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UNEP

«Putting a Face» to the Ozone Layer Protection!

Regional Highlights

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FOREWORD

"Putting a Face" to Ozone Layer Protection

A generation ago, the world's nations came together quickly and resolutely to protect the ozone layer, initiating an intergovernmental process that blazed new trails.

As we implement the outcomes of the Rio+20 conference on sustainable development, the remarkable success story of the Montreal Protocol on Substances that Deplete the Ozone Layer acts like a beacon of hope. The ozone layer protection has multiple benefits toward biodiversity, health, the world's economy and climate change. For example, island livelihoods and the fishing industry are very much dependent upon "refrigeration technology". It reminds us that, faced with extraordinary threats to our survival, nations of the world can and do cooperate to ensure our common future.

Under the Multilateral Fund, a special, dedicated resource is available to help Article 5 countries meet their obligations under the Montreal Protocol: the UNEP Compliance Assistance Programme (CAP).

CAP facilitates operation of 10 Regional Ozone Networks involving 148 developing countries and countries with economies in transition. These "People's" Networks have helped National Ozone Units (NOUs) to overcome the often difficult challenges they face in complying with the Montreal Protocol. The Networks can be credited with ensuring more rapid ratification of the Protocol and its amendments, expediting more effective and timely adoption of national legislation on ozone depleting substances, enhancing the countries' compliance with the ozone regime and assisting in providing updated information on technology choices. It is no exaggeration to say that, by facilitating the exchange of ideas and experiences between NOUs, the Regional Networks have contributed to making the Montreal Protocol the strong and adaptable regime it is today. Yet it is vital to raise the profile of the Montreal Protocol not only nationally and regionally but on the international agenda.

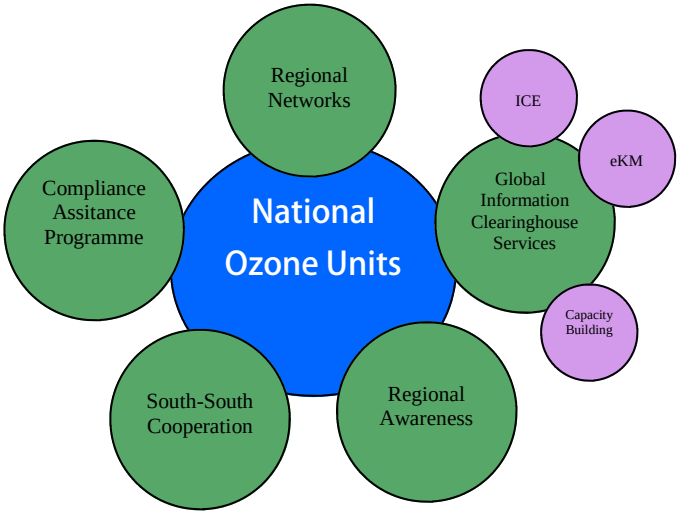
UNEP is an instrument of international cooperation and it is our task to show that, by helping collaboration and dialogue to thrive, environmental sustainability can thrive too. Within the dynamics of climate change, we should maximize the importance of the ozone layer protection as a common denominator value.

Just as important, we need to relate all our work to people whose health, livelihoods and prosperity we are trying to safeguard. I grew up in South Africa and still remember how Nelson Mandela, when he came out of prison and addressed us in the Academy of Science in the early 1990s, urged us to "put a face to science!"

Can we 'put a face' to ozone layer protection?

