ROUND TABLE DISCUSSION
ON KNOWLEDGE-SHARING NETWORKS FOR ODS PHASE-OUT

FINAL REPORT

convened on the occasion of the 1995 International CFC and Halons Alternatives Conference

Washington, D.C.
24 October 1995

Organized by: OzonAction Programme of the United Nations Environment Programme (UNEP)
INTRODUCTION

This is the report of the third annual Round Table Discussion on Knowledge Sharing Networks for ODS Phase Out, organized by UNEP IE's OzonAction Programme.

These round tables provide a regular forum for:

° exchanging views on the information needs of Article 5 countries in the context of the Montreal Protocol's phaseout targets; and

° sharing the experiences of both developed and developing countries and exploring the elements required for efficient information exchange.

This year's round table was organized on the occasion of the 1995 International CFC and Halons Alternatives Conference held in Washington, D.C. (23-26 October 1995) and included 12 representatives from developing countries and numerous observers from both developed and developing countries.

The participants included 8 representatives from governmental National Ozone Units, one government Ministry specifically involved with SME issues, one non-governmental ozone focal points, one research institution, and one industry representative.

A. Chair of the UNEP Economic Options Committee and a member of the UNEP Aerosols, Sterilants, Miscellaneous Uses and Carbon Tetrachloride Technical Option Committee participated, as well as representatives from UNEP.

Observers included UNDP, chemical manufacturers, industry experts in various sectors, and ozone officers from developed countries.

This year's round table was specifically focused on opportunities and barriers for technology transfer to small- and medium-sized enterprises (SMEs) in developing countries.

The major goals of the round table were to:

° identify the major technical, financial, regulatory & informational barriers that impede the adoption of ODS phaseout technologies by SMEs;

° make specific recommendations for overcoming the identified barriers, with a focus on assistance provided to SMEs under the Multilateral Fund for the Implementation of the Montreal Protocol.

These recommendations from the round table were used on 25 October as input into a companion session moderated by UNDP, Technology Transfer, which focused on the successful efforts by the Multilateral Fund and the private sector to develop and implement ODS phaseout projects.

The recommendations will also be considered by UNEP IE’s OzonAction Programme when formulating its 1996 Work Programme under the Multilateral Fund, and will contribute to further information clearinghouse projects targeted to SMEs.

A. Co-Chair of the Technology and Economic Assessment Panel and the Chair of the Economic Options Committee.
facilitated the round table

The list of participants is included as an annex.
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I. Background to the Round Table

A. Introduction

Small and medium-sized enterprises (SMEs) comprise important sectors in many economies -- particularly in developing countries. Though individually they consume a small amount of ODS, collectively SMEs represent a substantial ODS consumption at the country level. The SME sector also forms a socially-important industry segment in many developing countries, which is often reflected in government-provided incentives to small enterprises.

Across all industry sectors affected by the control measures of the Montreal Protocol, the overwhelming majority of investment projects approved by the Executive Committee to-date have benefitted larger enterprises. However, it has become increasingly evident that SMEs in Article 5 countries require adequate assistance if they are to make the transition to non-ODS technologies smoothly and avoid severe economic and social dislocations.

Because of the economies of scale, investment projects for SMEs are seldom as cost-effective as for larger companies. Consequently, new approaches are currently being studied by the Executive Committee to extend the appropriate level and type of assistance to SMEs, while at the same time maintaining the Multilateral Fund requirements for expediting ODS phase-out through cost-effective investment projects and support services.

At its Thirteenth Meeting, the Executive Committee agreed that projects that will result in the elimination of the maximum amount of ODS should be given priority, in order to maximize the return in terms of tonnes of ODS phased-out per dollar. However, recognizing that significant problems face the SME sector in several countries, the Executive Committee also recommended that the Implementing Agencies give special attention to the development of efficient and feasible strategies to address the specific situation of SMEs.1

B. Definition and general characteristics of SMEs

"Small", "medium", and "large" are not absolute terms that have universal meaning in any business context. They are most often used as a relative terms to describe various classes of enterprises according to certain criteria (e.g., investment level in fixed assets, production output, number of employees, amount of revenue). There are country-specific, as well as sectoral, differences between what is understood as a "large" and "small" company.

It is impractical to provide any single universal definition of SMEs arrived at through quantitative criteria. In fact, at the policy level, many developing country Governments define SMEs in a variety of ways, e.g. in terms of a combination of investment level, number of employees, sales revenues, etc. It is therefore important to characterize SMEs and identify them in each sector on a case-by-case basis.

However, one can discern a number of general characteristics of these enterprises that can be useful in understanding the nature of SMEs in the individual sectors.

