



COUNTRY REPORT: ERITREA Regulation of Ozone Depleting Substances

Zerisenay Habtezion*

Introduction

As part of the international effort to address global air pollution and climate change, the *Vienna Convention for the Protection of the Ozone Layer* as well as its *Montreal Protocol* and the Protocol's amendments¹ enjoy global adherence.² They have been hailed as a very effective regime to substantially reduce the production and use of ozone-depleting substances (ODSs).³ The 'spectacular' and 'extraordinary' success of the ozone international regulatory regime is such that there has been a 98 percent reduction in the consumption of ODSs between 1986 and 2008 globally⁴ and that, by 2050, the ozone layer is expected to return to its natural level.⁵ All countries in Africa have ratified the *Montreal Protocol*, although the region contributed only a very small

* Research fellow, Du Bois Institute, Harvard University. Email: zhabtez@fas.harvard.edu. The author gratefully acknowledges the valuable assistance of Kibrom Tesfagabir.

¹ The regime on protection of the stratospheric ozone layer is composed of the following agreements: *Vienna Convention for the Protection of the Ozone Layer* (1985); *Montreal Protocol on Substances that Deplete the Ozone Layer* (1987). The Protocol has been further strengthened through five amendments: *London Amendment to the Montreal Protocol* (1990); *Copenhagen Amendment to the Montreal Protocol* (1992); *Montreal Amendment to the Montreal Protocol* (1997); and *Beijing Amendment to the Montreal Protocol* (1999).

² For the status of ratification, accession, or approval of the agreements on the protection of the stratospheric ozone layer (as of October 2011), as provided by the Depository, the United Nations Office of Legal Affairs, see http://ozone.unep.org/new_site/en/treaty_ratification_status.php.

³ R. Steinberg, 'Power and Cooperation in International Environmental Law' in A. Guzman & A. Sykes (eds) *Research Handbook in International Economic Law* (2007) 485.

⁴ United Nations *The Millennium Development Goals Report* (2010) New York, 54.

⁵ C. Sunstein, 'Of Montreal and Kyoto: A Tale of Two Protocols' (2007) 31 *Harvard Environmental Law Review* 1, at 4.

percentage of the global consumption of ODSs and almost zero percent⁶ of production of same.⁷ Eritrea is one of these countries. Besides acceding to the *Montreal Protocol* and its amendments⁸, the country has adopted regulations⁹ on ODSs and ODSs-based equipment and products.¹⁰ This report presents a brief review of these regulations.

ODSs: Overall Context

Chlorofluorocarbons (CFCs), Halons and Methyl bromide are the main Ozone Depleting Substances (ODSs). R-11, R-12, R-22 and R 115 commonly known as Freon gases also are some of the chemicals that fall into this group. These ODSs are employed in many day-to-day activities - coolants (like CFCs) are used in refrigerators and air conditioners; halons in fire extinguishers; methyl bromide in fumigation of soil, flowers, fruits and grain stores; foams in plastic industry and insulation; these and other ODSs as propellants in aerosols and other related purposes. ODSs lead to depletion of the ozone layer which in turn countenances the penetration of the dangerous Ultra Violet (UV) radiation to the Earth.¹¹ Exposure to UV radiation can lead to serious diseases such as skin cancer, eye cataracts, and can affect the immune system. Increased UV radiation is also dangerous for marine life and to terrestrial animals and crop production.¹²

The international community started to pay attention to the environmental problems linked to the ozone layer during the 1970s when scientists discovered holes of the ozone layer at the two poles of the planet.¹³ The *Vienna Convention* came into being in 1985 as a legal response, followed by the *Montreal Protocol* in 1987. The latter sets out a mandatory timeline for the phase out of ODSs and this timeline has been reviewed regularly, with phase out dates accelerated in accordance with scientific

⁶ With the exception of South Africa, there has never been a country in Africa that has ever produced ODSs.

⁷ United National Environment Programme, *Patterns of Achievement - Africa and the Montreal Protocol* (2009) (available at <http://www.unep.org/roa/docs/pdf/patternofachievements/PatternsAchievement-2009.pdf>.)

