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Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

Twelfth Meeting
Montreal, 28-30 March 1994

1994 UNIDO WORK PROGRAMME

This document includes:

- Comments and recommendations of the Fund Secretariat
- 1994 UNIDO Work Programme

COMMENTS AND RECOMMENDATIONS OF THE FUND SECRETARIAT

COMMENTS

1. UNIDO's 1994 work programme contains information about activities planned for 1993 and a request for their funding.
2. The work programme contains a comprehensive strategy for ODS phase-out consistent with the Three-Year Plan and Budget with ODS phase-out targets by sector and sub-sector, in some cases, potential projects identified. UNIDO anticipates its work programme and investment pipeline project requirements during 1994 will approach US \$11 million.
3. The work programme also indicates when both work programme and project funds would need to be disbursed from the Treasurer to UNIDO under a promissory note system.

Requested level of funding for 1994 work programme activities

4. The UNIDO work programme contains a detailed description of projects costing below US \$500,000 along with a detailed cost summary which presents, where appropriate, equipment, personnel, travel, and consultant costs for each project.
5. Through its work programme, UNIDO is seeking the Executive Committee's approval for the following expenditures:

Project preparation (Algeria and Argentina)	US\$ 200,000
Methyl bromide workshop	US\$ 120,000
Sectoral strategy for Pakistan in refrigeration	US\$ 50,000
Country programme assistance to UNEP	US\$ 156,000
Institutional strengthening (Romania)	US\$ 272,000
Support costs	<u>US\$ 103,740</u>
Total request	US\$ 901,740

Project preparation

6. Project preparation expenditures are used solely for the preparation of projects for submission to the Executive Committee. Project preparation activities in Algeria are requested for the preparation of projects for three companies in the refrigeration sector and one company in the aerosols/solvents sector. Project preparation was also requested for Argentina.

Methyl bromide workshop

7. The Fourth Meeting of the Parties requested the Scientific Assessment Panel and the Technology and Economic Assessment Panel to submit a combined report on methyl bromide, by 30 November 1994 at the latest, to the Seventh Meeting of the Parties provided inter alia, abundance of methyl bromide in the atmosphere; methodologies to control emissions; and the availability of substitutes, their incremental costs, and the technological and economic feasibility of substitution for various uses. Considering that this report is due to be submitted for the consideration of the Open-ended Working Group of the Parties, only by the end of 1994, we suggest that this activity should be postponed pending the outcome of the meeting of the Open-ended Working Group.

Sectoral strategy for Pakistan in refrigeration

8. Due to the level of ODS in this sector, the request for the development of a refrigeration sector strategy for Pakistan should be approved.

Country programme assistance to UNEP

9. The project, Joint Action with UNEP in Country Programming Exercises, will in effect increase the costs of country programme preparation in these countries by 30 per cent. Since several small countries are included in the project and several are in the same region, the number of missions can likely be reduced. The need for coordination with UNEP in organizing missions to so many countries is great and the ability to coordinate schedules may lead to delays in the completion of the country programme. For these reasons, it was agreed with UNIDO that funds should be reduced to the level of US \$75,000 at this time, with additional funds requested if the results from the initial activities in this joint venture prove fruitful.

Institutional strengthening (Romania)

10. Since no response was received for the Secretariat's comments on this activity, the Secretariat cannot recommend approval for this activity at this time.

RECOMMENDATIONS

11. The Secretariat does not recommend approval for the institutional strengthening in Romania until it receives additional information. It is also recommended that the workshop on methyl bromide should be deferred until the results of the Scientific Assessment Panel and the Technology and Economic Assessment Panel's report are completed.

12. The Secretariat recommends that the Executive Committee fund the following work programme activities as listed below and direct the Treasurer to transfer funds accordingly:

Project preparation (Algeria and Argentina)	US\$ 200,000
Sectoral strategy for Pakistan in refrigeration	US\$ 50,000
Country programme assistance to UNEP	US\$ 75,000
Support costs	<u>US\$ 42,000</u>
Recommended funding level	US\$ 367,000



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

Twelfth Meeting
Montreal, 28 - 30 March 1994

**THE 1994 WORK PROGRAMME
OF THE
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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UNIDO WORK PROGRAMME FOR 1994

I. INTRODUCTION

This annual work programme for the year 1994 for assisting eligible developing countries in reducing and phasing out the production and consumption of ozone depleting substances (ODSs) has been prepared for consideration by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol (MFMP) at its 12th Meeting scheduled for 28 - 30 March 1994 in Montreal. It is meant as a planning tool for

- providing some indication of where the UNIDO programme is moving in 1994;
- establishing a resource requirement estimate for implementing such a programme. This will assist the Fund Secretariat and the Executive Committee in arriving at the total resource requirement for the entire ozone operation in 1994 and also hopefully in setting up an encashment schedule for the promissory notes to be introduced in 1994.

Section II examines the main features of the 1994 Work Programme where the major lines of activities are analysed in terms of their orientation and rationale. Much of this analysis is based on:

- UNIDO's own perception of its technical and substantive contributions to the global ozone phase-out operations;
- UNIDO's current project pipeline development; and
- the need to consolidate the programme inside UNIDO.