General SME Characteristics

An SME can be characterized as typically having:
- a small production capacity;
- a low level of investment;
- a disproportionately high number of employees per unit of production compared to larger companies;
- generally low level of health and safety standards;
- low awareness about environmental issues; and
- dependence on larger industries for the supply of products, raw materials, and "technology feedback".

When taken as a whole, the SME sector can be generalized as:

- being comprised of a very large number of small enterprises overall, often constituting up to 80% of the total industry in many developing countries;
- representing a politically-important socioeconomic sector for developing countries;
- providing a source of significant employment for a number of developing countries;
- being geographically scattered, which makes individual SMEs difficult to identify for targeting assistance and difficult to communicate with; and
- often consisting of enterprises that can be classified as belonging to both to the "formal" and "informal" sectors (the "informal sector" refers to those enterprises that have not been formally registered with the appropriate Government agencies).

It is important to note that exceptions to all of these characteristics exist for each sector.

C. Consequences of SMEs Not Phasing-Out ODS

As a whole, SMEs are not keeping pace with larger companies in terms of achieving ODS phase-out. The consequences of SMEs not being in the mainstream include:

- the worldwide phase-out of ODS will be delayed;
- many SMEs may be forced to close down and unemployment will rise, especially since SMEs employ proportionally more persons than larger companies;
- increased dependence of consumers and users on larger companies or multinationals;
- SMEs may see some increase in ODS consumption if some or all of the ODS-using production volume shifts from larger companies to smaller ones, which at a later date may exacerbate the difficulties SMEs face in eliminating their ODS use; and
- consumption of ODS in SMEs may continue to grow so long as CFC technologies remain more cost-effective than replacement technologies, due to possible cost advantages.
D. Barriers to ODS phase-out in SMEs

The following generalized barriers can prevent or slow the adoption of non-ODS technologies by SMEs:

Environment generally not a high concern

Environmental issues in general, and ozone protection in specific, are not considered a priority in the face of limited time, budgetary, and human resources. SMEs are often too busy with routine problems to take the long-term view that is essential for technological innovation, including conversion to non-ODS technologies and products.

Reluctance to change

Many SMEs are already on the "edge of survival" and resist changing existing operating methods and technologies for any reason.

Lack of Industry Organizations

SMEs in many countries do not have formal organization or focal points to represent their interests. As a consequence, they have no focal point to assist with identifying, obtaining and channelling assistance for ODS phase-out projects.

Fewer Internal Resources

SMEs do not benefit from the "economies of scale" of larger companies, which due to their size have relatively greater internal human and financial resources to undertake ODS phase-out.

Lack of Information

Due to limited time, and human and financial resources, SMEs have great difficulties identifying sources of information and assistance, both of which are essential elements in the technology transfer process.

Information about the need for phase out and timing, how to access assistance from the Multilateral Fund and the National Ozone Units (NOUs), technical options and sources of technology, equipment, and chemicals, etc. have not yet reached the majority of SMEs.

Limited Technical Skills

The limited internal human resources available to SMEs usually means that skills are focussed on the narrow technical specialties required for the immediate production needs. Little time is available to acquire the new skills required to undertake new activities such as phase-out projects. Examples of such missing skills include:

- training in recovery and recycling;
- training in the safety of alternative technologies, equipment and substances;
- need for technical assistance to design projects;
- lack of technology assessment capabilities.

Access to Technology, Equipment, and Chemicals
SMEs are generally not active in identifying suppliers of new technology, equipment and chemicals. Unable to easily seek out different sources of information, SMEs often rely on their suppliers' advice about what new technology to adopt. Local dealers and importers are often themselves not very knowledgeable about new technologies. Additionally, SMEs do not always receive advice even from larger suppliers because their small size (and hence, small sales potential for the supplier) does not merit the type of attention given to larger customers. SMEs therefore need improved access to mechanisms for technology transfer.

Access to Financing

SME’s need for financial assistance is great due to slim operating margins. Small operating margins means SMEs are more risk adverse than large companies with regard to adopting new technologies. Financial institutions tend to not underwrite environmental technology transfer activities for SMEs. SME awareness about the financial assistance under the Multilateral Fund is rising, but more work in this area is required because of the sheer number of enterprises involved. Even if they are aware, the procedures for receiving assistance under the Multilateral Fund may appear complicated for SMEs, which would point to the need for streamlining or simplifying the application procedures.

II. Information Needs and Barriers in Developing Countries

The following observations were made by the participants when the round table addressed the barriers to ODS phase-out encountered by SMEs and their needs to overcome them.

In order to give the reader a general idea of which country or countries expressed a particular concept or need, the country that initiated the comment is indicated in parentheses each observation.

