



**Programa de las  
Naciones Unidas  
para el Medio Ambiente**



Distr.  
GENERAL

UNEP/OzL.Pro/ExCom/71/16  
11 de noviembre de 2013

ESPAÑOL  
ORIGINAL: INGLÉS

COMITÉ EJECUTIVO DEL FONDO MULTILATERAL  
PARA LA APLICACIÓN DEL  
PROTOCOLO DE MONTREAL  
Septuagésima primera Reunión  
Montreal, 2 – 6 de diciembre de 2013

**PROYECTO DE PROGRAMA DE TRABAJO DE SUPERVISIÓN Y EVALUACIÓN  
PARA EL AÑO 2014**

Los documentos previos al período de sesiones del Comité Ejecutivo del Fondo Multilateral para la Aplicación del Protocolo de Montreal no van en perjuicio de cualquier decisión que el Comité Ejecutivo pudiera adoptar después de la emisión de los mismos.

## INTRODUCCIÓN

1. El proyecto de programa de trabajo de supervisión y evaluación para 2014 se basa en conversaciones con funcionarios pertinentes de las Dependencias Nacionales del Ozono, de los organismos de ejecución y de la Secretaría del Fondo
2. Pueden surgir otras cuestiones de interés que podría ser necesario tratar en 2014. Por lo tanto, debería haber un cierto grado de flexibilidad para ejecutar el presente programa de trabajo, así como en la asignación de su presupuesto para dar cabida a dichas cuestiones.

### **Actividades de evaluación: Para 2014 se proponen las tres actividades de evaluación siguientes:**

#### Evaluación de proyectos de metilbromuro en América Latina y el Caribe

3. La justificación de la evaluación de proyectos de metilbromuro (MB) en América Latina y el Caribe se basa en diversas razones: varios países de la región muestran la menor reducción relativa en el consumo de MB con respecto a sus consumos básicos de referencia; algunos países estuvieron temporalmente en situación de incumplimiento de los compromisos del Protocolo de Montreal (p. ej., Barbados, Ecuador, Chile, Honduras, Guatemala, Paraguay, Saint Kitts y Nevis y Uruguay), mientras que otros mostraron demoras en la ejecución o reprogramaron sus procesos de eliminación. En otros países también se puso en tela de juicio la sustentabilidad del uso de alternativas.
4. La evaluación permitirá analizar cuestiones concretas en relación con el consumo y la eliminación del MB en diversos países de América Latina y el Caribe, explicar las razones del consumo remanente de MB relativamente grande, examinar la sustentabilidad del uso de alternativas y analizar el fortalecimiento institucional tras la ejecución de proyectos. Los términos de referencia detallados de la evaluación se describen en el anexo I del presente documento.

#### Evaluación de la capacitación en el sector de mantenimiento de la refrigeración

5. Con la aceleración de la eliminación de HCFC y la decisión XIX/6 de la Reunión de las Partes los países del Artículo 5 se enfrentan a dificultades para eliminar las SAO en el sector de mantenimiento de la refrigeración. Algunas de estas dificultades no se plantearon o no tenían la misma pertinencia en el momento de eliminar los CFC. La capacitación en el sector de mantenimiento de la refrigeración debería adaptarse para tratar estas dificultades. A continuación se describen varios ejemplos de estas nuevas situaciones.
6. En la actualidad, varias de las sustancias alternativas de bajo potencial de calentamiento de la atmósfera para el HCFC-22 son inflamables y, en algunos casos, tóxicas. Por consiguiente, deberán ampliarse los programas de capacitación para incluir aspectos relativos al manejo seguro de refrigerantes inflamables y a las instalaciones que los usan, así como en los reglamentos y normas. Deberá garantizarse cobertura y autosustentabilidad suficientes para que los técnicos que manejan estas sustancias estén preparados para hacerlo de manera segura.
  - a) Los proyectos en el sector de mantenimiento de la refrigeración se centrarán en la limitación de los impactos en el clima, en el potencial de calentamiento mundial y en el uso de energía. Por lo tanto, los programas de capacitación deberán ampliarse para cubrir el mantenimiento preventivo, el diseño eficaz y la calidad de las instalaciones, manteniendo o mejorando la eficacia energética del uso de equipos para minimizar las emisiones directas e indirectas. Estos programas también deberían dirigirse a una audiencia más amplia (como ingenieros civiles, constructores y usuarios finales).

