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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Eighty-sixth Meeting  
Montreal, 2-6 November 2020  
Postponed to 8-12 March 2021<sup>1</sup>

**REVISED DESK STUDY ON THE EVALUATION OF THE SUSTAINABILITY OF THE  
MONTREAL PROTOCOL ACHIEVEMENTS**

**Background**

1. At the 82<sup>nd</sup> meeting, interest emerged in developing an evaluation of the sustainability of the Montreal Protocol (MP) achievements, including an assessment of the role of the national ozone units (NOUs) and project management units (PMUs) in monitoring ODS phase-out. This comprises, *inter alia*, measures by which NOUs and governments have incorporated the MP obligations and project outcomes into their legal and policy frameworks and how this is reflected in NOU activities; coordination of national key stakeholders; methodologies adopted to ensure the effective implementation of the MP; and mechanisms in place to monitor redirection from non-controlled uses to controlled uses of substances.

2. In response to this initiative, at its 83<sup>rd</sup> meeting, the Executive Committee approved a desk study on the evaluation of the sustainability of the MP achievements as reflected in projects funded by the Multilateral Fund (MLF), as part of the 2019 monitoring and evaluation work programme.<sup>2</sup> The terms of reference are contained in Annex I of the present document. The desk study was accordingly presented at the 84<sup>th</sup> meeting<sup>3</sup> and the Committee deemed its conclusions important and useful. It was noted, however, that a low number of responses to the questionnaire developed to conduct this evaluation were received (i.e., 10 NOUs and one implementing agency (IA)); although an in-depth analysis was conducted, the low number of responses may limit the meaningful recommendations drawn from the study.

3. Subsequently, when the Executive Committee considered the 2020 monitoring and evaluation work

<sup>1</sup> Due to coronavirus disease (COVID-19)

<sup>2</sup> UNEP/OzL.Pro/ExCom/82/13/Rev.1

<sup>3</sup> UNEP/OzL.Pro/ExCom/84/12

programme, it recommended that the Senior Monitoring and Evaluation Officer (SMEO) prepare a revised desk study which would contain additional information to be collected from the national ozone officers (NOOs), and the bilateral and IAs, via questionnaire, to obtain a more representative set of data, and present it to the 85<sup>th</sup> meeting.<sup>4</sup>

4. In accordance with the agreed procedures for conducting the 85<sup>th</sup> and 86<sup>th</sup> meetings due to the COVID-19 pandemic, all the documents related to evaluation at the 85<sup>th</sup> meeting have been deferred to the 86<sup>th</sup> meeting.

5. Below is the revised desk study; changes made to the document submitted to the 84<sup>th</sup> meeting are shown in **bold** in the text.

### **Objective and scope**

6. The objective of the desk study is to assess how the reductions achieved under the MP have been sustained after the completion of the projects funded by the MLF and the extent to which MLF-supported activities contribute to sustaining compliance after the completion of the project.

7. It will cover various aspects related to the policies, regulatory frameworks, institutions and mechanisms; monitoring and reporting; role and responsibilities of the NOUs and PMUs, role of institutional strengthening (IS); production, consumption; stakeholders and awareness-raising activities; in the context of support provided under MLF-funded projects.

### **Methodology**

8. Following the discussions held at the 83<sup>rd</sup> meeting, regarding the terms of reference, the Committee decided that the methodology would use a narrow definition of the term sustainability, which would focus on the irreversibility of actions taken and on the lasting influence of projects and activities financed by the MLF on the long-term policies of a given government. The Committee suggested that the technical aspects of the use of alternatives should also be taken into account, and requested that the desk study examine the ability of Article 5 countries to forge synergies that would allow for ODS destruction after consumption had been phased out (decision 83/8).

9. Following the terms of reference, the desk study looks at eight main topics which collectively impact the ODS phase-out or phase-down of HFCs achieved by the Parties as per their MP obligations; it then considers actions and strategies in place aimed at ensuring that such reductions can be sustained over time, particularly once funding derived from projects has ended. The study looks at past achievements (phase-out of ODS) and considers the current work of the MP and the MLF. A final section deals with challenges identified, lessons learned and a recommendation.

10. A consultant was hired to conduct the desk study addressing the objectives described above. She reviewed previous monitoring and evaluation reports conducted by the MLF on ODS phase-out, compliance, challenges and sustainability of the phase-out achieved, as well as relevant Executive Committee decisions. Reports, work programmes and project documents submitted by IAs to the Executive Committee and the MLF were also studied. These included IS projects, demonstration projects (using non-ODS alternatives) and ODS phase-out (investment) projects approved for various Article 5 countries in different regions. Reports from the Technical and Economic Assessment Panel (TEAP) of the MP were sometimes referenced.

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<sup>4</sup> UNEP/OzL.Pro/ExCom/84/15/Rev.1 and decision 84/11

11. In addition, reports and programmes submitted by UNEP's Compliance Assistance Programme (CAP) (OzonAction) over the years were considered, particularly the most recent three-year rolling strategy (2018-2020), since that clearly addresses actions and changes already made and further needed in light of the ozone-climate link brought into the MP by the Kigali Amendment.

12. To complement and strengthen conclusions derived from the analysis above, a questionnaire was developed to gather feedback from key actors supporting the ODS phase-out process, namely NOOs and IAs. As stated previously the response level was low,<sup>5</sup> and even though the answers received still allowed for more in-depth assessment of strategies in place to assure sustainability of the phase-out in specific countries, and to identify particular challenges emerging, **the Committee agreed that re-sending the questionnaire, with the aim of increasing the responses, would benefit the scope and quality of the conclusions and recommendations made so far.**

13. **This extended version of the document provides the requested update and is based on a total of 49 responses received: 47 NOUs and two IAs (UNIDO and the World Bank).**<sup>6</sup> The questionnaire can be found in Annex II of the present document. **In looking for specific trends and/or challenges, countries were divided into low-volume-consuming (LVC) countries and non-LVC countries on the basis of their HCFC consumption. The list of countries that responded to the questionnaire can be found in Annex III of the present document. An effort was also made to consider high ambient temperature (HAT) countries and highlight their issues separately.**

## Results of the evaluation

### Policies, regulatory frameworks, institutions and mechanisms

14. Ways in which countries ensure compliance with their MP obligations, and in particular the sustained aggregate reductions of controlled substances, after MLF funded activities are completed, were analysed. In particular, whether national policies, legislation and regulations integrate these issues. From the analysis of previous evaluations, project documents and monitoring efforts, it becomes clear that from the inception of the MP and its Amendments, Parties have committed and sought to support compliance with provisions and commitments acquired in relation to ODS phase-out, through governmental policies and regulatory frameworks. These commitments are in fact a requirement of projects funded through the MLF, particularly investment (phase-out) and IS projects. There were instances where non-investment projects also provided substantial support, plus regional regulations, for example in the African region, which further contributed to the establishment of strengthening mechanisms for the ODS phase-out.

15. The IS projects, in particular, are reported to have “provided the extra leverage needed (to increase priority of ozone issues in many Article 5 countries) by strengthening the NOUs as focal points for mobilizing local stakeholders, initiating and following-up on legislation and ratifications, and coordinating the preparation and implementation of phase-out projects and plans with IAs and bilateral agencies.”<sup>7</sup> In Asia, for example, UNEP has implemented IS projects providing training for customs officers and refrigeration technicians, monitoring and policy training and assistance for strengthening and enforcing

<sup>5</sup> The questionnaire was **initially** responded by 10 NOUs: Armenia, Chile, Costa Rica, Ecuador, Egypt, Guatemala, Mexico, Nigeria, Thailand and Vanuatu; and one IA: UNIDO.

<sup>6</sup> **UNEP mentioned that overlooking the questionnaire was due to communication problems and the outbreak of the COVID-19 pandemic, which generated a large amount of urgent staff and operational issues to be addressed in a short time; UNDP explained that following the discussions held at the Inter-agency coordination meeting held in February 2020, they believed that the questionnaire was more applicable to NOUs, given that their country specific inputs would be more valuable and would allow to draw more informed conclusions on the matter.**

<sup>7</sup> Paragraph 1 of document UNEP/OzL.Pro/ExCom/56/8

regulations relating to CFC phase-out, recovery and recycling, and to the phase-out of methyl bromide (MB) and CTC.<sup>8</sup> Similarly, Kenya lacked a regulatory framework to address ODS, their reduction and phase-out as per MP guidelines, which the IS project helped to foster.

16. Through IS funding, with support from the IAs, NOUs have been able to establish and promote regulatory frameworks through their governments to sustain the ODS phase-out. In general, such legislations have been updated or amended, in step with the evolution of the Protocol, to include new provisions, adopt stronger stances as phase-out deadlines arrive (i.e., completely banning an ODS) and consider the Amendments to the Protocol. Licensing and quota systems are put in place to assist with monitoring compliance with regulations related to ODS consumption and trade (import, export, and production where applicable). Since the 68<sup>th</sup> meeting, the Agreements between the Committee and the Governments concerned, link the implementation of HPMPs to a commitment by the countries that a licensing and quota systems will be effectively implemented (decision 63/17). Strengthening such systems is an ongoing exercise that can be evidenced through independent verifications.

