Non-CO_2 Short-Lived Climate Pollutants and the Deterioration of Human Rights

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&

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submission to the

Office of the High Commissioner for Human Rights

in regard to

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Executive Summary

This communication is in reply to the High Commissioner's invitation to provide information relevant to a study of the relationship between climate change and human rights that UNHCHR is preparing in accordance with Human Rights Council resolution 7/23.

The analytical study required by Human Rights Council presents a landmark opportunity for the advancement of the U.N. Human Rights System. It could have a significant impact on the development of human rights and especially on the promotion and protection of human rights related to the quality of the environment. In a time when science has unequivocally shown the emergency that humankind is facing with climate change impacts, this is a unique opportunity to advance the legal recognition of human rights violations arising as a consequence of failing to address greenhouse gas emissions.

The U.N. Human Rights System requires clarity and the development of stronger jurisprudence on human rights related to climate change, specifically as it concerns:

- Remedies available for victims of climate change;
- Need for Special Legal Protection for those most vulnerable to climate change;
- Identification and scope of States' obligations in the context of common but differentiated responsibilities for human rights violations as a consequence of climate change
- Clear recommendations to States on urgent actions for fast mitigation.

In this submission, we have focused on State international obligations. We have anchored our observations on standards and rules applicable to human rights, indigenous peoples rights, children's rights, women's rights, and the environment. These rules and standards are mandated in universal, international agreements freely entered into by States and by general principles in international human rights and environmental law.

The central contention of this submission is that the U.N. Human Rights System must work to protect the human rights of peoples vis a vis climate change, especially for those most vulnerable to climate impacts., Moreover, when those most responsible for the current climate crisis are States that are Party to many human rights instruments those States should act positively to prevent further human rights violations and to provide the needed remedies to adequately address the climate related human rights violations that are already occurring. This submission identifies concrete measures that States can take now in accordance with human rights and international environmental law to reduce further emissions of climate pollutants. These measures will significantly reduce near-term climate impacts that are now violating the fundamental rights of inhabitants of the most world's most vulnerable regions.

Climate pollutants and associated adverse impacts from climate change are violating the human right to life, health, water, food, equality before the law, effective judicial remedy, residence and movement, self determination, clean environment, be free from interference with one's home.

Some climate pollutants are also causing separate and direct adverse impacts on human health and food crops, in particular, emissions of black carbon soot and tropospheric (ground level) ozone. These two climate pollutants, along with methane and hydrofluorocarbons (HFCs), are collectively known as short-lived climate pollutants, or non-carbon dioxide climate pollutants. They are causing half of global climate change and the associated adverse impacts.

Emissions of carbon dioxide are causing the other half of climate change. Cutting carbon dioxide emissions is essential for long-term climate protection, and national efforts must begin immediately to cut this climate pollutant. However, because a significant fraction of the carbon dioxide emitted today stays in the atmosphere for thousands of years, cutting carbon dioxide pollution does not produce cooling of the climate system for up to a thousand years, and does not provide relief to the vulnerable peoples and ecosystems they depend upon.

Emissions of the short-lived climate pollutants control the near-term warming and associated adverse impacts on vulnerable people and the ecosystems they depend upon. In addition to causing half of global climate change, the short-lived climate pollutants are causing serious harm to public health, killing 2.4 million people each year, mostly women and children. They also are causing additional non-lethal health effects, as well as significant damage to food crops.

The violations of human rights that are occurring from climate change and its associated adverse impacts can be remedied in the near term by cutting emissions of the short-lived climate pollutants. These emissions can be cut quickly with technologies that are already being used at scale, often using existing national laws and institutions. Such cuts will reduce the rate of global climate change by half in the next 30 to 60 years and significantly reduce near-term climate impacts, especially in the most vulnerable regions. Such cuts also will save millions of lives, reduce impacts on food, water, and public health.

Accordingly, this communication requests that measures be implemented to cut emissions of the short-lived climate pollutants, along with measures to cut emissions of carbon dioxide. Specific measures are described in the Conclusion.

Climate Change and Short-Lived Climate Pollutants

In its Fourth Assessment Report, published in 2007, the Intergovernmental Panel on Climate Change reported that "warming of the planet is unequivocal" and "most of the observed increase in globally averaged temperatures since the mid-20th century is very likely [i.e. more than 90% likely] due to the observed increase in anthropogenic greenhouse gas concentrations."[2] Since this pronouncement, the signs of human intervention in the climate system have only become more clear, and its effects more prevalent, leading many scientists to argue that we have entered

[2] IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007), *available at* http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html; *see also*, Nat'l Research Council, CLIMATE STABILIZATION TARGETS: EMISSIONS, CONCENTRATIONS AND IMPACTS OVER DECADES TO MILLENNIA, 3 (National Academies Press 2011).

a new geological epoch, one in which human actions play a dominant role in environmental and climatic change the "Anthropocene."[3]

According to scientists Ramanathan and Feng, human emission of greenhouse gases as of 2005 may have already committed the planet to 2.4°C of warming, pushing the climate system dangerously close to the boundaries of dangerous anthropogenic interference and predicted climate tipping points.[4] Climate tipping points are predicted changes in the earth's climate system which have the potential to trigger abrupt, irreversible and catastrophic shifts that can overwhelm ecosystem's and society's ability to adapt.[5] A few examples of predicted tipping points include the melting of Arctic permafrost and sea ice, melting of the Greenland ice sheet, dieback of the Amazon rainforest, disappearance of the Hindu-Kush-Himalayan-Tibetan glaciers, and the shutdown of the Atlantic Thermohaline Circulation.[6] The brunt of the harms caused by passing these climate tipping points will be borne by the world's most vulnerable people with the least capacity to adapt to the change.

