

**A CHALLENGE FOR THE NEW SECRETARY-GENERAL: REORGANIZING THE UN TO
EFFECTIVELY COMBAT CLIMATE CHANGE**

**-An Analysis Addressing the Report of the UN High-Level Panel on System-wide
Coherence based on the IPCC Fourth Assessment Reports-**

“The whole history of international environmental action has been of arriving at destinations which looked impossibly distant at the moment of departure.”

Tony Brenton, *The Greening of Machiavelli*ⁱ

Abstract

On November 20, 2006, the outgoing UN Secretary General, Kofi Annan, presented to the UN General Assembly the Report of the UN High-Level Panel on System-wide Coherence, which included some of the most far-reaching reform proposals in the UN's history.ⁱⁱ However, the Panel, while emphasizing climate change as a distinctive challenge among environmental problems, did not make any innovative proposal for combating climate change. The new Secretary-General of the United Nations, Ban Ki-moon, who will have to play *ex officio* a central leading role, has commented that will take up the climate change issue, but he may well need bolder advice to this end. In my presentation, I will discuss the strategic goals of the High-Level Panel, proposals for implementation of the new global environmental governance, and ways to help use these

proposals specifically to combat the climate change phenomenon. Finally, I will discuss additional proposals to be put on the UN reform table and fields of current UN work should incorporate the climate change combat dimension and will lay guidance for the post-Kyoto era.

Introduction

This presentation aims to address the growing gap between the daily scientific evidence piling up of dramatic climate change and the reluctant steps the global community is taking to cope with this crisis. Climate change should be seen not only as an environmental issue, but also as a developmental and global security issue with ethical and equity considerations transcending, thus, most of the sections of the United Nation (UN) work. On November 20, 2006, the outgoing Secretary General of the United Nations (UNSG), Kofi Annan, presented before the UN General Assembly the Report of the UN High-Level Panel on System-wide Coherence, which included some of the most far-reaching reform proposals in the UN's history.ⁱⁱⁱ However, the Panel, while emphasizing climate change as a distinctive challenge among environmental problems, did not make any innovative proposals for combating climate change. It punted on crucial, but too general questions of international environmental governance.

The new Secretary-General of the United Nations, Ban Ki-moon, holding *ex officio* a central leading role, has commented that he will take up the climate change issue. Nonetheless, he may well need bolder advice than the suggestions of the UN High-Level Panel to this end. What major actions should the UN undertake in the next few years to better assure the survival of the environment and people dependent on it? How should the UN organize itself taking into account the implications for global governance of the growing climate change crisis?

In the following presentation, I will shortly refer to climate change and how the UN addressed it over the years, with special emphasis to the Secretary General leadership. Then, I will proceed to the discussion of the UN High-Level Panel Report. In addition, I will address complimentary proposals for UN reform to combat climate change. Last, I will proceed to specific proposals for integration of the climate change combat dimension to other UN and UN-related activities, fields where the climate change dimension, although highly relevant, has not yet been incorporated, such as the oceans protection or the ozone layer depletion. Last, the UN could also play a supervisory role to efforts undertaken by its Member States.

PART I

1. Short History of Climate Change Science

By “climate change” policymakers refer to “a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.”^{iv}

Due to their extensive impacts on a great range of aspects of human life and the natural environment, climate change and variability appear to be the primary environmental concern of the twenty-first century. Despite this recent political awareness and the late development of regulatory responses, the Greenhouse Gases (GHGs) concentration, the abnormal anthropogenic GHGs generation and their subsequent effects are early noticed phenomena.

As early as 1827 the French scientist Fourier suggested that the Earth’s atmosphere warms the surface by letting through high-energy solar radiation, but trapping part of the longer-wave heat radiation coming back from the surface. This is caused by a number of “greenhouse gases”, notably carbon dioxide and water vapor. His theory was refined in 1860 by John Tyndall, who measured the absorption of heat by carbon dioxide and water vapor.^v At the end of the nineteenth century the Nobel prize Swedish scientist Svante Arrhenius postulated that the growing volume of carbon dioxide emitted by the factories of the Industrial Revolution was changing the composition of the atmosphere, increasing the proportion of greenhouse gases, and that this would cause the Earth’s surface temperature to rise.^{vi} It remained for G. S. Kallendar, a British meteorologist who attempted to persuade the Royal Society in 1938 that global warming had taken effect, gather information from 200 weather stations around the world and demonstrate that average temperatures had increased between 1880s and 1930s. His theory that carbon

dioxide was causing global warming was not well received by the Royal Society. The subject attracted little interest until the late 1950s.