⁸ Eritrea has acceded to the all of the agreements on protection of the ozone layer listed in Note 1 (see table Eritrea's Accession to the Ozone Agreements).

⁹ Legal Notice No. 117/2010.

¹⁰ Government of Eritrea, Legal Notice No. 117/2010 'Regulations for the Issuance of Permit for the Importation or exportation of Ozone Depleting Substances (ODS) and Ozone Depleting Substances Based Equipment or Products'.

¹¹ UNEP (supra note 7).

¹² For the science of ozone depletion see D. Hunter, J. Salzman & D. Zaelke, *International Environmental Law* 2nd edition (2002) 527-531.

¹³ Ibid.

understanding and technological advances, usually in the form of amendments.¹⁴ The *Montreal Protocol* has also produced other significant environmental benefits. The phase out of ODSs is responsible for delaying climate change by up to 12 years.¹⁵ All parties to the ozone accords have been phasing out ODSs and reverting to Ozone friendly alternatives¹⁶.

ODSs: Eritrean Context

Historically, ODSs had been used in Eritrea largely in connection with imports of refrigerators and air-conditioners containing such substances. Surveys conducted between the years 2006 and 2010 by the Department of Environment show that such equipment and products are mostly found in the Eastern lowlands, mainly in the port cities of Massawa and Asseb. Smaller numbers of such equipment also exists in other parts of the country, including the western lowlands and the highlands.¹⁷

Like almost all African countries, Eritrea does not produce ODSs. On the consumption side, again as in most African countries, the country has managed to decrease its consumption of ODSs by cutting down on imports of ODS and equipment and products that utilize ODSs such as refrigerators and air-conditioners. In 1996 the consumption of ozone-depleting substances in Ozone Depletion Potential (ODP) metric tons was 43.2 - this decreased to 3.1 by 2008.¹⁸ In contrast, two of the biggest consumers of ODSs in Africa, Nigeria and Egypt, have decreased their consumptions from 5,111.1 and 2,944.9 metric tons in 1996 to 312.7 and 726.2 metric tons in 2008, respectively.¹⁹ The two countries that have managed to reduce their ODSs consumption closer to zero are São Tomé and Príncipe and the Comoros

¹⁴ See note 1 above for list of the amendments.

¹⁵ United Nations Environment Programme, *Ozoneaction* (2008) (Special issue dedicated to HCFC Phase out: Convenient Opportunity to Safeguard the Ozone Layer and Climate) (available at: <http://www.unep.fr/ozonaction/information/mmcfiles/3139-e-ganHCFCspecialissue.pdf>.)

¹⁶ Some of the alternatives are: R-134a, R-404a, R-600a and Ammonia as coolants; CO₂, foam and dry powder as fire-extinguishers; solarisation, steam and biological control as fumigants; CO₂, R-134a and R-152a in the foam industry. The use of ODS has also a devastating economic impact in developing countries like Eritrea, as most of these chemicals have phased out since 2010. So unless the country implemented steps to keep up with global trends, it would be left with old and obsolete equipment and machines.

¹⁷ GoE, *Introductory Note on Ozone Depleting Substances and its Global and National Response* (2011) (Unpublished).

¹⁸ United Nations Environment Programme, *Assessing Progress in Africa toward the Millennium Development Goals* (2011) 77.

¹⁹ Ibid.

- each consuming 0.2 metric tons in 2008.²⁰ Table 1 below shows an estimate of import/consumption of common ODSs in Eritrea for the periods 2005-2009. Again, the downward trend is consistent with indicators globally as well as in Africa.

Since acceding to the *Vienna Convention* and the *Montreal Protocol*, the Government of Eritrea (GoE) has been conducting activities in furtherance of its commitments under the Convention²¹ and the Protocol.²² Some of the activities being undertaken include: awareness campaigns;²³ surveys on ozone depleting substances²⁴ and ozone depleting substance based equipment;²⁵ identification of ozone friendly equipment and products for importation;²⁶ and sensitization on the need for development of regulatory tools on ODSs and ODS based equipment.²⁷

Year	R-12*	R-22**
2005	29.6	31
2006	3.6	1.8
2007	3.1	13.6
2008	2.5	4.7
2009	1.7	1.8

Source: GoE 2011 (unpublished)

*Dichlorodifluoromethane (R-12), is a colorless gas, is a chlorofluorocarbon halomethane (CFC), often used as a refrigerant and aerosol spray propellant.

