CHAPTER 2

Limits to Climate Change Global Governance:

The Failure of the Kyoto Protocol

INTRODUCTION

Environmental governance started to develop in the decade of 1970. At that time, international responses reacted to pollution problems, especially in the U.S., Canada and Europe. The approach was regulatory, and it focused in single-pollutant issues that were thought to be solved by technology.[1] Diverse responses to this approach emerged. The following decades, definitions of environmental governance went from the need to commoditize environment—or develop international rules and law—to the need of reforming the previous command-and-control regulatory frameworks, or democratize it under a communitarian basis. In addition to these approaches, it emerged the "third-way" for conceiving environmental governance. This focused in the need for accountability of environmental results, rather than accountability for compliance with rules and regulations.[2]

In this context, several environmental issues emerged as priorities. One of them was clearly the pollution of air and its impact in climate. It is the goal of this chapter to give a background of climate change governance and explore specific mechanisms, like the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP). The first part will present the background towards developing global

[1] Durant, 2004:1
[2] Durant, 2004:2

strategies to deal with climate change. The second part will explain how the Kyoto Protocol was designed, and the third part will present why this mechanism have not worked as expected. I will argue that the KP's failure can be explained in three possible ways. First, it rested in the assumption that national policies would have to adapt to global needs. Second, the Protocol is a mechanism with an inadequate design because it was based on a national approach, when in reality the implementation costs are localized regionally. National governments have not had the political will to implement the Protocol due to either electoral costs or conflicts with civil society, business community, and local authorities. The second explanation deals with the emergence of free riders. This argument was developed by U.S. Congress for not ratifying the Kyoto Protocol. The explanation was based on the fact that potential pollutant countries, which potentially would be growing fast but leave a huge GHG footprint as China and India, were not included in "Annex I" list. Thus, the U.S.—and the other Annex I countries—would need to absorb the greatest economic costs. Third, the KP has no obligatory mechanisms for implementation; it is based in voluntary instruments, targets and commitments, which meant there were only political will and no sanctions.

1. CLIMATE CHANGE GLOBAL GOVERNANCE: THE ROAD FROM KYOTO (1997) TO CANCUN (2010)

With 195 Parties, the United Nations Framework Convention on Climate Change (UNFCCC) has near full membership as to date, if referring to the members of the United Nations system. This treaty is the framework for the 1997 Kyoto Protocol, which has to

date 193 member Parties (192 countries and one regional organization). Under the Protocol, 37 States were committed with specific goals to reduce or limit their greenhouse gases.[3]

The process towards reaching this agreement started in 1957-8 with the celebration of the International Geophysical Year, where scientific studies of global warming were first drafted.[4] More than a decade later, in the 1972 United Nations Conference on the Human Environment held in Stockholm, a set of principles was established to protect the environmental depletion produced by human activities. This was the first international conference where environmental topics were placed at the negotiations table at the United Nations (UN). This conference established that developed nations would hold greater responsibility regarding environmental and inequality issues in other countries. After this conference, the United Nations Environment Program (UNEP) became the voice for the environment in the UN system.[5] The UNEP, alongside with the World Meteorological Organization (WMO), and the International Council of Scientific Unions (ICSU) organized the World Climate Conference in Geneva in 1979.[6] In these first international conferences the attention was drawn to topics as acid rain, toxic wastes and the ozone layer, especially in urban industrialized areas. Greenhouse gases, although recognized as pollutants, were left out of the agenda.

In the decade of 1980, climate change moved from the scientific agenda to the policy agendas nationally and internationally.[7] It was with the Vienna Convention for the Protection of the Ozone Layer in 1985 and its Montreal Protocol on Substances that Deplete the Ozone Layer in 1987 that climate change started to take its own path and

[3] United Nations Framework Convention on Climate Change, 2011b
[4] Adams, 2009:99
[5] United Nations Framework Convention on Climate Change, 2007a
[6] Adams, 2009:99
[7] Weaver, 2004

became a global issue. In this conference and protocol, scenarios for future emissions of all greenhouse gases were deeply discussed,[8] especially their impact on the ozone layer, which already presented evidence of depletion: an expanding hole over the North Pole was found. The 1987 Montreal Protocol intended to control chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), synthetic compounds which depleted the ozone layer and were greenhouse gases. Hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) were used as replacements for CFCs and HCFCs in some applications, because they deplete less the ozone layer.[9]

The ozone layer depletion was the "hot topic" of that decade and "signaled that environmental issues were increasingly moving from local and national to the global level."[10] The Vienna Convention and the Montreal Protocol served as a model for the next generation of global governance conferences on climate change, represented by the 1988 conference called The Changing Atmosphere: Implications for Global Security. It was held in Toronto, just after the Intergovernmental Panel on Climate Change (IPCC) was established.[11] The IPCC had the goal of legitimizing the global climate governance by presenting assessments from three working groups which addressed 1) the science, 2) the socio-economic and vulnerability-adaptation issues, and 3) the socio-economic and mitigation strategies. In addition, the IPCC mandate—received from the United Nations—established that the organism had to set the basis for understanding the risk of human-

[8] Adams, 2009:99
[9] CFC and HCFC were used as cooling devices in the refrigeration industry, vehicles, appliances, as well as in aerosols. See United Nations Framework Convention on Climate Change, 2009.
[10] Paehlke, 2008:58
[11] The IPCC was created in 1988 by the World Meteorological Organization and the United Nations Environment Program. See Bramley, 2000:1-2.

induced pollution and its impacts, as well as options for mitigation and adaptation.[12] However, the IPCC did not have a research team of its own; it only worked as a peer reviewer of literature of worldwide experts.

With this background, the Toronto Conference set climate change into the international debate with the legitimacy granted by the newly created epistemic community. Legitimacy, then, would fall under "networks of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain."[13] This fact attracted important personalities, as Gro Harlem Brundtland, Chair of the World Commission on Environment and Development, and over 300 scientists and policy makers from 46 countries and organizations. This Conference called for reductions of carbon dioxide emissions (CO2) by 20% from 1988 levels by the year 2005.

