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Executive Committee of
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Implementation of the Montreal Protocol

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**REPORT ON UNEP'S CONTINUED WORK ON ADDRESSING THE NEEDS OF LOW
VOLUME ODS CONSUMING COUNTRIES (LVCs)**

(Submitted by UNEP)

1. Background

At its 19th meeting, the Executive Committee of the Multilateral Fund took note of the paper submitted by UNEP on 'Innovative Approaches for the Phasing out of ODS in low-volume-ODS-consuming Countries'¹, endorsed the methodology presented therein for Institutional Strengthening and Country Programme formulation and suggested UNEP to implement such methodology on a trial basis. (ExCom Decision 19/30)

At the same meeting, the Executive Committee requested UNEP

- to continue its work for the preparation of an 'Overall Approach in addressing the needs of low-volume-ODS-consuming Countries' by, inter alia, drawing on the experience and ongoing activities of other organizations and to submit a report thereon to the Executive Committee at its twentieth meeting, in keeping with subparagraph (d) of decision VII/25 of the Seventh Meeting of the Parties (see Annex 1 for full text of decision VII/25).

This paper reports on UNEP's continued work in the preparation of the overall approach for LVCs by reviewing the efforts which have already been initiated under the Multilateral Fund, identifies some of the issues which need to be addressed for way ahead and proposes modalities for further action.

2. Review of initiatives taken under the Multilateral Fund

This report is based on a review of ongoing activities already approved by the Executive Committee in LVCs. These include: 72 Country Programmes (see Annex 2 for statistical data of consumption by country and by sector), 45 Institutional Strengthening projects, about 20 projects in training in the Refrigeration sector, including Recovery and Recycling projects, about 5 training projects in monitoring of imports and more than 40 investment projects.

In seven areas where key needs of LVCs have been identified, the status of ongoing activities is as follows:

Raising Awareness: Institutional Strengthening projects of LVCs support public awareness activities. These include information seminars to industries and industry associations, school-targeted awareness programmes, and consumer-oriented information campaigns. Awareness materials produced by UNEP, i.e. video, posters, guidelines for raising awareness, etc., are also available to all National Ozone Units (NOUs), including LVCs.

¹ For the purpose of determining the eligibility of projects for funding from reserved allocation, Low-volume-ODS-consuming Countries (LVCs) have been defined as countries with annual consumption level of 360 tonnes or less (ExCom decision 17/11)

Formulating Country Programmes and Institutional Strengthening Projects:

Based on the experience of developing 72 Country Programmes innovative approaches for Country Programme formulation and Institutional Strengthening project implementation were developed by UNEP and endorsed by the Executive Committee at the 19th Executive Committee. These approaches which propose cost-effective and simplified methods to address LVC's needs, are being implemented on a trial basis by UNEP.

Preparing Refrigerant Management Plans: The need for a Refrigerant Management Plan (RMP) stems from the strategy to contain, recover and recycle refrigerant, making provision for the critical stocks for the 'service tail' through internal conservation techniques as well as external suppliers if necessary. It entails prudent retrofits and timely replacements and is a critical management tool for LVCs for a smooth transition to non-ODS. Projects for training of trainers in good practices have been undertaken in 15 LVCs. MAC workshops, with bilateral assistance from USEPA, were organized back-to-back with Regional Network meetings in Africa, Latin America and Caribbean regions. A number of LVCs participated at these workshops.

UNEP has prepared and disseminated the following manuals for use of all Article 5 countries, LVCs and Non-LVCs:

- * *"Chillers and Refrigerant Management" Training Manual*
- * *"Good Practice in Refrigeration" Training Manual*

USEPA and UNIDO, in close cooperation with UNEP, have also developed guidelines:

- * *"Reducing CFC Use in Refrigeration - Strategic Options for Countries with Low CFC Consumption"*

These operating guidelines will provide an important tool to implement the overall approach for LVCs as they deal with:

- a general framework for the development of successful phase-out strategies in the refrigeration and air conditioning sector;
- main elements to be taken into consideration for selected phase-out options in the domestic, commercial and mobile air conditioning sub-sectors;
- data collection tools that help gather the information needed to determine which option to choose;
- discussion on different measures the Government can implement to support the phase-strategies in the refrigeration and air conditioning sector.