** Chlorodifluoromethane or difluoromonochloromethane (R-22) is a hydrochlorofluorocarbon (HCFC), is a colorless gas once commonly used as a propellant and in air conditioning applications and has high ozone depletion potential and is a potent greenhouse gas, with a high global warming potential.

²⁰ Ibid. The two lowest importers of ODSs in Africa for this time frame are Comoros and Cape Verde Islands - the former's consumption of ODSs decreased from 2.3 metric tons/year in 1996 to 0.2 in 2008 while the latter's consumption of ODSs decreased from 2.3 to 0.8 metric tons for same time span. São Tomé and Príncipe also reduced its consumption from 4.3 metric tons/year in 1996 to 0.2 metric tons/year in 2008.

²¹ Article 2(2)(b) of the *Vienna Convention* states that parties shall 'adopt appropriate legislative or administrative measures and co-operate in harmonizing appropriate policies to control, limit, reduce or prevent human activities under their jurisdiction or control should it be found that these activities have or are likely to have adverse effects resulting from modification or likely modification of the ozone layer'.

²² GoE (supra note 17).

²³ Ibid. These awareness campaigns targeted decision makers, customs officers, investors, import - export companies, refrigerators technicians, students and community representatives. There has also been training on good refrigeration practices; and the identification of ODSs and ozone friendly substances and products.

²⁴ Ibid.

²⁵ These purchases included refrigerant analyzers for the customs officers and other retrofitting and recycling equipment to refrigeration.

²⁶ Alternatives to ozone-friendly products are now manufactured widely in many countries including some developing countries such as India, China and Brazil. Many of these products have labels representing that they are ozone-friendly. In the absence of such labels, verification of the contents, normally included on the products themselves or in accompanying documents, would normally show whether they contain CFCs or ozone-friendly alternatives.

²⁷ The sensitization effort in regulation of ODSs culminated in the promulgation of Legal Notice No. 117/2010.

Legal Response: Legal Notice No. 117/2010

The Regulations as an International Obligation

The *Eritrean Constitution* does not say much on international treaties except for the fact that the President may negotiate and sign international agreements²⁸ and that the National Assembly shall ratify these agreements by law.²⁹ However, the country's *National Environmental Management Plan (NEMP-E)* notes that the country needs to actively participate in international effort on the environment.³⁰ Specifically, *NEMP-E* observes that Eritrea shall participate in the global effort to protect the ozone layer.³¹ As noted earlier, Eritrea is a party to all agreements on ODSs. The country, therefore, has an obligation to regulate the substances, equipment and products that come within the purview of these agreements. There is also an economic rationale for this. By acceding to these accords, the country in effect avoids becoming a dumping ground for ODSs and ODS based-equipment and products banned in almost all other countries. In addition, Eritrea would expect to benefit from technology and financial support that accrue to parties to the treaty.³² Table 2 provides a list of the agreements on protection of the ozone layer and the dates of Eritrea's accession to them.

Table 2: Eritrea's Accession to the Ozone Agreements

Name of Agreement	Date of Accession
Vienna Convention	10 - 3 - 2005
Montreal Protocol	10 - 3 - 2005
London Amendment	5 - 7 - 2005
Copenhagen Amendment	5 - 7 - 2005
Montreal Amendment	5 - 7 - 2005
Beijing Amendment	5 - 7 - 2005

Source: UNEP, *Status of ratification, accession, acceptance or approval of the agreements on the protection of the stratospheric ozone layer* (2011) UNEP/OzL.Pro.WG.1/31/INF/1-UNEP/OzL.Pro/ImpCom/46/INF/1.

²⁸ *Eritrean Constitution* (1997), article 44(6)

²⁹ *Ibid*, article 32(4).

³⁰ GoE *National Environmental Management Plan for Eritrea* (1995), 117-122.

³¹ *Ibid*, 34.

³² See: *Vienna Convention* (article 4); *Montreal Protocol* (articles 10 and 10A).

