92		50,000									
				175,000									175,000
Aerosols	Converters from CFC to LPG												
Foams	Non-CFC blowing agent												
Halons													
Refrig.	Improve service procedure												
	Modified foam insulation												
Solvents													
TOTAL				175,000									175,000

OTHER AGENCIES: US EPA

Country study: Available. The World Bank. March 1991.

(*) Undetermined.

TURKEY

ODS consumption in 1989						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	1,160	1,677		1,000	430	4,267
Per cent (%)	27.19	39.30		23.44	10.08	100.00

Source: UNDP, 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton	1,160	1,677		1,000	430	4,267
Per cent (%)	27.19	39.30		23.44	10.08	100.00

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme			13,515									
	Project preparation (*)			217,687	Participat.int./reg. meetings			10,000					
	Project financing (*)			3,500,000									
				3,731,202				10,000					3,741,202
Aerosols													
Foams													
Halons													
Refrig.	Recov. and rec. facility												
	Modified foam insulation												
	Recov. and rec. CFC-12												
Solvents													
TOTAL				3,731,202				10,000					3,741,202

OTHER AGENCIES: US EPA.

(*) Undetermined.

UGANDA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			(*)	
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL													

OTHER AGENCIES:

(*) US \$25,000 brought forward from 1991 UNEP budget.

URUGUAY

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						430
Per cent (%)						
Source: UNDP, 1991.						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						430
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors					Country study			(*)					
					Participat int/reg meetings			10,000					
								10,000					
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL								10,000					0

OTHER AGENCIES:

(*) Country study: To be completed. Cost \$13,050 (1991 UNDP Work Programme).

VENEZUELA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton				4,125		5,500
Per cent (%)				75.00		

Source: UNDP, 1991.

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton				4,125		5,500
Per cent (%)				75.00		

Source:

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors	Country Programme	02/92-03/92		61,591									
	Project preparation (*)			107,058	Participat. int./reg. meetings			10,000					
	Project financing (*)	07/92-12/92		10,000,000									
				10,168,649				10,000					10,178,649
Aerosols													
Foams	Substitution of CFC-12 as blowing agent (**)												
Halons													
Refrig.													
Solvents													
TOTAL				10,168,649				10,000					10,178,649

OTHER AGENCIES: US EPA

(*) Undetermined.

(**) Expected project cost is about \$600,000-700,000.

ZAMBIA

ODS consumption in 1990						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

ODS consumption in 1992						
ODS	Aerosols	Foams	Halons	Refriger.	Solvents	TOTAL
M ton						
Per cent (%)						
Source:						

SECTOR BY SECTOR ACTIVITIES

SECTOR	WORLD BANK				UNDP				UNEP				TOTAL COST
	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	Project description	Timetable	Impacts	Cost	
Cross sectors									Country Programme			(*)	
Aerosols													
Foams													
Halons													
Refrig.													
Solvents													
TOTAL													

OTHER AGENCIES:

(*) US \$25,000 brought forward from 1991 UNEP budget.

Interim Multilateral Fund under the Montreal Protocol



World Bank Work Program
for Investment Project Preparation and Related Studies
Calendar Year 1992
(February 1992)

Introduction

1. This calendar year 1992 (CY92) work program and budget for assistance to developing countries in reducing their emissions of ozone depleting substances (controlled substances) ^{1/} has been revised and updated for consideration by the Executive Committee (EC) of the Interim Multilateral Fund under the Montreal Protocol (IMFMP), at its February 27 - 28, 1992 meeting, in Montreal. However, budget estimates are not provided for CY93 activities and planned CY93 activities are expected to change in the course of implementation of the CY92 work program.

2. At its November 18-22, 1991, meeting, the Executive Committee decided to delay approval of an earlier version of the CY 1992 work program until its February 1992 meeting, pending completion of an integrated work program by the Secretariat, in collaboration with the implementing agencies. The Secretariat has requested the Bank to revise and update its work program, providing in addition a sectoral overview of planned Bank activities. The Bank's progress report to the February 1992 meeting of the Executive Committee summarizes developments which have occurred in the November 1991 through January 1992 period.

Work Program Scope

3. With the recent addition of Argentina, Turkey, and provisionally Iran, and the temporary suspension of activities in Yugoslavia, the World Bank work program covers 16 countries^{2/}. While the Bank's primary role as an implementing agency of the IMFMP is to manage the investment project cycle, in collaboration with other implementing agencies the Bank will also assist eligible developing countries to prepare Country Programs and pre-investment studies. The CY92 work program makes provision for the preparation/and or completion of ten (10) Country Programs, and twelve (12) line of credit investment projects. The financial dimensions of the work program are as follows:

o	Programmed project commitments	US\$95.3 million (Table 3);
o	Project preparation activities	US\$ 2.1 million (Table 2) ^{3/} ;
o	Country Program preparation and pre-investment studies	US\$ 1.2 million (Table 2);
o	Operations coordination, policy analysis, financial and legal administration	US\$ 1.3 million (Table 2).

Country Programs, supporting studies and policy analyses, and pre-investment studies are all part of a continuum culminating in the preparation, approval and implementation of investment projects. Such studies are only undertaken by the Bank in so far as they advance and facilitate investment project funding under the IMFMP.

^{1/} The use of the term "controlled substance", in this context, should be understood to refer only to those ozone depleting substances specifically controlled by the Protocol.

^{2/} All countries included in the CY92 work program have either ratified the Protocol or will have completed ratification procedures by the beginning of 1992.

^{3/} The underlying assumption in this budget is that the Bank will be reimbursed reasonable costs incurred in fulfilling its role as an implementing agency.

Activities not completed during CY91 have been deferred to CY92. Savings realized through not undertaking these activities will accrue to finance part of the CY92 work program^{4/}.

Interagency Cooperation and Collaboration with the Secretariat

4. The proposed work program has been prepared in consultation with the other implementing agencies. The Chief Officer of the IMFMP Secretariat invited the implementing agencies to a meeting in Montreal on January 25, 1992, to review the draft consolidated document mentioned above, with a view to revising agency work programs accordingly. The present document has thereby benefitted from a revision in both presentation and content, founded upon the sector-based approach, which was employed by the Secretariat in preparing the consolidated document, and is elaborated further in Section 9, below.

In consideration of the present civil disturbances in Yugoslavia, the Bank has begun exploring the alternative possibility of developing a Country Program, and associated investment projects, in Iran instead, and intends to liaise with UNDP to that end. Revised plans for Yugoslavia are under consideration.

As a consequence of understandings reached in 1991, the Bank has ceased its programmed activities in Trinidad & Tobago and transferred responsibility for overall development of the program to UNDP.

Structure of the Report

5. The Bank's CY92 work program report has been revised to include a summary overview of activities by ODS sub-sector in addition to a country by country level description of planned activities (Annex II). Country activity descriptions identify wherever possible the country level implementing agency, collaboration between the IMFMP implementing agencies, Country Programs and related studies, and the project cycle stages in the particular country, each with expected outcomes and time-lines.

Profile of Typical Montreal Protocol Investment Operations

6. Investment operations supported by the IMFMP will typically fall into two broad categories:
- (i) funding of incremental costs of a single or precisely defined number and type of industry process or plant reconfiguration, and,
 - (ii) establishment of ozone layer protection investment funds (IF) in development finance institutions to finance the incremental costs of eligible small to medium scale investments by private or public sector producers or consumers to reduce utilization of controlled substances. Where sub-projects exceed \$500,000 they will be presented separately to the Executive Committee for approval.

Normally, both kinds of investment projects will include human resource and institutional capacity building activities, and assistance with implementation of the agreed policy framework, tailored to local needs for effective implementation of the Montreal Protocol.

^{4/} Provisional CY91 Expenditure Estimate As of February 1st 1992, the provisional estimate of expenditures under the CY91 MP administrative budget for Bank operations was \$1.6 million compared with a budget of \$2.9 million. A final balance sheet for CY91 will be provided at the Executive Committee meeting on February 27th, 1992.

First Investment Project for Executive Committee Review

7. At its November, 1991, meeting, the Executive Committee's approval was sought for a \$10 million project in Mexico, the **Ozone Protection Policy and Institutional Strengthening Project**. The EC provisionally approved a line of credit activity of \$ 4 million with the understanding that all projects to be funded within this line of credit would be for amounts less than \$ 500,000, and that more detailed descriptions would be presented to the Executive Committee at its February 1992 meeting, including an indication of priorities for the timing of projects. To the extent possible, these project details have been defined and are annexed in this work program (Annex III).

8. If during further project preparation and appraisal there are increases in project costs in excess of 10% of that approved by the EC, the Bank proposes that each project be brought back to the EC for approval of the additional costs. The EC's confirmation is sought as to whether this is an acceptable understanding on the treatment of increases in project costs during project preparation.

The Sector-based Approach to Assuring Project Quality

9. The Vice-Chair of the Executive Committee presented a paper at the November 1991 meeting of the Committee, entitled, "Integrating the Sector-based Approach into Implementing Agency Work Programs". At that meeting, the EC determined that the Secretariat should undertake, with the assistance of the implementing agencies, to prepare a consolidated program document based upon a sector-based integration across all three implementing agency work programs and along the lines advocated in that paper.

Pursuant to this directive, as mentioned in Section 4, above, the Secretariat convened a meeting with the implementing agencies, in Montreal, on January 25, 1992, to review a draft of the consolidated document and agree upon concomitant revisions in the individual agency work programs. These changes have now been incorporated in this version of the Bank's work program. See Annex I for a brief sectoral summary of the CY92 work program.

To assist the Bank in ensuring the highest quality sector-based technical information and support in the design and implementation of the Bank's Montreal Protocol investment project portfolio, the Bank has established an Ozone Operations Resource Group (OORG).

As presently envisaged, the OORG will be comprised of a core group of internationally recognized sector-based specialists who have well established reputations as technical experts in the alternatives to ODS use in the principal ODS-consuming sectors, namely: (a) Aerosols, (2) Mobile Air Conditioning, (3) Refrigeration, (4) Foams, (5) Solvents, and (6) Halons. It is anticipated that the OORG will be convened as a group at least twice each year, for comprehensive sector-based technical reviews and technical advice in the design of the Bank's work program, in collaboration with Bank regional MP operations coordinators and task managers.

Individual OORG members may also participate in project preparation and supervision missions, participate in and prepare reports for Technical Review Panels in conjunction with the Bank's standard Montreal Protocol project preparation cycle.

Finally, the OORG will be responsible for compiling, maintaining, and updating an international roster of sector-based experts with project design and implementation experience from which project-related assistance would be available. While the composition of the Panel necessarily reflects the more advanced state of sector-based technical expertise in industrialized countries, as the program evolves concomitantly with training and other project experience in developing countries, efforts will be taken by the OORG to identify second and third tier members from those countries who would be capable of assisting in the transfer of technologies within their own as well as other developing countries.

Reporting to the Executive Committee

10. It was proposed at the November 18 - 22, 1991 meeting of the Executive Committee to report to the Executive Committee on progress in processing and implementation performance for specific projects at least twice yearly through progress reports issued in advance of Executive Committee meetings. The first such progress report was presented to the Executive Committee at its November 1991 meeting. Another progress report has been prepared for the February 27 - 28, 1992 meeting. In addition, the Executive Committee will always receive from the Bank, through the Secretariat, the negotiated documents for each project as soon as possible after negotiations are completed.

Table 1

INTERIM MULTILATERAL FUND OF THE MONTREAL PROTOCOL

World Bank Work Program

Estimated Receipts, Resource Requirements and Fund Balances

(In US\$ million)

	CY91 Estimate a/	CY92 Estimate	Cumulative from inception through end -CY92
FUNDS RECEIVED (through 9/30/91)			
Contributions	\$5.000		\$5.000
Investment Income	\$0.053		\$0.053
TOTAL FUNDS RECEIVED	\$5.053	\$0.000	\$5.053
RESOURCE REQUIREMENTS			
Initial Workprogram Preparation	<u>\$0.589</u>		<u>\$0.589</u>
Estimated Resource Requirements:			
I. Workprogram Costs			
- CPs and Studies	\$0.815	\$1.228	\$2.043
- Project Preparation	\$1.185	\$2.078	\$3.263
- Administrative Costs	<u>\$0.320</u>	<u>\$1.347</u>	<u>\$1.667</u>
Sub-total WP Costs	<u>\$2.320</u>	<u>\$4.653</u>	<u>\$6.973</u>
II. Project Commitments			
- Pre-inv. Activities		\$1.420	\$1.420
- Project Financing		<u>\$93.900</u>	<u>\$93.900</u>
Sub-total Project Costs	<u>\$0.000</u>	<u>\$95.320 b/</u>	<u>\$95.320</u>
Total Estimated Resource Requirements	<u>\$2.320</u>	<u>\$99.973</u>	<u>\$102.293</u>
TOTAL RESOURCE REQUIREMENTS	\$2.909	\$99.973 b/	\$102.882
EXCESS OF RECEIPTS (REQUIREMENTS)	\$2.144	(\$99.973)	(\$97.829)
FUND BALANCE AT BEGINNING OF PERIOD	\$0.000	\$2.144	\$0.000
FUND BALANCE AT END OF PERIOD	\$2.144	(\$97.829)	(\$97.829)

a/ Final CY91 costs will be provided shortly before the February 27 meeting of the Executive Committee of the Montreal Protocol.

b/ This resource requirement is contingent upon approval by the Executive Committee of specific projects above \$500,000 as well as progress on work program implementation by the Bank.

TABLE 2

INTERIM MULTILATERAL FUND OF THE MONTREAL PROTOCOL

World Bank Work Program

CALENDAR YEAR 1992 BUDGET SUMMARY

I. Country Work Programs a/	No. of Manweeks b/	Workprogram Budget (US\$)		
		CP/Studies c/	Proj.Pren.	Total
Argentina	32.0	\$149,337		\$149,337
Brazil	70.0	\$123,788	\$191,878	\$315,666
Chile	47.2		\$191,878	\$191,878
China	70.4		\$180,000	\$180,000
Ecuador	132.0 d/	\$76,102	\$95,026	\$171,128
Egypt	46.0	\$27,526	\$227,827	\$255,353
Iran	30.0	\$150,000	\$40,000	\$190,000
Jordan	12.0	\$70,000		\$70,000
Malaysia	32.0		\$120,000	\$120,000
Mexico	54.0		\$292,076	\$292,076
Nigeria	92.4	\$271,255	\$144,078	\$415,333
Philippines	17.0		\$100,000	\$100,000
Thailand	56.0	\$160,000	\$120,000	\$280,000
Tunisia	40.0	\$125,000	\$50,000	\$175,000
Turkey	44.0	\$13,515	\$217,687	\$231,202
Venezuela	38.0	\$61,591	\$107,058	\$168,649
TOTAL-Country WP	813.0	\$1,228,114	\$2,077,508	\$3,305,622
II. Administration, Legal and Financial Costs e/				\$1,347,550
TOTAL BUDGET				<u>\$4,653,172</u>

a/ Budget amounts reflect costs of project preparation and country programmes and associated overhead costs.

b/ Planned manweeks for World Bank higher level staff, international and local consultants.

c/ Includes country programmes and supporting technical studies, these underpin project preparation.

d/ About 80% is for local consultant weeks.

e/ Budget amounts for operations coordination, related policy analysis and review, legal and financial administration and associated overhead costs.