This document is being disseminated to LVCs through the Ozone Cell and other consultants.

Additionally, the following documents will be available soon from UNEP:

- * *"Guidelines for the establishment of Recovery and Recycling systems and related legislation"*
- * *"Guidance for hotel industry in phase-out of ODS".*

Monitoring of ODS and ODS using equipment: Sub-regional Training for Monitoring and Control of ODS Consumption have taken place in three sub-regions of French-speaking Africa which mainly involved LVCs.

As a direct result of these workshops, Cameroon, Burkina Faso and Senegal have issued Government decrees to include ODSs within import permit systems already existing in their countries. These countries are now considering the possibility to create a registry of ODS users, as the next step to establish a comprehensive national system for Monitoring and Control of ODS Consumption.

The benefits of such activities is also noticeable in terms of improved data reporting by LVCs. Reporting of data by LVCs has also been enhanced through training sessions provided at Network meetings.

Assisting Halon Banks: The Executive Committee has approved specific guidelines for Low Halon consuming countries to establish Halon Banks, including recycling (Decision 18/22 of the Executive Committee). No projects have yet been approved based on these guidelines.

Implementing Investment Projects: investment projects in LVCs by the Executive Committee is receiving adequate priority at present. Special allocation of funds for the projects in LVCs have made it possible to remove the cost-effectiveness barriers for LVCs. However given that (as per the consolidated progress report of May 1996, document UNEP/OzL.Pro/ExCom/19/39), out of 55 investment projects which had been completed by UNDP, UNIDO and World Bank, none of these was for LVCs, implementation of approved projects in LVCs will need to be given higher priority than is currently given.

Policy Guidance and Regulatory support

No specific support to LVCs is being provided in this area though global documents and training modules on policy setting may also be useful in general for LVCs. The following documents have already been prepared and disseminated to all Article 5 countries by UNEP:

- * *"Practical Guidelines for Industry for Managing the Phase-out of Ozone Depleting Substances"*
- * *"Elements for Establishing Policies, Strategies and Institutional Framework for Ozone Layer Protection"*

The following documents related to policy-setting are being prepared by UNEP at the moment for the benefit of all Article 5 countries:

- * Training Module on Policy Design and Setting up of Legislation
- * Guidelines for the Establishment of Recovery and Recycling Systems and Related Legislation for LVCs
- * Compilation of "Recommendations for a Code of Good Practices in Refrigeration" in Article-5 countries
- * A paper prepared by the Secretariat on the Phase-out of Ozone-Depleting Substances in Small and Medium Size Enterprises which is being tabled at the twentieth meeting will also provide assistance to LVCs in their phase-out programmes.

3. Further considerations for implementation of phase-out in LVCs

Of the 112 Article 5 countries which are Parties to the Montreal Protocol, 85 are low-volume ODS-consuming countries (LVCs). 22 countries which are yet to join the Montreal Protocol are all LVCs. Thus 80% of the Article 5 countries under the Montreal Protocol constitute LVCs.

a. Predominance of Refrigeration Sector and Low Skills of Technicians:

More than 70% of ODS consumption in LVCs is concentrated in refrigeration sector, which supports vital sectors of their economy [Annex 1, figures 1 & 2] Most of this consumption is in the servicing and maintenance sector.

Refrigeration equipment installation, servicing and maintenance is mainly carried out by informal service workshops, staffed by technicians with low skills and no formal technical training, resulting in wastage of ODS, sometimes more than 50%.

b. Weak system for monitoring of imports and Dumping:

Weak institutional structure and lack of organized and efficient systems make monitoring and control of imports of ODS or ODS-containing equipment in LVCs a formidable task. Customs statistics are often not reliable due to untrained and unskilled customs officers and lack of specific custom codes for ODS and regulations for control of ODS.