The Vienna and the Toronto conferences complemented each other. The cooperation model of Toronto was based on the Montreal Protocol; it was expected to be as successful for climate change as it had been for the ozone layer. The Toronto Conference included HFCs and PFCs in the list for anthropogenic designed GHGs. This conference set a major precedent for widening the scope of the Montreal Protocol. As established by Robert Paehlke, the Toronto Conference coincided with

> the Second Wave of Environmentalism (roughly 1986-91), a period when public opinion and media attention focused unrelentingly on environmental matters—having being spurred by the issues of acid precipitation, the 1987 media sensation concerning the global journey of a barge filled with garage from New York City, the

[12] Weaver, 2004
[13] Haas, 1992b

> 1989 Exxon Valdez oil spill, [depletion] of tropical rainforests, and growing scientific evidence about human-induced climate change.[14]

After the Toronto Conference, representatives of countries such as Canada, U.S., and some of the most developed in Europe, started talking about setting specific goals for stabilizing CO2 emissions as a basis for the U.N. meeting in Bergen, Norway to be held in 1990.[15] At this point, the climate change conference had been a success in gathering international representatives and putting the topic in the international agenda. It was applauded by several societies and incentivized the participation of society in this kind of topics. For example, the Canadian governmental organizations, green NGOs, universities, think tanks, and industries participated through the Canada's National Climate Change Process, which included a long series of public hearings.[16]

At the beginning of the 1990's, some countries expressed the need of an international climate change agreement. They were talking about the need to move towards the "next generation" of environmental policies that would address both point (e.g. chimneys) and nonpoints sources (e.g. pesticides) and adopt a source-reduction approach,[17] in other words, mitigation strategies. In the same year, the IPCC presented its first report and established the importance to cut fossil fuel and carbon consumption to address air pollution. This recommendation created conflict between industrialized nations and developing ones. The North was "urging the priority of environmental protection and that

[14] Paehlke, 2008: 59
[15] Smith, 1998: 4-5
[16] Paehlke, 2008:64.
[17] Van Nijnatten, 2008: 294

any measures agreed should be cost effective, while the South pushed the need for development and industrialization, and the principle of historical responsibility."[18]

The international context made these years conflictive and confusing. The Second World Climate Conference took place in Geneva in 1990 with the objective to create an agreement to present in the coming Rio Conference in 1992. However, there were very different positions towards GHG emissions. "The EU favoured agreement on targets and a timetable for implementation, the USA was reluctant."[19] At the end, the compromise to be presented in the context of the Rio conference was set on a non-binding agreement for cutting CO2 and other GHGs not treated by the Montreal Protocol to 1990 levels.

The Rio Conference was held in 1992 introducing the previous agreement called United Nations Framework Convention on Climate Change and its negotiation mechanism, the Conference of Parties (COP).[20] These institutions were sustained on the assertion of the previous IPCC reports which demonstrated that climate change was in part the result of human activities. Their general goal was to establish mechanisms for incorporating the climate issue into a sustainable development approach—concept developed since 1987 Conference and reinforced in the Rio Conference in 1992. The concept of sustainable development also included the need to preserve environment for future generations. The UNFCCC established the main goal of

> stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt

[18] Adams, 2009:102
[19] Adams, 2009:102
[20] The UNFCCC entered into force in March of 1994.

> naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.[21]

The UNFCCC also established a system of detailing which gases were to conform the mix of greenhouse gases—including the Montreal Protocol's GHGs—and the ways to measure them, setting 1990 as the baseline year.[22] The selection of the six GHGs was based on the IPCC's scientific reports previously drafted. The main principle of this treaty was a "common-but-differentiated" approach for responsibility and capabilities.[23] This meant that industrialized countries (OECD members) were to have greater responsibility in controlling GHGs because they had historically developed and incentivized their economies by polluting (e.g. burning fossil fuels for industry). In other words, "they are the source of most past and current greenhouse gas emissions."[24] The rest of the countries ratifying the treaty agreed to take climate change into account in such matters as agriculture, industry, energy, and natural resources. In other words, they agreed to develop national programs to slow down climate change through stabilizing GHGs to non-risky levels. The document also recognized that all efforts would be based on national sovereignty.

This convention also set the basic differentiation between Annex I countries and Non-Annex I countries—distinction that would be enforced in the convention's protocol in 1997. Countries with specific commitments and time goals—either to reduce specific

[21] Article 2 of the United Nations Framework Convention on Climate Change, 1992: 4

[22] The UNFCCC established this year as baseline, but some years later in Article 3(5-8) of the Kyoto Protocol, it is allowed for countries to propose a different base year for measuring GHG reductions. However, if a country chooses some posterior base year, the GHG produced would have to be multiplied by five. Any Party included in Annex I may use 1995 as its base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. See the Kyoto Protocol at United Nations Framework Convention on Climate Change, 1998:4.

[23] Article 3-4 of the United Nations Framework Convention on Climate Change, 1992:4-5

[24] United Nations Framework Convention on Climate Change, 1992:1

GHGs percentages or to limit them—would be included in the list called Annex I. This Annex also included countries with transition economies, especially those in Eastern Europe. Annex parties would have major responsibilities regarding financial mechanisms for climate change. The rest of the signing countries were listed in a non-annex list, which accounted for developing countries with no reduction or limit commitments. This differentiation was also present when the UNFCCC pointed out that there was vulnerability because of climate change due to the uncertainty of the impacts of the GHG release. Developing countries would have greater climate change impacts, being that their emissions were the lowest. Due to this situation, they were not committed but enhanced to propose projects on a voluntary basis. The mechanism for financing the climate change strategies was also established at the UNFCCC. An important part of this climate-change agreement was Article 14, which accounted for mechanisms for dispute settlement. Although problems—as misunderstandings, lack of accountability or transparency—would only appear in case of implementation of specific projects, it established that there were two institutions for solving them: The International Court of Justice or through a process of arbitration by the COPs mechanism.