TABLE 3

Montreal Protocol Interim Multilateral Fund

World Bank Work Program

CY92 SCHEDULED APPROVALS/COMMITMENTS

(In US\$ million)

Country	No. of Projs.	Project Type	Total Project Cost	Projected Approval/Commitment Dates				TOTAL CY92
				Jan-Mar '92	Apr-June '92	Jul-Sept '92	Oct-Dec '92	
Brazil	1	Project Financing	16.00				16.00	16.00
Chile	1	Project Financing	1.00				1.00	1.00
China	1	Project Financing	15.00			15.00		15.00
Ecuador	1	Project Financing	4.00			4.00		4.00
Egypt	1	Demonstration	0.37		0.37			0.37
	1	Project Financing	2.40			2.40		2.40
Malaysia	1	Proj. Financing-Phase I	3.00		3.00			3.00
		Phase II	10.00			10.00		10.00
Mexico	1	Demonstration Proj.	0.18	0.18				0.18
	1	Project Financing	4.00		4.00			4.00
Philippines	1	Engineering Proj.	0.40	0.40				0.40
	1	Project Financing	10.00				10.00	10.00
Thailand	1	Engineering Proj.	0.47	0.47				0.47
	1	Project Financing	15.00				15.00	15.00
Turkey	1	Project Financing	3.50			3.50		3.50
Venezuela	1	Project Financing	10.00			10.00		10.00
TOTAL	15	TOTAL	95.32	1.05	7.37	44.90	42.00	95.32

Definition of Project Types

Project Financing: Relatively large, multi-million dollar, multi-project, investment packages, meeting Montreal Protocol project criteria and implementation guidelines, which will often be disbursed through financial intermediaries on terms to be determined by country Governments, within the context of the country's Country Program, related policies and institutional arrangements.

Pre-inv. Activities: Activities preceding major project identification and design which are effectively engineering design projects, demonstration or pilot projects or research and development, e.g. demonstration project in Egypt aims to reduce CFC-12 charge in domestic refrigerators and to establish recycling units to conserve CFC-11 and CFC-12 in refrigerators and air conditioners.

Annex I

Sectoral Summary of the Work Program

1. Aerosols

The Bank cleared for negotiation with the Government of Mexico a pilot demonstration project for CFC-12 aerosol conversion to hydrocarbons and an associated safety program in October 1991. Implementation will begin as soon as the Government of Mexico completes negotiations and approves the project.

Recent Bank and UNDP missions have identified a project for CFC aerosol conversion to LPG which will contribute to the total phase out of CFC-12 use in the aerosol sector of China.

A mission in February 1992 to Tunisia will prepare an action plan for project development in the aerosol sector.

Subject to consultations with OORG^{5/}, and timelines of implementation, the Mexico aerosol project is regarded as the model for designing such interventions technically in other beneficiary countries.

2. Mobile Air Conditioning (MACs)

A mobile air conditioning recycling demonstration project for Mexico was cleared by the Bank in October 1991 for negotiation with Government. Project implementation still awaits the Government of Mexico's approval.

The automobile air conditioning CFC recycling design engineering projects for Thailand and the Philippines were approved by the Bank in January 1992. The projects will become effective when legal documents are signed, though no delays are anticipated and implementation arrangements are well advanced.

The Bank has proposed a mobile air conditioning recovery/recycling demonstration project for Egypt as a part of Egypt's Country Program, which will be presented to the Executive Committee at its February 1992 meeting.

The Bank has sent a mission to Malaysia in February 1992 to prepare a mobile air conditioning recovery and recycling demonstration project.

Subject to consultations with OORG, and the outcome of the upcoming project preparation mission, the Malaysia project will be adopted as the technical model for such interventions in other beneficiary countries.

3. Refrigeration (& Chillers)

With assistance from the Bank and UNDP, China has embarked upon a major program to phase out CFC-12 use in domestic refrigeration. The program calls for substitute testing and development involving pilot-scale production and demonstration, technical assessment, evaluation, and standards development, as well as eventual promotion and large scale adoption of non-ODS technologies. First stage development work for HFC-134a, HFC-152a, and HCFC-22/HFC-152a is essentially complete. A pilot demonstration project at a refrigerator factory for conversion to HCFC-22 has been identified.

The Bank has identified five (5) refrigeration (domestic and commercial chiller) recovery, recycling, and redesign projects as a part of Egypt's Country Program which will be presented to the EC at its February 1992 meeting. UNDP may want to consider them.

^{5/} Ozone Operations Resource Group (OORG)

A February 1992 mission to Tunisia will prepare a plan of action to develop projects for the refrigeration sector in Tunisia.

In consultation with OORG, and country level counterparts, either China or Egypt will be regarded as the model for demonstration of technical design parameters for refrigeration and conversion in the MP Investment Portfolio.

4. Foams

Substantial progress has been made in China as a consequence of joint Bank and UNDP missions to identify near-term investment projects in the foam sector. The first project being proposed would lead to reduction in CFC-11 emissions of 2200 tonnes per year by 1995. A second project is for conversion to butane in the polystyrene and polyethylene packaging industry. The China projects may be adopted as model projects for the MP Investment Portfolio in terms of technical design parameters and implementation arrangements.

An engineering design feasibility project for the Philippines was approved by the Bank in January 1992, and project effectiveness is anticipated shortly.

A February 1992 mission to Tunisia will prepare a plan of action to develop projects for the foam sector in Tunisia.

5. Solvents

The solvent substitution design engineering projects for Thailand and the Philippines were approved by the Bank in January 1992, and project effectiveness is anticipated shortly.

The Bank's Thailand solvent project has been designed in conjunction with a similar tri-lateral project being undertaken simultaneously with bi-lateral assistance from Japan (MITI) and the United States (USEPA). The necessary collaboration has been taken to ensure that all of these activities dovetail one another, building on their comparative strengths. The relatively large size of Thailand's solvents sector makes it a natural focal point for activities in this area, which will be conducive to development of a model solvent sector program for demonstration and example to other countries and regions.

The collaborative work with USEPA/MITI and the Bank will define the technical parameters and implementation arrangements most suitable for phasing out ODS's in the solvent sector in other beneficiary countries.

6. Halons

China and Malaysia are the only countries at this time in which the Bank envisages investment projects within the halon sector. Recent joint Bank and UNDP missions have identified three (3) halon projects in China to reduce halon emissions in production and use leading to estimated short term reduction of 1400 tonnes per year.

The Bank has sent a mission to Malaysia in February 1992 to review and prepare a servicing, maintenance and recovery charging kit for portable halon 1211 extinguishers, including a halon sector training project. This project should become the model for such interventions in other beneficiary countries.

ARGENTINA

1. Background

The Bank understands from the GOA that it proposes to embark on an a program for accelerated phase out of controlled substances. The GOA expects to draw on assistance under the IMFMP in implementing this program.

2. Work Program Goals

Work on Argentina will be initiated in CY92. Goals of the CY92 work program include: (i) agreement with the government on a country work program; (ii) completion of a baseline study; (iii) completion of a country program; and (iv) establishment of an investment fund for controlled substance phaseout. The following program description is tentative pending review with the Government.

3. Collaboration with UNDP and UNEP

The Bank will consult with UNDP to obtain results of UNDP's sector reconnaissance survey of substances controlled under the Montreal Protocol in Argentina. Efforts will be made to benefit from the UNEP regional MP workshop which is scheduled for May 1992, in Caracas, Venezuela.

4. Country Program

Country Program Formulation will begin with a country work program mission scheduled for March 1992. The mission will review with the Government the status of its program for meeting its responsibilities under the Montreal Protocol and its requirements for assistance channelled through the Bank.

A baseline study to underpin the CP is scheduled to be undertaken with GOA in June 1992. The Bank mission will work with Government and industry to (i) collect baseline information on controlled substances flows in Argentina, (ii) assess the existing policy and institutional framework for controlled substance control, (iii) develop an outline for the CP with the Government and a plan for its preparation, including workshops for information exchange with industry and other interested groups.

A mission scheduled for October 1992 will participate in workshops to (i) disseminate detailed technical information to the various controlled substance-using sectors on the latest technological developments in each of the use sectors; (ii) disseminate information on the science and effects of stratospheric ozone depletion, and (iii) discuss overall policy, incentives, institutional, regulatory and legislative issues with industry, consumer groups, NGOs, environmental groups and other interested parties to enable a clear understanding of the problem.

A follow-up mission in January 1993 will present and discuss a draft CP, and identify an investment operation.

5. Project Cycle

Project Preparation is scheduled to begin formally in March 1993 leading to appraisal of an investment fund operation in June, 1993.

BRAZIL

1. Background

The Interministerial Work Group (GTO) was officially constituted by a "portaria interministerial" of 4 October 1991 to (i) prepare the Country Program for MP implementation; (ii) supervise national compliance with MP phase out norms; and (iii) establish procedures for utilization of the MP Interim Trust Fund. The GTO is coordinated by the Economic Secretariat of the Min. of Economics, Finance and Planning (MEFP), and is composed of representatives of the following organizations: National Planning Secretariat of MEFP, Environmental Secretariat of the Presidency (SEMAM), Sec. of Science and Technology (SCT), and the Min. of External Relations (MRE). Participating in the work of the GTO as advisors, though not official members are representatives of industry user groups (e.g. ABINEE, ABRAVA, ABIPLAST and others), IBAMA, BNDES, FINEP, and other governmental and non-governmental groups, as required. The Dept. of Industry and Commerce (DIC) of MEFP is the Executive Secretariat of the GTO.

The following work program for Brazil for CY92 is tentative, pending further interactions with, and approval by, appropriate Government authorities.

2. Goals of the Work Program

The major goals of the work program for CY92 are: (i) definition of a national controlled substance phaseout strategy, to include; (ii) preparation of a Country Program; (iii) preparation of the Bank's freestanding MP ODS Elimination Project, which is tentatively programmed for presentation to the MP Executive Committee and appraisal in May/June 1992; (iv) continuing dialogue with industry to identify investment and substitute technology development sub-projects which can be financed through the ODS Elimination Project grant funding line; and (iv) conduct of substitution/reduction technology workshops by the UNDP.

3. Collaboration with UNDP and UNEP

The Bank has been in consultation with the UNDP consultants who carried out an earlier project identification mission to Brazil. There will also be on-going consultations with UNDP on its planned technology workshops. Efforts will be made to benefit from the UNEP regional MP workshop which is scheduled for May 1992, in Caracas, Venezuela.

4. Country Program

A draft country study, "The Costs to Brazil of Complying with the Montreal Protocol" was prepared in 1990 by USEPA, in conjunction with IBAMA, and Brazilian industrial ODS users. This report is the based document for preparation of the Country Program. A working group of IBAMA and DIC/MEFP technicians has produced a first draft Country Strategy document for discussion during a Bank mission in February 1992, at which time program priorities, resource requirements and a Country Program planning schedule will be decided.

5. Project Cycle

Activities which are now taking place or are in the planning stage include review /revision of the country study and preparation of a draft Country Program, reaching agreement with Government on identified project activities. The MP ODS Elimination Project summary will be presented to the EC for approval in April/May 1992.

CHILE

1. Background

There are regular Bank-financed projects under preparation in Chile which include components of a controlled substance phase-out program which would not qualify for assistance under the IMFMP. These include the Environmental Institutions Development Project, and the follow-on Environmental Management Investment Project. It is proposed that each of these Bank projects include components funded by the IMFMP. These components would be prepared and appraised in parallel with their Bank-associated projects.

2. Work Program Goals

The overall goals of the Bank's activities over the next two years in Chile are to: (a) assist Chile in the development of a strategy for the phasing out of controlled substances; (b) help strengthen Chile's institutional capability to manage ozone protection activities, in conjunction with the efforts being made to improve its current environmental management framework; and (c) support Chile in project identification, preparation and implementation.

3. Collaboration with UNDP and UNEP

There are no specific plans at this time for collaboration with UNDP or UNEP in preparation of a work program for Chile. Efforts will be made to benefit from the UNEP regional MP workshop which is scheduled for May 1992, in Caracas, Venezuela.

4. Country Program

Country Program Formulation will proceed with a combined CP and investment project formulation mission in February - March, 1992. The objective of the mission will be to initiate, with CONAMA, preparation of a strategy for controlled substance phase-out, including a definition of the technical, policy and institutional issues and strategy. In addition, it would identify projects which could be supported under the Protocol. The mission would work with CONAMA and associated Government agencies, as well as with relevant industry, consumer and NGO groups. The mission would agree with CONAMA on the strategy and structure of the CP paper, and on the respective contributions from each of these groups to the paper. It is expected that local consultants supported by specialized international experts would be contracted to assist CONAMA. A draft CP is expected to be completed by the end of 1991.

A final CP/project preparation mission is scheduled for May, 1992. This mission would discuss the draft CP to the Government and based on these discussions the document would be finalized. It is expected that this would include agreement of a program to strengthen Chile's policy framework and management capabilities. Resources to carry out this program could be included under the Environmental Institutions Development Project. The mission would also include technical experts who would prepare potential projects which had been identified by the earlier mission.

5. Project Cycle

Provision has been made for an investment project appraisal for the first phase of investment project interventions during the second half of 1992. Projects to be appraised will be identified in the February-March mission. Regular supervision of these projects will be underway early in 1993.

CHINA

1. Background

China signed the Montreal Protocol on June 14, 1991 and completed the ratification process in 1991. At its June 1991 meeting, the Executive Committee authorized funds for the Bank to engage the GoC in a dialogue on a work program for CY92, including preparation of a country program and identification of a series of investment interventions. A UNDP study was published in May, 1990, which identified some specific short and medium-term controlled substance phase-out projects, although not all the sub-sectors were fully covered. The National Environmental Protection Agency (NEPA) is the focal point in China for Protocol implementation activities and has requested the UNDP to proceed with the second phase of the feasibility study. UNDP fielded missions in September/October, 1991, to advance preparation of the China Country program.

2. Work Program Goals

The Bank is undertaking a dialogue with appropriate Government authorities in China to agree on the details of a work program and budget and projects identified in the just-completed feasibility study undertaken by the UNDP. As far as possible, the Bank intends to appraise specific investment projects under either Bank environment or industry-related investment operation now in the preparation stage. The possibility of combining a controlled substance proposal with the expansion or modernization of industries will be explored.

3. Collaboration with UNDP and UNEP

UNDP will continue to have the leading role in the dialogue with GoC, including providing financing for the completion of the previous work, plus feasibility studies for specific short-term investments. UNDP will also arrange financing for the proposed country program. TOR for both studies have been agreed between UNDP, NEPA and the World Bank. UNDP and NEPA will identify and select the consultants for both endeavors but they welcome further Bank participation in the development of the two studies. The second phase of the previous work will be carried out with UNDP funds (UNDP China has a US\$300,000 unspent allocation for this purpose). Financing of the Country Program (CP) will possibly require a new project with either UNDP, bilateral, or IMFMP financing of US\$500,000-600,000.