International action to reduce CO_2 emissions, while necessary to manage long-term warming, will do nothing to prevent already accelerating harms in critical vulnerable regions such as the Arctic. This is because a large percentage of emitted CO_2 survives in the atmosphere for millennia, and the benefits of mitigating of CO_2 accrue over a long timescale.[7] It is only by cutting the powerful non-CO_2 short-lived climate pollutants such as black carbon, tropospheric ozone, and HFCs that we can produce meaningful and immediate mitigation and prevent reaching temperature thresholds for predicted climate tipping points in the next few decades.[8] These short-lived climate pollutants, which are estimated to account for as much as 40-50% of positive anthropogenic radiative forcing, have atmospheric lifetimes of weeks to decades. [9] Cutting their emission decreases their effect on the global radiative budget to zero on a short time scale and pushes back the threshold for predicted tipping points for decades. [10]

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[3] Pontifical Academy of Sciences, *Fate of Mountain Glaciers in the Anthropocene*, 8 (May, 11 2011), http://www.vatican.va/roman_curia/pontifical_academies/acdscien/2011/PAS_Glacier_110511_final.pdf; Nat'l Research Council, CLIMATE STABILIZATION TARGETS: EMISSIONS, CONCENTRATIONS AND IMPACTS OVER DECADES TO MILLENNIA, 217 (National Academies Press 2011).

[4] Veerabhadran Ramanathan & Yan Feng, *On Avoiding Dangerous Anthropogenic Interference with the Climate System: Formidable Challenges Ahead*, 105 PROC. OF THE NAT'L ACAD. OF SCI.14245, 14245 (2008).

[5] IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, 129, 132 (2007), *available at* http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html.

[6] Timonthy M. Lenton et al., *Tipping Elements in the Earth's Climate System*, 105 PROC. OF THE NAT'L ACAD. OF SCI. USA 1786, 1788 (2008); *see also* Timonthy M. Lenton, *Early Warning of Climate Tipping Points*, 1143 NATURE 201 (2011).

[7] Nat'l Research Council, CLIMATE STABILIZATION TARGETS: EMISSIONS, CONCENTRATIONS AND IMPACTS OVER DECADES TO MILLENNIA, 9 (National Academies Press 2011).

[8] U.N. Envtl. Programme & World Meteorological Org., *Integrated Assessment of Black Carbon and Tropospheric Ozone: Summary for Decision Makers*, 7, UNEP/GC.26/INF/20 (Feb. 17 2011).

[9] *Supra* note 6 at 69.

[10] *Id.*

In addition to their contribution to climate change and passing thresholds for climate tipping points, emissions of non-CO_2 short-lived climate pollutants cause significant harm to human health and the environment, both of which adversely impact the internationally recognized fundamental human rights to life, food, water, and health. Their current impacts and predicted future impacts of these emissions are so severe that failure to take mitigating actions should be recognized as a violation of fundamental human rights.

Under international human rights law, States have a positive, self-imposed duty to ensure the fundamental human rights of all persons.

The UN Charter is the basis of a State's commitment to its citizens and to the international community. Parties to the UN Charter are committed to ensuring the human rights and fundamental freedoms of all people by finding "solutions [to] international economic, social, health, and related problems."[11] The UN Declaration of Human Rights (UDHR) adopted by the U.N. General Assembly in 1948 expressly delineates in Article 3 the rights to life, liberty, and security of person.[12] Furthermore, Article 25 provides that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food…."[13] The Declaration also specifies the need for an international order that provides for the realization of these rights, and some form of security for individuals in the event that circumstances beyond their control prevent attainment of the other enumerated rights.[14]

In addition, the two optional protocols to the International Bill of Human Rights, including the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the International Covenant on Civil and Political Rights (ICCPR), echo the UDHR's guarantees regarding the rights to life and health. They elaborate on the specific individual rights held therein. The ICCPR reiterates the right to life, specifically mentioning special protection for children. In the event that rights are violated, States are to ensure that individuals have access to effective remedies.[15]

> Art 6 (1). Every human being has the inherent right to life. This right shall be protected by law.
>
> Art 24 (1). Every child shall have... the right to such measures of protection as are required by his status as minor, on the part of his family, society and the State.[16]

Similarly, the ICESCR commits States to individual and collective action for "full realization" of the listed rights, including: the right to health, adequate standard of living, control and prevention

[11] U.N. Charter art. 55.
[12] Universal Declaration of Human Rights, G.A. Res. 217 (III) A, U.N. Doc. A/RES/217 (III), Art. 3 (Dec. 10, 1948).
[13] *Id.* at art. 25.
[14] *Id.* at art. 3, 25, 28.
[15] International Covenant on Civil and Political Rights art. 2(3), Dec. 16, 1966, 999 U.N.T.S. 174.
[16] *Id.* at art. 6, 12.

of disease, and improvement of environmental hygiene. The covenant emphasizes the right to food and freedom from hunger, outlining in detail States' commitments to improving global methods of production and equitable distribution of food.

> Art 11 (1) The States Parties … recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing….[17]

> Art 12 (1) The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. (2) The steps to be taken … shall include those necessary for (b) The improvement of all aspects of environmental and industrial hygiene. [18]

States have a duty to cooperate under international environmental law.

Recent human rights jurisprudence recognizes that in order to fulfill their human rights obligations, States have a duty to regulate domestic environmental pollution.[19] This link has been made explicit by such fora as the UNHRC, Inter-American Court of Human Rights (IACHR), European Court of Human Rights (ECHR), European Court of Justice (ECJ), and the African Court of Human Rights (ACHR).[20] Furthermore, within international environmental law States have a duty to cooperate,[21] and a number of treaties specifically address State responsibility for pollution that is harmful to the people of other States.[22] The duty to cooperate, as outlined in the UN Framework Convention on Climate Change (UNFCCC),[23] is directly analogous to the ICESCR duty to cooperate.[24] In order to ensure fundamental human rights, the UNHCR must recognize a legal obligation on the part of States to cooperate in addressing environmental harms.

