

**CLIMATE CHANGE REGIME WITHIN THE CONTEXT OF
INTERNATIONAL ENVIRONMENTAL POLITICS**

**A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY**

BY

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**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
THE DEPARTMENT OF INTERNATIONAL RELATIONS**

AUGUST 2009

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ABSTRACT

CLIMATE CHANGE REGIME WITHIN THE CONTEXT OF INTERNATIONAL ENVIRONMENTAL POLITICS

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August 2009, 166 pages

The objective of this thesis is to analyze the process of the development of climate change regime within the context of international environmental politics. In this context, this thesis aims to scrutinize how principles, norms, rules and decision-making procedures concerning climate change regime have been created during the course of the climate change cooperation. To this end, having started with the explanation of the emergence of environmental issues as a topic of international politics, the thesis focuses on the general assessment of climate change in terms of science and environmental politics. Then, international climate change negotiations together with the United Nations Framework Convention on Climate Change and the Kyoto Protocol that constitute the basis for climate change regime are studied in this thesis. Finally, the thesis will elaborate on the positions and policies of the key players in relation to climate change for the purpose of clarifying their roles in the formation of climate change regime. This thesis concludes cooperation on climate change constitutes an example of a regime established within the scope of international environmental politics.

Keywords: Climate change, Cooperation, Regime, United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol

ÖZ

ULUSLARARASI ÇEVRE POLİTİKASI KAPSAMINDA İKLİM DEĞİŞİKLİĞİ REJİMİ

Şaylan, İbrahim Barış

Yüksek Lisans, Uluslararası İlişkiler Bölümü

Tez Yöneticisi : Doç. Dr. Şule Güneş

Ağustos 2009, 166 sayfa

Bu tezin amacı, uluslararası çevre politikası kapsamında iklim değişikliği rejiminin gelişim sürecini incelemektir. Bu bağlamda, tez, iklim değişikliği rejimine ilişkin ilkelerin, normların, kuralların ve karar-alma prosedürlerinin iklim değişikliğine karşı işbirliği kapsamında nasıl oluşturulduğunu incelemeyi hedeflemektedir. Bu amaçla, çevre konularının uluslararası bir politika konusu olarak ortaya çıkışının açıklanmasını takiben, tez, iklim değişikliğinin bilim ve çevre politikası açısından genel bir değerlendirmesine odaklanmaktadır. Daha sonra, iklim değişikliği rejiminin temelini oluşturan uluslararası iklim değişikliği müzakereleri, Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesi ve Kyoto Protokolü ile birlikte bu tez kapsamında çalışılmıştır. Son olarak, tez, iklim değişikliği rejiminin şekillendirilmesindeki rollerinin aydınlatılması amacıyla, önemli oyuncuların iklim değişikliğine ilişkin pozisyon ve politikalarını incelemektedir. Bu tez, iklim değişikliğine yönelik işbirliğinin, uluslararası çevre politikası kapsamında oluşturulmuş bir rejime örnek teşkil ettiği sonucuna varmaktadır.

Anahtar Kelimeler: İklim değişikliği, İşbirliği, Rejim, Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesi (BMİDÇS), Kyoto Protokolü

*To my dear
father Şaban Şaylan
and
mother Filiz Şaylan*

ACKNOWLEDGEMENTS

I wish to express my deepest gratitude to my supervisor Assoc. Prof. Dr. Şule Güneş for her invaluable guidance, advice, criticism, encouragement and insight throughout the research.

I would also like to thank to Assoc. Prof. Dr. Oktay Tanrıseven and Assoc. Prof. Dr. Aykut Çoban for their useful suggestions and comments.

Moreover, I avail myself of this opportunity to extend my thanks to the Scientific and Technological Research Council of Turkey (TÜBİTAK) for its financial assistance provided for the purpose of conducting my research during the course of Master of Science.

I am also grateful for Pelin Kuzey, the Acting Director of the European Union and Foreign Affairs Directorate, Ministry of Finance for her patience throughout my study.

Finally, I express my sincere appreciation to my father Şaban Şaylan and my mother Filiz Şaylan for their great support and motivation. Özge Evcen also deserves special thanks for her worthy contribution, encouragement and help throughout the research.

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LIST OF ABBREVIATIONS

AAUs	Assigned Amount Units
AG-13	<i>Ad Hoc</i> Group on Article 13
AGBM	<i>Ad Hoc</i> Group on the Berlin Mandate
AOSIS	Alliance of Small Island States
AWG-KP	<i>Ad Hoc</i> Working Group on Further Commitments for Annex-1 Parties under the Kyoto Protocol
AWG-LCA	<i>Ad Hoc</i> Working Group on Long Term Cooperative Action under the Convention
BAP	Bali Action Plan
BAPA	Buenos Aires Plan of Action
CACAM	Group of Countries of Central Asia, Caucasus, Albania and Moldova
CEITs	Countries that are undergoing the process of transition to a market economy
CERs	Certified Emission Reductions
CH₄	Methane
CDM	Clean Development Mechanism
CMP	Conference of Parties serving as the Meeting of Parties to the Kyoto Protocol
COP	Conference of Parties
CO₂	Carbon Dioxide
EEA	European Environment Agency
EIG	Environmental Integrity Group
ENB	Earth Negotiations Bulletin

ERUs	Emission Reduction Units
EU	European Union
EU-ETS	European Union - Emission Trading Scheme
FAO	Food and Agriculture Organization
G-77/China	Group of 77 and China
GDP	Gross Domestic Product
GEF	Global Environment Facility
GRULAC	Group of Latin American and Caribbean States
HFCs	Hydrofluorocarbons
IEA	International Energy Agency
IISD	International Institute for Sustainable Development
INC	Intergovernmental Negotiating Committee
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
JUSSCANNZ	A group of countries comprising Japan, the USA, Switzerland, Canada, Australia, Norway and New Zealand
LULUCF	Land Use, Land Use Change and Forestry
MEAs	Multilateral Environmental Agreements
N₂O	Nitrous Oxide
NASA	National Aeronautics and Space Administration
NDRC	National Development and Reform Commission
O₃	Ozone
OBG	Open Balkan Group
OECD	Organization for Economic Cooperation and Development

OPEC	Organization of Petroleum Exporting Countries
Para.	Paragraph
PFCs	Perfluorocarbons
RECIEL	Review of European Community and International Environmental Law
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SF₆	Sulphur Hexafluoride
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
WHO	World Health Organization
WMO	World Meteorological Organization
ZaöRV	Zeitschrift Für Ausländisches Öffentliches Recht und Völkerrecht

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CHAPTER 1

INTRODUCTION

Obviously, in order to survive all the living things need a healthy environment that provides the basic needs such as air, water, food and shelter. Taking into account this essential role of the environment in sustaining the life on the earth, protection of environment against harmful human activities has been discussed widely at international level by the early second half of the 20th century. Notably, this period witnessed several global environmental problems including heavy air pollution, acid rains and transboundary water pollution. In the meantime, several developed countries such as the United States of America (USA), United Kingdom, Canada, France and Germany had begun to formulate their national environmental policies in modern terms that led to a further contribution to the process of growing awareness about environmental problems as well as the development of environmental policy at international level. Following this period, the 1970s and the 1980s represent a great advance in the field of institutionalization of the environmental policies at international level together with a number of intergovernmental gatherings and conferences on environment and climate change.

The Stockholm Conference held in 1972 is a significant milestone in the development and recognition of the environmental policy at international level. This Conference paved the way for further developments in relation to rise of scientific and political concern about environmental issues, especially atmospheric problems such as depletion of the ozone layer and climate change. Moreover, owing to a series of scientific and intergovernmental environmental conferences as well as books and articles published in the field after the 1972 Stockholm Conference, international community has begun to pay more attention to the environmental issues. This ongoing awareness raising process at both national and international levels has been

rewarded with one of the most significant environmental events in the history, that is to say, the Rio Conference or the United Nations Conference on Environment and Development (UNCED) held in 1992. The Rio Conference is a cornerstone of the formation of the international climate change regime inasmuch as the United Nations Framework Convention on Climate Change (UNFCCC) was adopted during this conference.

In this context, a question comes to mind. How did climate change emerge as a crucial policy issue within the context of international environmental politics? In fact, climate change has become a significant part of the international environmental politics owing to the accumulation of scientific knowledge in the field since the late 19th century. Presently, climate change science clearly shows that anthropogenic activities are the major factors in the emergence of climate change as a global environmental challenge. Furthermore, as a result of intensifying far-reaching adverse effects of climate change in the last decades, international community has begun to involve heavily in the climate change issues through focusing on the causes and impacts of as well as the measures to be taken against climate change. Particularly, since climate change reached a point that has devastating impacts on the world economy and human welfare, the cooperation in the field of climate change has come to the agenda of international environmental politics.

So what is the reason behind the special place of climate change in international environmental political agenda and even international relations? Definitely, the adverse affects of climate change respect no boundaries between countries. It is possible to observe the detrimental effects of climate change all over the world. In some regions, these damaging effects could be seen as extreme events including drought and ensuing famine, and as for other regions these effects could be in the shape of sea level rise, flooding and cyclone that may put many people in danger. According to a latest report published by Global Humanitarian Forum, climate change causes 300,000 death every year and also an economic loss about 125 billion

dollars annually.¹ Climate change is also considered a unique problem on the grounds that the problem itself and a solution to it pertain to a number of policy areas and sectors. Clearly, numerous sectors and areas, namely energy, transport, industry, agriculture, forestry and health are closely linked to the struggle against climate change. As Skolnikoff claims, “global climate change is the apotheosis of the idea that everything is related to everything else.”² Therefore combating climate change, as one of the greatest global threats ever to face humanity, necessitates global cooperation and even a universal effort among all countries regardless of being developed or not developed.

Thus, the adoption of the UNFCCC during the Rio Conference in 1992, as an outcome of the growing international concern about this serious global environmental problem, led to the start of international cooperation in the field of climate change. Evidently, the UNFCCC is the starting point for the formation of international climate change regime by means of setting out the guiding principles, defining the boundaries of the cooperation issues and also establishing the necessary institutions for the future international climate change regime. Apparently, the Conference of Parties (COP), the subsidiary bodies and the secretariat established by the UNFCCC have played a vital role in the development of the climate change regime so far. In this context, this powerful institutional structure of the UNFCCC is one of the key factors for making enhanced cooperation in the field of climate change possible. However, the UNFCCC was not an adequate step towards dealing with climate change sufficiently. Although it aims at stabilizing global greenhouse gas emissions in the atmosphere, it contains no binding emission limitation and reduction commitments for parties to this end. This is partly because of its legal character, that is to say, UNFCCC, as a framework convention, is expected to primarily lay the foundations for a future climate change regime. In addition, there was no consensus among countries whether human activities cause climate change or not during the adoption of the UNFCCC. Actually, this was a result of not only

¹ Global Humanitarian Forum, *Human Impact Report Climate Change: The Anatomy of A Silent Crisis*, (Geneva, 2009), p. 1, http://ghfgeneva.org/Portals/0/pdfs/human_impact_report.pdf

² Eugene B. Skolnikoff, *The Elusive Transformation: Science, Technology and the Evolution of International Politics*, (Princeton: Princeton University Press, 1993), p. 183.

scientific uncertainty about climate change existed in that time but also the positions of some developed countries that perceived combating climate change as a stumbling block to their economic growth.

However, both the deepening adverse effects of climate change and the progress made in climate change science showed that there was a great need for an urgent action against climate change through determining more ambitious targets for limitation and reduction of greenhouse gas emissions. Thus, parties to the UNFCCC agreed to adopt the Kyoto Protocol in 1997 after a series of long-lasting negotiations. The Kyoto Protocol, built on the objectives, principles and the institutions of the UNFCCC, is a turning point in the history of international environmental politics. The Kyoto Protocol introduces legally binding quantified emissions targets for some developed country parties specified in accordance with the UNFCCC. It also creates several interesting market mechanisms that provide flexibility for parties in complying with their commitments. However, owing to the USA repudiation of the Kyoto Protocol, it entered into force in 2005 after a tough ratification process that was finalized only after the Russian ratification. At this juncture, it is worth noting that the European Union (EU) took the leadership role in this process and made a great effort to reach a successful outcome in the ratification process of the Kyoto Protocol.

Currently, international community is negotiating the climate change regime for the post-2012 period because of the expiry of the Kyoto Protocol in 2012. In this respect, the current negotiations have been proceeding on two parallel tracks under the Kyoto Protocol and the UNFCCC. The negotiations within the scope of the Kyoto Protocol focus on the further commitments of Annex-1 parties to the UNFCCC for the post-2012 period in terms of greenhouse gas emissions reduction and limitation. The other track under the UNFCCC deals with shared vision, mitigation, adaptation, finance and technology in accordance with the objectives of the Bali Action Plan (BAP) agreed in COP-13. These negotiations are planned to be finalized by December 2009. Up to now, it is not certain how the post-2012 climate change regime will be formulized. Parties may come to an agreement on adopting a new protocol or only

amending the Kyoto Protocol. Whatever the outcome, probably, the future climate change regime will be built on the existing regime based on the UNFCCC and the Kyoto Protocol.

The thesis consists of five chapters including the introduction and conclusion parts. The second chapter subsequent to the introduction chapter of the thesis will initially give general explanatory information about climate change through putting a special emphasis on the science for the evolution of climate change regime. Furthermore, significance of climate change will be stressed by means of showing the observed and potential impacts as well as the consequences of global climate change. Having started with the explanation of climate change in scientific terms, the chapter will analyze the process of awareness-raising towards environmental issues before the 1972 Stockholm Conference. Following this part of the chapter, the evolution of international environmental politics and developments in the field of climate change from the 1972 Stockholm Conference to the 1992 Rio Conference will be examined through concentrating on several important scientific and intergovernmental meetings and conferences on environment and climate change. In this respect, the vital role of the United Nations (UN) and Intergovernmental Panel on Climate Change (IPCC) in the development of international climate change regime will be scrutinized as well.

The third chapter will shed light on the formation of the international climate change regime through elaborating on the international climate change talks that started in the early 1990s. In this context, firstly, the negotiation process culminated with the adoption of the UNFCCC will be explained. Prior to the explanation of the objectives, principles, main institutions of and the commitments made under the UNFCCC, this chapter will initially talk about the process of regime formation in relation to climate change from the perspective of regime theories. Following the explanation of the UNFCCC and its relevance to regime theories, this chapter will analyze the period between the UNFCCC and the Kyoto Protocol and then the Kyoto Protocol in a comprehensive manner. In the last part of this chapter, international climate change negotiations for the post-2012 period will be examined up to COP-

14, the last COP held in Poznan-Poland in December 2008. Doing so it will be possible to foresee how the post-2012 climate change regime will be developed in this negotiation process. At this juncture, bearing in mind that this thesis has been written in the midst of the ongoing negotiations for the post-2012 climate change regime. Therefore, it only covers some part of these negotiations.

The fourth chapter of the study will deal with the positions and policies of the key players in relation to the current international climate change regime as well as the ongoing negotiations for the post-2012 climate change regime. Apparently, the current international climate change regime based on the UNFCCC and the Kyoto Protocol has been shaped by the views, proposals and policies of these crucial actors participated in the climate change negotiations. Moreover, these key players will play a decisive role in determining the principles, rules and objectives of future climate change regime during these negotiations. In this context, for a better understanding of the process of the formation of the international climate change regime, it is necessary to focus on the positions and policies of the key players in the climate change regime, namely the EU, the USA, Japan, the Russian Federation, China and several other political negotiation groups and coalitions as well.

This thesis aims to contribute to the literature through arguing that climate change cooperation based on the UNFCCC and the Kyoto Protocol can be seen as a regime, albeit with some shortcomings, built in the field of international environmental politics. In this context, the thesis will elaborate on the formation and development of the climate change regime through focusing on the cooperation process on this global problem. In order to clarify this issue, this study will put special emphasis on the institutions, principles, reporting and compliance mechanisms and the interplay between the regime and science within the context of climate change issue. One of the aims of this thesis is also to indicate how international community has developed the current climate change regime to deal with such an unprecedented and profound global challenge. Furthermore, this study will specifically deal with the divergent and sometimes conflicting positions and policies of the key players in the formation of climate change regime that also directly affects these actors in some way.

CHAPTER 2

EMERGENCE AND SIGNIFICANCE OF CLIMATE CHANGE AS A GLOBAL ENVIRONMENTAL CHALLENGE

This chapter is devoted to the assessment of climate change as a global environmental problem in scientific terms and the developments in the international environmental politics as well as climate change policy until the adoption of the UNFCCC in 1992. In addition, the central role of both the UN and IPCC for the formation and development of international climate change regime will also be analyzed within the scope of this chapter.

2.1. A General Evaluation of Climate Change

2.1.1. Definition of Climate Change

There have always been ongoing changes at different levels in climate throughout 4.6 billion years of geological history. Predominantly, natural factors and internal fluctuations in the atmosphere including continental drift, variations in the earth's orbit around the Sun, changes in solar radiation, volcanic emissions, aerosols and cloud cover³ have a determining role in the climatic changes until the industrial revolution in the late 18th century. However, besides these natural factors, human activities, particularly its industrial activities, have emerged as one of the defining factors for increasing concentration of greenhouse gases in the atmosphere. Therefore, human impacts together with natural factors should be taken into account when making a definition of climate change.

³ A. Barrie Pittock, *Climate Change: Turning up the Heat*, (London: Earthscan, 2005), p. 30.

According to the UNFCCC, climate change means (Article 1, para. 2, UNFCCC):

a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

On the other hand, IPCC defines climate change as “any change in climate over time, whether due to natural variability or as a result of human activity.”⁴ In this context, anthropogenic dimension of climate change has become the focal point for the struggle with this global problem. Thus, a number of countries, which determined to tackle with climate change, initiated national and global action and cooperation against climate change challenge. This process has resulted in the development of climate change policy under international environmental politics.

2.1.2. Greenhouse Effect

Initially, there is a need for focusing on natural and anthropogenic greenhouse gases in the atmosphere prior to explanation of greenhouse effect. Greenhouse gases are defined as the trace gases with the ability to absorb heat radiated from the earth surface.⁵ According to another definition made by the UNFCCC (Article 1, para. 5, UNFCCC) “greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.”

Around 99% of the atmosphere consists of nitrogen, oxygen and argon that are not greenhouse gases. Regardless of their small-scale in the atmosphere, greenhouse gases are not only vital and but also dangerous for sustaining life in the earth. In this regard, it is necessary to make a distinction between natural greenhouse gases and

⁴ IPCC, “Summary for Policymakers” in *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, [S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)], (Cambridge: Cambridge University Press, 2007), p. 2, <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>

⁵ The George C. Marshall Institute, *Climate Issues&Questions*, (Washington D.C., Third Edition, February 2008), p. 8, <http://www.marshall.org/pdf/materials/577.pdf>

indirect or anthropogenic greenhouse gases for a better explanation of greenhouse effect.

Water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and ozone (O₃) are the natural greenhouse gases. Naturally, these gases have already existed in the atmosphere for sustaining life. However, people can increase the concentration of these gases substantially mainly through their industrial activities. Among the natural greenhouse gases, water vapor that depends on several factors such as temperature and humidity is the most important and abundant one. However, people may change its concentration indirectly through making climate warmer. Despite naturally existed in the atmosphere, the concentration of CO₂, the most influential greenhouse gas altering the composition of the atmosphere, has increased dramatically due to fossil fuel consumption in energy, industry and transport sectors as well as land use change and deforestation. CH₄ naturally exists from wetlands, but its concentration has increased because of landfills, coal mining, leakage from natural gas pipelines and oil systems, livestock, wastewater treatment, rice cultivation, biomass and fossil fuel combustion.⁶ N₂O is another minor greenhouse gas resulting from agricultural activities such as fertilizing, fossil fuel combustion, chemical industry such as nylon production. The concentration of O₃ in the troposphere is also rising due to the activities related to industrial production and transport.

Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) are indirect or mainly man-made greenhouse gases which have emerged owing to a variety of industrial activities including semiconductor manufacturing, electrical transmission and distribution, aluminum and magnesium production. These greenhouse gases had not existed naturally in the atmosphere before the start of industrial activities and furthermore concentration of these gases is continuously rising owing to intensified industrial activities.

⁶ Kevin A. Baumert, Timothy Herzog and Jonathan Pershing, *Navigating the Numbers: Greenhouse Gas Data and International Climate Policy*, (World Resource Institute, Washington D.C., 2005), p. 6.

Within the scope of international cooperation on climate change, CO₂, CH₄, N₂O, HFCs, PFCs and SF₆⁷ are recognized as the greenhouse gases that should be reduced in the process of combating climate change. Thus, by determining the greenhouse gases to be dealt with one by one in scientific and legal terms, a more specifically targeted concerted action for mitigation of greenhouse gases is ensured at international level.

These greenhouse gases have different levels of global warming potentials (GWP)⁸ and various atmospheric lifetimes that determine their weight and shares in contributing to global warming. According to the GWP of CO₂ accepted as 1 in 100 year time horizon, the GWPs of CH₄, N₂O, SF₆, PFCs, HFCs are respectively 21, 310, 23900, 6500-9200 and 140-11700.⁹ And as for their lifetimes, the lifetime of CO₂ is variable, but CH₄, N₂O, SF₆, PFCs, HFCs have a lifetime respectively 12±3, 120, 3200, 2600-50000 and 3-264 years.¹⁰ All these indicators show that these greenhouse gases may have long-term effects on climate; therefore, future generations will face with the adverse impacts of our today's environmentally harmful activities.

Actually, greenhouse effect has naturally occurred throughout the earth history. Approximately one-third of the energy coming from the sun is reflected back to the space immediately. The remaining two-third absorbed by the earth warms the earth's surface. In order to balance this absorbed energy, the earth sends this energy back out into the space in the form of infrared radiation. However, some of this infrared

⁷ United Nations, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Annex A, 1998, <http://unfccc.int/resource/docs/convkp/kpeng.pdf>

⁸ GWP is a time dependent index used for comparing the radiative forcing of a specific greenhouse gas with regard to that of CO₂. In this context, the weight of a greenhouse gas included in the Kyoto Protocol is assessed according to the GWP over a 100-year time horizon as clarified in the 1995 Second Assessment Report of the IPCC. See International Petroleum Industry Environmental Conservation Association (IPIECA), *Climate Change: A Glossary of Terms*, (London, 4th Edition, April 2007), p. 34.

⁹ IPCC, *Climate Change 1995: The Science of Climate Change: Summary for Policymakers and Technical Summary of the Working Group I Report*, p. 22, http://unfccc.int/ghg_data/items/3825.php

¹⁰ *Ibid.*

radiation escape into the space and the rest of it is absorbed by greenhouse gases and re-emitted towards the earth's surface. This process is called the 'greenhouse effect.'

This natural greenhouse effect makes the earth's global mean temperature 15°C instead of being -18°C without any natural greenhouse effect.¹¹ According to Dr. Fraser, if there is no such greenhouse effect, we are all dead.¹² Obviously, "without the greenhouse effect, the earth would have been a large uninhabitable snowball."¹³ The natural greenhouse effect, which makes life possible, is essential for all the living things to survive. However, for some scientists, in order to avoid the use of the misnomer, this natural greenhouse effect should be called 'atmospheric effect.'¹⁴

Due to increasing concentration of the greenhouse gases acting like a blanket, notably CO₂ and other man-made greenhouse gases, the natural greenhouse effect is intensified and makes the earth's surface warmer than naturally it should be. This further rise in the potency of the greenhouse effect is known as the 'enhanced greenhouse effect.' Enhance greenhouse effect resulting from anthropogenic greenhouse gases leads to global warming and thus it makes the international community pay more attention to the fight against climate change.

2.1.3. Causes of Climate Change and the Role of Human Activities

In fact, the causes of climate change are closely linked to the human activities led to anthropogenic greenhouse effect and global warming. As a result of rise in fossil fuel consumption owing to the intensified industrial activities and global population

¹¹ John Weier, "Global Warming," *Earth Observatory NASA*, 8 April 2002, http://earthobservatory.nasa.gov/Features/GlobalWarming/global_warming_2002.pdf

¹² Mikdat Kadıođlu, *Küresel İklim Deđişikliği ve Türkiye: Bildiđiniz Havaların Sonu*, (İstanbul: Güncel Yayıncılık, İkinci Baskı, Ocak 2007), p. 61.

¹³ Knut H. Alfsen, *Climate Change and Sustainability in Europe*, (CICERO Policy Note 2001: 03, Oslo, October 2001), p. 3, <http://www.cicero.uio.no/media/1436.pdf>

¹⁴ R.G. Fleagle and J.A. Businger, *An Introduction to Atmospheric Physics*, (New York: Academic Press, International Geophysical Series, Vol. 5, 1963) in R. Lee, "The 'Greenhouse' Effect," *Journal of Applied Meteorology*, (Vol. 12, Issue. 3, April 1973, pp. 556-557), p. 557.

growth, the concentration of greenhouse gas began to increase dramatically. Particularly, since the 1950s, with rapid industrialization process at global level, the role of people have become much more influential in changing climatic patterns.

Several indicators relating to the increasing trends in energy consumption and population growth facilitate our understanding of the major causes of climate change challenge. The world population, which was 980 million in 1800,¹⁵ has become 3 billion in 1959 and 6.7 billion in 2008,¹⁶ an increase of about 584%. Furthermore, the world population is estimated to reach 8.1 billion by 2020s, 9.8 billion by 2050s and 10.7 billion by 2080s.¹⁷ As regards for energy indicators, total fossil fuel consumption including oil, coal and natural gas between 1958 and 1996 has increased by 194%.¹⁸ Moreover, world primary energy demand is projected to rise by 45% until 2030 compared to the 2006 levels.¹⁹ These increasing trends in energy consumption and world population also stimulated the other related activities and factors resulting in climate change such as booming industrial and agricultural production, transport, waste, urbanization, land use change and deforestation.

As stated by the IPCC, “most of the observed increase in globally averaged temperatures since mid-20th century is very likely (90% of possibility) due to the observed increase in anthropogenic greenhouse gas concentrations.”²⁰ Among the

¹⁵ Chris Spence, *Global Warming: Personal Solutions for a Healthy Planet*, (New York: Palgrave Macmillan, 2005), p.10.

¹⁶ U.S. Census Bureau, International Data Base, *World Population: 1950-2050*, <http://www.census.gov/ipc/www/idb/worldpopgraph.html>

¹⁷ Hadley Center for Climate Prediction and Research, *Climate Change and its Impacts: Stabilization of CO₂ in the Atmosphere*, (The Met Office, London, October 1999), p. 10, <http://www.metoffice.gov.uk/research/hadleycentre/pubs/brochures/COP5.pdf>

¹⁸ Environment Canada, *State of the Environment InfoBase: National Environmental Indicator Series, Global Fossil Fuel Consumption (1958-1996)*, http://www.ec.gc.ca/soer-ree/English/Indicators/Issues/Energy/Tables/ectb07_e.cfm

¹⁹ International Energy Agency (IEA), *World Energy Outlook 2008*, (OECD/IEA, Paris, 2008), p. 4, http://www.worldenergyoutlook.org/docs/weo2008/WEO2008_es_english.pdf

²⁰ IPCC, *Climate Change 2007: Synthesis Report: Contribution of Working Groups I, II and III to the Fourth Assessment Report of the IPCC* [Pachauri, R.K and A. Reisinger (eds.)], (IPCC, Geneva, 2007), p. 5, http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf

anthropogenic greenhouse gases, CO₂ is the most influential one with the share of about 76.7% in total greenhouse gas emissions in 2004 [the share of other greenhouse gases: CH₄ (14.3%); N₂O (7.9%); and SF₆, HFCs and PFCs (1.1%)].²¹ In this context, energy supply (25.9%), industry (19.4%), forestry (17.4%), agriculture (13.5%), transport (13.1%), residential and commercial buildings (7.9%), waste and wastewater (2.8%) are the main sectors that are responsible for the total global anthropogenic greenhouse gas emissions in 2004.²² Predominantly, combustion of fossil fuels in these sectors resulting in CO₂ emissions comes first among the causes of climate change. Moreover, agricultural production, waste, land use change and deforestation are the other defining factors led to climate change at the present time.

Recently, the atmospheric concentrations of both CO₂ and CH₄ have reached a value that surpassed the natural range over the last 650,000 years. In December 2006, National Oceanic and Atmospheric Administration at Mauna Loa in Hawaii measured the atmospheric concentration of CO₂ as 382.43 ppm, which was naturally between 180-300 ppm.²³ Scientific findings revealed that global greenhouse gas emissions have grown by 70% between 1970 and 2004 and during the same period notably CO₂ emissions have increased by 80%.²⁴ According to the IPCC scenarios, global greenhouse gas emissions are estimated to grow by 25%-90% between 2000 and 2030.²⁵ An Organization for Economic Cooperation and Development (OECD) report highlighted that without taking mitigation measures, global greenhouse gas emissions are projected to increase by about 50% as of 2050.²⁶ However, several

²¹ *Ibid.*

²² *Ibid.*

²³ Kelly Levin and Jonathan Pershing, "Climate Science 2006-Major New Discoveries," *World Resources Institute Issue Brief*, (Washington D.C., March 2006), p. 2 and see also <http://www.esrl.noaa.gov/>

²⁴ IPCC, *Climate Change 2007: Synthesis Report*, p. 2.

²⁵ *Ibid.*

²⁶ OECD, *Preparation of the 4-5 June 2008 Council Meeting at Ministerial Level: The Economics of Climate Change*, C(2008)60, 4 April 2008, p. 5.

factors including population growth, economic, technological and social trends will determine the rate of the future global greenhouse gas emissions.

To make clearer the human impact on climate change, the IPCC's assessment reports are very useful reference resources. The IPCC's first assessment report adopted in 1990 underlined greenhouse gases concentration in the atmosphere resulting in global warming increased due to the human activities despite of the fact that uncertainties about climate change had still been continuing. This report, which was announced during the ongoing negotiations on climate change, became an encouraging factor for the negotiating parties that suspected human impact on climate change. In 1995, the second assessment report clearly indicated "the balance of evidence, from changes in global mean surface air temperature and from changes in geographical, seasonal and vertical patterns of atmospheric temperature, suggests a discernible human influence on global climate."²⁷ The third assessment report of the IPCC released in 2001 reflected the substantial progress made in understanding and evaluating climate change in scientific terms. This report covered a wide range of data with respect to observed and possible changes in climate, the impacts of these changes on the human environment and the response measure to cope with climate change.²⁸ This report also confirmed the necessity of reducing greenhouse gas emissions to reach the ultimate objective of the UNFCCC. Finally, the fourth assessment report of the IPCC in 2007 suggests, "warming of the climate system is unequivocal, as is now evident from observations of increase in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level."²⁹ Furthermore, this report notes climate change is already going on and human activities have substantially contributed to this process as well.

²⁷ IPCC, *Climate Change 1995: IPCC Second Assessment Report*, (IPCC, Geneva, 1995), p. 5, <http://www.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>

²⁸ See IPCC, *Climate Change 2001: Synthesis Report: Summary for Policymakers*, [Watson, R. T. and the Core Writing Team (eds.)], (IPCC, Geneva, 2001), <http://www.ipcc.ch/pdf/climate-changes-2001/synthesis-spm/synthesis-spm-en.pdf>

²⁹ IPCC, *Climate Change 2007: Synthesis Report*, p. 2.

Explicitly, increasing trends in global greenhouse gas emissions due to the human activities will bring about further global warming in the future. According to IPCC, this process would result in numerous influential changes in the climate system in the 21st century that would very likely be more influential than those observed throughout the 20th century.³⁰ Consequently, all these scientific findings show that there is a need for strengthened global cooperation on climate change in order to avoid the potential adverse impacts of climate change and provide a healthy environment for future generations of mankind as well.

2.2. Observed and Potential Impacts and Consequences of Climate Change

As a multi-faceted global challenge, climate change has various and numerous adverse impacts on the human environment and many natural ecosystems. In this respect, higher temperatures, drought, desertification, melting glaciers and snow cover, sea level rise, more frequent extreme weather events, changing rainfall and precipitation patterns, increased rate of extinction, increased health risks, decline in agricultural production, starvation and migration could be cited among the far-reaching impacts of climate change.