17. Challenges with enforcement of such legal provisions are reported both through the questionnaire received, and in the documents studied. These include, *inter alia*: delays in enacting legislation and even ratification of Amendments due to political circumstances (i.e., a change of government priorities or political will; staff changes affecting the continuity of policy implementation; **lack of coordination between government agencies that have a role in ODS phase-out**; or political/civil unrest); the priority given to environmental issues and more specifically ozone protection, which in turn impacts the importance given to the NOU; full involvement of stakeholders including different ministries, but also government agencies and other institutions (e.g., research and development), associations and the private sector. Actions to strengthen sustainability of the phase-out achieved include, for example: helping NOUs to gain traction and recognition within the countries by involving key stakeholders and sectors and contributing to helping Governments identifying and developing efficient, enforceable regulatory frameworks. This is important in achieving the appropriate level of support, from Government and key sectors. Although the commitment of Governments to phasing-out ODS is included in the Agreement with the Executive Committee, when approving phase-out plans, UNEP's CAP helps to foster awareness on the overall importance of protecting the ozone layer and encouraged NOU participation in regional networks. **The majority of respondents to the questionnaire indicated that assistance from UNEP/CAP is highly valuable. UNIDO and the World Bank** noted however, in responding to the questionnaire, that IAs cannot monitor compliance once the projects are completed.

18. The prominent role of the NOUs in assisting in the development of policies and regulatory frameworks is well recognized. Since one of the roles of the NOUs is securing and sustaining a country's compliance with the MP, the NOUs regularly participate in the development of regulations or licensing and quota systems to control the import, export, manufacture and sale of ODS and products containing them. All the NOUs responding to the questionnaire reported an implementation of national legislation to support and maintain the ODS phase-out. In most cases, the regulatory framework has been adjusted over time (or is being currently adjusted) in line with the evolution of the MP (e.g., accelerated phase-out of HCFCs after decision XXIX/6 or the Kigali Amendment). **However, some parties indicated challenges over this due to administrative delays, insufficient training and other issues (e.g., Botswana, Marshall Islands, Senegal, Vanuatu and Zimbabwe). Hurdles in ratifying the Kigali Amendment were cited by a number of LVC countries particularly in Latin America and the Caribbean (e.g., El Salvador, Guatemala, Paraguay and Bolivarian Republic of Venezuela). These seem mainly related to political issues, rather than technical ones.**

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<sup>8</sup> Annex VI of document UNEP/OzL.Pro/ExCom/56/8

19. To enforce policies, NOUs work with national authorities, in particular customs and trade officers (and phytosanitary authorities in the case of MB<sup>9</sup>). Cases of non-compliance or potential non-compliance are also handled by the NOUs. Penalties for violations (i.e., illegal use or trade) are handled by pertinent authorities **and are present in several of countries (e.g. Argentina, Armenia, Barbados and Costa Rica)**. However, agile and efficient mechanisms to enforce such penalties were sometimes reported as weak or difficult to impose, **particularly outside the larger cities or in rural areas in countries (e.g., Cuba, Nigeria, Papua New Guinea and Bolivarian Republic of Venezuela)**. Some African NOUs responding to the questionnaire indicated weak or absent legal instruments to penalize such violations (e.g., **Kenya and Nigeria**) whilst, for example, Armenia indicated that a Code of Administrative Violations is in place and imposes clear penalties on breaches of legislation related to ODS **and Cameroon reported that any movement of ODS and ODS-containing equipment required a “technical visa” and that violations generated penalties**. One way in which Mexico enforces regulations – and thus sustains reductions and maintains compliance – is by implementing national standards to avoid ODS uses.

20. Some countries encourage enterprises to convert from the use of controlled substances to alternatives by implementing fiscal mechanisms (e.g., tax incentives/disincentives or removal of subsidies). However, they do not seem to be a widespread practice as only a few of the NOUs responding to the survey mentioned their implementation and/or using these as a continuing tool to sustain phase-out. Fiscal mechanisms can lead to undesirable results as well. Some examples below illustrate both outcomes:

- (a) Brazil’s chiller demonstration project (UNDP 2005)<sup>10</sup> included the development of a limited duration tax incentive programme for chiller replacement, based on net revenue impact plus the long-term economic impact. The programme costed approximately US \$100,000 and resulted in the removal of US \$61 million aggregate upfront taxes on chillers, thus stimulating their replacement;
- (b) Chile has not implemented tax incentives or disincentives, however a removal of subsidies is part of the contracts between the Ministry of Environment and enterprises receiving funding from the MLF;
- (c) Croatia introduced an environmental tax on refrigerants resulting in a sudden decrease in HCFC-22 consumption in 2006 and an increased demand for split AC units. Import of HCFC-22 equipment was subsequently banned entirely;<sup>11</sup>
- (d) Guatemala mentioned putting in place a “Cleaner National Production Policy” giving recognition to enterprises complying with its mandate, which includes energy efficiency goals. Costa Rica mentioned difficulties in implementing such measures due to current fiscal reforms;
- (e) Thailand reported that the tax disincentive implemented by the Government (in the form of an excise tax) encouraged the smuggling of CFCs due to higher margin gained from the illegal trade;
- (f) The governments of some countries (e.g., Albania, **Chad**, Malaysia and **Sri Lanka**) have been reported to provide incentives for investment in ozone-friendly technologies and duty exemptions on imports for ODS substitutes;<sup>12</sup> and

<sup>9</sup> A good example of this cooperation was provided by Mexico, where imports of MB for controlled uses have been banned since 2014. El Salvador, Indonesia, Jordan and Sri Lanka also provided good examples.

<sup>10</sup> Annex I of document UNEP/OzL.Pro/ExCom/47/21

<sup>11</sup> UNEP/OzL.Pro/ExCom/61/33

<sup>12</sup> UNEP/OzL.Pro/ExCom/56/8

**(g) Zimbabwe reported that tax incentives were in violation of revenue collection targets.**

21. Countries have mentioned that when difficulties arise, in relation to a project, the issues are best solved jointly by the NOU, the PMU and the IA (**UNEP-CAP was often cited in this context**). However, as these mechanisms depend on funding, once the project is completed they lose their importance or disappear entirely (i.e., PMUs). It is thus important for sustainability to invest in capacity building to ensure that the relevant stakeholders such as Government agencies (i.e., ministries, control bodies and others), research or training institutions, private associations and end-users will have the tools to deal with the issues. Yet, there can be external factors such as political instability or economic hardship that fall outside the realm of the project's operative structure, and which are frequently cited as a cause of delay or difficulty in achieving results.

22. Because they are key stakeholders, professional organizations and associations (e.g., trade associations representing a sector) have traditionally been involved in ODS phase-out and replacement. They play an important role in developing the required regulatory framework and monitoring its implementation, as they can help generate confidence in the transition to alternatives and their efficient adoption. This is important as the successful introduction of alternatives is often met by reluctance to change and concerns.

23. In addition, professional organizations and trade associations hold valuable information with respect to what is happening in a sector, such as: trade movements and tendencies and issues with the adoption of alternatives. This includes production sector associations, which play a key role in phasing-out ODS production and can be drivers for industry collaboration, a critical component of sustainability. A positive relationship between agencies, NOUs and PMUs, is essential and needs to evolve and be updated (e.g., when a new association is formed, or new/previously unconsidered stakeholders join the scene). Such relationships become even more important when considering that trade associations (or their members) can contribute to identify illegal behaviors, since such instances can undercut legitimate actors. Many NOUs responding to the questionnaire reported collaboration with professional organizations: Egypt reports continued and fruitful interaction with the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE); **Benin reports extensive cooperation with the National Cold and Air-conditioning Association**. In other instances (Chile, Nigeria and Vanuatu), the NOUs stated that such collaborations were either not active or did not take place at all. **However, only in a few cases did respondents indicate that professional organizations would be able to continue the necessary monitoring and follow-up tasks after phase-out was completed and the MLF funding had stopped.**

24. Institutions, or agencies selected as national counterparts of a project, can be instrumental, not only for its successful implementation and completion, but also for ensuring continuity after the project ends. This has been true, for example, in MB projects, where research stations have supported project efforts by undertaking research and demonstration trials, training sessions and awareness raising campaigns. Together with trade associations, or similar organizations, they have contributed to supporting and speeding up the registration process of chemical alternatives and giving confidence to farmers on the use of both chemical and non-chemical options. Similar cases can be found, for example, in chiller projects. Some examples of this are found below:<sup>13</sup>

- (a) The Armenian refrigeration association and the centre for Environmental Legislation (Yerevan State University) are actively involved in discussions and public hearings related to ODS legislation and its implementation. NGOs and other civil organizations contribute to enforcing such legislation on a voluntary basis;

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<sup>13</sup> UNEP/OzL.Pro/ExCom/68/11 and UNEP/OzL.Pro/ExCom/42/39/Add.1

- (b) The technology transfer centre in Agadir, Morocco, which was established through the investment projects led by UNIDO, has been instrumental in disseminating alternatives, providing technical assistance and necessary training and solving problems encountered by growers. These services go well beyond the implementation of alternatives, to addressing pest and disease diagnosis, plant nutrition and irrigation, best agricultural practices, composting and others;
- (c) **The Association for Refrigeration and Air-Conditioning, the National Learning Centre (SENA) and the Association of Flower Exporters of Colombia cooperate with the NOU in developing certification and training schemes to support the phase-out;**
- (d) Trade associations, such as the Kenya Flower Council, contributed to the dissemination of information, awareness and identification of problems related to the implementation of alternatives to MB;
- (e) Mexico's NOU continues to work with associations of producers and fumigators in disseminating and promoting alternatives to MB as identified and implemented in the national phase-out plan;
- (f) The National Refrigeration Institute of Mexico was selected under the CFC national phase-out plan to provide training for service technicians in 2005; and
- (g) The tobacco research board in Zimbabwe and the Agricultural Research and Extension Trust (ARET) in Malawi (which works in full cooperation with the country's tobacco research board), played a central role in training growers, providing technical assistance and research support.