COPs become important: from Kyoto to Cancun

Under Article 17 of the UNFCCC, the adoption of protocols could be allowed under COPs meetings.[25] These meeting started in 1995 in Berlin (COP-1) with the goal of developing quantified limits and targets, and specific time frames.[26] In December of 1997, 160 members of the UNFCCC met in Kyoto, Japan, for the COP-3 to develop an international

[25] United Nations Framework Convention on Climate Change, 1992:19
[26] Lucas, 2004. For a summary of the COPs results, see Annex A of this thesis.

accord that would help mitigate the effects of climate change through the reduction of GHG emissions. In the following years, the resulting agreement called the Kyoto Protocol was signed by the majority of the countries; it was subject to individual ratification, entering into force

> on the ninetieth day after the date on which not less than 55 Parties to the Convention, incorporating Parties included in Annex I which accounted in total for at least 55 per cent of the total carbon dioxide emissions for 1990 of the Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession.[27]

In this sense, the KP became a legal instrument subsidiary to the UNFCCC. Under the terms of the Protocol and based on the division of the UNFCCC, Annex I countries committed under Articles 2 and 3 to implement and elaborate policies and measures in accordance to their national circumstances to reduce anthropogenic emissions of at least 5% below levels of 1990 for 2008-2012.[28] As an interim step towards reporting under the Kyoto Protocol, Annex I countries were required to submit annually a National Inventory Report (NIR) and a set of data since 1990 and all subsequent years to the UNFCCC Secretariat on April 15th of each year. These submissions had to follow a set of international agreed guidelines developed by the Intergovernmental Panel on Climate Change (IPCC) for the preparation of national greenhouse gas inventories.[29] Article 2 specified that Annex I countries had to do whatever was necessary to use renewable

[27] See Article 25 of the Kyoto Protocol at United Nations Framework Convention on Climate Change 1998
[28] See the Kyoto Protocol at United Nations Framework Convention on Climate Change 1998:3-4
[29] See Article 5 of the Kyoto Protocol at United Nations Framework Convention on Climate Change 1998:6

energies and perform technological change towards emissions reduction of GHG not treated in the Montreal Protocol of 1987.

Right after the setting of the UNFCCC in 1992, negotiations started by setting positions of countries regarding GHG reductions. The general perception was that the U.S. would establish a 3% GHG reduction. Most of the Annex I countries, especially Canada, the European Union and Japan, started taking commitments around the U.S. percentage. Facing this scenario, two clear positions within Annex I countries appeared.

The first one was the regional approach taken by the European Union. The KP allowed this regional approach. However, Article 4(5) noted that "[i]n the event of failure by the Parties to such an agreement to achieve their total combined level of emission reductions, each Party to that agreement shall be responsible for its own level of emissions set out in the agreement."[30] Nonetheless, Europe chose to negotiate in this way to compensate polluting countries of the Mediterranean (such as Spain, Portugal, Italy or Greece).[31]

The second position was the individual commitment that always took into account the 3% GHG reduction range of the U.S. This approach was taken by the North American countries. In the case of Canada, "negotiators led the delegation to stay 1% behind the U.S...Canada was cognizant of the need to remain economically competitive with its largest trading partner."[32] Canada would set a goal of 2%.[33] This country had being performing a free trade agreement with the U.S. since 1989, which represented an integrated economy in production and services, and explained the link to the U.S. position.

[30] See the Kyoto Protocol at United Nations Framework Convention on Climate Change, 1998:5
[31] Antal, 2004
[32] Harrison, 2007: 103
[33] Jaccard et al, 2007:35

In this context of perceptions and strategies, Al Gore, Vice-President of the U.S., "suddenly announced that the U.S., the world's larger emitter, would reduce its emissions by an astonishing 7% from 1990 levels."[34] As a result, many countries had to raise the target. In addition, during the KP international negotiations, there was a group led by the Clinton administration favouring flexible mechanisms such as carbon trading, sinks, and exchangeable credits for developing countries—United States, Norway, Australia, New Zealand, Iceland, Japan and Canada.[35]

However, electoral timing interfered with the U.S. leadership for Kyoto; George W. Bush won the presidential elections. In spite of the Clinton-Gore demands to keep Kyoto alive, in the spring of 2001, the newly elected president announced that the U.S. would not ratify the Protocol. The U.S. Congress agreed not to ratify. The strongest reason for this decision was the presence of free-riders. The U.S. Congress explained that the fact that potential pollutant countries, which were expected to grow fast but leave a huge GHG footprint as China and India, were not included in "Annex I."

In this scenario, the U.S. and the other Annex I countries would need to pay for these countries' responsibilities. This resulted in the unwillingness to share the costs of remediating global public bads and spillovers of other countries. At both global and local levels individuals or organizations (such as states) could make credible commitments, but they were frequently finding new constraints that changed the basic structure of incentives.[36] The KP process did not take into account that the leader who was going to absorb higher costs, the U.S., suddenly decided not to ratify the agreement; the other Annex

[34] Jaccard et al, 2007:39
[35] Jaccard et al, 2007:64-5
[36] Keohane and Ostrom, 1995:2

I countries simply were not willing to pay for this. In this sense, legitimacy was lost due that the U.S. broke consensus.

Facing this situation, many governments and the business community outside the U.S. wanted to call the KP off and retry their commitments. Some of the Annex I countries had to stick to the protocol because of internal pressures as Canada. Some of these countries kept fighting for exceptions and privileges in the following COP meetings.[37] For example, Canada and Japan fought to include carbon sinks for GHG reduction and exchangeable credits for developing countries. At the COP-7 in Marrakech, Canada renewed the old argument for including "clean energy" to count on behalf of GHG reduction. Canadian government pledged for receiving credits to export natural gas to the United States, on the grounds that Americans would otherwise be burning more greenhouse gas-intensive oil or coal.[38]

For 2002, in the Johannesburg Conference on Environment and Development (best known as "Rio plus 10"), the majority of Annex I countries, although having ratified the KP, had not accomplished their commitments. From the beginning, Canada and the commercial partners of the U.S. were destined to fail to reach its KP targets. The EU had better scenarios for accomplishing their committed goals because it had negotiated as a region or "bubble."[39]

During 2006, the Asia-Pacific Partnership on Clean Development and Climate took place. This initiative implied that there were other fora to establish goals, other than the KP. It was composed by the U.S., China, India, Australia, South Korea and Japan with the purpose of helping big polluters as China and India to keep on industrializing by using

[37] Jaccard et al, 2007:67
[38] Harrison, 2007: 106
[39] Schwanen, 2006:296; Antal, 2004:157-158

environmental technologies. Yet, this initiative did not set emission targets or deadlines; participation was voluntary.[40]

By the beginning of 2007, the IPCC launched a series of three reports that resulted from the work of scientists all over the world: Working Group I Report "The Physical Science Basis", Working Group II "Impacts, Adaptation and Vulnerability", and Working Group III "Mitigation of Climate Change." They represented an international acknowledgement to support that there were both human and natural drivers for climate change.[41] Although this was a big step towards international consensus, some countries tried to prevent this report to state that a part of global warming was, indeed, anthropogenic. The case of a group of scientists in the United States and Australia was a clear example.[42]