Facts

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[17] International Covenant on Economic, Social and Cultural Rights art. 11, Dec. 16, 1966, 993 U.N.T.S. 7.
[18] *Id.* at art. 12(1), 11(1).
International Covenant on Economic, Social and Cultural Rights art. 11(1), Dec. 16, 1966, 993 U.N.T.S. 7.
[19] *See*, Lopez Ostra v. Spain, 20 Eur. Ct. H. R. 277 (1994); *see also*, Guerra v. Italy, 26 Eur. Ct. H. R. 357 (1998); Fadeyeva v. Russia, 2005 IV 45 Eur. Ct. H. R. 10; Öneryildiz v. Turkey, 2004 XII 41 Eur. Ct. H. R. 20.
[20] *See*, Dinah Shelton, *The Environmental Jurisprudence of International Human Rights Tribunals* at 11-12, in LINKING HUMAN RIGHTS AND THE ENVIRONMENT (Romina Picolotti and Jorge Daniel Taillant eds., 2003) ("[The UNHRC, IACHR, ECHR, ECJ, and ACHR] have developed a jurisprudence that recognizes and enforces rights linked to environmental protection.")
[21] The MOX Plant Case (Ir. v. U.K.), Case No. 10, Order of Dec. 3, 2001, ITLOS Rep. ¶82; *see also*, The Land Reclamation Case (Malay. V. Sing.), Case No. 12, Order of Oct. 8, 2003, ITLOS Rep.
[22] *See, e.g.*, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, 1673 UNTS 126; 28 ILM 657 (1989).
[23] UNFCCC, *opened for signature* May 9, 1992, S. TREATY DOC. NO. 102-38, 1771 U.N.T.S. 107, *as amended by* Kyoto Protocol to the United Nations Framework Convention on Climate Change, *opened for signature* Mar. 16, 1998, 2303 U.N.T.S. 148 (*entered into force* Feb. 16, 2005.)
[24] ICESCR, *supra* note 7, at Art. 1

Despite the clear and imminent intrusion on human rights that climate change will produce on a global scale, recent reports persistently conclude that climate change sources are too diffuse, and the causal links too complex for human rights law to be effective as remedial action.[25] It is urged that a human rights approach be used instead to simply inform national and international policy-making, and the formation of international agreements.[26] While this may arguably be an appropriate approach when considering CO_2 emissions alone, data on HFCs, black carbon and tropospheric ozone illustrate that this conclusion overlooks the profound impacts these emission have on human health and wellbeing. Black carbon, tropospheric ozone and HFCs currently adversely impact the human rights of up to 3 billion of the world's most vulnerable people, women and children in particular.[27] Likewise, the intense but relatively short-lived warming effect of HFCs further threaten already vulnerable populations.[28] The warming potential of HFCs can be anywhere from hundreds to thousands of times that of CO_2 depending on the time frame.[29] These latter pollutants have a relatively short atmospheric lifetime, so they are usually found in the highest concentrations close to where they are emitted. The consequences are therefore felt more directly within those local and regional areas,[30] creating a local emissions effect.

Black carbon is an extreme threat to life and health and a significant contributor to current climate warming.

Black carbon, a major component of the particulate matter given off as smoke or soot from biomass combustion, is known to be immediately harmful to health and the environment.[31] As a result of the local emissions described above,[32] black carbon pollution is concentrated in

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[25] *See generally*, Report of the OHCHR on the Relationship Between Climate Change and Human Rights, 29-30, U.N. Doc. A/HRC/10/61 (Jan. 15, 2009); Siobhán McInerney-Lankford et al., *Human Rights and Climate Change: A Review of the International Legal Dimensions*, THE WORLD BANK, 29-30, *available at* http://publications.worldbank.org/index.php?main_page=product_info&products_id=24042.

[26] *Id.*

[27] *See generally*, IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007), *available at* http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html.

[28] *See*, Cahal Milmo, *'Too Late to Avoid Global Warming,' Say Scientists*, THE INDEPENDENT (Sep. 19, 2007), http://www.independent.co.uk/environment/climate-change/too-late-to-avoid-global-warming-say-scientists-402800.html, citing Piers Forster et al., *Changes in Atmospheric Constituents and in Radiative Forcing*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 129, 132 (2007), *available at* http://www.ipcc.ch/ipccreports/ar4-wg1.htm.

[29] IPCC, *supra* note 26.

[30] *See generally*, Jessica Wallack & Veerabhadran Ramanathan, *The Other Climate Changers: Why Black Carbon and Ozone Also Matter*, FOREIGN AFFAIRS, Sept./Oct. 2009 at 109 ("[B]oth black carbon and ozone precursor emissions tend to have localized consequences….").

[31] *Black Carbon Emissions in Asia: Sources, Impacts, and Abatement Opportunities*, UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (Apr. 2010), http://usaid.eco-asia.org/programs/cdcp/reports/summary-black-carbon-emissions-in-asia.pdf (last visited May 26, 2011).

[32] Wallack & Ramanathan, *supra* note 29.

particular regions, or "hotspots."[33] Approximately 3 billion people are subject to elevated exposure in black carbon hotspots in East and South Asia, Southern Africa, and the Amazon Basin.[34] There is a distinct split between the sources of black carbon in developed versus developing countries.[35] Residential biofuel use is a main black carbon source in developing countries, along with cropland burning, transportation, and industry.[36]

Despite the known effects of black carbon, it is still the cause of millions of premature deaths worldwide.[37] In Africa alone, where biomass sometimes accounts for 90% of household fuel supply, studies suggest that indoor air pollution will cause approximately 9.8 million deaths by the year 2030.[38] Similarly in India, black carbon from indoor air pollution may cause as many as 2.3 million premature deaths annually among women and children under five years of age.[39] In both cases the high black carbon mortality from indoor pollution is due to the inefficient combustion process of commonly-used cookstoves. While safer, cleaner cookstove technology is available, common versions emit smoke and soot high in particulate matter and other harmful substances. Since women and children spend more time in the home, they are disproportionately affected. [40]

The problem of black carbon pollution is neither new nor unsolvable. In the United States, polluted air high in particulate matter was linked to episodes of death and illness in Los Angeles in 1943 and Donora, Pennsylvania, in 1948.[41] A more severe episode in London in 1952 brought greater awareness to the danger of high emissions concentrations.[42] Changes in air pollution controls in developed countries have resulted in a decline in the amount of particulate matter emissions, [43] even while their total greenhouse gas emissions have increased. In both countries,