#### Monitoring and reporting

25. Monitoring, recording and reporting production and consumption of ODS is an obligation of the Parties to the MP under Article 7; whilst many countries found this obligation initially challenging, when comparing their situation to previous years, it is evident that information submitted has improved substantially over the years and the Ozone Secretariat's database is much more complete than in the past. NOUs are responsible for the collection, analysis and submission of data on ODS consumption and production, and these activities are supported with IS funding.<sup>14</sup> Monitoring is most often carried out in cooperation with customs and trade officers and other relevant authorities depending on the ODS (i.e., phytosanitary officers in MB, or health authorities for MDIs). Monitoring schemes for controlled substances that are phased-out remain in place after projects are completed, but as time goes by and focus on these substances diminishes notably, it becomes more difficult, or even practically impossible, to perform efficient control.

26. Country programme (CP) data reporting helps the Secretariat and the Executive Committee to understand consumption trends and to establish the financing of projects and their activities, as it is the only data providing the level of consumption of each controlled substance under the MP by sector. Accurate and timely submission of the CP data can be correlated to the capacity of the country to collect such information and to accurately estimate the level of production and consumption of ODS. In some countries, delays in

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<sup>14</sup> UNEP/OzL.Pro/ExCom/82/63

submission were due to the large turnover of NOOs; language issues; the approval process within the government for CP data; and changes in governments.<sup>15</sup>

27. Continuous improvement of the verification reports is important because they often uncover flaws and point out recommendation for institutional capacity building. For example, lessons learned from verification reports assert the need for the NOU to cross-check their records with importing enterprises' data on a regular basis to, *inter alia*: avoid the difference in consumption quantities; to diminish data discrepancies with customs agencies (e.g., use of wrong Harmonized System codes, different measurement units for quantities of shipments and non-availability of actual shipment); an additional capacity building and a formal channel of communication should be established between Customs and the NOU; and sufficient time should be allocated in project planning to allow government procedures (i.e., legislations adoption) between approval of the project and implementation.<sup>16</sup> HPMPs are required to monitor and record the implementation of activities, but can however be complex when verifying large numbers of small and medium-sized enterprises, as interactions with many end-users are necessary.<sup>17</sup> These hurdles are mostly reported for stage I of the HPMPs and are generally overcome by stage II. **Several countries reported confusion with new HS customs codes for HFCs and the need for extra training and support in this respect, particularly LVC countries (e.g., Bosnia Herzegovina, Chad and Jamaica).**

28. Bilateral and IAs greatly contribute to recording information on ODS production and consumption through surveys and inventories conducted as part of project activities, to characterize relevant sectors. Aside from providing direct information on ODS production and consumption, these surveys have helped to identify specific sectors impacted by ODS reductions and understand their particular circumstances, thus bearing importantly on the choice of potential alternatives (see below section on the role and responsibilities of bilateral and IAs).

29. Continuous monitoring of the reductions achieved is important to verify sustainability. NOUs responding to the questionnaire reported having monitoring schemes in place, but indicated concerns as to their long-term sustainability (e.g., **Chad, Guatemala and Nigeria**) **and difficulties in reaching informal consumers in the refrigeration sector and/or in rural or remote areas of the country (e.g., Botswana and Bolivarian Republic of Venezuela).** **A high proportion of the HAT countries responding to the questionnaire indicated insufficient, weak or even absent monitoring mechanisms in place (e.g., Benin, Burkina Faso, Nigeria, Senegal, Tunisia).** **In various other instances, like in Argentina, Armenia, The Gambia and Côte d'Ivoire, it was reported that national legislations contain mechanisms to monitor ODS phase-out during, and after, its completion and that government support was assured.** Some NOUs, such as in Mexico, involved customs authorities and industrial organizations in the monitoring activities. The Secretariat has recently conducted a review of the monitoring, reporting, verification and enforceable licensing and quota systems in place in Article 5 countries,<sup>18</sup> where recommendations were made, such as, *inter alia*: to ensure the continuity of the PMUs across multi-year agreements (MYA) (and even overlap of a PMU between two concurring MYA) and to ensure a robust involvement of key stakeholders.

#### Role and responsibilities of the NOUs and IS

30. Among their objectives, IS projects should enable the NOUs to coordinate ODS reductions and phase-out, in order to achieve timely compliance with the phase-out schedules set forth by the MP and its Amendments. With support provided through IS projects, NOUs monitor ODS phase-out, and the

<sup>15</sup> MLF/IACM.2018/1/24 and UNEP/OzL.Pro/ExCom/81/6 and Corr.1

<sup>16</sup> UNEP/OzL.Pro/ExCom/84/24

<sup>17</sup> UNEP/OzL.Pro/ExCom/74/9

<sup>18</sup> UNEP/OzL.Pro/ExCom/83/38



phase-down of HFCs in their country and develop monitoring and data-reporting capacity and a management information system that is accessible to key stakeholders. Resulting databases are generally put together in conjunction with producers and/or importers of ODS or equipment containing ODS, customs officers and other relevant authorities and should be coupled with licensing or quota systems in place, to exert the appropriate control. Producers, importers, exporters and sometimes direct users of ODS are required to obtain a permit from the NOU.

31. Although this is not an indicator that can be clearly measured, funding for IS projects is considered to have enabled and ensured the capacity of Article 5 countries to achieve compliance.<sup>19</sup> It has been a driving force in assisting the development of ODS-related regulatory frameworks and licensing schemes, and for the establishment of the PMUs. Furthermore, IS has been instrumental, in establishing systems to record and monitor ODS consumption and production.

32. Reporting consumption and production of controlled and exempted ODS is mandatory under Article 7 of the MP and is an essential component for monitoring compliance. Capacity building has been provided under IS projects to ensure controls on production and import/exports of ODS, including licensing and quota systems. The verification of production is critical in this respect and should cover accounting frameworks recording production, internal use, raw material consumption, domestic sales and exports for ODS use and for feedstock use including sales conducted through dealers. Monitoring feedstock can pose challenges, but its importance also lies in the fact that they could be stockpiled and could thus leak (this situation has been cited for example in reference to CTC).<sup>20</sup> **Many respondents reported not doing any monitoring for feedstock or exempted uses (e.g., laboratory and analytical uses and quarantine and pre-shipment (QPS) uses) to avert possible deviation into controlled uses; this was in particular the case of countries that do not produce ODS, especially some LVC countries in Africa (Cabo Verde, Chad, The Gambia, Rwanda and Zimbabwe), Latin America and the Caribbean (Cuba, Jamaica and Uruguay), and Asia and the Pacific (Maldives and Marshall Islands).**

33. Many countries have started using electronic licensing systems for import/export of controlled substances, which will reject approval of a licence if the intended quantity exceeds the quota. Some examples are presented below:

- (a) Armenia established an electronic licensing system with MLF funding, which allows for fully automated reporting possibilities, supported by reporting obligations included in the national legislation;
- (b) Brazil implemented licensing systems early on in the ODS reduction and phase-out process, as part of the overall regulatory framework for ODS consumption, export, production and use.<sup>21</sup> This has served as the framework for inclusion of further controlled substances, reduction steps or similar in the ensuing years;
- (c) Costa Rica reports having an electronic licensing system in place, but needs a specialized team of professionals to interpret data and define ensuing actions;
- (d) Thailand has implemented an electronic licensing system financed by the government, which allows its Department of Industrial Works (DIW) to track the import and export of ODSs in real time, and compare quantities against the license. Prior to each shipment, importers must notify the DIW of the intended quantity through an electronic system, which

<sup>19</sup> UNEP/OzL.Pro/ExCom/56/8 and UNEP/OzL.Pro/ExCom/74/51

<sup>20</sup> UNEP/OzL.Pro/ExCom/83/38

<sup>21</sup> UNEP/OzL.Pro/ExCom/47/21

will not approve the shipment if the allowed quota is exceeded. If approved, the information is transmitted to customs and once cleared, it is reconciled with the DIW to ensure consistency among two agencies;

- (e) Vanuatu is in the process of establishing an online licensing system for ODS. The Department of Industry and Customs authorities has taken the lead in this effort, which includes the Department of the Environment and the NOU. These efforts are part of a World Bank project currently in place;
- (f) **Senegal has implemented an electronic system to control ODS imports (including HFC) and encourage uptake of alternatives; there are however challenges with enforcement;**
- (g) **Indonesia has implemented an electronic licensing system that is linked to the quota system for ODS imports and will deduct the allocated amount automatically, when the importer processes the license; and**
- (h) Some NOUs that responded to the questionnaire (Egypt and Nigeria) reported difficulties in the implementation of the licensing systems, because controlled ODS are very specific and their identification requires high-level training. The sustainability of these systems post MLF funding, was often indicated as a cause of concern. Weak or absent long-term monitoring policies, a need for technological improvement of electronic systems and further staff training were the main hurdles cited.