4. Country Program

Country program formulation proceeding under UNDP's supervision will require about four months to complete and should be prepared by June 1992. With the understanding that the CP is under preparation, the Bank intends to proceed in parallel with preparation of the first \$15 million investment project funding.

5. Project Cycle

Project identification began under the CY91 work program with a mission planned for November/December, 1991. The purpose of this mission was to undertake a dialogue with appropriate Government authorities in China to agree on the details of the work program and budget for an investment project of \$15 million. Sufficient progress has been made on UNDP-supported feasibility studies underpinning the proposed investment fund to enable project documentation to be prepared to enable the project to be submitted to the Executive Committee for approval in February 1992.

The proposed project will include the following components:

- * Halon 1211 - Fire Extinguisher blend development project
- * Halon 1211 - Extinguisher conversion to ABC and AFT powder project
- * Halon 1211 - Production project
- * Aerosol Foam and Hair Spray projects
- * Polyurethane Foam Insulation project
- * Polystyrene and Polyethylene Packaging project
- * Refrigeration and A/C Compressors conversion to HCFC-22 project

Subject to Executive Committee approval of the project submitted in February, project appraisal should proceed in May, 1992. The required project documentation will be provided separately.

ECUADOR

1. Background

To conform with the Protocol's stipulations at the earliest possible time, the Government assigned responsibility to prepare a phase out program to the environmental units of the Ministry of Foreign Relations and of the National Development Council (CONADE). Since then, and under the leadership of CONADE an inter-ministerial committee has been established to assist in the preparation of the program. Representatives of the private sector, scientific community and of non-governmental organizations (NGOs) participate in the committee.

In March 1991 CONADE, requested assistance from the World Bank and the United States Environmental Protection Agency (EPA) to prepare the proposed program. Since then a base line study has been completed which was the basis for the preparation of a proposed country program (CP) for implementing the Montreal Protocol in Ecuador. A draft report of the CP in English is nearly complete, including the identification of 12 potential projects.

As a result of a joint Bank/EPA mission in August, GOE agreed to establish the institutional and legal framework for implementation of the proposed program. The Ministry of Industry (MICIP) has been assigned full implementation responsibility. Cooperating public sector entities would be the Finance Ministry, Central Bank and the Ministry of Health. To determine the organizational structure of the implementing unit within the MICIP a Bank consultant carried out an institutional capacity analysis in October 1991. The report included proposed draft legal instruments (a presidential and a ministerial decree). These documents served to complete the program document sent for review and clearance by government authorities in January 1992. It is expected that GOE would submit the Program to the Executive Committee in time for the February 28, 1992 meeting.

Various activities will be carried out in the next three months to set the stage for CP implementation. These will include: official establishment of the executing unit within the MICIP, enactment of official decrees, seminars for industry representatives, training for staff of the implementing agency, and initiation of a public awareness campaign. UNDP has agreed to support all training activities.

Given the relevance of aerosols as main users of CFCs the GOE's program proposes to start phase out activities with a project to replace these substances in the aerosol sector. EPA has offered to support preparation of a feasibility study to determine costs and execution timetable. Pre-investment studies for other projects would be agreed with GOE authorities during a proposed March 1992 mission.

2. Work Program Goals

The Government of Ecuador (GOE) wishes to quickly implement projects designed to phase-out the use of controlled substances and is currently preparing the necessary legal framework mandating the phaseout of controlled substances and putting the necessary institutional structure in place. The work program envisages an 8-year time span of two separate phases. Phase one is to be implemented over a 4-year period (1992-95) and have a two-pronged approach. The first would aim at putting in place the institutional and legal framework. The second would concentrate on phasing out the use of controlled substances in the aerosol and refrigeration sectors which together represent about 80 % of the total usage of CFC-11 and CFC-12. The second phase would include incorporating projects to phase out controlled substances from the remaining sectors. Thus, it is expected the entire effort would accomplish total phase out before the year 2000.

3. Collaboration with UNDP and UNEP

Bank mission have kept the UNDP office in Quito informed about the progress of the program. Efforts will be made to benefit from the UNEP regional MP workshop which is scheduled for May 1992, in Caracas, Venezuela.

4. Country Program

The Country program and the underpinning baseline study were completed by the GOE during CY91.

5. Project Cycle

A first round of project preparation activities began with the assistance of a Bank mission during October 1991. The mission and the GOE reached preliminary agreement on project selection and conceptual design. Discussions with GOE also included requirements and timetable for establishing supporting policy and institutional framework. Each of the proposed projects would include seminars, workshops, training, and technology demonstration activities to ensure rapid replication of the project throughout Ecuador. A local project coordinator would be hired half time for a period of three years to oversee the implementation of the projects in Ecuador after the program has been approved.

Project appraisal is scheduled for May 1992 and supervision missions should take place in September and November/December 1992.

EGYPT

1. Background

At its June meeting, the Executive Committee endorsed Egypt's proposal to prepare, with Bank assistance, a model Country Program. The GOE indicated that the Egypt Environment Affairs Agency (EEAA) would establish a task force of Egyptian experts to assist in the coordination of this effort. GOE also informed the Executive Committee that it would establish a Program Implementation Office to carry out short and long-term program strategies, associated action plans, conduct workshops, training, and undertake project developments/investments. Finally, the Executive Committee approved funds for UNDP to undertake pre-investment feasibility studies for reduction of controlled substances in 2 small firms not identified for interventions within the Bank's work program for Egypt.

The Government of Egypt is committed to support a program for phasing out controlled substances. The Ministry of Industry has issued a ministerial decree banning the use of CFCs in the aerosol industry as of January 1991.

2. Goals of the Work Program and Project Identification

The purpose of this work program is to strengthen Egyptian capacity to consolidate data collection on controlled substances, identify and select alternative technologies which may be deployed in implementing the Montreal Protocol, and to demonstrate CFC conservation in the refrigeration industry.

The work program will be coordinated by EEAA which will support project identification and preparation.

3. Collaboration with UNDP and UNEP

The work plan has been developed in collaboration with both UNEP and UNDP. In July 1991, at the invitation of the Government of Egypt, the Bank assisted with the preparation of a Country Program for Egypt, a pre-requisite for funding of projects by the Multilateral Fund. This Country Program is intended to serve as a model for other developing countries. The demonstration projects identified in the Country Program could be administered by the Bank as part of an investment project in ODS reduction funded by the IMF. Otherwise, UNDP could include them within its work program for technical assistance activities in Egypt, although final implementation arrangements have yet to be finalized. Total cost of these demonstration projects is estimated at approximately \$370,000.

4. Project Cycle

Project preparation based on the proposed CP action plan is scheduled for April, 1992. An investment project of \$2.4 million with a compressor company will be appraised by the Bank. Financing and implementation arrangements will be agreed during the mission. The mission will include a reclamation specialist enabling a pre-feasibility study to be made for a regional CFC reclamation facility for possible funding through the Bank under the IMFMP.

Further project preparation activities are planned for the second half of 1992 consistent with a program of short-term controlled substance phase-out actions agreed between the Bank and EEAA.

EGYPT**1. Background**

At its June meeting, the Executive Committee endorsed Egypt's proposal to prepare, with Bank assistance, a model Country Program. The GOE indicated that the Egypt Environment Affairs Agency (EEAA) would establish a task force of Egyptian experts to assist in the coordination of this effort. GOE also informed the Executive Committee that it would establish a Program Implementation Office to carry out short and long-term program strategies, associated action plans, conduct workshops, training, and undertake project developments/investments. Finally, the Executive Committee approved funds for UNDP to undertake pre-investment feasibility studies for reduction of controlled substances in 2 small firms not identified for interventions within the Bank's work program for Egypt.

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4. Project Cycle

Project preparation based on the proposed CP action plan is scheduled for April, 1992. Financing and implementation arrangements will be agreed during the mission. The mission will include a reclamation specialist enabling a pre-feasibility study to be made for a regional CFC reclamation facility for possible funding through the Bank under the IMFMP.

Further project preparation activities are planned for the second half of 1992 consistent with a program of short-term controlled substance phase-out actions agreed between the Bank and EEAA.

IRAN

1. Background

The World Bank is presently discussing with the Iranian Finance Ministry, the possibility of carrying out a Country Program on the phaseout of ozone depleting substances (ODS).

2. Goals and Status of Work Plan and Project Identification

The purpose of the work plan is to establish present consumption and usage patterns and define the best strategy for the phaseout of ODS.

3. Collaboration with UNDP and UNEP

The Bank intends to follow-up with UNDP to ensure that information obtained by their planned reconnaissance study in Iran, is obtained in a timely manner to better inform the planning of Bank activities. There are no specific plans for collaboration with UNEP at this time.

4. Country Program

Upon confirmation by Iran, a mission will be sent to Iran to carry out an ODS assessment, prepare the Country Program, and identify potential projects. Project appraisal is anticipated in early 1993.

JORDAN

1. Background

The planned World Bank mission to Jordan in October/November 1991 will help develop a country program for Jordan and define specific project proposals for assisting the controlled substances phase-out.

2. Goals and Status of Work Plan and Project Identification

The purpose of this work plan is to strengthen Jordan's capacity to introduce CFC conservation measures and identify and apply technical alternatives consistent with Montreal Protocol implementation.

3. Collaboration with UNDP and UNEP

The work plan has been discussed with both UNEP and UNDP and it has been agreed that the World Bank will take the lead in developing the program. There are no specific plans for collaboration with UNDP or UNEP in work program implementation.

4. Country Program

Country program formulation and preparation was begun with a reconnaissance and project identification mission in October, 1991, which collected information on controlled substance use, current and future growth; obtained previous studies on controlled substance utilization and substitutes and visited major industrial firms

that are using controlled substances. The mission will work with the Jordanian Environment Agency on the outline elements of the Country Program (CP) and will identify potential projects that will assist Jordan in reducing CFC.

5. **Project Cycle**

Project preparation will proceed during a proposed April, 1992, identification/preparation mission. The mission will discuss the draft of the CP that was prepared following the October 1991 mission. The project preparation phase will also be finalized.

Project supervision of approved projects will begin in the second half of 1992.

MALAYSIA

1. **Background**

The Department of Environment (DE) has prepared the Country Program and project feasibility studies and is the lead agency within Government for Montreal Protocol implementation. As opposed to relying on an implementing agency, the Government of Malaysia has taken full responsibility for completing development of the Country Program (CP). A Bank mission in September, 1991, assisted the Government with the definition of a project proposal. The GOM has requested another Bank mission during February 1992 to evaluate a mobile air conditioning recycling project and a halon recovery and recycling center.

The Bank has proposed to the Government that preparation of the CP and feasibility studies for the short-term action plan proceed in parallel.

2. **Work Program Goals**

The major goal is to assist the Government in establishing and implementing an effective controlled substance phase-out program.

3. **Collaboration with UNDP and UNEP**

There are no specific plans at this time for collaboration with UNDP or UNEP in preparation of a work program for Malaysia. The UNEP/SIDA CFC Project in Bangkok also promotes controlled substance phase-out activity in Malaysia.

4. **Project Cycle**

Provision has been made in the work program for assistance to the GOM, as required, with ongoing project preparation and processing through to effectiveness of its proposed investment projects. As a consequence, in part, of the anticipated results of the February 1992 Bank mission to Malaysia, a Phase I group of projects is expected to be presented to the Executive Committee for consideration of a \$3 million line of credit at its February 1992 meeting. A second Phase II set of project proposals and another line of credit of \$10 million will be ready for presentation to the Executive Committee in April 1992.

MEXICO

1. Background

Mexico has actively participated in the discussions and subsequent negotiations leading to the Montreal Protocol and currently chairs the Executive Committee of the Interim Multilateral Fund of the Montreal Protocol. It is fully committed to phase out the use of controlled substances. The Secretario de Desarrollo Urbano y Ecologia (SEDUE) has succeeded in convincing the two CFC producers and seven industrial users to sign voluntary agreements to reduce production and consumption of controlled substances, implement recycling and other conservation measures and, in some cases, adopt alternative technologies. Several other agreements are being negotiated with individual firms or industry leaders. These voluntary agreements form the basis of Mexico's strategy to implement the Protocol and has been instrumental in creating an environment of trust and cooperation between the authorities and industry on this matter. SEDUE, with assistance from Camaro Nacional de la Industria de la Transformacion (CANACINTRA), has also identified six projects to reduce or recycle CFCs. Three consist of implementing recycling technologies and the rest concern reduction of controlled substance use in foam, provision of training and safety during aerosol manufacturing. All the projects appear eligible for financing under the Interim Fund and are likely to reduce controlled substance consumption to some extent. Two of these (CFC 12 recycling from MACS and aerosol propellants safety program) have been processed in the World Bank for financing by the Interim Fund and the project documents have been sent to Mexico for approval.

SEDUE's ozone protection effort consists of periodic oversight by two senior officials and a programs coordinator. USEPA has been working with SEDUE to assist in their Country Program (CP) which is being finalized for submission to the Executive Committee's approval, and in funding the first three years of a technical center. The Mexican industry has made significant in-kind contributions to these efforts.

2. Work Program Goals

The overall goal of the Bank's activities over the next three years in Mexico is to assist the Government in implementing its country program for phasing out controlled substances by the year 2000. Specifically the Bank will: (1) support Mexico's project preparation and implementation effort, (2) help strengthen Mexico's institutional capabilities to manage ozone protection activities and complement its current policy framework with measures which would ensure that the controlled substance phase-out would be done efficiently and at the lowest possible cost to Mexican industry, and (3) finance well-conceived ozone protection projects.

3. Collaboration with UNDP and UNEP

UNDP and UNEP are collaborating with the Bank in assisting Mexico in developing its program. UNDP has been asked by the Mexican Government to provide technical options information, and institutional strengthening and technical assistance will be a special focus of UNDP activities in Mexico. The Bank is continuing to work with the Government in fostering an accelerated investment funding mechanism in Mexico, while UNEP is supporting Mexico in developing replacement technology information for dissemination to other Spanish-speaking countries. Efforts will be made to benefit from the UNEP regional MP workshop which is scheduled for May 1992, in Caracas, Venezuela.

4. Project Cycle

In a joint effort with CANACINTRA (Mexico's Chamber of Industries) and the United States Environmental Protection Agency, SEDUE conducted a study providing baseline data on total controlled substance consumption, growth forecasts, demand for controlled substance by end-use, technology used in these sectors,

potential alternative technologies and substances, and first order costs of phasing out controlled substances by the year 2010. Upon completion of this study, Mexico began discussions with industry to identify specific controlled substance reduction projects, described in the Mexico Country Program.

The second IMFMP-assisted project in Mexico, for which US \$ 4 million has been approved on the condition that all sub-projects larger than \$500,000 would be presented for approval by the Executive Committee and more detailed descriptions would be presented to the EC at its next meeting in February 1992, will make provision for funding a number of sub-projects included in the Country Program.