As phase-out of ODS progresses in other countries, used equipment are increasingly being dumped in LVCs which lack the technical and institutional capacity to regulate such imports. This has increased the consumption of ODS in LVCs and their dependence on ODS may therefore continue longer than planned and expected.

4. Experience and Feedback from National Ozone Units of LVCs on on-going efforts

While there is need to carry out detailed survey on changing needs of LVCs for effective implementation of phase-out, feedback received through Networking activities and Institutional Strengthening reports was useful in identifying the issues currently encountered by LVCs:

a. Continued Institutional Weaknesses:

Despite financial assistance, through Institutional Strengthening, institutional capacity still remains weak in LVCs, possibly as a result of limited national commitment, inadequacy of skilled human resources and limited knowledge of the related issues. Policy and Action frameworks for the implementation of the Montreal Protocol are drawn as part of the Country Programmes. But often, the inadequacy of institutional capacity and limited resources have obstructed effective implementation of Country Programmes.

b. Influence of Market Forces:

As a result of market forces and globalization of economies, the following common trends are emerging in LVCs:

- increase in illegal ODS imports;
- changes in traditional ODS suppliers;
- dumping of old CFC-containing equipment;
- increase in ODS consumption, especially in the refrigeration sector.

The lack of appropriate controls and inadequate institutional capacity for monitoring and implementing such controls has further promoted these trends.

c. Implementing Policies and Regulations

While training in Good Practices in Refrigeration Sector would lead to substantial saving in ODS consumption [to the extent of 50%], such training needs to be backed by the legislation and regulation and the institutional capacity to enact such legislation in order to obtain the planned reduction in ODS consumption².

d. Limited National Awareness:

National Ozone Units require active support from other ministries and agencies to enact and enforce the monitoring and control of ODS. Additionally, participation of the public is key to national phase-out efforts. Awareness campaigns, though being supported by the Multilateral Fund, need to be restructured and adapted to suit the needs of government officials, other stakeholders and the general public.

e. Lower priority given to projects in LVCs:

Priorities of the IAs are focussed on large ODS consuming countries for a variety of reasons, such as absence of significant investment activities and low levels of

²Ref: UNEP/OzL.Pro/ExCom 18/10 page 1.

funding for projects in LVCs. Historically, the IAs carrying out investment projects focus on the larger consuming countries. The projects in LVCs, mainly recovery and recycling, approved by the ExCom have not received desired priority in their implementation, though UNDP and UNIDO have recently reported progress on some of the countries.

f. **Possibility of Shortages:**

As phase-out in developed countries continues and a used second-hand ODS containing equipment are dumped in LVCs, the 'service tail' of ODS may become a severe problem for LVCs. The option of stocking may not be financially and administratively feasible for LVCs.

5. Way Ahead for Action in Addressing the Needs of LVCs

The control measures of the Montreal Protocol including the timetable for the reduction in consumption of ODS and ultimate phase-out are applicable equally to both large and low ODS consuming countries. The urgency of assistance to LVCs is as pressing as those in large consuming countries. LVCs therefore pose formidable management challenges for the implementation of the Montreal Protocol.

Significant initiatives have already been taken under the Multilateral Fund to address the special needs of LVCs. Considering that LVCs do not have significant investment projects there is high possibility that phaseout will be completed only by non-investment projects which in itself could be far more cost effective than investment projects. It should also be noted that LVCs have the potential to become the first countries to become ODS-free countries (servicing of existing equipment could be managed by recycled ODS).