It was not until 1957 that Roger Revelle (who later taught Former Vice President Al Gore at Harvard) and Hans Suess from the Scripps Institute of Oceanography warned of climate change and began routine measurements of carbon dioxide increases at a remote 11,000-foot observatory on Manua-Kea, Hawaii. 1957, as the International Geophysical Year, also provided the foundations for a global scientific community, dedicated to understanding planetary processes and human influence on them, and established a network of monitoring stations. Observation immediately began to trace a steady rise in the concentration of carbon dioxide. In 1965, a White House conference on global warming took place and only in 1970 an important conference and a study by the Massachusetts Institute of Technology (MIT) documented concerns about possible climate change. In the same year, the Secretary General of the United Nations was sufficiently concerned to mention the possibility of a “catastrophic warming effect” in his report on the environment. 37 years later the subsequent Secretary Generals of the UN continue abstractly using the rhetoric of combating climate change, by no bold action had been taken by the international community.

2. Failed Excuses, Institutional and Regulatory Responses

Over the years, the excuse for limited action by the most crucial actors was and still is the invocation of scientific uncertainty. This excuse is not valid any more. Voices of

scientists come from all over the world indicating that there is no scientific uncertainty on human-induced global warming.^{vii} In 1995, the International Panel on Climate Change (IPCC), the most authoritative scientific body on climate change, concluded that “the balance of evidence suggests a discernable human influence on climate”.^{viii} In 2001, this finding was strengthened, referring to “new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities.”^{ix} In April 2007, the IPCC Working Group I Fourth Assessment Report concluded that most of the observed increase in the globally averaged temperature since the mid-20th century is “very likely”^x due to the observed increase in anthropogenic GHGs concentrations.^{xi} In addition, the IPCC Working Group III in a report entitled “Mitigation of Climate Change” on technical and economical research, which was released in Bangkok on May 4, 2007, clearly stated that there are already enough technical capabilities to keep the effects of climate change limited to a raise of maximum 2 degrees Celsius. This is an increase in temperature that would create phenomena feasible to mitigate and adapt.^{xii} The use of the necessary technology would cost the average world citizen no more than 3% of income by 2030.^{xiii} Thus, scientific and economic excuses for inaction to combat climate change have fallen down posing a great challenge to the policy makers and regulators to become bolder than in the past.

As the data of the latest report by the IPCC indicate the existing legal instruments, namely the 1992 United Nations Framework Convention on Climate Change (UNFCCC)^{xiv}, the 1997 Kyoto Protocol^{xv} and their implementing instruments, fail making GHG emissions fall down to safe levels and stabilize the raise of the temperature.

In addition, under international law these legal instruments are not binding upon all states, but only upon those states that have ratified them. Countries that are major generators of GHGs, such as the United States, have not yet ratified them. On the contrary, they keep either acting as free riders or designing their own regulatory schemes, mostly with financial objectives, in order to mitigate climate change in ways that these countries consider more suitable to their economies. These schemes are, however, far from bringing down the GHGs emissions to numbers that would make a meaningful change to the warming of the Earth's atmosphere.

From an institutional point of view, the UNFCCC, the Kyoto Protocol and their subsequent implementing instruments mentioned above create the "UNFCCC regime". Within this regime there exist institutional bodies assisting to the implementation and continuous negotiations and development of the system, as established by the UNFCCC, primarily its Secretariat, a Subsidiary Body for Scientific and Technological Advice (SBSTA) and a Subsidiary Body for Implementation (SBI.)^{xvi} On the one hand, UNFCCC system continues to be the main negotiations platform and the only available international regime that has to meet the challenge of achieving global co-ordination of national climate change responses. The UNFCCC Secretariat does not have the power to unilaterally impose restrictions of GHGs emission upon states. Any future agreement will remain voluntary for the countries that would not consent to self-restrain themselves under international law. In addition, the Secretariat and the subsidiary bodies would not have the capacity to coordinate a world divided by a wide range of stakeholders, as is the

case with climate change. Further, the potential impacts and mitigation of climate change need to be analyzed within the broader context of sustainable development.

Climate change response measures should be incorporated into broader development strategies, without, though, the purpose of environmental protection to be absorbed by the developmental purposes in the hierarchy of priorities. Notwithstanding the special role of the UNFCCC regime, climate change should be positioned among the rest of the challenges that the UN system faces today; namely an external challenge, the challenge of achieving global sustainable development, and an internal challenge, the inter-organizational and inter-institutional coherence. Any solution designed for one of the above phenomena should at the same time take into account the other issues, too. It is necessary that the UN proceed to a re-construction and the establishment of new bodies, in order to bring in the game all the countries and to provide protection to all the countries, especially those that would be the most vulnerable to the climate change effects.^{xvii}

The guiding principles of any institutional design should address both environmental and equity concerns. Special aspects of these principles should include:

1. protection of the natural environment, especially species survival and ecosystems protection;
2. establishment of an equitable and participative global framework for making and implementing collective decisions about climate change;

3. reduction of the potential for social disruption and conflicts arising from climate change impacts; and
4. protection of threatened cultures and preservation of cultural diversity.^{xviii}

In order to face such multi-dimensional problems, as well as in order to face the challenge of its own effective institutional reconstruction, the UN called for a High-Level Panel on UN System-wide Coherence.