- b) En muchos países o no se dispone de sustancias alternativas con bajo potencial de calentamiento de la atmósfera o éstas son demasiado caras. Ello, unido a las medidas de control de las importaciones de HCFC-22 por parte de los Gobiernos, está obligando a técnicos y usuarios finales a utilizar propano de tipo no refrigerante o gases no identificados falsos para retroadaptar los equipos basados en HCFC sin tener en cuenta la cuestión de la seguridad. La capacitación debería tener en cuenta este contexto particular;
- c) Varios países del Artículo 5 siguen teniendo dificultades para incluir en los programas de capacitación a una gran parte de los técnicos que no están registrados o que pertenecen a una asociación. Este problema se agrava cuando se introducen los refrigerantes inflamables como sustancias alternativas;
- d) Varios países del Artículo 5 tienen problemas para establecer o para llevar sus planes de certificación de técnicos a un nivel tal que sólo los técnicos certificados puedan efectuar trabajos de mantenimiento y manipular los refrigerantes.

7. Por lo tanto, parece que, para la ejecución de los planes de gestión de eliminación de HCFC, sería práctica una evaluación que se centrara en la forma de organizar programas de capacitación que se autosustentaran y de amplia cobertura para adaptarse al nuevo contexto. También sería útil para los planes de gestión de eliminación de HCFC explorar con mayor detenimiento las relaciones entre los programas de capacitación, los planes de certificación de los técnicos y la reglamentación y normas necesarios. La evaluación parece oportuna teniendo en cuenta que, de los 138 planes de gestión de eliminación de HCFC ya aprobados, 100 se refieren al sector de mantenimiento y que disponer pronto de información sobre la introducción segura de sustancias alternativas con bajo potencial de calentamiento de la atmósfera atenuaría cualquier riesgo potencial ligado al uso de refrigerantes inflamables.

8. Los términos de referencia detallados de la evaluación se incluyen en el anexo II al presente informe.

Informe final sobre la evaluación de proyectos para la conversión de inhaladores de dosis medida basados en CFC a metodologías sin CFC

9. Se presentó un informe intermedio en la 71<sup>a</sup> reunión. Esta es la versión final, que incluye dos países más que podrían no haber sido visitados en 2013.

**Actividades de supervisión: Para 2014 se proponen las tres actividades de supervisión siguientes:**

Informe refundido de terminación de proyectos de acuerdos plurianuales

10. El informe refundido de terminación de proyectos de acuerdos plurianuales brindará al Comité Ejecutivo un panorama general de los resultados y de las experiencias adquiridas como se informó sobre la base del formato de los informes de terminación.

Informe refundido de terminación de proyectos

11. El informe ofrecerá al Comité Ejecutivo un panorama general de los resultados y de las experiencias adquiridas incluidos en los informes de terminación de proyectos recibidos durante el periodo examinado.

Informe sobre la base de datos de las tablas de proyectos plurianuales

12. De conformidad con la decisión 70/23, el Comité Ejecutivo será informado en la primera reunión de 2014 sobre el estado de las actualizaciones de información recogidas en la base de datos de los cuadros de proyectos plurianuales.

### Calendario de presentación

13. En el cuadro 1 se presenta una descripción general de los estudios de evaluación y del trabajo de supervisión propuestos para 2014.