Global warming, which brings about other interrelated detrimental impacts on various parts of ecosystem and the human environment, is one of the most salient impacts of climate change. Global average surface temperature has increased by 0.74°C (\pm 0.18°C) over one hundred year period between 1906 and 2005.³¹ At first sight, this change may be seen small in quantity. However, suffice it to say that there has been only a 5°C temperature change that occurred since the last ice age (15,000-50,000 years ago),³² how significant this change could be easily figured out. Furthermore, remarkably, eleven of the twelve warmest years recorded since 1850 have been observed in the period between 1995 and 2006; and 1998 and 2005 were

³⁰ *Ibid.*, p. 7.

³¹ IPCC, *Climate Change 2007: The Physical Science Basis*, p. 5.

³² Mikdat Kadioğlu, *op. cit.*, p. 256.

the warmest years respectively that have been recorded up to now.³³ Unfortunately, the future looks bleak in terms of temperature changes according to the IPCC's global warming projections. By the end of the 21st century global average temperature is projected to increase by a range between 1.8°C and 4°C for the best estimates of IPCC's low and high scenarios.³⁴

Due to climate change, global sea level has increased by 17cm (\pm 5cm) during the 20th century.³⁵ Increasing global temperature triggered this rise in sea level through global thermal expansion of ocean water and melting glaciers and ice caps. Sea level is estimated to rise between 18-59cm by the end of the 21st century.³⁶ Sea level rise is of critical importance to the coastal regions where many people live owing to the fact that it may bring about coastal erosion, salinization and inundation and deterioration of coastal lands. In this regard, many low-lying coastal countries, islands and vast areas of river delta are under the threat of disappearing because of flooding by sea level rise. For instance, the low-lying countries such as the Netherlands, Bangladesh, Viet Nam and Egypt as well as a number of small island states in the Caribbean and Pacific are at risk of being destructed by future sea level rise. If global temperature increases by 3-4°C, 330 million people will be obliged to being displaced by flooding.³⁷ Certainly, such impacts of climate change will lead to significant socio-economic and macroeconomic costs as well as irreversible security implications.

Melting snow cover, glaciers and ice caps are another well-known impact of climate change. According to the satellite data announced by the National Aeronautics and Space Administration (NASA), more than 2 trillion tons of ice land in Greenland, the

³³ IPCC, *Climate Change 2007: The Physical Science Basis*, p. 5-36.

³⁴ R.K. Pachauri, "Climate change is unequivocal" in David Simpson (ed.), *Climate Action*, (Sustainable Development International and UNEP, London, December 2007, pp. 23-25), p. 24.

³⁵ IPCC, *Climate Change 2007: The Physical Science Basis*, p. 7.

³⁶ *Ibid.*, p. 13.

³⁷ UNDP, *Human Development Report 2007/2008: Fighting climate change: Human solidarity in a divided world*, (New York: Palgrave Macmillan, 2007), p. 9, http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf

Arctic, Antarctica and Alaska have melted since 2003.³⁸ Snow cover and mountain glaciers have considerably decreased in several regions particularly during the spring. To illustrate, half of the glaciers in the European Alps have shrunk since the Industrial Revolution; furthermore, the whole ice cap of Mount Kilimanjaro is estimated to disappear by 2015.³⁹ Arctic sea ice reached its smallest extent in 2007 according to the satellite data recorded since 1979 and thus the Northwest Passage has been opened for the first time in human memory.⁴⁰ Satellite data reveals that the planet has lost about 10% of its snow cover since the 1960s.⁴¹ Thus, ecosystems in Greenland, the Arctic, Antarctica and Alaska together with the vulnerable coastal regions and islands are adversely affected from accelerated sea level rise stemmed mainly from melting glaciers and ice caps.

It is expected that climate change will also have considerable impacts on water resources. Water resources are vital not only for agricultural production for which irrigation accounts the two-third of water use⁴² but also for drinking water. However, owing to climate change, the problems of water shortage and drought broke out and desperately, people may be at risk of food insecurity in the future. There are already 1.7 billion people live in water stress countries and it is estimated that this number will increase to 5 billion people by 2025.⁴³ According to another study, an additional 1.8 billion people could face with water scarcity by 2080.⁴⁴ According to an IPCC

³⁸ “NASA: 2 Trillion Tons of Ice Have Melted Since 2003,” Tuesday, 16 December 2008, <http://www.foxnews.com/story/0,2933,467526,00.html>, accessed on 26 February 2008.

³⁹ Chris Spence, *op. cit.*, p. 49.

⁴⁰ Pew Center on Global Climate Change, *Climate Change 101: Understanding and Responding to Global Climate Change*, (Washington D.C., January 2009), p. 5, <http://www.pewclimate.org/docUploads/Climate101-Complete-Jan09.pdf>

⁴¹ Peter Bunyard, “Crossing the Threshold,” *The Ecologist*, (Vol. 34, No. 1, February 2004, pp. 55-58) in Paul McCaffrey (ed.), *Global Climate Change*, (The Reference Shelf, Vol. 78, No. 1, Bronx, New York: the H.W. Wilson Company, 2006), p. 90.

⁴² John Houghton, *Global Warming: The Complete Briefing*, (Cambridge: Cambridge University Press, Third Edition, 2004), p. 162.

⁴³ Michael Williams (ed.), *Climate Change Information Kit*, (UNEP and UNFCCC, September 2002), p. 13.2, http://unfccc.int/resource/docs/publications/infokit_2002_en.pdf

⁴⁴ UNDP, *Human Development Report 2007/2008*, p. 9.

report, there would be water stress due to decreasing water resources stemmed from climate change in many semi-arid and arid areas such as the Mediterranean Basin, western USA, southern Africa and northeastern Brazil.⁴⁵ As a result of water scarcity led to a decline in agricultural production, it is estimated an additional 600 million people to be affected by malnutrition.⁴⁶ Remarkably, some regions are more vulnerable to the water scarcity because of their economic dependence on agricultural production. Africa represents the best example for this case on the grounds that its agricultural sector constitutes about 40% of its gross national product and 70% of the African workers are employed in this sector as well.⁴⁷

Climate change also threatens human health through adversely affecting food, air and water resources. Due to increasing temperature, which provides appropriate conditions for several infectious diseases to spread, malaria and dengue fever may become more influential and prevalent. Because of deteriorating water resources and poor drinking water quality, cholera and diarrhoea could become more hazardous to human health in vulnerable regions where people have poor social and economic conditions. It was projected that climate change was responsible for nearly 2.4% of worldwide diarrhoea, 6% of malaria in some middle-income countries and 7% of dengue fever in some industrialized countries in 2000.⁴⁸ Diarrhoea and malaria are estimated to kill 1.9 million and 0.9 million people per year respectively.⁴⁹ The number of people to be adversely affected from cardio-respiratory diseases, death and injuries related to the extreme weather events will grow due to climate change in the future.

⁴⁵ IPCC, *Climate Change and Water*, [B.C. Bates, Z.W. Kundzewicz, S. Wu and J.P. Palutikof (eds.)], (Technical Paper of IPCC, Geneva, 2008), p. 3.

⁴⁶ UNDP, *Human Development Report 2007/2008*, p. 9.

⁴⁷ Scott Fields, "Continental Divide: Why Africa's Climate Change Burden is Greater," *Environmental Health Perspective*, (Vol. 113, No. 8, August 2005, pp. 534-537), p. 536.

⁴⁸ World Health Organization (WHO), *The World Health Report 2002: Reducing Risks, Promoting Healthy Life*, (WHO, Geneva, 2002), p. 72, http://www.who.int/entity/whr/2002/en/whr02_en.pdf

⁴⁹ WHO, *Climate Change and Health*, Report by the Secretariat, Executive Board, 122nd Session, Provisional agenda item 4.1, EB122/4, 16 January 2008, p. 1, http://www.who.int/gb/ebwha/pdf_files/EB122/B122_4-en.pdf

Climate change is also considered a crucial global environmental problem in terms of its profound impacts on biological diversity. If global average temperature increases by 1.5°C to 2.5°C relative to 1980-1999, an estimated 20% to 30% of plant and animal species assessed so far will likely be threatened with extinction.⁵⁰ Moreover, a rise of 3.5°C in global average temperature will pose a risk of extinction for 40% to 70% of species.⁵¹ Other scientific studies show that if global mean temperature rise continues as it is predicted, more than 1 million species may be under the threat of extinction by 2050.⁵²

A number of weather-related disasters including storm, hurricane, flood, drought and heat wave are also associated with climate change. Notably, increases in the frequency and severity of such kind of weather-related disasters are attributed to climate change. Obviously, these disasters have been more influential in both developed and developing countries in terms of their ensuing loss of lives and economic costs since the 1980s. For instance, tropical cyclone hazards, which affected approximately 120 million people annually, cause the death of 250,000 people from 1980 to 2000.⁵³ Furthermore, climate related disasters adversely affected almost 262 million people annually from 2000 to 2004.⁵⁴ These disasters also result in unprecedented economic losses in the countries' economies. The total economic cost incurred from all weather related natural disasters from 1980 to 2004 was

⁵⁰ IPCC, "Summary for Policymakers" in *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC*, [M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.)], (Cambridge: Cambridge University Press, 2007) p. 11.

⁵¹ IPCC, *Climate Change 2007: Synthesis Report*, p. 14.

⁵² Jeffrey Kluger, "The Tipping Point," *Time*, 3 April 2006, p. 33 and United Nations Educational, Scientific and Cultural Organization (UNESCO), "Talking to Chris Thomas: Nowhere to run," *The New Courier*, April 2004, p. 4, <http://unesdoc.unesco.org/images/0013/001350/135045e.pdf>

⁵³ IPCC, "Technical Summary" in *Climate Change 2007: Impacts, Adaptation and Vulnerability: Contribution of Working Group II to the Fourth Assessment Report of the IPCC*, [M.L. Parry, O.F. Canziani, J.P. Palutikof and Co-authors: M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.)], (Cambridge: Cambridge University Press, 2007), p. 40.

⁵⁴ UNDP, *Human Development Report 2007/2008*, p. 8.

estimated to be 1.4 trillion dollars.⁵⁵ In 2005, Hurricane Katrina, one of the costliest disasters in the USA history, caused damage roughly 125 billion dollars.⁵⁶ Besides, the heat waves of 2003 and 2007 in Europe, floods in Asia and Mexico in 2007, and floods following droughts in some African countries resulted in many death and numerous displaced people coupled with great economic costs. Drought is also another challenge posed by climate change, which human beings will confront in the future. If climate change is not prevented, an area of land corresponding nearly a third of the world will turn out to be desert by 2100.⁵⁷

It should not be forgotten that the magnitude of all these impacts of climate change varies from region to region. In this respect, water shortage will be observed more frequently in low latitudes, or more floods may be occurred in southeast Asia compared to the other regions. Numerous examples can be cited with regard to the varying levels of impacts of climate change as well. Consequently, far-reaching and serious impacts of climate change, which have been proved by the science, have facilitated the process of the development of international climate change policy and the global cooperation on climate change.

2.3. Evolution of Policy of Climate Change within the context of International Environmental Politics until the 1972 Stockholm Conference

2.3.1. Rise of Political and Scientific Awareness on Environment and Climate Change before the 1972 Stockholm Conference

There have been increasing scientific concern about the issues related to climate change since the 19th century. Many scientists have conducted a number of researches to give a scientific answer to the reasons and impacts of climate change.

⁵⁵ Paul R. Epstein and Evan Mills (eds.), *Climate Change Futures: Health, Ecological and Economic Dimensions*, (The Center for Health and the Global Environment Harvard Medical School, Second Printing, September 2006), p. 22, http://chge.med.harvard.edu/programs/ccf/documents/ccf_report_oct_06.pdf

⁵⁶ Red Cross/Red Crescent, *Climate Guide*, (Geneva, November 2007), p. 15, http://www.climatecentre.org/downloads/File/reports/RCRC_climateguide.pdf

⁵⁷ Nesrin Algan, "İklim Etiği," *Mülkiye*, (Vol. XXXII, No. 259, Summer 2008, pp. 191-204), p. 201.

In 1827, Jean Baptiste Joseph Fourier, the French scientist who argued that the gases in the atmosphere could have a warming effect, was one of the first to put forward the greenhouse effect occurred in the atmosphere.⁵⁸ Around the 1860s, the British scientist John Tyndall suggested that concentration of some gases in the atmosphere, mainly CO₂, block the infrared radiation and thus lead to climate change.⁵⁹ The Swedish scientist Svante Arrhenius took a further concrete step with regard to climate change science in 1896 with his study aiming at measuring the effects of increasing concentration of greenhouse gases. He predicted that a doubling of the CO₂ concentration in the atmosphere compared to the pre-industrial levels could result in a rise of global mean temperature by 5°C to 6°C, a very close estimate to the current scientific findings.⁶⁰ Then, the English scientist Guy Stewart Callendar contributed to this scientific progress made in the field of climate change through his studies shedding light on the link between global warming and increased concentration of CO₂. He discovered that CO₂ levels had increased about 10% in the 19th century.⁶¹

Global warming became a topic of an article in a very popular magazine around the world even in the 1930s. It was written in an issue of Time magazine in 1939; “gaffers who claim that winters were harder when they were boys are quite right...weather men have no doubt that the world at least for the time being is growing warmer.”⁶² In the 1950s, the scientific concern over climate change continued to expand through the studies carried out by Gilbert N. Plass, Roger

⁵⁸ Knut H. Alfsen and Tora Skodvin, *The Intergovernmental Panel on Climate Change and Scientific Consensus: How scientists came to say what they say about climate change*, (CICERO Policy Note 1998: 3, Oslo, 1998), p. 6, <http://www.cicero.uio.no/media/49.pdf>

⁵⁹ Spencer Weart, “Timeline/Milestones,” *The Discovery of Global Warming*, June 2008, <http://www.aip.org/history/climate>, for an overview see the book the same title (Harvard University Press, 2003), 2003-2007 Spencer Weart&American Institute of Physics.

⁶⁰ John Houghton, *op. cit.*, p. 17.

⁶¹ Ian Sample, “Heat: How We Got Here,” *The Guardian* (London), 30 June 2005, pp. 5-9 in Paul McCaffrey (ed.), *op. cit.*, p. 7.

⁶² “Warmer World,” *Time*, Monday, 2 January 1939, p. 27, <http://www.time.com/time/magazine/article/0,9171,760573,00.html>

Revelle and Hans Suess.⁶³ In 1956, Gilbert N. Plass declared that human activity, particularly its industrial activities, would lead to an increase of global mean temperature by just over 1°C per century.⁶⁴ Climate change science reached a significant milestone in 1958. In 1958, the systematic and routine measurement of atmospheric CO₂ concentration began with Charles David Keeling records at Mauna Loa Observatory under a program operated out of Scripps Institution of Oceanography.⁶⁵ As stated in the website of Scripps Institution of Oceanography, “the Mauna Loa record, or Keeling Curve, as it is sometimes called, has become a standard icon symbolizing the impact of humans on the planet.”⁶⁶

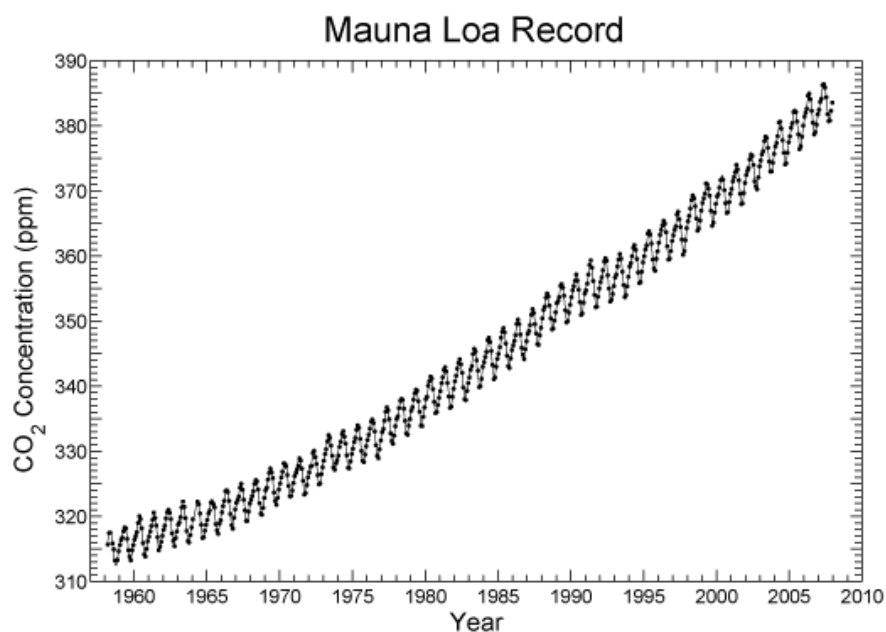


Figure 1: Monthly CO₂ Concentration - Keeling Curve

Source: http://scrippsco2.ucsd.edu/research/atmospheric_co2.html, accessed on 29 May 2009.

⁶³ For detailed information see Spencer Weart, “The Discovery of the Risk of Global Warming,” *Physics Today*, (American Institute of Physics, January 1997, pp. 34-40).

⁶⁴ Ian Sample, *op. cit.*, p. 7.

⁶⁵ For detailed information see Charles David Keeling, “The concentration and isotopic abundances of carbon dioxide in the atmosphere,” *Tellus*, (Vol. 12, No. 2, June 1960, pp. 200-203), http://sio.ucsd.edu/special/Keeling_50th_Anniversary/images/keelling_tellus_1960.pdf

⁶⁶ http://scrippsco2.ucsd.edu/program_history/keeling_curve_lessons.html, accessed on 12 June 2009

ppm: parts per million the ratio of the number of greenhouse gas molecules to the total number of molecules of dry air. For example, 300 ppm means 300 molecules of a GHG per million molecules of dry air.⁶⁷

This curve, covering long-term records of CO₂ concentration, shows the dramatic increase of CO₂ concentration in the atmosphere throughout the second half of the 20th century.

The 1960s and 1970s were the years of increasing concern and awareness about human's impact on environment in intellectual and scientific terms. During these years awakening environmental consciousness at local level started to expand gradually to national and international levels. For instance, Rachel Carson wrote in her book *Silent Spring* staying best-seller list of the *New York Times* for long time in 1962 "the environment was no longer pure; pollution could cross-borders; and the invisible dangers were to be especially feared."⁶⁸ A Report prepared by the USA President's Science Advisory Committee in 1965 covering atmospheric CO₂ emissions was a milestone in terms of being the first governmental document of which a part focused on the topic.⁶⁹ Steward Udall's *The Quiet Crisis* (USA, 1963), Jean Dorst's *Before Nature Dies* (France, 1965), Rolf Edberg's *On the Shred of a Cloud* (Sweden, 1966) and Max Nicholson's *The Environmental Revolution* (United Kingdom, 1970) and William Ophul's *Ecology and the Politics of Scarcity* (USA, 1977) were among outstanding books that had substantial contribution to rise awareness among public about environment in these years.

The Biosphere Conference held in Paris on 4-13 September 1968 with the participation of 60 countries is another milestone in the process of development of international environmental and climate change politics. This Conference was the first intergovernmental meeting where participants adopted a number of

⁶⁷ IPCC, *Climate Change 2007: The Physical Science Basis*, p. 2.

⁶⁸ Rachel Carson, *Silent Spring*, (New York: Fawcett Crest, 1964) in Alex Evans and David Steven, *Climate change: The state of the debate*, (Center on International Cooperation, the London Accords, October 2007), p. 5, http://www.riverpath.com/library/wp-content/uploads/2008/01/climate_change_the_state_of_the_debate.pdf

⁶⁹ Jamie Sanderson and Sardar M.N. Islam, *Climate Change and Economic Development: SEA Regional Modeling and Analysis*, (New York: Palgrave Macmillan, 2007), p. 3.

recommendations to protect environment.⁷⁰ 1970 was the year of Environment according to *Time* magazine⁷¹ and for *Life*⁷² environment was a movement that might be the primary issue of new decade. Another best-selling book related to the environmental issues during these years was *the Limits to Growth*, a report of the Club of Rome published in 1972. This book emphasized that national resources was depleting and the world was closing to the end of its carrying capacity because of the rapid industrialization, population growth and consumption.⁷³ This warning of the book became very influential especially in the developed countries and thus it was able to galvanize more public support for protection of the environment. In the 1970s, intergovernmental community, particularly the scientific community, began to pay more attention to issues related to the climate change. A number of scientific researches in the field of climate change began to appear by the 1970s such as “*Man’s Impact on the Global Environment*,” a report prepared by the Massachusetts Institute of Technology. All these developments in the field of science and public awareness about environment had made environmental issues widely discussed at international policy level.

2.3.2. The 1972 Stockholm Conference

Obviously, the United Nations Conference on Human Environment or the 1972 Stockholm Conference has a special and pivotal role in the development of international environmental policy and law and indirectly cooperation against climate change. The Stockholm Conference was held in Stockholm on 5-16 June 1972 with a great participation of 113 countries as well as a host of intergovernmental and non-governmental organizations. This Conference was initiated by a Swedish proposal to convey an international conference on the problems of human environment. On 3

⁷⁰ UNESCO, *The Biosphere Conference: 25 years later*, Conference on rational use and conservation of resources of the biosphere and creation of the programme on man and the biosphere, (France, October 1993), p. 4, <http://unesdoc.unesco.org/images/0014/001471/147152eo.pdf>

⁷¹ *Time*, 4 January 1971, p. 21-22.

⁷² *Life*, 30 January 1970, p. 23.

⁷³ For detailed information see Donella H. Meadows (et. al.), *The Limits to Growth: A report for the Club of Rome’s project on the predicament of mankind*, (New York: Universe Books, 1972).

December 1968, the UN General Assembly adopted Resolution numbered 2398 (XXIII) calling for convening a conference in 1972 with the aim of attracting public and governments' attention to the significance and urgency of the problems of the human environment.⁷⁴ Its main objective, as written in the UN General Assembly Resolution, is to:⁷⁵

serve as a practical means to encourage, and to provide guidelines for, action by Governments and international organizations designed to protect and improve the human environment and to remedy and prevent its impairment...

In the official preparatory documents of the Conference, there were some references to climate change within the context of the problems of human environment. One of these documents recognized that “the earth’s temperature may rise as a result of atmospheric content in CO₂ due to future consumption of fossil fuel.”⁷⁶ In the Action Plan adopted by the Conference, governments were recommended to be “mindful of activities in which there is an appreciable risk of effects on climate and to this end to carefully evaluate the likelihood and magnitude of climatic effects and to consult fully other interested states.”⁷⁷

The 1972 Stockholm Conference produced several substantial outcomes including the adoption of the Action Plan for the Human Environment, the Stockholm Declaration on the Human Environment and the World Environment Day (June 5) as well as the establishment of the United Nations Environment Programme (UNEP). Notably, the establishment of UNEP is a crucial step for ensuring the sustained and institutional concern of the UN and its member states about the global environmental issues.

⁷⁴ United Nations General Assembly, Resolution 2398 (XXIII): *Problems of the Human Environment*, 1733rd plenary meeting, A/RES/2398(XXIII), 3 December 1968.

⁷⁵ United Nations General Assembly, Resolution 2581 (XXIV): *United Nations Conference on the Human Environment*, 1834th plenary meeting, A/RES/2581(XXIV), 15 December 1969.

⁷⁶ United Nations, Conference on the Human Environment: Identification and control of pollutants of broad international significance, para. 42, A/conf.48/8, 7 January 1972.

⁷⁷ United Nations, *Action Plan for the Human Environment*, Recommendation 70, United Nations Conference on the Human Environment, 1972.

An author characterizes the 1972 Stockholm Conference as “the cocoon form which the chrysalis of international environmental law emerged.”⁷⁸ This Conference is also viewed as the start of international cooperation on environmental matters and as the event that launched international debate on the environment.⁷⁹ An important factor for these achievements of the Conference was crucial efforts of the Secretary General of the Conference Maurice Strong who became the first Executive Director of the UNEP and the Secretary General of 1992 Rio Conference. Governments could take concrete steps to cooperate in environmental issues that were seen as serious concern for their national sovereignty in these years. In 1982, a UNEP report related to the impacts of the Stockholm Conference characterized the Conference as a powerful force for change with its role on increasing environmental awareness and accelerating the existing programmes as well as launching new national, regional and international environmental programmes.⁸⁰

2.4. Developments in International Environmental and Climate Change Politics from the 1972 Stockholm Conference to the 1992 Rio Conference

2.4.1. Scientific and Intergovernmental Conferences on Climate Change

On 12-23 February 1979 in Geneva, the “First World Climate Conference,” one of the first major international climate change events, was held by the World Meteorological Organization (WMO) with the aim of evaluating the present knowledge of climate change, the projected future changes in the atmosphere and the

⁷⁸ L. Guruswamy, “International Environmental Law: Boundaries, Landmarks and Realities,” *Natural Resources and Environment*, (Fall 1995, pp. 43-48), p. 43-44 in Lavanya Rajamani, “From Stockholm to Johannesburg: the Anatomy of Dissonance in the International Environmental Dialogue,” *Review of European Community and International Environmental Law (RECIEL)*, (Vol. 12, No. 1, 2003, pp. 23-32), p. 23.

⁷⁹ Mostafa K. Tolba (et. al.), *The World Environment: 1972-1992: two decades of challenge* (London, New York: Chapman&Hall, 1992), p. 742 in Lorraine Eliot, *The Global Politics of the Environment*, (Houndmills, Basingstoke, Hampshire: Macmillan Press, 1998), p. 7.

⁸⁰ UNEP, *The Environment in 1982: Retrospect and Prospect*, UNEP/GC/SSC/2, 29 January 1982, p. 22. For report of the session, see “UNEP: Session of a Special Character,” *Environmental Policy and Law* 9 (September 1982), p. 2-28 in Mostafa Kamal Tolba (ed.), *Evolving Environmental Perceptions: From Stockholm to Nairobi*, (London: Butterworths, 1988), p. 10.

role of the human activities in climate change. In the Conference Declaration, it was emphasized that there was a need for improving knowledge on climate change and for dealing possible anthropogenic changes in climate that might threaten human environment.⁸¹ This Conference can be considered as a watershed for development of climate change policy in terms of its stimulus role for encouraging scientific research on climate change at international level.

Another significant climate change conference called “International Assessment of the Role of Carbon Dioxide and of other Greenhouse Gases in Climate Variations and Associated Impacts,” was held by the UNEP, WMO and International Council of Scientific Unions in Villach, Austria on October 9-15, 1985. In the Conference conclusions, having emphasized the unusual increase of global average temperature in man’s history, it was stressed that governmental policies could shape the rate and degree of future warming.⁸² This Conference made climate change issue publicly well known and showed the significant role of the science on the way to development climate change policy at both national and international levels.

Another important development as for climate change and international environmental politics in general was a report prepared by the World Commission on Environment and Development. It was an independent commission under the umbrella of the UN aiming at evaluating environment and development together, chaired by the former Prime Minister of Norway Gro Harlem Brundtland. Its report “*Our Common Future*” or the Brundtland Report, published in 1987, demonstrated the close link between development and environment issues. This report also constitutes a vital step due to its integrating approach for policies of development and environment and its role for strengthening the place of environment in international

⁸¹ World Meteorological Organization (WMO), *Declaration of the World Climate Conference*, IOC/SAB-IV/INF.3, 12-23 February 1979, http://www.dgvm.de/fileadmin/user_upload/DOKUMENTE/WCC-3/Declaration_WCC.pdf

⁸² UNEP, WMO and ICSU, *Conference Statement: International Assessment of the Role of Carbon Dioxide and of other Greenhouse Gases in Climate Variations and Associated Impacts*, 9-15 October 1985, http://ozone.unep.org/Meeting_Documents/ccol/ccol8/ccol8-5-related_activities_to_work_of_cc.86-02-24.doc

politics⁸³ since it introduced the term ‘sustainable development’ which has become an important agenda item of environmental issues, especially for climate change. A part of the report is also devoted to the gradual global warming and its possible adverse impacts on agriculture, economy and coastal areas.⁸⁴

Another important conference on climate change “Changing Atmosphere: Implications for Global Security” in which many scientists, policy makers from 46 countries, international organizations and non-governmental organizations participated was held in Toronto, Canada on June 27-30, 1988. This Conference called for a reduction of global CO₂ emissions by about 20% of 1988 levels by the year 2005 and recognized that industrialized nations should have a leading role in this global target.⁸⁵ In the Conference statement, governments were called to take urgent steps for making an international framework convention that would be strengthened by protocols.⁸⁶

There are other significant climate change conferences that have made substantial contributions to the process of policy development with regard to climate change. The Ottawa Conference in 1989, the Tata Conference in 1989, the Hague Conference and Declaration in 1989, the Noordwijk Ministerial Conference in 1989, the Cairo Compact in 1989 and the Bergen Conference in 1990 could be counted in this regard.

Another important development for bridging the gap between climate change science and politics is the “Second World Climate Conference” sponsored by the WMO and UNEP in which 137 states and the European Community represented, held in Geneva on 29 October-7 November 1990. Compared to the previous one, the second

⁸³ James Connelly and Graham Smith, *Politics and the Environment: From Theory to Practice*, (London and New York: Routledge, 1999), p. 202.

⁸⁴ See United Nations General Assembly, Development and International Economic Cooperation, Environment, *Our Common Future*, Report of the World Commission on Environment and Development, A/42/427, 4 August 1987, p. 176-183.

⁸⁵ *The Conference Statement: The Changing Atmosphere: Implications For Global Security*, (Toronto, Ontario, Canada, 27-30 June 1988), <http://www.cmos.ca/ChangingAtmosphere1988e.pdf>

⁸⁶ *Ibid.*

Conference put more emphasis on the need for global political cooperation on climate change rather than prioritizing the scientific dimension of the topic. In this respect, the Ministerial Declaration of the Conference underlines that there is a need for making a framework treaty and necessary protocols combating climate change in the 1992 Rio Conference and for taking response measures immediately.⁸⁷ However, there was no agreed timetable or targets concerning for reduction of greenhouse gas emissions in the Ministerial Declaration of the Conference.

Obviously, these scientific and intergovernmental meetings on environment and climate change constituted an important background to the climate convention signed in 1992.⁸⁸ From the 1972 Stockholm Conference to the 1992 Earth Summit, scientific knowledge, public awareness, non-governmental organizations' participation and expertise in the field of climate change had increased dramatically.

2.4.2. The 1992 Rio Conference

In 1989, the United Nations General Assembly decided to convey a conference on environment and development with the aim of:⁸⁹

elaborating strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries.

The year 1992 was a watershed for the international cooperation on environment. On 3-14 June 1992 UNCED or known as Rio Conference was held in Rio with the participation of 172 countries, of which 108 represented at levels of heads of state and government. The total participation from governments, intergovernmental

⁸⁷ UNFCCC, *Fact Sheet 221: The Second World Climate Conference, Geneva, 29 October-7 November 1990*, <http://unfccc.int/resource/ccsites/senegal/fact/fs221.htm>

⁸⁸ Björn-Ola Linnér and Merle Jacob, "From Stockholm to Kyoto and Beyond: A Review of the Globalization of Global Warming Policy and North-South Relations," *Globalizations*, (Vol. 2, No. 3, December 2005, pp. 403-415), p. 405.

⁸⁹ United Nations General Assembly, Resolution 44/228: *United Nations Conference on Environment and Development*, 85th plenary meeting, A/RES/44/228, 22 December 1989.

organizations, non-governmental organizations and media was more than 20.000 people. Taking into consideration of this great and high-level participation, this Conference is viewed as “the mother of all summits.”⁹⁰ It is important to note that the Rio Conference was an outcome of the work initiated by the 1972 Stockholm Conference. In this respect, the main purpose of the Rio Conference was the reconciliation of the objectives regarding environment and development.⁹¹

During the Rio Conference, parties reached an agreement on the adoption of the Rio Declaration on the Environment and Development, the Agenda 21, the UN Convention on Biological Diversity, UNFCCC, and the Statement of Forest Principles. As a result of the Conference, several follow-up mechanisms were established in the field of sustainable development notably the Commission on Sustainable Development. Actually, the Conventions on climate change and biodiversity opened for signature during the Conference have been negotiated in a platform separated from the preparation process of the Rio Conference.