Dr. Shamila Nair-Bedouelle,
Head of UNEP DTIE OzonAction Programme

Services Delivered by CAP to Article 5 Countries



Schedule for Article 5 country phase-out for production and consumption of HCFCs

Schedule	Year
Baseline	Average of 2009 and 2010
Freeze	2013
10% reduction of baseline	2015
35% reduction of baseline	2020
67.5% reduction of baseline	2025
97.5% reduction of baseline	2030
2.5% of baseline averaged over 10 years (2030-2040) allowed, if necessary, for servicing of refrigeration & air-conditioning equipment until 2040	2030-2040

French-speaking African Countries: CFC Lessons for HCFC Phase-out in Africa

Yamar Guisse

The French-speaking African countries comprise Algeria, Benin, Burkina Faso, Burundi, Cameroon, Cap Verde, Central African Republic, Chad, Comoros, Congo, Congo (Democratic Republic of), Cote d'Ivoire, Djibouti, Equatorial Guinea, Gabon, Guinea, Guinea Bissau, Madagascar, Mali, Mauritania, Morocco, Niger, Sao Tome and Principe, Senegal, Togo, Tunisia.

Africa joined the rest of the world in sustained efforts to eliminate CFC use. Now it faces the twin challenges of managing and phasing out HCFCs, and finding viable alternatives that are both ozone and climate-friendly.

All African countries are in compliance with Montreal Protocol. Some eliminated CFC use well ahead of the deadline, which shows political will and implementation capability. However, they must now maintain the momentum and involve Governments in taking decisions for phasing out HCFCs and promoting equipment containing alternatives.

The main lessons learned from the elimination of CFCs in Africa are as follows:

- A strong commitment of the CAP team for training Customs officers exported in order to control illegal importation/exportation of refrigerants by demonstrating the use of refrigerant identifiers to check the quality of refrigerants that are being imported and control the quality of refrigerants being imported or exported.
- Similarly, training refrigeration technicians by demonstrating how to retrofit refrigerators, replace ODS-based equipment with transitional refrigerants such as HCFCs, or alternative substances.
- The use of hydrocarbons as alternatives to CFCs in the domestic refrigeration sector is at the rise.
- The proliferation of poor quality of refrigerants due to the high price of these refrigerants.

The phase-out of HCFCs in Africa is now underway but faces some challenges. For many countries, there is some continuity between the elimination of CFCs and that of the HCFCs; they are indeed tempted to systematically replace R-22 by hydrocarbons. This is potentially risky because the contexts are very different and this kind of practice must be done with special precautions and in the framework of an appropriate legislation.

Hence CAP will focus on assistance to countries to help them not only make the right choice of technology and alternatives to use in place of the HCFCs, but also to better manage the quantity of HCFCs already in circulation.

Yamar Guisse is Regional Network Coordinator of the French- speaking Africa at UNEP Regional Office for Africa (ROA)

English-speaking African Countries: Balancing Compliance with Economic Growth

Patrick Salifu

The Regional Network of ODS Officers for English-speaking African countries comprises 28 countries, all of them Article 5, i.e. Angola, Botswana, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Liberia, Libya, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Uganda, Tanzania, Zambia, Zimbabwe.

The network provides a regular forum aimed at strengthening and improving the capacities of the National Ozone Officers (NOOs) in the implementation of the Montreal Protocol activities; helping NOOs share experiences, challenges and opportunities that exist; and identify other needs of NOOs such as training and networking. Currently, all countries in the region are in compliance with the Montreal Protocol.

Africa is ranked as the second fastest growing region over the past decade. Due to the expansion of infrastructure development, the region is experiencing increased demand for RAC services. To maintain the Montreal Protocol phase-out momentum and in readiness for future phase-out obligations, capacity building for Customs and other law enforcement officers has been one of the major activities in the region. This helps ensure that boarder control is effective and ODS control measures are enforced and monitored adequately.

One challenge in the region is increased cases of illegal trade of ODS refrigerants, especially cases of mixed, mislabeled and fake refrigerants. UNEP Regional Office for Africa (ROA) Compliance Assistance Programme (CAP) is working with national authorities and relevant regional and international partners to put in place appropriate measures to curb this problem.

Implementation of HCFC Phase-out Management Plans (HPMPs) in the Region commenced in readiness for the coming HCFC reduction targets. Most countries have established HCFC licensing and quota systems to ensure controlled consumption of HCFCs.