**Cuadro 1**

#### CALENDARIO DE PRESENTACIÓN DE DOCUMENTOS DE SUPERVISIÓN Y EVALUACIÓN EN 2014

1ª reunión de 2014 (72ª )	2ª reunión de 2014 (73ª )
Estudio teórico de la evaluación de proyectos de MB en América Latina y el Caribe	Informe final de evaluación de proyectos de MB en América Latina y el Caribe
Informe final sobre la evaluación de proyectos para la conversión de inhaladores de dosis medida basados en CFC a tecnologías sin CFC*	Estudio teórico de la evaluación de la capacitación en el sector de mantenimiento de la refrigeración
Informe refundido de terminación de proyectos de acuerdos plurianuales	Informe refundido de terminación de proyectos
Informe sobre la base de datos de las tablas de proyectos plurianuales	

\* Se presentó un informe intermedio en la 71ª reunión. Esta es la versión final, que incluye dos países más que podrían no haber sido visitados en 2013.

### Presupuesto

14. El cuadro 2 presenta el presupuesto para el programa de trabajo de supervisión y evaluación para 2014. El presupuesto incluye las tasas y gastos de viaje de los consultores así como del oficial superior de supervisión y evaluación que participarán en algunos estudios de caso y asistirán a reuniones regionales.

**Cuadro 2**

#### PRESUPUESTO PROPUESTO PARA EL PROGRAMA DE TRABAJO DE SUPERVISIÓN Y EVALUACIÓN DE 2014

2014	
Descripción	Cantidad
<b>Evaluación de proyectos de MB en América Latina y el Caribe</b>	
Estudio teórico	
(1 consultor * 30 días de trabajo * 500/día)	15 000
10 estudios de caso	120 000
Informe final (1 consultor * 20 días de trabajo a 500 \$EUA/día)	10 000
<b>Estudio teórico sobre la evaluación de la capacitación en el sector de mantenimiento de la refrigeración</b>	
(3 consultores * 30 días de trabajo a 500 \$EUA/día)	45 000
Viajes del personal	50 000
Varios	6 000
<b>Total 2014</b>	<b>246 000</b>

**Medida que se prevé del Comité Ejecutivo**

15. El Comité Ejecutivo puede considerar oportuno aprobar el programa de trabajo de supervisión y evaluación para 2014 propuesto, con un presupuesto de 246 000 \$EUA que se muestra en el cuadro 2 del documento UNEP/OzL.Pro/ExCom/71/16.

## Annex I

### Evaluation of Methyl Bromide Projects in Latin America

#### Background and justification

1. The Multilateral Fund (MLF) has been financing projects in the area of methyl bromide (MB) since 1994. Initially it funded non-investment projects, mainly technical assistance and demonstration projects which in time were followed by investment projects. As per the Montreal Protocol commitments, the complete phase-out of MB in all Article 5 (A5) countries should take place by 1 January 2015. The Report of the Technology and Economic Assessment Panel (TEAP) of May 2013 indicates that while this process is going on, Latin America and the Caribbean (LAC) continues to be the region showing the smallest relative reduction in MB consumption with respect to its baseline, although at present it is the region making the largest cuts per year. In 2011 the region had phased out 65 per cent of its regional baseline (up from 55 per cent in 2010). This appears to be a rather slow phasing out trend, if compared to Africa, which during the same year had phased out 92 per cent of its consumption (90 per cent in 2010) and to Asia and the Pacific, including Middle East that had phased out 86 per cent of its consumption (84 per cent in 2010).

2. Only nine of the 33 countries in the LAC region reported MB consumption for controlled uses in 2011. Of these, six countries (Argentina, Chile, Costa Rica, Guatemala, Honduras and Mexico) account for about 95% of the regional consumption, and about 90% of the total A5 consumption. These six countries are included in the category of "large users" (consumption larger than 100 mt).

3. Various reports to the Executive Committee document problems that occurred during the phase-out process in the region. For example, in Argentina, the levels of MB consumption reported between 2006 and 2012 deviated from those committed to by the Government<sup>1</sup> and the phase-out plan had to be re-scheduled. In Central America countries like Guatemala, Honduras and Costa Rica had implementation problems. In Guatemala and Honduras there was also some resistance to alternatives and lobbying from companies to exceptionally be allowed to import MB in 2013. Delays also happened in Jamaica and a progress report on Trinidad and Tobago states that "...there is no guarantee regarding the long-term sustainability of the MB phase-out so far achieved". This means that the issue of sustainability may be worth inquiring upon as well.