Section III presents those investment projects which will materialize in 1994. A list of pipeline projects gives information on country, sector, project title, 1994 phasing, 1995 phasing, total budget and stage of readiness. Under 1994 phasing, an additional item Time of Funds Required is provided to show the cash requirement of each project on a six-month basis. This is intended to assist the Executive Committee to establish the encashment schedule for the promissory notes to be introduced in 1994.

In Section IV, the last section, project proposals each with a budget below \$500,000, are presented with a consolidated **budget summary** and a brief project document providing the details.

In addition, two annexes are appended to the Work Programme. Annex (i) is a sector-by-sector analysis of the activities in 1994, showing areas of concentration and countries to be covered. Some of the activities may not show up as new project proposals. However, they represent on-going work already started in 1993. Cases like this include work on the strategy for ODS phase-out in low-consuming countries and in the informal sector and also pilot work on retrofitting of chillers in Kenya.

In each sectoral analysis, cross-reference is made to the Proposed three-year Plan and Budget of UNIDO (1994-96) (for details, see Annex ii for related Excerpts) in particular to the 1994 estimates in that document. A comparison is made between the estimate made then and the current estimate and comments are given to explain the consistency or otherwise. This is intended to put this annual work programme in the medium-term planning time-frame of the Fund. However, no attempt is made to re-adjust the UNIDO three-year plan and budget (1994-1996) since that itself was an estimate prepared in 1993 with the understanding that it would be adjusted with the annual budget preparation and plus the realignment of that 3-year plan would require more time than available for this exercise.

At the end of each sectoral analysis, an indication is made of the coordination to be undertaken with other implementing agencies in carrying out such activities.

Annex ii is excerpts from the Proposed 3-year Plan and Budget of UNIDO (1994 - 1996).

Since this annual work programme has been prepared at the beginning of the year, the information contained in it is up-to-date till that moment. With the developments during the year, changes will be necessary and will be incorporated as amendments to this document.

II. MAIN FEATURES OF 1994 WORK PROGRAMME OF UNIDO

Building upon the momentum of 1993, the UNIDO Work Programme for 1994 will bear the following features:

1. UNIDO will continue concentrating on formulating and implementing investment projects to convert plants from CFC-based to non-CFC based production, in particular, in the refrigeration and foam sectors. This can be attributed to -
 - the field experience UNIDO has acquired at the plant level conversion in these two sectors in 1993;
 - high concentration on these two sectors in 1994 shown in the current project pipeline;
 - the fact that these two sectors have been big users of CFCs and, therefore, have become easily very high on national priorities as phase-out targets.

Important distinctions of UNIDO's operation in 1994 from its 1993 operations in investment project formulation and implementation is that those two sectors will be

- An even closer watch over the development of technologies, especially in such options like HCFCs versus ODP-free options like cyclo pentane and their cost implications;
 - A closer examination of their applicability and functionability in various developing countries' environment;
 - Drafting of some guidelines on the choice of technology in different operation environments for its field operations. This will be summarized in the form of a working paper to be shared with all Agencies and the Fund Secretariat.
2. UNIDO expects to be a major contributor to phase-out ODS in the small industries sector and low ODS-consuming countries. The small-industries sector and the low-consuming countries seem to be two different issues. However, according to the initial investigation of UNIDO, the users in the low-consuming countries comprise largely small and dispersed operators, mostly employed in the servicing sector. This bears a lot of resemblance to the small operators in the large-consuming countries in terms of behaviour. The key to a successful CFC-phase-out in these countries and sectors is to
 - set up a good economic incentive package to induce these small operators to co-operate,;
 - reduce the cost of the operation to an acceptable level by such means as packaging the services, bulking the purchases and so on;
 - attend to operational details to have an effective operation, things like training conducted in the local language.

UNIDO will, during 1994, work closely with UNEP and the U.S./EPA to prepare a draft strategy and then test it out in a few countries before implementing it across the board.

3. Plant level Training:

Training, in particular training of technicians, will be crucial to the success of the phase-out operation at the workshop level and servicing stations. In UNIDO's experience in running group training programmes world wide in developed and developing countries in various industrial sectors, the most effective approach is **hands-on training**, and the most cost-effective manner is through **Training of the Trainers**. This experience will also be applied to UNIDO's training programme conducted under the Montreal Protocol.

The training programme will consist mainly of

- investment project-related training on, among other things, :
 - management and production control;
 - quality control in relation to conversion;
 - operation of the new machinery and equipment;
 - maintenance of the new machinery and equipment;
 - refrigeration laboratory tests
 - new technologies for foam and refrigerant;
 - specifications for material;
 - safety regulations for flammable/explosive chemicals
- training of technicians in CFC recovery and recycling in servicing stations.

This will be done in relation to the phase-out of CFCs in low-consuming countries, first on a trial basis in a few countries and then hopefully in all these countries.

4. Internal Programme Consolidation:

If 1993 was a year of programme development for UNIDO, 1994 is going to be characterized by programme consolidation. This will be done in the following areas:

- Adjust and streamline further UNIDO's internal operating procedures to facilitate the implementation of Montreal Protocol related activities;
- Strengthen UNIDO field staff on Montreal Protocol-related activities through in-house training seminars and increasing the number of field staff working on these activities;
- Set up the programme management system and exercise close monitoring over implementation;
- This will be done in close co-ordination with the Fund Secretariat and other Implementation Agencies to achieve maximum uniformity;
- Expand the external expertise and supplier sourcing network;
- Recruit the needed expertise to strengthen the substantive capacity of related Branches in UNIDO.