General Features of the Regulations

Legal Notice No. 117/2010, titled 'Regulations for the Issuance of Permit for the Importation or exportation of Ozone Depleting Substances (ODS) and Ozone Depleting Substances Based Equipment or Products' contains 12 articles and 4 annexes.³³ It was promulgated on 23 August 2010. These Regulations constitute the first attempt at dealing with the environmental and health risks posed by ODSs in Eritrea. As a matter of established legislative practice, regulations/legal notices are ordinarily issued by government agencies that are empowered by pertinent enabling legislation.³⁴ Eritrea has not as yet promulgated an umbrella environmental proclamation which would have ordinarily empowered the Ministry of Land, Water and Environment (MLWE) to issue regulations governing the various matters of environmental concern such as ODSs. The absence of such a proclamation has therefore led to the issue of these regulations by the Government of Eritrea.

The objectives of Legal Notice 117/2010 are to: '(1) track the total quantity of ozone depleting substances imported to or exported from Eritrea; (2) control and limit the ozone depleting substance imported to or exported from Eritrea; (3) ensure that ozone depleting substances are imported or exported through formal import permits; (4) promote the use of ozone friendly substances, products, equipment and technology; and (5) phase out the use or consumption of ozone depleting substances and products'.³⁵

Breadth of ODSs Regulated

Legal Notice 117/2010 aims to regulate the use, exportation, importation and handling of all ozone depleting substances listed in Annex I (which provides a list of controlled ODSs and their mixtures, categorized in ODS group, substances, trade name, tariff code number and chemical formula) and ODS-based products and equipment listed in Annex II (also categorized by name of equipment/product and customs code tariff numbers). The latter products and equipment include: automobile and truck air conditioning units (whether incorporated in vehicles or not); domestic and commercial refrigeration and air conditioning heat pump equipment (such as

³³ The four annexes are: Annex I: List of Controlled ODSs and their Mixtures; Annex II: ODS based Products and Equipment Controlled by these Regulations; Annex III: Application Forms; and Annex IV: Designated Ports of Entry or Export.

³⁴ An enabling law is referred to as a 'Proclamation'.

³⁵ Article 3.

refrigerators, freezers, dehumidifiers, water coolers, ice machines, air conditioning and heat pump units); aerosol products, except medical aerosols; portable fire extinguishers (halons); Insulation boards, panels and pipe covers; and prepolymers.³⁶ Also included are 'products that are transported in consignments of personal or household effects or in similar non-commercial situations; and any person who imports or distributes ozone depleting substances, technology or products which uses or contains ozone depleting substances'. The Regulations do not however apply to 'the restricted use of Methyl Bromide as fumigant for pre-shipment and quarantine purposes'.³⁷ This exception is limited to specific agricultural use as set out in the provisions of Annex I of Legal Notice No. 114/ 2006.³⁸

Permitting Regime

As mentioned above, there is no production of ODSs in Eritrea, as is the case in almost all countries in Africa. The primary way in which Legal Notice 117/2010 seeks to regulate ODSs is, therefore, by regulating the import, export and consumption of these substances and associated equipment and products. Accordingly, the Regulations specifically prohibit the import or export of ODSs listed in Annex I and II without obtaining a permit from the MLWE.³⁹ Legal Notice 117/2010 empowers the MLWE to further regulate the permits by setting permitting conditions and determining the type and quantity of chemicals to be imported and/or exported into/out of the country.⁴⁰ Customs officers are also empowered to, among others things, check import or export permit issued for an ODS and/ or ODS-based equipment or products, at every points of entry/exit.⁴¹

Control on Imports and Exports

A control on imports and exports of ODSs in bulk is a key feature of any national regulatory regime on ODSs.⁴² Legal Notice 117/2010 seeks to regulate ODSs by

³⁶ Article 4(1)(b).

³⁷ Article 4(2).

³⁸ Legal Notice No 114/2006 'Regulations for Importation, Handling, Use, Storage and Disposal of Pesticides' regulates pesticide imports through permit requirements; rules on labeling and packaging as well as inspection and disposal. The full text of the Regulations is available at <http://faolex.fao.org/docs/pdf/eri68051.pdf>.