During the Rio Conference, the issue of providing financial and technical assistance to developing countries in dealing with environmental problems was also one of the hot topics discussed widely among the parties. Apparently, combating environmental problems, especially climate change, places heavy economic burden on the national economies, notably developing countries that are in dire need of external funding in that field. To this end, Global Environment Facility (GEF) was established by the UNDP, UNEP and International Bank for Reconstruction and Development in 1991 as a pilot programme in order to support for the global environmental projects and to promote environmental sustainable development. Over the years, the number of the partners implementing the GEF projects have increased with joining of the Food and Agriculture Organization (FAO), the Inter-American Development Bank, the United

⁹⁰ Philip Shabecoff, *A New For Peace: International Environmentalism, Sustainable Development and Democracy*, (Hanover: University Press of New England, 1996), p. 187 in David Hunter, James Salzman and Durwood Zaelke, *International Environmental Law and Policy*, (New York: New York Foundation Press, Second Edition, 2002), p. 187.

⁹¹ Lynton Keith Caldwell, *International Environmental Policy: From the Twentieth to Twenty-First Century*, (Durham and London: Duke University Press, Third Edition, 1996), p. 114.

Nations Industrial Development Organization, the Asian Development Bank, the African Development Bank, the European Bank for Reconstruction and Development and the International Fund for Agricultural Development.⁹² Its funding activities mainly concentrate on six focal areas: climate change, biological diversity, ozone layer depletion, international waters, land degradation, and persistent organic pollutants. Currently, one of the main functions of the GEF is to provide funding for developing countries to cope with climate change within the context of climate change regime.

According to Maurice Strong, the Secretary General of the Rio Conference, this Conference is the “historic moment for humanity.”⁹³ Clearly, the Rio Conference was an unprecedented environmental event in the international politics with its unique size and comprehensive scope. Having coincided with the dramatic increase in population growth and consumption, governments agreed to take measures to balance the development needs and environmental protection during the Conference. Thus, sustainable development, which had come to the agenda with the Brundtland Report in 1987, has become one of the determining principles of international environmental policy in the new era.

2.4.3. The Intensifying Role of the UN

The UN has a special place in the development of climate change policy. As mentioned before, since the 1972 Stockholm Conference, the UN has become a platform for negotiations with regard to environmental issues, particularly for climate change. UN specialized agencies such as the UNEP, United Nations Development Programme (UNDP), WHO and FAO have been heavily involved in the issues related to climate change. However, UN General Assembly played a special role in the international cooperation on climate change through its various influential Resolutions in the late 1980s.

⁹² http://www.gefweb.org/interior_right.aspx?id=50, accessed on 27 July 2009.

⁹³ United Nations Conference on Environment and Development, 1992, see <http://www.un.org/geninfo/bp/enviro.html>, accessed on 29 April 2009.

In 1987, the UN General Assembly called for international cooperation for monitoring of the concentration of greenhouse gases and their impacts on climate and sea level that were resulted from increasing consumption and energy expansion as well as the growing population.⁹⁴ Another Resolution of the UN General Assembly in 1988 recognized that “climate change is a common concern of mankind since climate is an essential condition which sustains life on the earth.”⁹⁵ In this Resolution, with reference to the role of human activities in changing global climate patterns that might threaten present and future generations, the need for global cooperation on climate change was stressed clearly as well.⁹⁶

The UN General Assembly is of prime importance for the start of the international negotiations on climate change in the end of the 1980s. The UN General Assembly initiated the negotiating process with its Resolutions in the late 1980s paving the way for the establishment of Intergovernmental Negotiating Committee (INC) on an effective framework convention on climate change. Since the late 1980s, each year the UN General Assembly has adopted a resolution with respect to climate change in order to encourage and promote international cooperation on this global challenge.⁹⁷

Currently, the UN as a universal organization is one of the most appropriate forums for the global cooperation on climate change. All parts of the UN system show great efforts to contribute to create a common stance to deal with climate change. In fact, ensuring the UN “Delivers as One”⁹⁸ in supporting climate change cooperation, through bringing various perspectives and expertise concerning climate change together, has become one of priorities made by the Secretary General Ban Ki-moon.

⁹⁴ United Nations General Assembly, Resolution 42/186: *Environmental Perspective to the Year 2000 and Beyond*, 96th plenary meeting, A/RES/42/186, 11 December 1987.

⁹⁵ United Nations General Assembly, Resolution 43/53: *Protection of global climate for present and future generations of mankind*, 70th plenary meeting, A/RES/43/53, 6 December 1988.

⁹⁶ *Ibid.*

⁹⁷ See <http://www.un.org/documents/resga.htm>

⁹⁸ United Nations System Chief Executives Board for Coordination, *Acting on Climate Change: The UN System Delivering as One*, (New York: United Nations Headquarters, November 2008), <http://www.un.org/climatechange/pdfs/Acting%20on%20Climate%20Change.pdf>

This strategy was designed for creating a more united, cooperative, effective and responsive UN system in the pursuit of one set of goals, particularly in the field of climate change.⁹⁹ To this end, Ban Ki-moon had appointed three Special Envoys with the aim of facilitating international cooperation on climate change in May 2007. On 24 September 2007, Ban Ki-moon convened a high level event to advance negotiations on climate change and to provide an opportunity for exchanging views among world leaders in addressing climate change. As stated by Ban Ki-moon, this event was meant to “express the political will of world leaders at the highest level to tackle the challenge of climate change through concerted action.”¹⁰⁰

On 17 April 2008, following a letter from the Permanent Representative of the United Kingdom to the President of the Council,¹⁰¹ the Security Council convened to hold its first-ever open debate focusing on the relationship between energy, security and climate. In this meeting, participants discussed the potential impacts of climate change on security in relation to conflicts over access to energy, water, food and other scarce resources; population movements; and border disputes.¹⁰² As another significant development at the UN level, a General Assembly thematic debate titled “Addressing Climate Change: The United Nations and the World at Work” aiming at seeking the best policy options for collaboration among member states, private sector

⁹⁹ United Nations, *Delivering as One*, (UN, Report of the Secretary-General’s High-Level Panel, New York, 9 November 2006), p. 2, <http://www.un.org/events/panel/resources/pdfs/HLP-SWC-FinalReport.pdf>

¹⁰⁰ United Nations, Chair Summary on the High-Level Event on Climate Change as read by the UN Secretary General Ban Ki-moon, New York, 24 September 2007, <http://www.un.org/apps/sg/sgstats.asp?nid=2755>

¹⁰¹ See United Nations Security Council, *Letter dated 5 April 2007 from the Permanent Representative of the United Kingdom of Great Britain and Northern Ireland to the United Nations addressed to the President of the Security Council*, UN Doc. S/2007/186, 2007, <http://www.securitycouncilreport.org/atf/cf/%7B65BF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/CC%20S2007%20186.pdf>

¹⁰² United Nations Security Council, Department of Public Information, News and Media Division, *Security Council holds first-ever debate on impact of climate change on peace, security, hearing over 50 speakers*, 5663rd Meeting (AM&PM), UN Doc. SC 9000, 17 April 2007, <http://www.un.org/News/Press/docs/2007/sc9000.doc.htm>

and civil society under the umbrella of the UN system was held on 11-12 February 2008.¹⁰³

2.4.4. The Interplay between IPCC and Climate Change Regime

The role of the IPCC in the development of the climate change science and policy is best characterized by the current Chairman of the IPCC Rajendra K. Pachauri's words: "Any discussion of the history of the UNFCCC and its activities would be incomplete if the evolution of the IPCC is not described in some detail."¹⁰⁴ Apparently, scientific knowledge on climate change has a vital role in development of political cooperation on this environmental challenge. Moreover, combating climate change, a multi-faceted technical issue, requires complex and wide-range of scientific data and reliable scientific researches in the field. It may be argued that without any progress made in climate change science, political cooperation on climate change at international level would be impossible. In this context, besides the aforementioned scientific conferences and meetings on climate change, IPCC, a good example of interaction between policy and science, has a special place in the evolution of international climate change policy cooperation.

As an outcome of cooperation between WMO and UNEP to establish an *ad hoc* intergovernmental mechanism for scientific assessment of climate change, IPCC was established at the 40th Session of the WMO Executive Council in 1988. IPCC is open to all members of the WMO and UNEP. The work done by IPCC, which should be politically neutral and objective, has been strengthened by the contributions of

¹⁰³ United Nations General Assembly Thematic Debate, *Addressing Climate Change: The United Nations and the World at Work*, New York, 11-12 February 2008, p. 1, http://www.un.org/ga/president/62/letters/background_paper.pdf

¹⁰⁴ Rajendra K. Pachauri, "IPCC - Past Achievements and Future Challenges" in IPCC, *16 Years of Scientific Assessment in Support of the Climate Convention*, December 2004, <http://www.ipcc.ch/pdf/10th-anniversary/anniversary-brochure.pdf>

hundreds of scientists studied in the field of climate change. It is important to note that instead of launching new research on climate change, the IPCC assesses:¹⁰⁵

on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.

The UN General Assembly played a determining role in the utilization of the IPCC in the process of dealing with climate change by its Resolution 43/53, “Protection of global climate for present and future generations of mankind” in 1988. In this Resolution, the UN General Assembly endorsed the establishment of the IPCC and then decided to request WMO and UNEP, through utilizing IPCC, to initiate an action to assess the situation of climate change science and climate change, socio-economic impacts of the problem, response strategies as well as its recommendations with regard to the measures and instruments to be included in a possible future international convention on climate change.¹⁰⁶

At its first plenary session held in November 1988, IPCC established three working groups (Working Groups I, II, and III), which were respectively in charge of assessing available scientific information on climate change; evaluating environmental and socio-economic impacts of climate change and finally formulating response strategies. In 1992 these Working Groups were reorganized and thus the Working Groups I and II were merged and a new Working Group III was established. This new structure has entrusted the Working Group I with assessing physical science basis of climate change; the Working Group II with assessing climate change impact, adaptation and vulnerability and lastly the Working Group III with evaluating the mitigation aspect of climate change.¹⁰⁷

¹⁰⁵ Principles Governing IPCC Work, Approved at 14th Session (Vienna, 1-3 October 1998) on 1 October 1998, amended at 21st Session (Vienna, 3, 6-7 November 2003 and at the 25th Session (Mauritius, 26-28 April 2006), <http://www.ipcc.ch/pdf/ipcc-principles/ipcc-principles.pdf>

¹⁰⁶ United Nations General Assembly, Resolution 43/53: *Protection of global climate for present and future generations of mankind*, 70th plenary meeting, A/RES/43/53, 6 December 1988.

¹⁰⁷ See http://www.ipcc.ch/working_groups/working_groups.htm, accessed on 28 July 2009.

IPCC Plenary, met once a year at governmental level, is the highest decision making organ of the IPCC. IPCC has a Bureau, chaired by the Chair of the IPCC, composed of 30 members including the Co-Chairs of three Working Groups, and the Task Force Bureau on National Greenhouse Gas Inventories, Vice-Chairs of these organs. IPCC has a Secretariat responsible for coordinating all the IPCC activities and a Task Force responsible for formulating methodologies for calculation and reporting of national greenhouse gas emissions and removals.¹⁰⁸

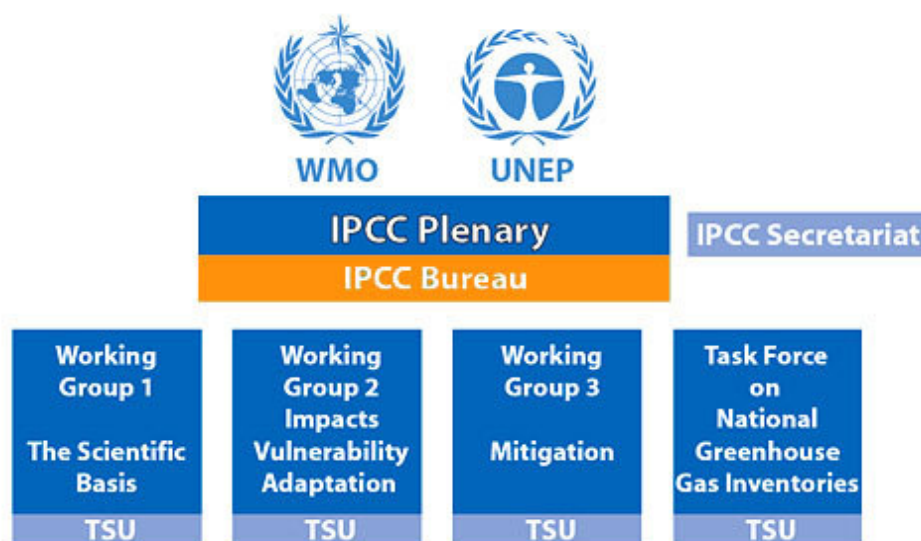


Figure 2: The Organizational Chart of the IPCC

Source: <http://www.ipcc.ch/about/how-the-ipcc-is-organized.htm>, accessed on 10 May 2009.

IPCC produces regular Assessment Reports, Special Reports, Methodology Guidelines, Technical Papers and Supporting Materials. Among these documents, Assessment Reports have special place in the policy-making process of climate change. Remarkably, these reports give the opportunity to IPCC for playing a role of agenda formation, attracting public attention to the topic and promoting climate change as a self-contained issue.¹⁰⁹ Up to now, IPCC has produced four Assessment

¹⁰⁸ For detailed information see IPIECA, *A Guide to the Intergovernmental Panel on Climate Change*, (London, 4th Edition, May 2006).

¹⁰⁹ Kilaparti Ramakrishna and Oran R. Young, “International Organizations in a Warming World: Building a Global Climate Regime” in Irving M. Mintzer (ed.), *Confronting Climate Change, Risks, Implications and Responses*, (Cambridge, New York: Cambridge University Press, 1992, pp. 253-259), p. 257-258.

Reports in 1990, 1995, 2001 and 2007. Briefly, the whole work of the IPCC has showed the great capability of international community to cooperate in the areas of common concern of mankind such as environment and the possibility to solve even such a great challenge as climate change.¹¹⁰

Besides all the assessment reports mentioned before, the fourth assessment report in 2007, which includes the most updated and reliable data concerning climate change, represents the peak level in climate change science. According to a decision of the Conference of Parties at its thirteenth sessions (COP-13), the fourth assessment report of the IPCC was recognized as “the most comprehensive and authoritative assessment of climate change to date” and all parties were called for making use of the findings of this report in the development of their national policies on climate change as well as the ongoing international climate change negotiations.¹¹¹

As a result of the outstanding efforts and unique contribution of the IPCC for encouraging international cooperation on climate change, it was awarded by the Nobel Peace Prize for 2007 jointly with the former the USA Vice President Albert Arnold Al Gore. According to the Norwegian Nobel Committee, this joint award was for “their efforts to build up and disseminate greater knowledge about man-made climate change and, to lay the foundations for the measures that are needed to counteract such change.”¹¹² Thus, the prominent role of the IPCC in the development of climate change science and policy has been recognized by one of the most prestigious prizes in the world.

¹¹⁰ John Houghton, “An overview of the Intergovernmental Panel on Climate Change (IPCC) and its process of science assessment” in R.E. Hester and R.M. Harrison (eds.), *Global Environmental Change*, (Issues in Environmental Science and Technology, No 17, The Royal Society of Chemistry, 2002, pp. 1-20), p. 20.

¹¹¹ UNFCCC, “Decision 5/CP.13: Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 8th plenary meeting, 14-15 December 2007,” p. 29 in *Report of the Conference of the Parties on its Thirteenth Session, held in Bali from 3 to 15 December 2007*, FCCC/CP/2007/6/Add.1, 14 March 2008.

¹¹² The Norwegian Nobel Committee’s announcement dated on 12th of October 2007 regarding the Nobel Peace Prize for 2007, Oslo, 2007, http://nobelpeaceprize.org/en_GB/laureates/laureates-2007/announce-2007/

CHAPTER 3

INTERNATIONAL CLIMATE CHANGE REGIME: THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC), THE KYOTO PROTOCOL AND THE POST-2012 NEGOTIATIONS

This chapter will examine the international cooperation and negotiations in the field of climate change in detail. To this end, the two important milestones in the history of international climate change regime, the UNFCCC and the Kyoto Protocol, will be scrutinized respectively. This chapter will also focus on the international climate change negotiations made throughout this process. In addition, the ongoing international climate change negotiations for the post-2012 period (post-Kyoto Protocol) will be analyzed at the end of this chapter.

3.1 The International Negotiations on the way to the UNFCCC

3.1.1. Intergovernmental Negotiating Committee (INC) on an effective framework convention on climate change

As mentioned before, the UN General Assembly has a key role in initiating international negotiations for a framework convention on climate change. In the late 1980s, the General Assembly announced its serious concern for launching global cooperation on climate change as soon as possible via its several resolutions. In this respect, the Resolution 45/212 constituted a watershed for this cooperation process since it established the INC on an effective framework convention on climate

change.¹¹³ Thus, a single intergovernmental negotiating process under the umbrella of the UN was established. With an objective to complete its work until the Rio Conference in June 1992, five meetings were held under the INC between February 1991 and May 1992. During these meetings in which more than 150 states participated, the topics including binding commitments, targets and timetables regarding emission reduction, financial and technological issues, procedural and legal matters as well as fundamental principles of a framework convention were discussed by the participants.

In this context, the concepts framework convention and protocol should be explained for a better understanding of the process of climate change cooperation. As for a cooperation issue within the context of the international environmental law, rules may be formulated in a framework or umbrella treaty that is adaptable to the new developments and conditions emerged regarding the cooperation area in question.¹¹⁴ Accordingly, a framework convention determines a general policy framework laying down basic principles, objectives, procedural matters and institutional mechanisms for ensuring the future cooperative actions on the issue concerned.¹¹⁵ A framework convention is designed in a way that makes amendments and adoption of one or more detailed protocols dealing with specific issues¹¹⁶ possible under this cooperation process. Thus, it provides a certain level of flexibility regarding the cooperation issue in question through eschewing to introduce stringent and detailed rules that may turn out to be outdated and ineffective quickly.¹¹⁷ Following the adoption of a framework convention, parties of the convention conclude a

¹¹³ United Nations General Assembly, Resolution 45/212: *Protection of global climate for present and future generations of mankind*, 71st plenary meeting, A/RES/45/212, 21 December 1990.

¹¹⁴ Şule Güneş, “Karadeniz’de Çevresel İşbirliği, 1992 Bükreş Sözleşmesi,” *ODTÜ Geliştirme Dergisi*, (Vol. 28, No. 2, 2001, pp. 311-337), p. 326.

¹¹⁵ Gareth Porter and J. W. Brown, *Global Environmental Politics*, (Boulder, Colorado: Westview Press, Second Edition, 1996), p. 17.

¹¹⁶ Patricia W. Birnie and Alan E. Boyle, *International Law and the Environment*, (Oxford: Clarendon Press, 1992), p. 13.

¹¹⁷ Andrew Hurrell and Benedict Kingsbury, “The International Politics of the Environment: An Introduction” in Andrew Hurrell and Benedict Kingsbury (eds.) *The International Politics of the Environment: Actors, Interests, and Institutions*, (Oxford: Clarendon Press, 1992, pp. 1-47), p. 16-17.

supplementary protocol that will introduce specificity and concreteness to the general obligations of the convention.¹¹⁸ In short, “while the convention phase of treaty negotiations focuses on developing a general statement of the problem and a possible solution, protocols typically deal with the details of implementation.”¹¹⁹

In the field of climate change cooperation, adoption of a framework convention followed by a protocol has been observed in this connection. Clearly, as mentioned before, climate change is an area closely linked to the scientific knowledge as well as subject to the rapid scientific developments. In addition, scientific uncertainty and suspicion of parties towards climate change in that time push parties to give priority for adopting a framework convention in order to avoid any possible deadlock in relation to more specific binding commitments to be taken. Therefore, as regards the climate change cooperation process, parties signed the UNFCCC that would make adoption of further protocols possible. So, the UNFCCC was followed by the adoption of the Kyoto Protocol in 1997. Aside from climate change, the Vienna Convention for the Protection of the Ozone Layer (1985) followed by the Montreal Protocol (1987), Convention for the Protection of Mediterranean Sea Against Pollution (1976) followed by several protocols and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Disposal (1989) are similar cases of the convention-protocol approach.

Following the explanation of the concepts framework convention and protocol, it will be appropriate for re-focus on the INC process that resulted in the adoption of the UNFCCC. The significance of the INC process for the international cooperation on climate change is clearly underscored by the words of Antoine Blanca, Director-General for Development and International Economic Cooperation in his statement

¹¹⁸ Elliot L. Richardson, “Climate Change: Problems of Law Making,” pp. 166-179 in Hurrell and Kingsbury (eds.), *op. cit.*, p. 172.

¹¹⁹ Lawrence Susskind and Connie Ozawa, “Negotiating More Effective International Environmental Agreements,” pp. 142-165 in Hurrell and Kingsbury (eds.), *op. cit.*, p. 144.

made on behalf of Secretary-General of the UN in the opening session of the INC. He underlined:¹²⁰

the parallel that existed between the San Francisco Conference¹²¹ and the process being set in motion at the present meeting. The San Francisco Conference was the result of war between people. The present meeting of the INC resulted from war between people and the planet. The framework convention on climate change, which should be signed at the UNCED, to be held at Rio de Janeiro in 1992, would be the keystone for a new global order based on justice, equity and long-lasting and environmentally sound development.

After the adoption of the framework convention on climate change at its fifth session held on 9 May 1992, the INC continued to meet six more times to discuss the agenda items including issues with respect to commitments; financial mechanisms, technical and financial assistance for developing countries as well as the procedural, legal and institutional matters.¹²² The INC met last time (11th session) in February 1995 with the aim of completing the arrangements for the first session of the COP and other relevant matters. This negotiating process is sometimes called as “post agreement negotiations” in terms of its role in carrying on the dialogue to facilitate mutual understanding among the parties and further strengthen the aims and implementation of the UNFCCC.¹²³

3.2. The United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC is a milestone in the international climate change cooperation inasmuch as it is an outcome of all the efforts towards combating climate change

¹²⁰ UN General Assembly, *Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of its First Session*, Washington D.C., 4-14 February 1991, A/AC.237/6, 8 March 1991, p. 3-4.

¹²¹ The San Francisco Conference (25 April-26 June 1945) is the international meeting that established the United Nations.

¹²² International Institute for Sustainable Development (IISD), “A daily report of the eleventh session of the INC for a Framework Convention on Climate Change,” *Earth Negotiations Bulletin (ENB)*, (Vol. 12, No. 1, 6 February 1995), p. 1.

¹²³ IISD, “A daily report of the Eleventh Session of the INC for a Framework Convention on Climate Change,” *ENB*, (Vol. 12, No. 11, 20 February 1995), p. 8.

throughout the second half of the 20th century. In addition, it establishes the principles and general framework for the future cooperation actions against climate change. In other words, “the UNFCCC delineated the future playing field and defined the basic rule of the future game.”¹²⁴

Prior to the details of the UNFCCC, there is a need for analyzing the formation of the climate change regime within the context of regime theories that have been frequently discussed since the 1980s in order to explain intensifying international cooperation in the world politics. Thus, it will be possible to understand how climate change cooperation has evolved into an international regime. In this regard, according to Krasner, international regimes are:¹²⁵

sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations converge in a given issue-area. Principles are beliefs of fact, causation, and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Decision-making procedures are prevailing practices for making and implementing collective choice.

Here, it should be noted that there are different approaches with respect to the usage of the term regime between lawyers and international relations scholars. While lawyers see regime as “all the law on a particular subject,” international relations scholars refer it to “a process of international cooperation, particularly in the field of economics, whether or not it involves a formal organizational structure.”¹²⁶

One of the salient aspects of regimes is their role in ensuring coordination of the state behavior with the aim of reaching aspired outcomes in specific issue-areas.¹²⁷ Furthermore, regimes function as a means to create consistent and stable mutual

¹²⁴ Sebastian Oberthür and Hermann E. Ott, *The Kyoto Protocol: International Climate Policy for the 21st Century*, (Berlin: Springer, 1999), p. 33.

¹²⁵ Stephan D. Krasner, “Structural causes and regime consequences: regimes as intervening variables,” *International Organization*, (Vol. 36, No. 2, Spring 1982, pp. 185-205), p. 186.

¹²⁶ Shirley V. Scott, *International Law in World Politics: An Introduction*, (Boulder, London: Lynne Rienner Publishers, 2004), p. 161-163.

¹²⁷ Krasner, *op. cit.*, p. 191.

expectations among parties and to enable them to possess the capacity adaptable to the changing environment and new situations.¹²⁸ Thus, regimes aim to provide more favorable and beneficial conditions for each party that engages in a regime compared with absence of such a regime. As underlined by Young, international regimes are considered “responses to the pervasive collective-action problems that make cooperation problematic at the international level.”¹²⁹ Accordingly, formation of a regime in a global environmental issue such as climate change is a complicated and challenging task on the grounds that¹³⁰

global environmental issues are typically characterized by high levels of uncertainty in which the definition and boundaries of the problem, the cost of alternative policy responses, and the identity of the actors and their interests are all far from self-evident.

Several normative and institutional factors including existing international organizations, principles, norms and rules can play a supportive effect on the formation of a regime.¹³¹ In this connection, it can be said that the factors such as existing norms and rules set by the process of the Stockholm Conference and the Rio Conference and the role of the UN have defining roles in the formation of climate change regime. Moreover, according to List and Rittberger, the existence of shared knowledge or epistemic communities helping for building consensual knowledge is another influential factor in the regime formation process.¹³² In this respect, Haas defines epistemic communities as “network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within the domain or issue-area.”¹³³ Epistemic communities

¹²⁸ Robert O. Keohane, “The Demand for International Regimes,” *International Organization*, (Vol. 36, No. 2, Spring 1982, pp. 325-355), p. 331-334.

¹²⁹ Oran R. Young, *International Cooperation: Building Regimes for Natural Resources and the Environment*, (Ithaca: Cornell University Press, 1989), p. 5.

¹³⁰ Hurrell and Kingsbury, *op. cit.*, p. 13.

¹³¹ Martin List and Volker Rittberger, “Regime Theory and International Environmental Management,” pp. 85-109 in Hurrell and Kingsbury (eds.), *op. cit.*, p. 102-103.

¹³² *Ibid.*, p. 103.

¹³³ Peter M. Haas, “Introduction: Epistemic Communities and International Policy Coordination,” *International Organization*, (Vol. 46, No. 1, Winter 1992, pp. 1-37), p. 3.

primarily deal with the vital role of knowledge and cognitive processes in the formation and the maintenance of international regimes.¹³⁴ They are very fruitful actors in the regime formation through clarifying and defining the problems within a specific issue area and in assisting decision-makers to understand the significance of the issue in question. Apparently, IPCC takes this challenging role in enhancing the cooperation among parties within the framework of the climate change regime.

In this context, a good definition of the problem together with the boundaries of the cooperation areas and utilization of scientific knowledge as well as sharing information among parties through effective communication mechanisms have key roles in the formation of climate change regime. To this end, the process of setting principles, norms and rules and establishing decision making procedures as well as compliance and enforcement measures concerning climate change issue has been initiated by the adoption of the UNFCCC in 1992. Following the UNFCCC, the formation of climate change regime has been continuing by the adoption of the Kyoto Protocol and several other decisions made during the COP sessions throughout the negotiations on climate change.

As the starting point for the climate change regime, the UNFCCC, opened to signature during the Rio Conference in 1992, was signed by 154 governments and European Community. The UNFCCC entered into force on 21 March 1994 after 90 days following the 50th instrument of ratification submitted to the UN Secretary-General. Currently, 192 countries including European Community have ratified the UNFCCC that is almost reaching a universal participation.¹³⁵

¹³⁴ Ayşegül Kibaroglu, *Building a Regime for the Waters of the Euphrates-Tigris River Basin*, (London, The Hague, New York: Kluwer Law International, International and National Water Law and Policy Series, 2002), p. 54.

¹³⁵ See Appendix A: Status of Ratification of the United Nations Framework Convention on Climate Change, (as of 22 August 2009), http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/unfccc_conv_rat.pdf

3.2.1. The Objective and Principles of the UNFCCC

The preamble of the UNFCCC is the starting point for an understanding of objectives and principles of the climate change regime. In preamble, through underlining the common concern of humankind over climate change and accepting the anthropogenic dimension of the problem, several references are made with respect to objectives and principles in general. The preamble of the UNFCCC puts specific emphasis on the rights of present and future generations, sovereign rights of states and their economic development priorities and the main responsibility of developed countries for the emergence of climate change. The preamble also makes reference to the previous process such as the 1972 Stockholm Conference and the provisions of the resolutions of the UN General Assembly regarding climate change on the formation of the climate change regime.

The ultimate objective of the UNFCCC is “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (Article 2, UNFCCC). The UNFCCC also stipulates that ecosystems’ natural adaptation to climate change, food supply security and sustainable development should be taken into consideration when achieving this level that is not specified by the UNFCCC. It is worth stressing that the recognition of this role of the anthropogenic emission in the emergence of climate change could be seen as a fundamental step for the climate change regime.¹³⁶ Thus, a specific issue area within the framework of the climate change regime has been defined as the struggle with anthropogenic greenhouse gas emissions.

The principles of the climate change regime are laid down by the UNFCCC so that any future action in the field of climate change cooperation would be taken on the basis for the established principles by the UNFCCC. In this respect, equity, common but differentiated responsibilities and respective capabilities of the country parties together with precautionary and cost effective policies and measures would be the

¹³⁶ John Vogler, *The Global Commons: Environmental and Technological Governance*, (Chichester, West Sussex: John Wiley&Sons Ltd, Second Edition, 2000), p. 138.

main principles for the future actions taken to achieve the objectives of the UNFCCC (Article 3, UNFCCC). Furthermore, the UNFCCC gives the leading role to the developed country parties in coping with climate change and its adverse effects (Article 3, para. 1, UNFCCC). Also, the most vulnerable developing countries to the adverse effects of climate change and response measures should be given specific consideration and higher priority under this cooperation process. According to the UNFCCC, measures and policies combating climate change should not only distort international trade but also should be carried out in a manner that promotes sustainable economic growth and development of all parties.¹³⁷

Among all these basic principles of the UNFCCC, the ones related to common but differentiated responsibilities and sustainable development have been emphasized intensively particularly by developing country parties throughout the climate change negotiations. The historical responsibility of developed countries for the occurrence of climate change and the ongoing economic development process of developing countries that has not completed yet could be considered the defining factors with regard to this situation. Thus, it would be possible for making differentiation among parties in terms of various commitments to be taken under the UNFCCC.

3.2.2. The Commitments under the UNFCCC

The commitments of the parties under the UNFCCC are determined on the basis of common but differentiated responsibilities, specific national and regional development priorities, objectives and circumstances of the parties (Article 4, para. 1, UNFCCC). In this context, the UNFCCC divides the parties into three main groups with respect to designation of different commitments to the parties.

The first group is Annex-1 parties consisting of the industrialized countries that are members of the OECD as of the year 1992, as well as the countries with economies in transition (CEITs) such as the Russian Federation, the Baltic States and several other

¹³⁷ For the principles of the UNFCCC, see Michael R. Molitor, "The United Nations Climate Change Agreements" in Norman J. Vig and Regina S. Axelrod (eds.), *The Global Environment Institutions, Law and Policy*, (Washington D.C.: Congressional Quarterly Inc, 1999, pp. 210-235), p. 230.

Central and Eastern European countries. Actually, these countries included in Annex-1 were expected to take leading role in dealing with climate change on the grounds of their historical responsibility. However, due to their deteriorating political and economic conditions and decreasing CO₂ emission trends, the CEITs are given ‘a certain degree of flexibility’ for the implementation of their commitments under the UNFCCC such as selecting a different base year from other than 1990 (Article 4, para. 6, UNFCCC). The second group is Annex-2 parties that include only OECD members of Annex-1 and exclude the countries with economies in transition. The last group is non-Annex-1 parties that are composed of developing countries, which are recognized as the countries vulnerable to the adverse effects of climate change and to the impacts of the implementation of climate change response measures. Moreover, least developed countries (LDCs) and several other groups of countries including small island countries, low-lying coastal countries etc, are granted the special consideration to be taken into account primarily by the other parties of the UNFCCC. In this regard, the UNFCCC underlines their specific financial and technological needs owing to the lack of capacity in these country parties to cope with climate change (Article 4, para. 8 and Article 4, para. 9, UNFCCC).