4. On the other hand, Latin America and the Caribbean is the region making the largest relative reductions in MB consumption in the past three years (i.e. making on average about 12 per cent larger cuts each year). In the past some large and medium consumers such as Brazil and the Dominican Republic have completed the phase-out process successfully. Furthermore, Parties that were in non-compliance with Montreal Protocol commitments such as Ecuador, Uruguay and Chile, are now back in compliance. It is therefore appropriate, at this specific moment with the deadline for phase-out looming, to inquire on how and whether the phase-out will be entirely achieved on time; how will the MB consumers manage and whether they will submit critical use nominations for consideration by the Parties. The lessons learned will draw on countries experience in solving difficulties and completing the phase-out process.

#### Objective and organization of the evaluation and sustainability

5. The objectives of the evaluation are:

- (a) Analyse particular issues related to MB consumption and phase-out in various Latin American and Caribbean countries;

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<sup>1</sup> UNEP/OzL.Pro/ExCom/70/59 and UNEP/OzL.Pro/ExCom/69/40

- (b) Identify and analyse the reason for the remaining relatively large consumption of MB in the region as described above;
- (c) Recommend solutions and actions to comply with the phase out deadline; and
- (d) Assess the long-term sustainability of the alternative technologies that have been introduced, including technical assistance and training programme.

6. The evaluation will take place in two stages. During stage one (desk study) a consultant will analyze the existing documentation and interview representatives from the Secretariat and implementing agencies and will prepare a report with specific conclusions and recommendations on any further issues that need to be tackled during field visits.

7. Consequently, the desk study will be followed by field work at the country level. During this second stage, a team of consultants will undertake field visits to gather further information and issue country-based case study reports.

8. A final report will synthesize the findings of both the desk study and field visits and will make recommendations for immediate implementation.

Main questions to be addressed by the desk study

9. The desk study will:

- (a) Examine the information on technical alternatives adopted by the countries and assess issues related to feasibility and sustainability (possibly also characterizing successful phase-out cases);
- (b) Analyze the strengthening and harmonization of laws and regulations for the trade and use control as well as constraints (including regulatory constraints) and barriers in the implementation of alternatives to MB;
- (c) Analyze the effectiveness of institutional arrangements in facilitating project implementation as well as in the political context, including the functionality and feasibility of regional agreements and trade policies as well as the collaboration of regional UN offices, intergovernmental institutions, universities;
- (d) Assess the effectiveness of training, including awareness raising strategies and information transfer activities at local and regional levels;
- (e) Assess the involvement of key stakeholders in project implementation and in the adoption of alternatives.
- (f) Examine the reasons for the particular trend in the phasing out of MB including major problems countries encountered in implementing projects and any hurdles in the adoption of alternatives that still remain in key productive sectors;
- (g) Explain what are the necessary conditions to achieve a successful MB phase-out by 2015 and what needs to be done to fulfil these conditions;
- (h) Assess the effectiveness of existing monitoring and surveillance systems; and
- (i) Determine the potential request for submission of critical use nominations.

Scope and methodology of the desk study

10. The desk study will analyse project documents from a sample of 15 countries. The sample will include countries with on-going projects; countries that had successfully phased out the MB and countries that had problems in reaching compliance but succeeded in overcoming them. It will consider particular issues of low volume consuming (LVC) countries, which may face different problems, particularly in the Caribbean. It will focus on the remaining high consumption sectors such as strawberries, other berries (raspberries, blueberries) and melons. Other sectors, which in the past consumed MB but have successfully replaced including vegetables (tomatoes, peppers), tobacco, flowers and some post-harvest applications will also be taken into account.

11. A consultant will be recruited to review the existing information on MB projects in Latin America and the Caribbean available at the MLF. Among these are:

- (a) Individual project documents, i.e. the project proposals that were approved by the Executive Committee, progress and completion reports;
- (b) Agreements made between the Executive Committee and the governments concerned;
- (c) MLF Inventory of Approved Projects;
- (d) Progress reports, project completion reports (PCRs) and final reports for demonstration projects submitted by the implementing agencies to the MLF;
- (e) TEAP progress reports and the assessment reports of the Methyl Bromide Technical Options Committee (MBTOC); ODS production and consumption reported under Article 7 of the Montreal Protocol;
- (f) Additional information and clarifications gathered from discussions with members of the Secretariat, implementing agencies and country offices; and
- (g) Previous desk study and final evaluation reports.