The key areas which need continued and focussed assistance should be investigated further to assess the efficacy of ongoing activities and requirements of further support. Some of these areas have been indicated below along with ongoing efforts. The proposed framework for supplementary work has also been listed.

a. **Raising Awareness:**

The awareness at the level of decision and policy makers (ministries, parliamentarians etc.) is of key importance for the implementation of phase-out activities. Public awareness should be a continued activity and its content should be of dynamic nature as LVCs move along the different phases of the implementation. Additionally sector specific awareness programmes for refrigeration technicians in LVCs need to be supported.

b. Formulating Country Programmes and Institutional Strengthening Projects

While the lessons learned from this 'test run' will be utilized in improving such an approach to phase out in LVCs. However, in the meanwhile, it would be important to handle such projects on a case-by-case basis due to the differing situations in the LVCs.

c. Preparing Refrigerant Management Plans

Given that 69% of ODS consumption in LVCs is concentrated in the refrigeration sector a Refrigerant Management Plan (RMP) is essential. This strategy would contain, recover and recycle refrigerant, making provision for the critical stocks for the 'service tail' through internal conservation techniques as well as external suppliers if necessary. It entails prudent retrofits and timely replacements and is a critical management tool for LVCs for a smooth transition to non-ODS.

Follow-up on training already undertaken and effective implementation of Recovery and Recycling projects including supporting legislation would be needed. Further training of technicians in LVCs by the trained trainers who have benefitted from ongoing activities will need to be carried out. RMPs would need to be prepared by all LVCs for smooth transition. Training for LVCs who have not yet benefitted will need to be carried out using new guidelines.

The technology for retrofitting is making major progress. Drop-in substitutes are now available for many of the applications. Therefore, workshops, guidebooks and demonstrations on retrofitting are likely to be very cost-effective for phase-out in LVCs.

d. Monitoring of ODS and ODS using equipment

Customs training for LVCs need to be undertaken on priority. Effective prevention of dumping of used equipment using ODS would later save high costs to the Multilateral Fund to phase-out LVCs.

e. Assisting Halon Banks

Demonstration projects in the regions need to be initiated to obtain practical results. Based on these, further similar projects need to be undertaken.

f. Implementing Investment Projects

Implementation of approved projects in LVCs will need to be given higher priority than is currently given. This issue will need to be discussed with IAs.

6. Proposed Modality for further Action

Further action is necessary to maintain the momentum in LVCs efforts to phase out ODS.

- **Establishment of legislative and regulatory frameworks** is essential for effective phase-out in LVCs, especially in recovery and recycling projects. Specific policy related assistance applicable to LVCs, particularly in refrigeration sector, like certification and accreditation programmes, is needed to be considered. Without specific initiative and commitment from the countries themselves, phase-out will not be possible and without the passage of legislation, it will be ineffective. A dialogue is proposed to be undertaken with LVCs. It should be noted that with the upcoming commitments to be met in 1999 and 2002 by all Article 5 parties, this issue will become even more important.

- **Leveraging Bilateral Cooperation Efforts**, such as the efforts in the past from Australia, Canada, France and the U.S., will be promoted for effective implementation of Refrigerant Management Plans and Regulatory Support.

- **Networks** will be used by UNEP as vehicle for further identification of LVC needs, with the assistance of other implementing agencies. UNEP would interact with LVCs during the Network Workshops for assessing the effectiveness of ongoing activities and identifying further needs. A brief questionnaire would be sent to all LVCs and the results would be discussed.

Such an exercise would facilitate the development and implementation of projects to address specific identified needs. These initiatives could be implemented by a cost-effective regional approach, if feasible.

Given these actions the following modalities are proposed for the consideration of the Executive Committee in addressing the needs of LVCs:

1. Refrigeration Management Plan

For countries that have approved country programmes given that 69% of ODS consumption in LVCs is concentrated in the refrigeration sector, a Refrigerant Management Plan (RMP) should be identified as the priority for project preparation. Implementation of such a plan with its components (i.e. identification of users, training, recovery and recycling, regulations etc.) timed to complement one another is very important as, delays in the implementation of one component may impact on the effectiveness of the overall plan. (The US EPA, UNIDO guidelines "Reducing CFC use in Refrigeration - Strategic Options for Countries with Low CFC consumption" once finalized could be considered as a key component in this approach.