Part II

1. The High-Level Panel on UN System-wide Coherence

The High-Level Panel on UN System-wide Coherence in areas of Development, Humanitarian Assistance and the Environment was founded in 2006 in order to explore how the United Nations system could work more coherently and effectively across the world.^{xix} The question posed to the Panel was how the UN could launch work to further strengthen the management and coordination of the UN operational activities so that they can make an even more effective contribution to the achievement of the international agreed development goals, including the Millennium Development Goals (MDGs). As the UNSG, Kofi Annan, commented:

“The principal challenge for this work was identified as being in the fields of development, humanitarian assistance and the environment, while taking into account the cross-cutting areas of gender equality, sustainable development and human rights... Without a substantial renewed effort, the international community would not be able to live up to the ambition of the Millennium Development Goals.”^{xx}

Currently, the High-Level Panel plans to consult with Member States in July and complete the study during the 61st session of the General Assembly for possible implementation in 2007.

Strategic Directions of the High-Level Report

The Panel acknowledges that the work of the UN in the areas of development and the environment is often fragmented and weak. Inefficient governance and unpredictable funding have contributed to policy incoherence, duplication and operational ineffectiveness across the system. Cooperation between organizations has been hindered by competition for funding, mission creep and outdated business practices. In order to combat these phenomena, delivering as one and overcoming systemic fragmentation is a central theme of the Report.

The Panel has developed a set of clear recommendations based on the following five strategic directions:

- “Ensure coherence and consolidation of UN activities, in line with the principle of country ownership, at all levels (country, regional, Headquarters).
- Establish appropriate governance, managerial and funding mechanisms to empower and support consolidation, and link the performance and results of UN organizations to their funding.
- Overhaul business practices of the UN system to ensure a focus on outcomes, responsiveness to needs and the delivery of results by the UN system, as measured in advancing the Millennium Development Goals.

- Ensure significant further opportunities for consolidation and effective delivery of “One United Nations” through an in-depth review.
- Undertake implementation urgently but not at all in-planned and hasty manner that could compromise permanent and effective change.^{xxxix}

Measures with Environmental Relevance

Within this framework of action the Panel recognized an increasingly compelling case for taking urgent action on the environment. As the Panel commented, environmental priorities have too often been compartmentalized in isolation from economic development priorities. Little headway has been made in integrating the environment and development strategies at the country level or in implementing internationally agreed goals, including the Millennium Development Goals. However, global environmental degradation – including climate change – will have far-reaching economic and social implications that affect the world’s ability to meet the Millennium Development Goals. Because the impacts are global and felt disproportionately by the poor, coordinated multilateral action to promote environmental sustainability is urgently required. Thus, the Panel made a series of recommendations, some regarding a general restructure of the UN regarding environmental issues and some specifically addressing climate change.

The first set of recommendations includes the following:

- the international environmental governance be strengthened and made more coherent in order to improve the effectiveness and targeted action of environmental activities in the UN system;

- the Secretary-General commission an independent assessment of international environmental governance within the UN system and related reform;
- UNEP be upgraded as the environmental policy pillar of the UN system;
- the UN entities cooperate more effectively on a thematic basis and through partnerships, with a dedicated agency at the center;
- the UN help countries mainstream environment in their strategies and actions;
- a UN country coordinator (“resident coordinator”) would help the countries mainstream environmental issues in national decision-making (“one country program”);
- especially the UNEP (normative) and the UNDP (operational) should build a stronger partnership on their complementarities;
- sustainable development should be mainstreamed into the work of the ECOSOC, by consideration of reports emanating from subsidiary competent bodies;
- a “sustainable development” segment should be instituted in the Economic and Social Council to help promote a balance between the three pillars of sustainable development, focus on sustainability issues arising from the Council’s functional commissions and feed conclusions back to those commissions; and coordinate recommendations to UN system organizations and their governing bodies;
- a Global Leaders *Forum* within the ECOSOC framework should be established; and
- the Commission on Sustainable Development (CSD) should be further reformed focusing on implementation, including approaches for integrating environmental

and social concerns into economic planning, and for identifying and sharing best practices.