Outputs

12. The consultant will prepare a desk study report addressing the issues mentioned above. The report will be no more than 35 pages, including annexes. The consultant will take into consideration comments received from members of the Secretariat, implementing and bilateral agencies. The document should clearly formulate recommendations for the second phase of the evaluation; point out work hypotheses and possible venues to explore during country visits; indicate what additional information would be necessary and include lessons learned related to project design, monitoring, quality of data and project implementation.

13. A draft terms of reference for the final evaluation based on the desk study findings, including a plan for field visits will be drawn up.

Timing

14. The estimated time for the consultant to complete the work is 35 days. The desk study will be presented to the first meeting of the Executive Committee in 2014. The final report will be completed for the second meeting in 2014.



List of countries for the desk study

15. The list contains the following countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Jamaica, Mexico, Peru, Trinidad and Tobago, and Uruguay.

## Annex II

### Evaluation of training in the refrigeration servicing sector

#### Background and justification

1. The refrigerant servicing sector is the largest consumer of ozone depleting substances (ODS) in most countries and training in good practices of refrigeration has been one of the key activities funded by the Multilateral Fund to reduce ODS emissions and consumption in this sector.

2. During the CFC phase-out period several evaluations<sup>2</sup> covered the subject of training, whether separately or as part of larger evaluations on multiyear programmes or on the refrigeration servicing sector. The evaluations have produced valuable information on different aspects of the training programmes including training strategies, planning, design and delivery, results, impact, sustainability, role of national ozone units (NOUs), vocational training institutes and professional organizations, and role of technicians' certification schemes. Many of these findings are used as reference for projects being implemented today.

3. At the 70<sup>th</sup> meeting the Secretariat presented a discussion paper which provides an overview on issues related to minimizing the adverse climate impact of HCFC phase-out in the refrigeration servicing sector<sup>3</sup>. The paper views the importance of training within a new perspective shaped by the challenges the refrigeration servicing sector currently faces.

4. Indeed, with the acceleration of the HCFC phase out and decision XIX/6<sup>4</sup> of the Meeting of the Parties, Article 5 countries are facing new challenges to phase out ODS in the refrigeration servicing sector under their HCFC phase-out management plans (HPMPs). Some of the identified challenges were not present or did not have the same level of relevance at the time of CFC phase-out. Training needs to adapt to this new context. Several examples are described below.

- (a) In substituting most of the CFC-12 by non-flammable HCFCs and HFCs in the past, the training in good practices in refrigeration focused on reducing emissions and service equipment with the alternative refrigerants. At present, several of the low global warming potential (GWP) alternatives to HCFC-22 are flammable. Therefore, training programmes will need to be expanded to include considerations on safe handling of flammable refrigerants and installations using them, and the linkages with regulations and standards;
- (b) If minimizing impact on climate, global warming potential and energy use are to be taken into consideration in the refrigeration servicing sector, training programmes are to be also expanded to cover preventive maintenance, efficient design, and installation quality, maintaining or improving energy efficiency of operating equipment to minimize direct and indirect emissions. They should also reach a larger audience (e.g., civil engineers, construction contractors and end-users);
- (c) While in previous training programmes coverage and sustainability varied from country

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<sup>2</sup> Include here all the evaluations on training

<sup>4</sup> Decision XIX/6 encourages Parties to promote the selection of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate, as well as meeting other health, safety and economic considerations, and requests the Executive Committee, when developing and applying funding criteria for projects and programmes, to give priority to cost-effective projects and programmes which focus on, *inter alia*, substitutes and alternatives that minimize other impacts on the environment, including on the climate, taking into account global-warming potential, energy use and other relevant factors.