[33] *See*, John Seinfeld, *Atmospheric Science: Black Carbon and Brown Clouds*, 1 NATURE GEOSCIENCE 15, (2008).
[34] *Id.; see also* John Bachmann, *Black Carbon: A Science/Policy Primer, Pew Center on Global Climate Change,* PEW CENTER ON GLOBAL CLIMATE CHANGE, (Dec. 2009), http://www.pewclimate.org/science/black-carbon-primer.
[35] USAID, *supra* note 30.
[36] *Id.*
[37] The substance is a cause of about 7% of child deaths worldwide, and in children under 5 alone, about one third of fatal respiratory illness is linked to it. Wallack and Ramanathan *supra* note 20 at 109. Since women and children spend more time within the home, they are particularly at risk for the effects of indoor pollution. *Id.* There are documented run-on effects, in children's school attendance and performance, for example, and in general economic productivity. *Id.* In India, between 1.6 billion and 2 billion days of labor are lost yearly because of indoor pollution alone; households in that country that burn solid fuels have particulate levels about 100 times the annual mean guideline put forward by the World Health Organization. *Id.*; *supra* note 37 at 22.
[38] Robert Bailis et al, *Mortality and Greenhouse Gas Impacts of Biomass and Petroleum Energy Futures in Africa*, 308 SCIENCE 98, 102 (2005).
[39] USAID, *supra* note 30 at 23.
[40] Wallack & Ramanathan, *supra* note 29 at 109.
[41] Phillip K. Hopke, *Contemporary Threats and Air Pollution*, 43 ATMOSPHERIC ENV'T 1, 87-93, 87 (2009).
[42] *Id.*; John Seinfeld, *Air Pollution: A Half Century of Progress*, AM. INST. OF CHEM. ENG'RS J. 50, 1096-1108, 1096 (2004).
[43] *See generally*, IPCC *supra* note 1.

regulations have since dramatically reduced pollution from particulate matter and other substances, and the associated health indicators have changed correspondingly.[44]

According to a recent report by UNEP and the World Meteorological Organization, implementing only five actions using existing technologies can significantly reduce black carbon globally, prevent up to 2.4 million premature deaths each year, and save 25 million tons of food production, between the major crops of maize, rice, soy and wheat.[45] The benefits to health and productivity would be equally profound.

Tropospheric ozone increases illness and death from cardiopulmonary causes and decreases food production.

Ozone in the upper atmosphere (stratospheric ozone) is important to human life because it blocks harmful UV light; however, lower level ozone (tropospheric ozone) is extremely harmful. Ozone in the lower levels of the atmosphere is the product of photochemical reactions involving methane and nitrous oxide emissions.[46] It is a major component of smog and is a powerful greenhouse gas[47] – the third most abundant after carbon dioxide and methane.[48] Ozone is particularly dangerous for the human respiratory system because of its similarity to regular atmospheric oxygen.[49] It decreases lung function, and induces and exacerbates asthma, bronchitis and other diseases.[50] Tropospheric ozone also decreases chlorophyll production in plants, and is therefore harmful to agricultural production.[51] Leaf health, growth and productivity, are all negatively affected above vegetation composition and diversity.[52] Furthermore, ozone has been found to disrupt tropical rainfall and circulation patterns.[53]

The total cost of the health, agricultural, and climate impacts of tropospheric ozone could top $580 billion by 2050,[54] and the human costs will most likely be borne by those least capable of coping, particularly women and children. While the impacts will be felt differently among

[44] *See,* C. Arden Pope III et al., *Fine Particulate Air Pollution and Life Expectancy,* 360 NEW ENG. J. MED. 4, 376-386 (2009).
[45] UNEP, *supra* note 7; *see also,* Siobhán McInerney-Lankford et al., *Human Rights and Climate Change: A Review of the International Legal Dimensions*, THE WORLD BANK, 29, *available at* http://publications.worldbank.org/index.php?main_page=product_info&products_id=24042.
[46] Barbara J. Finlayson-Pitts & James N. Pitts Jr., *Tropospheric Air Pollution: Ozone, Airborne Toxics, Polycyclic Aromatic Hydrocarbons, and Particles*, 276 SCIENCE 5315, 1045-51, 1045 (1997).
[47] Noelle Selin et al., *Global Health and Economic Impacts of Future Ozone Pollution,* 4 ENVTL. RESEARCH LETTERS 1, 7 (2009).
[48] *Id.*
[49] *See* Smith et al, *Public Health Benefits of Strategies to Reduce Greenhouse-gas Emissions: Health Implications of Short-lived Greenhouse Pollutants,* 374 THE LANCET 2091, (2009).
[50]Michael Jerrett et al., *Long Term Ozone Exposure and Mortality*, 360 NEW ENG. J. MED. 1085, 1093 (2009); UNEP, *supra* note 7 at 7.
[51] Wallack & Ramanathan, *supra* note 29 at 108.
[52] Noelle Selin et al., *supra* note 46.
[53] *Id.*
[54] UNEP, *supra* note 7 at 5.

regions, all regions will experience economic losses as a result of elevated tropospheric ozone levels. It is projected that the worst effects will be in northern India and China, where intense industrialization is facing the pressure of a rapidly growing population expected to be concentrated in urban areas.[55] With the exception of regions in North America, all regions of the world are expected to see increased mortality rates due to tropospheric ozone.[56] Its concentrations have nearly doubled since pre-industrial times. The key to addressing lower-level ozone is to control the precursor gases that cause it: studies have found that lowering methane emissions will lead to lower tropospheric ozone exposure.[57]

The warming effect of HFCs is hundreds to thousands of times greater than carbon dioxide, with 80% lasting less than 29 years.[58]

HFCs are a common substitute for the ozone-depleting substances regulated by the Montreal Protocol, and have a very high global warming potential.[59] [60] The high warming potential of HFCs means that they contribute significantly to temperature increases despite their relatively short atmospheric life span.[61] Approximately 80% of HFCs have a lifetime of less than 29 years.[62] Since their climate effect is intense but short-lived, HFCs create near-term warming, bringing global climate close to critical temperature tipping points.[63] HFCs therefore increase the likelihood of runaway climate change caused by feedback loops triggered at those tipping points. While HFCs do not cause specific human harms, they accelerate the human rights impacts of a dramatically warming planet, including food and water shortages, rising sea levels, and diminished agricultural production.