Project appraisal for the Ozone Protection Policy and Institutional Strengthening Project is scheduled for March, 1992, assuming the \$4 million is fully approved by the Executive Committee in February 1992. Project appraisal mission objectives include to: (i) discussion and decisions whether to use the marketable permit system; (ii) finalize the operational features and agree on the specific arrangements for its implementation if Mexico agrees to use the marketable permit system; and (iii) agree with the Government on the conditions and financial arrangements for passing on the funds to industry beneficiaries.

Project negotiations are scheduled for May, 1992, and the project should be effective by June, 1992.

Project supervision activities will begin in July, 1992, for the First Montreal Protocol to Mexico (CFC-12 recycling from MACs and aerosol propellants safety program) and by year-end will include the Ozone Protection Policy Project. Supervision missions in late 1992 will assess the effectiveness of assistance to strengthen SEDUE and the quality of NAFIN's sub-project review and financing to draw lessons for the design and implementation planning for proposed future projects of this kind in Mexico and elsewhere.

NIGERIA

1. Background

The Government of Nigeria (GON) has yet to develop a policy and institutional framework for phase-out of controlled substances. In the Bank's CY91 work program, provision was made to assist the GON with preparation of a country program. However, due to unforeseen delays the substantive part of this assistance must now take place in CY92. A Bank-financed Environmental Management Project will strengthen the capacity of the Federal Environment Protection Agency (FEPA) in Nigeria to formulate and oversee implementation of environmental management plans and policies and will complement assistance proposed under the IMFMP for Montreal Protocol implementation.

2. Country Program and Project Identification Activities

Studies are planned during the period from March to June, 1992, to provide the institutional background and sector foundation for the preparation of a country program (CP) and to recommend institutional and technical strategies and investments for CFC and other controlled substance reduction, substitution, and elimination. Starting with a census of all major industrial users of controlled substances prepared by the Federal Environmental Protection Agency (FEPA), a detailed enterprise level technical assessment will be made of major industrial users of controlled substances and a sample of the retail air conditioning repair and maintenance operations. The focus of the assessment will be to compile a profile of controlled substance users for each of the major applications to include inter alia substitution/reduction measures already taken or possible at the individual enterprise level, and feasible CFC elimination and conservation investments in the air conditioner assembly and repair/maintenance sub-sectors.

In-country training, and technical assistance needs in support of country program implementation, will

be defined by the Bank in collaboration with the UNDP, partly in the context of an in-country technical assistance workshop sponsored by the UNDP (see para 3. below). The proposed technical and institutional Country Program studies will be carried out by experts in the principal applications of controlled substances, particularly CFCs. The national counterpart supervising agency will be FEPA.

3. **Collaboration with UNDP and UNEP**

The work program has been discussed with both UNEP and UNDP and it has been agreed that the World Bank will take the lead in developing the program. UNDP and the World Bank have agreed to coordinate planning for an inventory of CFC-consuming industries which would complement Bank-managed technical studies, project preparation activity and CP formulation. UNDP is also coordinating proposed UNIDO work on technical alternatives for phase-out of CFCs in Nigeria and will liaise with the Bank to avoid duplication. UNDP, in cooperation with UNEP, are also considering conducting an MP-related industrial seminar in Nigeria in early 1992. UNEP's scheduled All-Africa Workshop in Kenya, in September 1992, will benefit from the results of the proposed Bank-assisted technical studies which will be completed by then.

PHILIPPINES

1. **Background**

A country study funded by the EEC and carried out by COWIConsult (Danish), was completed in May 1991. The EEC report recommends a rapid phase-out of controlled substances but does not include all costs and benefits. The Government is requesting the EC to provide financing for preparing the CP and UNDP to provide technical assistance to support training activities. The Government has requested the Bank to prepare and implement an investment program.

2. **Work Program Goals**

The major goal is to assist the Government in establishing and implementing an effective controlled substance phase-out program. The Government has appointed the Department of Environment and Natural Resources (DENR) as Executing Agency for the engineering design of short-term investment projects and for preparation of the Country Program. It is proposed that the UNDP join the Bank in its appraisal missions.

3. **Collaboration with UNDP and UNEP**

The Bank and UNDP have collaborated in formulating the work program for the Philippines and will undertake joint missions for identification of technical assistance requirements for Protocol implementation.

4. **Project Cycle**

Depending on the rate of Government implementation, pre-feasibility studies initiated in 1991 will result in investment projects being presented to the Executive Committee for approval at its first or second meeting in 1992. Feasibility studies are currently scheduled for completion by April, 1992. A joint UNDP/Bank mission to identify technical assistance needs consistent with proposed investments will be undertaken. Project appraisal for EC-approved projects is planned for August, 1992.

THAILAND

1. Background

The responsibility for compliance with the Protocol provisions has been allocated to the Ministry of Industry (MOI) and the National Environmental Board (NEB) provides technical support for the controlled substance phase-out program.

A UNEP/SIDA project has been initiated for the control of CFCs and other controlled substances.

A Country Program (CP) and three pre-investment studies are under preparation. The Government has also requested UNDP and/or UNEP to finance a separate proposal for technical assistance to local institutions responsible for developing and implementing the controlled substance phase-out program.

2. Work Program Goals

The overall goal is to assist the government in establishing and implementing an effective controlled substance phase-out program.

The three feasibility studies, namely, (1) auto A/C CFC recycling, (2) solvent recycling, and (3) CFC substitution in solvent applications, are designed to develop specific investments in the main CFC consumption areas with the highest growth rates and where cost-effective technology is already established in other countries. The studies will bring in relevant expertise/technology from other sources and provide for appropriate transfer of that technology to local sources. The studies include all the analysis required to take each set of projects to the investment stage.

3. Collaboration with UNDP and UNEP

The government has requested assistance from the World Bank in the formulation of the CP, as well as for three feasibility studies to develop a short term investment plan. The Government has requested UNDP to finance a separate proposal for technical assistance to local institutions responsible for developing and implementing the controlled substance phase-out program. The UNEP/SIDA project has an overall coordinating role for controlled substance activities in Thailand.

4. Country Program

A draft of the country program should be complete by June 1992.

3. Project Cycle

Project preparation began in 1991 and culminated in a Bank mission to Thailand in late September which defined a preliminary first tranche of investments for submission for Executive Committee approval in early 1992. The engineering design of these projects is scheduled for completion by April, 1992.

Pending Executive Committee approval project appraisal will be completed in June, 1992 leading to project effectiveness in the second half of 1992.

TUNISIA

1. Background

The Government of Tunisia (GOT) is committed to support a program for decreasing the use of CFC in the aerosol industry and an eventual phase out of CFC in the foam industry. The Agence Nationale de la Protection de l'Environnement (ANPE) is the local agency for Montreal Protocol implementation.

2. Goals and Status of Work Plan and Project Identification

The goals of this work plan are: (a) to strengthen Tunisian capacity to implement the Montreal Protocol through both technical and policy interventions; and (b) to demonstrate the CFC conservation and recycling options in industry. Because the local CFC market and the scale of individual end-uses are small, Tunisia is ideally suited to serve as a testing ground for policies and programs to conserve, reduce and eventually eliminate CFC uses in other small developing countries.

3. Collaboration with UNDP and UNEP

There are no specific plans for collaboration with UNDP or UNEP in preparation of a work program for Tunisia.

4. Country Program

A mission is planned for February, 1992, to prepare a CP for Tunisia, including an action plan to implement the CP feasibility studies for projects recommended to assist the refrigeration, foam and aerosol sectors in the transition from CFCs to acceptable alternatives. The CP will be undertaken under contract with a consulting company, Cowiconsult. The company will begin work in February, 1992 and the draft CP reviewed by the Bank, including technical specialists, with Government and local industry representatives in May, 1992. Details of project proposals will be discussed and an implementation plan will be initiated.

5. Project Cycle

Project interventions under consideration with Government in parallel with preparation of the CP include the following:

- possible application of a modified foam insulation system in the refrigeration industry.
- assistance with establishment of a program in a major refrigerant service company to improve service procedures, train technicians to conserve CFC, and demonstrate the use of CFC recovery/recycling machines.
- demonstration of use of non-CFC blowing agents in the manufacture of flexible foam.
- assistance to aerosol producers to convert their plants from CFC's to LPG.

Project preparation would proceed in the period July - September, 1992, resulting in presentation to the Executive Committee of projects greater than \$500,000 for approval at a meeting in the latter half of 1992. Projects approved by the EC should become effective before the end of 1992 and be under implementation early in 1993.

TURKEY

1. Background

The Government of Turkey has initiated activities for phasing-out controlled substances consistent with implementation of the Montreal Protocol. The Ministry of Health has issued a ministerial decree banning the use of CFC as propellants for insecticides. The Turkish refrigeration industry has expressed enthusiasm for the transition to CFC-free substances in order to maintain a competitive position in the export market. The Under-Secretariat for the Environment, which is the coordinating agency for the implementation of the Montreal Protocol, is preparing to recommend further actions for the phase-out of controlled substances. A Bank mission to Turkey in September 1991 initiated action on a Country Program.

Investment project activities will be coordinated by the Under-Secretariat of Treasury and Foreign Trade, World Bank Projects Department.

2. Goals and Status of the Work Plan and Project Identification

The overall goals of the Bank's activities in Turkey are to:

- (1) avail Turkey of assistance under the IMFMP for its efforts in phasing-out controlled substances; and
- (2) strengthen Turkey's institutional and human resource capacity to manage specific ozone protection activities.

This work plan makes provision for strengthening Turkish capacity in collecting and utilizing for policy and planning data on the use of CFCs and other controlled substances, providing information on feasible alternatives to controlled substances, demonstrating options for conservation and recycling, and aiding the prompt implementation of CFC free technologies for refrigerator manufacture as they are commercially proven.

3. Collaboration with UNDP and UNEP

The Government of Turkey has requested the World Bank to assist it in formulating a work program. It is agreed that UNDP will assume responsibility on all public awareness and non-project related training activities.

4. Country Program

A mission is planned for March, 1992, to discuss a Turkey Country Program draft which was prepared following the October 1991 mission.

5. Project Cycle

The March, 1992, mission will finalize the program for CP implementation and initiate preparation for all short term project proposals included in the CP. Projects now under consideration include to:

- Demonstrate the use of a modified foam insulation system in an established refrigerator design at a major refrigerator manufacturing facility and when commercially proven, HFC-134a as an alternative refrigerant;
 - Establish a recovery and reclamation program in a major domestic refrigerator service company to improve in-shop service procedures and train technicians in conservation of
-

CFCs.

- Recovery and reclamation of CFC-12 from household refrigerators being repaired in a refrigerator production facility.

Specific projects of this kind in excess of \$500,000 will be presented to the Executive Committee for approval beginning at its first meeting in 1992.

VENEZUELA

1. Background

An ad hoc group, coordinated by the Ministry of the Environment and Renewable Natural Resources (MARNR), with the participation of the Ministry of Finance (Hacienda), Ministry of Industry and Commerce, Ministry of External Relations, and both state and private industry, is taking an active part in country program preparation. It is planned to replace this ad hoc group with a legally constituted autonomous unit, perhaps in the form of a foundation, which will be the national coordinating unit for implementation of the Protocol. It is intended that operating expenses of the unit will be supported in part by the Trust Fund. Venezuela is a member of the Executive Committee of the MP. MRE is responsible for coordinating Venezuela's contact with the Bank, UNEP, and UNDP for Protocol Implementation.

The GOV has already instituted a series of measures for the purpose of monitoring and regulating controlled substances production and consumption. Among these are a reclassification of tariff codes to permit classification by individual controlled substances; requirement of prior approval by the MARNR for importation; prohibition beginning in 1992 of use of controlled substances in nonessential uses for which non CFC substitutes already are commercially available; and active control of production and consumption to maintain annual consumption below the 0.3 kg per capita level.

Government has also organized, in conjunction with the major trade and producer associations, a series of seminars on alternatives for reducing and substituting for CFC use in refrigeration and air conditioning. The seminars are planned for May 1992, pending confirmation of UNDP support of guest industry experts. The producer associations have already developed the technical agenda for the workshop and it will include a review of the latest developments in commercial scale HFC 134a technology.

The following work program and budget for Venezuela are presented as indicative, pending further review and approval by Government authorities.

2. Work Program Goals

The work program for CY92 will build on current or planned program activity. The major goals of the CY92 work program include: (i) definition of a national controlled substance phase-out strategy; (ii) preparation of a country program; (iii) establishment of a freestanding MP ODS Elimination Project, tentatively programmed for presentation to the MP EC and appraisal in May/June 1992; (iv) continued dialogue with industry to identify investment and substitute technology development subprojects which can be financed through the grant funding line; and (v) conduct of seminars/workshops on substitution/reduction technology in collaboration with UNDP.

3. Collaboration with UNDP and UNEP

The GOV intends to make use, as required, of assistance from the Bank and the Trust Fund, the UNDP,

and USEPA, and these agencies will collaborate in providing such assistance. UNDP has been requested to provide support to MARNR and Hacienda to mobilize expertise to train customs officials and agents to effectively track controlled substances. Efforts will be made to benefit from the UNEP regional MP workshop which is scheduled for May 1992, in Caracas, Venezuela.

4. Country Program

The "National Study on Consumption Patterns for CFC's and Halons; Feasibility of Substitution and Necessary Resources" will serve as the basis for preparation of a national CFC phaseout strategy and country program. The USEPA will assist MARNR in the estimation of costs and alternatives for implementation of a country program. In the meantime, MARNR has resumed contacting CFC users in the foam and solvents sectors in order to improve the data base for revision of the national study.

5. Investment Project Actions

Investment sub-project preparation is currently focussed on a Venezuelan producer of molded food packaging containers produced from blown polystyrene sheet in a process which uses CFC 12 as a blowing agent. GOV will be requesting IMFMP assistance for the modifications required to substitute CFC 12 as the blowing agent. Both butane and carbon dioxide foaming agent technologies are being studied. The sub-project will be officially transmitted to the Bank in March, 1992, with a view to presenting the project for Executive Committee approval in the second quarter of 1992. The expected project cost is about \$600,000-700,000.

Ongoing investment project identification actions include MARNR-initiated contacts with pre-selected CFC-users in the aerosol and foam industries to inform them of the availability of IMFMP financing and encourage them to develop a pipeline of eligible projects. Local representatives of American compressor manufacturers have recently begun to submit technical proposals for HFC 134a technology for commercial air-conditioning systems. This development will be monitored closely for the purpose of identifying and quantifying incremental costs eligible for Trust Fund support. In-country sub-project preparation, evaluation and review will be coordinated by the established Implementation Unit responsible for administration of the CP. Sub-projects will be financed on a grant basis.

YUGOSLAVIA

[All work in Yugoslavia has been temporarily suspended pending return of political stability. Provisions are being made to resume work on the Country Program in the fourth quarter of 1992]

1. Background

The Federal Ministry of Health is responsible for the implementation of the Protocol. The Under-Secretariat for the Environment, which is the coordinating agency for implementation of the Montreal Protocol, has already included in its national environment strategy a program for phasing out controlled substances.