III. PIPELINE INVESTMENT PROJECTS

As a result of the work of UNIDO in the year 1993 in project formulation, a series of investment projects will materialize in 1994. 6 domestic refrigeration projects, 3 from Egypt and 3 from Jordan and one solvent project from India are being submitted to this session of the Executive Committee for approval. The others are in various stages of readiness. Some have completed field work and are being reviewed internally and externally and will be submitted at the next Committee Meeting in June/July. For others, UNIDO staff and consultants are still completing their field work.

The following list of pipeline projects presents information on country, sector, project title, 1994 phasing, 1995 phasing total budget and stage of readiness.

Under the 1994 phasing, an additional item Time of Funds Required is intended to give the cash requirement schedule of each project on a six-month basis. The schedule is arrived at by

- estimating the time when the project will be approved;
- the duration between the time of approval and the end of 1994;
- the activities implementable in this duration.

¹Stage:

S = submitted to the 12th session of the Executive Committee, 28 - 30 March 1994

TR = Technical review both by UNIDO internal experts and external experts to be completed. That means field work completed and draft project document prepared

F = Field work to be completed by UNIDO staff and consultant

Section III. List of Pipeline Projects

Sector/Country	1 sta- ge See up	Project Title	ODS	1994 Allocations in US \$'000 ----- Time of Funds Required		1995 Allocati ons \$ '000	TOTAL \$ '000
				Jan- June	July- Dec.		
				Refrigeration			
Egypt	S	Investment project for phasing out ODS at Kiriazi Refrigeration Manufacturing Co.	90 ton CFC-11 30 ton CFC-12	2,000		1,334	3,334
Egypt	S	Investment project for phasing out ODS at Delta Industrial Co.	40 ton CFC-11 50 ton CFC-12	3,000		1,478	4,478
Egypt	S	Investment project for phasing out ODS at Electrostara for Refrigeration Co.	30 ton CFC-11 14 ton CFC-12	2,000		173	2,173
Jordan	S	Conversion of domestic refrigeration production facilities to HFC-134a and HFC-141b at HAWC	12 ton CFC-11 4 ton CFC-12	300		235	535

Sector/Country Refrigeration (cont'd...)	¹ See up	Project Title	ODS	Jan- June	July - Dec	1995 alloca- tions \$ '000	TOTAL \$ '000
Jordan	S	Conversion of domestic refrigeration production facilities to HCFC-134a and HCFC-141b at NRC	7 ton CFC-11 3 ton CFC-12	300		302	602
Jordan	S	Conversion of domestic refrigeration production facilities to HFC-134a and HCFC-141b at MEE	15 ton CFC-11 6 ton CFC-12	300		248	548
Syria	TR	Phase out of CFC at Al-Hafez Refrigeration Factory	7 ton CFC-11 14 ton CFC-12	300		300	600
Syria	TR	Phase out of CFC at Barada	7 ton CFC-11 20 ton CFC-12	400		400	800
Brazil	TR	Investment project for phasing out CFC in Metalfrío Commercial Refrigerators	205 metric tons	3,000		800	3,800
China	F	Conversion of production facilities at Jiaxipera	263 metric tons	2,000		1,800	3,800
Cameroon	F	Phase out of CFCs at the household and air-conditioner manufacturing company (FAHM) in Douala	54 metric tons	1,000		1,000	2,000
Sub-totals in Refrigeration Sector				14,600		8,070	2,670
FOAMS							
Argentina	F	Investment project at Celpack Co.	144 tons	450		500	950
Argentina	F	Investment project at Bandox Co.	360 tons	440		500	940
Sub-totals in Foams Foams Sector				890		1,000	1,890

Sector/ Country	see up	Project Title	ODS	Jan- June	July- Dec.	1995 Allocat- ions \$ '000	TOTAL \$ '000
Halons (also sub- totals China		Nanjing Fire Fighting Apparatus Factory (Halons)	150 metric tons	300		300	600
Solvents							
China	F	Tobacco Expansion			350	350	700
India	TR	ITI Manikapur Elimination of ODS solvents		450		590	1,040
Sub-total in Solvents Sector				450	350	940	1,740
G R A N D T O T A L				16,240	350	10,310	26,900

IV. PROJECT PROPOSALS WITH A BUDGET OF LESS THAN \$500,000

Since the conclusion of the 11th Session of the Executive Committee, new requests for UNIDO assistance have been received from a few Article 5 countries. These requests are presented in a consolidated Budget Summary and the details of each of them in the form of simplified project documents.

There have been indications of other Article 5 countries for UNIDO's involvement in their CFC-phase out operations. Since by the time when this Work Programme is prepared, no official request has reached UNIDO from these countries. They are not included here. However, they may be submitted later this year as Amendments to UNIDO's Work Programme.