In the Bali Conference of that same year (COP 13), the majority of Annex I countries confirmed the reluctance to comply the Kyoto commitments. They tried to block international negotiations for setting new targets for industrialized countries for a post-Kyoto agreement.[43] The only achievement of COP 13 was to draft a "roadmap" for future agreements.[44]

In this context, electoral processes in the U.S. again influenced the trend of the climate-change governance. Barack Obama won the elections in the U.S., and he started his

[40] Sheppard, 2006
[41] Intergovernmental Panel on Climate Change, 2007abc
[42] This is the case of Lance Endersbee, Australian researcher, who proposes that climate change is totally a natural phenomenon and humans do not have any incidence. See Endersbee, 2008. For further detail, see the discussion presented by Aaron M. McCright and Riley E. Dulap. They note that the conservative movement in the U.S. was the one who constructed the couter-argument since the decade of 1990. See McCright and Dulap, 2003. Tony Clarke proposes a similar argument for the case of U.S. and Canada. He argues that the former lobbies of the tobacco industry, facing the debacle of their cause, changed their focus to de-legitimazing climate change. See Clarke, 2008.
[43] Demerse, 2008
[44] Giddens, 2010:221

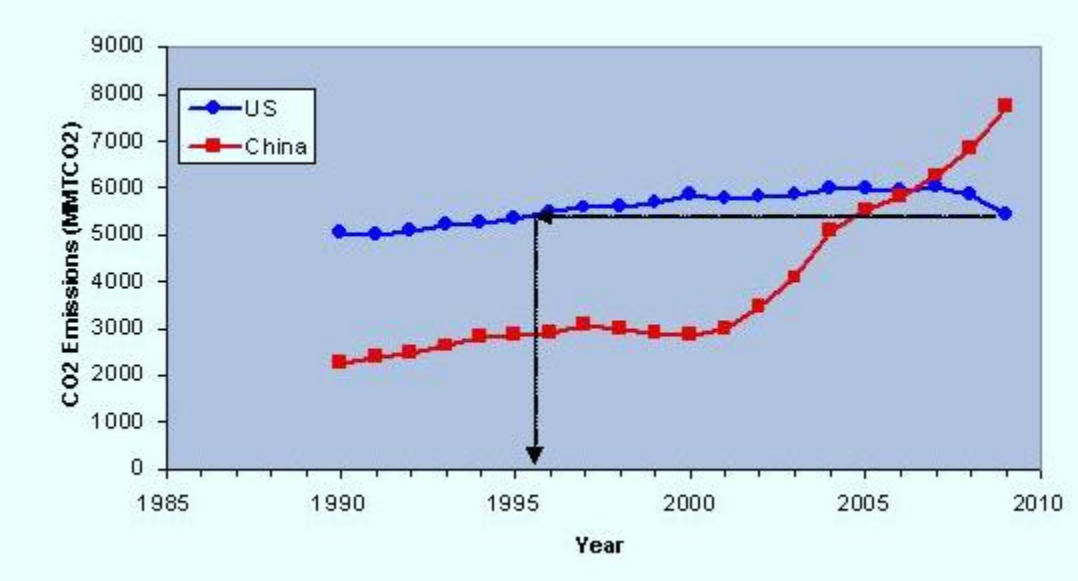
tenure by facing the financial crisis and trying to set climate change as a priority for his government. In a parallel effort, the Poznan Conference (COP 14) in December 2008 took place with no important advances. Nonetheless, in the aftermath of this conference, some Annex I countries started to set pledges for meeting their reduction goals. Just after this conference developed, President Obama visited Canadian P.M. Stephen Harper and proposed to create a cap-and-trade system in North America.[45] For President Obama, this idea would mean an important mechanism for technological transition and less dependency from fossil fuels. This position was enforced by the U.S. economic recovery bill signed in February 2010, where Obama's government granted $76.53 billion USD for renewable energy, energy efficiency, and the development of green technology. The Canadian Government was also putting money into the matter but only $1.60 billion CAD.[46] In this sense, Canadian P.M. Harper was forced to follow the green trends of his Southern neighbor in order to try to match both countries' environmental rules and standards to keep up with the economic relation.

In 2009, COP15 took place in Copenhagen, Denmark. Although the conference gathered several chiefs of state and government, the results were not as expected. The final accord pledged for maintaining temperature under 2°C. They intended to produce a second version of the KP, but no consensus was achieved. For example, some Non-Annex states that registered increasing GHG emissions—as the BRICs plus Mexico and South Africa—had different postures. China and India denied the possibility of committing with specific reduction goals, even though both had considerably increased their GHGs. Brazil would work to reduce deforestation in the Amazon River up to 80% to 2020; Mexico proposed the

[45] Economist, 2009
[46] Weiss and Bramley, 2009:1-2

Green Fund to help emerging economies to mitigate and adapt.[47] In North America, Canada's posture clearly would depend on the path that U.S. would follow, not proposing any specific commitment. Hence, there were several climate bills debated in the Senate. However, due to the financial crisis, U.S. had the major dropout of GHGs emissions as shown in the figure below.

Graphic 1. U.S.-China Greenhouse Gases (1985-2010)[48]



However, there were modest aspects that resulted from the Copenhagen meeting. The first one was that states committed not to go above 2°C. Developed countries agreed to set scenarios for 2020 and establish new goals. They also committed to support projects to avoid deforestation (Reduction of Emissions from Deforestation and Degradation—REDD—mechanisms) and to develop financial mechanisms, as the Green Fund.[49]

With this background, COP16 organized in Cancun, Mexico, faced the challenge to deal with all the topics that were not discussed deeply in the former meeting. Some

[47] United Nations Framework Convention on Climate Change, 2009b
[48] World Climate Report, 2011
[49] United Nations Framework Convention on Climate Change, 2009b

examples of these challenges were how to operate the Green Fund, a renewed set of commitments for Annex-I countries and the incorporation of some of Non-Annex ones, the establishment of reducing emissions from REDD mechanisms as tools for and achieving mitigation, etc. In other words, the goal was to draft a "new" version of the KP.