Technology options are still a major challenge in implementing HPMPs. The region faces a lack of HCFCs alternative technologies that are sustainable and environmentally-friendly but at the same time realistic, cost-effective and safe. In most countries, there are no safety standards for handling of refrigerants. To bridge this gap, UNEP ROA CAP has been conducting good refrigeration practices training programmes aimed at building the capacities of servicing technicians.

Patrick Salifu is Regional Network Coordinator for English- speaking Africa at the UNEP Regional Office for Africa (ROA)

Chasing Targets in West Asia
Abdulelah Alwadaee and Khaled Klaly

Since 1997, the regional ozone network in West Asia has been striving to enhance, strengthen and catalyze efforts of 12 member countries to sustain compliance with the Montreal Protocol. The goal is to do so in a timely manner with minimum negative impacts on economic and social aspects, and in coordination with key stakeholders at all levels.

Since 2011, instability in the region has made it more challenging for CAP to deliver its services -- especially in Syria, Yemen and Iraq. In response, the CAP team adjusted its focus to ensure sustained compliance and address the main regional priorities until 2015.

CAP plans to continue its services to all countries to ensure sustaining the achieved compliance post-2010, with special attention to meeting HCFCs phase out targets in 2013 and 2015. Several HPMPs and investment projects have been approved for phasing out HCFCs in foam and RAC sectors. The key milestone in 2013 was the approval of HPMPs for Bahrain, Kuwait, Saudi Arabia and Yemen. The HPMP for Syria is pending approval.

In 2012, CAP/ROWA focused on foam industries - one of the key consuming sectors - to facilitate their meeting impending targets. Several regional events and consultation work have been conducted to update insulation codes and standards. Work has also been initiated to find long-term alternatives in the air conditioning industry for high-ambient countries. To support the accelerated phase-out of HCFCs in the region, unified ODS legislations for Gulf Cooperation Council (GCC) have been developed and endorsed.

Member states also agreed to compile detailed information on unwanted ODS to facilitate in-depth discussion about best management approaches and propose activities/projects as necessary.

Another collaboration started in 2012 with the Air-Condoning, Heating and Refrigeration Institute (AHRI) will set up a regional refrigeration and air-conditioning industry association by end of 2013. This will allow the unification of industry position in several technical concerns including the long term alternative refrigerants.

In 2014, CAP/ROWA will focus on ensuring sustained compliance, and expedite the implementation of HPMPs. It will also facilitate the total phase-out of Methyl Bromide and maintain the regional momentum of key emerging issues, particularly the development of national and regional policies, legislations and enforcement.

Technological concerns specific to the region - such as sound alternatives for the high ambient temperature and management of unwanted ODS - will continue to receive attention through thematic meetings and south-south cooperation.

Abdulelah Alwadaee is Regional Network Coordinator for West Asia and Khaled Klaly is Policy and Enforcement Officer, both at UNEP Regional Office for West Asia (ROWA)

Promoting Energy, Climate and Ozone (ECO) Synergy in South Asia

Atul Bagai

The South Asia Regional Network of Ozone Officers is one of the most diverse networks. It comprises the two rising giant economies of China and India; industrialised Republic of Korea; middle volume consuming countries of Bangladesh, Iran, North Korea, Pakistan and Sri Lanka; low volume consuming countries Afghanistan, Bhutan, Mongolia and Nepal; and the small island state of the Maldives.

All eyes of the Montreal Protocol community are focused on Asia, and rightly so: combined HCFCs in China and India make up 96% of global baseline production, and almost 60% of the global baseline consumption in Article 5 Parties. The rest is divided among the 145 remaining countries.

Asia is also the world's largest consumer and exporter of HCFC-based equipment such as air-conditioners, supplying to markets within the region and in other regions. Researchers and environmentalists are concerned about Asia's rising consumption of HFCs, a highly potent greenhouse gas.