Project proposals with Budgets less than \$500,000
BUDGET SUMMARY

No	Country	Sector	Project Title	US \$
1.	Algeria	Refriger- ation	(a) Preparation of the investment project proposal for the phase-out of CFC-11 and CFC-12 in the manufacture of domestic refrigerators and freezers in three plants belonging to the same Organization	25,000
2.	Algeria	Aerosols and solvents	(b) Preparation of the investment proposal for the phase-out of CFC-12 and CFC-14 in the manufacture of aerosols and of the solvents CFC-113 in the manufacture of razor blades	25,000
3.	Argentina	Foams/ Refriger- ation	Preparation of investment projects on ODS phase out in the sector of refrigerators and foams	150,000
4.	(Regional) Asia	Methyl Bromide	Workshop for Regional Approach for the Time Bound Reduction/Elimination of Methyl Bromide	120,000
5.	Pakistan	Refriger- ation	Strategy for the Phase-out of ODSS in the Refrigeration Industry	50,000
6.	Romania	not applicable	Strengthen the Coordination Unit in the Ministry of Waters, Forests and Environment Protection (MWFEP) for the implementation of the Montreal Protocol activities	272,000
7.	13 countries	Several	Joint action with UNEP in country programming exercises in the above-cited countries with special emphasis on industrial actions to be taken for CFC phase-out	156,000
			Total (excluding support cost)	798,000
			13% support costs	103,740
			GRAND TOTAL	901,740

PROJECT OUTLINE

COUNTRY : DEMOCRATIC PEOPLE'S REPUBLIC OF ALGERIA

SECTOR COVERED : Refrigeration

PROJECT TITLE : Preparation of the investment project proposal for the phase-out of CFC-11 and CFC-12 in the manufacture of domestic refrigerators and freezers in three plants belonging to the same Organization

PROPOSED BUDGET : US \$ 25,000 (excluding support costs)

IMPLEMENTING AGENCY : UNIDO

NATIONAL COORDINATING AGENCY : Ministry for Universities and Scientific Research,
Direction of Environment

PROJECT DESCRIPTION

The implementing agency has received an official request from the government of the Republic of Algeria for the preparation of investment projects in the refrigeration sector for three plants which all belong to the same Organization. This Organization, ENIEM, is an important consumer of ODS in Algeria in 1991 consumption of CFC-12 was 69 tons and the CFC-11 332 tons. In addition, in 1991, 380 tons of CFC-12 were used for service and maintenance and repair of domestic refrigerators.

Service, maintenance and repair operations for domestic refrigerators are carried out through a network of refrigeration workshops, many of which are licensed by ENIEM. This project will therefore include assistance to ENIEM for improving existing service operations to reduce venting of CFCs and development of servicing capability for servicing refrigerators using HFC-134a. In this context, it should be noted that ENIEM is the only manufacturer of domestic refrigerators in the country, and is, therefore, the appropriate focal point for providing assistance for servicing.

PROJECT OUTLINE

COUNTRY : DEMOCRATIC PEOPLE'S REPUBLIC OF ALGERIA

SECTOR COVERED : Aerosols and Solvents

PROJECT TITLE : Preparation of the investment project proposal for the phase-out of CFC-12 and CFC-14 in the manufacture of aerosols and of the Solvents CFC-113 in the manufacture of razor blades

PROPOSED BUDGET : US \$ 25,000 (excluding support costs)

IMPLEMENTING AGENCY :

NATIONAL COORDINATING AGENCY : Ministry for Universities and Scientific Research,
Direction of Environment

PROJECT DESCRIPTION

UNIDO has received an official request from the Government of the Republic of Algeria for the preparation of investment projects in the manufacture of aerosols and razor blades. The Organization operating these plants is the ENAD located in the Wilaya de Bowmorebs, Algeria. The present consumptions of CFCs for aerosols in 1991 was 4,100 kg per year and of solvents CFC-113 was 4,773 kg. per year. The ENAD has already cut back on the use of CFCs for aerosols but wishes to assistance from the Multilateral Fund for complete elimination of their use and for converting the remaining part of their plant to use LPG.

PROJECT OUTLINE

COUNTRY	: ARGENTINA	
SECTOR COVERED	: Refrigerators and Foams	
SECTORIAL ODS CONSUMPTION	: About 1,000 tons/year	
PROJECT TITLE	: Preparation of investment projects on ODS	phase out in
	the sector of refrigerators and foams	
PROJECT DURATION	: 6 months	
PROPOSED BUDGET	: US\$ 150,000 (excluding support costs)	
IMPLEMENTING AGENCY	: UNIDO	
NATIONAL COORDINATION AGENCY	: Secretariat of Natural and Human Resources	

PROJECT SUMMARY

The project provides for technical services, proposed to be rendered by UNIDO to assist the Argentinean Government for the preparation of investment projects for phasing-out of CFC consumption in the freezers and refrigeration industry as well as in the foam producing industry.

1. Background

Seven companies have requested UNIDO's assistance. Six of them are in the sector of refrigerants and freezers and one in the sector of foams. Total consumption of CFC 11 and 12 in these sectors is 1,000 tons/year. In the refrigerator industry CFCs are used as fluids in compressors and foam blowers.

Foams are mainly used as packing materials for foods and as panels for thermal insulation. Expanded PSR is mainly used for production of these foams.

2. Project Description

The requested resources will be utilized to develop 7 investment projects for the phase-out of CFC-11 and CFC-12 in the sectors of refrigeration and foams.

6 companies working in refrigeration:	New Market, Hela Metal, Bacsa, Zensa, Autosal and Acmar.
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Amount requested:	US\$130,000
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1 company working in foams:	Indufoam
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Amount requested:	US\$20,000
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The investment project proposals will consist of:

- Assessment of the current technology and equipment employed in each plant.
- Assessment of the technology option identified

- Equipment specification, costing and installation programme, with a schedule of trial use
- Calculation of incremental costs
- Specification of the training programme to ensure smooth operation of the industrial plant.