Table 1: Annex-1 parties to the UNFCCC

Australia	Austria	Belarus*	Belgium
Bulgaria*	Canada	Croatia* /a	Czech Republic* /a
Denmark	Estonia*	European Economic Community	Finland
France	Germany	Greece	Hungary*
Iceland	Ireland	Italy	Japan
Latvia*	Liechtenstein /a	Lithuania*	Luxembourg
Monaco /a	Netherlands	New Zealand	Norway
Poland*	Portugal	Romania*	Russian Federation*
Slovakia* /a	Slovenia* /a	Spain	Sweden
Switzerland	Turkey	Ukraine*	United Kingdom of Great Britain and Northern Ireland
United States of America			

a Countries added to Annex I by an amendment that entered into force on 13 August 1998, pursuant to decision 4/CP.3 adopted at COP 3.

* Countries that are undergoing the process of transition to a market economy (CEITs).

Source: http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php, accessed on 25 July 2009.

Table 2: Annex-2 parties to the UNFCCC¹³⁸

Australia	Austria	Belgium	Canada
Denmark	European Economic Community	Finland	France
Germany	Greece	Iceland	Ireland
Italy	Japan	Luxembourg	Netherlands
New Zealand	Norway	Portugal	Spain
Sweden	Switzerland	United Kingdom of Great Britain and Northern Ireland	United States of America

Source: http://unfccc.int/essential_background/convention/background/items/1348.php, (accessed on 25 July 2009)

The commitments under the UNFCCC are designated according to this classification of the parties. In this context, general commitments made by all parties are as follows (Article 4, para.1, UNFCCC):

- develop national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol;¹³⁹
- formulate and implement national and regional programmes containing mitigation and adaptation measures;
- promote sustainable management of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol;
- cooperate in preparing for adaptation;

¹³⁸ Turkey was deleted from Annex-2 list by an amendment (entered into force on 28 June 2002) pursuant to decision 26/CP.7 adopted during COP-7 in 2001.

¹³⁹ Similar to the case of the climate change regime that adopts a convention-protocol approach, the Montreal Protocol (1987) is the protocol based on the Vienna Convention for the Protection of the Ozone Layer (1985).

- take climate change considerations into account in their relevant social, economic and environmental policies and actions;
- promote and cooperate in the fields of scientific, technological, technical and socio-economic research; exchange of information; and education, training and public awareness related to climate change;
- communicate to the COP information related to implementation.

In addition to these general commitments, there are several other commitments to be implemented only by Annex-1 parties within the scope of the UNFCCC. The most salient and important commitment of Annex-1 parties is the aim of reducing individually or jointly anthropogenic greenhouse gas emissions not controlled by the Montreal Protocol to their 1990 levels by the year 2000 (Article 4, para. 2, UNFCCC). Thus, the UNFCCC makes possible for Annex-1 parties to implement joint action in reaching their commitments under the Convention. This wording of the UNFCCC is also characterized as “the most impenetrable treaty language ever drafted.”¹⁴⁰

Each of Annex-1 parties is responsible for adopting national mitigation policies and measures to achieve this emission reduction aim. Moreover, each of these parties should prepare and submit national communications containing information on its mitigation policies and measures and their results. This reporting and review process of Annex-1 parties is formulated in a stricter, regular and in-depth manner compared to that of non-Annex-1 parties.

Annex-2 parties, which are accepted as the wealthiest ones among Annex-1 parties, have further obligations closely related to the responsibilities of non-Annex-1 parties under the UNFCCC. In this regard, each of these countries must provide new and additional financial resources for developing countries to meet the cost of their emission reduction and adaptation activities and measures. Annex-2 parties are also responsible for promoting, facilitating and financing the transfer of environmentally sound technologies and know-how to CEITs and developing parties in order to enable them to implement the provisions of the UNFCCC.

¹⁴⁰ Oberthür and Ott, *op. cit.*, p. 34.

Non-Annex-1 parties are required to report their climate change related activities such as adaptation actions. However, their responsibilities in this respect are more flexible in terms of time frame and also contingent upon the financial assistance to be provided by Annex-2 parties. Therefore, the UNFCCC emphasizes the commitments of non-Annex-1 parties will depend on the actions taken by Annex-2 parties concerning the financial and technical support for developing countries. Furthermore, development levels and poverty eradication processes of these parties are also essential factors for the implementation of their commitments under the UNFCCC.

3.2.3. Institutional Mechanism of the UNFCCC

Prior to explanation of the main institutions of UNFCCC, it is necessary to discuss why there is need for creating strong institutions in the field of multilateral environmental agreements (MEAs) such as the UNFCCC. Due to the lack of institutionalization in international environmental relations, each MEA creates its own autonomous institutional arrangements with the aim of sustaining the cooperation process within the regime that has been established.¹⁴¹ These kind of institutional arrangements, which play vital roles in setting norms and ensuring the compliance of the parties to these norms, usually comprise a Conference or Meeting of the Parties with decision-making powers, a Secretariat, and one or more specialist Subsidiary Bodies.¹⁴²

The climate change regime that is established by the UNFCCC and the Kyoto Protocol also has its own autonomous institutional arrangements with their own lawmaking powers and compliance mechanism. Actually, such an environmental issue as climate change requires that the institutions to be established should meet the need for updated information on climate change science that is subjected to a

¹⁴¹ Ulrich Beyerlin, "State Community Interests and Institution-Building in International Environmental Law," *Zeitschrift Für Ausländisches Öffentliches Recht und Völkerrecht (ZaöRV)*, (56, pp. 602-627, 1996), p. 603-604 in Şule Güneş, *Uluslararası Hukuk Açısından Çevresel Etki Değerlendirmesi*, (Ankara: Siyasal Kitabevi, 2007), p. 138.

¹⁴² Robin Churchill and Geir Ulfstein, "Autonomous Institutional Arrangements in Multilateral Environmental Agreements: A Little-Noticed Phenomenon in International Law," *The American Journal of International Law*, (Vol. 94, 2000, pp. 623-659), p. 623.

constant change. Moreover, they should pave the way for a gradually extended cooperation process with more powerful objectives determined and more parties involved in order for maintaining climate change regime.

For a framework convention, in nature, establishment of potent institutions is vital for the continuation of the cooperation process. Thus, such powerful institutions enable the relevant parties to negotiate further protocols under the convention by means of creating an appropriate environment for negotiations. In this context, the UNFCCC establishes the COP, a Secretariat, the Subsidiary Body for Scientific and Technological Advice (SBSTA), the Subsidiary Body for Implementation (SBI) and a financial mechanism. Therefore, it may be argued powerful institutions established by the UNFCCC seems to balance the weak commitments made by the parties.¹⁴³ It can be also said that owing to the powerful and well-established institutions under the UNFCCC, “the malign, complicated character of the issue has been institutionally counterbalanced.”¹⁴⁴

Obviously, COP is an indispensable body for the climate change regime in terms of its lawmaking power as well as its role in promoting the cooperation by means of adopting new protocols and making amendments. COP, as the supreme decision making body of the UNFCCC, is mainly responsible for ensuring the proper implementation of the UNFCCC. It reviews and promotes the implementation of objectives and the compliance with the commitments within the scope of the UNFCCC. It also makes decisions on the issues related to the rules and procedures for negotiations of new commitments under the UNFCCC. The decisions before COP has been developed through an intense work done by the subsidiary bodies and the Secretariat. COP meets every year regularly, unless the parties decide otherwise. Countries that are observers and parties to the UNFCCC, the UN and its specialized agencies and any body and agency qualified in the UNFCCC matters by COP can

¹⁴³ Alexandre Kiss and Dinah Shelton, *International Environmental Law 1994 Supplement*, (New York: Transnational Publishers, 1994), p. 131.

¹⁴⁴ Jørgen Wettestad, *Designing Effective Environmental Regimes: The Key Conditions*, (Cheltenham: Edward Elgar Publishing, 1999), p. 215.

participate in these meetings. Only parties to the UNFCCC have a right to vote for the issues in question (Article 7, UNFCCC). However, there is a debate in the international law literature with regard to question of legitimacy about the decisions made by COP.¹⁴⁵ Because although COP decisions are generally made through consensus, they are not under the domestic democratic scrutiny, that is to say, not subject to domestic ratification process but rather in the hands of the related executive authority of each party.¹⁴⁶

An interim Secretariat was established in 1991 in Geneva to make arrangements for the sessions of the COP and its subsidiary bodies, compile and disseminate the related data to the UNFCCC matters, provide technical support for the parties, particularly for developing countries and coordinate the relations with other relevant international bodies (Article 8, para. 2, UNFCCC). This interim Secretariat became the permanent secretariat of the UNFCCC in 1996 following a decision taken by COP-1. Currently, it also serves as the secretariat of the Kyoto Protocol. Now, 270 international civil servants work at the Secretariat, which is based in Bonn, Germany.¹⁴⁷ The Secretariat is also given specific tasks including the preparation of the official documents for the COP and subsidiary bodies, the coordination of in-depth reviews of Annex I party national communications and the compilation of greenhouse gas inventory data. In this regard, reporting system of an international environmental agreement is a crucial factor for developing an effective environmental regime. A competent and effective secretariat could appropriately perform this task that is essential for the effectiveness of the established regime. As Von Moltke and Young argue “the effectiveness of the Secretariat is a necessary condition for the effectiveness of the regime.”¹⁴⁸ In brief, the Secretariat is a key

¹⁴⁵ See Güneş, *op. cit.*, 2007, p. 139.

¹⁴⁶ Neil Craik, “Deliberation and Legitimacy in Transnational Environmental Governance: The Case of Environmental Impact Assessments,” *Victoria University of Wellington Law Review*, (38, 2007, pp. 381-402), p. 384.

¹⁴⁷ UNFCCC, *Fact Sheet: UNFCCC Secretariat*, http://unfccc.int/files/press/backgrounders/application/pdf/unfccc_secretariat.pdf

¹⁴⁸ K. von Moltke and Oran R. Young, *International Secretariats: Background paper for workshop at the Rockefeller Brothers Conference Center*, (Pocantico, New York, June 15-18, 1995), p. 2 in Jørgen Wettestad, *op. cit.*, 1999, p. 26.

component of a sustained climate change regime, which necessitates dissemination of information in relation to the cooperation matters to each party in a timely manner. Clearly, an effective Secretariat with sufficient financial resources and expertise is one of the crucial factors in contributing to the cooperation process in the field of climate change.

SBSTA has a responsibility to provide COP timely information and advice on scientific and technological matters relating to the UNFCCC (Article 9, para. 1, UNFCCC). In this respect, promoting development and transfer of clean technologies and improving methodologies in preparing national communications and emission inventories can be said the main works of the SBSTA.¹⁴⁹ SBSTA carries out its work on scientific and technological matters in close coordination with IPCC. Thus, it is able to take use of the IPCC's technical expertise in climate change science in making recommendations on policy related issues of the scientific and technological dimension of the UNFCCC. In this respect, it can be said that SBSTA also acts as an intermediary between the COP/CMP and IPCC within the context of the climate change regime.¹⁵⁰ In addition, cooperation in the field of climate change is a difficult task to achieve due to the fact that this is a matter seen as “a classic example of the persistent mismatch between the language of science and the needs of policy.”¹⁵¹ Accordingly, it becomes apparent that SBSTA, which combines the elements of climate change science with the climate change policy considerations, has the key role in promoting the cooperation on climate change.

SBI is in charge of giving advice to COP on matters related to the better implementation of the UNFCCC. In this respect, review and assessment of national communications, emission inventories and commitments concerning financial

¹⁴⁹ UNFCCC, *A Guide to the Climate Change Convention Process*, (Bonn, Preliminary Second edition, 2002), p. 20, <http://unfccc.int/resource/guideconvkp-p.pdf>

¹⁵⁰ Oberthür and Ott, *op. cit.*, p. 250.

¹⁵¹ Andrew C. Revkin, “Ideas&Trends: Global Waffling; When Will We Be Sure?”, *The New York Times*, 10 September 2000, <http://query.nytimes.com/gst/fullpage.html?res=9C00E3D61039F933A2575AC0A9669C8B63&n=Top/Reference/Times%20Topics/People/R/Revkin,%20Andrew%20C>

assistance of the parties as well as budgetary and administrative matters are under the responsibility of the SBI (Article 10, UNFCCC). Under the climate change regime, the matters related to the implementation are of central importance in achieving the agreed objectives. Obviously, all efforts to deal with climate change can turn out to be meaningless steps without a proper implementation of the regime. Therefore, SBI can play a vital role in developing a sound climate change regime in the future. Both SBSTA and SBI are open to participation by all parties and they operate under the authority and guidance of the COP. The sessions of the SBSTA and SBI are generally held twice a year (June and December).¹⁵²

As mentioned in the section regarding the Rio Conference, the funding issues have a key role in the successful cooperation in the field of environmental issues, particularly climate change. In this connection, the financial mechanism of the UNFCCC was established under the authority and guidance of the COP. It is responsible for providing financial resources on grant or concessional basis, including for the transfer of technology (Article 11, UNFCCC). GEF is assigned to the financial mechanism of the UNFCCC on an interim basis (Article 21, para. 3, UNFCCC). It was established on interim basis in that parties of the UNFCCC agreed to restructure it with the aim of making its representation mechanism more equitable, transparent and universal. COP decided to entrust GEF with operation of the financial mechanism of the UNFCCC on ongoing basis and review financial mechanism every four years in 1998.¹⁵³ Presently, GEF operates several climate change funds including Trust Fund and Strategic Priority on Adaptation under Trust Fund, Least Developed Country Fund, Special Climate Change Fund and Adaptation Fund. Under GEF operation since 1991, a source of 3.3 billion dollars has been

¹⁵² http://unfccc.int/essential_background/convention/convention_bodies/items/2629.php, accessed on 28 July 2009.

¹⁵³ UNFCCC, "Decision 3/CP.4: Review of Financial Mechanism" in *Report of the Conference of the Parties at its Fourth Session, held at Buenos Aires from 2 to 14 November 1998, Addendum, Part Two: Action taken by the Conference of the Parties at its Fourth Session, FCCC/CP/1998/16/Add.1*, 25 January 1999, p. 8.

allocated to climate change projects and also it has provided a further co-financing accounted for 14 billion dollars.¹⁵⁴

3.2.4. Procedural Matters, Settlement of Disputes and Other Issues

There are other issues formulated in a way that aims to enhance climate change cooperation as well. In this context, the UNFCCC stipulates that parties should cooperate on supporting for research and systematic observation (Article 5, UNFCCC) and climate change activities related to education, training and public awareness (Article 6, UNFCCC).

The UNFCCC also includes the procedural matters concerning the communication of information related to the implementation of the UNFCCC. To this end, the UNFCCC determines how reporting procedures, including the implementation of the commitments, national inventories of greenhouse gases, policies and measures together with their effects and timetables for these communications, are to be implemented by the parties (Article 12, UNFCCC).

The UNFCCC also establishes the necessary mechanisms for resolution of questions regarding implementation of the UNFCCC and settlement of disputes (Article 13-14, UNFCCC). A multilateral consultative process is to be established by the parties in order to resolve the questions arising from the implementation of the UNFCCC and divergent views of the parties in understanding of the UNFCCC. To this end, the parties launched the *Ad Hoc* Group on Article 13 (AG-13) for the establishment of a multilateral consultative process at COP-1 in 1995. The AG-13, which met six times, completed its work during COP-4 in 1998. As a result of these meetings, a standing Multilateral Consultative Committee, consisting of 10-15-25 experts in relevant scientific, socio-economic and environmental fields selected according to equitable geographical distribution and rotation between Annex-1 and non-Annex-1 parties, was established. This Committee is to provide assistance by clarifying and resolving the questions with appropriate advice and recommendations on technical, financial

¹⁵⁴ UNFCCC, *Investment and Financial Flows to Address Climate Change*, Bonn, 2007, p. 164.

and information-related dimensions of the question.¹⁵⁵ It was decided that this process is to be conducted in a “facilitative, cooperative, non-confrontational, transparent and timely manner and be non-judicial.”¹⁵⁶ The UNFCCC envisages other dispute settlement mechanisms in case a dispute among parties cannot be resolved within the scope of multilateral consultative process. In this respect, negotiation among parties concerned, establishment of a conciliation commission or submission of the dispute to the International Court of Justice and international arbitration by mutual consent of the parties concerned are the possible ways for the settlement of disputes under the UNFCCC (Article 14, UNFCCC).

Amendments to the UNFCCC and its Annexes and matters related to the protocols to the UNFCCC, voting, withdrawal and reservation procedures are arranged in Articles 15-25 of the UNFCCC. Particularly, Article 17 enables parties to adopt protocols to the UNFCCC, thus the UNFCCC makes possible the adoption of the Kyoto Protocol. Regional economic integration organizations aside from members of the UN or any of its specialized agencies or parties to the Statute of the International Court of Justice can become a party to the UNFCCC (Article 20, UNFCCC).

3.3. The Road to the Kyoto Protocol

3.3.1. Process from COP-1 to COP-3

3.3.1.1. COP-1

After the entry into force of the UNFCCC, COP-1 was held in Berlin, Germany from 28 March-7 April 1995 to discuss the adequacy of the commitments undertaken by Annex-1 parties concerning greenhouse gas emission reduction. The main outcomes of the COP-1 were the Berlin Mandate and the establishment of a new subsidiary

¹⁵⁵ UNFCCC, “Decision 10/CP.4: Multilateral Consultative Process and Annex: Multilateral Consultative Process” in *Terms of Reference in Report of the Conference of the Parties on its Fourth Session, held at Buenos Aires from 2 to 14 November 1998*, FCCC/CP/1998/16/Add.1, 25 January 1999, p. 42-47.

¹⁵⁶ *Ibid.*, p. 43.

body named as the *Ad Hoc* Group on the Berlin Mandate (AGBM). Under the Berlin Mandate, parties agreed to launch a new process for taking actions for post-2000 in order to strengthen the commitments of the Annex-1 parties through the “adoption of a protocol or another legal instrument.”¹⁵⁷

This new process started with the aim of setting quantified limitation and reduction objectives for Annex-1 parties within specified time-frames, such as 2005, 2010 and 2020.¹⁵⁸ Inadequacy of the commitments under the UNFCCC acted as a stimulus to initiate this new round of talks, which initially ensured that no new commitments for developing country parties would be introduced. To this end, AGBM was established to conduct the negotiations within the context of the Berlin Mandate. Until the completion of its work in COP-3, AGBM met eight times to discuss various proposals made by the parties regarding a new protocol or legal document complied with the decisions included in the Berlin Mandate. In a nutshell, “the Berlin Mandate set the stage for a strengthening of industrialized countries’ commitments to protect the global climate.”¹⁵⁹ COP-1 also dealt with the implementation of the UNFCCC by addressing the review of the first national communications submitted by developed countries. Establishment of four-year pilot phase for the implementation of joint projects was another important development during COP-1. The parties also agreed Bonn as the location for the permanent Secretariat of the Convention.

3.3.1.2. COP-2

COP-2 met on 8-19 July 1996 Geneva, Switzerland. Prior to COP-2, IPCC released its second assessment report suggesting ‘discernible human influence on global climate,’ as mentioned before. This emphasis of the IPCC on the human role in climate change prompted the negotiating parties to focus more seriously and eagerly

¹⁵⁷ UNFCCC, “Decision 1/CP.1: the Berlin Mandate: Review of the Adequacy of Article 4, paragraph 2 (a) and (b), of the Convention, including proposals related to a protocol and decisions on follow-up,” in *Report of the Convention of the Parties on its First Session, held at Berlin from 28 March to 7 April 1995*, FCCC/CP/1995/7/Add.1, 6 June 1995, p. 4.

¹⁵⁸ *Ibid.*, p. 5.

¹⁵⁹ Oberthür and Ott, *op. cit.*, p. 47.

on binding emission reduction commitments. As a result of this process, parties agreed on the Geneva Ministerial Declaration calling for “accelerating negotiations on the text of a legally binding protocol or another legal instrument to be completed in due time for adoption at the third session of the COP.”¹⁶⁰ However, some countries including Australia, New Zealand, Russia did not endorse this Declaration but its adoption could not be hindered by these countries notably in the absence of any agreed formal voting procedure within COP. Another important development during COP-2 was the shift in the USA policy to support for climate change negotiations, particularly for the issues related to binding commitments.

3.3.1.3. COP-3

COP-3 is one of the most significant sessions throughout the COP history since parties adopted the Kyoto Protocol during this meeting held at Kyoto, Japan from 1-11 December 1997. The process under Berlin Mandate was also finalized during COP-3 by the adoption of a protocol containing binding commitments for the parties. Naturally, divergent interests of the parties to the UNFCCC made the negotiations on binding commitments under AGBM a challenging process. In this respect, participation of developing countries and reduction commitments of each Annex-1 party under a new protocol were among the most contentious issues of the COP-3. On the other hand, it should be noted that AGBM Chair R. Estrada Oyuela, also the former chairman of the INC, showed great effort in reaching consensus among parties for the adoption the Kyoto Protocol. In this respect, the adoption process of the Kyoto Protocol is best described by Christopher Flavin words:¹⁶¹

With the spotlight of the world’s media upon them, delegates decided they had more to fear from a failed agreement than one with which they only partially agreed, and stood aside as Estrada

¹⁶⁰ UNFCCC, “the Geneva Ministerial Declaration” in *Report of the Conference of the Parties on its Second Session, held at Geneva from 8 to 19 July 1996*, FCCC/CP/1996/15/Add.1, 29 October 1996, p. 73.

¹⁶¹ Christopher Flavin, “Last Tango in Buenos Aires,” *World Watch*, (November/December 1998, pp. 10-18), p. 13.

pushed relentlessly through the text....Despite remaining reservations, no government was prepared to stand in the way.

3.4. The Kyoto Protocol

Obviously, international cooperation on climate change has reached its zenith in 1997 with the adoption of the Kyoto Protocol. With the adoption of the Kyoto Protocol, the parties were able to come to an agreement on a number of contentious matters which they had divergent interests. Andresen underscores that through the Kyoto Protocol:¹⁶²

The EU got their numbers, the USA got their institutions, Japan got prestige as a host, the JUSSCANNZ countries (a group of countries comprising Japan, the USA, Switzerland, Canada, Australia, Norway and New Zealand) got their differentiation and the developing countries avoided their commitments.

According to Article 25 para. 1 of the Protocol, ratification of 55 parties to the UNFCCC, which accounted in total for at least 55% of the total CO₂ emissions for 1990 of the parties included Annex-1 is required for the Protocol to be entered into force. The Kyoto Protocol, adopted on 11 December 1997, entered into force on 16 February 2005, 90th day after the ratification by the Russian Federation on 18 November 2004. As of 8 July 2009, 187 parties to the UNFCCC including the European Community have ratified the Protocol.¹⁶³ As a general rule, only the parties to the UNFCCC are entitled to become parties to the Kyoto Protocol (Article 24, para. 1, Kyoto Protocol).

The Kyoto Protocol built on the UNFCCC is a significant milestone in the formation of climate change regime. It makes outstanding contributions to the climate change

¹⁶² S. Andresen, *The Development of the Climate Regime: Positions, Evaluation and Lessons*, (FNI Report, 3/98, 1998), p. 28 in S. Andresen and S. Agrawala, "Leaders, pushers and laggards in the making of the climate regime," *Global Environmental Change*, (Vol. 12, No. 1, 2002, pp. 41-51), p. 47.

¹⁶³ See Appendix B: Status of Ratification of the Kyoto Protocol (as of 8 July 2009), http://unfccc.int/files/kyoto_protocol/status_of_ratification/application/pdf/kp_ratification_20090708.pdf, Turkey and Kazakhstan will become parties to the Protocol on 26 August 2009 and on 17 September 2009 respectively.

regime through introducing stricter review and reporting rules, quantified emission reduction targets and new market mechanisms that provide flexibility for parties in meeting their targets. As stressed by Cutajar, the former Executive Secretary of the UNFCCC and the current Chair of the *Ad Hoc* Working Group on Long Term Cooperative Action under the Convention (AWG-LCA), “the Kyoto Protocol can be best understood as being an economic instrument that uses flexible targets and market mechanisms to limit greenhouse gas emissions at the least cost.”¹⁶⁴ Actually, one of the salient aspects of the Kyoto Protocol is its innovative market mechanisms that link combating climate change to the measures to be taken in the field of economic policy as well as to the private sector’s involvement in this cooperation process.

3.4.1. The Commitments under the Kyoto Protocol

Prior to explanation of the commitments under the Kyoto Protocol, it should be noted that the Kyoto Protocol has been built on the legal framework established by the UNFCCC. It shares the same principles, aims and institutions included in the UNFCCC. It also strengthens the commitments made under the UNFCCC through introducing binding quantified emission limitation and reduction commitments for the UNFCCC parties, namely Annex-1 countries. Particularly, the differentiation among the parties to the UNFCCC in terms of responsibilities, as Annex-1, Annex-2 and non-Annex countries, is the main determining factor regarding formalization of the legally binding and concrete commitments under the Kyoto Protocol.

The Kyoto Protocol introduces general commitments similar to that of the UNFCCC to all parties. In this context, all parties are responsible for (Article 10, Kyoto Protocol):

- progressing towards the improvement of the quality of emissions data;
- initiating national mitigation and adaptation programmes;
- taking steps to promote and finance the transfer of, access to environmentally friendly technology;

¹⁶⁴ Michael Zammit Cutajar, "Reflections on the Kyoto Protocol-Looking Back to See Ahead," *International Review for Environmental Studies*, (Vol. 5, No. 1, 2004, pp. 61-70), p. 62.

- cooperating in scientific research and international climate observation networks and
- supporting education, training, public awareness and capacity building.

In terms of commitments, the salient part of the Kyoto Protocol is its legally binding commitments for the Annex-1 parties, which are listed in Annex-B to the Kyoto Protocol with their quantified emission limitation and reduction commitments.¹⁶⁵

Table 3: Annex-B parties to the Kyoto Protocol and their emission targets

Party	Emission Targets
European Community, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom of Great Britain and Northern Ireland, Bulgaria,* Czech Republic,* Estonia,* Latvia,* Liechtenstein, Lithuania,* Monaco, Romania,* Slovakia,* Slovenia,* Switzerland	- 8%
United States of America	- 7%
Canada, Hungary,* Japan, Poland*	- 6%
Croatia*	- 5%
New Zealand, Russian Federation,* Ukraine*	0
Norway	+ 1%
Australia	+ 8%
Iceland	+ 10%

* Countries that are undergoing the process of transition to a market economy (CEITs).

Source: http://unfccc.int/kyoto_protocol/items/3145.php, accessed on 14 June 2009.

These individual emission targets are expected to result in reduction of overall emissions at least 5% below 1990 levels in the commitment period 2008 to 2012 (Article 3, Kyoto Protocol). As mentioned before, the CEITs have a right to choose a base year different from 1990 (Article 3, para. 5, Kyoto Protocol). As for the emission of HFCs, PFCs and SF₆, any party may choose either 1990 or 1995 as a

¹⁶⁵ Annex-1 and Annex-2 are the lists within the scope of the UNFCCC and Annex-A and Annex-B lists are included in the Kyoto Protocol.

base year.¹⁶⁶ It is also emphasized that Annex-1 parties must make demonstrable progress in implementing their commitments by 2005 (Article 3, para. 1, Kyoto Protocol).

Kyoto Protocol also allows joint fulfillment of the commitments by any group of parties (Article 4, Kyoto Protocol). Within the scope of this article, the member states of the European Community were able to redistribute their emission targets among themselves by means of “EU bubble” that was formed under the Kyoto Protocol. The details of the EU commitments will be explained in the relevant part of the Chapter 3 of this thesis.

Kyoto Protocol clarifies which greenhouse gases and sectors as well as sources are to be targeted by the parties in reaching their emission limitation and reduction commitments. In this respect, CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ are prescribed for emissions targets in Annex-A list to the Kyoto Protocol. Annex-A to the Kyoto Protocol also covers the sectors and sources including energy, industrial process, solvent and other product use, agriculture and waste, to be deal with implementing commitments with regard to emission limitation and reduction by the parties.

Obviously, the reporting and information procedures lie at the heart of the Kyoto Protocol mainly due to the quantified emission targets of the Annex-1 parties to the UNFCCC inscribed in Annex-B list to the Kyoto Protocol. To this end, the Kyoto Protocol includes more detailed rules for the parties with regard to reporting and information requirements. In this respect, Annex-1 parties are obliged to prepare two more reports, the initial report and the true-up period report, apart from an annual report and a periodic national communication under the Kyoto Protocol.¹⁶⁷ In a nutshell, a stronger mechanism under the Kyoto Protocol has been established to review the quantified emission limitation and reduction commitments of the parties.

¹⁶⁶ UNFCCC, *Uniting on Climate: A guide to the Climate Change Convention and the Kyoto Protocol*, (Bonn, 2007), p. 27.

¹⁶⁷ *Ibid.*, p. 34.

The Kyoto Protocol introduces stricter rules in the field of review procedures in order to ensure proper implementation of the Kyoto Protocol. An international expert review team undertakes an in-dept review of each report submitted by the parties. If the team lists any question as for implementation of the Kyoto Protocol, Conference of Parties serving as the Meeting of Parties to the Kyoto Protocol (CMP)¹⁶⁸ will address the issues in question with the assistance of other relevant bodies under the UNFCCC and the Kyoto Protocol (Article 8, Kyoto Protocol).

With regard to financial requirements under the Kyoto Protocol, the developed country parties and Annex-2 parties to the UNFCCC are required to provide new and additional financial resources to the developing country parties in meeting the agreed full cost and agreed full incremental costs arising from achieving their commitments (Article 11, Kyoto Protocol).

3.4.2. The Kyoto Mechanisms

In order to enhance the cooperation among parties in the field of emission reduction and limitation commitments and ensure the implementation of these commitments in a cost-effective way, the Kyoto Protocol introduces three new mechanisms. These Kyoto Mechanisms, also known as Flexibility Mechanisms, are Joint Implementation (JI), Clean Development Mechanism (CDM), and Emission Trading. The institutional and procedural details of these mechanisms are formalized during COP-7 held in Marrakesh in 2001. These three mechanisms have been established in accordance with idea that “greenhouse gas emissions are a global problem and that the place where reductions are achieved is of less importance.”¹⁶⁹ These flexibility

¹⁶⁸ CMP is the highest decision-making authority under the Kyoto Protocol. In the literature, the term Meeting of Parties (MOP) is sometimes used instead of the CMP. However, in the official documents of the Kyoto Protocol, the UNFCCC Secretariat opts for using the abbreviation CMP. After the entry into force of the Kyoto Protocol, COP and CMP sessions will be referred to as COP/CMP process in this study.

¹⁶⁹ Raoul Weiler, “The Kyoto Protocol and its Socio-ethical Aspects” in Etienne Vermeersch (ed.), *Reading the Kyoto Protocol: Ethical Aspects of the Convention on Climate Change*, (Delft: Eburon, 2005, pp. 19-56), p. 39.

mechanisms are also effective means of maximizing participation of the parties in dealing with climate change.

3.4.2.1. Joint Implementation (JI)

The Kyoto Protocol does not use the term JI directly. However, Article 6 stipulates that Annex-1 parties may carry out projects with the aim of reducing emissions or enhancing removals by using sinks in other Annex-1 parties. In this respect, an investor Annex-1 party can make use of the emission reduction units (ERUs),¹⁷⁰ generated by such projects in a host Annex-1 party, to reach its emission targets. Only Annex-1 parties with a commitment inscribed in Annex-B, can benefit from the JI and generate ERUs in accordance with other relevant eligibility requirements.¹⁷¹

The Marrakesh Accords adopted in 2001 set the rules with respect to the JI. In this regard, there are two procedures for verification of the ERUs. According to the first procedure, commonly referred to as ‘Track 1,’ if a host party meets all of the eligibility requirements, it may verify its own JI projects and issue ERUs. According second one, ‘Track 2,’ if a host party does not meet all eligibility requirements, its JI project has to be verified by the Joint Implementation Supervisory Committee (JISC) established during COP-11/CMP-1 in 2005.¹⁷² In 2005, parties agreed that having met the necessary requirements, only the projects starting as of 2000 may be eligible as JI projects and these projects may only generate ERUs after the beginning of the year 2008.¹⁷³

¹⁷⁰ An ERU represents one tonne of CO₂ equivalent greenhouse gas emissions reduction achieved through a JI project; in IPIECA, *Climate Change: A Glossary of Terms*, p. 27.