34. **In the majority of cases**, the NOU generally holds a seat within the Ministry of Environment, the Ministry of Natural Resources or a similar government body. As environmental issues become more important for most countries around the world, NOOs have come to receive increased support from within governments and report to the Deputy Minister, the Vice-minister or another high-ranking officer. In the past, changes in administrative structure within the relevant Ministry and/or NOU staff turnover have been signaled as a reason for delays in projects completion reports (especially in IS), establishing regulations and launching campaigns.<sup>22</sup> Staff turnover was reported **as low in the majority of cases** but can still be a problem. **To address this issue**, several countries have taken measures ensuring that NOOs are not political nominees; that there is a permanent base staff complemented by external specialists. The creation of “ozone steering committees” or similar bodies that are of permanent nature, **involve key stakeholders including from the private sector and academia**, and record and perpetuate actions undertaken by the NOU with respect to ODS phase-out and ozone layer protection, and developing documentation centres containing historical information, is another step often taken to ensure continuity.

35. Under the provisions of MP and through their Agreements with the Executive Committee, Article 5 countries are required to implement monitoring and reporting mechanisms to verify progress with the agreed reductions and phase-out of ODS. This often requires interacting with a variety of government bodies and institutions outside the Ministry or office where the NOU sits. For example, Customs, Ministries of Agriculture, Trade, Health, Industrial Development and even Foreign Affairs may be impacted by ODS phase-out. It is not always simple to involve a varied set of stakeholders with different interest in ODS issues; these factors can complicate the monitoring and ODS reduction enforcement processes.

36. Licensing and quota systems usually remain in place after the end of the MLF-funded projects,<sup>23</sup> with the aim of ensuring sustainable compliance with the MP. Some IS activities are organized to strengthen

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<sup>22</sup> UNEP/OzL.Pro/ExCom/56/8

<sup>23</sup> Some countries keep their import quotas, while others impose a ban.

this process and ensure sustainability, in conjunction with the NOU and relevant authorities, plus other key stakeholders.

37. The MB tracking systems also pose specific challenges. The fact that QPS uses of MB are exempted under the MP, prevents Parties from banning this ODS altogether, although some have opted for this option. **Various countries in Latin America and the Caribbean** (e.g., **Argentina, Belize, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala and Mexico**), **and in the Asia Pacific region** (e.g., **Sri Lanka** and Thailand) provided information on specific measures to track imports and use of MB. Mexico, in particular, established a monitoring system for MB that involves various divisions within the Ministries of Environment, Health, and Agriculture and Forestry.

38. Tracking imports, production and actual use of phased-out ODS also represent a challenge.<sup>24</sup> A similar issue arises with HCFCs that have been phased-out or are in the process of being phased-out (e.g., HCFC-22, HCFC-141b and HCFC-142b). Monitoring such feedstock and reporting their annual quantities often proves difficult. **This challenge was reported for example by Bolivarian Republic of Venezuela.**

#### Role of the bilateral and IAs

39. Bilateral and IAs (UNEP, UNIDO, UNDP and the World Bank) of the MP and bilateral agencies have been instrumental to the ODS phase-out process and its sustainability. They have primarily been responsible developing projects aimed at identifying and implementing the most feasible alternatives to ODS, and thus ensure an effective phase-out. Projects can be demonstrative, to trial alternatives or disseminate information and help gather confidence in their implementation; or investment, with a clear commitment for phase-out. They can be specific to one country or regional and even global in nature.

40. The role of the bilateral and IAs goes beyond the adoption of feasible alternatives; it further supports sustainability of the phase-out achieved by assisting the host country to develop the required regulatory framework to enforce the ODS phase-out; identifies key stakeholders impacted by the phase-out and establish a strong relationship with them; identifies a counterpart agency which can later act as a “depository” for activities related to the phase-out; organize training activities; and prepare information materials to support communication and conducting awareness-raising strategies.

41. Bilateral and IAs also contribute greatly to characterizing ODS use through surveys and inventories and assessing the impacts of phase-out. These are generally carried out in the project preparation stage, and updated when submitting progress reports and include specific information on ODS users (i.e., productive sectors such as vegetables for export), and the location of equipment when relevant (i.e., chillers). This has helped in assessing technical and economic feasibility of alternatives, understanding hurdles to their adoption and finding ways to overcome them. Good examples abound in many project documents.

42. Ensuring flexibility in project implementation and development on the part of the bilateral and IAs, has also proven to be an important asset. In some instances, the alternatives selected initially to replace an ODS, have not produced the envisioned results under the specific circumstances, such as: the unavailability of the necessary materials or supplies; the environmental conditions; the necessary expertise to implement the alternatives; and the delayed regulatory issues. Having the possibility to change the initially proposed alternatives and even being able to include new or additional ODS in a given project, has proven essential both for achieving the phase-out and to ensure that alternatives are efficient to replace permanently the ODS in question. The process has not always been simple, as the following examples illustrate:

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<sup>24</sup> Both chemicals are exempted from Montreal Protocol controls when used as certified reference materials for laboratory and analytical uses.

- (a) The “Demonstration project for integrated management in the chiller subsector in Brazil, with emphasis on the application of energy-efficient, CFC-free technologies for the replacement of CFC-based chillers”<sup>25</sup> for example, initially envisaged the completion of an inventory of chillers using CFCs. However, project initiation was seriously delayed, and by the time it started the number of chillers with CFCs was small and HCFCs (in use) had been included in the MP list. Thus, flexible conditions allowed for these substances to be included, and training efforts to be adjusted, with very good results;
- (b) The Croatia HPMP implemented by UNIDO and Italy envisioned early phase-out of HCFCs due to the countries entering the European Union (EU) in 2016<sup>26</sup>. However, Croatia then entered the EU in 2013, making it necessary to update the strategy for its HPMP,<sup>27</sup> which led to a ban on import and use of HCFCs starting 1 July 2013, and use of recovered/recycled HCFCs as of 31 December 2014; and
- (c) In the course of an evaluation conducted by the Secretariat, CFC-MDIs replacement projects were found to be particularly complex, due to the intricacy of the project and the variety and range of stakeholders involved, including different ministries, professional organizations, regulatory bodies and health service providers. A recommendation was made for amending organizational configurations and creating new coordination bodies and raised some concerns about the safety and cost of some alternatives selected.<sup>28</sup>

43. Bilateral and IAs play a key role in setting forth and achieving the phase-out process. They contribute in creating confidence towards alternatives and their effectiveness in the long term, once ODS become unavailable or illegal and once the projects come to an end. The performance of IAs was recently evaluated against their 2017 business plans,<sup>29</sup> and included a quantitative assessment based on performance indicators and also a qualitative appraisal with input from NOUs. This proved helpful for drawing lessons and identifying areas where work can be improved. Over the years, IAs have had varying levels of success in the different projects they have implemented, but the general outcome – especially when measured against the outstanding achievement of the phased-out controlled ODSs – is positive. Issues arising in specific countries have been resolved through dialogues with the NOUs and implementation of corrective measures, and the Executive Committee has played an important mediating role in this process.

44. Bilateral and IAs’ success in phasing-out ODS is achieved by providing a continuous assistance. It is important to consider achievements and lessons learned from each stage, for example, when a demonstration project leads to an investment project. Sometimes, however, each of these stages or projects is carried out by different agencies, which underlines the importance of ensuring inter-agency collaboration and exchange of information, especially relating to previous projects. This can avoid duplicating efforts and contributes to the continuity of results.

45. An important issue is the fact that, once a project is finished, IAs are not allowed to monitor ODS use any further as it becomes the responsibility of the Government. Political instability and economic crises have been shown to hamper sustainability of the phase-out achieved.

46. UNEP’s CAP delivers direct, country-specific assistance to Article 5 countries (especially LVCs) to achieve and sustain compliance with MP commitments (e.g., the development of a licensing system in

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<sup>25</sup> Project number BRA/REF/47/DEM/275

<sup>26</sup> UNEP/OzL.Pro/ExCom/61/33

<sup>27</sup> UNEP/OzL.Pro/ExCom/71/32

<sup>28</sup> UNEP/OzL.Pro/ExCom/71/15

<sup>29</sup> UNEP/OzL.Pro/ExCom/82/10

Suriname, or the compliance assistance provided to Maldives). The CAP activities are regional, sometimes global, and can be described in a general manner as compliance support, networking and information exchange. The CAP plays a central role in providing support to strengthen existing institutions and contribute to the sustainability of the phase-out achieved. It endeavours to maintain active communication with NOUs, to identify emerging issues and provide solutions to the extent possible. The CAP has revised its strategy for the period 2018 – 2020 to account for developments arising from the Kigali Amendment.<sup>30</sup> Providing assistance for ensuring compliance with reduction and phase-down targets is still a core objective, but work is now underway to install enabling activities in preparation for the HFC phase-down. There is also a need for supporting implementation of licensing and quota systems to address this. **The majority of countries responding to the questionnaire indicated that the UNEP CAP support was excellent and had been instrumental for achieving and maintaining MP goals. Seeking assistance from UNEP CAP to address difficulties arising from implementation of new developments of the MP was repeatedly reported by NOUs.**

47. One of the pillars of the CAP is its clearinghouse mandate, through which it provides vital updated information to NOUs and supports awareness-raising activities. The roles and activities undertaken by UNEP's CAP was deemed highly important by a **high proportion of NOUs** that responded the questionnaire.