Taking note of this, the Executive Committee of the Multilateral Fund has approved the highest funded project in history for China's HCFC Phase-out Management Plan (HPMP). HPMPs of most other network countries have also been approved, and Ozone Officers and governments are now diligently implementing them to ensure they meet HCFC reduction targets. The success of these projects will be measured post-2015.

Technology options are still a major challenge in HPMPs. NOUs look for alternatives that are more sustainable and environmentally friendly but at the same time realistic, cost-effective and safe. Asia has taken one step forward by emphasizing ozone protection's linkages with climate and energy use (CEU).

Several countries have included CEU in their HPMPs to be co-financed with non-MLF funding. For members of the South Asian Association for Regional Cooperation (SAARC), a proposal to fund CEU activities has been submitted to the SAARC Development Fund (SDF). Meanwhile, GEF funding is being sought by the governments of the Maldives and Pakistan, in separate projects, both linking ozone to their climate and energy efficiency programmes.

UNEP Asia Pacific's Compliance Assistance Programme (CAP) has been encouraging network countries to maximize climate benefits in HCFC phase-out. Since 2010, CAP Asia Pacific has worked with the Indian Bureau of Energy Efficiency (BEE) to conduct capacity-building workshops on ozone and energy synergies in Bhutan, the Maldives, Nepal and Pakistan. It also organized an Energy Efficiency Symposium as part of the Joint Meeting of South Asia and Southeast Asia Networks in September 2013 with support from the United States Environmental Protection Agency (USEPA).

Asian countries can take advantage of the current concerns to energy efficiency shown by governments and the business community for advancing HCFC phase-out targets, policies and programs. Doing so will yield multiple benefits for everyone.

Atul Bagai is Senior Regional Coordinator for South Asia at the UNEP Regional Office for Asia and the Pacific (ROAP)

On Target, but Fresh Challenges
Shaofeng Hu

The Southeast Asia and the Pacific Network of the Ozone officers (SEAP) covers 12 countries, i.e. Brunei Darussalam, Cambodia, Fiji, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Vietnam. Australia and Sweden are the two Article 2 country partners.

All 12 countries are in compliance with the control measures on ODS under the Montreal Protocol. The network countries are also fulfilling their reporting obligations to the Executive Committee of the Multilateral Fund, especially on the CP progress report.

Most countries have progressed well with the implementation of the approved HCFC Phase-out Management Plans (HPMPs). For maximizing climate benefits with the HCFC phase-out, manufacturing countries have chosen the low GWP, flammable alternatives in foam, refrigeration and air-conditioning (R/AC) manufacturing as much as company capacity permits.

In doing so, it is essential to ensure safety of transportation, storage and handling of flammable chemicals in keeping with national regulations and standards.

In countries without manufacturing capacity, strict safety regulations are often not in place. So installing, maintaining and eventually disposing of refrigeration equipment and air-conditioners with flammable refrigerant need particular attention. The same applies to foam products with flammable agent introduced in place of HCFCs.

Our key challenge in the coming years is how to get all countries ready for introducing flammable refrigerants/foaming agent based non-HCFC equipment/ product: for the countries with safety regulations/standards, how they can remove the regulatory barriers, and for countries without strong safety regulations, how they can improve such safety awareness of all national stakeholders, and build the capacity of the servicing technicians for the safely conduction of installation and servicing .

Related to this is the other challenge of mobilizing funds at country level for delivering energy efficiency and climate benefits under their HPMPs.

Shaofeng Hu is Regional Network Coordinator at the UNEP Regional Office for Asia and the Pacific (ROAP)

Networking for Compliance in the Pacific
Artie Dubrie

The Pacific Island countries (PICs) are a number of independent states and territories scattered over the Pacific Ocean covering 165.2 million square km, or 44% of the world's oceans. In 2009, the total population in these countries made up just 0.14% of the world population.