Project Proposal

Country or Region : Asia

Sector(s) Covered : Methyl Bromide

ODS Consumption and Production : 63,000 tonnes world-wide in 1990

Project Title : Workshop for Regional Approach for Time Bound Reduction/Elimination of Methyl Bromide

Project Impact : Not applicable

Project Budget : \$120,000 (excluding support cost)

Implementing Agency : UNIDO

National Coordinating Agency : National Ministries responsible for Montreal Protocol Activities in Countries involved.

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Project Summary

Methyl bromide is a versatile fumigating agent used for soil fumigation and also for post harvest treatments, especially on fruits and vegetables. Total annual production and sales of methyl bromide (excluding use as chemical intermediates) have increased from about 42,000 tonnes to about 63,000 tonnes between 1984 and 1990. In 1990, methyl bromide was used as a fumigant for soil (51,300 tonnes = 82%), for commodities (8,400 tonnes = 13%), and for structures (3,200 tonnes = 5%).

From 1984 to 1990, approximately 290,000 metric tonnes of methyl bromide were used for soil fumigation. In 1990, 51,000 metric tonnes were used (about 80% of total use). About 45% of this soil fumigation use occurred in North America, 32% in Europe, 16% in Asia, 3% in Africa, 2% in South America, and 1% in Australia. Between 1984 and 1990, the use of methyl bromide grew at an annual rate of higher than 5%.

While it is very easy and cheap to use, it has many side effects on health, as mentioned earlier, and it is also harmful to beneficial soil-micro-organisms. It is important to note that methyl bromide is among the substances identified as contributing to the destruction of the ozone layer. It is, therefore, a potential candidate to be phased out. However, there is a need to ascertain the cost of replacing methyl bromide with alternatives, comparable in effectiveness, as well as their impacts. The time horizons necessary for a cost-effective phasing-out process have to be assessed.

Additionally, it is necessary to assess the extent of methyl bromide use in developing countries and to identify optimal application methods and/or phasing-out opportunities. In this connection, UNIDO endeavours to initiate a series of workshops in the area of methyl bromide control/phasing-out. The first workshop will take place in Indonesia and it will focus on regional Asia. While the first workshop will concentrate on Asia, Focal Points in other regions will be identified depending on the amount of consumption in order to initiate early enough the process of data collection and public awareness.

Project Objectives:

To provide data/information on current cases of methyl bromide and associated problems. To identify potential methods and technologies that can assist in controlling the negative impacts from the application of methyl bromide and/or facilitating the phasing-out of methyl bromide.

The project will undertake a detailed inventory/assessment of (a) methyl bromide produced and used in various developing countries and (b) methyl bromide substitutes in order to prepare a programme for the phasing-out of methyl bromide. The assessment will include techno-economic evaluations.

Technical reports focusing on individual countries from the Asian region participating in the Workshop. These reports will include extensive data collected in a standard format and analyzed for selected countries (preferably countries cited in Article 5, paragraph 1 of the Montreal Protocol):

Project Budget

The budget for short-term international consultants on methyl bromide application, national consultants for data collection and sub-contract for organizing a workshop in a selected country in Asia is estimated at around US\$120,000 as follows:

Project personnel	US \$50,000
Expenses for holding a workshop (around 26-30 participants for Asia region	60,000
Miscellaneous (correspondence, report preparation/reproduction)	10,000

Proposed budget

Budget Line	Activity	m/m	US\$
11-50	Short-term consultants on methyl bromide application	2 x 0.75	20,000
16-00	Staff mission		7,000
17-50	Four national experts in data collection		20,000
21-00	Sub-contract for organizing a workshop in a selected country in Asia through RENPAP (see Annex II for basic Terms of Reference)		15,000
34-00	Workshop with 24 participants		60,000
51-00	Miscellaneous (correspondence, report preparation/reproduction)		10,000
99-99	TOTAL	1.5	117,000
	13% overheads		15,210
	GRAND TOTAL	1.5	132,210

III. EXPECTED FOLLOW-UP

The project will act as an initial step for the development and implementation of similar workshops in West Africa, Latin America, and Europe.

PROJECT OUTLINE

COUNTRY	:	Pakistan
SECTOR	:	Refrigeration
SECTORAL ODS CONSUMPTION	:	3000 tons
PROJECT TITLE	:	Strategy for the Phase-out of ODSs in the Refrigeration Industry
PROJECT DURATION	:	3 months
PROJECT IMPACT	:	The project will prepare a sectoral strategy to monitor the implementation of the phase-out. This will form the basis for conversion of enterprises in the refrigeration industry to non ODS technologies. The coverage will include: production and servicing of industrial, commercial and domestic refrigeration and air conditioning equipment; production and servicing of mobile refrigeration equipment not including air conditioning of autos.
PROPOSED BUDGET	:	US \$50,000 (excluding support costs)
IMPLEMENTING AGENCY	:	UNIDO
NATIONAL COORDINATING AGENCY	:	Environment and Urban Affairs Division Ministry of Housing and Works

PROJECT SUMMARY

This project will:

- a) undertake a detailed techno-economic analysis of the current use of ozone depleting substances in the refrigeration industries in Pakistan including the production and servicing of industrial, commercial and domestic refrigeration and airconditioning equipment, and, the production and servicing of mobile refrigeration equipment (excluding auto air conditioning). Production will include the use of ODSs in insulation and as a refrigerant; servicing will include the recharging of refrigerants, related recovery and recycling, and the disposal of unrecyclable substances and abandoned equipment.
- b) elaborate a strategy for the phasing out of ODSs in the refrigeration industries consistent with the Country Programme of the Government of Pakistan. The strategy will take into consideration the requirements and potentials of the enterprises, their regional differences, the available technological options and their cost implications, and, the impact on socio-economic variables and development parameters. It will propose initiatives based on common interest and will recommend plans and strategies to the Government of Pakistan for implementation through ministerial decrees, legislation and incentive measures. It will also suggest a work plan for the government, industry and

International experts	2.4 w/m	\$38,400
National Experts	2.8 w/m	\$5,600
UNIDO staff	1.0 w/m	\$6,000

PROJECT PROPOSAL

COUNTRY : ROMANIA

SECTOR COVERED : not applicable

PROJECT TITLE : Strengthen the Coordination Unit in the Ministry of Water, Forests and Environment Protection (MWFEP) for the implementation of the Montreal Protocol Activities

ODS Consumption : 2,980 metric tons in 1990

PROJECT IMPACT : Through strengthening the institutional machinery, achieve effective implementation of national phase-out plan

PROPOSED MF FINANCING : US \$ 272,000
(falls within medium volume consuming countries (consumption level : 1,000 to 10,000 tonnes).
Eligible funding level : US \$ 303,000

IMPLEMENTING AGENCY : UNIDO

NATIONAL COORDINATING AGENCY : Ministry of Water, Forests and Environment Protection (MWFEP)

PROJECT SUMMARY

The objective of this project is to provide a national institutional mechanism for co-ordinating with Romania the national and international efforts for the protection of the ozone layer in general and to facilitate actions aimed at speedy phase-out of ozone-depleting substances in particular.

The strengthened unit in the Ministry of Waters, Forests and Environment Protection will be responsible for:

- a) initiating actions to provide a suitable climate in the country for the expeditious phase-out of the ODSs;
- b) co-ordinating in-country activities for phasing-out the ODSs;
- c) receiving, collecting, analyzing and disseminating information on the issues involved in ozone layer protection;
- d) facilitating exchange of information with other Parties and organs established by the Protocol;

- e) facilitating action by policy-making organs in the country to promote activities for ODS phase-out;
- f) providing liaison between the country and the relevant organs under the Protocol;
- g) promoting and monitoring ODS phase-out projects; and
- h) reporting regularly to the Executive Committee of progress of implementation of ODS phase-out programmes in the country

Budget Requirement:

US \$ 272,000

ITEM		Category 2 Countries	
		Per Year	3-year Period
1.	CAPITAL EXPENDITURE*		
	Office equipment (as appropriate) Personal Computer with disk Drive, Monitor, Printer & Software Modem Photocopier Typewriter Fax machine		14,000
	Sub-total		14,000
2.	RECURRENT EXPENDITURE		
2.1	<u>Personnel**</u> Incentives (100-200% of basic salary) for a) Professional Staff b) Supporting Staff	20,000 12,000	60,000 36,000
	Sub-total	32,000	96,000
2.2	Operational costs including: Collation/dissemination of info. Official travel Telecommunications charges Misc.service charges (incl.electricity) Office supplies Maintenance of equipment	50,000	150,000
	Total (2.1 and 2.2)	82,000	246,000
	Contingencies (10% of 1 and 2)		26,000
	TOTAL		272,000

* One time set-up cost only, for the first year

** The level of incentives for personnel will depend on salary structures of individual countries. Figures provided are indicative only, for purposes of estimating ceiling

PROJECT PROPOSAL

COUNTRY	:	Article 5 countries for which Country Programmes are being prepared by UNEP : Antigua y Barbuda, Bahamas, Barbados, Botswana, Guinea, Niger, Pakistan, Peru, Seychelles, Tanzania, Togo, Uganda, Zimbabwe
SECTOR COVERED	:	Several
PROJECT TITLE	:	Joint action with UNEP in country programming exercises in the above-cited countries with special emphasis on industrial actions to be taken for CFC Phase-out.
ODS CONSUMPTION	:	not applicable
PROJECT IMPACT	:	More action-oriented country programmes
PROJECT BUDGET	:	US \$ 156,000 (excluding support cost)
IMPLEMENTING AGENCY	:	UNIDO in cooperation with UNEP
NATIONAL COORDINATING AGENCIES:		National Ministries responsible for Montreal Protocol activities in the countries involved

PROJECT SUMMARY

UNEP has been the lead agency for preparing country programmes for low ODS-consuming countries (countries with an annual consumption of less than 200 metric tons). At the moment, UNEP is working in the following countries on country programme preparation: Antigua y Barbuda, Bahamas, Barbados, Botswana, Guinea, Niger, Pakistan, Peru, Seychelles, Tanzania, Togo, Uganda and Zimbabwe.