to country, and in many cases countries could only continue training as long as there were available funds; if flammable and in some cases toxic low-GWP alternatives are to be introduced at large scale, all refrigeration training programmes should guarantee enough coverage and self-sustainability to make sure that technicians handling these substances are prepared to do it in a safe way; and

- (d) Low GWP alternatives are not available in many countries and in others their prices are very high; in consequence there does not seem to be a short term solution for several refrigeration and air-conditioning applications. This fact and the control measures being established by the Governments to control the imports of HCFC-22 is forcing technicians and end-users in several countries to use non-refrigerant grade propane or counterfeit unidentified gases to retrofit HCFC-based equipment without any safety consideration;

5. It appears, therefore, that an evaluation focusing on how to organize self-sustained training programmes with a wide coverage to accommodate this new context would be useful for the HPMP implementation. Further exploration on the links between training programmes, the technicians' certification schemes and the required regulations and standards seems also useful for HPMPs at present. The evaluation seems timely considering that out of 138 already approved HPMPs 100 are addressing the servicing sector and that early information on safe introduction of low-GWP alternatives would mitigate any potential risk associated with the use of flammable refrigerants,

#### Objectives of the evaluation

6. The evaluation will examine the new context of the accelerated HCFC phase out in a sample of Article 5 (A5) countries; it will identify the needs for training to face the challenges mentioned. It will then analyze the current situation in training area as left from the CFC phase out and will indicate how training should re-organize to fulfill the needs of the new phase-out process.

It will focus on the following elements:

- (a) The organization, functioning and capacity of training institutes, and of vocational schools;
- (b) The process of professional strengthening in the refrigeration area, especially the creation and role of the professional associations and their impact on the implementation of training programmes;
- (c) How trainees are identified and selected; incentives and disincentives in training attendance;
- (d) Registration and certification of technicians; challenges in establishing a mandatory certification system;
- (e) The informal refrigeration and air-conditioning service sector and how it can be reached. How is the marketing of training done within the informal sector, and how technicians could be recruited for training;
- (f) Training curriculum related issues. The inclusion of topics on installation, operation, servicing, maintenance, disposal of equipment, safe handling of flammable and toxic refrigerants and other issues related to HCFC alternatives;
- (g) Monitoring tools (baseline data, monitoring indicators) to evaluate the impact of training;

- (h) Self-sustainability of training programmes, key factors and strategies, barriers and incentives that should be taken into account;
- (i) Whether funding was adequate; and
- (j) How to estimate the impact of training in the reduction of ODS emissions; a methodology may be devised based on the findings of the evaluation.

### Methodology and Scope

7. The data for the evaluation will be collected in two phases: a) a desk review and b) field work in a sample of countries. The desk review will analyze and synthesize data available in various documents and will obtain new information from interviews and discussions with the Secretariat and implementing agencies, electronic surveys, telephone interviews as needed.

8. The desk study will identify the issues that will need additional information, and will suggest questions for the second phase of the evaluation and next phase from the sample of countries to be visited.

9. A team of consultants will, in cooperation with the Senior Monitoring and Evaluation Officer:

- (a) Review information on training in servicing on HCFC phase-out in the refrigeration and air-conditioning sector available in annual progress and project completion reports, previous evaluations and relevant Executive Committee projects in a sample of countries;
- (b) Conduct interviews with staff of the Secretariat, implementing agencies and organize an electronic survey targeting staff of NOU and other relevant stakeholders; and
- (c) Identify issues and formulate questions for the second phase of the evaluation, including the sample of countries to be visited.

10. A sample of countries will be established by the Senior Monitoring and Evaluation Officer, in consultation with the Secretariat and the bilateral and implementing agencies concerned. Countries will be selected according to the following criteria:

- Regional representation (all regions); and
- Both LVC and non-LVC preparation;

11. The draft report will be shared with implementing agencies and Secretariat staff for comments, before being presented to the Executive Committee.

### Output of the evaluation

12. The first phase of the evaluation will yield a desk study that analyses the existing documentations and draws preliminary conclusions. The desk study will indicate the direction to be taken during the second phase of the evaluation and will identify additional issues to be addressed, the type of information needed and the sample of countries to be visited.

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