The Cancun meeting was not as successful as expected either. However, some of the prior goals were discussed and drafted in a package of agreements called "Cancun Agreements." Among these commitments, COP-16 established that every two years developing countries would have to report emissions. To aid in the technological transfer and funding of these countries, the World Bank would be the institution that would aid the operation of the Green Fund. The institution would mobilize "fast-start" funding for 2010-2012 ($30 billion USD) and longer-term $100 billion per year to 2020.[50]

The Cancun agreements also made carbon capture and storage projects eligible for carbon credits under the Clean Development Mechanism.[51] In addition, the REDD mechanisms were included as an alternative mitigation mechanism, as well as adaptation schemes for the most affected countries. The Cancun meeting was based on a renewed scientific assessment by the IPCC, which submitted its conclusions to the U.S. National Academy of Sciences.[52] For 2010, the International Energy Agency noted that the total world emissions of GHG had increased mainly from burning fuel. The rise registered was from 1.6 gigatonnes of CO2, which represented almost a 10% increase regarding 2009.[53] These projections were expected until 2020. These results prove that global climate change governance had failed.

[50] United Nations Framework Convention on Climate Change, 2010a
[51] Friedman, 2010
[52] Busby, 2010
[53] International Energy Agency, 2011

2. STRUCTURE OF THE KYOTO PROTOCOL: ELEMENTS FOR FAILURE

As mentioned before, the KP has been the main instrument of the UNFCCC. It established that the heaviest burden for cutting GHGs had to rely on the industrialized nations and emerging economies listed in Annex I. The KP created institutions that relied in several principles. The first one is the precaution principle that claims that it is better to prevent emitters from producing pollution than to find solutions afterwards. The second refers to common but differentiated responsibilities, based on the premise that the one who pollutes (or has polluted) must pay for the damages. The third deals with sustainable development in the terms defined by the Brundtland Conference in 1972, where economies must develop but with a rational use of resources for future generations.[54] The KP legitimized these ideas based on the epistemic communities already created since the IPCC.

The need for designing and supporting decisions based on science became fundamental when Article 13 of the KP mentioned that there was a need to call for help of private or public entities, and members or observer states to create a body of knowledge and information structures.[55] These strategies determined what principles were acceptable for the basis of reducing conflicts, and whether governmental actions were legitimate or illegitimate.[56]

In this sense, the lack of legitimacy of the KP (or the constant questioning of its fundaments) resulted in failure. Legitimacy of global institutions, understood as "the justification of authority"[57] could be lost easily. The fact that their authority is self-imposed

[54] Giddens, 2010
[55] Young, 1992:176-192
[56] Keohane, 1998:90-2
[57] Bodansky, 1999

to the governed implies that consensus over the contract (or convention), internally and sometimes internationally, has been achieved. In this sense, global environmental governance exercised little authority due to the lack of legislative powers to legitimize decisions to its member states,[58] and the fact that, under the UNFCCC and KP, opposing states are privileged by the consensus-based rule.[59]

The strategy of partial-consensus over the principles and implementation mechanisms of climate-change governance was another part of the legitimacy problem. The UNFCCC of 1992 got international consensus over the fact that there was a problem over GHG emissions. However, it was until 2004 that epistemic consensus could be reached over the acknowledgment of the anthropogenic causes of this problem. Consequently, there were uncertainties that reflected difficulties in the process of decision-making. [60]

Different from the UNFCCC, the KP of 1997 was not designed under a full-consensus format; this tends to avoid the incompatibility of effective government.[61] The KP is a non-consensus mechanism where different states have different commitments and where these can compensate for such responsibilities. It praises for individual negotiation of GHG management.

The KP was thought as a model of "joint intergovernmental cooperation" where production of a global public good (clean air) was assigned to an international organization, but it based on national cooperation where national policies had to adjust and adapt to gain

[58] Bodansky, 1999
[59] Busby, 2010
[60] In the late 1960's, J.D. Thompson noted how uncertainties for the problem of climate change can make difficult the process of decision-making. He developed a matrix relating beliefs about cause-effect relations and preferences regarding possible outcomes. For further detail see Thompson, 1967.
[61] Bodansky, 1999

international benefits.[62] In other words, national policies would need to adapt to global needs.

Lack of legitimacy was also expressed in that there was no compulsory jurisdiction of global institutions to solve disputes.[63] In fact, Article 18 of the KP establishes that the consequences of non-compliance of the protocol should only be expressed in presenting the consequences and impacts,[64] but there is no mechanism for making it happen.

For addressing legitimacy issues, some institutions were created. The main structures of the protocol are the Conferences of the Parties (COPs), established at the UNFCCC.[65] These conferences served as the meeting mechanism of the Parties to the Kyoto Protocol**.** The UNFCCC establishes that

> the Conference of the Parties, as the supreme body of this Convention, shall keep under regular review the implementation of the Convention and any related legal instruments that the Conference of the Parties may adopt, and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention.[66]

It was established that COPs met in ordinary sessions and could have extraordinary ones. KP could have observers to the COPs, either states or other entities.[67] Alongside, there were the Conferences of the Parties serving as the meetings of the Parties to the Kyoto Protocol (CMP)**.** These conferences were created as a mechanism to include other entities different

[62] Kaul et al, 2003:11
[63] Bodansky, 1999
[64] United Nations Framework Convention on Climate Change, 1998:15
[65] See chronology of COPs in Annex A of this research
[66] See Article 7 of the United Nations Framework Convention on Climate Change, 1992
[67] See Article 14 of the Kyoto Protocol at United Nations Framework Convention on Climate Change, 1998

from the members to the protocol. Parties to the Convention that are not Parties to the Protocol are able to participate in the CMP as observers but without the right to take decisions. The functions of the CMP in the KP are similar to those carried out by the COP for the UNFCCC. The first CMP was held in Montreal, Canada in December 2005, in conjunction with the eleventh session of the Conference of the Parties (COP 11).[68]

There are other institutions of the KP created to help perform the agreement. As stated in Article 6 of the KP, the scope of the protocol was to prevent emissions from sources and transfer pollution into sinks—either generated, acquired or transferred externally. To make operable this transfer, the KP created subsidiary bodies. There are two permanent subsidiary bodies established by the KP that also serve at the COPs or CMPs, the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI)**.**[69] Subsidiarity implied that the best level for implementing a solution would be the one with the competence for so doing.[70] It implicitly meant division of authority to the best-equipped problem solver mechanism or institution. Subsidiarity anticipated that there would be situations where expertise was to be the best level for problem solving or case reviewing.