2. Delivery of phase-out package for LVCs

For countries that have not developed their country programme, a phase-out package, should be fully developed within the CP. This would include: Institutional Strengthening Projects such as Awareness Raising initiatives, Refrigeration Management Plans (as identified in par. 6.1), Monitoring, Regulatory Support , Halon Banking and when required Investment Projects. These initiatives should be timed to have the most impact on ODS phase-out in meeting a country's requirements and need not commence immediately on approval of a Country Programme. This package will necessarily take into consideration existing approved projects and will be adjusted accordingly.

UNEP proposes to continue to work with IAs and bilateral agencies based on the above framework and provide regular feedback to the Executive Committee.

UNEP will provide regular updates on this overall approach to phase-out ODS in LVCs.

ANNEX 1

Decision VII/25 of the Seventh Meeting of the Parties:

To request the Executive Committee of the Multilateral Fund to provide specific support to low-volume-ODS-consuming countries (LVCs) by:

- (a) Allocating sufficient funds for projects in low-volume-ODS-consuming countries to further strengthen and expand awareness and training programmes, specially in the area of refrigerant management;*
- (b) Supporting specialized assistance such as a workshop to establish regulatory and legislative measures required to facilitate the phase-out of ozone depleting substances;*
- (c) Allowing financing of eligible retrofitting projects, in sectors vital to LVC economies on a case-by-case basis where this can be shown to be the best approach;*
- (d) Requesting the United Nations Environment Programme, due to its extensive experience with low-volume-ODS-consuming countries (LVCs), to take the lead in preparing an overall approach in addressing these needs;*
- (e) Providing funds to low-volume-ODS-consuming countries, on a regional basis, to organize training workshops for their customs and other officers on the harmonized system and other systems to control and monitor consumption of ozone-depleting substances;*

Approval of projects in low-volume-ODS-consuming countries and very low-volume-ODS-consuming countries should be based upon a more appropriate project-appraisal approach reflecting the particular circumstances encountered by the countries referred to above;

ANNEX2

TABLE NO.1 : ODS CONSUMPTION IN ARTICLE 5 COUNTRIES
(from Inventory of approved projects and *Country Programmes*)

COUNTRIES WITH A CONSUMPTION ABOVE 1000 ODP TONNES

COUNTRY	AEROSOL	FOAMS	HALONS	OTHERS	REFRIGERANTS	SOLVENTS	TOTAL
Algeria	559	650	176		754	84	2223
Argentina		1585			1441		3026
Brazil	255	1950	68		5748	897	8918
Chile	254	345	187.5		240.8	48.1	1055.2
China	8600	17773	12500	900	12869	3306.4	55948.4
Egypt	91.3	877	1230		571	93.5	2752.8
India	1100	1576	3650		1990	4795	13111
Indonesia	2000	1025	972		2098	474.3	6587.3
Iran		744			1050		1794
Lebanon	328.6	143	15		589.8	0.1	1056.8
Malaysia	350	1685	1800		1800	662	5697
Mexico	993	1629	1200		4795	1255	9874
Philippines	5	417	89	350	1217	458.1	2538.1
Romania	927	267	29.6		176	157	1556.6
Syria	260	493			500		1253
Thailand	475	1532	100		3291.6	3422.1	8820.7
Turkey		1645			1814		3459
Venezuela					2505		2508
TOTAL	16197.9	34036	21797.1	1250	43232.1	15853.8	132166.7
As a % of total	12%	26%	16%	1%	33%	12%	100%
Number of countries							18
Percentage of total number of countries							23.08%
Percentage of the total consumption							#REF!