³⁹ Articles 5-6.

⁴⁰ Article 7.

⁴¹ Article 9.

⁴² United Nations Environment Programme & Stockholm Environmental Institute, *Regulations to Control Ozone Depleting Substances: A Guide Book* (2000), xxv-xxvii.

instituting a standardized system for such control. Article 8 accordingly obliges importers and exporters to: (1) submit the application for import or export permits three months in advance of the intended time for import or export; (2) import or export the ODS or ODS-based equipment or product for which he obtained a permit during the period indicated in the permit; (3) keep a register of the type and quantity of ODS sold; (4) submit annually a report to the Department of the quantities of ODS imported or exported; (5) obtain approval before shipping any ODS; (6) submit a copy of the permit to the customs officials at the port of entry; and (7) check for proper labeling of ODS.⁴³

Regulatory Powers

Legal Notice 117/2010 empowers the MLWE to: (1) issue a permit exemption for the importation or exportation of ODS and ODS-based equipment or products; (2) set the conditions of permit and determine the type and quantity of chemicals to be imported and/ or exported into and out of Eritrea; (3) determine the number of licensed importers/ exporters allowed to import/export ODS and ODS-based equipment or products at a given time; (4) suspend or cancel the permit of a holder who fails to meet any of the conditions/ requirements of the permit, or fails, without good cause, to use the permit within the time stipulated under these regulations; and (5) monitor the importer or exporter that imports or exports during the period indicated in the permit.⁴⁴

These regulatory powers are welcome for two reasons. First, they constitute an important initial step to establish a reliable system to control and monitor the import and export of ODSs through the MLWE, a government agency that has the resources and the expertise to deal with the challenge. Secondly, given the multiple usage and application of chemicals (such as in agriculture, industry and home use) and the fact that the powers and responsibilities of some government agencies in the country are

⁴³ Article 8. Article 8 further requires that labeling include: (a) the name of the ODS or of the Product; (b) the name and address of the manufacturer of the ODS or of the product; (c) the name of the country of origin or destination of the ODS or of the product; (d) a statement which reads 'Not Ozone Friendly', 'Ozone Depleting', 'this substance/product is harmful to the Ozone Layer', 'No CFC', 'Ozone Friendly' or 'CFC free' as the case may be, in a clearly legible letter; and (f) a symbol indicating that the substance or product is harmful to the Ozone Layer.

⁴⁴ Article 7.

blurred on certain areas of regulatory concern,⁴⁵ it is sensible to delineate the powers and responsibilities over ODSs.

Concluding Remarks

The regulatory success at national and international levels on ODSs epitomizes the potency of cooperation in tackling the major environmental woes of our planet. If nothing else, Legal Notice 117/2010 is a welcome addition to the global effort at protecting the ozone layer. It is an example of how all nations, whatever their standing on the international plane, could contribute in the fight against global environmental challenges.

Seen within the context of the anatomy of environmental regulation in Eritrea, Legal Notice 117/2010 is also a step in the right direction. The environmental and economic rationales for the legislative action are self-evident. On the enforcement side, the challenge will be making sure that implementation of these Regulations is not dwarfed by resource handicaps. Training of all enforcement agents, including customs officers, will need to be amplified. The MLWE should exert all effort, including by exercise of its regulatory powers under article 7, to ensure that a reliable system of control of ODSs is in place and that the consumption of ODSs is judiciously monitored. The ultimate objective should be getting to zero imports and zero consumption of ODSs. In the same vein, effort should be made to make sure that 'leakages' in the form of contraband ODSs and ODS-based equipment or products do not undermine the objectives of the new law.

Finally, Legal Notice 117/2010 will not be served by the country's overall environmental regime, which is still at an embryonic stage. There is still no framework environmental proclamation and the institutions involved in environmental regulation have huge resource constraints. Commitment and effort need to be redoubled, therefore, to deal with 'the other pieces of the puzzle' in environmental governance in the country.

⁴⁵ For instance, there have been a number of examples of regulatory and institutional overlap on wildlife, forests and pesticide regulation between the Ministries of Agriculture and the Ministry of Land, Water and Environment.