¹⁷¹ UNFCCC, “Decision 9/CMP.1: Guidelines for the implementation of Article 6 of the Kyoto Protocol” in *Report of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol on its First Session, held at Montreal from 28 November to 10 December 2005*, FCCC/KP/CMP/2005/8/Add.2, 30 March 2006, p. 6.

¹⁷² UNFCCC, *Uniting on Climate*, p. 31.

¹⁷³ *Ibid.*, p. 2, see also Decision 16/CP.7.

The JI, as a project-based mechanism, is providing technology transfer and foreign investment for the host party and enabling the investor party to meet its commitments as well. The JI projects have mostly concentrated in the CEITs, notably Russia, Bulgaria and Ukraine, owing to the lower investments costs in these countries to achieve emission targets. However, the JI has received much less attention than the other project-based mechanism, the CDM, partly because of its later crediting date and national institutional constraints.¹⁷⁴

The JI projects that entered into the pipeline (having a public project design document) are mainly in the sectors including energy distribution (CH₄ reduction), renewable energy and energy efficiency; and there were 192 JI projects in the pipeline at the end of 2006.¹⁷⁵

3.4.2.2. Clean Development Mechanism (CDM)

The negotiations relating to the proposals on the CDM had started just before the adoption of the Kyoto Protocol. Therefore, the Chairman of the negotiations refer Article 12 defining the CDM as the ‘Kyoto Surprise’ due to speed of this process and the centrality of the CDM in brokering the final outcome of Kyoto.¹⁷⁶

According to Article 12, a clean development mechanism is established with the aim of assisting to both non Annex-1 parties to the UNFCCC in achieving sustainable development and ultimate objective of the UNFCCC and Annex-1 parties to the UNFCCC in meeting their emission targets under the Kyoto Protocol. Certified emission reductions (CERs) accruing from the project activities such as emission reduction and afforestation and reforestation projects in host non-Annex-1 parties to

¹⁷⁴ Katia Karousakis, *Joint Implementation: Current Issues and Emerging Challenges*, (OECD/IEA, COM/ENV/EPOC/IEA/SLT(2006)7, October 2006), p. 8, <http://www.oecd.org/dataoecd/45/32/37672335.pdf>

¹⁷⁵ UNEP Risø Center website, <http://cdmpipeline.org/ji-projects.htm#4>, accessed on 12 April 2009.

¹⁷⁶ Remarks by Ambassador Raul Estrada Oyuela, From Kyoto to Buenos Aires: Technology Transfer and Emission Trading in the conference held at Columbia University, New York, 24 April 1998 in Jacob Werksman, “The Clean Development Mechanism: Unwrapping the Kyoto Surprise,” *RECIEL*, (Vol. 7, Issue. 2, 1998, pp. 147-158), p. 147.

the UNFCCC may be used by the investor Annex-1 parties to the UNFCCC for complying with their emission targets. CERs, accrued from projects from the year 2000 onwards, can be used to help Annex-1 parties to the UNFCCC inscribed in Annex-B to the Kyoto Protocol to meet their commitments and; therefore, this prompt start of the makes the CDM a unique mechanism compared to other mechanisms under the Kyoto Protocol.¹⁷⁷

The CDM is operating under the authority and guidance of the CMP as well as the supervision of an executive board of the CDM (Article 12, para. 4, Kyoto Protocol). The CDM projects should be developed on the basis of voluntary participation of the parties involved; real, measurable and long-term benefits as for mitigation of climate change and additional emission reductions (Article 12, para. 5, Kyoto Protocol).

The CDM projects are mostly implemented in the sectors such as renewable energy, energy efficiency, methane reduction, coal mine/bed and fuel switch.¹⁷⁸ The CDM was launched in November 2001 and the first CERs were issued in October 2005.¹⁷⁹ By April 2009, there have been 4200 projects in the pipeline of which 1500 are registered.¹⁸⁰ The CDM projects also provide finance for adaptation activities in the developing countries (Article 12, para. 8, Kyoto Protocol). In this respect, a levy, which amounts to 2% of the CERs issued from the CDM projects, is allocated to resources under the Adaptation Fund within the framework of the Kyoto Protocol in order to finance adaptation activities.

¹⁷⁷ Henrik Malvik and Hege Westskog, *The Kyoto mechanisms and the quest for compliance: Unresolved issues and potential pitfalls*, (CICERO Working Paper 2001: 3, Oslo, April 2001), p. 9, <http://www.cicero.uio.no/media/1219.pdf>

¹⁷⁸ Sami Kamel, *Guidebook to Financing CMD Projects*, (UNEP Risø Center, Roskilde, May 2007), p. 24.

¹⁷⁹ UNFCCC, *Investment and Financial Flows to Address Climate Change*, p. 138.

¹⁸⁰ <http://cdm.unfccc.int/Statistics/index.html>, accessed on 12 April 2009.

In addition to emission cuts and sustainable development benefits, the CDM has been a very fruitful instrument for engaging developing countries in the Kyoto Protocol.¹⁸¹ However, the CDM projects are sometimes criticized because of their heavily concentration in some particular regions, namely Asia Pacific and Latin America. In fact, the CDM projects have been concentrated disproportionately in China, India, the Republic of Korea, Brazil and Mexico while African countries have gotten little owing to their insufficient capacities to gain and carry out a CDM project.¹⁸² There is also another debate whether these projects really contribute to the sustainable development process in developing countries.¹⁸³ Actually, all these issues will be understood after the completion of the first commitment period under the Kyoto Protocol by 2012.

3.4.2.3. Emission Trading

Emission trading, a market-based mechanism under the Kyoto Protocol, is a cost-effective way of reducing and limiting the emissions for Annex-B parties. According to Article 17, Annex-1 parties to the UNFCCC inscribed in Annex-B to the Kyoto Protocol may make use of emission trading in order to meet their emission targets under the Kyoto Protocol. It is also stated that COP would define the principles, rules and guidelines regarding verification, reporting and accountability for emission trading in its following sessions.

For the 2008-2012 commitment period, the upper limit of emission, which Annex-B parties to the Kyoto Protocol would emit, is referred as assigned amounts. Under the Emission Trading, the units of these assigned amounts, in other words Assigned Amount Units (AAUs), can be exchanged among Annex-B parties for ensuring the

¹⁸¹ Courtney Cabot Venton and Sara Shaw, *Carbon Trading*, (A Tearfund briefing paper, Teddington, May 2008), p. 8.

¹⁸² For geographical distribution of the CDM projects, see <http://cdmpipeline.org/cdm-projects-region.htm>

¹⁸³ Etem Karakaya, "Proje Temelli Esneklik Mekanizmaları: Temiz Kalkınma Mekanizması ve Ortak Yürütme" in Etem Karakaya (ed.), *Küresel Isınma ve Kyoto Protokolü: İklim Değişikliğinin Bilimsel, Ekonomik ve Politik Analizi*, (İstanbul: Bağlam Yayınları, 2008, pp. 169-196), p. 180.

compliance with their emission targets. Annex-B parties that cannot reach their emission targets can trade AAUs, which are not used, from other Annex-B parties that meet their emission targets and stay below their assign amounts. Article 3 para. 10 and para. 11 also enable the Parties to exchange such units in meeting their emission targets. Within the scope of emission trading, ERUs, CERs and Removal Units (RMUs) from sink activities can be traded aside from AAUs.¹⁸⁴ It is also possible to establish national and regional emission trading schemes under the umbrella of the Kyoto Protocol. In this context, European Union - Emission Trading Scheme (EU-ETS) and trading systems in Norway, United Kingdom, and New South Wales-Australian Capital Territory have been established so far.

The Kyoto parties determined the details of emission trading through the Marrakesh Accords agreed during COP-7 in 2001. Requirements for participation in emission trading are the same as those for the JI. Each Annex-B party is required to hold a commitment period reserve, a minimum quantity of Kyoto units and in this respect the reserve requirement is the lower of 90% of its assigned amount or 100% of five times its most recently reviewed inventory.¹⁸⁵ Thus, the parties aimed at preventing the problem of “oversell” of the Kyoto units. Moreover, an international transaction log has been established to electronically register and track the tradable units under the Kyoto Protocol and ensure the transactions of these units made under emission trading. The Kyoto Protocol also allows the access of industries or other entities, which have assign amounts allocated by their authorized national bodies, to emission trading. However, the ultimate responsibility for meeting emission targets of the concerning Kyoto party still endures.

However, emission trading has been criticized since it leads to convert not only the common good -the atmosphere- into a commercial good but also the principle of

¹⁸⁴ OECD/IEA, *Act Locally, Trade Globally: Emission Trading for Climate Policy*, (OECD/IEA, Paris 2005), p. 36, http://www.iea.org/textbase/nppdf/free/2005/act_locally.pdf

¹⁸⁵ Erik Haites and Farhana Yamin, “Special Feature on the Kyoto Protocol: Overview of the Kyoto Mechanisms,” *International Review for Environmental Strategies*, (Vol. 5, No. 1, 2004, pp. 199-216), p. 213.

polluter pays into the opposite 'the polluter buys his way out.'¹⁸⁶ It can be said that this mechanism has been designed in a way aiming that the costs incurred by protection of the atmosphere have been counterbalanced by the economic benefits and concerns of the parties to curb greenhouse gas emissions.¹⁸⁷

3.4.3. Institutional Mechanism of the Kyoto Protocol and Compliance and Other Issues

As mentioned before, the Kyoto Protocol has nearly the same institutions as that of the UNFCCC. COP, as the highest authority under the UNFCCC, serves CMP (Article 13, para. 1, Kyoto Protocol) that met together with COP-11 in 2005 for the first time. CMP with similar functions and responsibilities to those carried out by COP, meets at the same period as COP. However, parties to the UNFCCC that have not ratified the Kyoto Protocol can participate in CMP as observers (Article 13, para. 2, Kyoto Protocol), thereby having no right to vote under the Kyoto Protocol. Meanwhile, it should be emphasized that the COP/CMP meetings are unique in international environmental politics since a great number of participants from governments, international and observer organizations and media come together during the COP/CMP meetings. To illustrate, 10,828 representatives from 192 States, 413 observer organizations and a number of media organs participated in COP-13 held in Indonesia-Bali in December 2007.¹⁸⁸ Similar to the COP/CMP case, the SBI and the SBSTA continue to serve as subsidiary bodies of the Kyoto Protocol as well. However, several new institutions have been established owing to the entry into force of the Kyoto Protocol. As mentioned earlier, the CDM Executive Board, mainly responsible for day-to-day operation of the CDM and the JISC that has a supervisory role in verification of ERUs have been established within the scope of the Kyoto Protocol mechanisms.

¹⁸⁶ Raoul Weiler, *op. cit.*, p. 53.

¹⁸⁷ For an ethical discussion on climate change, see Algan, *op. cit.*, pp. 191-204.

¹⁸⁸ UNFCCC, *List of Participants*, Conference of the Parties, Thirteenth Session, Bali, 3-14 December 2007, FCCC/CP/2007/INF.1 (Part 1), 14 December 2007.

More importantly, after the entry into force of the Kyoto Protocol, a Compliance Committee has been established under the Kyoto Protocol. In fact, the Kyoto Protocol provides the basis for the creation of such a compliance mechanism. In this regard, as stated in Article 18 of the Kyoto Protocol, procedures and mechanisms relating to non-compliance of the Protocol would be adopted during the first session of the CMP. To this end, during the CMP-1 the parties decided to establish a Compliance Committee with its two branches, a Facilitative Branch and an Enforcement Branch, to strengthen the parties' compliance with their commitments. It should be noted that one of the central features of the compliance mechanism is its close links with the annual inventories and national communications submitted by the parties. These reporting instruments are of critical importance for getting reliable information regarding the issues including sources and sinks of greenhouse gases, policies and measures being taken, to be assessed within the context of compliance mechanism.

The Facilitative Branch is responsible for providing advice and assistance to parties in order to ensure compliance of the parties with their obligations particularly other than those related to Annex-1 parties' emission reduction commitments under the climate change regime. Indeed, Facilitative Branch presents valuable opportunities for parties and the regime through encouraging parties to re-engage in fulfilling their obligations and also informing the relevant authorities about the difficulties experienced during the implementation of the commitments by parties.¹⁸⁹ Therefore, the Facilitative Branch is an essential component of the climate change regime in terms of not only its role in contributing to the cooperation process but also improving the implementation of the regime. In brief, it can be said that it has been designed to function as an "early warning system for Annex-1 parties that may have trouble meeting their emissions targets."¹⁹⁰

¹⁸⁹ Juliette van der Jagt, "Elaborating an international compliance regime under the Kyoto Protocol" in Ekko C. van Ierland, Joyeeta Gupta and Marcel T.J. Kok (eds.), *Issues in International Climate Policy*, (Cheltenham, Northampton: Edward Elgar Pub., 2003, pp. 223-241), p. 227.

¹⁹⁰ David Hunter, (et. al.), *op. cit.*, p. 648.

The Enforcement Branch has a task for deciding upon the consequences of non-compliance of the commitments by the parties that is relating to Annex-1 parties' emissions reduction commitments primarily. It also serves as "judicial like forum for determining whether an Annex I Party has met its target, complied with its monitoring and reporting requirements and met the eligibility tests for participating in the flexibility mechanisms."¹⁹¹ In this respect, if a party does not comply with its emissions target as a result of exceeding its assigned amount, this party must make up the difference between its emissions and its assigned amount during the second commitment period, plus a penalty of additional deduction from the party's assigned amount for the second commitment period of a number of tonnes equal to 1.3 times the amount in tonnes of excess emissions. Furthermore, this Party must submit a compliance action plan and its eligibility of making transfers under emission trading will be suspended.¹⁹² According to the Marrakesh Accords, it is not possible for parties to appeal the decisions of the Facilitative Branch, however, parties can appeal the decisions of the Enforcement Branch in relation the emission reduction commitments to CMP as the competent appellate authority. In this respect, there is need for a three-fourths majority vote of the parties present and voting at the meeting to overturn its decision.¹⁹³

Clearly, "compliance is a key determinant of regime effectiveness."¹⁹⁴ Hence, in the last decades, countries have tried to establish powerful and efficient compliance mechanisms in the field of international environmental cooperation. Actually, non-compliance procedures were introduced in a MEA for the first time, by the Montreal Protocol to the Vienna Convention on the Protection of the Ozone Layer, which

¹⁹¹ *Ibid.*, p. 649.

¹⁹² http://unfccc.int/kyoto_protocol/compliance/introduction/items/3024.php, accessed on 1 May 2009.

¹⁹³ UNFCCC, "Decision 24/CP.7: Procedures and Mechanisms relating to Compliance under the Kyoto Protocol" in *Report of the Conference of Parties on its Seventh Session, held at Marrakesh from 29 to 10 November 2001, Addendum, Part two: Action taken by the Conference of the Parties, FCCC/CP/2001/13/Add.3*, 21 January 2002, p. 74.

¹⁹⁴ Scott, *op. cit.*, p. 177.

could be seen as a precedent and starting point for other MEAs in this regard.¹⁹⁵ It can be said that climate change regime takes a further step to enhance the role of non-compliance procedures in effective and proper implementation of a MEA. In this context, the compliance mechanism, which is one of the distinctive aspects of the Kyoto Protocol, makes the Kyoto Protocol more ambitious than other MEAs that typically introduce facilitative procedures.¹⁹⁶ Strikingly, the compliance mechanism under the Kyoto Protocol has been designed in a way that the most challenging commitments, notably emission reduction commitments, are subjected to enforcement-oriented non-compliance consequences.¹⁹⁷ Moreover, incorporation of enforcement measures into the Kyoto Protocol's compliance mechanism makes the climate change regime as the first and groundbreaking regime to do so.¹⁹⁸ Certainly, establishing such a powerful compliance mechanism is of great importance to the climate change regime since the commitments are global in character and also potential socio-economic and environmental effects of non-compliance may be enormous and irreversible. Therefore, it can be said that as a sign of the global and significant character of climate change, this system established by the Kyoto Protocol together with the Marrakesh Accords appears to be only international environmental regime having a penal character.¹⁹⁹

¹⁹⁵ Cesare P.R. Romano, *The Peaceful Settlement of International Environmental Disputes: A Pragmatic Approach*, (The Hague, London, Boston: Kluwer Law International, 2000), p. 66.

¹⁹⁶ Jutta Brunnée, "Europe, the United States and the Global Climate Regime: All Together Now?," *Journal of Land Use*, (Vol. 24, No. 1, Fall 2009, pp. 1-44), p. 7.

¹⁹⁷ Jutta Brunnée, "The Kyoto Protocol: Testing Ground for Compliance Theories?," *ZaöRV* (63, 2003, pp. 255-280), p. 280.

¹⁹⁸ *Ibid.*, p. 279.

¹⁹⁹ Geir Ulfstein and Jacob Werksman, "The Kyoto Compliance System: Towards Hard Enforcement" in Olav Schram Stokke, Jon Hovi and Geir Ulfstein (eds.), *Implementing the Climate Regime: International Compliance*, (London: Earthscan, 2005, pp. 39-63), p. 59.

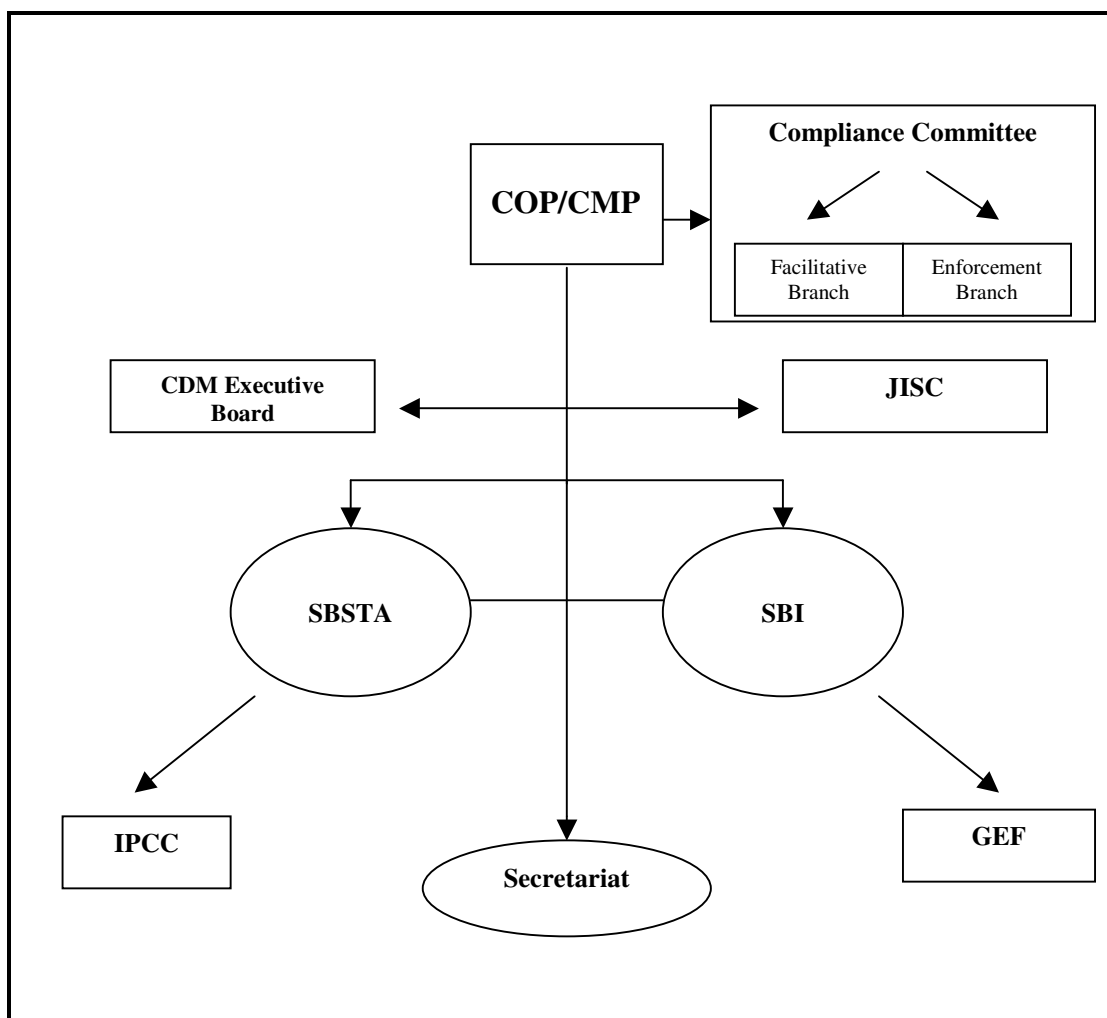


Figure 3: The Main Institutions of the International Climate Change Regime (the UNFCCC and the Kyoto Protocol)

Source: UNFCCC, *A Guide to the Climate Change Convention Process*, (Bonn, Preliminary Second edition, 2002), p. 15, <http://unfccc.int/resource/guideconvkp-p.pdf>²⁰⁰

Besides these main institutions established by the UNFCCC and the Kyoto Protocol, there are also several other minor organs having different functions under the climate change regime such as Expert Group on Technology Transfer, LDCs Expert Group and Non-Annex-1 Consultative Group of Experts as well as *ad hoc* working groups, namely the *Ad Hoc* Working Group on Further Commitments for Annex-1 Parties

²⁰⁰ This figure is an updated version of the figure contained in the source, therefore some changes have been made on the figure.

under the Kyoto Protocol (AWG-KP) and *Ad Hoc* Working Group on Long Term Cooperative Action under the Convention (AWG-LCA).

The Kyoto Protocol also introduces several key areas of policies and measures for Annex-1 parties in achieving their emission limitation and reduction commitments (Article 2, Kyoto Protocol). In this context, these measures and policies include:²⁰¹

enhancing energy efficiency; promoting renewable energy; favoring sustainable agriculture; recovering methane emissions through waste management; encouraging reforms in relevant sectors to reduce emissions; removing subsidies and other market distortions; protecting and enhancing greenhouse gas sinks and reducing transport sector emissions.

There is no legally binding specific action to be taken by the Annex-1 parties according to the language of Article 2. However, depending on their effective coordination among parties, these policies and measures included in Article 2 may turn out to be important elements of future cooperation actions in the field of climate change in the 21st century.²⁰²

Finally, Kyoto Protocol also addresses the rules and procedure with regard to amendments to the Kyoto Protocol and its Annexes (Article 20-21, Kyoto Protocol). The adoption of an amendment requires for consensus and if there is no consensus, as a last resort a three-fourths majority vote of the parties present and voting at the meeting is required. The matters related to voting, withdrawal, entry into force and reservation are also arranged in Articles 22-27 of the Kyoto Protocol.

3.5. The International Climate Change Negotiations from COP-4 Onwards

This part of the chapter will initially focus on the process starting from COP-4, the first COP after the adoption the Kyoto Protocol, until COP-10, the last COP before

²⁰¹ UNFCCC, *Caring for Climate: A guide to the Climate Change Convention and the Kyoto Protocol*, Bonn, revised edition, 2005, p. 26.

²⁰² Oberthür and E. Ott, *op. cit.*, p. 29.

the entry into force of the Kyoto Protocol. Then, this chapter will deal with the negotiations for the post-Kyoto period through examining the period between COP-11/CMP-1 and COP-14/CMP-4, the last COP and CMP session held in 2008.

3.5.1. Process from COP-4 to COP-10

3.5.1.1. COP-4

COP-4 was held on 2-14 November 1998 in Buenos Aires, Argentina. During COP-4, parties adopted the Buenos Aires Plan of Action (BAPA) in order to prepare for entry into force of the Kyoto Protocol and set out a timetable for finalizing the details of the Kyoto Protocol such as the Kyoto Mechanisms, sinks, compliance and the issues related to developing countries.²⁰³ The BAPA also underlined there should be made demonstrable progress on these issues such as financial mechanism, development and transfer of technologies and activities jointly implemented in order to promote the implementation of the Convention. Generally speaking, not only in the specifics of the BAPA but also the parties' efforts to remain "committed to restoring the momentum of the process by embracing the discipline of self imposed deadlines",²⁰⁴ made COP-4 a significant climate change meeting in the climate change negotiation history. COP-4 is also an important event for the formation of climate change regime since the non-compliance procedures within the scope of the UNFCCC agreed during COP-4 pursuant to the report of the AG-13.²⁰⁵

3.5.1.2. COP-5

COP-5 took place in Bonn, Germany on 25 October-5 November 1999. It can be said that COP-5 was an uneventful meeting for climate change negotiations since no

²⁰³ UNFCCC, "Decision 1/CP.4: The Buenos Aires Plan of Action" in *Report of the Conference of Parties on its Fourth Session, held at Buenos Aires from 2 to 14 November 1998*, FCCC/CP/1998/16/Add.1, 25 January 1999, p. 4.

²⁰⁴ IISD, "Report of the Fourth Session of the Conference of Parties to the UN Framework Convention on Climate Change: 2-13 November 1998," *ENB*, (Vol. 12, No. 97, 16 November 1998), p. 14.

²⁰⁵ See Cesare P.R. Romano, *op. cit.*, p. 68.

significant decision was made during COP-4. During COP-5, the parties focused on the work built on the BAPA for promoting the implementation of the Convention and facilitating the entry into force of the Kyoto Protocol by 2002. During COP-5, parties also discussed the issues including capacity building, development and transfer of technology, Kyoto mechanisms, national communications and the matters relating to the preparations of the COP-6.

3.5.1.3. COP-6

Initially, COP-6 was held at The Hague, the Netherlands from 13-25 November 2000. In the first part of the COP-6, the parties were engaged in several contentious issues regarding the operational details and implementation of the Kyoto Protocol. The negotiations with respect to sinks or land use, land use change and forestry (LULUCF); supplementarity under the Kyoto mechanisms, notably emission trading; compliance issues, and funding together with developing country participation in Kyoto commitments ended in deadlock due to the disagreement mainly between the EU and the USA. This stalemate was portrayed as “a train wreck that had been proceeding in slow motion for several years, as the EU, the USA and like-minded nations, and developing countries squabbled over the design and implementation of measures to limit greenhouse gas emissions.”²⁰⁶

The resumed COP-6 was held at Bonn, Germany from 16-27 July 2001 with the aim of finalizing the unfinished work as for the details of the Kyoto Protocol. In the meantime, the USA rejection of ratifying the Kyoto Protocol in March 2001 marked a turning point in the climate change negotiations. Under the atmosphere of pessimism resulting from the USA withdrawal, the parties were able to reach an agreement, the Bonn Agreement on the implementation of the BAPA, on the contentious key issues, which they could not agree during the first part of the COP-6. Thus, the matters related to Kyoto mechanisms, carbon sinks, compliance and financing were resolved by the Bonn Agreement. In this respect, according to the

²⁰⁶ Henry D. Jacoby and David M. Reiner, “Getting climate policy on track after The Hague,” *International Affairs*, (Vol. 77, Issue. 2, 2001, pp. 297-312), p. 297.

EU, the Bonn Agreement saved the Kyoto Protocol²⁰⁷ and it was the “triumph of multilateralism over unilateralism” in the eyes of Group of 77 and China.²⁰⁸

3.5.1.4. COP-7

COP-7 was held at Marrakesh, Morocco on 29 October-10 November 2001. It was a milestone in finalizing the operational details relating to the commitments under the Kyoto Protocol. During COP-7, the parties agreed on draft decision included in the Marrakesh Accords covering the issues relating to the timely ratification and proper implementation of the Kyoto Protocol negotiated by the parties since COP-3. It also addressed the issues within the context of the BAPA and the Bonn Agreement with the aim of strengthening the implementation of the UNFCCC.

The main decisions at COP-7 included rules, procedures, modalities and guidelines for Kyoto mechanisms; compliance matters; funding issues; capacity building and LULUCF. The parties also discussed the proposals for amendment of the Annex-1 and Annex-2 lists to the UNFCCC, that is to say, the proposal for deletion of Turkey from these two lists as well as inclusion of Kazakhstan in Annex-1 to the UNFCCC. In this context, it was decided that the name of Turkey was deleted from Annex-2 list to the UNFCCC and she remained as a *sui generis* party in Annex-1 list to the UNFCCC. However, no amendment was made in relation to the proposal made by Kazakhstan and it would remain as a non-Annex-1 party for the purposes of the UNFCCC.²⁰⁹

²⁰⁷ Suraje Dessai, *The Climate Regime from The Hague to Marrakesh: Saving or Sinking the Kyoto Protocol?*, (Tyndall Center for Climate Change Research, Working Paper 12, December 2001), p. 8, http://www.tyndall.ac.uk/publications/working_papers/wp12.pdf

²⁰⁸ Remarks by Ambassador Bagher Assadi, Chairman of the Group of 77 and China, at the closing session of the high-level segment of the resumed COP-6, Bonn, 22 July 2001 in IISD, “Summary of the Resumed Sixth Session of the Conference of Parties to the UN Framework Convention on Climate Change: 16-27 July 2001,” *ENB*, (Vol. 12, No. 176, 30 July 2001), p. 14.

²⁰⁹ IISD, “Summary of the Seventh Conference of the Parties to the UN Framework Convention on Climate Change: 29 October-10 November 2001,” *ENB*, (Vol. 12, No. 189, 12 November 2001), p. 9.

3.5.1.5. COP-8

COP-8 took place in New Delhi, India on 23 October-1 November 2002. During COP-8, parties discussed the issues regarding the implementation of the Marrakesh Accords adopted in COP-7 held in 2001. The most important development was the adoption of the Delhi Ministerial Declaration on Climate Change and Sustainable Development. The Delhi Declaration put special emphasis on the priority of social and economic development, poverty eradication and adaptation needs of developing countries in dealing with climate change.²¹⁰ In a nutshell, COP-8 not only exemplified the usual divide between developed and developing country positions regarding climate change but also crystallized the impossibility of calling for more comprehensive commitments.²¹¹

3.5.1.6. COP-9

COP-9 convened in Milan, Italy on 1-12 December 2003. The main decisions and conclusions of the COP-9 included issues related to afforestation and reforestation activities under the CDM, LULUCF and financial mechanism of the Convention. Because of the concentration of the meeting on the issues including sinks and forestry, COP-9 is remembered as the “forest COP.”²¹² However, no significant decision that could affect the cooperation process considerably had been made during COP-9.

3.5.1.7. COP-10

COP-10, the last COP prior to the entry into force of the Kyoto Protocol, was held at

²¹⁰ UNFCCC, “Decision 1/CP.8: Delhi Ministerial Declaration on Climate Change and Sustainable Development” in *Report of the Conference of the Parties on its Eight Session, held at New Delhi from 23 October to 1 November 2002*, FCCC/CP/2002/7/Add.1, 28 March 2003, p. 3-5.

²¹¹ IISD, “Summary of the Eighth Conference of the Parties to the UN Framework Convention on Climate Change: 23 October-1 November 2002,” *ENB*, (Vol. 12, No. 209, 4 November 2002), p. 2.

²¹² IISD, “Summary of the Ninth Conference of the Parties to the UN Framework Convention on Climate Change: 1-12 December 2003,” *ENB*, (Vol. 12, No. 231, 15 December 2003), p. 2.