Emissions of HFCs are expected to grow in the future if not mitigated.[64] Global radiative forcing from projected HFC emissions in 2050 will be equivalent to that of 6 to 13 years of carbon dioxide emissions.[65] Emissions growth will dramatically outstrip all other greenhouse gases and, by 2050, will reach the equivalent of 9-19% of projected global carbon dioxide emissions under

[55] *Id.*
[56] *Id.* at 4.
[57] UNEP, *supra* note 7; *see also* J. Jason West et al., *Global Health Benefits of Mitigating Ozone Pollution with Methane Emission Controls*, 103 PROC. OF THE NAT'L ACAD. OF SCI. 3988, 3988, 3992 (2006).
[58] IPCC *supra* note 1.
[59] *See generally* Mario Molina, et al., *Reducing Abrupt Climate Change Risk Using the Montreal Protocol and Other Regulatory Actions to Complement Cuts in CO_2 Emissions*, 106 PROC. NAT'L. ACAD. SCI. 20618 (2009).
[60] *The Need for Speed: Reducing Non-CO2 Climate Forcers & Perfecting Carbon-Negative Strategies To Complement CO2 Emission Reductions*, Institute for Governance and Sustainable Development, May 2011, *available at* http://www.igsd.org/documents/NeedforSpeed_22May2011.pdf.
[61] IPCC *supra* note 1.
[62] IPCC *supra* note 1.
[63] A tipping point is a threshold at which increased global temperature will initiate dramatic changes in the Earth's climate systems. *See generally*, IPCC *supra* note 1.
[64] Guus J.M. Velders, et al., *The Large Contribution of Projected HFC Emissions to Future Climate Forcing*, 106 PROC. NAT'L. ACAD. SCI. 10952-10953 (2009).
[65] *Id.*

business-as-usual scenarios.[66] Under the IPCC's carbon dioxide stabilization scenario of 450 parts per million, that proportion rises to 28-45%.[67]

Reducing HFC production and consumption can be done under the Montreal Protocol,[68] which has successfully phased out 97% of nearly one hundred ozone-depleting and climate-warming substances. Phasing out HFCs via the Montreal Protocol would virtually eliminate one of the six Kyoto gases and mitigate the equivalent of over one hundred billion tons of carbon dioxide by 2050.[69] Small island developing states, led by the Federated States of Micronesia and Mauritius, have proposed the Malé amendment to the Montreal Protocol that would allow for jurisdiction over the production and consumption of HFCs. The established technical expertise and administrative structure of the treaty would be used to start quickly phasing out HFCs.[70] The US, Mexico, and Canada have made a similar joint proposal.[71] The Montreal Protocol can be applied to HFCs because unlike carbon dioxide, HFCs are components of manufactured products, and not simply unwanted by-products of industrial and agricultural processes.[72] Reducing HFC emissions will delay critical tipping points and allow time for States to address the longer-term elements of climate change.

Application

Numerous States' human rights obligations are triggered by the current and impending human rights crisis caused by climate change and the emission of non-CO_2 short-lived climate pollutants. The UN Human Rights Council (UNHRC) and Office of the High Commissioner for Human Rights (OHCHR) have already acknowledged the normative and legal connection between climate change and human rights.[73] At the 2007 UNFCCC meeting in Bali, the Office of the High Commissioner noted the need "to fully integrate human rights when meeting the climate change challenges."[74] It pointed out that climate change threatens "universally recognized fundamental rights, such as the right to life, food…, health, and water,"[75] and noted that "[i]n tackling climate change, Governments worldwide must bear in mind that they have not

[66] *Id.*
[67] *Id*, at 10952.
[68] *Id.*
[69] IGSD, *supra* note 59.
[70] Guus J.M. Velders, et al., *supra* note 63.
[71] *Id*.
[72] *Id.*
[73] *See*, U.N. Joint Press Kit for Bali Climate Change Conference, OHCHR, The Human Rights Impact of Climate Change, U.N. Doc. DPI/2483 (Nov. 2007), *available at* http://www.un.org/ climatechange/pdfs/bali/ohchr-bali07-19.pdf; U.N. Human Rights Council Res. 7/23, in U.N. Human Rights Council, Report of the Human Rights Council on Its Seventh Session 65-66 ¶ 1, U.N. Doc. A/HRC/7/78 (July 14, 2008); OHCHR, Report of the OHCHR on the Relationship Between Climate Change and Human Rights, U.N. Doc. A/HRC/10/61 (Jan. 15, 2009); *See*, Siobhán McInerney-Lankford, *Climate Change and Human Rights: An Introduction to The Legal Issues*, 33 HARVARD ENV. L. REV. 431, 433 (2009).
[74] U.N. Joint Press Kit for Bali Climate Change Conference, OHCHR, The Human Rights Impact of Climate Change, U.N. Doc. DPI/2483 (Nov. 2007), *available at* http://www.un.org/ climatechange/pdfs/bali/ohchr-bali07-19.pdf.
[75] *Id.*

only moral but *legal* obligations to protect and promote basic human rights enshrined in the Universal Declaration of Human Rights and international human rights law."[76]

The later study conducted by the OHCHR, however, in describing the relationship between human rights and climate change,[77] does not outline how climate change might influence the legal human rights obligations states have, nor those of the organization itself. It sees climate change as a problem to which human rights law cannot easily be applied, stating that:

> "it is virtually impossible to disentangle the complex causal relationships linking historical greenhouse gas emissions of a particular country with a specific climate change-related effect, let alone with the range of direct and indirect implications for human rights… adverse effects of global warming are often projections about future impacts, whereas human rights violations are normally established after the harm has occurred."[78]

An understanding of the role of non-CO_2 short-lived climate pollutants, which are the cause of up to half (50%) of currently felt climate change, illustrates that the relationship between climate change, non-CO_2 short-lived climate pollutants, and human rights is much more direct – non-CO_2 short-lived climate pollutants have severe health impacts, strong warming effects, and have short atmospheric lives.[79] They satisfy the requirements for a violation described the OHCHR study, that "the State through its acts or omissions had failed to protect an individual against a harm affecting the enjoyment of human rights."[80]