COUNTRIES WITH A CONSUMPTION BETWEEN 360 AND 1000 ODP TONNES

COUNTRY	AEROSOL	FOAMS	HALONS	OTHERS	REFRIGERANTS	SOLVENTS	TOTAL
Colombia					390		390
Croatia	9	15	20	177.1	189.5	26	416.6
Ecuador	454	68	45		162	3.1	742.1
Jordan	224	117.5	231		206.5		779
Morocco	9	417		15.1	321.8	1.1	758
Nigeria					538		538
Pakistan					500		500
Sudan	281.5	16	3		303.5	2.2	606.2
Tunisia	180.3	50			155		385.3
TOTAL	1161.8	683.5	299	192.2	2746.3	32.4	5115.2
As a % of total	23%	13%	6%	4%	54%	1%	100%
Number of countries							9
Percentage of total number of countries							11.54%
Percentage of the total consumption							#REF!

ANNEX2

COUNTRIES WITH A CONSUMPTION BELOW 360 ODP TONNES (LVCs)

COUNTRY	AEROSOL	FOAMS	HALONS	OTHERS	REFRIGERANTS	SOLVENTS	TOTAL
Bahamas					58.11		58.11
Bahrain			28.3		65.4	32.9	147.6
Bangladesh	86		7.5		138.8		232.3
Barbados			6.9		32.3		39.2
Benin			3.9		37.1		41
Bolivia		1.1		0.3	74.1	0.2	75.7
Botswana			21.3		14		35.3
Brunei Darussalam			8	2.17	64.6		74.77
Burkina Faso			3.6		29.1		32.7
Cameroon		15	15	1	51.7	21.2	103.9
Central African Rep.		0.2			31		31.2
Chad		0.5	20		13.4		33.9
Congo		0.5	19.6		12.48		32.58
Costa Rica		22.3	27.5		163.5	13.9	227.2
Cote d'Ivoire	89.5	4.5	11.6		125.4		231
Cuba	17		3.6		310.8		331.4
Dominican Republic		97	2.7		177.2	1.3	278.2
Fiji		9	3.6		33.1	0.8	46.5
Gabon			2.31		39.72		42.03
Ghana		23.8	3		72.8	1.8	101.4
Guatemala					224.3		224.3
Guinea			12.1		32.4		44.5
Honduras					123.9		123.9
Jamaica					215		215
Kenya			15.5		47	66	128.5
Malawi		2.5	14.4		43.1		60
Malta				4.8	24.3	34	63.1
Mauritius	25.5	6.4	6.6		24.5	6.4	69.4
Mozambique			10.5		21.9		32.4
Namibia			10.2		31.3		41.5
Panama	3.7	32.5	6		191		233.2
Papua New Guinea			3.4		52.78		56.18
Peru		33.6			233.5	19.4	296.5
Senegal		2.1			99.4		101.5
Swaziland					100.6		100.6
Tanzania	150				63		213
Uruguay	23	109	3.3		170	8.8	314.1
Vietnam	200						200
Ethiopia				0.6	9.4		10
Gambia		6			16.66		22.66
Lesotho			0.6		5.1		5.6
Maldives					5		5
Mauritania					17.3		17.3
Niger			0.6		17.2	0.5	18.3
Saint Lucia			0.86		6.6		7.46
Seychelles			0.9		3.5		4.4
Sri Lanka	5.2						5.2
Togo					1.2		1.2
Uganda					14.7		14.7
Zambia		2			20		22

ANNEX2

Zimbabwe	7	20	97		196		320
TOTAL	506.9	365	371.27	5.87	3535.25	207.2	5167.49
As a % of total	12%	8%	7%	0%	69%	4%	100%
Number of countries							39
Percentage of total number of countries							50.00%
Percentage of the total consumption							#REF!
Total number of countries analyzed		75					

ANNEX2

FIGURE No.1 : PERCENTAGE OF ODS USE BY SECTOR IN LVCs COUNTRIES

AEROSOL	FOAMS	HALONS	OTHERS	REFRIGERANTS	SOLVENTS	TOTAL
11.74%	7.51%	7.18%	0.17%	69.38%	4.01%	100%