In this sense, the SBSTA was established by the UNFCCC to provide the Conference of the Parties and its other subsidiary bodies with timely information and advice on scientific and technological matters relating to the Convention. This body shall be open to participation of all Parties and shall be multidisciplinary. It shall comprise

[68] United Nations Framework Convention on Climate Change, 2011e
[69] See Article 8-10 of the Kyoto Protocol at United Nations Framework Convention on Climate Change, 1998:9
[70] Wallace and Wallace, 2000:138-139; Watts, 1999:4-5

government representatives that have competence in the relevant field of expertise.[71] It also develops methodology to define measuring techniques by sector, as well as vulnerability and adaptation techniques. In addition,

> the SBSTA plays an important role as the link between the scientific information provided by expert sources such as the IPCC on the one hand, and the policy-oriented needs of the COP on the other. It works closely with the IPCC, sometimes requesting specific information or reports from it, and also collaborates with other relevant international organizations that share the common objective of sustainable development.[72]

When one country wants, for example, to use land-use change, forest management, and sinks to account for its GHG reduction, the SBSTA has the competence to decide in which cases this can apply and add or substrate modalities for land-use and forestry.[73]

In the other hand, the SBI was established to assess and review the effective implementation of the Convention in Article 10 (1) of the UNFCCC. An important task is to examine the information in the national communications and emission inventories submitted by Parties in order to assess the Convention's overall effectiveness. As well, the SBI is in charge of reviewing the financial mechanisms to assist non-Annex I Parties to help them implement their Convention commitments.[74] The Global Environmental Fund, administered by the World Bank, is the agency that grants the financial aid for KP projects.

[71] See Article 9(1) of the United Nations Framework Convention on Climate Change, 1992
[72] United Nations Framework Convention on Climate Change, 2011a
[73] Although this is a scientific body, negotiations are intense. Some countries as Japan and Canada keep on fighting for including widening the sinks to renewable energies or energy savings. The SBSTA has denied this option for them. See Jaccard, et.al, 2007:67.
[74] United Nations Framework Convention on Climate Change, 2011a

This is also considered as an operative body for the KP and an essential institution to make SBI accomplish its goal.

In addition, there is a bureau that serves as a representative committee for administrative purposes. There are also several constituted committees for special functions that were created during different COPs. These bodies are the Clean Development Mechanism Executive Board (CDM) for accreditation of operational entities, the Joint Implementation Supervisory Committee (JISC) for verification of emission reduction units (ERU) generated by implementation projects, and the Compliance Committee (CC) for facilitating and enforcing the compliance with the protocol. The KP establishes that Annex I countries must provide information in their national communications to demonstrate that they use these mechanisms as a "supplement to domestic action" to achieve their targets.[75]

3. MECHANISMS OF THE KYOTO PROTOCOL AND FAILURE

Annex I countries are requested to meet their targets under national policies. However, the KP provided three complementary market-based mechanisms based on technology transfer and investment, cost efficiency, and on encouraging private sector and developing countries to contribute to emission reduction efforts.[76]

The three mechanisms are focused to create a "carbon market" where countries that have emission units[77] to spare can sell this excess capacity to countries that are not

[75] United Nations Framework Convention on Climate Change, 2011e
[76] United Nations Framework Convention on Climate Change, 2011d
[77] Since carbon dioxide is the principal greenhouse gas, people speak simply of trading in carbon. Carbon is now traded like any other commodity. There are other units which may be transferred under the scheme, each equal to one tonne of CO2: 1) a removal unit (RMU) on the basis of land use, land-use change and forestry (LULUCF) activities such as reforestation; 2) an emission reduction unit (ERU) generated by a

achieving their targets, as established in Article 17 of the KP. In this sense, a new commodity was created in the form of emission reductions or removals. Businesses, non-governmental organizations, and other legal entities may participate in the three following mechanisms under the authority and responsibility of governments: 1) emissions trading schemes, 2) clean development mechanism, 3) joint implementation mechanism.

The Emissions Trading Scheme was established in Article 17 of the KP as an option for individual countries or regions. The idea of setting up this trading scheme was born from a U.S. proposal. However, the Europeans were the ones who developed this proposal through the European Emission Trading Scheme (ETS)—one of the largest operating markets. It was created in 2005 to cover only CO2 of energy sources, especially for producing electricity. This international carbon market established that industrialized countries could sell allowances among each other (Annex I) and among non industrialized countries (Non-Annex). The European ETS granted each European state the right to design their own national plan for allowance allocation, based on Kyoto criteria. It is important to mention that there have been emission reductions due to this mechanism.[78]

This market established the basis for the second Kyoto instrument, the Clean Development Mechanism (CDM) which involved investment in sustainable development projects that reduce emissions in developing countries. Under this mechanism,

> (a) Parties not included in Annex I will benefit from project activities resulting in certified emission reductions; and (b) Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction

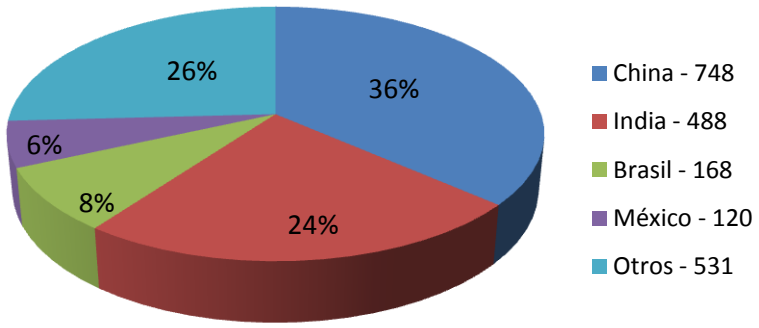
joint implementation project; 3) a certified emission reduction (CER) generated from a clean development mechanism project activity.

[78] Giddens, 2010

> commitments under Article 3, as determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol.[79]

The KP established that this exchange could be between public or private entities and shall be voluntary. The CDM has received critiques for rewarding intensive polluters as China, accused of investing in old-fashioned technology and subsequently being paid to eliminate the source of emissions.[80] The number of projects registered under the CDM reveals that only some countries have had access to this source of funding, as shown in the graphic below.