The second set of recommendations, specifically addressing climate change includes a recommendation that the Global Environmental Facility (GEF) be strengthened to help developing countries build their capacity and address the challenge posed by climate change and other environmental issues. GEF, as the specialized funding institution that helps developing countries undertake projects and programs that protect the global environment, should require a significant increase in resources to address future challenges. In addition, in order to achieve better policy integration and coordination, its policy requirements and operational procedures need to be made much more simple and compatible with the development framework at the country level.^{xxii}

In addition, cooperation should be close among the United Nations Environment Program (UNEP), the United Nations Development Program (UNDP), the World Meteorological Organization (WMO), the Global Environmental Facility (GEF) and the World Bank in order to build scientific and technical capacity, manage investment and infrastructure components, support adaptation measures and facilitate an effective integration of global environmental concerns into the development policy frameworks at the country level on the climate change issue, as well as on the desertification and ecosystem decline and dispersion of hazardous chemical substances issues.^{xxiii}

All the above recommendations could not be evaluated but in a very positive way. Their effectuation would make a real difference both in combating climate change and other environmental and sustainable development problems. There has been extensive scholarship and, therefore, further support and explanations would be a mere repetition. There are nonetheless two questions remaining. First, is there any political will for these proposals to be effectuated? Innumerable political and academic statements have been advocating similar proposals for several decades, but the time for their effectuation does not seem to have come yet. The UN General Assembly just began the “intergovernmental process” of considering the Report and the recommendations of the High-Level Panel on June 6, 2007. The answer remains to be given in the coming years. Secondly, since most of these proposals are not climate change specific, the question remains whether there are any other complimentary proposals that would make a difference in combating climate change.

2. The Current Position of the New UN Secretary General and other UN Bodies

The UN Secretary-General has to “play a critical role in the consultation and decision-making process related to the critical recommendations of the report.”^{xxiv} UN Secretary General Ban Ki-moon has acknowledged the importance of climate change and warned that climate change poses as much of a danger to the world as war does. In his first address on the issue, Mr. Ban said changes in the environment were likely to become a major driver of future war and conflicts.^{xxv} Mr. Ban warned that poor people living in Africa and small island states would suffer most from the effects of global warming, even though they were least responsible. New measures must be agreed to control emissions

after 2012. He said the world needed a more coherent system of international environmental governance in order to tackle global warming beyond the expiry of the Kyoto Protocol in 2012.

Nonetheless, recent developments do not give the impression of a reality as optimistic as the previous rhetoric. There has been taken currently no decision to effectuate any of the proposals of the High-Level Panel regarding climate change. On May 16, a UN meeting in Bonn failed to agree on how to distribute money on the UN Climate change adaptation fund to developing nations. On May 12, the Commission on Sustainable Development (CSD) was unable to agree on an ambitious text on energy, climate, air pollution, and industrial development during its 15th meeting in New York. The European Commissioner, Stavros Dimas, characteristically said that “The challenges posed by climate change, energy security, and air pollution are now seen more clearly than five years ago. They require strengthened and more ambitious international policy commitments. It is unfortunate that the Commission on Sustainable Development was *unable to deliver*.^{xxvi} Divergence among state interests and among preferred means to achieve climate change mitigation still prevails.

There has, however, been a momentum created and a sort of a “noble competition” of who is going to take the lead in the fight against climate change. For example, on the one hand, the U.S. President, George Bush called for a summit of the major greenhouse gas emitters, including China and India, on June 3.^{xxvii} On the other hand, the EU President,

Manuel Barosso, called for next week's G8 summit in Heiligendamm to commit to further urgent international action on climate change, on June 4, 2007.^{xxviii}

There are two points in time in the coming months that would be crucial for future developments. First, the UN Secretary-General is hoping to hold a High-Level meeting on climate change on September 24, 2007, and, secondly, in December 2007 the negotiations phase for the new protocol begins. In the face of these opportunities for brain-storming, convergence and decision-making, I am attempting to present some additional proposals for UN reform complementary to the High-Level Panel recommendations.

PART III

Further Proposals

From a Global Leaders Forum of the Member States of the ECOSOC to a Global Leaders Forum under the UN supervision

The report provides that “the *Forum* would comprise the leaders of half its members, rotating on the basis of equitable geographic representation, with the participation of the executive heads of the major international economic and financial institutions. Its meetings could be preceded by a preparatory meeting of ministers for foreign affairs and economic, social and related ministries.”^{xxix} The role of the Global Leaders *Forum* would be to provide leadership and guidance to the international community on development and global public goods related issues, to develop a long-term strategic policy framework

to secure consistency in the policy goals of the major international organizations and to promote consensus-building among Governments on integrated solutions for global economic, social and environmental issues.