#### Role and responsibilities of the PMUs

48. The PMUs were introduced in 1997 when performance-based funding agreements for ODS phase-out between the Executive Committee and IAs were implemented. Guidelines for the preparation, implementation and evaluation of phase-out projects were set by the Executive Committee at its 38<sup>th</sup> meeting.<sup>31</sup> These made bilateral and IAs responsible for establishing mechanisms which allowed effective and transparent implementation of phase-out plans and provided funding for creation of PMUs, which hold a central role in the preparation of annual action plans, the coordination of activities with stakeholders, and monitoring and reporting obligations. In most cases, PMUs are located with, or managed by, the NOUs. The role of the PMUs was recently reviewed by the Secretariat within an assessment requested by the Executive Committee to help understand the costs and duties of the PMUs and their relationship to IS projects and the CAP project preparation and verification activities.<sup>32</sup>

49. Since the onset of the HPMP and the adoption of the Kigali Amendment, the roles and responsibilities of the NOUs and the PMUs and, in consequence bilateral and IAs, have become more relevant and good communication and coordination between NOUs and PMUs seems more important than in the past.

50. Through the questionnaire sent to NOUs as part of this evaluation, it is evident that this issue is receiving increased attention; efforts to ensure good knowledge and capacity transfer from the PMUs to the NOUs upon completion of the projects were reported by several NOUs, however, this issue was often identified as a challenge, and concern for the time when the projects are finished and MLF funding ends was frequently expressed.

51. The PMUs are more active in preparing the national action plans, identifying key stakeholders and coordinating activities that involve them and monitoring project progress, with a less active role in establishing policies, legislation and regulations to assure a sustained aggregate ODS phase-out. The fact that they are outside the government often ensures quicker decision-making and response to the bilateral

<sup>30</sup> UNEP/OzL.Pro/ExCom/80/28

<sup>31</sup> UNEP/OzL.Pro/ExCom/38/57/Rev.1

<sup>32</sup> UNEP/OzL.Pro/ExCom/82/63

and IAs. The PMUs also bring specific expertise to a project and can help recruiting consultants when needed.

52. Not all countries have a PMU in operation, **including a few LVC countries (e.g., Armenia, Barbados, Paraguay, Vanuatu and Zimbabwe) and some non-LVC countries (e.g., Chile, Colombia, Ecuador and Nigeria)**, thus, project management, implementation and follow-up are the responsibility of the NOUs (sometimes with the help of consultants). In some instances, PMUs have played a crucial role in enforcing ODS regulations (e.g., Kenya and Senegal).<sup>33</sup> **In other cases, the NOU performs simultaneously as a PMU (e.g., Argentina, Belize, Jamaica and Sri Lanka).**

#### Production, consumption and stockpiles

53. Project preparation was often the first source of information on ODS consumption as it generally involves surveys of a wide array of stakeholders to characterize ODS use and the impact of its phase-out. These include direct users and importers, producers and service suppliers' dependant on the concerned ODS. At present, the NOUs keep databases on the manufacturing enterprises and lines funded for dismantlement, but there does not seem to be ample follow-up of enterprises using the agreed alternatives once the projects have been completed (although Mexico, for example, did report continuing activities in this respect, particularly in connection with the phase-out of controlled uses of MB). Monitoring of ODS production facilities that were dismantled to ensure that production has indeed ceased, was also not reported.

54. Follow-up mechanisms in the production sector, for lines funded for closure, were reported by some NOUs in the questionnaire. For the production lines that did not close, or imports/consumption which are still allowed because they comprise substances used for exempted uses (e.g., QPS, laboratory and analytical uses and feedstock), such imports or production are monitored through licenses granted for specific uses and production or import reports; different authorities may be involved, for example trade, Customs, phytosanitary and agriculture. Such licensing systems were reported, for example by Chile, Ecuador, Guatemala, and Mexico **in Latin America, and Sri Lanka and Thailand in Asia Pacific. Madagascar reported creating a “one-stop shop” for monitoring the dismantling of equipment and ODS phase-out.** Ensuring that there is no redirection from exempted to controlled uses is still a challenge, as tracking systems that go all the way from importation to the end-user are difficult to implement and enforce. Identification of specific ODS, and in some cases actual differentiation between exempted and controlled uses, is not completely clear, and still causes confusion (i.e., doubts remain as to whether a particular use of a substance is exempted and allowed, and/or if the intended or actual use is controlled and thus currently illegal).<sup>34</sup>

55. In **several** pilot projects currently funded by the MLF, or where a destruction scheme has **otherwise** been agreed (e.g., Costa Rica currently holds a temporary destruction agreement with a local cement factory for ODS destruction free of charge), there is a concern with respect to the continuity of the scheme once the funding stops and enterprises have to cover the costs directly. Ecuador has recovered ODS and has a destruction scheme in place, approved in 2017 without direct participation from the NOU. To date, the country has destroyed 2.7 mt of ODS. **Indonesia reported the ability to destroy ODS locally, but at high cost and through a cumbersome process. Bolivarian Republic of Venezuela reported that the destruction facility had stopped operating due to economic constraints.**

56. Many NOUs (e.g., **Belize, Cambodia, Colombia, Ecuador, Egypt, Guatemala, Indonesia, Nigeria and Vanuatu**), reported collection or recovery of stocks of ODS that can no longer be used. The

<sup>33</sup> UNEP/OzL.Pro/ExCom/82/63

<sup>34</sup> 2018 TEAP Report. Volume 3: TEAP 2018 Progress Report.

initial (and often single) action is to store these stocks at a location designated by authorities. Destruction has been achieved only in some instances (e.g., Brazil, Colombia, **Indonesia** and Mexico). There is general concern with this issue, as often an appropriate destruction technology is not available, or it is not economically feasible to destroy small quantities of ODS. Due to transboundary restrictions, it may be infeasible to ship these substances abroad, **or it can only be achieved at a very high cost (e.g., Papua New Guinea exporting ODS to Australia for destruction)**. ODS disposal projects have been reviewed by the MLF, including recovery, collection, transportation and storage as well as destruction options.<sup>35</sup> Measures to support ODS disposal as well as specific challenges and suggested actions were evaluated. **Lack of a sustainable funding option for destruction was often cited as a constraint.** Detection of illegal ODS trade or confiscation of illegal ODS have also been reported, and in increasing numbers.<sup>36</sup> These substances may also end in storage or in some cases are destroyed. Some Article 5 countries have expressed concern with the handling of these substances, especially where destruction mechanisms are not available or cannot be funded. This is an issue warranting further attention as volumes may increase and be cumbersome to store, or substances could find their way back into the market.

### Stakeholders

57. Full involvement of key stakeholders has been regularly identified as a critical factor influencing successful phase-out of ODS.<sup>37</sup> They include Government institutions, the concerned industry or production sector, service/maintenance agencies, suppliers, technical/vocational institutions, research centres, regulators associated with standards and certification bodies and others depending on the ODS in question.

58. Coordination mechanisms among stakeholders vary, but often comprise the creation of a steering committee or an advisory group bringing together key stakeholders, including the private sector, the NOU and the PMU if relevant. This committee is usually coordinated by the NOU, and in general meets regularly to discuss and decide on relevant issues. In some instances, no formal steering committee exists, but strong cooperation amongst stakeholders is actively encouraged, such as in Armenia through annual stakeholder consultation events involving industry representatives, government authorities, standards bodies, enterprises and others. Mexico reported continuous, evolving coordination with industrial associations, to address various issues such as adjusting quotas or reviewing energy standards.

59. Although measures are in place in many countries to reduce staff turnover at NOUs, and many NOOs have been in that position for many years or made a smooth transition when succession occurs, frequent staff changes (**beyond the NOU and extending, for example, to customs**) are still cited as a hurdle for securing institutional memory and the continuity of programmes. In many cases, service sector training is sustained through integration of relevant technical information into technical institutions' curriculum. Furthermore, in the case of customs, the training curriculum is integrated into national customs academy training, and should be regularly updated. This is an important point for sustainability.

60. Membership in steering committees, coordination and responsibilities are reported to evolve over the years by involving new sectors and/or stakeholders as appropriate; however, those sectors that have phased-out ODS may become inactive and information on activities undertaken for their replacement lost or forgotten. This could impact the sustainability of the phase-out, for example when potential or real instances of illegal trade arise, or for those ODS where a controlled and exempted status exists (e.g., QPS, laboratory, or analytical uses). **High stakeholder involvement and active participation was generally reported by NOUs responding to the questionnaire. In some instances, the challenges cited arose from**

<sup>35</sup> UNEP/OzL.Pro/ExCom/82/21

<sup>36</sup> UNEP/OzL.Pro.31/INF/6

<sup>37</sup> UNEP/OzL.Pro/ExCom/68/11 and UNEP/OzL.Pro/ExCom/71/15

**maintaining momentum of the steering committees and involving informal users (for example in the refrigeration sector) or users located in rural or remote areas.**

### Training

61. Training remains a crucial factor for sustaining the ODS phase-out achieved. In several cases, the PMUs are able to bring the appropriate expertise to a given sector, often with the help of external consultants. Further, in conjunction with the bilateral and IAs and the PMUs, the NOUs seek to develop a pool of trainers, that can, for example, work with service technicians of the refrigeration and air-conditioning sector. Training manuals and training-of-trainers' activities and training modules for schools and universities are developed usually as joint efforts between NOOs, local institutions and bilateral and IAs. **The continuity of these programmes without funding from the MLF was often cited as a concern.**

62. Certification schemes for trained technicians have been suggested as a good way to ensure the continued availability of good trainers once projects are finished, and have been implemented with good success in some countries. When integrated with guidelines for safe handling of refrigerants they facilitate the sustained use of alternatives. **Lack of a certification system was, however, reported as a challenge by several respondents from Africa (e.g., Botswana, Burkina Faso, Eswatini, Kenya, Senegal and Tunisia) and in other countries (e.g., Barbados).** The continuity of these programmes, follow-up education or training based on new developments or for new employees once the projects are completed, is however not assured and was often cited as a cause of concern.