As part of an agreement between UNEP and UNIDO, UNIDO will join UNEP in country programming exercises in these countries. Specifically, the two Organizations will work together in the following manner:

For each country programming exercise, UNEP usually fields two consultant missions. The first mission aims at setting up the national team composed of all interested parties in the country related to the ODSs reduction operation and spelling out the objectives and outputs from a national survey of ODS stock-taking by each sub-sector.

This second mission will come in to work out the strategies for the entire phase-out operation.

It is agreed that UNIDO would join in the second UNEP mission once data by sector is available as a result of the first mission and prepare investment projects at plant level.

Because of the limited funding available for the country programming exercises, it is proposed that UNIDO could request from ExCom estimated financing for project formulation.

To facilitate data-gathering to meet the requirements for investments projects formulation, UNIDO would prepare a project preparation format based on its experience and reflecting the specific requirements of the ExCom. This UNEP could distribute to the national team before the first field assignment of the consultant to be filled in. Depending on the degree of data available, UNIDO could already draft the project document before joining the second UNEP consultant mission and could use the second mission to verify the details if necessary.

It was believed that this joint UNEP/UNIDO effort in country programming would significantly reduce the lag time between the preparation of the country programme and the actual investment project formulation and implementation.

Budget : \$156,000

It is estimated \$12,000 would be required for each UNIDO expert mission in each of these 13 countries.

Annex i

Work Programme in 1994

(by sectors)

Foams:

(not including refrigeration insulation)

Concentration:

Formulation and implementation of investment projects to convert CFC-based to non-CFC-based production.

Countries

to be covered: Argentina

Linkage to the proposed 3-year Plan and Budget of UNIDO 1994-96.

Sector	Estimate in 3-year Plan & Budget of UNIDO : 1994		Current Estimate : 1994 (Mix of sub-sectors may change)	
	US \$'000	Tonnes	US \$'000	Tonnes
Rigid Foam	33	20		
Flexible Foam	1,706	300		
Extruded	211	30	890	504
Total	1,950	350	890	504

Comments: 1994 Work Programme as estimated now will not deviate much from the original estimate in terms of financial resources required although part of those resources will not be required until 1995 in terms of cash. ODS tonnage reduction, however, goes up based on the actual situation of two projects in the country.

Inter-Agency Coordination: The World Bank

Halons:

Concentration: Formulation and implementation of investment projects to convert CFC-based to non-CFC-based production

Countries to be covered: China

Linkage to the proposed 3-year Plan and Budget of UNIDO 1994-96

Sector	Estimate in 3-year Plan & Budget of UNIDO : 1994		Current Estimate: 1994	
	US \$ '000	Tonnes	US \$ '000	Tonnes
Halons	304	70	300	150

Comments: The original estimate is adjusted on the basis of project profile from China. The financial figure is the 1994 phasing of the project while the total budget is \$600,000

Inter-Agency Coordination: UNDP

Refrigeration:

Domestic and Commercial Refrigeration

- Concentration:
- Formulation and implementation of investment projects to convert CFC-based to non-CFC-based production.
 - Work out a strategy for ODS phase-out in low-ODS consuming countries and test it in a few countries;
 - Develop guidelines on the choice of technology in different operating environments for its field operation.
 - plant-level training on
 - operation and management of alternative technologies
 - CFC recovery and recycling

Emphasis on

- Hands-on experience
 - Training of trainers
- (for details, see **Section III, Main Features**)

MAC and Chillers:

- Concentration:
- Pilot-nature projects in selective countries to work out a technically and financially feasible way of approaching these two sub-sectors in particular with regard to retrofitting.

Countries

- to be covered:
- Algeria, Argentina, Brazil, Cameroon, China, Egypt, Jordan, Kenya, Malta, Pakistan, Senegal, Syria and Thailand.

Refrigeration (continued...)Linkage to the proposed 3-year Plan and Budget of UNIDO 1994-96

Sector	Estimate in 3-year Plan & Budget of UNIDO: 1994		Current Estimate : 1994	
	US \$'000	Tonnes	US \$'000	Tonnes
Domestic Refrigeration	1,740	50	11,600	666
Commercial	325	50	3,000	205
MAC	588	50	588	50
Chillers	944	50	200	20
TOTAL	3597	200	15,790	941

Comments: The significant upward adjustment in the domestic and commercial refrigeration sub-sectors is attributed to UNIDO's successful experience in a few countries and the current pipeline build-up. The downward adjustment in the chillers sub-sector is due to the pilot nature of the operation in the entire Fund operations and UNIDO's policy decision.

Inter-Agency Coordination: The World Bank in Brazil, China and Thailand.

Solvents:

- Concentration:
- Formulation and implementation of investment projects to convert CFC-based to non-CFC-based production.
 - Country programme amendment;
 - Work out an approach to phase out ODS in the scattered informal sector.

Countries

to be covered: - China and India

Linkage to the proposed 3-year Plan and Budget of UNIDO 1994-96

Sector	Estimate in 3-year Plan & Budget of UNIDO : 1994		Current Estimate : 1994	
	US \$ '000	Tonnes	US \$ '000	Tonnes
Solvents	1,800	150	1,000	100

Comments: The original estimate is adjusted downward in view of the work underway in China's tobacco sector which may take some time to come to the project formulation stage from the Country Programme amendment.