This proposal is not specifically tighten to climate change. It rather aims to address a variety of environmental and developmental issues. Nonetheless, if tailor-made to the specifics of climate change, a UN Leaders *forum* has the potential to create the necessary impetus. The composition of this panel would be crucial for the outcome of its work. The proposal of the High-Level Panel refers to government representatives, as a result of the fact that membership to the ECOSOC is restricted only to the UN Member States. However, one should keep in mind that there are multiple and highly variable sources for global warming. Thus, such initiative should aim at attracting high-level leadership from all the sectors relating to climate change; from corporations, NGOs, and UN administrators along with government representatives. Depending on the level of leadership employed, the Panel could have the potential to move the issue of combating climate change much faster than any other reform effort of the UN. Consequently, a Global Leaders *Forum* under the UN supervision with high-level, multi-sectoral leadership would be more effective than a Global Leadership *Forum* within ECOSOC.

Shorter formations of the ECOSOC^{xxx}

Commentators have proposed that ECOSOC could be an appropriate *forum* for the formation of a panel with only the most relevant actors. One proposal refers to the participation of the most relevant states, such as the three greatest GHG emitters, namely

the U.S., China and Brazil.^{xxxii} Alternatively, a bilateral formation, including the U.S. and China, would have a crucial role, if the U.S. could comply with mandatory reductions of GHGs and China would follow in compliance. The success of this bilateral platform is based on the assumption that these two countries have been trapped in a competition. In both proposals, regarding the limited membership body and the bilateral *forum*, it is essential that they operate along with other mechanisms that would bring everybody on board, especially those that would be more affected by adaptation, so that they can propose their own formulas.

Bilateral EU – U.S. Forum on Climate Change

Within the concept of bilateral *fora* is a proposal to create a bilateral *forum* of negotiations between the U.S. and the EU regarding the post-Kyoto protocol regime.^{xxxiii} The new approach is to engage the U.S. Congress in the negotiations, so that we minimize the possibility of having the U.S. administration signing an environmental agreement and afterwards the U.S. Congress denying ratifying it. Both the House of Representatives and the Senate should participate to this *forum*, as well as administrators of the U.S. Environmental Protection Agency (EPA) and other related administrative units. On behalf of the EU, representatives of the European Commission, the Council and the Parliament should participate. The UN Secretary General could initiate or otherwise facilitate such *forum*.

Specifically, on behalf of the European Parliament, the temporary committee on climate change (CLIMA)^{xxxiiii} of the EP should participate. The Committee has just recently been

established with *inter alia* the mandate “to formulate proposals on the European Union’s future integrated policy on climate change and to coordinate the European Parliament’s position with a view to negotiating the international framework for climate policy after 2012.”^{xxxiv} By engaging the parliaments of the two parties such venue would also highlight the democratic component of the debate.

There are already some venues in place that could accommodate such *forum*, such as the Transatlantic Legislators’ Dialogue (TLD) established in 1999 by the EP delegation to the U.S. Congress and the U.S. Congress delegation to the EP.^{xxxv} Taking the existing inter-parliamentary relationship as its basis, the TLD aims to strengthen and enhance the level of political discourse between European and American legislators. The European Parliament and the Congress have also established a Steering Committee to co-ordinate TLD activities. The Steering Committee also maintains contact with the Senior Level Group (SLG), which is composed of high-ranking officials from the European Commission, the EU Presidency and the US Administration.^{xxxvi}

Institute for Research and Learning on Mitigation and Adaptation^{xxxvii}, ^{xxxviii}

As referred above, the summary for policymakers of the second working group contributing to the fourth IPCC climate change report (2007) contains important conclusions and new findings over climate change, adaptation and vulnerability.^{xxxix} The final version of the summary for policymakers forecasts that the world poorest countries

will suffer most from climate change, that water shortages will increase and that diseases will spread more easily.

Impacts of climate change are distributed unevenly, with developing countries being more vulnerable than developed countries. The main reasons for this are that developing countries not only have higher impacts, they also have lower capacity to adapt. Higher impacts result from the greater extent of flood- and drought-prone areas, the larger share of climate-sensitive sectors such as agriculture, a more sensitive population due to poorer health and nutrition, and a more vulnerable shore area. They have lower capacity to adapt, because they lack technological, institutional, financial and knowledge capacity.^{xI} In addition, adaptation to climate change is also likely to benefit from experience gained in reaction to extreme climate events, by specifically implementing proactive climate change risk management adaptation plans.^{xII} Thus, an Institute for Research and Learning on Mitigation and Adaptation would be vital for the most vulnerable countries.