63. Establishing a pool of trainers that can ensure continuity of the expertise and experience achieved through the projects and alternative adoption efforts is an important step towards sustaining the phase-out. Project reports mention setting up robust and thorough training programmes and consolidating trainer pools (e.g., the sector plan for phasing-out CFC-11 and CFC-12 production in Mexico<sup>38</sup>) and programmes in place with associations or organizations that bring them together. NOUs responding to the questionnaire gave varying answers in this respect: Nigeria and Vanuatu indicated not having a pool of trainers available whilst Costa Rica, Ecuador, Mexico, **Paraguay and Trinidad and Tobago** are actively working on this.

64. Gender-disaggregated data about trainers and trainees is not apparently available; UNEP's CAP has very recently launched the booklet "Women in the refrigeration and air-conditioning industry: Personal achievements and experiences"<sup>39</sup> with the aim of making participation of women in the RAC sectors more visible. **Most NOUs responding to the questionnaire indicated encouraging female participation in the NOU's work, trainings and technical committees, but gender issues are not addressed beyond that fact.**

### Awareness-raising activities

65. Awareness-raising activities about the MP targeting decision-makers, stakeholders and the broader public have always been at the core of projects and NOUs' activities and programmes. Many NOUs are actively involved in preparing these campaigns, very often in conjunction with the bilateral and IAs and sometimes with Government support. **Celebration of a National Ozone Day is often the most significant**

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<sup>38</sup> UNEP/OzL.Pro/ExCom/45/38 and MEX/PRO/40/INV/115

<sup>39</sup> UNEP OzonAction. Women in the refrigeration and air-conditioning industry: Personal achievements and experiences  
[https://wedocs.unep.org/bitstream/handle/20.500.11822/29236/8051Women\\_in\\_RAC.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/29236/8051Women_in_RAC.pdf?sequence=1&isAllowed=y)



**event held, particularly in LVC countries, and to some extent in HAT countries.** The ozone-climate linkage offered by the Kigali Amendment has given new impetus to these campaigns.

66. Campaigns led by NOUs and Governments (often with the participation of bilateral and IAs) are increasingly using social media and virtual communication channels including websites, (often in conjunction with other activities supported by the Ministry of the Environment), apps and others, with good success. However, NOUs report that printed materials are still useful and much needed. CAP clearinghouse materials have been qualified by NOUs as very useful and effective to support these efforts.<sup>40</sup> Some NOUs are especially active and specific examples are found below:

- (a) The NOU of Armenia has organized a wide range activities involving different age groups and social groups: students (pre-school, school and higher education), policy makers from various government bodies, professional associations, journalists, artists (promoting ozone layer protection through their art), sports events organizers (e.g., marathons), radio stations, and TV programmes;
- (b) Mexico has developed several materials distributed through the official page of the Ministry of Environment and also with help of trade associations and on social media. Their latest release is a cartoon featuring a new character, “Kigalito”; and
- (c) **Paraguay has established a national award for ozone-friendly companies that is widely publicized.**

67. Gender considerations were generally reported as considered “to the best extent possible.” This is clearly an area that will attract more attention in the future. The Ozone Secretariat has initiated discussion on this topic with a recent publication “Gender in the Ozone Treaties.”<sup>41</sup>

68. UNEP’s OzonAction programme and its clearinghouse mandate have been instrumental in achieving awareness-raising activities and were cited by most NOUs responding the questionnaire as providing essential support particularly by providing information exchange and outreach opportunities at the regional level.

#### Further analysis of challenges identified

69. Overall, efforts undertaken to ensure the sustainability of the ODS phase-out achieved are effective and far-reaching. Countries have carefully selected alternatives to the different ODSs phased-out through the MP, with the assistance of the bilateral and IAs. Their technical and economic feasibility was assessed and their use and adoption was supported by the PMUs and, when necessary, by external experts. NOUs have actively participated in developing and enforcing licensing and quota systems and following up on the issuance and enactment of legal instruments that will support and maintain the phase-out achieved. Working together with Government agencies have contributed, *inter alia*, to the sustainability of the phase-out by ratifying the Protocol and its Amendments, issuing necessary legal frameworks, facilitating the continuity of ozone officers at their posts. **Nevertheless, various countries, particularly in Africa and Latin America, indicated hurdles in updating legislation at the same pace as the MP has evolved.**

70. However, devising and strengthening mechanisms to ensure that the phase-out achieved is clearly sustainable over time, in particular once projects are completed and MLF funding stops, is still an important

<sup>40</sup> UNEP. Annex I of the document: Briefing note about OzonAction Clearinghouse Services. CAP Review, May 2018.

<sup>41</sup> UNEP, Ozone Secretariat. Gender in the Ozone Treaties. 2019. <https://ozone.unep.org/sites/default/files/2019-08/OEWG-41-gender-in-the-ozone-treaties.pdf>

issue. **This was further highlighted when analysing the additional responses to the questionnaire received; in particular, it was noted that several respondents indicated there is Government support to ensure continuity of the NOU's work into the future. This includes both LVC and non-LVC countries. However, this was not always the case and many countries noted concern over the continuity of work conducted by the PMUs and even of the NOUs, once the funding stops.** The unexplained increase in CFC-11 emissions since 2012 (a topic of ample debate and investigation recently) and reported ongoing emissions of CTC introduces questions to the sustainability of the phase-out achieved.

71. Parties to the MP are increasingly recognizing, addressing and reporting illegal trade<sup>42</sup> and confiscation of illegal goods has been recognized publicly **and in some countries a system of award recognition has even been set up. However, certain countries reported a lack** of clarity regarding stocks potentially stored. Similarly, potential deviation of ODS legally imported or produced, for feedstock or exempted uses, into controlled uses (i.e., MB for QPS; laboratory; and analytical uses) is still a problem. Robust tracking systems to ensure that an imported ODS is not used for a controlled application are not easy to implement **and some countries do not seem fully aware of its importance.** For example, MB imported for QPS, is an exempted use and might end in soil fumigation, a controlled use. Often the distinction between controlled and exempted uses of a substance is not entirely clear to customs officers, or no monitoring system is in place to verify the final use of the ODS. Additional cases that present challenges concern counterfeit refrigerants and phased-out substances contained in polyols and used, for example, in foam-blowing processes, which could be mislabelled.<sup>43</sup> Relaxed regulations, often occurring at free-trade zones, can also offer opportunities for illegal trade to flourish. In view of the proliferation of free-trade zones around the world, this issue warrants attention.<sup>44</sup>

72. Sustainability needs to be considered from technical, economic and regulatory standpoints. Alternatives may be too expensive (driving illegal ODS use), may not always be readily available to users (e.g., due to a slow or cumbersome registration process, suppliers not found locally, **no maintenance available** or too expensive to import); and maintenance services for new equipment may be difficult to find, or service providers may not be sufficiently trained. Additionally, they could lose effectiveness (i.e., if pests resistant to an alternative to MB emerged) or become de-registered. This can make prospective users lack confidence and be reluctant to adopt new technologies, even when previously used ODS are banned. Adaptation may be necessary to ensure economic feasibility of alternatives, for example by using locally sourced equipment or materials; the fact that economic feasibility may, sometimes, not be achieved immediately, but rather in the long term might need to be considered.

73. Destruction schemes and other options need to be more widely available and affordable. Storing recovered or confiscated quantities of ODS that are no longer legal to use cannot be done permanently. **Exploring options to ship ODS across boundaries and collectively gather waste to be destroyed would be useful, particularly for LVC countries including small island developing states.**

74. Although training of technicians is widely implemented, this is an issue with scope for further work. Training quality, availability of a (continuing) pool of experts and funds to maintain training efforts still pose challenges. Safety standards need to be reinforced, especially with new refrigerant options, and energy efficiency needs to be considered. **Additional training on the recent revision of HS customs codes for HFCs, is also important.** These issues could be linked to technician training certifications and industry collaboration efforts, to reinforce sustainable training and capacity building. **Similarly, awareness-raising**

<sup>42</sup> UNEP/OzL.Pro.31/INF/6

<sup>43</sup> TEAP report on unexpected CFC-11 emissions.