In its 2007 Fourth Assessment Report, the IPCC stated that "warming of the planet is unequivocal [and…] very likely due to the observed increase in anthropogenic greenhouse gases."[81] As human rights cases in Europe and Latin America demonstrate, states are obligated to regulate environmental nuisances that would otherwise interfere with health and other rights.[82] This responsibility exists particularly in cases where risks have been identified and negative impacts are foreseeable.[83] Given the IPCC's clear identification of the risks of climate change;

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[76] *Id.* (emphasis added).
[77] OHCHR, Report of the OHCHR on the Relationship Between Climate Change and Human Rights, U.N. Doc. A/HRC/10/61 (Jan. 15, 2009).
[78] *Id.* at 23.
[79] Strong warming effects are described as their radiative forcing ability or global warming potential relative to carbon dioxide. HFCs are hundreds to thousands of times more potent warmer than carbon dioxide. Black carbon has a warming potential thousands of times that of carbon dioxide as well. The effect of tropospheric ozone is part of the overall effect of methane emission which has as warming potential of 50 times that of carbon dioxide in the near term. *See generally*, IPCC, CLIMATE CHANGE 1995: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, 22 (1995); *Reducing Black Carbon May Be Fastest Strategy for Slowing Climate Change*, Institute for Governance and Sustainable Development, Aug. 29, 2008, http://www.igsd.org/docs/BC%20Summary%206July08.pdf.
[80] OHCHR, *supra* note 76, at 24.
[81] IPCC, *supra* note 1.
[82] *See*, Alan Boyle, *Human Rights of Environmental Rights? A Reassessment*, 18 FORDHAM ENVTL. L. REV. 471, 488 (2007).
[83] *Id.*

the serious near-term human rights impacts of black carbon, tropospheric ozone, and HFCs; and the foreseeability that these impacts will continue unless immediate action is taken, failure to regulate these pollutants should be considered a violation of the human rights of individuals negatively impacted by climate change. The link between human rights and climate change caused by non-CO_2 short-lived climate pollutants is important not as a human rights perspective to an environmental problem, but in order to protect individuals from extremely harmful environmental effects.[84]

States have an obligation to regulate environmental harm, including trans-boundary environmental harm, when human rights are affected by environmental pollution.

Regional courts have dealt with the human rights effects of limited environmental regulation in a number of contexts.[85] Both the European Court of Human Rights and the Inter-American Court of Human Rights have made decisions on this subject.[86] Their holdings establish States' obligations to regulate environmental pollution that causes violations of human rights, even where the harm may not yet have taken place, or is felt by individuals outside the territory where the pollution occurs.[87] The OHCHR study mentioned above takes note of these developments:

> "From a review of the decisions of international treaty bodies (including courts and commissions), the experts noted that in the last decade a substantial body of case law and decisions has recognized the violation of a fundamental human right as the cause, or result, of environmental degradation…. In relation to substantive matters, a growing body of case law from many national jurisdictions is clarifying the linkages between human rights and the environment, in particular by: (1) recognizing the right to a healthy environment as a fundamental human right; (2) allowing litigation based on this right and facilitating its enforceability in domestic law by liberalizing provisions on standing; (3) *acknowledging that other human rights recognized in domestic legal systems can be violated as a result of environmental degradation.*"[88]

The duty to regulate environmental degradation that affects human rights is established in such cases as *Fadeyeva v. Russia* and *Öneryildiz v. Turkey* in the ECHR, and *Maya Indigenous Community of the Toledo District v. Belize* in the IACHR.

In *Fadeyeva*, the European Court found that in failing to regulate a private steel plant which released high levels of harmful emissions and affected the petitioner within her home, the Russian Federation failed to appropriately balance her private rights with the community interest

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[84] *Id.*, at 489.
[85] *See*, Shelton, *supra* note 19, at 11.
[86] *See*, Boyle, *supra* note 81.
[87] *See*, Fadeyeva, 2005-IV 45 Eur. Ct. H. R. 10; Öneryildiz, 2004-XII 41 Eur. Ct. H. R. 20; Maya Indigenous Cmty. of the Toledo Dist. v. Belize, Case 12.053, Inter-Am. C. H. R., Report No. 40/04, OEA/Ser.L/V/II.122, doc. 5 rev. 1 727; Trail Smelter Arbitral Decision (U.S. v. Can.) (1941) 35 Am. J. Int'l L. 684.
[88] Office of the High Commissioner for Human Rights, Meeting of Experts on Human Rights and the Environment, Jan. 14-15, 2002, *available at* http://www2.ohchr.org/english/issues/environment/environ/conclusions.htm. Emphasis added.

in industrial development.[89] The State had a duty to regulate private industry for the protection of those rights.[90] The regulation of climate pollutants that cause near-term climate change effects is like the *Fadeyeva* case, as the pollutants (particularly the ozone precursor gases) have immediate negative impacts on human health, as well as on the production and availability of food. States therefore have a duty to regulate these substances strictly, in order to protect the rights to life, food and health that they threaten. In considering this regulation States are obliged to take into account the effect that any such emissions will have on fundamental human rights.

In *Öneryildiz*, that court found the Turkish government had a duty to take positive measures for the protection of slum dwellers living near a garbage dump.[91] Since the authorities knew or ought to have known that persons living near the dump would be affected by likely methane explosions, they were obliged to take measures that would protect those persons.[92] The loss of life in a methane explosion that took place in this context was held to be a violation of the slum dwellers' human rights, as the State was required to create legislative and administrative structures that would protect their right to life.[93] The IPCC reports and other studies describing the effects of non-CO_2 short-lived climate pollutants provide abundant information on the risks these pollutants create for individuals who live in vulnerable regions.[94] States and the international community know that such individuals will continue to be severely affected as the climate crisis grows.[95] There is therefore an obligation to create structures that will mitigate climate change, including through the reduction or elimination of non-CO_2 short-lived climate pollutants like black carbon, tropospheric ozone, and HFCs. Furthermore, since these pollutants remain in the atmosphere for relatively short time-spans, current emissions have a direct causal effect on human rights in the near term.