Under the Montreal Protocol, PICs operate both as Article 5 and non-Article 5 countries. For the PIC operating under Article 5, all have maintained compliance. The only ODS reported as consumed in the PIC is the Hydrochlorofluorocarbons (HCFC), used as a refrigerant in air conditioning and refrigeration (RAC). RAC services are used mainly in fisheries, agriculture, tourism and for cooling buildings.

As the economies expand for these countries so does the demand for RAC services. All RAC technologies and appliances are imported. This dependence on external market availability can result in a high risk of non-compliance with MP phase-out targets. Customs and other law enforcement officers have to be ever vigilant. To sustain MP compliance management, it is necessary to have adequate national capacities in both public and private sectors, and to engage relevant regional and international partners. RAC has to be addressed as an important sector in the context of national development, particularly in relation to energy demand and climate impacts.

To meet national obligations for the phasing out of HCFCs, UNEP through the Montreal Protocol Compliance Assistance Program is working with all PICs. UNEP also manages the PIC Network of Ozone Officers (NOOs).

This service of networking provides a regular, interactive forum for officers in National Ozone Units (NOUs) to exchange experiences, develop skills, and share knowledge and ideas with counterparts from both developing and developed countries. This, in turn, allows countries to have the information, skills and contacts required for sustaining compliance to the MP and in tandem with the wider national sustainable development goals.

Artie Dubrie is Regional Network Coordinator for Pacific Island Countries at the UNEP Regional Office for Asia and the Pacific (ROAP)

Regional Ozone Network for Europe & Central Asia Turns 10

Halvart Koeppen

The Regional Ozone Network for Europe & Central Asia (ECA network) is producing its 10th anniversary brochure to share major achievements and case studies with countries within and outside the region. The network consists of 12 developing countries spreading from Central Asia and Caucasus to the Balkans. In terms of Montreal Protocol implementation, they are doing well:

- All 12 countries are in compliance with the Montreal Protocol phase-out schedule.
- All have operational import/export licensing systems in place.
- Eight countries established quota systems to control HCFC imports and to comply with the HCFC freeze in 2013.
- All countries have ratified all the Montreal Protocol amendments since 2011.
- All countries have reported Article 7 & Country Programme implementation data for 2012.
- All countries already phased-out methyl bromide consumption, well ahead of the ban in 2015.
- Eight countries have reported HCFC consumption in 2012 below the baseline (freeze in 2013).
- Ten countries have designated Customs focal points for the Montreal Protocol.
- Eight countries participate in the informal Prior Informed Consent initiative (iPIC).
- Nine countries have national refrigeration and air-conditioning associations (and additional two countries are in the process of creating such associations).

Similar efforts are undertaken by the 7 CEIT countries following the more challenging phase-out schedules for developed countries.

Overall, all CEIT countries demonstrate a high commitment to comply with the Montreal Protocol provisions although some countries are facing compliance challenges:

- Azerbaijan in terms of its HCFC consumption and UNIDO assists the country in implementing a GEF-funded project to phase out all remaining HCFC consumption in the country.
- Kazakhstan in terms of its HCFC and methyl bromide consumption and UNIDO is currently preparing projects to assist the country to return to compliance.
- Ukraine is currently implementing its HCFC plan of action to return to compliance by 2015.

Priorities of the ECA network & associated CEIT countries in 2014 will include:

- Implementation of integrated policy measures to promote ozone- and climate-friendly technologies and the adoption of performance and safety standards applicable to the refrigeration & air-conditioning (RAC) sector.
- Establishment of training and certification schemes for refrigeration technicians and companies. This involves the promotion of e-learning courses as a complement to traditional face-to-face and practical training.
- Enforcement support related to the iPIC initiative, analysis of trade data and the ECA Ozone Protection Award for Customs and Enforcement Officers.
- Cooperation with national RAC associations, building planners and architects and international stakeholders.
- Monitoring of Montreal Protocol implementation in terms of compliance, consumption trends, data reporting, operation of import/export licensing and quota system, etc.