Inter-Agency Coordination: UNDP

Production of Chemical Substitutes:

Concentration: - Ready to assist the Fund Secretariat and the Executive Committee to prepare the ground work to tackle this sector. UNIDO has good working experience in the chemical industry in China and India, which are the main actors in this sector.

Countries to be covered: - China and India

Linkage to the proposed 3-year Plan and Budget of UNIDO 1994-96

<u>Sector</u>	<u>Estimate in 3-year Plan & Budget (1994-96) : 1994</u>		<u>Current Estimate</u>	
	US \$ '000	Tonnes	US \$ '000	Tonnes
Chemical Substitutes	300		300	

Comments: The original estimate of US \$300,000 is maintained to provide for any need in the year.

Inter-Agency Coordination: The World Bank

Annex ii

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

(Excerpts)

to the

Proposed Three-year Plan and Budget of UNIDO
(1994 - 1996)

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

Background

1. UNIDO's three-year plan and budget have been prepared in accordance with the recommendations of the ExCom made at its Ninth Meeting (8 - 10 March 1993, Montreal). The bases of the UNIDO proposal are:

- a) Document "Proposed three-year plan and budget of the Multilateral Fund (1994-1996) - Working Paper", UNEP/OzL.Pro/ExCom/9/19, 6 March 1993.
- b) Report of the Working Group formed by the ExCom at its Ninth Meeting on the "Three-year plan and budget of the Multilateral Fund (1994-1996)".
- c) Detailed background consumption data compiled by the Fund Secretariat on 16 countries for which a country study exists, that is:

i) Brazil	ix) Iran
ii) Chile	x) Malaysia
iii) China	xi) Mexico
iv) Costa Rica	xii) Philippines
v) Ecuador	xiii) Thailand
vi) Egypt	xiv) Tunisia
vii) Ghana	xv) Turkey
viii) India	xvi) Zambia
- d) Cumulative consumption data compiled by the Fund Secretariat covering the above-mentioned 16 countries and additional 21 countries: Botswana, Burkina Faso, Gambia, Kenya, Malawi, Nigeria, Togo and Uganda in Africa; Bangladesh, Indonesia and Sri Lanka in Asia; Jordan and Syria in Arab Region, and Argentina, Cuba, Guatemala, Maldives, Panama, Trinidad and Tobago, Uruguay and Venezuela in the Central and South America.
- e) List of projects compiled by the Fund Secretariat from 16 country studies.
- f) UNIDO's own data bases, country-specific experiences; capacity and capability of its staff and support services.

2. As requested by the ExCom, the three-year plan of the MF "should provide a profile of projects that should be targeted by implementing agencies and Parties for funding during the budget period. These projects are identified by sector and sub-sector. The principal themes of the plan are the identification and implementation of projects which use proven cost-effective technologies that can be easily replicated throughout Article 5 countries; the promotion of good handling practices in ODS use, recovery and recycling; conversion and reduction of ODS use during the manufacture of intermediate goods; conversion of ODS production facilities to non-ODS technologies; and the elimination of targeted levels of ODS during the budget period".

3. With the document "Proposed three-year plan and budget of the Multilateral Fund (1994-1996)", UNEP/OzL.Pro/ExCom/9/19, the Fund Secretariat presented a plan and budget proposal which is intended to complement the previous studies by identifying projects as part of an overall strategy for the most expeditious and efficient approach to ODS phase-out in Article 5 countries. Budget figures calculated in this proposal represent the needs of the plan, but not necessarily the precise project mix that will be presented to the Executive Committee during the course of the three-year budget period. The summary of the budget and its sectoral structure are given in the table below.

UNIDO PLAN AND BUDGET (1994 - 1996)

Description of Budget item	MF Secretariat Budget (1994 - 1996)			UNIDO Plan and Budget (1994 - 1996)					
				Total		1994		1995	
	000 \$	Tonnes	\$/ton	000 \$	Tonnes	000 \$	Tonnes	000 \$	Tonnes
End-user Sectors	354,250	46,600	7,602	53,938	4,950	7,891	800	15,727	1,480
Aerosols	20,000	12,000	1,667	249	150	33	20	83	50
Rigid PE foam	68,250	12,000	5,688	9,100	1,600	1,706	300	2,844	500
Flexible PE foam	26,000	3,700	7,027	1,546	220	211	30	492	70
Extruded foam	20,000	2,500	8,000	1,760	220	240	30	560	70
Domestic refrigeration	87,000	2,500	34,800	17,400	500	1,740	50	5,220	150
Commercial refrigeration	26,000	4,000	6,500	2,275	350	325	50	650	100
MAC	20,000	1,700	11,765	4,353	370	588	50	1,412	120
Chillers	17,000	900	18,889	3,777	200	944	50	944	50
Solvents	60,000	5,000	12,000	12,000	1,000	1,800	150	3,000	250
Halons	10,000	2,300	4,348	1,478	340	304	70	522	120
Production of chemical substitutes	82,000			1,500		300		500	
Project formulations, feasibility studies and country programmes	0			1,800		600		600	
Inst. Strengthening	9,000			1,200		400		400	
In-plant industrial training	0			1,200		300		400	
Overhead charges	31,500			7,754		1,234		2,292	
TOTAL	476,750			67,392		10,725		19,919	
ExCom & Secretariat	7,800								
GRAND TOTAL	476,750								

(Total UNIDO agency charges)					9,554	1,834	2,892	4,828	
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