2. Work Program Goals

The objective of the work plan is to support the Yugoslav Government and industry in conserving, recycling and phasing out CFCs and other controlled substances and to apply and promote the use of CFC-free technologies in the refrigeration, aerosol and foam sectors wherever feasible.

3. Collaboration with UNDP and UNEP

There are no specific plans agreed for collaboration with UNDP or UNEP in preparation of a work program for Yugoslavia.

4. Country Program

Terms of reference (TOR) for the Country Program were issued and a consultant was selected (Cowiconsult, of Denmark) to carry out the work which will only resume upon the return of political stability.

5. Project Cycle

Projects under consideration in Yugoslavia include the following:

- Establishment of a central recovery/recycling plant for CFC-12.
- Establishment of two LPG purifying units in two refineries for the cosmetic industry
- Use of non-CFC blowing agents in the foam and polystyrene manufacture.

Either in parallel or as part of the proposed investment operations the following technical assistance activities are proposed by UNDP as technical assistance projects:

- Establish a database on controlled substance import and consumption conforming to Protocol.
- Conduct a series of workshops on controlled substance alternatives.
- Train a core of engineers in the use of controlled substance alternatives.

The schedule for project preparation and appraisal following the end of civil unrest.

INTERMIN MULTILATERAL FUND

UNDER THE

MONTREAL PROTOCOL

UPDATING OF THE MEXICO PROJECT

January 31, 1992

INTERIM MULTILATERAL FUND UNDER THE MONTREAL PROTOCOLUPDATING OF THE MEXICO PROJECT

1. At its November 18-22, 1991 meeting in Montreal the Executive Committee of the Interim Multilateral Fund for the Implementation of the Montreal Protocol reviewed the Mexico project presented by the World Bank and made the following decisions:

- (i) Proposals for funding SEDUE's ozone protection unit and proposals for the endorsement of specific policy recommendations were separated out for further consideration by the Government of Mexico; and
- (ii) Funding for the line of credit to finance ozone protection projects was reduced to \$4 million and approved on condition that all projects larger than \$500,000 would be presented for approval by the Executive Committee and more detailed descriptions would be presented to the Executive Committee at its next meeting, including an indication of priorities for the timing of projects.

2. The purpose of this note is to update the Mexico project in light of the Executive Committee's decisions and to provide the requested details on ozone protection projects likely to be financed by the line of credit to obtain final approval for the \$4 million funding.

3. As stated in the Mexico Country Program, the United States has offered to cover the \$350,000 required for the operation of SEDUE's protection unit over the next three years as part of its contribution to the Multilateral Fund. Thus, there is no need for any funding under the Bank-prepared project. With regard to the policy recommendations of the Bank-prepared project, including the introduction of the marketable permit system, they are being discussed with the Mexican authorities. However, should the Mexican authorities decide to adopt them, their implementation would likely require little funding and could be accommodated within the \$4 million envelope. Therefore, no additional financing would be requested from the Multilateral Fund for this purpose.

4. The table below shows the ozone protection projects likely to be financed by the \$4 million line of credit, together with their estimated approval dates and ODP-weighted tons phased out. A detailed description of these projects appears in annex. All the information comes from the 2nd draft of the "Mexico Country Program for Eliminating Substances Controlled by the Montreal Protocol" submitted by the Mexican Government to the Executive Committee for approval.

5. While extreme care has been taken to estimate what projects would most likely be financed by the line of credit over 1992-93, the list can only be indicative. During implementation, new developments could alter the composition of the list, with new project proposals added on, while others

under preparation are dropped. Furthermore, it should be noted that (i) the total cost of the projects included in the list exceeds the \$4 million envelope. At this stage of project preparation and given the uncertainties, it was thought prudent to include more projects than the \$4 million could cover as some may not materialized or take more time to mature than foreseen; and (ii) while most of the funds will finance investment projects, a small amount (less than 10% of the total) may be used to fund prefeasibility studies and outreach programs within the projects.

LIST OF PROJECTS LIKELY TO BE FINANCED UNDER THE \$4 MILLION LINE OF CREDIT

<u>Project Name</u>	<u>ODP Phased Out</u> (Tons)	<u>Cost</u> (\$m)	<u>Approval Date</u>
1. Centralized CFC Recycling and Material Handling System	8,250	1.1	4th Quarter 92
2. Expanded Use of Recycling in MACs	3,250	0.5	1st Quarter 93
3. Chiller Purge Device and Conversion	580	1.3	2nd Quarter 93
4. Low-CFC Foam Insulation	750	0.5	2nd Quarter 93
5. Polystyrene Foam Conversion from CFC to HCFC	1,000	0.6	3rd Quarter 93
6. Training and Plant Conversion in the Electronic Industry	6,000	1.8	4th Quarter 93
TOTAL	<u>19,830</u>	<u>5.8</u>	

Source: Mexico's Country Program for Eliminating Substances Controlled under the Montreal Protocol.

ANNEXDESCRIPTION OF INVESTMENT PROJECTS
LIKELY TO BE FINANCED UNDER THE USS4 MILLION LINE OF CREDIT1. Centralized CFC Recycling and Material Handling System and Training Program

High volumes of CFC-11 and CFC-12 are emitted from various refrigeration equipment due to improper maintenance practices. Typically, a large portion of the refrigerant charge is vented to conduct repair work in particular components of the system (e.g., compressor, condensor). However, both recovery and disposal are established and commercially available technologies for reducing the demand and emissions of CFCs.

Recycling can be accomplished either on-site or off-site. For example, portable recycling units can process up to four pounds per minute and can be used for refrigeration systems with charges ranging from a few ounces to several pounds. Alternatively, stationary receiver tanks can be used to temporarily store refrigerant while the system is being repaired. Such receiver tanks help avoid the venting of refrigerant to the atmosphere and collect refrigerant for reclamation. Several countries already have centralized reclamation facilities. In the US, for example, the Air Conditioning and Refrigeration Institute (ARI) has established ARI standard 700 which provides the specifications that reclaimed refrigerants must meet. Moreover, ASHRAE has developed service practice manuals that provide the necessary guidance for refrigeration service technicians.

The development of a recycling network in Mexico will be an effective means of increasing participation in refrigerant recycling. Such a network could serve refrigerant distributors, service shops for industrial and household air conditioners, MACs, hotels, supermarkets, restaurants, and refineries. CYDSA, a holding company that owns Quimobasicos, is interested in pursuing this project and has the necessary qualified service technicians, technical expertise, and a suitable network of distributors. As currently proposed, the project will involve recycling CFCs sold by Quimobasicos and will provide the necessary impetus for a comprehensive refrigerant recycling program throughout Mexico. Terms of reference for this project is being developed by CYDSA.

2. Expanded Use of Recycling in Mobile Air Conditioners (MACs)

The MACs recycling demonstration project is expected to produce several results such as successful demonstration of recycling technology, a small cadre of MAC service technicians skilled in recycling procedures, and educational materials both for MAC service technicians and consumers. As described in the MACs recycling demonstration project, however, the ultimate goal of the demonstration program is to facilitate replication of MACs recycling throughout Mexico. The purpose of this project is to fulfill this objective by implementing the widespread use of MACs recycling technology at all major service sites in Mexico.

An expanded network of MACs recycling will depend on at least two key factors: (i) the availability of more recycling machines; and (ii) the availability of adequately trained MACs service technicians. Once the MACs recycling demonstration program is fully implemented, a pool of service technicians trained in MACs will be created. These service technicians will assist in transferring MACs recycling expertise to other MACs service establishments in Mexico. SEDUE will select up to 100 service shops from around the country to receive on-site training and a recycling machine. Only sites with a large volume of MACs servicing will be chosen so as to ensure the cost effectiveness of the project. The project includes public outreach activities to inform consumers about the environmental benefits of CFC-12 recycling and about companies in Mexico that are using recycling equipment.

3. Chiller Purge Device and Conversion

This project will demonstrate technology for reducing emissions of CFC-11 from the purge devices in centrifugal chillers.

Centrifugal CFC-11 chillers are normally equipped with purge units. By removing water and non-condensable gases (e.g., air) from refrigeration systems, these units improve refrigeration efficiency by ensuring that the presence of non-condensable gases does not artificially inflate the condensor pressure. Because they remove moisture, purge units can also successfully prevent the occurrence of corrosion caused by moisture build-up and acids that are formed when small amounts of moisture mix with the refrigerant.

In removing the unwanted non-condensibles and water, however, the purge units also remove some CFC-11 and vent it into the atmosphere. In order to minimize the amount of CFC-11 vented, high efficiency purge units have been developed and are now manufactured by several companies.

Most of these high efficiency purge units are one of two basic designs: mechanical or thermal. Mechanical units employ a compressor in removing a mixture of refrigerant, air, and other non-condensibles from the refrigeration condensor. The mixture is compressed to a higher pressure which condenses the refrigerant and water vapor. In comparison, thermal purge units use the pressure differential between the operating refrigeration system condensor and evaporator to remove a vapor mixture of refrigerant, air, and other non-condensibles. A second stream of high-pressure refrigerant passes through purge unit coils at a lower temperature to condense the refrigerant out of the mixture that has been drawn off. For both types of systems the cost of a high efficiency purge device is approximately US\$2,500-7,000.

This project will involve the installation of purge units in several selected chiller units and will include the establishment of a training program for certifying chiller service technicians. In addition, the project will implement conversion of several chiller units. While SEDUE is in the process of identifying Government agencies that have large numbers of chillers to undertake chiller conversions, several firms have expressed interest in participating in this project. For example, the Cautitlan Industrial Complex of Ford Motor Company has indicated that it would like to participate.

4. Low CFC Foam Insulation

Technology that reduces the amount of CFC-11 foam used in refrigerator manufacturing is now available. Such technology uses standard equipment and would only require slight modifications to Mexico's factory specifications. Reduced CFC-11 foam insulation is capable of meeting necessary performance criteria of traditional CFC-11 foam. Reductions of up to 50% of the CFC-11 normally used can be achieved by substituting water for CFC-11 and adjusting the polyol mix. In addition to reducing the amount of CFC-11, other desirable properties of low CFC-11 foam include completeness of cabinet filling, foam friability, dimensional stability of the foam, structural stability of the cabinet, removal of exothermal heat, and improved viscosity of the process chemicals. Increasing the amount of water used in foam insulation would not require any capital cost, but would result in a 5% increase in operating costs due to changes in the chemicals used.

The objective of this project is to reduce CFC foam insulation, while maintaining refrigerators's performance and consumer satisfaction. The latter would be addressed through consumer awareness activities. This project is expected to introduce low-CFC foam in three refrigerator manufacturing facilities using standard equipment only requiring modification to individual factory specifications. The project would involve several steps: (i) meetings between interested refrigerator manufacturers and foam suppliers; (ii) initial factory screening to verify compliance with performance needs; (iii) a short production trial; (iv) review of results from the short production trial; (v) process and product modifications to reflect production trial results; (vi) a full production trial; (vii) quality control and assurance verification tests; and (viii) full production.

5. Polysterene Foam Conversion from CFC to HCFC

The Mexican polysterene industry uses CFC-12 as an expansion agent to obtain polysterene foam boards, which are used in food packaging applications. However, in several countries, the substitution of HCFC-22 for CFC-12 in such applications has been proven to be effective. Non-flamable and low in toxicity, HCFC-22 provides high chemical and thermal stability.

This project will involve the use of HCFC-22, as a replacement for CFC-12, and the modification of facilities used in the expanding polysterene foam utilized in foam packaging. Modification of the extrusion system, replacement of pumps to feed HCFC-22 to process, and other changes to facilities will be required. Du Pont of Mexico presented this proposal and is working with SEDUE to prepare detailed terms of reference.

6. Training and Plant Conversion in the Electronic Industry

The largest users of CFC-113 and methyl Chloroform in the Mexican electronics and metal cleaning industry are firms located near the Mexico-US border. This project involves assisting these industries in reducing and eventually eliminating their use of CFC-113 and methyl chloroform solvents. Several commercially available alternatives for these solvent applications exist such as low-solid/no-clean fluxes, and aqueous and semi-aqueous

cleaning. Each has been proven to meet rigorous performance standards in both civilian and military electronics cleaning applications. Low-solids/no-clean fluxes, for example, can be used to eliminate cleaning in some instances. Both aqueous and semi-aqueous cleaning are currently being used in many diverse cleaning applications.

This project involves training workshops and investments in substitute technologies. The Industry Cooperative for Ozone Layer Protection (ICOLP) and Northern Telecom, a manufacturer of telecommunications equipment, have agreed to provide technical expertise for this project. The project will be implemented in four stages: project planning, training, demonstration, and plant conversion. The technical training and demonstration components are scheduled for 1992. Workshops will be organized in various maquiladora sectors (Tijuana, Juarez, Nogales, etc.). In addition, technical staff of Mexican firms will be invited to visit ICOLP facilities where alternative processes are in operation.

Following these workshops, participating firms will be asked to provide information on the amount of solvents, what technologies they are selecting to eliminate solvent use, and their proposed timetable for elimination of solvents. As a result of these activities, electronics manufacturers will develop plans to convert existing cleaning processes to alternatives such as those listed above.

Washington, D.C.
January 31, 1992

Interim Multilateral Fund under the Montreal Protocol



World Bank Progress Report

**to the February 27-28, 1992 Meeting of the Executive Committee
on implementation of the World Bank Work Program**

February 7, 1992

**Progress Report
to the February 27 - 28, 1992 Meeting
of the Executive Committee**

1. Introduction

This report reviews progress made by the Bank in the implementation of the calendar year 1991 (CY91) work program, and through January 1992, the first month covered within the calendar year 1992 (CY92) work program. As such, it includes discussion of progress made in terms of continuing interagency collaboration, project identification, preparation, approval, and documentation, and in response to resolutions and expressed concerns of the Executive Committee.

2. Calendar Year Work Programming

The Bank's first progress report reviewed the period January through October 1991. This report covers, additionally, the period November 1991 through January 1992. This report serves two purposes. First, it presents activities carried out through January 1992. Second, it updates performance of the Bank as an implementing agency for the Montreal Protocol to January 31, 1992.

3. Overview of Implementation Performance

A MP work program milestone table, summarizing the status of work program implementation at the country level, is attached as Annex I. The table indicates completed and planned activities in:

- (1) assisting Governments to prepare country programs;
- (2) assisting Governments to undertake pre-investment activities; and
- (3) helping Governments to prepare, and appraising and supervising investment projects.

4. In general, the country level work program implementation remains on schedule.

The Bank has now completed its reviews, and approved Country Program documents, for four (4) countries, each of which has now been forwarded to its respective Government for submission to the Executive Committee, hopefully, at its February 1992 meeting:

- * Ecuador
 - * Egypt
 - * Mexico
 - * Turkey
-

5. Country Program preparations are on schedule for completion during CY 1992 in the following countries:

- * Brazil
- * Iran (pre-planning)
- * The Philippines
- * Thailand
- * Venezuela

6. Significant Country Program variances from the schedule include:

* **Chile**

Chile's planned Country Program final report completion date has slipped one month to March 1992.