Center for New Technologies within the UNEP Framework

As already mentioned, many cost-effective technologies and policies that would effectively combat climate change are already available, e.g. hybrid-engine cars, wind turbines, advances in fuel cell technology, end-use energy efficiency in building, transport, manufacturing and industry to reduce emissions. In addition, technology might give definite answers to climate change mitigation. For example, new fuels for aircrafts that would not contribute to climate change have the potential to change the GHGs emissions dramatically, since aircrafts are among the most important polluters. Instead of

depending on private initiatives, such as the 25m USD prize that Sir Richard Branson, President of Virgin Atlantic, and Former Vice President Al Gore have acclaimed for whoever scientist come up with the best way to removing significant amounts of carbon dioxide from the atmosphere, the UN should acquire the institutional capacity to give incentives to scientists for relevant research, to co-ordinate scientific meetings that would go a step ahead of the IPCC meetings and discuss about implementing technologies, and to promote the necessary international, regional and domestic legislation for technology-transfer. If not a new center, then the UNEP Division in Technology, Industry and Economics, in Paris, France, could undertake such priorities as part of its work.^{xlii}

Integration of the Climate Change question to other UN Activities and Policies

Apart from the establishment of any new institutional body, integration of the climate change challenge dimension to all UN activities is essential. For example, the UN Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, is currently supervising an unprecedented effort on behalf of the scientific and regional and international organizations community: the compellation of a report on the status of the oceans, based on all existing reports and measurements, the so-called “Assessment of Assessments.” Such assessment should *inter alia* incorporate an evaluation of climate change dimensions in order the international community to be better equipped to evaluate how oceans are being affected by climate change, since this is an issue not yet adequately studied. It is worth to note that the uptake of anthropogenic carbon since 1750 has led to the ocean becoming more acidic with an average decrease in pH of 0.1 units.^{xliii} However, the effects of observed ocean acidification on the marine biosphere are as yet

undocumented.^{xliv} In addition, such assessment of the status of the oceans should aim at evaluating how oceans, functioning as sinks for GHGs, may be useful for climate change mitigation. Thus, scientists and policy-makers would be in a better position to give advice on policies aiming to improve the quality of oceans in order to better absorb GHGs or suggestions for the protocol that would soon succeed the Kyoto Protocol.

Clustering or Aligning of MEAs

One last word to be said in the face of any future regulation is that multilateral environmental and other type of agreements with environmental relevance should be clustered to fewer legal instruments or, at least, the objectives of these agreements should be sought among others after having taken into account the climate change dimension. Namely, the objectives of multilateral environmental agreements (MEAs) and the means for their achievement should not be indifferent or hostile to regulations and policies that aim to combat climate change. For example, there are currently enacted MEAs that, despite existing scientific knowledge, promote the use of substances that contribute to climate change phenomenon.

Such an example is the Ozone Layer regulatory system, namely the Vienna Convention for the Protection of the Ozone Layer^{xlv} and the Montreal Protocol,^{xlvi} which provides for the substitution of chemicals that destroy the ozone layer with alternative chemical substances. Most gases controlled by the Montreal Protocol on the depletion of the ozone layer (e.g. chlorofluorocarbons and their initial replacements, hydrochlorofluorocarbons) are potent greenhouse gases, but their earlier increase in concentrations has either turned

into a decrease or slowed down, in response to production controls agreed under the Montreal Protocol. Some of these alternative substances, however, contribute to climate change. Concentrations of HFCs are increasingly produced as alternatives for the Montreal Protocol compounds and do not deplete the ozone layer. Nonetheless, they do affect radiative forcing and are increasing in the atmosphere, similarly to other compounds such as perfluorocarbons and sulphurhexafluoride.^{xlvii} The means used by the Ozone treaties to combat ozone depletion counter-fight the objective of the climate change agreements. Further efforts of coordination among the regimes are necessary to be undertaken. In general, there should be a coordinated effort of research, analysis and regulation for the alignment of means and objectives of these agreements. In any future regulatory attempt, the drafters of new upcoming agreements should take the climate change dimension into account.

Conclusion

Innovations need to be made on multiple levels: on organizational reform, negotiation strategies, regulatory law-making, and implementation methods. Urgent action towards these ends needs to be undertaken. The timely engagement towards UN reform to effectively combat climate change is of major importance due to expiration of the Kyoto Protocol in 2012 and the need for the Post-Kyoto regime preparation.

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ⁱ TONY BRENTON, *THE GREENING OF MACHIAVELLI: THE EVOLUTION OF INTERNATIONAL ENVIRONMENTAL POLITICS* (Brookings Publishers Press 1994.)

ⁱⁱ “Delivering as one”, Report of the High-Level Panel on United Nations System-wide Coherence in the areas of development, humanitarian assistance and the environment, Sixty-first Session, Agenda Item 113, Follow-up to the outcome of the Millennium Summit UNGA, A/61/583, 20 November 2006, available at: <http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/61/583&Lang=E> (last visited on April 8, 2007.)

ⁱⁱⁱ “Delivering as one”, Report of the High-Level Panel on United Nations System-wide Coherence in the areas of development, humanitarian assistance and the environment, Sixty-first Session, Agenda Item 113, Follow-up to the outcome of the Millennium Summit UNGA, A/61/583, 20 November 2006, available at: <http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/61/583&Lang=E> (last visited on April 8, 2007.)