<sup>44</sup> Free Trade Zones and trade in ODS. OzonAction Programme. [https://wedocs.unep.org/bitstream/handle/20.500.11822/28382/7745FreeTradeZ\\_EN.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/28382/7745FreeTradeZ_EN.pdf?sequence=1&isAllowed=y)

**activities need to be reinforced, given a clear and sustainable funding within the NOU, with Government support, if possible.**

75. Information on some ODS that are already phased-out under the Protocol, for example halons and MB and CFC for MDIs, is sometimes absent or confusing. The NOOs who are new to the MP may have little information on these substances and this could, for example, allow for illegal trade to go undetected. The same might be said about exempted uses relating to feedstock and laboratory and analytical uses. These issues will impact the ease and quality of reporting ODS production and consumption as per Article 7 guidelines, which is another challenge.

### **Recommendations for a way forward**

76. The MP has been dubbed “the most successful environmental treaty” by former UN Secretary General Kofi Annan, and this is clearly due to the very high proportion of ODS production and consumption that has been phased-out to date. However, sustaining this achievement poses challenges.

77. Recent unexplained emissions of CFC-11 that have been reported, set off alarms as to potential revert to the use of ODS that have been phased-out. NOUs may wish to strengthen their information repositories, to include more thorough information on ODS already phased-out, measures undertaken to replace them, regulations in place to ban or enforce them, their feasible alternatives and further sources of information could be part of the solution. Some websites (e.g., CAP/OzonAction) offer such resources, but not on a country basis and are not always kept up to date.

78. Laws and regulations that restrict or ban production, imports and exports of ODS have generally been put in place by governments. However, enforcement of these regulations and introduction of penalties resulting from failure to comply appear to be needed in many cases. In particular, phase-out of ODS production may need closer follow-up. A sustained production phase-out is critical in maintaining phased-out consumption. This is an area where further action may be beneficial. For example, independent verification and auditing was reported by some NOUs as an efficient means of enforcing a sustained phase-out of ODS. These could be further considered and successful schemes shared, especially when dealing with ODS substances already phased-out in the past.

79. Timely destruction of ODS and ODS-based equipment, which have been replaced by equipment based on alternative technologies is thus an important aspect ensuring the sustainability of the conversion and the ODS phase-out. For example, bilateral and IAs monitor the destruction, and can link the release of the last funding installments with the destruction of old equipment, however ways to ensure and encourage future destruction of such equipment could be set. Project completion reports should always include clear information on the equipment destroyed. **Exploring options to gather quantities of ODS waste from various countries and destroying them together in one site seems important. Currently, it is often difficult or impossible to ship ODS waste abroad.**

80. Illegal trade of ODS is being addressed through the MP and the Parties are increasingly reporting cases of illegal trade. Reports to the local authorities of illegal trade should be supported and pursued. Illegal substances confiscated in a country or found in free-trade zones may go unreported as that Party is concerned that these will be added to their consumption reports, thus impacting their compliance. The Executive Committee is suggesting a solution to this issue for consideration.<sup>45</sup>

81. Involvement of stakeholders in projects and ODS phase-out efforts in general is high, and this plays an important role in the success achieved to date. Ways to maintain the interest of stakeholders impacted

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<sup>45</sup> UNEP/OzL.Pro/ExCom/83/38

by ODS already phased-out could be explored: the experience and knowledge generated could be useful to create linkages with other environmental treaties, as it is sometimes the case. The link between ozone and climate brought by the Kigali Amendment, or destruction experience gained through participation in the Basel Convention may offer examples of this.

82. Responses provided by the **47 NOUs, UNIDO and the World Bank**, to the questionnaire prepared for this evaluation, were valuable for identifying factors putting the sustainability of the ODS reductions and phase-out so far achieved at risk, and ways in which such risks might be mitigated or averted. The low level of **responses of the first round failed to achieve a good geographical representation, which affected the scope and accuracy of the conclusions drawn. This new round has allowed for further analysis and a broader spectrum, which was clearly to the benefit of this evaluation.**

83. **The new round further confirmed that**, in line with the sustainable development goals (SDGs), gender issues should be incorporated much more strongly in the MP in general, but more specifically in the ODS phase-out process and HFC phase-down.

84. The phase-out should be envisioned in a more integral manner, within the SDGs framework as the MP activities and achievements touch on many of their aspects. At the request of the Parties (decision XXVI/7), the three assessment panels of the MP started looking at sustainability issues in their recent 2018 Assessment Reports.<sup>46</sup>

## RECOMMENDATION

85. The Executive Committee may wish:

- (a) To take note of the **revised** desk study on the evaluation of the sustainability of the Montreal Protocol achievements, contained in document UNEP/ OzL.Pro/ExCom/86/10; and
- (b) To invite the bilateral and implementing agencies to take into consideration, where appropriate, the findings and recommendations of the desk study referred to in sub-paragraph (a) above, when assisting Article 5 countries in preparing and implementing projects supported by the Multilateral Fund.

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<sup>46</sup> Ozone Secretariat webpage. Assessment Panels <https://ozone.unep.org/science/overview>

## Annex I

### **TERMS OF REFERENCE FOR THE DESK STUDY ON THE EVALUATION OF THE SUSTAINABILITY OF THE MONTREAL PROTOCOL ACHIEVEMENTS**

#### Objective and scope of the desk study

1. The desk study will assess how the reductions achieved under the Montreal Protocol have been sustained after the completion of the projects funded by the MLF and the extent to which MLF-supported activities contribute to sustaining compliance after the completion of MLF-funded activities.
2. It will cover various aspects related to the policies, regulatory frameworks, institutions and mechanisms; monitoring and reporting; role and responsibilities of the NOUs and PMUs, role of institutional strengthening (IS); production, consumption; stakeholders and awareness-raising activities; in the context of support provided under MLF-funded projects.
3. It will address the topics listed below.

#### Policies, regulatory frameworks, institutions and mechanisms

4. How do countries ensure compliance with Montreal Protocol obligations, and in particular the sustained aggregate reductions of controlled substances, after MLF-funded activities are completed? Do national policies, legislation and regulations integrate these issues?
5. What is the role of the NOUs and PMUs in assisting in the development of policies and regulatory frameworks? Are there appropriate regulations to control the export, import, manufacture, sale and certain uses of ODS and products containing them? How are new developments and difficulties in implementation tackled?
6. Are fiscal mechanisms, such as tax incentives/disincentives or removal of subsidies, used to encourage enterprises to convert from the use of controlled substances?
7. Is there a framework to enforce existing policies, legislation and regulations addressing sustained aggregate reductions under the Montreal Protocol, including monitoring and return to compliance under national processes? Do countries have penalties in place for violators of these regulations?
8. What is the role of professional organizations and associations contributing to the legislation and monitoring its implementation?

#### Monitoring and reporting

9. What mechanisms are in place to monitor the phase-out of controlled substances after the completion of the project?
10. Which institutions are currently involved in these monitoring activities? What is their capacity (e.g., technical staff, access to data and monitoring protocols) and how can it be improved?
11. Do customs have a management information system, if funded by the MLF? Do they have a long-term monitoring and reporting policies?
12. What is the specific role of the NOUs and PMUs in monitoring ODS phase-out? Do the NOUs

have a monitoring and data-reporting capacity or management information system accessible to, or shared with, other stakeholders? How can it be improved?

#### Role and responsibilities of the NOUs and role of IS

13. Where are the NOUs located in the institutional organization of the Government and are there measures to ensure their continued operation? What are the activities undertaken to strengthen the NOUs? What is the staff turnover in the NOUs and what measures are taken with regards to knowledge retention within the NOU?

14. Are the existing monitoring and reporting mechanisms on the implementation of the Montreal Protocol strengthened to function after the end of the MLF-funded projects and ensure sustainable compliance with the Montreal Protocol? What IS activities are organized for this purpose? What other institutions are involved in this process?

15. How does the UNEP's Compliance Assistance Programme (CAP) support to reinforcing the existing institutions and contribute to their sustainability? How does CAP enable countries to ensure their own compliance with the Montreal Protocol?

#### Role and responsibilities of the PMUs

16. Are there any measures in place to retain and transfer knowledge and capacities from the PMUs to the NOUs upon completion of the ExCom Agreement?

17. Are the PMUs taking part in establishing the policies, legislation and regulations regarding the sustained aggregate reduction?

#### Production, consumption, and stockpiles

18. Is there a database on the production enterprises and lines funded for dismantlement? Is there a monitoring mechanism for lines funded for closure? For the production lines that did not close because they only produce controlled substances for exempted uses, how is such production monitored to ensure there is no redirection from feedstock to controlled uses?

19. How many of the manufacturing enterprises that were supported for conversion are still using the agreed alternative? What information is available on stockpiles of phased out controlled substances? If such stockpiles are monitored, who performs it? Are the NOUs involved in this monitoring?

20. Was any ODS collected? Was it locally destroyed or shipped abroad for destruction? Do destruction plants have a financial sustainability to continue the destruction after the project completion? How is this achieved?

#### Stakeholders

21. What is the coordination mechanism among the stakeholders (Government institutions, the industry, service agencies, technical/vocational institutions, regulators associated with standards and certification bodies)? Does the coordination evolve during the years and, if so, how? Do the NOUs have a role in the coordination process?

22. What measures are taken to ensure that Montreal Protocol-related issues will be included in the training of technicians? Is there a pool of trainers for service technicians in Montreal Protocol-related

issues? Is there a certification system for trained technicians and, if yes, how does it function? Are there measures in place to check the certification system? Is there gender-disaggregated data about trainers and trainees? Have professional organizations and associations been established and have the capacity to continue to effectively train technicians after the completion of MLF-funded projects (e.g., refrigeration and air-conditioning associations or technical/vocational institutions)?