* **China & Malaysia**

China's and Malaysia's initial investment project preparation has moved along rapidly enough to advance the timing by two months from that reported in the last progress report. This should permit the Executive Committee to consider approvals during its meeting in February 1992.

* **Ecuador**

Completion of Ecuador's Country Program slipped three months - to January 1992.

* **Jordan**

Jordan's planned Country Program final report completion date has slipped two months to February 1992.

* **Mexico**

Mexico's CP was not approved by the Executive Committee at its November 1991 meeting, pending completion of Executive Committee-required revisions in document presentation and inclusion of additional details on individual projects proposed for funding through a line of credit. Thus, anticipated approval of pending project investments has slipped three months.

* **Nigeria**

Plans for completing the Country Program for Nigeria have been advanced one month to mid-October 1992 in order to be able to submit it to the Executive Committee at its meeting in late October 1992.

* **Tunisia**

Tunisia's planned Country Program final report completion date has advanced one month to May 1992.

* **Turkey**

Completion of Turkey's Country Program slipped one month to January 1992.

7. Investment Program Development

We anticipate that Executive Committee approval will be sought during CY 1992 for major investment projects in China, Malaysia, the Philippines, Thailand, Brazil, Chile, Ecuador, Mexico, Venezuela, Egypt, and Turkey. Country investment totals have been revised downwards to reflect present estimates of fully achievable goals. Proposed investment project totals for China, Malaysia, Ecuador, and Mexico have each been adjusted accordingly:

*** China**

The first tranche amount has been reduced from \$20 million, to \$15 million and will address China's first investments in aerosols, halons, foams, refrigeration and air conditioning.

*** Ecuador**

The investment amount for Ecuador has been reduced from \$10 million to \$4 million.

*** Egypt**

Concomitant with completion of Egypt's Country Program is identification of new requirements for investment projects totalling \$2.4 million in refrigeration, air conditioning, and reclamation. The Bank has now identified and proposed six (6) demonstration projects in the mobile air conditioning, domestic and commercial refrigeration sectors, as part of Egypt's Country Program documentation which will be presented to the Executive Committee at its February 1992 meeting. Some or all of these relatively small projects may be undertaken by the UNDP.

*** Malaysia**

Investments have been reduced from \$13.5 million to \$13 million in total, and divided into an early Phase I for presentation to the EC in February 1992, and a later Phase II for presentation to the EC in May 1992. The Bank also mounted a pre-appraisal mission in February 1992 for two (2) recycling projects, one in halons and one in mobile air conditioning (MACS), and to finalize line of credit arrangements, in Malaysia.

*** Mexico**

At its last meeting, the EC reduced the investment line of credit proposed for Mexico from \$10 million to \$4 million. The proposed project will finance investments in six (6) projects in CFC recycling, foam insulation, polystyrene foam conversion, and training and plant conversion in the electronic industry.

*** Turkey**

Concomitant with completion of Turkey's Country Program is identification of new requirements for investment projects totalling \$3.5 million in the refrigeration, central air conditioning, and mobile air conditioning (MACS) sectors.

In combination, these changes have resulted in a reduction of the overall estimated Montreal Protocol project investment program total presented in the November 1991 progress report, from \$113.5 million to \$100.9 million.

8. Project Approvals

Two (2) small demonstration projects for Mexico were cleared by the Bank for negotiation with the Government in November, and still await Government approval. Another three (3) small demonstration projects were approved by the Bank for the Philippines, and two (2) were approved for Thailand in January 1992. Project implementation, in each case, will begin as soon as the respective Governments sign their documents, giving final approval.

Of special concern, is that Mexico has not yet authorized approval of the demonstration projects which were processed by the Bank in November 1991.

9. Other Matters of Operational Significance

The Bank's internal operational procedures for Montreal Protocol operations have been streamlined and final draft procedures are under review with the regions. As soon as the procedures are cleared and published, they will be forwarded to the IMFMP Secretariat for information and distribution to the EC.

10. Ozone Operations Resource Group (OORG)

In response to the Executive Committee's request to be reassured that a cost-effective and technically coherent approach to ODS phaseout is being adopted sector by sector, the Bank has assembled an Ozone Operations Resource Group (OORG). (Likewise, a brief sector by sector summary of the Bank's work program has been added as Annex I in the CY92 work program.) OORG will be comprised initially of six (6) internationally-recognized sector-based experts, one for each of the following principal ODS-using sectors: (1) Aerosols, (2) Mobile Air Conditioning (MACS), (3) Refrigeration, (4) Foams, (5) Solvents, and (6) Halons. It will reflect as broad a geographical representation as possible, but without prejudice to the high level of technical expertise required.

The OORG will meet as a group two times each year to review with the Banks staff, the Ozone Protection Technical Advisory Team, MP Coordinators, and task managers, to review the Bank's work program, specific projects, planning and project implementation experience, and the emergent strategy for rapid cost-effective phase-out of ODS.

The OORG will help the Bank compile, maintain and update a roster of sector-specific experts with project design and implementation experience from developing as well as developed countries. Individual members of the OORG will function as project-specific technical reviewers, or participate in CP and project preparation missions. Terms of reference for the OORG, and initial membership, is attached (Annexes III & IV).

11. Technical Review Panels

No Technical Review Panels have been conducted since the last project report.

12. Projects Proposed for Executive Committee Approval

No new projects will be proposed for Executive Committee approval at its February 1992 meeting. However, an expanded project description for the Mexico \$4 million line of credit will be provided for review.

13. Inter-Agency Coordination Meetings

The IMFMP Secretariat convened a meeting with the implementing agencies, in Montreal, on January 25, 1992, to review a draft consolidated work program document which presented a sector by sector, and country by country, description of Montreal Protocol supported activities. The Bank was unaware until January 22nd that it was required, in addition, to redraft and present its original CY92 Work Program to the EC's February meeting. Every effort has been made in the two weeks available to make required revisions. A first attempt is made in this Progress Report and the revised work program to present a sectoral overview of plans and performance. However, the result is regrettably not fully satisfactory.

14. Proposed Adjustments to WP and Budget

Adjustments to the CY91 country program are reflected in the revised CY92 work program and budget to be submitted to the Executive Committee at its February 1992 meeting. The actual (as opposed to estimated) expenditures for CY91 will also be made available at that time.

ANNEX I

WORLD BANK
MONTREAL PROTOCOL WORK PROGRAM MILESTONE SUMMARY
AS OF JANUARY 31, 1992

	Country Programs				Pre-invest./Demo. Projects						Proposed Investment Projects							
	Main Mission	Final Report	Gov. Approval	Action Plan	IEPS/ FEPS	EC Approv.	Y.C. Review	Bank Approval	Govt. Approval	Amount (estimated)	IEPS/ FEPS	EC Approval	FEPS Final	Bank Appraisal	Y.C. Review	Govt. Approval	Bank Approval	Amount (estimated)
AFRICA																		
Nigeria	Jul-92	Oct-92	Dec-92	Apr-93	Sep-92	Sep-92	Nov-92	Dec-92			Sep-92	Nov-92	Mar-93	Apr-93	May-93	Jun-93	Jun-93	\$5,000,000
ASIA																		
China											Jan-92	Feb-92	Apr-92	May-92	Jun-92	Jul-92	Jul-92	\$15,000,000
Malaysia (Phase I)		Jul-91			Jan-92	Feb-92	Apr-92				Oct-91	Feb-92	Mar-92	Feb-92	Mar-92	Apr-92	Apr-92	\$3,000,000
(Phase II)											Oct-91	Apr-92	Apr-92	Jun-92	Jul-92	Aug-92	Aug-92	\$10,000,000
Philippines		Feb-92			May-91	Jun-91		Jan-92	Not yet	\$400,000	Oct-91	Apr-92	Jun-92	Aug-92	Sep-92	Sep-92	Sep-92	\$10,000,000
Thailand	Oct-91	Jun-92	Aug-92	Aug-92		Jun-91		Jan-92	Not yet	\$470,000	Oct-91	Apr-92	Mar-92	May-92	Jun-92	Jul-92	Jul-92	\$15,000,000
EMENA																		
Egypt	Aug-91	Jan-92	Feb-92	Feb-92	Mar-92	Mar-92	Apr-92	Jun-92		\$370,000	Mar-92	Apr-92	Apr-92	May-92	Jun-92	Sep-92	Sep-92	\$2,400,000
Iran	Apr-92	Jul-92	Sep-92	Sep-92														
Jordan	Sep-91	Feb-92	Mar-92	Mar-92														
Tunisia	Feb-92	May-92	Jun-92	Jun-92	Jun-92		Sep-92	Nov-92										
Turkey	Sep-91	Jan-92	Mar-92	Mar-92							Mar-92	Apr-92	Apr-92	May-92	Jun-92	Jul-92	Jul-92	\$3,500,000
LAC																		
Argentina	Jan-93	Mar-93	Mar-93								Feb-93		May-93	Jun-93				\$2,000,000
Brazil	Feb-92	Jul-92	Jul-92								Mar-92	Apr-92	Apr-92	Jun-92		Aug-92	Aug-92	\$16,000,000
Chile	Feb-92	Mar-92	Mar-92								Mar-92	Apr-92	Apr-92	Jun-92	Sep-92			\$1,000,000
Ecuador		Jan-92	Feb-92		Feb-92						Feb-92	Apr-92	Feb-92	May-92				\$4,000,000
Mexico		Oct-91	Oct-91	Oct-91	Aug-91		Sep-91	Nov-91	Not yet	\$180,000	Oct-91	Feb-92	Mar-92	Apr-92	May-92	Jun-92	Jun-92	\$4,000,000
Venezuela	Feb-92	Mar-92									Mar-92	Apr-92	Apr-92	Jun-92		Aug-92	Aug-92	\$10,000,000
Total										\$1,420,000								\$100,900,000*

* Amount includes investments in CY92 & CY93, excludes Brazil's R&D fund and CY 91 pre-investment disbursements.

Denotes that activity has been completed as of this date.

Annex II

Summary of Progress, by Country

Argentina -

Argentina is a new addition to the Bank's CY 92 work program. Goals of the new CY 92/93 work program include: (i) agree with the government on a country work program, to include; (ii) completion of a baseline study; (iii) completion of a Country Program; and (iv) establishment of an Investment Fund for controlled substance Phaseout.

Brazil -

An Interministerial Technical Group has been formed and has committed to preparation of the CY 1992/3 Brazil Work Program. The National Bank for Economic and Social Development (BNDES) has been designated to handle any further on-lending activities. The Special Division of the Environment of the Ministry of External Relations will represent Brazil's interest in dealing with the MP Executive Committee and Secretariat. A Bank mission went to Brazil in early February 1992 to finalize an MP ODS Elimination Project for a \$16 million line of credit. Agreements will be reached on the basic structure of project components, institutional organization, and subproject processing arrangements.

Chile -

There has been some further slippage in the program for Chile. There are regular Bank-financed projects under preparation in Chile which could include an Interim Multilateral Fund-supported project for a controlled substance phase-out program. These include the Environmental Institutions Development Project, and the follow-on Environmental Management Investment Project. Revised plans now call for completing a draft Country Program in March 1992.

China -

A Country Program (CP) and pre-feasibility study, financed by UNDP, identified some specific short and medium-term phase out projects but not all the sub-sectors were fully covered. UNDP completed the second phase of the feasibility study in February 1992. The Bank is continuing its dialogue with appropriate Government authorities in China (with a mission in February 1992) on the details of a work program and budget for investment project preparation. The Bank is proceeding on the basis that the first \$15 million in anticipated MP investment project funding in China would be justifiable on the basis of reasonable progress being made towards the completion of a UNDP-supported Country Program plan.

Ecuador -

As a result of a joint Bank/USEPA mission in August, GOE agreed to establish the institutional and legal framework for implementation of the proposed Country Program. To determine the organizational structure of the implementing unit within the Ministry of Industry (MICIP) a Bank consultant carried out an institutional capacity analysis in October 1991. Simultaneously, proposed legal instruments (a presidential and a ministerial decree) are being drafted. These documents served to complete the CP document sent for review and clearance by government authorities in January 1992. It is expected that GOE would submit the CP to the Executive Committee in time for the February 28, 1992 meeting.

Egypt -

Following the last Executive Committee meeting, the Bank reviewed and revised the final draft of Egypt's Country Program and, following Bank approval of the resulting document, forwarded it to the GOE in early January 1992. It is anticipated that the GOE will submit this CP to the Secretariat for review by the EC at its February 1992 meeting. Specific demonstration projects were identified, including three activities on training, reduction of CFC-12 charge in domestic refrigerators by redesigning refrigerator condensers, and establishing recycling units to conserve CFC-11 and CFC-12 in refrigerators and air conditioners. The Bank has subsequently proposed that UNDP support the recycling/recovery demonstration and CFC substitution projects.

Iran -

The World Bank is presently discussing with the Iranian Finance Ministry the possibility of carrying out a Country Program on the phaseout of ozone depleting substances (ODS). These arrangements need to be coordinated with UNDP. Upon confirmation by Iran, and with appropriate collaboration with UNDP, a mission will be sent to Iran to carry out an ODS assessment, prepare the Country Program, and identify potential projects.

Jordan -

Prior plans for World Bank reconnaissance and identification missions to Jordan in September and November 1991, respectively, were merged into a single October mission, whose overall aim was to assist the Government formulate a Country Program and define project proposals. Previous expectations that the CP would be completed last November 1991 were not met and the present expectation is that it will be completed in February 1992.

Malaysia -

The Bank sent a mission in February 1992 to finalize preparation of projects for mobile air conditioning and halon recovery and recycling. Conclusions reached during this mission will be conveyed to the Montreal Protocol Executive Committee at its February 1992 meeting when it will consider Malaysia's proposed investment projects. A second Phase II set of project proposals are planned for presentation to the Executive Committee in May 1992.

Mexico -

The Country Program has been revised by SEDUE (in consultation with the Bank and USEPA) in accordance with the requirements set forth by the Executive Committee at its November 1991 meeting. It is anticipated that Mexico will submit the CP to the EC at its February meeting. The Mexican Government and the Bank have not, however, agreed on the strategy to implement the MP. The first MP project for Mexico (CFC-12 MAC recycling, elimination of CFC aerosol propellants and safety program), which was prepared by the Government with USEPA assistance, has been technically reviewed and appraised by the Bank, and approval by the Government is pending. The second IMFMP-assisted project in Mexico, of US \$ 4 million was approved by the Executive Committee subject to review of a more detailed description. The required additional descriptions will be presented to the EC at its next meeting in February 1992. These details were obtained from and agreed with SEDUE for presentation at that February 1992 meeting.