The *Maya Indigenous Community* case saw the IACHR censoring government concessions that would cause permanent forest degradation, when this degradation threatened the petitioners' right to practice subsistence agriculture.[96] Here, the regulatory failure was not over a substance harmful to the petitioners' health.[97] Instead the Court's decision explicitly associated their human rights with the maintenance of environmental quality, noting that "development activities must be accompanied by appropriate and effective measures to ensure that they do not proceed at the expense of the fundamental rights of persons who may be particularly negatively affected… and the environment upon which they depend for their physical, cultural and spiritual well-

[89] Fadeyeva, 2005-IV 45 Eur. Ct. H. R. 10.
[90] *Id.*
[91] Öneryildiz, 2004-XII 41 Eur. Ct. H. R. 20.
[92] *Id.*
[93] *Id.*
[94] *See e.g.*, IPCC, *supra* note 1; USAID, *supra* note 30; John Bachmann, *Black Carbon: A Science/Policy Primer, Pew Center on Global Climate Change*, PEW CENTER ON GLOBAL CLIMATE CHANGE, (Dec. 2009), http://www.pewclimate.org/science/black-carbon-primer.
[95] *See*, OHCHR *supra* note 73.
[96] Maya Indigenous Cmty. of the Toledo Dist. v. Belize, Case 12.053, Inter-Am. C. H. R., Report No. 40/04, OEA/Ser.L/V/II.122, doc. 5 rev. 1 727
[97] *Id.*

being."[98] This is relevant to black carbon and tropospheric ozone as both contribute to the general environmental degradation. It is most pertinent with regard to HFCs, however, since these contribute to the near-term global temperature, and are accelerating temperature increases toward dangerous climate tipping points.

In each of these three cases the regional court decision was based on a State's duty to regulate environmental harm that threatened individual human rights within its territory. There is other, environmental law jurisprudence that establishes States' duty to regulate transboundary pollution when it impacts other jurisdictions.

Perhaps the most famous such example is the *Trail Smelter Case*, in which the United States and Canada went to arbitration over harm to food production and the general environment caused in Washington state by a Canadian smelter.[99] While the case is considered a landmark one in environmental law, there are important parallels to be drawn with human rights. Action in *Trail Smelter* was started by a group of individual farmers and residents in the Columbia River Valley seeking remedies for crop destruction and atmospheric pollution.[100] The dispute began with interactions between these individuals and the Canadian smelter company, escalating to the international level after initial attempts at redress failed.[101] At the time of the case individuals had no standing to bring disputes in international tribunals, and the injury was characterized as harm to sovereignty. *Trail Smelter* enunciated the principle that "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence."[102] This standard has been foundational in the development of international environmental law,[103] but while it persists in contemporary cases, legal obligations are still examined in the context of state sovereignty despite the obvious human rights effects that motivate contemporary transboundary pollution in current cases.[104] For example, the ongoing *Aerial Herbicide Spraying* dispute between Ecuador and Colombia arises from harm to individuals, including serious illness and death, as a result of Colombian policies for the eradication of coca.[105]

The legal fiction that appears to persist in the division between international environmental and human rights law is that environmental harm that impacts human rights ceases to fall under the

[98] Boyle, *supra* note 81 at 476, quoting Maya Indigenous Cmty. of the Toledo Dist. v. Belize, Case 12.053, Inter-Am. C. H. R., Report No. 40/04, OEA/Ser.L/V/II.122, doc. 5 rev. 1 at 727 (2004).
[99] *See*, Trail Smelter Arbitral Decision (U.S. v. Can.) (1941) 35 Am. J. Int'l L. 684.
[100] *Id.*
[101] *Id.*
[102] Trail Smelter Arbitral Decision (U.S. v. Can.) (1941) 35 Am. J. Int'l L. 716.
[103] Chinthaka Mendis, *Sovereignty vs. Trans-Boundary Environmental Harm: The Evolving International Law Obligations and the Sethusamuduram Ship Channel Project*, http://www.un.org/depts/los/nippon/unnff_programme_home/fellows_pages/sri_lanka.html
[104] *See, e.g.*, Aerial Herbicide Spraying (Ecuador v. Colom.), Press Release, (Apr. 1, 2008), *available at* http://www.icj-cij.org/docket/index.php?p1=3&code=ecol&case=138&k=ee.
[105] *Id.*

authority of human rights bodies once it crosses a border. The danger here is that in situations like that posed by climate change, where the horizontal structure of international environmental law is unable to overcome collective action hurdles, human rights abuses will continue unless human rights bodies take action. If international human rights law is to have meaning in this context, it must be applied to the severe human rights crisis at hand. As one commentator notes:

> "… the beneficiaries of this duty to regulate and control sources of environmental harm are not the community at large, still less the environment per se, but… those individuals whose rights will be affected by any failure to act. The duty is not one of protecting the environment, but one of protecting humans from significantly harmful environmental impacts."[106]

Special legal protection is needed for women and children affected by climate change.

Article 31 (1) of the Vienna Convention on the Law of Treaties provides that:

> "A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and *purpose*."[107]

In the context of climate change, the basic rights of the women and children are protected by the Convention on the Rights of the Child and Convention on the Elimination of All Forms of Discrimination against Women. These vulnerable groups face continuous and severe discrimination as a result of climate change and the effects of non-CO_2 short-term climate pollutants. Deep reflection is required to ensure that their protection is adequate and effective. The prevention of discrimination, on the one hand, and the implementation of special protections, on the other, are merely two aspects of the same problem: that of fully ensuring equal rights to all persons.

"Special protection"[108] is meant to further non-discrimination, which is understood through the principle of juridical equality. In other words, special protection ensures reasonably equal treatment for every individual in given circumstances. Juridical equality requires that factual inequalities be recognized in order for the law to address them and for justice to be achieved. The special circumstances faced by women and children in the context of climate change require special legal treatment in order to render justice.