Graphic 2. Number of CDM Projects by Country to 2010[81]

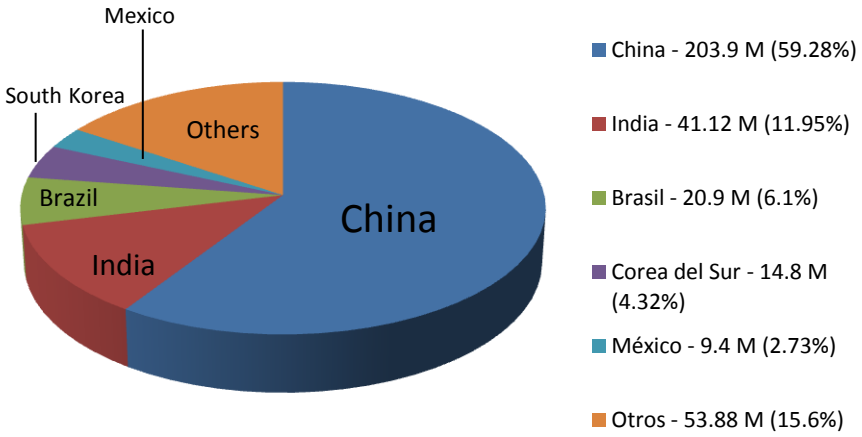


Most countries that use the CDM are emerging economies that have been increasing their GHG emission year after year. Another critique is the appearance of free-riding. Some countries that use this mechanism tend to relax their efforts to reduce their emissions.

[79] See Article 12 of the Kyoto Protocol at United Nations Framework Convention on Climate Change, 1998:12
[80] Busby, 2010:7
[81] Author's elaboration with data from United Nations Framework Convention on Climate Change, 2010b

Indeed, some of the CDM projects are only "accounting tricks," and there are not useful.[82] However, CDM has achieved certain results as show in the graphic below.

Graphic 3. Annual Average Estimates for CO2e Reduction as Result of CDM to 2012 (millions of tons)[83]



The third KP instrument is the Joint Implementation Mechanism (JIM)**,** which enables industrialized countries to carry out joint implementation projects with other developed countries. In spite of this institution, the KP has not performed effective implementation strategies in member countries. In other words, the KP has not achieved GHG reductions through this mechanism. In Article 18, the KP establishes compliance mechanisms to oversee implementation of commitments. However, the costs of doing so were localized regionally and dispersed in different sectors. Some societies, as in the U.S., did not want to pay the cost, as well as politicians did not want to pay the electoral price. In some other

[82] Giddens, 2010:221
[83] Author's elaboration with data from United Nations Framework Convention on Climate Change, 2010b

countries as Canada, the federal government did not have the competence to implement international agreements dealing with some natural resources. This incoherence between commitments and costs resulted in a lack of effectiveness to implement the international rule.

Another failure of the KP can be understood in a results-based approach, where, in spite of all these institutions and potential funding, GHGs total emissions reduction had been modest and far from the goals established. A decade after the enforecement of the KP, almost none of the countries committed under Annex I had accomplished their goals. For example, although some countries of the European Union, as Germany achieved Kyoto goals individually, as a region—way in which they chose to enter into the KP for compensating polluting countries with green ones—it has not. In fact, some others, as Canada and Japan, have increased their emissions. The EIA presented data that demonstrated that in 2010 the total level of emissions increased 3.8%.[84]

New big polluters as India, China, Russia, South Africa, Mexico, and Brazil have not been doing their job either. Although these countries were registered under a non-Annex list,—which did not imply commitments but only delivering annual reports of the state of GHG to United Nations,[85] they register an increasing rate growth for GHG emissions larger than the majority of Annex I countries.

However, the measuring of absolute GHGs has caused some problems. If the countries measure their accomplishments based only on the quantity of historical GHGs reduced, there would be a significant decrease of GHG in some countries of Eastern Europe from 1990 to 1995 when the first national inventory mechanism was launched. The reason

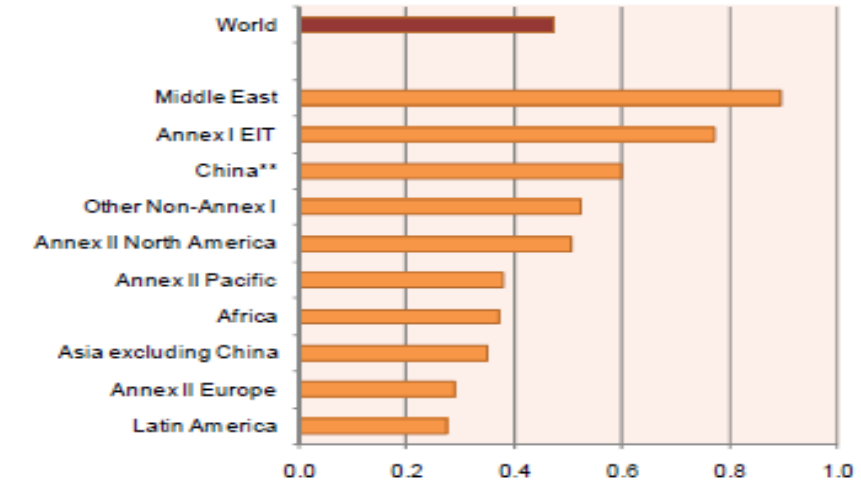
[84] Energy Information Administration, 2010
[85]See Article 10 of the Kyoto Protocol at Author's elaboration with data from United Nations Framework Convention on Climate Change, 1998:10

for this decrease was a deceleration of their economies. The deindustrialization and transformation of the economies of these countries helped to get amazing GHG reduction numbers. Nonetheless, if we focus our attention to the periods of time after 1995, the decrease has been minimum or null.

Results in GHG emissions reduction appear worse when they use other ways to measure them. The first one is by measuring the intensity factor, as to say, the relation between GHG reduction and unit of energy used. The second one is the energy used in a unit of GDP per capita.[86] If we compare the different measurements with sector strategies, the results are quite different and challenge the effectiveness of the absolute-target approach. This difference in measurement has been one of the arguments of emerging economies that do not commit to the KP, as shown in the following graphics.