Halvart Koeppen is Regional Network Coordinator for Europe & Central Asia at UNEP DTIE's OzonAction Branch

Latin America: Built Capacity to Share
Mirian Vega and Marco Pinzon

The Latin America region comprises 19 countries from Mexico to Chile including Cuba and the Dominican Republic in the Caribbean. Their consumption of ODS ranges in general from low to high level, depending on the size of the country and its industrial base. Some countries - Argentina, Mexico and Venezuela - also have ODS production facilities.

During recent years, Latin America has been characterized as a dynamic region with sustained growth levels and expanding economies. This, in turn, has led to increased levels of consumption of ODS and related technologies.

In most Central American countries, comprehensive HCFC Phase-out Management Plans (HPMPs) run until 2020. They have particular focus on enhancing legislative frameworks, and control and prevention of illegal trade in ODS.

Other countries have been implementing first stage of their strategies which will run until 2015 with a diverse focus on those sectors that represent greater impact in terms of ODP reductions and cost-effectiveness, i.e. PU foam sector, commercial refrigeration, domestic refrigeration, etc.

A key activity in all countries is enhancing capacities and skills of Customs officers and refrigeration technicians. Many countries have also embarked on conversion processes of production facilities in the refrigeration sector from HCFCs and HFCs to alternatives such as HCs in refrigeration and air conditioning, or to methyl formate, HCs and HFOs in the foam industries.

In fact, the region has benefitted from the approval of demonstration projects in methyl formate and CO2 supercritical alternatives. These projects have enabled the relevant sectors in the region and beyond to have information at hand to evaluate the results and make informed decisions on technology choices.

The region now has a robust institutional framework and substantial experience gained through technology conversions and demonstration projects with alternatives that have minimum or no impact to the climate system, This holds great potential for south-south cooperation, especially for the Caribbean countries, particularly in developing the institutional base (regulations, standards, certification), and training and capacity building for a sustainable refrigeration servicing sector.

Mirian Vega is the Regional Network Coordinator for Latin America and the Caribbean at the UNEP Regional Office for Latin America and the Caribbean (ROLAC)

The Caribbean: Every ODP gram counts
Marco Pinzon

The Caribbean Network of Ozone Officers comprises Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago. All of them operating under Article 5 of the Montreal Protocol. Except for Jamaica and Trinidad and Tobago, the rest are considered low volume consuming countries.

Implementation of HCHC Phase-out Management Plans (HPMPs) has already started in all the countries; depending on the approval date, they have accomplished different levels of progress.

Most phase-out strategies give priority to enhancing licensing and quota systems to address the HCFC freeze in 2013. To control and prevent illegal trade in ODS, Customs and other law enforcement officers have been trained in classification, identification including blends, and other topics.