23. What measures are taken to ensure the institutionalization of Montreal Protocol-related issues into training courses of customs agents after the end of the MLF-funded projects? Are there trainers to train customs officers in Montreal Protocol issues? Is there follow-up education or training based on new developments or for new employees?

#### Awareness-raising activities

24. Are there awareness-raising activities about the Montreal Protocol targeting decision-makers, stakeholders and broader public? Who organizes them? What is the involvement of the NOUs? Are gender considerations taken into account in these campaigns? Are the Montreal Protocol-related issues mentioned in the media (e.g., press, TV and social media)?

#### Organization and output of the evaluation

25. A consultant will be recruited to review the existing documentation, including project proposals, project completion reports, evaluation reports and reports of the Executive Committee meetings and Meetings of the Parties, and write the draft desk study, which will be shared with the Secretariat and the bilateral and implementing agencies for comments, and be presented to the 84<sup>th</sup> meeting of the Executive Committee.





## **Annex II**

### **QUESTIONNAIRE SENT TO THE NATIONAL OZONE UNITS AND THE IMPLEMENTING AGENCIES**

#### **Background**

During the 82<sup>nd</sup> meeting of the Executive Committee interest emerged in developing an evaluation of the sustainability of the Montreal Protocol achievements, including an assessment of the role of the national ozone units (NOUs) and project management units (PMUs) in monitoring ODS phase-out. This involves for example measures by which NOUs and governments have incorporated the Montreal Protocol obligations and project outcomes into their legal and policy frameworks and how this is reflected in NOU activities; coordination of national key stakeholders; methodologies adopted to ensure the effective implementation of the Montreal Protocol; and mechanisms in place to monitor redirection from non-controlled uses to controlled uses of substances.

In response to this initiative, at its 83<sup>rd</sup> meeting, the Executive Committee approved a desk study on the evaluation of the sustainability of the Montreal Protocol achievements as reflected in projects funded by the Multilateral Fund (MLF). The desk study will assess how the reductions achieved under the Montreal Protocol have been sustained after the completion of the projects funded by the MLF and the extent to which MLF-supported activities contribute to sustaining compliance after the completion of MLF-funded activities.

It will cover various aspects related to the policies, regulatory frameworks, institutions and mechanisms; monitoring and reporting; role and responsibilities of the NOUs and PMUs where applicable, role of institutional strengthening (IS); production, consumption; stakeholders and awareness-raising activities; in the context of support provided under MLF-funded projects.

Previous monitoring and evaluation efforts conducted by the MLF, as well as project documents submitted by implementing agencies (IAs) will be considered. In addition, the questionnaire below has been put together to help gather relevant feedback from key stakeholders, namely national ozone officers and IAs.

The following questionnaire was initially circulated to NOUs and IAs in September 2019, with the aim of conducting appropriate analysis and draw conclusions and recommendations in time for consideration at the 84<sup>th</sup> Executive Committee meeting.

Please keep answers short and to the point – it can be yes or no in some instances. There is no need to supply actual regulations or detailed examples of work. In particular, it will be useful to identify specific challenges or hurdles that may put the sustainability of the achievements at risk.

**Evaluating the sustainability of Montreal Protocol Achievements – Questionnaire/checklist**

Issues evaluated	Specific questions	Response (yes, no, please provide examples when relevant)	Challenges, problems identified
Policies, regulatory frameworks, institutions and mechanisms (ensuring compliance with Montreal Protocol obligations)	<ul style="list-style-type: none"> <li>○ Measures in place to sustain aggregate reductions (or phase-out) of controlled substances after MLF-funded activities are completed.</li> <li>○ National policies, legislation and regulations in place, including tax incentives/ disincentives or removal of subsidies, used to encourage enterprises to stop use of controlled substances.</li> <li>○ Regulations to control the export, import, manufacture, sale and certain uses of ODS and products containing them.</li> <li>○ Framework to enforce existing policies, legislation and regulations addressing Montreal Protocol obligations, including monitoring and return to compliance under national processes, penalties in place for violators of these regulations.</li> <li>○ Ways to tackle new developments and difficulties in implementation.</li> <li>○ Role of professional organizations and associations contributing to the legislation and monitoring its implementation.</li> </ul>		
Monitoring and reporting	<ul style="list-style-type: none"> <li>○ Mechanisms in place to monitor ODS phase-out after project completion.</li> <li>○ Institutions involved in monitoring activities.</li> <li>○ Management information systems (if funded by MLF), long-term monitoring and reporting policies.</li> <li>○ Specific role of NOUs and PMUs in monitoring ODS phase-out. Indicate challenges or problems if any and ways to improve.</li> </ul>		
Role and responsibilities of the NOUs	<ul style="list-style-type: none"> <li>○ Location of the NOU in the institutional organization of the Government.</li> <li>○ Measures to ensure their continued operation.</li> <li>○ Activities undertaken to strengthen the NOU.</li> <li>○ Staff turnover in the NOU and measures taken to ensure knowledge retention within the NOU.</li> </ul>		
Role of IS	<ul style="list-style-type: none"> <li>○ Existing monitoring and reporting mechanisms on the implementation of the Montreal Protocol</li> <li>○ How these are strengthened to function after the end of the MLF-funded projects and activities aimed at ensuring sustainable compliance with the Montreal Protocol.</li> <li>○ Other institutions are involved in this process.</li> <li>○ Relationship and role of UNEP-CAP in strengthening existing institutions and contribute to their sustainability.</li> </ul>		
Role and responsibilities of the PMUs	<ul style="list-style-type: none"> <li>○ Measures in place to retain and transfer knowledge and capacities from the PMU to the NOU upon completion of the Executive Committee Agreement.</li> <li>○ Ways in which the PMU is or has taken part in establishing policies, legislation and regulations relevant to sustaining the aggregate phase-out achieved.</li> </ul>		

Issues evaluated	Specific questions	Response (yes, no, please provide examples when relevant)	Challenges, problems identified
Recording production, consumption and stockpiles	<ul style="list-style-type: none"> <li>○ Database on the production enterprises and lines funded for dismantlement or otherwise phase-out of ODS (i.e. methyl bromide (MB) use, MDIs).</li> <li>○ Monitoring mechanism for lines funded for closure.</li> <li>○ Monitoring mechanism for enterprises supported for conversion or adoption of alternatives, to ensure that they are still using these.</li> <li>○ Monitoring production lines that did not close because they only produce controlled substances for exempted uses.</li> <li>○ How is it ensured that there is no redirection from feedstock or allowed exempted uses (i.e., MB for QPS, laboratory and analytical uses) to controlled uses.</li> <li>○ Have stocks of ODS been collected? Is the NOU involved in collecting this? Are these ODS destroyed (locally or abroad) or stored? Is there financial sustainability to ensure future destruction and if yes, how is it achieved?</li> </ul>		
Stakeholders	<ul style="list-style-type: none"> <li>○ Briefly describe the coordination mechanism among the stakeholders (Government institutions, the industry, service/ supply providers, technical/vocational institutions, regulators, standards and certification bodies). Is the NOU involved?</li> <li>○ Does coordination evolve during the years and, if so, how?</li> <li>○ Describe measures in place to ensure that Montreal Protocol issues are included in training efforts? Is a pool of trainers available; are there measures to check certification systems? Are there professional organizations able to continue these efforts after the completion of MLF-funded projects?</li> </ul>		
Awareness- raising	<ul style="list-style-type: none"> <li>○ Please give examples of awareness-raising activities about the Montreal Protocol targeting decision-makers, stakeholders and broader public. Who organizes them, is the NOU involved, are gender considerations taken into account, is the Montreal Protocol mentioned in the media (e.g., press, TV and social media)?</li> </ul>		



**Annex III**

**LIST OF THE 47 RESPONDING COUNTRIES CATEGORIZED BY REGION AND HCFC CONSUMPTION (LOW-VOLUME CONSUMING (LVC) COUNTRIES AND NON-LVC COUNTRIES)**

<b>Region</b>	<b>LVC countries</b>	<b>Non-LVC countries</b>
<b>Africa</b>	<b>Botswana Cabo Verde Côte d'Ivoire* Chad* Eswatini (the kingdom of) Gambia (the)* Malawi Rwanda Zimbabwe</b>	<b>Benin* Burkina Faso* Cameroon Kenya Madagascar Morocco Nigeria* Senegal* Tunisia*</b>
<b>Central Asia</b>	<b>Armenia Bosnia and Herzegovina</b>	
<b>Latin America and Caribbean</b>	<b>Barbados Belize Costa Rica Cuba El Salvador Guatemala Jamaica Paraguay</b>	<b>Argentina Chile Colombia Ecuador Mexico Trinidad and Tobago Venezuela (Bolivarian Republic of)</b>
<b>Asia and the Pacific</b>	<b>Cambodia Maldives Marshall Islands Papua New Guinea Sri Lanka Vanuatu</b>	<b>Indonesia Thailand</b>
<b>West Asia</b>		<b>Jordan* Oman*</b>

\*High ambient temperature (HAT) countries. Countries are identified as HAT when they have an average of at least two months per year, over ten consecutive years, with a peak monthly average temperature above 35°C.