Nigeria -

Changes in the Bank's task management of the Nigeria work program are now complete and plans for a Technical Strategy Development Study, leading to a Country Program in Nigeria, are back on track. Preparation is planned during the period from March to June, 1992, to provide the required institutional background and sector foundation and to recommend institutional and technical strategies and investments for ODS reduction, substitution, and elimination. Plans have also been made to integrate these activities with on-going plans for an industrial training seminar in Nigeria to be sponsored by UNDP in early 1992, and a subsequent all-Africa MP workshop to be sponsored by UNEP in September 1992.

The Philippines -

Depending on the rate of Government implementation, pre-feasibility studies initiated in 1991 will result in investment projects being presented to the Executive Committee for approval at its first or second meeting in 1992. Feasibility studies are currently scheduled for completion by April, 1992. A joint UNDP/Bank mission to identify technical assistance needs consistent with proposed investments will be undertaken.

Thailand -

In January 1992, the Bank approved and transmitted to GOT for final signature, three feasibility studies, namely, (1) auto A/C CFC recycling, (2) solvent recycling, and (3) CFC substitution in solvent applications. As soon as the GOT approves, the project will be implemented. The Bank is continuing with preparation and resolution of an investment project, to incorporate results of the feasibility studies plus a line of credit totalling US \$10 million at present.

Trinidad & Tobago -

As a consequence of understanding reached in 1991, the Bank has ceased its programmed activities in Trinidad & Tobago and transferred responsibility for overall development of the program to UNDP.

Tunisia -

A mission is planned for February, 1992, to prepare a CP for Tunisia, including an action plan to implement the CP feasibility studies for projects recommended to assist the refrigeration, foam and aerosol sectors in the transition from CFCs to acceptable alternatives. The overall aim is to develop, in parallel, a Country Program and feasibility studies for refrigeration, foam and aerosol sector projects. These include the review of the possible use of new alternative refrigerant (HFC-134a) and a modified foam insulation system in the refrigeration industry, establishing a program in a major refrigerant service company to improve service procedures, train technicians to conserve CFC, demonstrating the use of CFC recovery/recycling machines, and demonstrating the use of non-CFC blowing agents in the manufacture of flexible foam.

Turkey -

The Government of Turkey has requested the World Bank to assist it in formulating a work program. It is agreed that UNDP will assume responsibility on all public awareness and non-project related training activities. A mission is planned for March, 1992, to discuss a Turkey Country Program draft which was prepared following the October 1991 mission.

Venezuela -

A mission is planned for February 1992, to finalize an MP ODS Elimination Project for a line of credit of \$10 million to be presented to the Executive Committee in April 1992.

Yugoslavia -

All work in Yugoslavia has been temporarily suspended pending return of political stability. Provisions are being made to resume work on the Country Program in the fourth quarter of 1992.

Annex III

MONTREAL PROTOCOL OZONE OPERATIONS RESOURCE GROUP

PROVISIONAL TERMS OF REFERENCE (TOR)

1. Purpose

The Ozone Operations Resource Group (OORG) has been assembled by the World Bank to provide specialized sector-based technical advice and assistance to the Bank, in fulfilling its role as one of the three principal implementing agencies (with UNDP and UNEP) of the Interim Multilateral Fund under the Montreal Protocol (IMFMP). Within the context of the Bank's assistance to the developing countries to prepare Country Programs and investment projects for the phase-out of ozone depleting substances (ODS), the OORG will help keep the Bank apprised of applicable sector-specific technological advances, commercially available ODS substitutes, the cost-effectiveness of the various sectoral options, and related developments.

2. Composition of OORG

OORG will be comprised of a core group of about six (6) internationally-recognized sector-based experts, at least one for each of the following principal ODS-using sectors: (1) Aerosols, (2) Mobile Air Conditioning (MACS), (3) Refrigeration, (4) Foams, (5) Solvents, and (6) Halons. It will reflect as broad a geographical representation as possible, but without prejudice to the high level of technical expertise required.

3. OORG Meetings

It is anticipated that the OORG will meet as a group two times each year to review with Bank staff, the Bank's work program, specific projects, planning and project implementation experience, and the emergent strategy for rapid cost-effective phase-out of ODS.. The dates and venue of each OORG meeting will be determined by the Bank's GEF Operations Coordinator, in consultation with the OORG core group members.

4. OORG Activities

In addition to its two annual meetings, the OORG will compile, maintain and update a roster of sector-specific experts from developing as well as developed countries. Individual members of the OORG will be expected to provide specific technical advice to the Bank, through direct interaction with the Bank's internal technical advisors, and including, in particular, the technical review of project proposals as external technical review participants in the Bank's Montreal Protocol Technical Review Panel process. Depending upon the need, individual members may also participate in Bank missions which might benefit from their technical expertise and contribution to assuring the highest possible quality in project design and implementation.

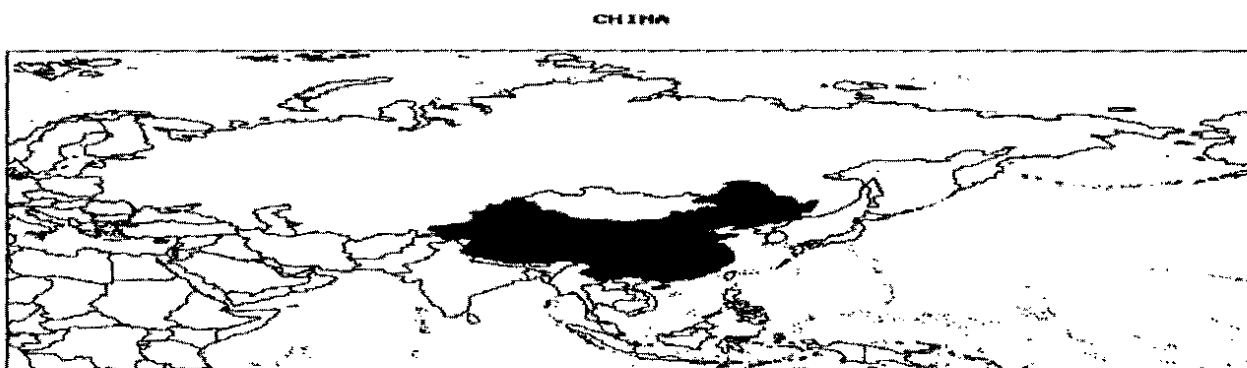
5. Language of Work

Meetings will be conducted in English. Documentation to be considered by the OORG shall be submitted in English.

6. Costs

The travel, subsistence and other related costs of all OORG members in connection with meetings of the OORG, participation in technical project reviews and/or missions, shall be incorporated in and borne by the Bank's Montreal Protocol work program.

Interim Multilateral Fund under the Montreal Protocol



China

**Ozone Depleting Substances (ODS)
Phase Out Project**

DRAFT EXECUTIVE PROJECT SUMMARY

CHINA - OZONE DEPLETING SUBSTANCES (ODS) PHASE OUT PROJECT

Grantee: Government of China

Cost: US\$14.3 million equivalent
(Excludes UNDP Demonstration and TA project)

Financing: US\$14.3 million (from the Ozone Trust Fund)
(Excludes UNDP Demonstration and TA project)

Appraisal Date: 04/00/92

Tentative Grant Approval Date: 05/00/92

Proposed Peer Reviewers: Messrs. King (ENVPR), Anderson (EA2EH)
Shum (EA2IE), S. Arif (EMTEN)

Technical Review Panel: Messrs./Mmes. Baratz (EMTEN), Davis (ASTEN)
Newcombe (CODGE); Outside Reviewer:

Background

1. China announced ratification of the Montreal Protocol (MP) in June, 1991; and is eligible for Ozone Trust Fund (OTF) financing. The MP is an international agreement to phase out substances that have been found to destroy the earth's ozone layer. The OTF has been created to provide technical and financial support to qualifying developing countries for the work required to complete their MP obligations. The OTF is managed by the Montreal Protocol Executive Committee (MPEC), and is being implemented by IBRD, UNDP and UNEP. Chinese agencies involved in ODS phase out are the National Environmental Protection Agency (NEPA) as managing agency and six technical ministries; all under coordination of the Ministry of Finance/State Planning Commission. UNDP, assisted by the Bank, is responsible for preparing the ODS Country Program (CP) and feasibility studies for the initial action plan of TA and phase out projects. A feasibility study (funded by UNDP and Finland) has been completed, with final report due by February 15, 1992. Preparation of the CP will start in March/April, 1992; funded from the OTF. The CP will include ODS phase out incremental cost and strategy and policies to achieve total ODS phase out, with emphasis on short/medium term action. The UNDP feasibility study included significant CP related work and NEPA/ministries have started some CP activities. USEPA is assisting in halons and refrigeration areas.

2. China is the developing world's largest ODS consumer and producer. In 1991, consumption was about 60,000 tons of ODS (in ODP units), with large uses as solvents (electronics/precision machines), aerosols, halons (fire protection), refrigerants (refrigeration /air conditioning), and blowing agents (foam products). The recent growth rate in ODS consumption is about 11% per year. NEPA stated that the Government has agreed to a 5 year program

to maintain ODS consumption in 1996 at 1991 level compared to an unconstrained growth to 100,000 tpy ODP for 1996. Phase out of 40,000 tpy in five years represents a substantial commitment, larger than any developing country has announced so far. Achieving this target will require the MP implementing agencies to undertake an innovative approach and rapid response to assist the Government in meeting this difficult goal. NEPA and the line ministries have initiated programs to start phase out, but efforts are severely hampered by lack of funds including foreign exchange, technology and access to the current worldwide efforts. Present consumption/production is spread over six main subsectors, 6 line ministries and about 2500 enterprises of different sizes and ownership in 8-10 provinces. NEPA is preparing a brief report on all initiatives currently underway in China to comply with ~~the~~ MP. The UNDP study will contain a brief overview of present (and expected) consumption patterns.

3. Discussions on project appraisal, financing, and implementation for the large number of relatively small and medium sized projects were held with MoF and NEPA. The proposed overall approach is to rely on a local financial intermediary to prepare subproject appraisals and handle subproject financing. While these arrangements will be patterned closely to similar Bank financed industrial environmental projects such as the Beijing Environmental Project, the terms and conditions of the OTF will require some changes and take some time to develop completely. In this first operation, an accelerated processing scheme, directly appraised by the Bank and UNDP, is proposed.

4. Industrial development in China is growing rapidly. Environmental concerns are increasing and substantial progress is being achieved in the regulatory framework and corrective action, including ODS phase out and to support environmental protection while pursuing sustainable industrial development. The Bank lending program includes several industrial and environmental operations over the next 3 years.

Suggested Action Plan

5. The approach discussed herein is designed to respond to the urgent need for a fast start on China's short term ODS phase out commitment and to prepare a comprehensive, cost effective program of projects and TA, consistent with the MP. The first operation - a TA program, a demonstration project and an investment project - to be developed and appraised jointly by the Bank and UNDP is proposed for immediate execution. The first investment project is the subject of this EPS. Following appraisal, the Bank and UNDP, respectively, will process the Demonstration and Investment Projects under their internal OTF procedures. The TA program will be processed by UNDP. CIB will assist the Bank in appraising the Investment Project and act as financial agent in handling subproject loans. The CP will be prepared in parallel to this first operation. A second operation, consisting of a second investment project and additional TA, will follow about one year later.

6. The UNDP feasibility report includes 44 projects totaling about \$50 million. While some projects will require more preparation, some are high priority and ready to proceed. Appraisal of these projects can proceed now, either on a demonstration or investment basis. The projects have been grouped into three categories - Demonstration Project, First Investment Project (these two lists contain the high priority projects) and Second Investment Project,

as shown in Annexes 2, 3, & 4. Demonstration subprojects will typically a) be under \$500,000, b) need commercial and technical viability to be demonstrated, c) represent technology development needs and (d) do not warrant financial intermediation. Investment subprojects will typically be over \$500,000, with well established technical and commercial viability and will be handled through CIB as financing agent. The categorization of subprojects as demonstration, or investment are subject to confirmation or amendment at the time of appraisal.

7. It is proposed that incremental costs of all demonstration subprojects be funded as a grant to the Government and passed to the enterprises/institutions also on a grant basis. In this First Investment Project, it is proposed that subproject incremental costs be given ~~to the~~ Government as grants but passed on to the enterprises partly as grants and partly as commercial loans; with the ratio between grant and loan determined by the subproject's financial rate of return. (Thus, incremental costs for demonstration subprojects will not take net benefits into consideration for purposes of determining total OTF grant financing amount nor subproject financing terms and conditions. For investment subprojects, net incremental costs/benefits will be taken into consideration in regard to setting enterprise financing terms and conditions, but not for determining the amount of the OTF grant to the Government.)

8. In parallel with the above, the Bank will undertake the preparation work for the Second Investment Project, based on Annex 4. This second project will propose more comprehensive financing arrangements and will use CIB as a full financial intermediary in project appraisal, financing and implementation. The draft CP will be available before appraisal of the second project and will be used to determine the total ODS phase out costs for which China is eligible and the recommended treatment for incremental costs.

Project Objectives

9. The Project objectives are to: (a) support the Government's short term action to reduce ODS consumption; (b) establish project implementation mechanism primarily through local institutions; (c) implement cost effective, priority subprojects; and (d) develop effective coordination between NEPA, UNDP and the Bank including integrating the overall investment program with TA and policy, strategy and action plans that are to be developed through the CP.

Project Description and Costs

10. The First Investment Project will support priority subprojects in non-ODS technology in aerosols, foam, refrigeration, and halon uses, as listed in Annex 2. All investment subprojects will be based on commercially proven technology already available outside China and include appropriate technology transfer arrangements. The TA being developed by UNDP will provide support to enterprises in subproject preparation and implementation, and will promote technology transfer. The subprojects will be fully described in the UNDP Report. The investment subprojects are consistent with the expected goals of the CP and with China's environmental and development strategy.

11. Preliminary estimates of project costs, corresponding to incremental capital costs required by the enterprise to implement the projects, are given below, as defined in the UNDP Feasibility Report. In most cases, these

incremental costs were defined as the foreign exchange requirements of the subprojects. Most enterprises did not include local costs (about 10-20% of the costs shown below) in their incremental cost calculations. Full subproject costs, including foreign exchange and local costs will be confirmed during appraisal. The costs shown below have not been adjusted to reflect net costs/benefits as suggested by the MPEC (see Annex 5) guidelines (but this calculation will be done at appraisal). The UNDP consultants and NEPA interpreted the MPEC guidelines as corresponding to the direct capital costs excluding any net operating benefits of the subprojects. The Bank's interpretation of these guidelines is that they intend for net operating benefits to be included in determining the amount of the eligible OTF grant and the subproject financing terms.