A. Environment generally not a high concern

In some countries (e.g. the Philippines) many SMEs are already concerned about ozone protection. However, many more would be involved if they were made aware of the issue. More awareness activities are needed to ensure the participation of SMEs in the ODS phase-out process. (Philippines, India)

National Ozone Units (NOUs) should take the lead in raising the awareness of SMEs about ozone protection. (Philippines)

B. Reluctance to change

SMEs are often resistant to change of any type; they are often afraid of something new, the possibility of failure, and are concerned that different practices or technologies could put them out of business. Many have adopted a “wait and watch” policy about ODS phase-out in order to learn what new technologies are being adopted by large companies. (Mexico, India)

In the case of SMEs that rely on large enterprises, the larger companies that convert to non-ODS technologies first could take the lead in promoting awareness about ozone depletion to the smaller companies, and then motivating them to act. (India)

Many businesses (large and small) in the developed world still are not concerned about
environmental issues such as ozone depletion, therefore it is not restricted solely to SMEs in developing countries. (Chemical Producer)

The only way to overcome a reluctance to participate in ozone protection is either through incentives or an enforced requirement. (Mexico, Argentina)

Rules and regulations do result in action by SMEs in some cases (India)

In countries where SME sectors are involved in export trade, the possibility of import bans on products containing or made with ODS can be an incentive to phase-out ODS. (India)

The possible lack of supply of CFCs has persuaded many SMEs to convert in advance of their national requirements. (Chemical Producer)

Another persuasive argument to induce SMEs to change is to make them aware that if they do not convert to non-ODS processes and substances, they might go out of business in the future. (India)

Employees in SME plants could play a catalytic role in overcoming the resistance to change, since they are often personally concerned that CFCs used in their facilities could damage both themselves and the world. (Equipment Manufacturer)

The suppliers of SMEs could help break down the fears of SMEs about non-ODS technology, and could motivate them to change. (Venezuela)

If an organization such as FONDOIN or an NOU helps an SME to prepare an ODS phase-out project, it helps the SME decide to change. (Venezuela)

C. Lack of industry organizations

Due to their scattered distribution throughout the country, it is often extremely difficult if not impossible for SMEs to attend ozone protection meetings. (Kenya)

The first step in addressing ODS phase out in small enterprises is to identify the SME community [e.g. through surveys]. (India)

Although it has many complicating factors, the experience in India indicates that the best way to involve SMEs in ODS phase-out programmes is to approach all individual enterprises one-by-one. (India)

Although there are some SME associations in larger countries, many smaller countries do not have such organizations. Some countries, such as Russia, never had industry associations. In other countries, industry associations related to SMEs exist on paper, but they are dormant. Industry associations should play a very powerful role in assisting SMEs, and should be more involved. In one case (India) an SME workshop catalyzed the formation of an SME association. (Argentina, India)

Existing associations should be encouraged to establish working groups to assist SMEs. (Venezuela)

Since industry associations are often supplier-driven, it might be appropriate for governments to
organize meetings with the suppliers to devise approaches for assisting SMEs. (Mexico)

D. Fewer internal resources

The day-to-day business affairs often prevent SMEs from actively participating in ODS phase-out activities. (India)

Even when they have relatively greater resources in terms of personnel and organizational structures to follow environmental legislation and regulations, larger companies often cannot themselves adequately respond to such requirements. For lack of such internal resources, SMEs often do not even try to comply with environmental requirements. (Mexico)

E. Lack of Information

There is a need to produce and distribute more Codes of Good Practices, including how SMEs can increase their profit by using them. (Malawi, Kenya, India)

Many employees of SMEs are not highly-educated and thus need appropriately-designed information that can be easily understood. (India)

Information targeted to SMEs is not expensive, and it is often a catalyst for action. (India)

In order to reach SMEs, it is necessary that appropriate information be translated into local languages. (Viet Nam)

Short handouts written in local languages and containing simple schematics are the most appropriate for the majority of Indian SMEs. (India)

In countries that rely largely on radio as an effective communication medium, radio messages could play a large role in transmitting ozone protection information. (India)

More evidence of the economic viability/profitability of alternative technologies is needed to motivate SMEs to take action. (Venezuela, India)

By showing real-life examples of how a non-ODS technology or practice was used in another similar company, you can motivate other SMEs to follow those examples. (Venezuela's MAC recovery and recycling project has been successfully used in this way). Therefore, more case studies and demonstration projects are needed to demonstrate the effectiveness of non-ODS technologies to SMEs. (Argentina, Venezuela, India)

Economic information targeted at SME managers is needed, since their management philosophy primarily focusses on the costs of a particular action. (Implementing Agency Consultant)

In addition to using UNEP-produced information, newsletters written by the NOUs in easy-to-understand language, and put in the context of the local conditions, would be very useful. (Kenya)

F. Lack of Technical Skills

There is a need for low-cost step-wise seminars and workshops addressing (a) awareness (b) technology overviews and (c) sector-specific technology workshops. (India)
SMEs need more training courses that include demonstration projects. (India)