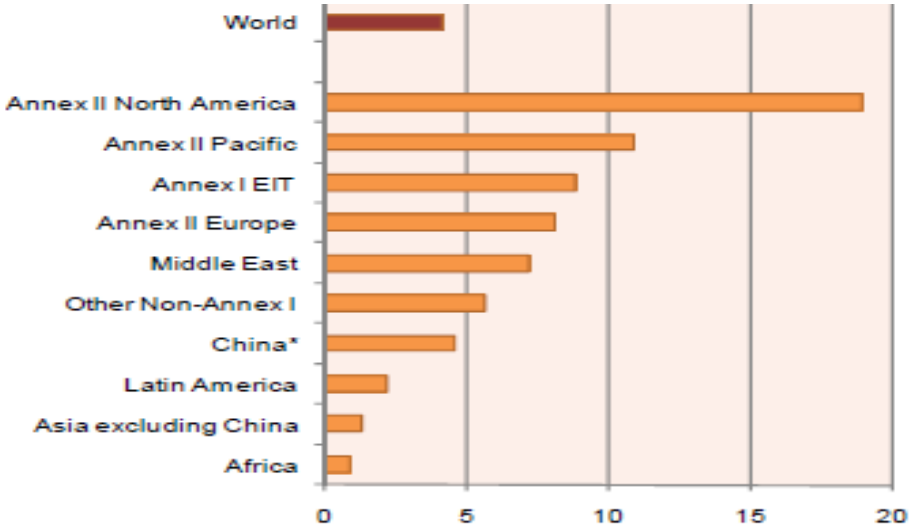
[86] United Nations Environmental Program, 2007: 46-7

Graphic 4. Intensity - World GHG Emissions to 2008 (% of CO2/GDP) [87]



* GDP in 2000 US$ using purchasing power parities.
** China includes Hong Kong.

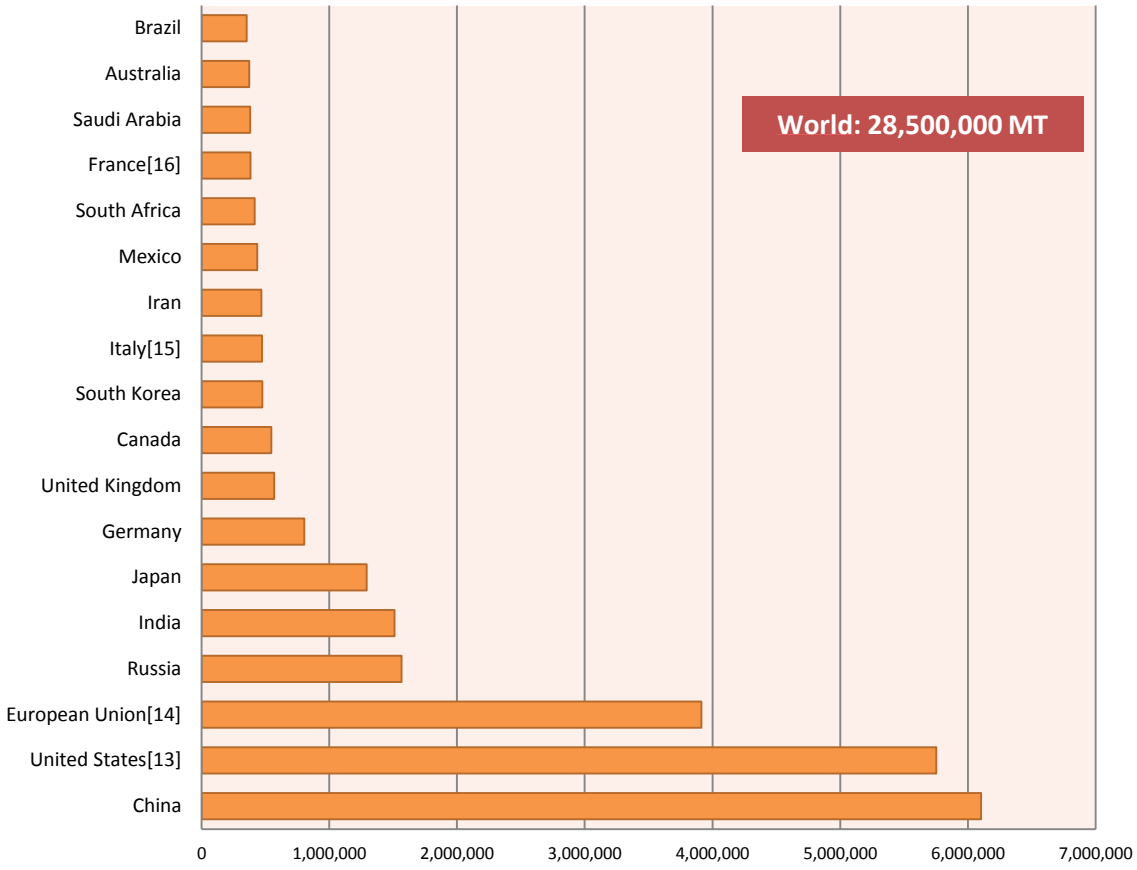
Graphic 5. Per Capita - World GHG Emissions to 2008(% of CO2 per capita)[88]



* China includes Hong Kong.

[87] United Nations Framework Convention on Climate Change, 2011g
[88] United Nations Framework Convention on Climate Change, 2011g

Graphic 6. Absolute – World GHG Emissions to 2008 (GHG MT)[89]



For example, if China and India take the per capita approach, they would appear with very low levels of GHG emissions; if oil-producing countries in Middle East take the intensity approach, they will appear with very high emissions. This debate is one of the cornerstones for the failure of the KP delegitimizing the international instrument.

This debate has also driven some countries to set commitments and proposals outside the KP. Some groups as G8, G20, the OCDE or APEC have been drafting proposals and positions in which they negotiate under other economic logics and with different

[89] United Nations Framework Convention on Climate Change, 2011g

approaches to measure GHG reductions. These positions are presented at the COPs but negotiated outside of it.

In noticeable difference with these groups (some of them regional ones), NAFTA region has had very peculiar positions about GHG management and experimenting reduction with interesting alternatives. This opens up the door to the next chapter where I will present the regional and national strategies for the NAFTA area. In addition, I will explore different levels of authority, other than global, regional or national institutions, that could provide the global public good to address climate change governance. I will propose a re-territorialization and integration of policies for climate change into new forms of articulating interests. In this sense, I will develop the concept of *transnational green-economic regions* to re-build climate change global governance.