<u>Investment Subprojects</u>	<u>Incremental Costs</u> <u>US\$ million</u>
Subprojects in consuming sectors:	
Halons, 2 subprojects	1.2
Aerosols, 2 subprojects	6.8
Foams, 2 subprojects	4.6
Refrigeration, 1 subproject	<u>1.7</u>
Total, Investment subprojects	14.3

Project Financing

12. Project financing is proposed as an OTF Grant of US\$14.3 million to the Government of China to cover 100% of the incremental costs without taking net benefits into consideration. In all subprojects in this first investment project, incremental costs will be defined as equal to or larger than foreign exchange costs. Participating enterprises will receive funds partly as grants and partly as commercial loans from CIB; with the ratio determined from the expected financial rates of return of the respective subprojects (as determined in the appraisal report). (CIB will receive an appropriate fee for its services as an agent.) ODS users are not familiar with the technology and do not see any benefit from phasing out ODS. They need some financial incentive to start phase out projects quickly, including availability of all incremental and foreign exchange costs required. Providing a portion of total incremental costs to enterprises as a grant should lower the cost of capital to provide sufficient incentives to initiate action. The CP and the Second Investment Project will include a more systematic and efficient policy and incentive package for subsequent projects and financing terms that are fully consistent with MPEC guidelines. In this project, about 40% of the OTF resources are estimated as grants to enterprises and 60% as loans under standard CIB terms. The 40% figure is an estimate of the net incremental costs of the subprojects in the Investment Project. The financing plan of each subproject including enterprise contribution, any local financing, and the split between the grant and loan portion will be confirmed at appraisal.

Project Implementation

13. NEPA will be the Managing Agency and will coordinate the overall ODS phaseout program, including the TA program. Each enterprise will prepare a detailed project preinvestment report (including the information listed in the attached eligibility/appraisal criteria annex), assisted by NEPA, line ministry, design institutes and resources from the TA program. The Bank will

undertake Investment Project appraisal (jointly with UNDP's Demonstration Project appraisal), using support of CIB. Institutional arrangements, including role of NEPA, MoF, CIB (central and local level), ministries and provincial agencies, and enterprise will be completed under appraisal. Analysis of each subproject will include cost effectiveness, ODS removed, project implementation/management, financial and economic rates of return and enterprise financial and economic viability. The Bank would be responsible for obtaining approval of the proposed Investment Project from the MPEC.

Procurement and Disbursement

14. The Bank will supervise the Investment Project, including all subproject appraisals. NEPA will prepare periodic supervision reports. Audit reports on the use of the OTF will be prepared according to standard OTF requirements. (UNDP would be responsible for supervising the Demonstration Project, the TA component and managing the ongoing work on the CP.) Procurement for the Investment Project will follow procedures consistent with the Bank's Trustee obligations under the MP. These arrangements will be established during appraisal. Project funds are expected to be fully disbursed by the end of 3 years. A detailed disbursement schedule will be prepared during appraisal. (UNDP will handle procurement and disbursement under the Demonstration Project according to UNDP procedures.)

Environmental Considerations

15. This first operation will provide support to China's program to reduce ODS consumption in the country from an estimated 60,000 tpy forecast for 1996 to 40,000 tpy in 1996. NEPA will be responsible for preparing EIA's for any subproject that includes significant modernization and/or expansion. EIA's will be prepared by the enterprises according to local regulations and reviewed by the Bank during appraisal.

Project Sustainability and Risks

16. The full program, consisting of TA, demonstration and investment projects, and the CP and its action plan is considered sustainable. To the extent there is concern in proceeding with the first operation before the CP is completed, the first operation is being limited to high priority actions where there is full agreement that they are consistent with China's short term phase out program and do not need immediate policy action.

17. Risks are considered reasonable. Subprojects are all based on technology commercially proven outside China and there is substantial amounts of technical support being provided herein and in UNDP's TA program. Risks will be further minimized by cooperation between UNDP, the Bank and NEPA. Many subprojects in foam, solvent, aerosol and a few halon and refrigeration applications are expected to be financially attractive and will require little or no grant financing to the enterprise, once technology is demonstrated. Thus, demonstration projects will be minimized in future operations.

Lessons from Previous Bank Experience

18. Projects utilizing OTF resources are being developed simultaneously in Mexico, Thailand, Egypt and other countries. A small pilot project has been approved in Mexico, and Engineering Projects have been approved in Thailand

and Philippines. Policies concerning the overall approach and methodology of the ODS phase out program in developing countries are being prepared under the direction of the Bank's Environmental Department and the GEF/MP Coordinator. No related previous projects have been completed.

Project Benefits and Rationale for Use of Ozone Trust Fund

19. The Project, including use of OTF grant resources, will help the Government begin its implementation of an accelerated ODS phase out program - reducing 1996 ODP consumption by about 40% of its unconstrained expected consumption. The Investment Project itself will correspond to 18500 tons/year of ODP reduction at full operation, or 45% of China's 1996 ODP phase out goal. TA support (through UNDP) for training and institutional strengthening will support the operation. The Project is part of the policy dialogue with the Government on development of the CP on ODS phase out.

Issues and Actions

20. There are several issues that need to be addressed in the first Investment Project and the parallel TA and Demonstration Project by UNDP:

- a) The CP is being prepared in parallel with the Investment Projects. The draft CP, based in part on the UNDP feasibility work should be available by September, 1992. During appraisal, we will seek agreement with the Government to complete the draft CP and its action plan by September 30, 1992, with a commitment to an early phase out date with appropriate policies to achieve that target in a cost effective way.
- b) Agreement on nature of incremental costs for purposes of determining the OTF grant to China and setting financing terms and conditions to enterprises and the need to supply all foreign exchange if foreign exchange costs exceed the definition of incremental costs.

Project Review and Next Steps

21. The following steps are suggested for processing the Project;

- a) The Bank and UNDP to agree on work program and responsibilities;
- b) UNDP consultants to issue feasibility report;
- c) The EPS to be submitted to the MP Executive Committee for authorization the appraisal to proceed.
- (d) Outside Technical Review to be completed after the UNDP Feasibility Report is issued.

22. Project appraisal will proceed following MPEC approval.

PROJECT ELIGIBILITY AND APPRAISAL CRITERIA

CHINA - OZONE DEPLETING SUBSTANCES (ODS) PHASE OUT PROJECT

Eligibility

1. Projects should be on priority list as given in the CP or confirmed by NEPA as essential to achieve CP objectives.
2. Projects should have direct result of reduction in consumption of ODS in China.
3. Projects should be cost effective and based on environmentally sound technologies or substitutes for the substances restricted by the MP, or recycling of controlled substance or substitutes, taking into account the national industrial policy of the China.
4. Projects with the most cost effective technology and with the highest reduction of ODS in the shortest period of time should receive priority.

Appraisal

5. Project scope - Including full description, technology, source of supply; divided into (a) incremental component relating to ODS phase out and (b) other components.
6. Quantity and schedule of ODS phase out attributed to project.
7. Project Investment and Operating Costs, divided in two ways:
 - (a) components relating to incremental cost of ODS phase out and (b) other components;
 - (b) (i) foreign costs and (ii) local costs.
8. Financial analysis including FRR, ERR and cash flow of enterprises (ability of enterprise to repay loan). Analysis of proposed investment to determine cost effectiveness compared to any other available technology.
9. Project implementation and institutional arrangements, including finance, project approval, management, procurement, implementation, operation, marketing program and schedule of all implementation steps.

Financing Arrangements

10. Financing For Demonstration Project - Financing proposed, divided into (a) incremental costs of ODS phase out to be financed as grant to the enterprise from the OTF; and (b) other costs to be provided by the enterprise.
11. Financing For Investment Project - Financing proposed, divided into (a) incremental costs of ODS phase out to be financed as grant to the enterprise from OTF, (b) amount to be financed from OTF Loan Funds (minimum of direct foreign exchange costs minus the grant component); c) amount to be financed from other loan sources; and (d) amount to be provided by the Enterprise; including terms and conditions of all financing.

1991 UNDP CHINA OZONE PROTECTION MISSION
LIST OF PROJECTS FOR APPLICATION TO MULTILATERAL FUND

INVESTMENT PROJECT¹

<u>Name</u>	<u>Cost</u>	<u>Annual ODS Reduction</u>
Industry: Aerosol- Foams and Hair Sprays Name: Shanghai and Tianjin CFC Conversion to LPG	US\$6,800,000	13,000 T CFC-12
Industry: Foam - Polyurethane Insulation Name: Adoption of 50% Reduced CFC Formulation ²	US\$3,638,000	2,200 T CFC-11
Industry: Foam - Polystyrene and Polyethylene Packaging Name: Zhejiang CFC Conversion to Butane	US\$ 960,000	400 T CFC-12
Industry: Halon - 1211 Production Name: Beijing Production of ABC Powder	US\$ 470,000	500 T Halon 1211
Industry: Halon-1211 Extinguisher Name: Zhejiang Conversion to ABC and AFT Powder Type:	US\$ 720,000	400 T Halon 1211
Industry: R & A/C Compressors Name: Nanjing CFC Conversion to HCFC22 Conversion	US\$1,750,000	200 T CFC-12

Total US\$14,338,000

¹/Subject to appraisal; confirmation on cost and ods reduction effectiveness

²/TA Component integral part of project

1991 UNDP CHINA OZONE PROTECTION MISSION
LIST OF PROJECTS FOR APPLICATION TO MULTILATERAL FUND

DEMONSTRATION PROJECT¹

<u>Name</u>	<u>Cost</u>	<u>ODS Reduction</u>
Industry: Halon 1211-Fire Extinguishers Name: Tianjin Halon Alt System Development	US\$ 470,000	
Industry: Foam-Polyurethane Insulation Name: TA support for Adoption of 50% Reduced CFC Formulation ²	US\$ 480,000	
Industry: Electronics and Metal Cleaning - Picture Tube Name: Dalian Conversion to Aqueous Cleaning	US\$ 450,000	80T CFC-113
Industry: Electronics and Metal Cleaning - Tuner Name: Dandong Conversion to Aqueous Cleaning	US\$ 470,000	20T CFC - 113
Industry: CFC-11/12 Production Type: TA Support for Guangdong (Guayong) Import Substitute Samples	US\$ 200,000	no direct reduction
Industry: Aerosol - Foams and Hair Sprays Name: Guangzhou CFC Conversion to LPG	US\$ 100,000	No direct reduction
Industry: Foam - Polyurethane Pipe Insulation Name: Shanghai CFC Conversion to CO ₂	US\$ 500,000	200T CFC-11
Industry: Halon - 1211 Production Name: Foshan Emission Reduction	US\$ 200,000	15T Halon 1211

¹/Subject to appraisal; confirmation on cost and ODS reduction effectiveness

²/ critical component of investment project

Industry: Halon - 1211 Fire Extinguisher Name: Guangzhou Production Emission Reduction	US\$ 460,000	15T Halon 1211
Industry: Halon 1211 & 1301 Fixed Systems Name: Guangzhou Improved Detection to Reduce False Release	US\$ 450,000	4T Halon 1211 & 18 T Halon 1301
Industry: Electronics and Metal Cleaning Name: TA Support for China Design Institute Evaluation of non-ODS Options	US\$ 200,000	No direct reduction
Industry: General Name: Beijing (NEPA) Ozone Protection Clearing House	US\$ 490,000	
Industry: General Name: Beijing (NEPA) International Study Tours	US\$ 291,000	
Industry: General Name: Beijing (NEPA) ODS/Ozone Problem Education Campaign	US\$ 100,000	
Industry: A/C Household Refrigerator Name: TA Support for Beijing Technical Support Center	US\$ 485,000	

Total

US\$ 4,876,000

1991 UNDP CHINA OZONE PROTECTION MISSION
LIST OF PROJECTS FOR APPLICATION TO MULTILATERAL FUND

2ND INVESTMENT PROJECT¹

<u>Name</u>	<u>Cost</u>	<u>Annual ODS Reduction</u>
Industry: Foam-Polyurethane Flexible Cushion Name: Tianjin CFC Elimination	US\$ 200,000	18 T CFC-11
Industry: Halon-1211 Fire Extinguisher Name: Shanghai Improved Pressure Gages to Reduce Leakage	US\$ 810,000	5 T Halon 1211
Industry: R & A/C-Mobile Air Conditioning Name: Shanghai CFC Conversion to 134a Compressors and Heat Exchangers (2 parts)	US\$1,941,000	350 T CFC-12
Industry: R & A/C Household Refrigerators Name: Conversion to 152a	US\$ 900,000	165 T CFC-12
Industry: R/A/C Household Name: Shanghai CFC Conversion to 134a (Compressor and Refrigerator)	US\$1,400,000	45T CFC-12
Industry: Electronics and Metal Cleaning - Radio Instrument Name: Chendu Conversion to non-clean process	US\$ 420,000	2 T CFC-113
Industry: Electronics and Metal Cleaning - Equipment Production Name: Taiyuan and Tianjin Conversion to non-ODS Cleaning Equipment	US\$2,200,000	no direct reduction
Industry: CFC-12 Production Name: Shanghai CFC Conversion to HCFC-22	US\$9,150,000	5,350 T CFC-12
Industry: Refrigeration and Air Conditioning Name: Beijing and Area #2 Recycling Project	US\$ 750,000	To be determined
Industry: Electronics and Metal Cleaning computer equipment Name: Nanjing Conversion to Aqueous	US\$ 430,000	3T CFC-113

¹/Subject to appraisal; confirmation of cost and ods reduction effectiveness.

Industry: R/A/C Household Name: Beijing (BHEAR) Development of Standards	US\$ 315,000	No direct Reduction
Industry: R& A/C Recycling Equipment Production Name: Qingdao (Qindachaler) Production of Recycling Equipment	US\$ 800,000	To be determined
Industry: Halon-Recycling Equipment Production Name: Tianjin Production of Recycling Equipment	US\$2,390,000	100 T Halon 1211
Industry: Halon-Fire Protection Name: Tianjin Halon Destruction Equipment Development	US\$ 500,000	5,000-10,000 T Halon 1211/1301 (potential)
Industry: Halon-Fire Extinguishers Name: Shanghai: Halon Substitutes Testing	US\$ 250,000	100 T Halon 1211 (potential)
Industry: R& A/C Compressors Name: Luoyang Small Scale Ammonia Compressor Development	US\$3,000,000	2,000 T CFC-12 (potential)
Industry: CFC-11/12 Production Name: Shanghai and Zhejiang 152a/134a Process Development Project Type: Development/Pilot Demonstration	US\$3,300,000	200 T CFC-12
Industry: CFC-11/12 Production Name: Shanghai 141b/142 Process Development	US\$ 450,000	89T CFC-11/12
Industry: CFC-11/12 Production Name: Zhejiang 123/124/125 Process Development	US\$ 870,000	98T CFC-11/12
Industry: R & A/C Lubricant Production Name: Xi'an 134/Lubricants Process Development	US\$ 16,000	No direct reduction
Industry: Electronics and Metal Cleaning Name: Taiyuan and Tianjin Technical Support Centers	US\$1,250,000	
Industry: R&A/C (Excluding household) Name: Beijing (MLI & MMEI) Dev. of Standards for Substitutes	US\$ 150,000	
Industry: Halon-Fire Protection Name: Tianjin Identification of Essential Uses	US\$ 400,000	

Industry: Halon Fire Protection Name: Beijing (MPS) Education Campaign, Training and Development of Standards and Specifications for Alternatives/Substitutes	US\$1,200,000	
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Total: US\$33,092,000