The particular and unequal harms suffered by women and children as a result of climate change have been recognized by the UNICEF, IPCC and OHCHR.[109] Women are more vulnerable to climate change impacts due to existing gender discrimination and inequality. Elderly women

[106] Boyle, *supra* note 81 at 489.
[107] Vienna Convention on the Law of Treaties art. 31(1), May 23, 1969, 1155 U.N.T.S. 331. Emphasis added.
[108] Convention on the Rights of Children, G.A. Res. 44/25, Art. 20 (Nov. 20, 1989).
[109] *See*, United Nations Children's Fund, Climate Change and Children: A Human Security Challenge (2008), available at http://www.unicef-irc.org/publications/pdf/climate_change.pdf; *see also*, IPPC, *supra* note 26; OHCHR, *supra* note 76.

and young girls are affected more severely than men by climate related disasters.[110] The OHCHR has noted that "the death rate of women is markedly higher than that of men during natural disasters."[111] Sexual violence against women and girls increases significantly, for example, when they perform traditional roles in refugee camps such as searching for stove fuel.[112] The IPCC projects that there will be 200 million environmental refugees worldwide by 2050, largely as a result of climate change events.[113]

Finally, studies have documented the importance of women's education and women's empowerment for climate change adaptation and mitigation. There are numerous examples of how measures to empower women and to address discriminatory practices have increased the ability of communities to cope with climate change impacts.

The UNHRC is obligated by its mandate to recognize human rights claims that arise from climate change.

As in the *Aerial Herbicide* case, black carbon, tropospheric ozone and HFCs present a situation in which policies within individual States can be linked to damage to life, health, food production, and the environment elsewhere. States have already acknowledged common but differentiated responsibility for climate change, and reiterated a duty to cooperate in the U.N. Framework Convention on Climate Change (UNFCC).[114] The duties enunciated in those arenas exist in tandem with States' duties under the UDHR, ICESCR and ICCPR, and may in fact be essential to their fulfillment. For the reasons enumerated above, the UNHRC is obligated by its mandate to recognize human rights claims that arise from climate change and the emission of non-CO_2 short-lived climate forcers.

Conclusion

The Human Rights Council, being the highest organ of the UN Human Rights System, has an affirmative duty to ensure the international protection of the basic rights of human beings. The severe discrimination faced by the most vulnerable to climate change requires the development and enforcement of special legal protections to ensure their enjoyment of basic human rights. The *sole* means of achieving this special protection is by requiring immediate and effective actions to mitigate green house gas emissions which are identified in this submission.

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[110] IPPC, *supra* note 26, at 398.
[111] OHCHR, *supra* note 76 at 15.
[112] Radhika Coomaraswamy, Sexual Violence Against Refugees, UNITED NATIONS, http://www.unhcr.org/3b9cc26c4.html.
[113] In this projection, the impacts of climate change, including coastal flooding, shoreline erosion and agricultural degradation were seen as major factors contributing to bulk of environmental refugees. *See*, IPCC *supra* note 7.
[114] *See*, United Nations Framework Convention on Climate Change Sixteenth Conference of the Parties, Cancún, Mex., Nov. 29-Dec. 10, 2010, *Decisions Adopted by the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol*, 4, FCCC/KP/CMP/2010/12/Add.1 (Mar. 15, 2011), *available at* http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2.

It is clear that we are operating under "circumstances of extreme emergency" and that special protections are needed to ensure the human rights of most world's most vulnerable people. States have an affirmative duty to act now. According to international human rights law these actions are **mandatory** in order to abide by Human Rights Treaties and protect the rights of women and children in an adequate and effective manner.

These legal human rights obligations require at minimum that the Human Rights Council requests that States immediately adopt the following measures:

a) Aggressive reduction of black carbon, and tropospheric ozone including the ozone precursor gas methane. We specifically recommend implementing the 16 black carbon and tropospheric ozone mitigation measures identified in the 15 June 2011 joint report by U.N. Environment Programme and World Meteorological Organization.[115] Developed from a review of over 2,000 possible measures, implementing these 16 measures by 2030, could cut the rate of global warming in half and the rate of warming in the Arctic by two thirds in 2050.[116] Such measures include: coal mine ventilation, controlling manure emissions, applying diesel particulate filters to vehicles, replacing traditional cookstoves, kilns, coke ovens and heaters with clean modern equivalents and fuels, and banning open field burning.[117] On an international level, mitigation policies should be pursued through existing international agreements as recommended in the Feb 2011 UNEP Science Policy brief on near-term climate protection and clean air benefits.[118]

b) International and national measures should be taken to reduce production, use, and emission of HFCs following *inter alia* the measures recommended in the Ozone Secretariat Technology and Economic Assessment Panel report of May 2011 describing climate-friendly HFC alternatives.[119] Finally, the Montreal Protocol should be amended to control and reduce the production and use of HFCs, in line with the proposal by the Federated States of Micronesia and similar joint proposal by the United States, Mexico and Canada.[120]

c) Immediately advance policies and programs for the education and empowerment of women, particularly in vulnerable regions, on issues of climate mitigation and adaption.

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[115] UNEP, *supra* note 7.
[116] UNEP, *supra* note 7 at 1.
[117] UNEP, *supra* note 7 at 9.
[118] U.N. Envtl. Programme, *Draft Science Policy Brief to the Governing Council, Towards an Action Plan for Near-term Climate Protection and Clean Air Benefits* (Feb. 2011) (final report forthcoming).
[119] U.N. Envtl. Programme, *Report of the Technology and Economic Assessment Panel, Assessment of the Funding Requirement for the Replenishment of the Multilateral Fund for the Period 2012-2014* (May 2011), http://ozone.unep.org/teap/Reports/TEAP_Reports/teap-replenishment-task-force-report-for-2012-2014-May2011.pdf.
[120] Proposed Amendment to the Montreal Protocol (submitted by the Federated States of Micronesia), Open-Ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, UNEP/OzL.Pro.W.G.1/31/4, (May 9, 2011); Proposed Amendment to the Montreal Protocol (submitted jointly by Canada, Mexico and the United States of America), Open-Ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, UNEP/OzL.Pro.W.G.1/31/5, (May 10, 2011).

The failure to act immediately will imply not only massive human rights violations but also will rob the UN Human Rights System of its purpose and raison d etre. The non-CO_2 measures identified in this submission present a unique opportunity for the UN Human Rights bodies to cope with the biggest human rights challenge that we face as humanity and will provide the international community with the needed time to mature a global meaningful action.