Buenos Aires, Argentina, on 6-18 December 2004. The parties agreed on a package covering assistance to be provided for parties, particularly for developing countries, in preparation of coping with climate change. In this respect, the parties adopted the Buenos Aires Programme of Work on Adaptation and Response Measures, which included scientific assessments of vulnerabilities, support for adaptation actions and effort to integrate these actions into sustainable development planning.²¹³ Besides an emphasis on mitigation as a building block in combating climate change, COP-10 equally focused on the adaptation issues and therefore it was nicknamed “the Adaptation COP.”²¹⁴

3.5.2. Developments from COP-11/CMP-1 to COP-14/CMP-4 and the Post-Kyoto Negotiations

In this part of the chapter, the developments since the entry into force of the Kyoto Protocol will be scrutinized through focusing on the COP/CMP process until COP-14/CMP-4. In this regard, the post Kyoto negotiations are also examined to shed light on possible developments relating to future climate change regime.

3.5.2.1. COP-11/CMP-1

COP-11/CMP-1 took place in Montreal, Canada, on 28 November-10 December 2005. This is a historical event in terms of being the first CMP, which the parties to the Kyoto Protocol have begun to convene for the first time after the entry into force of the Kyoto Protocol. Primarily, the Marrakesh Accords aiming at facilitating the implementation of the Kyoto Protocol and covering the operational and technical issues related to the Kyoto Protocol were adopted during COP-11/CMP-1. Parties also made a decision on starting the negotiations for the post-2012 commitments of

²¹³ UNFCCC, “Decision 1/CP.10: Buenos Aires programme of work on adaptation and response measures” in *Report of the Conference of the Parties on its Tenth Session, held at Buenos Aires from 6 to 18 December 2004*, FCCC/CP/2004/10/Add.1, 19 April 2005, p. 2-6.

²¹⁴ IISD, “Summary of the Tenth Conference of the Parties to the UN Framework Convention on Climate Change: 6-18 December 2004,” *ENB*, (Vol. 12, No. 260, 20 December 2004), p. 14.

the developed countries inscribed in Annex-1.²¹⁵ To this end, a new subsidiary body was established to enable the parties to carry out the post-2012 negotiations on the basis of the Kyoto Protocol in accordance with Article 3, para. 9 of the Kyoto Protocol: the *Ad Hoc* Working Group on Further Commitments for Annex-1 Parties under the Kyoto Protocol (AWG-KP). Besides, the COP-11/CMP-1 reached an agreement on initiating a dialogue among the parties on the long-term cooperation under the Convention.²¹⁶ According to COP-11/CMP-1 President Stéphane Dion the progress made during the meetings could be outlined as:²¹⁷

three 'I's of implementation, improvement and innovation. On implementation, he highlighted adoption of the Marrakesh Accords and the compliance mechanism, while improvement he cited initiatives on adaptation and the CDM. On innovation, he said parties must demonstrate a strong commitment to Protocol Article 3.9, but that action under Article 3.9 was only a part of the solution.

3.5.2.2. COP-12/CMP-2

COP-12/CMP-2 took place in Nairobi, Kenya on 6-17 November 2006. During COP-12/CMP-2, parties addressed the issues including the Kyoto mechanisms, compliance procedures, capacity building and implementation of the Convention and adopted the first amendment to the Kyoto Protocol allowing Belarus to take emission reduction

²¹⁵ UNFCCC, "Decision 1/CMP.1: Consideration of Commitments for Subsequent Periods for Parties included in Annex-1 to the Convention under Article 3, paragraph 9, of the Kyoto Protocol" in *Report of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol on its First Session, held at Montreal from 28 November to 10 December 2005*, FCCC/KP/CMP/2005/8/Add.1, 30 March 2006, p. 3.

²¹⁶ UNFCCC, "Decision 1/CP.11: Dialogue on Long-term Cooperative Action to Address Climate Change by Enhancing Implementation of the Convention" in *Report of the Conference of the Parties on its Eleventh Session, held at Montreal from 28 November to 10 December 2005*, FCCC/CP/2005/Add.1, 30 March 2006, p. 3-4.

²¹⁷ IISD, "Summary of the Eleventh Conference of the Parties to the UN Framework Convention on Climate Change and First Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol: 28 November-10 December 2005," *ENB*, (Vol. 12, No. 291, 12 December 2005), p. 16-17.

targets under Annex-B.²¹⁸ Russia also made a proposal on voluntary commitments to be made by non-Annex-1 parties during the Nairobi Conference.

The Nairobi Conference was generally regarded as ‘Africa COP’ since it heavily involved in adaptation and development issues relating to developing countries, particularly for the LDCs in Africa.²¹⁹ In this respect, among the main outcomes of the Nairobi Conference were the agreement on the Adaptation Fund, Nairobi Work Programme on Adaptation and the Nairobi Framework on Capacity Building for the CDM that were crucial for especially developing countries.

3.5.2.3. COP-13/CMP-3

COP-13/CMP-3 was held in Bali, Indonesia on 3-15 December 2007. Bali Conference was one of the most significant events throughout the history of climate change negotiations on the grounds of its special place in determining the post-Kyoto climate change regime. Obviously, the emphasis put by the IPCC’s fourth assessment report published in 2007 on calling for an urgent action against climate change made a substantial contribution to the outcomes of the Bali Conference.

The salient outcome of the Bali Conference was the adoption of the BAP, which includes a two-year negotiating process to be completed by COP-15 to be held at the end of 2009 to ensure proper implementation of the UNFCCC. To this end, a new body under the Convention was established to conduct the negotiations: *Ad Hoc* Working Group on Long Term Cooperative Action under the Convention (AWG-LCA). The parties also came to a decision to complete the work of the AWG-KP by 2009 in parallel with the work programme of the AWG-LCA. Thus, parties launched a two track negotiation process for framing the future climate change regime.

²¹⁸ IISD, “Summary of the Twelfth Conference of the Parties to the UN Framework Convention on Climate Change and Second Meeting of the Parties to the Kyoto Protocol: 6-17 November 2006,” *ENB*, (Vol. 12, No. 318, 20 November 2006), p. 1.

²¹⁹ C. Okereke, P. Mann, H. Osbahr, B. Müller and J. Ebeling, *Assessment of Key Negotiating Issues at Nairobi Climate COP/MOP and What It Means for the Future of the Climate Regime*, (Tyndall Center for Climate Change Research, Working Paper 106, June 2007), p. 3, http://www.tyndall.ac.uk/publications/working_papers/twp106.pdf

The BAP has been built on four main building blocks:

- 1- Enhanced national/international action on mitigation of climate change;
- 2- Enhanced action on adaptation;
- 3- Enhanced action on technology development and transfer to support on mitigation and adaptation and
- 4- Enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

Parties also underlined the necessity for achieving a shared vision for long-term cooperative action, including a long-term global goal for emission reduction.²²⁰ In a nutshell, “the BAP reflects a common understanding of the fact that climate change affects all countries and that fighting it requires common efforts, by developed and developing countries alike.”²²¹

The Bali Conference agreed on a number of issues including finalizing the Adaptation Fund under the Kyoto Protocol, a decision on reducing emissions from deforestation in developing countries, and outcomes on technology transfer, the Kyoto mechanisms, capacity building, national communications and adverse effects of combating climate change.²²²

²²⁰ UNFCCC, “Decision 1/CP.13: Bali Action Plan” in *Report of the Conference of the Parties on its Thirteenth Session, held in Bali from 3 to 15 December 2007*, FCCC/CP/2007/6/Add.1, 14 March 2008, p. 3-7.

²²¹ UN General Assembly, *Implementation of United Nations environmental conventions: Report of the Executive Secretary of the United Nations Framework Convention on Climate Change on the United Nations Climate Change Conference, Bali, 2007, and its follow up*, A/63/294, 15 August 2008, p. 3.

²²² IISD, “Summary of the Thirteenth Conference of the Parties to the UN Framework Convention on Climate Change and Third Meeting of Parties to the Kyoto Protocol: 3-15 December 2007,” *ENB*, (Vol. 12, No. 354, 18 December 2007), p. 1.

3.5.2.4. COP-14/CMP-4

COP-14/CMP-4 was held in Poznan, Poland on 1-13 December 2008. As mentioned before, the expiry of commitment period under the Kyoto Protocol in 2012 necessitated a prompt action to start negotiations for the post-Kyoto period. In accordance with the decisions adopted during COP-13/CMP-3 held in Bali in 2007, parties began the post-Kyoto negotiations in 2008 with the aim of reaching an agreement until COP-15/CMP-5 to be held in 2009. In this respect, COP-14/CMP-4, held at the midpoint of the negotiations, was of critical importance to the ongoing international climate change negotiations in terms of giving either positive or negative signal about the future negotiation process.

The main outcome of COP-14/CMP-4 was the governments' strong commitment to shift into a "full negotiating mode" in 2009 for the purpose of reaching a comprehensive agreement until the end of 2009.²²³ COP-14/CMP-4 also made decisions on several key issues including the agreement among the parties on the preparation of a draft concrete negotiation text for the post-Kyoto period by June 2009 and adoption of work programmes for 2009. Some progress has been made on several issues including adaptation, finance, technology, reducing emissions from deforestation and forest degradation (REDD) and disaster management that are primarily important for developing countries. COP-14/CMP-4 also witnessed hard discussions made among developed and developing parties about the financial issues such as institutional arrangements for the Kyoto Protocol's Adaptation Fund and resources to be allocated for the relevant funds to meet the adaptation needs of developing countries.

Political and economic developments coincided with COP-14/CMP-4, such as the presidential change in the USA, protracted negotiations among the EU countries regarding the adoption of the climate and energy package and global economic crisis,

²²³ UNFCCC, "Decision 1/CP.14: Advancing the Bali Action Plan" in *Report of the Conference of the Parties on its Fourteenth Session, held in Poznan, Poland from 1 to 13 December 2008*, FCCC/CP/2008/7/Add.1, 18 March 2009, p. 2.

also affected the outcome of the Poznan negotiations. Therefore, COP-14/CMP-4 took place in a political and economic environment that was not ideal for major political breakthroughs in the history of climate change negotiations.²²⁴

Presently, it is uncertain whether parties will agree on a new comprehensive agreement or continue with a revised version of the Kyoto Protocol for the post-2012 period. The post-Kyoto negotiations are now proceeding on the basis of two track under the UNFCCC (AWG-LCA) and the Kyoto Protocol (AWG-KP) and parties will reach an outcome by the end of 2009. Currently, it is not clear yet how negotiating parties will avoid risk of duplication in the works of these working groups that are parallel to each other.

Table 4: From COP-1 to COP-15/CMP-5

COP/CMP	Date	Venue
COP-1	28 March - 7 April 1995	Berlin – Germany
COP-2	8-19 July 1996	Geneva – Switzerland
COP-3	1-11 December 1997	Kyoto – Japan
COP-4	2-14 November 1998	Buenos Aires – Argentina
COP-5	25 October - 5 November 1999	Bonn – Germany
COP-6 Part-1/ COP-6 Part-2	13-24 November 2000/ 13-27 July 2001	The Hague – The Netherlands/ Bonn – Germany
COP-7	29 October - 9 November 2001	Marrakesh – Morocco
COP-8	23 October - 1 November 2002	New Delhi – India
COP-9	1-12 December 2003	Milan – Italy
COP-10	6-18 December 2004	Buenos Aires – Argentina
COP-11/CMP-1	28 November - 10 December 2005	Montreal – Canada
COP-12/CMP-2	6-17 November 2006	Nairobi – Kenya
COP-13/CMP-3	3-15 December 2007	Bali – Indonesia
COP-14/CMP-4	1-13 December 2008	Poznan – Poland
COP-15/CMP-5	7-18 December 2009 (<i>to be held</i>)	Copenhagen – Denmark

²²⁴ IISD, “Summary of the Fourteenth Conference of Parties to the UN Framework Convention on Climate Change and Fourth Meeting of Parties to the Kyoto Protocol: 1-12 December 2008,” *ENB*, (Vol. 12, No. 395, 15 December 2008), p. 18.

CHAPTER 4

POLICIES AND POSITIONS OF THE KEY PLAYERS WITHIN THE CONTEXT OF INTERNATIONAL CLIMATE CHANGE REGIME

This chapter of the thesis will deal with climate change policies of the key players including the EU, USA, Japan, the Russian Federation, the Group of 77 and China (G-77/China) that covers China, the Alliance of Small Island States (AOSIS), the LDCs, the African Group, Organization of Petroleum Exporting Countries (OPEC) and finally the Group of Latin American and Caribbean States (GRULAC). The chapter also talks about the positions of other subordinate actors including the Umbrella Group, Environmental Integrity Group (EIG) and other political negotiation coalitions, namely a group of countries of Central Asia, Caucasus, Albania and Moldova (CACAM), countries from the League of Arab States and the Intergovernmental Agency of the Francophonie, Open Balkan Group (OBG) and Central Group as well as Turkey that have a unique position under the current climate change regime.

Before going into details of the chapter, it is necessary to underline several special aspects of the political negotiation groups in relation to climate change negotiations. First of all, these groups are given precedence in terms of taking floor for expressing the views of its members over other countries not represented in any group during the negotiations. The members of these groups also have a chance to exchange information and express their opinions concerning the negotiation topics before and after each session. Thus, they are able to take stronger and more coordinated position in the negotiations. In order to facilitate the talks on sensitive and complex matters in the negotiations, the Chair of the session may sometimes take the initiative of

establishing a relatively small informal group called as ‘Friends of Chair,’²²⁵ comprising of selected delegates, notably from the negotiation groups. Being able to express the positions of its members in the closed sessions of the Friends of Chairs makes the political negotiation groups more active and influential in key parts of the negotiations. These political negotiations also provide a fruitful platform for countries that have relatively small delegations and scarce resources in the negotiations. When taking a variety of complex technical issues discussed and a great number of parties involved in the negotiations into consideration, these groups play a crucial role in reaching consensus in a very limited period of time.

4.1. The European Union (EU)

The EU, consisting of 27 member states, speaks in the negotiations as a group. In the climate change negotiations, the EU is represented by the EU Presidency that rotates among member states every six months and the EU Presidency speaks ‘on behalf of the European Community and its member states’ during the negotiations. It is the only regional economic integration organization that became a party to the UNFCCC and the Kyoto Protocol. Although the EU acts homogeneously during the negotiations, its members have divergent status under the current climate change regime owing to their different economic development levels. For example, there are Annex-2 parties (the most developed OECD countries of the EU namely Germany, France, etc.), CEITs parties that are included only in Annex-1 list (Eastern European countries such as Slovenia, Bulgaria, etc.) and non-Annex-1 parties (Malta²²⁶ and Southern Cyprus) inside the EU. There are also divergent views among the richer EU members in north that are ardent supporters of more ambitious targets and poorer ones in south that have concern about ambitious target because of their increasing greenhouse gas emissions.

²²⁵ *Multilateral Environmental Agreement Negotiator’s Handbook*, (UNEP Course Series 5, Joensuu: University of Joensuu, Second Edition, June 2007), p. 3-32, http://unfccc.int/resource/docs/publications/negotiators_handbook.pdf

²²⁶ Malta submitted its proposal to amend Annex-1 list to the UNFCCC by adding its name to the list in 2009. See UNFCCC, *Proposal from Malta to amend Annex I to the Convention*, FCCC/CP/2009/2, 13 May 2009.

According to the European Environment Agency (EEA), the EU-27 is responsible for 10.5% of global greenhouse gas emissions and emissions of the EU-15 account for 81% in total greenhouse gas emissions of the EU.²²⁷ The EU, as both an Annex-1 and Annex-2 party to the UNFCCC and under the Kyoto Protocol is committed to reduce its total greenhouse gases by 8% by 2012 compared to 1990 levels. However, this 8% greenhouse gas emission reduction target is valid only for 15 member states of the EU called as EU-15.²²⁸ After the adoption of the Kyoto Protocol, the number of the EU member states has reached to 27 with the last enlargement wave in 2007. As for other 12 member states apart from South Cyprus and Malta, there are individual targets as specified in Annex-B list of the Kyoto Protocol.²²⁹

As mentioned earlier, Kyoto Protocol makes fulfilling emission targets jointly possible for all parties. Thus, the EU-15 made a burden sharing agreement in 1998 in order to share their emission allowances in a cost-effective, fair and differentiated manner that reflects the different national circumstances. In addition, this burden sharing agreement or the EU bubble enables the EU members to act together and in coordination to meet their targets. In the case of any failure to reach the emission targets at the EU level, the EU member states will be individually accountable for their own emissions targets that are specified under the burden sharing agreement.

²²⁷ European Environment Agency (EEA), *Greenhouse Gas Emission Trends and Projections in Europe 2008: Tracking Progress towards Kyoto Targets*, (EEA, Copenhagen, EEA Report No 5/2008, 2008), p. 6-16.

²²⁸ EU-15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.

²²⁹ Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Romania, Slovak Republic and Slovenia have reduction targets of 8% and Hungary and Poland have reduction targets of 6%.

Table 5: The EU-15 Burden-sharing Agreement for the Kyoto Protocol

Member State	Target	Member State	Target
Austria	-13%	Italy	- 6.5%
Belgium	- 7.5%	Luxembourg	- 28%
Denmark	- 21%	Netherlands	- 6%
Finland	0%	Portugal	+ 27%
France	0%	Spain	+ 15%
Germany	- 21%	Sweden	+ 4.0%
Greece	+ 25%	United Kingdom	- 12.5%
Ireland	+ 13%		

Source: Council Decision of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfillment of the commitments thereunder, Annex II, *Official Journal of the European Communities*, (2002/358/CE), 15.05.2002, p. 20.

For the purpose of cutting greenhouse gas emissions to comply with its Kyoto commitments, the EU-15 has achieved a 2.7% emission reduction by 2006 compared to 1990 levels and greenhouse and a 7.7% emission reduction has been realized in the EU-27 between 1990 and 2006.²³⁰ In this respect, the EU has taken several policy measures in climate-related sectors and also initiated new policy programmes in order to meet its emission reduction targets under the Kyoto Protocol, For instance, the first and second European Climate Change Programmes were launched in 2000 and 2005 respectively with the aim of adopting comprehensive package of policy measures in the field of emission reduction. To this end, numerous measures have taken in policy areas including flexibility mechanisms, research and development activities and sectors such as energy, transport, industry and agriculture. Among these measures, the salient one is the EU-ETS that is established by Directive 2003/87/EC, which entered into force on 25 October 2003.

²³⁰ EEA, 2008, p. 6-7.

The EU-ETS, as a classic cap and trade system inspired by the Kyoto Protocol, is not operated under the Kyoto Protocol. The EU-ETS, consisting of two phases (first phase of 2005-2007 and second phase of 2008-2012) covers more than 11.500 installations in the EU-27 including mainly power sector and carbon intensive industrial sectors responsible for more than 40% of the total greenhouse gas emissions in the EU.²³¹ The objective of the EU-ETS is to “to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner.”²³² The EU-ETS is a scheme that enables the companies concerned to trade the allowances for their emissions of greenhouse gases determined in accordance with the overall environmental ambition of their government’s National Allocation Plans each other.²³³ In this context, a quantity limit or cap on CO₂ emissions are assigned to each member state in accordance with the burden sharing agreement and then the member states distribute these tradable allowances to the sectors and firms in the sector involved. Following the completion of this process, these installations trade their allocated allowances in order to comply with their targeted emissions caps in a certain period of time. The EU-ETS is also linked to the CMD and JI, the flexibility mechanisms under the Kyoto Protocol, by a directive adopted in 2004.²³⁴ This legislation allows firms to meet their targets through earning credits from the CDM and JI carried out in CEITs and non-Annex-1 parties that presents an opportunity for reducing emissions in a cheaper way.

²³¹ European Commission, *EU emissions trading: an open system promoting global innovation*, 2007, p. 7, http://ec.europa.eu/environment/climat/pdf/emission_trading2_en.pdf and A. Denny Ellerman and Paul L. Joskow, *The European Union’s Emission Trading System in perspective*, (Pew Center on Global Climate Change, May 2008), p. 3.

²³² Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas allowance trading within the Community and amending Council Directive 96/61/EC, *Official Journal of the European Union*, 25.10.2003, p. 35.

²³³ Jon Birger Skjærseth and Jørgen Wettestad, “Implementing EU Emissions Trading: Success or Failure?,” *International Environmental Agreements: Politics, Law and Economics*, (Vol. 8, No. 3, 2008, pp. 275-290), p. 276.

²³⁴ See Directive 2004/1001/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol’s project mechanisms, *Official Journal of the European Union*, 13.11.2004.

In brief, this system is designed as a market mechanism based on the principles of polluter pays and putting a price on carbon emissions at EU level. Strikingly, the EU-ETS, as the largest multi-country and multi-sectoral emission trading system, has reached a market value of 50 billion dollars in 2007.²³⁵ As having been emphasized by the EU officials, the EU-ETS has been the cornerstone of the climate policy of the EU in terms of its vital role in any EU success related to reduction of greenhouse gas emissions and compliance with the Kyoto Protocol as well as subsequent commitment periods.²³⁶ Apart from the EU-ETS, the EU member states have taken measures in the sectors not covered by the EU-ETS. They also benefit from the Kyoto mechanisms in their efforts to reach their emissions targets. So, all of these policy measures covering a number of different sectors and policy tools at EU level to cut greenhouse gas emissions demonstrate how hybrid the current EU system is.²³⁷

The position of the EU on the current climate change negotiations deserves attention to focus on since the EU is one of the most crucial actors with the ability of shaping the future climate change regime. Throughout the climate change negotiations, the EU always calls for stronger and more comprehensive actions to cope with climate change and draws parties' attention to the fact that combating climate change is a urgent matter. Climate change is one of the most important international policy topics in which the EU has been heavily involved from the outset. As it is underscored by Bretherton and Vogler, "the EU has been a major participant in the attempt to create an international climate change regime since its inception."²³⁸ The EU sees the climate change not only as a serious global environmental problem, but

²³⁵ Karan Capoor and Philippe Ambrosi, *State and Trends of the Carbon Market 2008*, (The World Bank, Washington, D.C., May 2008), p. 7.

²³⁶ Jon Birger Skjærseth and Jørgen Wæsted, "The Origin, Evolution and Consequences of the EU Emissions Trading System," *Global Environmental Politics*, (Vol. 9, Issue. 2, May 2009, pp. 101-122), p. 101-102.

²³⁷ Gernot Klepper and Sonja Peterson, "Emissions Trading, CDM, JI and More: The Climate Strategy of the EU," *The Energy Journal*, (Vol. 27, No. 2, 2006, pp. 1-26), p. 2.

²³⁸ Charlotte Bretherton and John Vogler, *The European Union as a Global Actor*, (New York: Routledge, Second Edition, 2006), p. 106.

also as a policy instrument to project itself as a global leader on this issue.²³⁹ Actually, the EU has emerged as a leader in the cooperation process particularly after the USA repudiation of the Kyoto Protocol. This role of the EU was seen in the process of persuading the Russian Federation to ratify the Kyoto Protocol for making the entry into force of the Protocol possible after the USA withdrawal. Thus, EU was able to display its vital role for climate change regime through using its the economic and political power as well as diplomatic and problem-solving capabilities. Moreover, the EU itself underlines its “unique position to respond to the impacts of climate change on international given its leading role in development, global climate policy and the wide array of tools an instruments at its disposal.”²⁴⁰

The EU’s post-2012 climate change policy is formulated in accordance with the energy and climate related targets as agreed by the European Parliament and Council on climate and energy package in December 2008. Within this context, EU is committed to reduce its greenhouse gas emissions by 20% in 2020 compared to 1990 levels. Besides, the EU decided to increase the share of renewable energy to 20% in its final energy consumption and improve energy efficiency by 20% as well as to establish an extended and ambitious EU-ETS, a legal framework for environmentally safe carbon capture and storage as well as on the related proposals on CO₂ emissions from cars and on fuel quality.²⁴¹ It should be noted that the EU’s climate change strategy has been carried out in parallel with not only its policy on developing a low-carbon economy and but also its policy on ensuring energy security. Thus, the EU has been able to adopt more ambitious targets in the field of climate change through

²³⁹ Jon Hovi, Tora Skodvin and Steinar Andresen, “The Persistence of the Kyoto Protocol: Why Other Annex I Countries Move on Without the United States,” *Global Environmental Politics*, (Vol. 3, Issue. 4, November 2003, pp. 1-23), p. 15.

²⁴⁰ Climate Change and International Security, Paper from the High Representative and the European Commission to the European Council, S113/08, 14 March 2008, p. 2, http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf

²⁴¹ European Commission, Press release on the final adoption of Europe’s climate and energy package, Climate Change: Commission welcomes final adoption of Europe’s climate and energy package, IP/08/1998, Brussels, 17 December 2008, <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1998&format=HTML&aged=0&language=EN&guiLanguage=en>

linking the issue to energy security of its member states, a policy area where they face with several problems, particularly with the Russian Federation, in recent years.

As for the post-2012 climate change negotiations, the position of the EU is based on the target of keeping global mean surface temperature below 2°C compared with pre-industrial levels. Thus, the EU aims at preventing irreversible and unpredictable changes in climate coupled with possible security impacts in the future. To this end, the EU supports for a ambitious target to be taken by developed countries that accounts for 25% to 40% greenhouse gas emissions reduction by 2020 and 80% to 95% by 2050 compared to 1990 levels.²⁴² According to the EU, in order to be able to achieve this goal, there is a need for developing of a comprehensive climate regime that will be built on broader participation from both developed and advanced developing countries. Annex-1 parties to the UNFCCC, EU member states, EU candidate countries and potential candidate non-Annex-1 countries together with relatively developed non-Annex-1 parties compared with other countries included in the same list, notably OECD member states and candidates for membership²⁴³ should contribute to this goal for the post-2012 climate regime. Therefore, as an indication of its leading role, the EU declared a 20% reduction of its greenhouse gas emissions by 2020 compared to 1990 levels. The EU also declares its readiness to take a more ambitious target that accounts for 30% emissions reduction by 2020 compared to 1990 levels if other developed and advanced developing countries are committed themselves to take ambitious targets for the post-2012 period.

To conclude, the EU's success in developing effective climate change policies has also wider policy implications in the field of international cooperation on climate change. In this regard, the EU's ability to exercise leadership as well as its credibility within this context are dependent not only upon any failure or success of the EU as

²⁴² UNFCCC, "Submission of France on behalf of the European Community and its member states in *Ideas and Proposals on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties, Addendum*, FCCC/AWGLCA/2008/MISC.5/Add.1, 21 November 2008, p. 6.

²⁴³ Council of the European Union, *Contribution of the Council (Environment) to the Spring European Council (19 and 20 March 2009): Further development of the EU position on a comprehensive post-2012 climate agreement, Council Conclusions*, (7128/09, Brussels, 3 March 2009), p. 3.

for dealing with climate change but also the success of the Kyoto Protocol which it championed.²⁴⁴ Therefore, the EU's policy towards the post-2012 climate change negotiations is essential to establish a sound and sustained climate change regime for the post-2012 period.

4.2. The United States of America (USA)

Indisputably, the USA is one of the significant actors in the climate change regime with its special situation and great capacity to influence the outcomes of the climate change cooperation process from the outset. This is because the USA with the highest Gross Domestic Product (GDP) is not only the largest energy consumer but also the largest greenhouse gas emitter in the world. Therefore, it has an undeniable responsibility as regards the emergence of climate change as a global challenge. For instance, it is responsible for 20.6% of global greenhouse gases emissions in 2000. Furthermore, it ranks as the first country with its 29.3 % share of world cumulative CO₂ emissions for the period between 1850-2002.²⁴⁵ In terms of the current trends as to its greenhouse gas emissions, total greenhouse gas emissions of the USA have grown by 14.4% from 1990 to 2007 and energy sector accounts for more than 86% of total USA greenhouse gas emissions in 2007.²⁴⁶ As a result of its tremendous share in global greenhouse gas emissions, the USA has become a focal point for any climate discussion covering mitigation and adaptation matters.

The USA is both an Annex-1 and Annex-2 party to the UNFCCC and it has a 7% emission reduction target by 2012 compared to 1990 levels within the context of the Kyoto Protocol. However, although it signed the Kyoto Protocol, it has neither ratified nor officially withdrawn from the Kyoto Protocol up to now. During the

²⁴⁴ Jørgen Wettstad, "The complicated development of EU climate policy" in Joyeeta Gupta and Michael Grubb (eds.), *Climate Change and European Leadership: A Sustainable Role for Europe?*, (Dordrecht, Boston, London: Kluwer Academic Publishers, 2000, pp. 25-46), p. 26 and Bretherton and Vogler, *op. cit.*, p. 110.

²⁴⁵ Baumert (et. al.), *op. cit.*, p. 12-31.

²⁴⁶ U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*, (Washington D.C., EPA 430-R-09-004, 15 April 2009), p. ES-3 - ES-11.

Kyoto negotiations, the USA seemed to be more ambitious for emission reduction targets owing to the Clinton Administration's goals of acquiring the international leadership in climate change policy. At that time it was suggested that the USA leadership was essential for making cooperation in the field of international environmental policy issues such as climate change possible.²⁴⁷ Indeed, so many views of the USA have been incorporated into the Kyoto Protocol such as covering emissions of six greenhouse gases rather than only CO₂, including sinks and emission trading as an innovative market mechanism.²⁴⁸ However, before the adoption of the Kyoto Protocol in December 1997, an outstanding political development emerged as a major issue concerning the USA's climate change policy. On 25 July 1997, the USA Senate unanimously passed the Byrd-Hagel Resolution by a 95–0 vote. According to this Resolution, the USA should not be a signatory to any protocol or other agreement adopted in Kyoto in 1997 without developing country participation in terms of emission limitation or reduction commitments or if it would lead to severe economic harm to the USA economy.²⁴⁹ That's why the Clinton Administration never sent the Kyoto Protocol for approval to the Senate that would absolutely reject the Resolution.

The Bush Administration subsequent to the Clinton Administration was also strictly against the ratification of the Kyoto Protocol for several reasons. In this respect, the President Bush stated, "I oppose the Kyoto Protocol because it exempts 80 percent of the world, including major population centers such as China and India, from compliance and would cause serious harm to the USA economy",²⁵⁰ Therefore,

²⁴⁷ See Robert L. Paarlberg, "Lapsed Leadership: U.S. International Environmental Policy Since Rio" in Norman J. Vig and Regina S. Axelrod (eds.), *The Global Environment Institutions, Law and Policy*, (Washington D.C.: Congressional Quarterly Inc, 1999, pp. 236-255), p. 236-241.

²⁴⁸ Daniel Bodansky, *U.S. Climate Policy After Kyoto: Elements for Success*, (Carnegie Endowment for International Peace, Policy Brief, Washington, D.C., 15 April 2002), p. 2, <http://www.carnegieendowment.org/files/Policybrief15.pdf>

²⁴⁹ Byrd-Hagel Resolution, 105th Congress, 1st Session, S. RES. 98, 25 July 1997, <http://www.nationalcenter.org/KyotoSenate.html>

²⁵⁰ U.S. White House, Office of the Press Secretary, *Text of a Letter from the President to Senators Hagel, Helms, Craig, and Roberts*, 13 March 2001, http://www.gcrio.org/OnLnDoc/pdf/bush_letter010313.pdf

ensuring participation of the developing country parties turns out to be “a litmus test for USA foreign policy on climate change.”²⁵¹ Despite having this hard-line position at international level, the Bush Administration and local governments have taken several steps in dealing with climate change. For instance, Bush announced the ‘Global Climate Change Initiatives’ introducing an emission intensity target, incentives for voluntary actions to be taken by private sector and programmes for development emission reducing technologies.²⁵² Moreover, the USA participated in the Asia Pacific Partnership on Clean Development and Climate, a pact consisting of several major emitters, covering voluntary and technology-related actions in the field of emission reduction without compliance measures. The USA also launched the Major Economies Meeting on Energy Security and Climate Change in 2007 with the aim of cooperating in the field of energy security and climate change for the post-Kyoto period.