^{iv} It is worth noting that scientific reports usually refer to any climate change over time, whether due to natural variability of as a result of human activity. See, International Panel on Climate Change, Working Group II Report (IPCC WGII), Endbox 1, Definitions of Key Terms, p. 22.

^v Robert K. Musil, *The Politics and Public Health Implications of Global Warming*, P&S Med Rev Vol 8, No. 1, p. 1.

^{vi} For more detailed information about the climate change science and politics history, see Michael Grubb et al., *The Kyoto Protocol, A Guide and Assessment*, the Royal Institute of International Affairs, London, UK, 1999, p.

^{vii} For instance, the board of the American Association for the Advancement of Science (AAAS), publisher of the prestigious journal “Science” and the world's largest general scientific society, on February 17, 2007, issued its first statement on global warming, attributing the Earth's recent warming to human activity. "The scientific evidence is clear: global climate change caused by human activities is occurring now, and it is a growing threat to society," the statement read. The release noted that atmospheric carbon dioxide levels are at their highest concentration in 650,000 years. AAAS president, John Holdren, added that by the end of this century, global temperatures could head for levels not seen in millions of years. Visit: www.aaas.org.

^{viii} Houghton et al. 1996.

^{ix} See, 2001 Third Assessment Report of the Intergovernmental Panel on Climate Change, conclusions available at: http://unfccc.int/essential_background/background_publications_htmlpdf/climate_change_information_kit/items/60.php (last visited on June 10, 2007.)

^x According to Endbox 2, Likelihood and Confidence Language of WGII, the term “very likely” corresponds to an assessed likelihood of an outcome or a result with more than 90% possibilities.

^{xi} See, Fourth Assessment Report, Working Group I report summary: “The Physical Basis of Climate Change”, available at <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html> (last visited on June 10, 2007.)

^{xii} According the IPCC Working Group II Fourth Assessment Report, if increases in global temperature exceed 1.5 – 2.5 Celsius, approximately 20-30% of plant and animal species assessed so far are likely to be at increased risk of extinction. For this range of increases and in concomitant atmospheric carbon dioxide concentrations, there projected to be major changes in ecosystem structure and function, species’ ecological interactions, species’ geographic ranges, with predominantly negative consequences for biodiversity, and ecosystem goods and services, e.g. water and food supply. Last, the progressive acidification of oceans due to increasing atmospheric carbon dioxide is expected to have negative impacts on marine shell forming organisms (e.g. corals) and their dependent species. See, IPCC WGII Fourth Assessment Report, p. 8.

^{xiii} Working Group III Contribution to the Intergovernmental Panel on Climate Change, Fourth Assessment Report, Climate Change 2007, Mitigation of Climate Change, Summary for Policy Makers, available at <http://www.ipcc.ch/SPM040507.pdf> (last visited on June 10, 2007.)

^{xiv} United Nations Framework Convention on Climate Change, 3 ILM 22, opened for signature on 9 May 1992 and entered into force on 21 March 1994.

^{xv} Kyoto Protocol to the United Nations Framework Convention on Climate Change, 37 ILM 22, opened for signature on 11 December 1997 and entered into force on 16 February 2005.

^{xvi} For more details regarding the latest regulatory and institutional developments, visit <http://www.unfccc.int>.

^{xvii} According to the IPCC WGII Assessment Report, most vulnerable countries are the small island countries (p. 13), African countries (p. 10) and, in comparison to European Countries, those of Southeast Europe (p. 12).

^{xviii} Cf. Mohan Munasinghe and Rob Swart, p. 148.

^{xix} The 15 member High-Level Panel comprises: Shaukat Aziz (Co-Chair), Prime Minister, Pakistan; Gordon Brown, Member of Parliament, United Kingdom, Chancellor of the Exchequer; Luísa Dias Diogo (Co-Chair), Prime Minister, Mozambique; Mohamed T. El-Ashry, Egypt, Senior Fellow, United Nations Foundation, Former Chairman and CEO of the Global Environment Facility (GEF), Robert Greenhill, President of the Canadian International Development Agency, Deputy Minister, International Cooperation, Canada; Ruth Jacoby, Director-General for Development Cooperation, Ministry for Foreign Affairs, Sweden; Ricardo Lagos Escobar, President of the Republic of Chile, Louis Michel, Belgium, European Commissioner for Development and Humanitarian Aid; Benjamin W. Mkapa, Former President, United Republic of Tanzania; Jean-Michel Severino, France, Director General, French Development Agency, Former Vice President of the World Bank East Asia and the Pacific, Josette S. Shiner; Under Secretary for Economic, Business and Agricultural Affairs, United States Department of State; Jens Stoltenberg, (Co-Chair), Prime Minister, Norway; Keizo Takemi, Member of the House of Councillors, Liberal Democratic Party, Former State Secretary for Foreign Affairs of Japan; Ex Officio Members: Kemal Derviş, Turkey, Administrator of the United Nations Development Programme (UNDP); Former Turkish Finance Minister; Lennart Bge, Sweden, President of the International Fund for Agricultural Development (IFAD.)