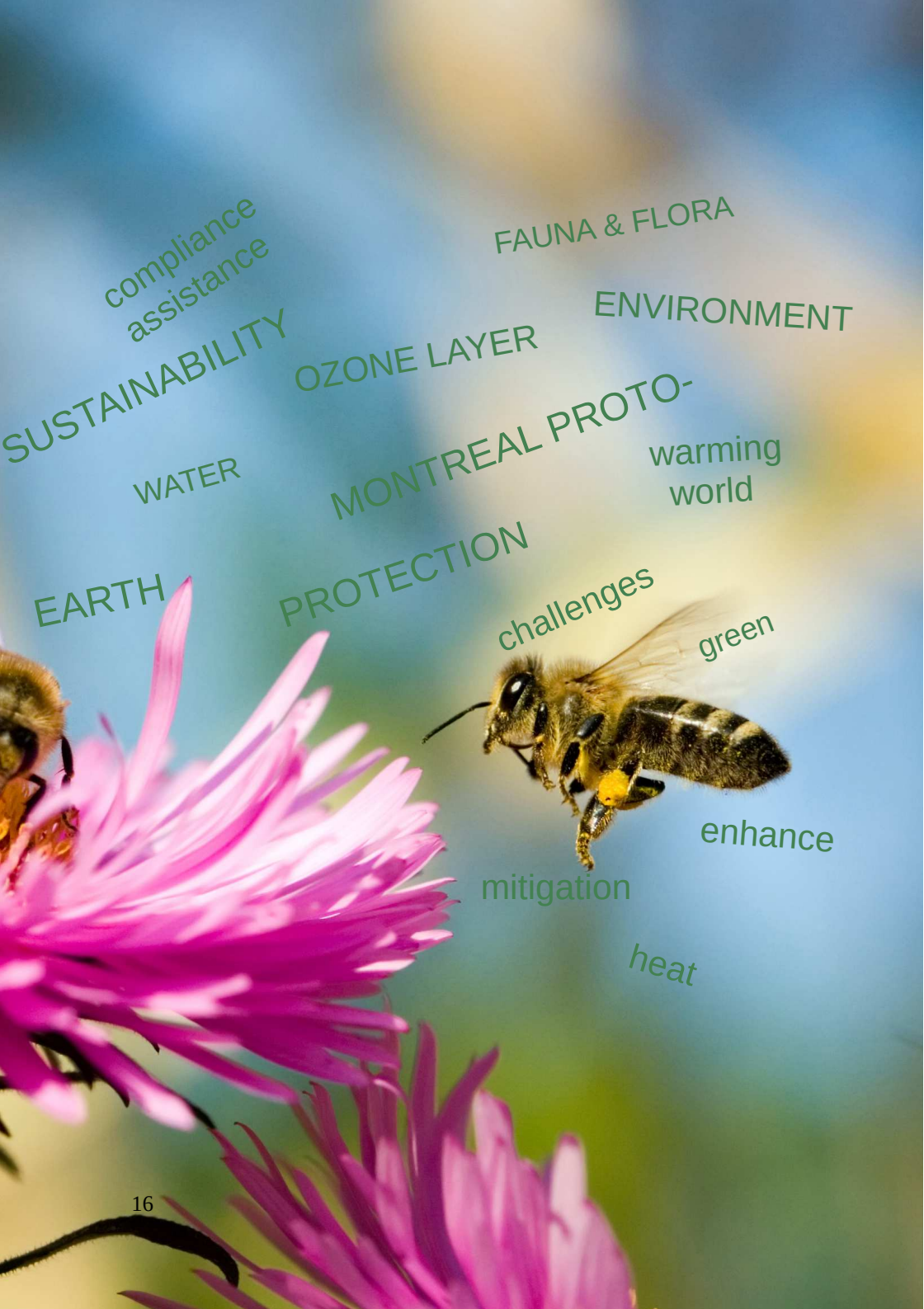
Training programmes for technicians have also been conducted, along with the provision of the necessary tools and equipment for safe handling ODS.

For countries with relatively small consumption levels of refrigerants, any minor disruption in the dynamics of the licensing and quota system may mark the difference between compliance and non-compliance. Since this represents a high risk for most Caribbean countries, building the capacities and enhancing skills of Customs and enforcement officers is a key priority in national strategies.

On the other hand, as most of the consumption is in the servicing sector, the region is characterized as 'technology taker'. This has led to the introduction of transitional technologies in the refrigeration and air conditioning sectors. Considering their potential climate impacts, it is vital to reduce the imports of transitional equipment.

For this purpose, some Caribbean countries have been introducing flammable refrigerants with retrofits in air conditioning units as first demonstration experiences. Safety infrastructure - i.e. regulations, standards, certification, training and capacity building - are critical in the phase-out strategies to prepare those countries and the region for the introduction and safe management of those technologies .

Marco Pinzon is the Regional Network Coordinator, a.i., for the Caribbean at the UNEP Regional Office for Latin America and the Caribbean (ROLAC)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