Expectations of the international community from the USA concerning climate change increased with the Obama Administration that came to office in January 2009. As it is anticipated, the Obama Administration has taken a concrete step at national level to bring forward a new legislation to tackle the problem of climate change. In this context, the American Clean Energy Security Act was adopted at the USA House in June 2009. This Act, which will introduce emission reduction and energy-related targets for the USA, needs to be approved by the Senate and to be considered by the President in order to be enacted. According to this Act, the USA is planning to reduce its greenhouse gas emissions by 17% from 2005 levels by 2020 and 83% by 2050.²⁵³ Clearly, this is a revolutionary action that promises the world a possible contribution of the USA in terms of emission reduction for the post-Kyoto

²⁵¹ David G. Victor, *Climate Change: Debating America's Policy Options*, (A Council Policy Initiative, Council on Foreign Relations, New York, 2004), p. 56, http://www.cfr.org/content/publications/attachments/climate_change.pdf

²⁵² George W. Bush's Remarks Announcing the Clear Skies and Global Climate Change Initiatives in Silver Spring, Maryland, 14 February 2002, <http://www.gpo.gov/fdsys/pkg/WCPD-2002-02-18/pdf/WCPD-2002-02-18-Pg232.pdf>, accessed on 22 June 2009.

²⁵³ American Clean Energy Security Act, <http://www.speaker.gov/newsroom/legislation?id=0322>, accessed on 3 July 2009.

period. This Act is very closely linked to the position of the USA during the ongoing negotiations for the post-2012 period. It can be said that enactment of this legislation will enable the USA delegation whose position highly depends on the outcome of the legislation to be more active in the climate change negotiations. As mentioned before, during the Kyoto Protocol negotiations, there was no national consensus, particularly between the Senate and the Clinton Administration, about the position of the USA on the Kyoto Protocol. Therefore, it can be said that the USA has started to work at home regarding the post-Kyoto climate change regime through taking into account the lessons learned from the past experiences of the Kyoto Protocol process.²⁵⁴ In this way, the USA will be able to take a better position itself with concrete targets during the current climate change talks.

As for the climate change talks for the post-2012 period, the position of the USA is still unclear owing to the existing uncertainties in domestic policy level. This is because of not only the change in the USA Administration in the midst of the post-Kyoto negotiations that started in the early 2008 but also the ongoing legislation process. The USA is aware of the fact that a global and meaningful solution to climate change should ensure the USA participation in the process launched by the BAP. From the outset of the negotiations, the USA has pushed the rapidly industrializing countries such as China and India into taking greenhouse gas emissions limitation and reduction commitments in return for its participation under the proposed climate change system. Therefore, it attached importance to the formulation of developing countries' actions as measurable, verifiable and reportable within the framework of the BAP.²⁵⁵ In a nutshell, the position of the USA on climate change will substantially affect the outcome of the post-2012 negotiations in which many parties expect the USA under the Obama Administration to fully engage in the cooperation process with ambitious targets.

²⁵⁴ Nigel Purvis, "The Perspective of the United States on Climate Change and the Kyoto Protocol," *International Review for Environmental Strategies*, (Vol. 5, No. 1, 2004, pp. 169-178), p. 174.

²⁵⁵ Anna Korppoo and Alex Luta (eds.), *Towards a New Climate Regime?, Views of China, India, Japan, Russia and the United States on the Road to Copenhagen*, (The Finnish Institute of International Affairs Report 2009:19), p. 102-103.

4.3. Japan

Japan, as a party included in both Annex-1 and Annex-2 lists of the UNFCCC, has the responsibilities for reducing its greenhouse gas emissions and also providing financial and technical assistance to developing country parties in their efforts. Japan that ratified the Kyoto Protocol in 2002 is legally obliged to reduce its 1990 greenhouse gas emissions by 6% during the 2008-2012 commitment period of the Kyoto Protocol. Japan's per capita emissions in 2000 was 10.4 million tons CO₂ equivalent which was much higher than the world average and less than that of developed countries and also it was responsible for 3.9% of global greenhouse gas emissions in 2000.²⁵⁶

Since the Kyoto Protocol was agreed in Kyoto, a Japanese city, Japanese governments as well as the Japanese people attach great importance to the proper implementation of the Kyoto Protocol.²⁵⁷ To this end, Japan, which asserts itself an international role in the climate change negotiations, made so many efforts at domestic and international levels to reach a successful outcome in the cooperation process under the Kyoto Protocol. Therefore, Japan acted as a mediator between the EU and USA in order to ensure an agreed outcome in the climate negotiations held in Kyoto. Particularly, after the withdrawal of the USA from the Kyoto process in 2001, "Japan found itself the pivotal actor in the global battle over the survival of the Treaty."²⁵⁸ In this respect, Tiberghien and Schreurs claim that the Kyoto Protocol turned out to be "a symbol of the pressuring problem of global climate change and Japan's bid to be a larger foreign policy player and a leader in global environmental protection."²⁵⁹

²⁵⁶ Baumert (et. al.), *op. cit.*, p. 12-22.

²⁵⁷ Ryokichi Hirono and Heike Schröder, "The Road to and from the Kyoto Protocol: The Perspectives of Germany and Japan," *International Review for Environmental Strategies*, (Vol. 5, No. 1, 2004, pp. 39-60), p. 48.

²⁵⁸ Yves Tiberghien and Miranda A. Schreurs, "High Noon in Japan: Embedded Symbolism and Post-2001 Kyoto Protocol Politics," *Global Environmental Politics* (Vol. 7, Issue. 4, November 2007, pp. 70-91), p. 70.

²⁵⁹ *Ibid.*, p. 78.

When the importance of development and transfer of technology in the field of cooperation on climate change is taken into consideration, Japan, which have a high technological capacity, has been argued to be a key actor in contributing to find a global solution to the problem of climate change.²⁶⁰ In addition, its position as a great power in terms of economy and technology pushes Japan into finding a fair solution to the climate change challenge which poses an unprecedented threat to the international security and prosperity. Accordingly, Korppoo and Luta argues that Japan is also eager to shape the outcome of the ongoing negotiations as to the post-2012 period for the purpose of preventing an undesired climate change agreement that can undermine the Japanese economy.²⁶¹

Japan also links its climate change negotiation position to its energy policy. Obviously, energy policy defines the boundaries of Japanese position during the climate change negotiations. Some data on energy sector in Japan in relation to climate change policy clarifies the vital importance of energy sector for Japan's climate change policies. To illustrate, in 2004 energy sector was the sources of 70% of total greenhouse gas emissions of Japan and 83% of Japan's primary energy consumption in 2005 was supplied by fossil fuels.²⁶² Hence, Japan, as a country heavily dependent on the import of fossil fuels to meets its energy demand, prioritizes the optimum use of scarce energy resources; and thus, it takes the opportunity to benefit from the cooperation process on climate change that is planning to result in efficient use of energy resources.²⁶³ It is worth stressing that Japan is also coping with climate change at domestic level through taking several significant measures and implementing comprehensive policies. These cover emission reduction plans such as the Kyoto Protocol Target Achievement Plan launched in 2005 and revised in 2008, the Top Runner Programme, capacity building

²⁶⁰ Korppoo and Luta (eds.), *op. cit.*, p. 79.

²⁶¹ *Ibid.*, p. 80.

²⁶² Forum for Sustainable Development of German Business (Econsense), *Fact Sheet: Japan, 2008*, http://www.climate-policy-map.econsense.de/factsheets_download/factsheet-japan.pdf

²⁶³ Korppoo and Luta (eds.), *op. cit.*, p. 80.

for nuclear energy and voluntary action plans by industry including Keidanren Voluntary Action Plan and voluntary emission trading system.²⁶⁴

As for the current climate change regime, Japan complains about the inequitable burden sharing under the Kyoto Protocol that has been based on political negotiations instead of scientific and socio-economic realities. The Japan's situation regarding its fulfillment of the Kyoto targets reveals the reasons behind Japan's displeasure with the current burden sharing structure under the Kyoto Protocol. Japan's greenhouse gas emissions (excluding LULUCF) have increased by a 5.3% in the period of 1990-2006; and thus, this exceeds Japan's emission target under the Kyoto Protocol by 11.3%.²⁶⁵ Therefore, Japan demands for a more scientific way of burden sharing under the new climate change regime and to this end, it offers a sectoral approach with regard to future mitigation commitments.²⁶⁶ According to this approach, greenhouse gases are categorized into CO₂ and other gases. Then, a sub-categorization of CO₂ is made by certain sectors such as industry, power generation, residential, commercial and transport. Thus, more appropriate sectoral measures within the realm of emission reduction and limitation policies can be taken on the basis of detailed analysis of sector-specific circumstances.²⁶⁷ Currently, this Japanese proposal regarding sectoral approaches has been discussed under the post-2012 the negotiations.

In a new climate change regime, Japan favors the classification of parties as developed and developing countries as introduced by the BAP over Annex-1 and

²⁶⁴ See European Parliament, Policy Department Economic and Scientific Policy, *Climate Change legislation and initiatives at international level and design options for future international climate policy*, (N. Höhne, S. Moltmann, M. Jung, C. Ellermann and M. Hagemann, IP/A/CLIM/ST/2007-03, December 2007), p. 19-20.

²⁶⁵ UNFCCC, *National greenhouse gas inventory data for the period 1990-2006*, FCCC/SBI/2008/21, 17 November 2008, p. 9.

²⁶⁶ Korppoo and Luta (eds.), *op. cit.*, p. 67.

²⁶⁷ See UNFCCC, "Japan's Submission on Sectoral Approach" in *Ideas and Proposals on the Subjects of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention workshops scheduled for 200: Submission from Parties*, FCCC/AWGLCA/2008/MISC.4, 14 August 2008, p. 8-16.

non-Annex-1 classification of the UNFCCC. In this respect, it calls for using a new set of criteria such as socio-economic development and environmental indicators in determining the differentiation among the parties. To this end, it offers to categorize the developing countries as “OECD member countries, countries that are not OECD members but whose economic development stages are equivalent to those of the OECD members and countries which voluntarily wish to be treated as developed countries.”²⁶⁸ Moreover, Japan suggests a differentiation of developing countries such as developing countries, which are expected to take further mitigation actions, vulnerable developing countries with negligible emissions and other developing countries.²⁶⁹

The Prime Minister of Japan Taro Aso officially announced Japan’s post-2012 emission reduction targets on 10 June 2009 and declared that the Japan’s target is a 15% emission reduction from the 2005 level by 2020 and a 60% to 80% reduction of greenhouse gas emissions by 2050 as a long-term target. He also underlined the need for Japanese leadership to achieve global cooperation on climate change which all major emitters, namely the USA and China, will take mitigation actions.²⁷⁰

4.4. The Russian Federation

The Russian Federation is also another important player for combating climate change in terms of its role in the international energy market. To illustrate, it is the largest natural gas producer and exporter, the largest producer and the second largest exporter of crude oil and the third largest energy consumer.²⁷¹ Russia’s economic

²⁶⁸ UNFCCC, “Japan’s Submission on paragraph 1(b)(i) and 1(b)(ii) of the Bali Action Plan” in *Ideas and Proposal on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties, Part I*, FCCC/AWGLCA/2009/MISC.4 (Part I), 19 May 2009, p.129.

²⁶⁹ UNFCCC, “Japan’s proposal for AWG-LCA: for preparation of Chair’s document for COP 14” in *Ideas and Proposal on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties*, FCCC/AWGLCA/2008/MISC.5, 27 October 2008, p. 41.

²⁷⁰ Speech on the Environment by Prime Minister Taro Aso, on 10 June 2009, Prime Minister’s Office, Tokyo, http://www.kantei.go.jp/foreign/asospeech/2009/06/10kaiken_e.html

²⁷¹ See IEA, *Key World Energy Statics 2008*, (OECD/IEA, Paris, 2008) and Laura A. Henry and Lisa McIntosh Sundstrom, “Russia and the Kyoto Protocol: Seeking an Alignment of Interests and Image,” *Global Environmental Politics*, (Vol. 7, Issue. 4, November 2007, pp. 47-69), p. 47.

growth is highly dependent on the revenue coming from the production and export of the fossil fuels. As for Russia's greenhouse gas emissions in 2004, 73% of its total emissions stemmed from energy sector dominated by fossil fuel resources.²⁷² Hence Russia's climate change policy has been formulated in accordance with its priorities as to its energy policy that is closely linked to the country's economic growth.

As a CEIT party included in Annex-1 list of the UNFCCC, the Russian Federation is provided with several flexibilities, particularly opting for a base year different from 1990, in fulfilling its commitments under the current climate regime. Under the Kyoto Protocol, the Russian Federation committed itself to keeping its emissions at the same levels of 1990 by 2012.

Notably, the significant role of the Russian Federation for the climate change regime was clarified during the ratification process of the Kyoto Protocol that was entered into force following the Russian ratification. After the USA that has a big share in global greenhouse gas emission had rejected to ratify the Kyoto Protocol in 2001, the Russian ratification was needed for fulfilling the requirement for the entry into force of the Kyoto Protocol.²⁷³ After a long-lasting public debate over the positive and negative aspects of the ratification of the Kyoto Protocol at national level, the Russian Federation finally decided to ratify Kyoto Protocol in 2004 that led to the Kyoto Protocol to be entered into force in 2005. It can be said that two main factors played determining role in this decision. Firstly, the Russian Federation, which has a significant amount of surplus emission allowances under the Kyoto Protocol, was expected to have economic benefits from the Kyoto mechanisms, especially JI, through selling its excess emission credits to Annex-1 parties. In this context, it is estimated that the Russian Federation can get 8-20 billion dollars through selling its

²⁷² Forum for Sustainable Development of German Business (Econsense), *Fact Sheet: Russia*, 2008, http://www.climate-policy-map.econsense.de/factsheets_download/factsheet-russia.pdf

²⁷³ According to Article 25 para. 1 of the Kyoto Protocol, the entry into force of the Kyoto Protocol requires not less than 55 parties to the UNFCCC, incorporating parties included Annex-1 which accounted in total for at least 55% of the total CO₂ emissions for 1990 of the Annex-1 parties to UNFCCC, have deposited their instruments of ratification, acceptance, approval or accession.

unused emission credits within the framework of the Kyoto Protocol.²⁷⁴ The second one, as an external factor, is the EU's support for Russia's application for the World Trade Organization membership that is conditional on the Russian ratification of the Kyoto Protocol.²⁷⁵

When the Russian Federation ratified Kyoto Protocol in 2004, it was in an advantageous position regarding its greenhouse gas emission levels compared to the 1990 levels. For instance, the latest figures indicate that Russia's total aggregate emissions excluding LULUCF in 2006 were %34.2 below 1990 levels.²⁷⁶ This decrease in emissions is mainly because of the economic collapse in the Russian Federation experienced after the break of the Soviet Union in the early 1990s. Thus, the Russian Federation had a considerable amount of surplus emission allowances under the Kyoto Protocol. Therefore, the Russian Federation does not have to endeavor to comply with the Kyoto Protocol.

As for the post-2012 period, the Russian Federation has announced that "it is currently considering establishing a national mid-term target."²⁷⁷ However, it has not declared any emission target up to now and also it has implemented 'wait and see' policy during the post-2012 negotiations mainly because of ambiguous positions of the major emitter countries like the USA regarding the post-2012 period. On the other hand, the Russian Federation has several concrete proposals for the 2012-period that introduce radical changes in the present climate change regime. For instance, the Russian Federation considers the classification among parties as Annex-1 and non-Annex-1 parties under the current climate regime obsolete and irrelative to present-day realities. Therefore, it offers a new way of regrouping of the countries based on several parameters including GDP per capita and other socio-economic

²⁷⁴ Tatiana G. Avdeeva, "Russia and the Kyoto Protocol: Challenges Ahead," *RECIEL*, (Vol. 14, Issue. 3, 2005, pp. 293-302), p. 297.

²⁷⁵ Barbara Buchner and Silvia Dall'Olio, "Russia and the Kyoto Protocol: The Long Road to Ratification," *Transition Studies Review*, (Vol. 12, Issue. 2, 2005, pp. 349-382), p. 377.

²⁷⁶ UNFCCC, *National greenhouse gas inventory data for the period 1990-2006*, p. 9.

²⁷⁷ UNFCCC, *Ideas and Proposals on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties, Addendum*, FCCC/AWGLCA/2009/MISC.4/Add.3, 12 June 2009, p. 8.

indicators.²⁷⁸ It also objects to setting an aggregate emission reduction target for all Annex-1 to the UNFCCC and developed country parties with regard to the post-2012 period. Regarding legally binding commitments, the Russian Federation supports a flexible system that should be formulated in a way that is non-enforceable and non-punitive and introduces effective incentives and adjustable commitments in the course of their implementation.²⁷⁹

The Russian Federation has also submitted another proposal introducing voluntary commitments for non-Annex-1 parties to the UNFCCC regarding the post-2012 period. In this proposal, by emphasizing lengthy and cumbersome procedures with respect to non-Annex-1 parties to the UNFCCC who wish to take commitments under the current regime, it proposed establishing simplified procedures for joining Annex-1 list to the UNFCCC and Annex-B list to the Kyoto Protocol and for taking voluntary commitments to reduce or limit the greenhouse gas emissions by the parties.²⁸⁰ Consequently, from the point of the Russian view on the post-2012 period, in order to be able to achieve global climate change cooperation, there is a need for a broader and more comprehensive participation of the parties including major developing countries with emission reduction or limitation targets.

4.5. The Group of 77 and China (G-77/China)

The G-77/China, established in 1964 within the context of the United Nations Conference on Trade and Development (UNCTAD), has now 135 member states having relatively a wide variety of divergent interests on climate change. The group consists of China and several other political negotiation coalitions including the AOSIS, LDCs, the African Group, OPEC and GRULAC. As the largest intergovernmental organization of developing states under the umbrella of the UN,

²⁷⁸ UNFCCC, “Russian Federation’s Ideas and Proposals on the Elements of paragraph 1 of the Decision 1/CP.13 (Bali Action Plan)” in *Ideas and Proposals on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties*, FCCC/AWGLCA/2008/MISC.5, 27 October 2008, p. 84.

²⁷⁹ *Ibid.*, p. 85.

²⁸⁰ Submission by the Russian Federation, Outline of Presentation on the Voluntary Commitments, http://unfccc.int/files/meetings/workshops/other_meetings/application/pdf/rusproposal_en.pdf

the objective of the G-77/China is to provide “the means for the developing world to articulate and promote its collective economic interests and enhance its joint negotiating capacity on all major international economic issues in the United Nations system.”²⁸¹ Currently, the G-77/China also participates actively in the climate change negotiations for the purpose of advocating the interests of developing countries within the UN system.

With respect to climate change, the group seeks to establish common positions among its members concerning the issues discussed during climate change negotiations. The common positions, if achieved, enable the members of the group to take a stronger and decisive action on the issues having higher priority for them. However, if there is no agreement on a specific issue within the group, its members may also intervene in the discussions by taking the floor individually. Furthermore, any member country may submit its views on a contentious issue arising in the negotiations that is closely linked to its specific interests even if the group members have already taken common position on the issue concerned. Thus, they draw attention to the problems or issues carrying higher importance for them during the climate change talks.

The G-77/China puts emphasis on the urgent need of financial and technological support that should be given by developed country parties for adaptation in developing country parties. The Group insists on the leading role of the developed countries in combating climate change and expects more ambitious mitigation targets to be taken by these countries. As a large negotiation coalition representing most of the developing countries, it draws also attention to the link between climate change and development, the recognition of common but differentiated responsibilities and equity as guiding principles during the negotiations.

²⁸¹ Sjur Kasa, Anne T. Gullberg and Gørild Heggelund, “The Group of 77 in the International Climate Negotiations: Recent Developments and Future Directions,” *International Environmental Agreements*, (2008: 8, pp. 113-127), p. 115.

Simply, the Group plays a concrete role in making “the negotiations more manageable for its members.”²⁸² In this respect, the G-77/China enables a host of developing countries having limited negotiation capacity to be more properly represented during the climate change negotiations that necessitate adequate knowledge and staff in complex negotiation topics.²⁸³ Moreover, the Group itself functions as a facilitator during the negotiations in which a great number of parties involve because of the fact that the Group speaking on behalf of 135 parties provides an opportunity for time-saving during the negotiations. One of the remarkable aspects of the G-77/China is that the Group could display unity during the negotiations even though it is made up of quite divergent countries and groups, namely oil exporter countries, low-lying and small island states, emerging industries, least developed countries.²⁸⁴

For a better understanding of the G-77/China’s position on the negotiation issues concerning climate change, there is need for concentrating on the individual positions of each negotiating coalition under the Group. To this end, the positions of China, AOSIS, LDCs, African Group, OPEC and GRULAC will be analyzed in the following parts of the chapter.

4.5.1. China

China plays a crucial part in the climate change negotiations owing to the fact that it ranks as the second largest greenhouse gas emitter after the USA in the world and it has also an influential role in the G-77/China, the largest negotiation group of the developing countries. Under the current climate change regime, China, which ratified the UNFCCC in 1992 and Kyoto Protocol in 2002 as a non-Annex-1 party, has no legally binding emission mitigation commitment. However, as every non-Annex

²⁸² Marc Williams, “The Third World and Global Environmental Negotiations: Interests, Institutions and Ideas,” *Global Environmental Politics*, (Vol. 5, Issue. 3, August 2005, pp. 48-69), p. 54.

²⁸³ Jon Barnett, “The Worst of Friends: OPEC and G-77 in the Climate Regime,” *Global Environmental Politics*, (Vol. 8, Issue. 4, November 2008, pp. 1-8), p. 6.

²⁸⁴ Joanna Depledge, “The Opposite of Learning: Ossification in the Climate Change Regime,” *Global Environmental Politics*, (Vol. 6, Issue. 1, February 2006, pp. 1-22), p. 4.

party, China has commitments with respect to reporting, cooperation on research and technology and protection of sink, which should be provided with adequate financial and technical assistance by developed country parties.

Notwithstanding its non-Annex-1 status that does not impose any heavy burden under the current climate change regime, China has drawn developed countries' attention not only to its greenhouse gas emission levels but also its increasing emission trends in recent years. Actually, China's greenhouse gas emissions have increased enormously as a result of its rapid economic growth that leads to a substantial increase in its energy demand. China's emissions have risen by approximately 80% since 1990 and it is estimated that its emission levels will further grow by about 65% to 80% by 2020.²⁸⁵ In this regard, China's greenhouse gas emissions from 2000 to 2030 alone are projected to rise at a rate that approximately equals to the entire industrialized world according to the International Energy Agency.²⁸⁶ China has also contributed to global greenhouse gas emissions significantly; for example, China is responsible for 14.7% of global greenhouse gas emissions in 2000, which makes China the second largest emitter in the world.²⁸⁷ Moreover, in terms of CO₂ from fossil fuels in 2007, China ranks as the first country with its 24% share in global CO₂ emissions followed by the USA.²⁸⁸ Despite the fact that China has a considerable share in global greenhouse gas emissions, its per capita emissions are incomparably less than that of the developed countries. To illustrate, while China's per capita emissions in 2000 was 3.9 million tons CO₂ equivalent; the average per capita emissions in the world and developed countries are 5.6 and 14.1 million tons CO₂ equivalent respectively.²⁸⁹ Chinese delegation has benefited from

²⁸⁵ Pew Center on Global Climate Change, *Climate Change Mitigation Measures in the People's Republic of China*, (International Brief I, April 2007), p. 1, <http://www.pewclimate.org/docUploads/International%20Brief%20-%20China.pdf>

²⁸⁶ Bryan Walsh, "The Impacts of Asia's Giants," *Time*, 3 April 2006, p. 53.

²⁸⁷ Baumert (et. al.), *op. cit.*, p. 110.

²⁸⁸ Netherlands Environmental Assessment Agency, *Global CO₂ Emissions*, 13 June 2008, <http://www.pbl.nl/en/publications/2008/GlobalCO2emissionsthrough2007.html>, accessed on 24 June 2009.

²⁸⁹ Baumert (et. al.), *op. cit.*, p. 22.

this favorable situation in a convincing way during the negotiations and it claims that China, as a developing country, has a right to development that naturally induces rapid growth in its emission levels.²⁹⁰

From the outset of the climate change negotiations, China has been decisively opposed to any legally binding emission mitigation commitment to be taken by developing countries. China, which prioritizes its economic development and poverty eradication objectives, also takes into account its overwhelming dependence on the consumption of fossil fuels to reach its economic and social priorities in the course of the negotiations. Therefore, this domestic situation of China is a reasonably determining factor for its opposition to discuss any legally binding emission commitment under the negotiations. As for the mitigation issue, China's position is based on the idea that developed countries are historically responsible for the current greenhouse gas emissions; therefore, they should take the leading role in combating climate change. Furthermore, China thinks that these countries should provide financial and technical assistance for developing countries in dealing with climate change, particularly for their needs to adapt the adverse impacts of climate change.

The current climate change regime based on the UNFCCC and the Kyoto Protocol offers another opportunity for China besides its non-Annex-1 position. China has been able to benefit from the CDM projects considerably under the current regime. Obviously, China has become a center of the CDM projects up to now due to its better and sound market conditions for the CDM projects compared with that of many other non-Annex-1 parties to the UNFCCC. For instance, although African countries has gotten a few CDM projects, 34% of all registered CDM project activities²⁹¹ have been carried out and more than 45% of all CDM credits²⁹² have been generated in China up to now.

²⁹⁰ G. Heggelund, "China's Climate Change Policy: Domestic and International Developments," *Asian Perspective*, (Vol. 31, No. 2, 2007, pp. 155-191), p. 175-176.

²⁹¹ <http://cdm.unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html>, accessed on 26 June 2009.

²⁹² <http://cdm.unfccc.int/Statistics/Issuance/CERsIssuedByHostPartyPieChart.html>, accessed on 26 June 2009.

As regard for the post-2012 negotiations, China wants to maintain its advantageous status under the current climate change regime built on the UNFCCC and the Kyoto Protocol. China is opposed to talk about any mitigation commitment for developing countries in a new agreement for the post-2012 period. Moreover, it asks for developed country parties to take more ambitious commitments with respect to mitigation, finance, adaptation and technology transfer. To this end, China pushes developed countries, namely Annex-1 parties to the UNFCCC, to commit themselves to reducing their emissions by at least 40% below 1990 levels by 2020.²⁹³ It also calls for establishment of new subsidiary bodies in the field of adaptation and technology and creation of new funds including a Convention Adaptation Fund, a Mitigation Fund, a Multilateral Technology Acquisition Fund and a Capacity Building Fund.²⁹⁴

Being aware of the fact that it will face great pressure to take more commitments in the post-2012 period, China takes several concrete steps to cope with climate change at domestic level. For instance, China submitted its Initial National Communication on Climate Change in 2004 and then it issued its National Plan for Coping with Climate Change in 2007. China is also making efforts to exploit cleaner energy resources in its economic development. For example, at domestic level it aims at reducing its energy intensity per unit of GDP by 20% by 2010 and increasing the share of renewable energy supply to 10% in its whole energy supply by 2010.²⁹⁵ However, despite taking these measures to follow a low carbon development pattern; fossil fuels, particularly coal resources, will keep the central role in the economic development process of China.

²⁹³ UNFCCC, “China’s submission on elements to be included in the draft negotiation text of LCA” in *Ideas and Proposals on the Elements contained in paragraph 1 of the Bali Action Plan*, FCCC/AWGLCA/2009/MISC.4 (Part I), 19 May 2009, p. 63.

²⁹⁴ *Ibid.*, p. 68.

²⁹⁵ Germanwatch and Climate Action Network Europe, *The Climate Change Performance Index: Results 2009*, (Jan Burck, Christoph Bals, Simone Ackermann, December 2008), <http://www.germanwatch.org/klima/ccpi09.pdf>

With respect to China's domestic climate change policy, it deserves a special mention for the key actors, namely the National Development and Reform Commission (NDRC), which determine the climate change policy in China. NDRC, as the coordinating authority for climate change issues in China since 1998, has formulated China's negotiation position on climate change together with the Ministry of Foreign Affairs and the Ministry of Science and Technology. In fact, the designation of the NDRC to coordinate climate change issues is critically important in terms of displaying China's national approach to climate change. NDRC is a national authority, which is also responsible for planning economic development and energy policy. Therefore, when formulating its climate change policy, China considers climate change as a development problem that is inextricably intertwined to each other.

China's position with regard to cooperation with other developing countries, especially within the context of the G-77/China, is worthy of mention. China attaches great importance to a united negotiation front of developing countries in order to negotiate with industrialized countries in a better position.²⁹⁶ To this end, China is striving to make a concerted action on negotiation topics among the members of the G-77/China that is in the interest of both China and other developing countries. Therefore, China that claims to take a leadership role in the G-77/China seems to remain in the Group, which secures China's position in the developing country front within the context of the climate change negotiations.²⁹⁷

4.5.2. Alliance of Small Island States (AOSIS)

Alliance of Small Island States (AOSIS), established during Second World Climate Conference in November 1990, is a negotiation coalition consisting of small-island and low-lying coastal states. AOSIS has 43 member and 4 observer countries located

²⁹⁶ Elizabeth Economy, "Chinese Policy-making and Global Climate Change: Two-front Diplomacy and the International Community" in Miranda A. Schreurs and Elizabeth Economy (eds.), *The Internalization of Environmental Protection*, (Cambridge: Cambridge University Press, 1997, pp. 19-41), p. 20.

²⁹⁷ Kasa, Gullberg and Heggelund, *op. cit.*, p. 121.

in wide area covering the oceans and regions such as Africa, Caribbean, Indian Ocean, Mediterranean, Pacific and South China Sea, which are highly vulnerable to the adverse effects of climate change.²⁹⁸ AOSIS is an *ad hoc* negotiation coalition within the context of climate change talks under the umbrella of the UN system on behalf of Small Island Developing States (SIDS) of which are also the members of the AOSIS. Although AOSIS members show unity during the climate change negotiations, sometimes the Group has difficulty in doing so because of the varying degrees of vulnerability among its member states.²⁹⁹ For instance, there are huge gaps in terms of welfare among some of the AOSIS members, namely poor countries such as Samoa and Vanuatu that are also the members of the LDCs and wealthy members including Singapore and Bahamas on the other hand.

AOSIS is called as “Conscience of the Convention” owing to their struggle for survival against climate change that puts their existence in peril and also the moral and ethical arguments that are developed by its members in relation to climate change regime.³⁰⁰ Being under the threat of flooding due to sea level rise and their insufficient capacity for handling with climate change make these countries more concerned about climate change. Although they bear least responsibility for emergence of climate change, the AOSIS members are among first ones to witness the adverse effects of climate change such as coastal river and rain-induced flooding, tropical cyclones and storm surges.

Furthermore, the AOSIS members that have similar development and environmental concern see climate change as a matter of survival for them. As stated by the Prime

²⁹⁸ UNFCCC, *Vulnerability and Adaptation to Climate Change in Small Island Developing States: Background Paper for the Expert Meeting on Adaptation for Small Island Developing States*, 2007, p. 30, http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/200702_sids_adaptation_bg.pdf

²⁹⁹ Farhana Yamin and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, (Cambridge: Cambridge University Press, 2004), p. 39.

³⁰⁰ Edward Cameron, “Small Island Developing States at the Forefront of Global Climate Change,” in *State of the World 2009: Into a Warming World*, (Worldwatch Institute, 2009), p. 73-74, http://www.worldwatch.org/files/pdf/SOW09_CC_small%20islands.pdf

Minister of Tuvalu during Second World Climate Conference in 1990, “Our survival is at stake.”³⁰¹ To illustrate, in 2004 Hurricane Ivan resulting in loss exceeds 200% of Grenada’s GDP and damage of 90% of Grenada’s infrastructure, devastated Grenada’s economy and society deeply.³⁰² All these make climate change a national security issue for the low-lying island states, particularly for Tuvalu, Tonga, Kiribati and Fiji, which have already made a refugee agreement with New Zealand on enabling their citizens to migrate New Zealand.³⁰³ In this respect, AOSIS members began to mention about the right for compensation and migration for their citizens during the negotiations in case they will be wiped out by climate change.

As a result of their overriding concern about climate change, they frequently take common position during the climate change negotiations. They involve in the negotiation process very actively and also they submit a number of concrete proposals regarding the core elements of climate negotiations. One of the most popular proposals of the Group is their proposal, amongst the first ones, on draft Kyoto Protocol in 1994 that calls for a reduction of 1990 level of anthropogenic emissions of CO₂ by at least 20% by the 2005 by Annex-1 parties.³⁰⁴

AOSIS’s special place for promoting climate change cooperation is summarized quite well by a statement made by T. Neroni Slade (Samoa on behalf of AOSIS) on 12 November 1998 during COP-4 held in Buenos Aires.³⁰⁵

³⁰¹ Address by the Prime Minister of Tuvalu, Rt Hon. Bikenibeu Paeniu to the Second World Climate Conference, Geneva, 6 November 1990 in Oberthür and Ott, *op. cit.*, p. 26.