^{xx} Note by the Secretary-General, Sixty-first Session, Agenda Item 113, Follow-up to the outcome of the Millennium Summit, UNGA, A/61/583, 20 November 2006.

^{xxi} Report, p. 10 and 22.

^{xxii} Para. 38, p. 30 and para. 39 of the Report.

^{xxiii} Paragraphs 37 and 38 of the Report.

^{xxiv} Paragraph 10 of the Report.

^{xxv} Statement of the UNSG at the United Nations Headquarters, addressing students, March 2, 2007, available at: <http://environment.guardian.co.uk/climatechange/story/0,,2025277,00.html> (last visited on June 10, 2007.)

^{xxvi} http://www.eu2007.de/en/News/Press_Releases/May/0512BMU.html (last visited on June 3, 2007.)

^{xxvii} <http://www.whitehouse.gov/news/releases/2007/05/20070531-9.html> (last visited on June 4, 2007.)

^{xxviii} <http://www.europa.eu/rapid/pressReleasesAction.do?reference=IP/07/757&format=HTML&aged=0&language=EN&guiLanguage=en> (last visited on June 4, 2007.)

^{xxix} Paragraph 59 of the Report.

^{xxx} This proposal was discussed inter alia by Dr. Jessica Matthews, President, Carnegie Endowment for International Peace; Founding Vice President and former Director of Research of the World Resources Institute at a Woodrow Wilson center event entitled: “Looking Forward: Sustaining the Earth and Humanity – Implications for the New UN Secretary-General, available at: http://www.wilsoncenter.org/index.cfm?fuseaction=events.event_summary&event_id=218883#.

^{xxxi} Cf. with President Bush’ proposal, supra, at FN 18.

^{xxxii} Interview with Mr. Andreas Papakonstandinou, Member of the Cabinet of the European Commissioner for the Environment, May 7, 2007 (the script of the interview remains with the author and is available upon request.)

^{xxxiii} “CLIMA” stands also for the Greek word meaning “climate.” The pronunciation of the Greek word is “cléma”.

^{xxxiv} See, Proposal for a Decision pursuant to Rule 175 of the Rules of Procedure by the Conference of Presidents setting up a temporary committee on climate change, B6-0158/2007, European Parliament 2004-2007 Session Document

^{xxxv} http://www.europarl.europa.eu/intcoop/tld/what_is/history_en.htm (last visited on June 4, 2007.)

^{xxxvi} http://www.europarl.europa.eu/intcoop/tld/default_en.htm (last visited on June 4, 2007.)

^{xxxvii} *Id.*, at 16.

^{xxxviii} I define ‘mitigation’ as a set of actions that will reduce the likelihood of climate change, whereas ‘adaptation’ involves actions that will reduce the impacts of climate change (without necessarily altering the likelihood that it will occur. Supra, at 18, p. 49.

^{xxxix} “‘Vulnerability’ is the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the

character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.” See, IPCC WGII, p. 22, Endbox 1. Definitions of Key Terms.

^{xl} MOHAN MUNASHINGHE AND ROB SWART, PRIMER ON CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT: FACTS, POLICY ANALYSIS, AND APPLICATIONS (Cambridge University Press 2005), p. 47.

^{xli} IPCC WGII Fourth Assessment Report, [12.5], Summary for Policymakers, p. 12.

^{xlii} <http://www.unep.fr/en/> (last visited on June 4, 2007.)

^{xliii} See, IPCC Working Group I Fourth Assessment Report.

^{xliv} IPCC Working Group II Fourth Assessment Report.

^{xlv} Vienna Convention for the Protection of the Ozone Layer, opened for signature Mar. 22, 1985, U.N. Doc. UNEP/IG.53/Rev.1, at 11 (1985), S.TREATY DOC. 9, 99th Cong., 1st Sess. (1985), reprinted in 26 I.L.M. 1529 (1987.)

^{xlvi} Montreal Protocol on Substances that Deplete the Ozone Layer, opened for signature Sept. 16, S. TREATY DOC. 10, 100th Cong., 2d Sess. (1987), reprinted in 26 I.L.M. 1550 (1987).

^{xlvii} MOHAN MUNASHINGHE, ROB SWART, PRIMER ON CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT, FACTS, POLICY ANALYSIS AND APPLICATIONS (Cambridge University Press 2005), p. 21.