For the MAC service sector, follow-up is needed after the training to ensure that technical skills are indeed imparted to SME technicians. (Venezuela)

**G. Access to Technology, Equipment, and Chemicals**

In the aerosol sector, much non-ODS technology has been created in recent years, but much of it is designed with larger companies in mind. Technologies that are appropriate to the conditions of SMEs is urgently needed. (India)

It is always difficult, and often impossible, for small companies to obtain samples or supplies of alternative substances (e.g. HFC-134a) from chemical suppliers, which is required for an SME to decide whether or not to switch to the new substance. (Mexico)

Existing distribution channels for equipment and chemicals should be encouraged to reach out to SMEs. (India)

**H. Access to Financing**

Access to financing continues to be difficult for many SMEs. The current cost-effectiveness yardsticks are too difficult for many SME sectors to meet. (India)

The European Commission has a "SME set-aside" programme that helps involve all SME sectors in ozone protection activities. (Implementing Agency Consultant)

The financing needs of larger companies is very different from SMEs. In general terms, "as the size goes up, the cost-effectiveness tends to goes up". The Multilateral Fund should be more flexible in its cost-effectiveness thresholds. (Mexico, Implementing Agency Consultant)

The Executive Committee still has not resolved all SME-related policy issues. There is a need for clear policies on SMEs from the Executive Committee. (Venezuela)

The Executive Committee may wish to consider a special allocation for SME projects. (Venezuela)

Simplified project proposal forms would assist SMEs with applying for financial assistance from the Multilateral Fund. (India)

Some NOUs are working with suppliers to convince the latter to offer low-cost equipment to SMEs. (Argentina)
### III. Specific Recommendations

The participants made the following recommendations:

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<th>National Ozone Units</th>
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<td>Utilize events such as workshops to promote formation of SME industry associations</td>
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<td>Existing associations should form sub-groups to address SME issues</td>
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<td>Produce more handouts on technology options that are specific to SME conditions</td>
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<td>Produce local newsletters in simple language</td>
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<td>Conduct step-wise workshops</td>
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<td>Develop and disseminate more case studies</td>
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<td>Make special provisions to sell/provide small quantities of alternative substances to SMEs</td>
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Notes

1. Executive Committee of the Multilateral Fund, "Report of the Thirteenth Meeting", pg. 45

2. Mr. Kotelnikov (Asia Pacific Centre for Technology Transfer), pg. 27

3. Some progress has been made in this area to date, for example, virtually all of UNEP IE’s OzonAction clearinghouse services and publications have been disseminated to and used by SMEs, including for example the following SME-focused publications:
   - Aerosol Sector Conversion in Action: Case Studies;
   - Aerosol Conversion Technology Handbook; and
   - Practical Guidelines for Industry for Managing the Phase-Out of Ozone Depleting Substances.

4. To date, examples of such training activities include:
   - Regional Workshop on Aerosol Conversion for West Asia (Jordan, March 1994);
   - Regional Workshop on Aerosol Conversion for the Southeast Asia and Pacific Region (West Java, May-June 1995);
   - Asian Regional Workshop on Ozone Depletion and Management of ODS Phaseout in SMEs (February 1995, New Delhi); and
   - Survey of ODS Use in the Small-Scale and Informal Sector in India (National Small Industries Corporation, May 1995).

5. Mr. Geno Nardini (UNEP Aerosols Technical Options Committee), personal communication to UNEP of 27 September 1995
Annex A: List of Participants
Annex B: Participants’ Papers
Introduction to Participants' Papers

Each participant was requested to prepare in advance of the round table a short paper that addresses the following SME issues in the context of their country or region:

- background of how the participant is involved with SME issues;
- overview of the SME sector in the participant's country or region, including how they define or characterize SMEs;
- description of major technical, financial, regulatory & informational barriers that impede the adoption of ODS phase-out technologies in SMEs in their country or region;
- recommendations for the types of assistance required to overcome the identified barriers;
- recommendations for strategies that the Multilateral Fund and other assistance programmes (e.g. bilateral projects) could take to better assist SMEs with the phase-out of ODS.

Participants from the following countries/organizations provided copies of their presentations or additional information after the round table:

APCTT "Discussion on Information Sharing and Technology Cooperation"
China "Issues Related with ODS Phase Out in SME in China"
Columbia "The Ozone Unit in Columbia"
Ghana "Focus on Small and Medium-sized Enterprises in Developing Countries"
India Untitled Participant Paper
Kenya "Focus on SMEs in Kenya"
Mexico "SMEs in Mexico"
Phillipines "Profile of Small-scale Users of ODS in the Philippines"
Thailand "ODS Phase Out in Small and Medium-Scale Enterprises in Thailand"
Venezuela Untitled Participant Paper