³⁰² Organization of Eastern Caribbean States, “Grenada, One year after Hurricane Ivan. Finance Minister says ‘Economy is recovering nicely,’” 9 September 2005, http://www.oecs.org/Press/news_Grenada_1yearlater.html, accessed on 22 June 2009.

³⁰³ Algan, *op. cit.*, p. 201.

³⁰⁴ UNFCCC, “Trinidad and Tobago (on behalf of the AOSIS): Draft Protocol to the United Nations Framework Convention on Climate Change on Greenhouse Gas Emission Reduction (Letter dated 20 September 1994)” in *Ad Hoc Group on the Berlin Mandate, Fourth session, Geneva, 9-16 July 1996*, FCCC/AGBM/1996/MISC.2, 17 May 1996, p. 5.

³⁰⁵ UNFCCC, *Climate Change: Small Island Developing States*, Bonn, 2005, p. 1.

It is a particular honor, Madame, as amongst our membership are many countries that have been “first movers” in the international response against climate change. These include:

- Maldives, host to one of the first Ministerial Declarations on the Impacts of Climate Change;
- Malta, sponsor of the UN General Assembly Resolution that launched the Convention negotiations;
- Vanuatu, who submitted the first outline of elements for a Convention;
- Mauritius, the first state to ratify the Convention, followed quickly by Seychelles and the Marshall Islands;
- Trinidad and Tobago, sponsor of the AOSIS protocol that spurred the Berlin Mandate process;
- Fiji and Antigua and Barbuda, the first to ratify the Kyoto Protocol;
- and the many island States whose delegations work tirelessly in this process to defend the front line in the battle against global warming.

As for the post-2012 climate change regime, AOSIS makes pressure not only for more ambitious mitigation commitments that should be taken by developed country parties but also for the establishment of more potent monitoring and compliance mechanisms. In this respect, regarding emission reduction for the post-2012 period, AOSIS calls for a reduction of emissions of Annex-1 parties by at least 45% below 1990 levels by 2020 and also a further reduction by 95% of their 1990 levels by 2050.³⁰⁶ AOSIS members also emphasize the urgency of their adaptation needs and to this end they demand more technological and financial support for adaptation and capacity building measures to be taken in their countries. In order to show the significance of climate change, AOSIS members now use the slogan “No Island Left Behind.”³⁰⁷ Thus, they try to underline that climate change is matter of survival for AOSIS countries and an urgent action is needed to prevent undesired and irrevocable consequences for them.

³⁰⁶ UNFCCC, *Views on possible elements for amendments to the Kyoto Protocol pursuant to its Article 3, paragraph 9, Ad Hoc Working Group on Further Commitments for Annex-1 Parties under the Kyoto Protocol, Seventh Session, Bonn, 29 March-8 April, FCCC/KP/AWG/2009/MISC.7*, 7 April 2009, p. 21.

³⁰⁷ AOSIS Statement, “Addressing Climate Change: The United Nations and the World at Work,” United Nations General Assembly Thematic Debate, 11-12 February 2008, <http://www.un.org/ga/president/62/ThematicDebates/statements/statementAOSIS.pdf>

4.5.3. Least Developed Countries (LDCs)

The 49 countries including some members of the African Group and the AOSIS except for Somalia, defined as LDCs under the UN system, participate as a group in the climate change negotiations. The members of the LDCs are identified in accordance with three criteria covering low-income, human resource weakness and economic vulnerability by the UN.³⁰⁸ LDCs enter into climate change negotiations as a formal group at the thirteenth session of subsidiary bodies held in September 2000.

As for the climate change issue, the salient aspect of the members of the LDCs is their distinct lack of capacity for adaptation because of their low socio-economic development levels and insufficient infrastructure systems that make them highly vulnerable to the adverse impacts of climate change. In addition, their intense economic dependence on climate-related sectors such as agriculture and coastal tourism makes adaptation measures more critical for LDCs. Hence LDCs put emphasis on the issues such as vulnerability and adaptation to climate change, financial matters and developed countries' commitment under the current and future climate change regime.

Furthermore, LDCs have played an active role to protect their vital interests in the climate change process from the outset of the negotiations. As a result of their highly vulnerable position to the adverse effects of climate change and their active role in the negotiations, their special situation under the climate change regime has been recognized by the UNFCCC through its Articles 4 para. 8 (indirectly), Article 4 para. 9 and Article 12 para. 5. As stated in Article 4 para. 9 of the UNFCCC, "the Parties shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology." Thus, meeting the urgent needs for financial resources and technology of the LDCs, which have been legally recognized within the context of climate change regime, have become one of the priorities of the developed parties, namely Annex-2 parties, having financial and technological commitments under this regime.

³⁰⁸ UNCTAD, *The Least Developed Countries Report 2006: Developing Productive Capacities*, (UN, New York and Geneva, 2006), p. iii, http://www.unctad.org/en/docs/ldc2006_en.pdf

Article 12 para. 5 stipulates “Parties that are least developed countries may take their initial communication at their discretion.” This provides some flexibility for LDCs in fulfilling their commitments concerning communication of information related to the implementation of the UNFCCC.

As an outcome of their recognized special situations under the existing climate change regime, they are able to benefit from several funds under the financial mechanism of the UNFCCC and the Kyoto Protocol. In this context, the Special Climate Change Fund the Least Developed Countries Fund was created for meeting the special concern and needs of the LDCs in the areas of adaptation and technology in dealing with climate change. For the post-2012 period, the Group put forward two proposals for establishment of two new funds, ‘Adaptation fund under Convention’ and ‘International Air Passenger Adaptation Levy’ for the purpose of scaling up the funds for meeting adaptation needs of the LDCs.³⁰⁹

4.5.4. The African Group

The African Group consists of 53 African countries having insufficient capacity in coping with climate change as well as sharing common interests with regard to the issues such as poverty eradication, vulnerability to adverse effects of climate change and adaptation. The African Group, the only UN regional group that is represented in the climate change negotiations, provides a platform for its member states to better position themselves in the negotiations through agreeing common positions on negotiation topics. Sometimes, they prefer to involve in the negotiations as a group by themselves rather than taking common stance with the G-77/China, which includes a wide variety of divergent interests among its member states. It actively

³⁰⁹ For details of these proposals, see UNFCCC, “Adaptation and Means of Implementation submitted by Lesotho on behalf of the LDCs and International Air Passenger Adaptation Levy submitted by Maldives on behalf of the LDCs” in *Ideas and Proposals on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties*, AWG-LCA, Fifth Session, Bonn, 29 March to 8 April 2009, FCCC/AWGLCA/2009/MISC.1, 13 March 2009.

participates in the negotiations, particularly on the issues, which its members have specific concerns, including finance, technology transfer and capacity building.³¹⁰

As mentioned in Article 4 para. 1 (e) of the UNFCCC in relation to adaptation needs of the parties, the UNFCCC makes a special reference to Africa through putting emphasis on Africa's situation that is affected by drought, desertification and floods. IPCC also underlines that "Africa is one of the most vulnerable continents to climate variability and change because of multiple stresses and low adaptive capacity."³¹¹ Therefore, the policies and position of the African Group constitute an important aspect of current and future climate change regime owing to special and vulnerable situation of its members with regard to ongoing climate change process.

An important milestone in the development of the African Group's common position on climate change is the adoption of the "Nairobi Declaration on the African Process for Combating Climate Change"³¹² during the special session on climate change of the African Ministerial Conference on Environment held in Nairobi on 25-29 May 2009. This Declaration is important in terms of its clarifying role on the African Group's position towards the post-2012 period. In the Declaration, it urges developed countries to take ambitious mitigation targets for the post-2012 period through calling for a reduction at least 40% below 1990 levels by 2020 and between 80-95% below 1990 levels by 2050 to stabilize the concentration of 450 ppm of CO₂ equivalent in the atmosphere (para. 11). It urges other parties to support for Africa to achieve its priorities in the fields of adaptation, capacity building, financing and technology development and transfer (para. 4). The African Group also demands for improvement of the CDM in a way that ensures equitable geographical distribution of the CDM projects (para. 6). Indeed, African countries' share of the CDM projects

³¹⁰ Yamin and Depledge, *op. cit.*, p. 39.

³¹¹ IPCC, "Summary for Policymakers" in *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC*, p. 13.

³¹² *Nairobi Declaration on the African Process for Combating Climate Change*, the Special Session on Climate Change of the African Ministerial Conference on Environment, Nairobi, 25-29 May 2009, http://www.unep.org/roa/Amcen/Amcen_Events/3rd_ss/Docs/nairobi-Declaration-2009.pdf

in terms of quantity is not at satisfactory level. For illustration, only about 40 of 1,186 CDM projects have been carried out in Africa by 2008.³¹³

However, the African Group also has several constraints on adopting common approach to climate change issues on account of having heterogeneous national circumstances and linguistic differences (between anglophones and francophones) among its members.³¹⁴ For instance, some of its members (Algeria and Nigeria) are also the members of the OPEC, others such as Angola and Benin are included in LDCs; and it has a relatively industrialized country such as South Africa on the other hand.

4.5.5. Organization of Petroleum Exporting Countries (OPEC)

OPEC consists of non-Annex-1 countries including Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela, which all are also the members of the G-77/China. OPEC was established in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela with the aim of determining and stabilizing prices in the oil market as well as coordinating the oil production policies of its member countries.³¹⁵ OPEC countries, which come together regularly during the climate change negotiations, mainly focus on the coordination of their positions and strategies regarding the issues that they have specific concerns. Instead of entering into negotiations as a group, OPEC countries prefer to participate in the negotiations under the G-77/China.

These countries meet on a common ground in the climate change negotiations due to their economic dependency on the export of the fossil fuels that constitutes the

³¹³ Statement by Tumusiime Rhoda Peace on Climate Change-Financing opportunities and challenges to achieve MDGs in Africa in Third Ministerial Conference on identification of additional financial investments and financial flows to address mitigation and adaptation challenges, Kigali, Rwanda, 21-22 May 2009.

³¹⁴ Yamin and Depledge, *op. cit.*, p. 39.

³¹⁵ Faruk Sönmezoğlu (ed.), *Uluslararası İlişkiler Sözlüğü*, (İstanbul: Der Yayınevi, 2000), p. 573.

largest share in their revenues, which accounts for average 27% of their GDP.³¹⁶ Apparently, reducing greenhouse gas emissions requires limitation of the burning of the fossil fuels as the main source of these emissions. Hence they worry about a possible revenue loss because of decreasing oil export.³¹⁷ As a result of their specific concerns about this issue, they demanded for compensation of adverse effects of climate change and the impacts of the implementation of response measures taken against climate change. Their views about this issue are reflected in Article 4.8 of the UNFCCC and Article 2 para. 3 and Article 3 para. 14 of the Kyoto Protocol.³¹⁸ For example, the UNFCCC makes reference indirectly to the OPEC members through emphasizing the specific needs and vulnerability of developing countries, particularly ‘countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products’ in relation to the adverse effects of climate change and/or the impact of the implementation of response measures (Article 4, para. 8, UNFCCC). The Kyoto Protocol follows this approach in parallel with that of the UNFCCC through covering this issue under Article 2 para. 3 and Article 3 para.14 as well.³¹⁹

Regarding this issue, Barnett puts forward “this is the reason why there are so many complex, time consuming and otherwise unnecessary negotiations around the issue of ‘adverse effects of response measures’ which to OPEC means ‘compensation for lost oil revenue.’”³²⁰ The G-77/China reluctantly supported OPEC’s position on this issue that is considered as a stumbling block to furthering negotiations. During the negotiations, they pressure other parties, especially the members of the G-77/China, into recognizing the strategic importance for them regarding the process on adverse

³¹⁶ World Wildlife Fund (WWF), *An Analysis of the Role of OPEC as a G77 Member at the UNFCCC*, December 2004, p. 8.

³¹⁷ Jon Barnett, Suraje Dessai and Michael Webber, “Will OPEC lose from the Kyoto Protocol?,” *Energy Policy*, (Vol. 32, Issue. 18, 2004, pp. 2077-2088), p. 2077.

³¹⁸ Barnett, Dessai and Webber, *op. cit.*, p. 2077-2078.

³¹⁹ *Ibid.*

³²⁰ Jon Barnett, *op. cit.*, p. 3.

effects of response measures in return for giving assistance to other contentious issues such as adaptation matters, which the G-77/China has special concern. OPEC also attaches importance for avoiding new taxes to be put by developed countries on fossil fuels.³²¹

It should also be noted that Saudi Arabia has a central and leading role within the Group, which affects the policies of the G-77/China, throughout the negotiations. Saudi Arabia, as the largest oil exporter, is very active participant in the negotiations competent enough to defend the views of other poor developing countries with its powerful negotiation capacity. However, sometimes members of the G-77/China, particularly LDCs and AOSIS that need urgent actions against climate change complain about the obstructive role of the OPEC members, namely Saudi Arabia, which result in delays in the negotiations.³²²

4.5.6. Group of Latin American and Caribbean States (GRULAC)

GRULAC consisting of 33 member states is a Regional Group under the UN System. With the exception of Mexico, the members of the GRULAC enter into negotiations on climate change within the context of the G-77/China. It has members both from G-77/China and AOSIS. Most of the Group members, particularly Latin American Initiatives Group (GRILA), seek to incorporate the carbon sinks into the international climate change regime, namely in CDM throughout the climate change negotiations.³²³ However, there is no consensus on this position of the Group because

³²¹ *Ibid.*

³²² Kasa, Gullberg and Heggelund, *op. cit.*, p. 123-124.

³²³ Manuel Estrada Porrua and Andrea García-Guerrero, "A Latin American Perspective on Land Use, Land-Use Change and Forestry Negotiations under the United Nations Framework Convention on Climate Change" in Charlotte Streck, Robert O'Sullivan, Toby Janson-Smith and Richard G. Tarasofsky (eds.), *Climate Change and Forests: Emerging Policy and Market Opportunities*, (London: Chatham House; Washington: Brookings Institution Press, 2008, pp. 209-222), p. 210.

of the opposition of Brazil and Peru to the inclusion of carbon sinks and forestry activities in the climate change regime.³²⁴

4.6. Umbrella Group

The Umbrella Group, as a loose association of most of the non-EU developed countries, was established during COP-3 in 1997 after the adoption of the Kyoto Protocol. The group consists of the Annex-1 parties to the UNFCCC that are Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, Ukraine, the USA and Kazakhstan (observer status).

It has originated from the JUSSCANNZ (a group of countries comprising Japan, the USA, Switzerland, Canada, Australia, Norway and New Zealand; Iceland, Mexico and the Republic of Korea may also participate in the meetings), a former coalition of countries that was active in the Kyoto Protocol negotiations. The Umbrella Group differs from the JUSSCANNZ since the group accepted new members, namely the Russian Federation and Ukraine that are ardent supporters of emission trading and it excluded Switzerland from its membership because of its position on the flexibility mechanisms much closer to that of the EU.³²⁵

During the negotiations, the group's members convene to share information and exchange their views on delicate negotiation matters instead of taking common positions. The Group sometimes makes submissions and statements with respect to the issues such as flexibility mechanisms that they have common concern. However, as for the other matters, the members of the Group generally take position individually in a more flexible way during the negotiations. The Group attaches importance to incorporation of the cost-effective policy measures, flexibility mechanisms, carbon removal activities, reporting and review issues and also topic of

³²⁴ Martina Jung, *Carbon Sequestration Options in the International Climate Regime*, (PhD Thesis prepared within the International Max Planck Research School on Earth System Modelling, Hamburg, 2005), p. 12.

³²⁵ Yamin and Depledge, *op. cit.*, p. 45-46.

the LULUCF into the legal documents of climate change regime.³²⁶ The Group also insists that developing countries should take binding commitments, particularly mitigation measures.

In brief, Yamin and Depledge depict the Group as “displaying solidarity rather than unity, the group operates to the mantra of ‘working together but not tied together’ and focuses on sharing information rather than developing detailed, common positions.”³²⁷ However, implicitly, the positions and policies of some individual group members including Japan and the USA attract more attention from other parties than that of the group as a whole during the negotiations.

4.7. Environmental Integrity Group (EIG)

Having excluded from the Umbrella Group, Switzerland prioritizes its works to establish a negotiation coalition in order to take advantage to be included in a group during the negotiations.³²⁸ Thus, EIG, as a loose negotiation bloc, was formed by Switzerland, Mexico and the Republic of Korea during the thirteenth session of subsidiary bodies in September 2000. Monaco and Liechtenstein became members of the EIG later on. Currently, it is a *sui generis* group owing to the fact that it is the only political negotiation group comprising of both Annex-1 and non-Annex-1 parties that “are strange bedfellows, sharing little in terms of national circumstances except for the fact that they do not belong to any of other main groups.”³²⁹

As inferred from its name, EIG aims at achieving environmental integrity of climate change regime throughout the negotiations. During the negotiations, they convene with the intention of exchanging information on the negotiation matters under the UNFCCC and the Kyoto Protocol and also seeking opportunity for adopting common

³²⁶ *Ibid.*, p. 46.

³²⁷ *Ibid.*, p. 45.

³²⁸ *Ibid.*, p. 47.

³²⁹ *Ibid.*, p. 48.

positions on specific negotiation themes.³³⁰ If there is no agreed common position among the members of the EIG, which they strive to reach, they enter into negotiations on their own. The group also supports for inclusion of the term ‘advanced developing country’ in the negotiations with the aim of determination of the post-2012 commitments to be made by the Republic of Korea and Mexico, which are non-Annex-1 OECD member countries.³³¹

4.8. Other Political Negotiation Groups and Coalitions and Turkey

Moreover, there are several other party groupings involved in the process of climate change negotiations while they relatively take a low-profile role in the negotiations. These include CACAM, countries from the League of Arab States and the Intergovernmental Agency of the Francophonie, OBG, and Central Group.³³²

CACAM consists of group of non-Annex-1 countries located in Asia and Central and Eastern Europe. The countries included in this party grouping, established during COP-1 in 2000, strive for clarification of their status under the UNFCCC. Although these countries are recognized as developing countries, they perceive themselves to be non-Annex-1 parties to the UNFCCC with economies in transition.³³³ However, COP has not taken a decision regarding their status under the UNFCCC yet. The CACAM members rarely take common positions on the issues under the climate change negotiations.³³⁴

³³⁰ José Romero, presentation on *An assessment of the Swiss experience with the Environmental Integrity Group in the UNFCCC process*, Ankara Climate Change Conference, 1-3 September 2004, Ankara.

³³¹ Yunus Arıkan, *İklim Değişikliği Görüşmelerinde Müzakerecinin El Kitabı*, (Bölgesel Çevre Merkezi, Türkiye, Ankara, Ağustos 2006), p. 17.

³³² http://unfccc.int/parties_and_observers/parties/negotiating_groups/items/2714.php, accessed on 23 July 2009.

³³³ Yamin and Depledge, *op. cit.*, p. 41.

³³⁴ *Ibid.*

The League of Arab States, as a group not specific to climate change issue, attaches importance to come together regularly during the climate change negotiations in order to exchange views about the negotiations. However, they scarcely articulate a common position and speak as a group.³³⁵

As for Intergovernmental Agency of the Francophonie, francophone countries also meet during the negotiations for the purpose of talking of procedural issues, namely the availability of French language documentation during the negotiations. This group has a special place in view of the fact that it creates an environment conducive to consultations to be made at the same time in a party grouping among both developed and developing countries sharing a common language.³³⁶

OBG is made up of Bosnia and Herzegovina (a member of the G-77/China), the former Yugoslav Republic of Macedonia, the Republic of Serbia and Montenegro that are non-Annex-1 parties. The process of the establishment of this group was initiated during COP-7 in 2001. These countries claim that they should be treated as CEITs, which correctly reflects their situation under the existing climate change regime, instead of being considered as developing countries. However, it is not an active negotiating coalition that takes part in the climate change negotiation currently. In the end of 2008, the non-EU countries located in South Eastern Europe showed their intentions of reactivating the Group for the purpose of strengthening their negotiating position at COP.³³⁷

The Central Group-11, which had been active from 2000 to 2003, was made up of several central and eastern European countries (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) that

³³⁵ *Ibid.*, 48.

³³⁶ *Ibid.*

³³⁷ *Joint Statement by the Ministers responsible for environment of the Republic of Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro and the Republic of Serbia on combating climate change in South East Europe*. Sarajevo, 14 November 2008, http://www.rcc.int/download.php?tip=docs&doc=CCC-SEE_Statement-FINAL+ADOPTED.pdf&doc_url=988fcf2ac861be26d28d3d2de625d40f

constituted a group of countries included in the EU enlargement process of 2004 and 2007. After most of the countries included in this Group became members of the EU in the 2004 and 2007 enlargement waves, only Croatia remained in the Group, and then this passive group has been called as the Central Group. During COP-14/CMP-4 in 2008, Turkey, which had not been a member of any negotiation coalitions participated in the climate change negotiations, announced its decision to become a member of the Central Group and reactivate the Group with her membership. Before its membership, Turkey complaints about not being able to express its views and exchange information and ideas with other parties because of its status as a country not included in any political negotiation groups.³³⁸ Since its revival, the Central Group has not adopted any common position with regard to issues discussed during the climate change negotiations for the post-2012 period. Turkey and Croatia have met during these negotiations in order to exchange their views on the current topics on climate change negotiations. Particularly, their declared special circumstances concerning climate change and their common objectives towards the EU membership combine these countries in a group to strengthen their negotiating positions in the climate change talks.

Turkey

Under this topic, it is also necessary to emphasize the position of Turkey, which deserves special attention owing to the fact that it constitutes a *sui generis* case under the current climate change regime. During the negotiations of the UNFCCC in the beginning of the 1990s, Turkey, as an OECD member state, was included in both Annex-1 and Annex-2 lists to the UNFCCC. However, Turkey was opposed to sign the Treaty because of its unfair status under the UNFCCC which stipulates legally binding commitments for Turkey in the field of limitation and reduction of greenhouse gas emissions as well as financial and technological assistance to be provided for developing country parties. Turkey called for the recognition of its

³³⁸ See UNFCCC, Views of Turkey regarding the work Program of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (25 February 2008) in *Views regarding the work Programme of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, Submissions from Parties*, FCCC/AWGLCA/2008/MISC.1, 3 March 2008, p. 82.

special situation and unique difficulties within the framework of the principle of common but differentiated responsibilities by parties during the negotiations.³³⁹ As a result of a series of negotiations held until 2001, Turkey was able to reach an agreement with other parties on the issue of amending these lists at COP-7 held in Marrakesh in 2001. According to Decision 26/CP.7, the name of Turkey was deleted from Annex-2 list to the UNFCCC, and the parties are invited to “recognize the special circumstances of Turkey, which place Turkey, after becoming a party, “in a situation different from that of other parties included in Annex-1 to the Convention.”³⁴⁰ As a result of this, Turkey acceded to the UNFCCC as a unique Annex-1 party on 24 May 2004.³⁴¹

After the ratification of the UNFCCC, a debate over what the position of Turkey on the accession to the Kyoto Protocol would be in the years ahead. The discussions about the topic came to an end in 2009 when Turkey decided to ratify the Kyoto Protocol. The main argument behind this step is to be able to take a better position in the post-2012 negotiations as a party to the Kyoto Protocol together with the concern about the credibility of country in international level and the relations with the EU.³⁴² Having completed the legislation procedures in Turkey, the instrument of accession was deposited to the Secretary-General of the UN, the Depositary of the Protocol, on

³³⁹ Murat Türkeş, “İklim Değişikliğiyle Savaşım, Kyoto Protokolü ve Türkiye,” in *Mülkiye*, (Vol. XXXII, No. 259, Summer 2008, pp. 101-131), p. 119 and see UNFCCC, “Statement of the Turkish Delegation on its National Policy related to Global Climate Change Concerns” in *Review of the List of Countries included in Annex I to the Convention, Submission by the Government of Turkey*, FCCC/CP/1995/Misc.5, 6 April 1995.

³⁴⁰ Decision 26/CP.7 on Amendment to the list in Annex II to the Convention (9 november 2001), Report of the Conference of the Parties on its seventh session, held at Marrakesh from 29 October to 10 November 2001, Addendum, Part Two: Action taken by the Conference of the Parties, FCCC/CP/2001/13/Add.4, 21 January 2002, p. 5.

³⁴¹ Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesine Katılmamızın Uygun Bulunduğuna Dair Kanun, Kanun No. 4990, *T.C. Resmi Gazete*, No. 25266, 21 Ekim 2003. The instrument of accession was deposited to the Secretary General of the UN on 24 February 2004.

³⁴² Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesine Yönelik Kyoto Protokolüne Katılmamızın Uygun Bulunduğuna Dair Kanun Tasarısı, Gerekçe, Kanun No 5836, <http://www2.tbmm.gov.tr/d23/1/1-0597.pdf> and Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesine Yönelik Kyoto Protokolüne Katılmamızın Uygun Bulunduğuna Dair Kanun, Kanun No. 5836, *T.C. Resmi Gazete*, No. 27144, 17 Şubat 2009.

28 May 2009 and according to Article 25 of the Protocol, Turkey is going to become a party to the Kyoto Protocol on 26 August 2009.

With regard to the post-2012 climate change regime, Turkey calls for new criteria for regrouping the parties that will reflect the changing economic realities of the today's world. To this end, Turkey asks for making a differentiation among parties on the basis of per capita income, per capita energy consumption and energy intensity, Human Development Index, historical responsibilities, economic and technological capacity and vulnerability.³⁴³ Thus, Turkey is trying to change some basic aspects of the current regime, which is thought to be unfair and obsolete.

³⁴³ UNFCCC, "Views of Turkey regarding the Work Program of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (25 February 2008)" in *Views regarding the Work Programme of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, Submissions from Parties*, FCCC/AWGLCA/2008/MISC.1, 3 March 2008, p. 81-82 and UNFCCC, "Turkey's views on the Fulfillment of the Bali Action Plan and the Components of the Agreed Outcome (24 April 2009)" in *Ideas and Proposals on the Elements contained in paragraph 1 of the Bali Action Plan, Submission from Parties, Part II*, FCCC/AWGLCA/2009/MISC.4 (Part II), 19 May 2009, p. 103.

CHAPTER 5

CONCLUSION

One of the salient aspects of climate change, as an unprecedented global challenge, lies in the fact that it is a complex and multi-faceted global problem that has far-reaching adverse effects on every part of the world. Millions of people are estimated to be subject to the detrimental impacts of climate change. Thousands of them are at risk of being killed or injured because of the extreme events stemmed from climate change. Many people are also under the threat of drought, famine and being homeless due to this global problem. In the future, there is no guarantee that climate change may likely turn out to be a matter of survival for many countries. In this regard, a solution to climate change as a global challenge is far beyond individual national endeavors and therefore international cooperation is required for a meaningful and successful struggle against climate change. Thus, global cooperation together with the establishment of a regime strong enough to tackle climate change problem have come to the agenda of international community in the last decades.

There is an international regime on climate change, which is constituted from principles, norms, rules and decision-making procedures where the UNFCCC and the Kyoto Protocol provides the basis for cooperation. However, despite its significance, climate change was an issue only studied by the scientists before the 1990s, and there was a low level political attention to the problem until the negotiations of the UNFCCC. Especially, when science proved that anthropogenic activities have contributed substantially to the emergence of climate change as a global challenge, international community has begun to focus on the topic at the political level. Therefore, it is worth underlining that science led by IPCC has played a key role in the development of the international climate change regime through keeping the

problem on the political agenda as well as increasing awareness towards the issue at international level. In this connection, a special emphasis should be placed on the interplay between science and politics in the field of climate change, which is one of the determining factors in the formation of the international climate change regime.

International cooperation in the field of climate change has been gradually transformed into an international regime since the early 1990s. Actually, climate change regime can be seen as a product of the awareness-rising process throughout the 20th century and also of a series of scientific and intergovernmental conferences held since the 1972 Stockholm Conference. Throughout this process, the role of the UN is significant in the development of climate change regime. From the outset of the political agenda in relation to climate change, the UN has encouraged parties to deal with climate change by means of setting rules, norms and principles as well as establishing institutional mechanisms within the context of the climate change cooperation. The UN, as a universal organization, has also become the platform for international negotiations on climate change. Therefore, the development of climate change regime cannot be understood without considering valuable contributions and essential role of the UN in the process of regime formation with regard to climate change.

International community showed great determination to combat climate change at international level with the adoption of the UNFCCC in 1992. The UNFCCC sets the necessary conditions for ensuring possible cooperative actions in the future. These include well-established institutional arrangements, guiding principles and fundamental objectives of the climate change regime. A further and decisive action was taken on enhancing climate change cooperation by the adoption of the Kyoto Protocol in 1997. These two international agreements together with the legal documents agreed in the COP/CMP sessions established the current international climate change regime.

Apparently, the current climate change regime is one of the toughest regimes in the field of international environmental politics. First of all, it has well-developed and

thorough reporting, verification and compliance mechanisms that are considered the major components of an effective and powerful environmental regime. Its reporting mechanism based on mainly national communications and national inventories is essential for proper implementation of the regime. As for its compliance mechanism, climate change regime has incorporated enforcement measures into the regime in a sophisticated way. This is mainly because of the unique character of climate change problem in which any non-compliance case within the scope of the cooperation, particularly in relation to the mitigation commitments, may lead to global and far-reaching consequences. International climate change regime is also noteworthy for its potent institutions. Taking lack of a coherent institutional structure in international environmental politics into consideration, the regime itself created its own autonomous institutions having decision-making, reviewing and administrative functions. Therefore, suffice it to say that the institutions established by the UNFCCC and the Kyoto Protocol, can be seen as the guardians of the international climate change regime. In addition, the climate change regime has applied several market-based mechanisms to provide flexible and cost-effective policy instruments for parties and encourage them to participate in climate change cooperation. In a nutshell, all these factors make the climate change regime one of the most ambitious and well-designed regimes in international environmental politics.

Despite the fact that the climate change regime is considered a regime established in the field of international environmental politics, there is an ongoing debate over the equity and effectiveness of the regime as well. This debate also covers whether or not the implementation of this regime could produce successful outcomes in combating climate change sufficiently in the future. These issues will be clarified by the end of the first commitment period of the Kyoto Protocol in 2012. Furthermore, with regard to the equity issues, as noted in the thesis, several parties speak up for establishing a more equitable and comprehensive climate change regime for the post-2012 period. In this context, although parties have been able to establish a potent regime in the field of climate change, a great global problem that makes cooperation challenging, there have been divergent and even conflicting interests among parties concerning

several components of the existing regime including burden sharing among parties and distribution of commitments.

Another important feature of the climate change regime is the vital role of the key players and the political negotiation groups and coalitions in the formation of the international climate change regime. The policies and positions of the key players are among the determining factors that define the boundaries of the ongoing cooperation process concerning climate change. At this juncture, the significant role of the EU as a pioneer in the field of the climate change cooperation should be underlined. For the EU, combating climate change is a high priority issue because of its linkage with not only to the welfare of its citizens and its energy security but also to the right of future generations bearing no responsibility for the problem to live in a healthy environment. In this context, the EU has played the leading role in promoting the climate change regime. Therefore, any success or failure of the EU in the struggle with climate change will directly affect the leadership role of the EU and the nature of the current and future climate change regime, especially the state of play in the current negotiations for the post-2012 period. Clearly, the EU policies and measures against climate change, such as the EU-ETS, renewable energy and energy efficiency policies, have become a testing ground for assessing the role and functions of the existing instruments and mechanisms in combating climate change.

Besides the EU, the most vulnerable countries within LDCs and AOSIS attach great importance to the regime as well. These countries face serious risks associated with climate change including drought, flooding, sea level rise and even problems threatening their survival. Therefore, they exert pressure on developed countries to take an immediate and tougher action on climate change. It should be noted that the continuation of the climate change regime in a successful way is in the public interests of most of these countries. Due to the determined support from these countries for sustaining the regime, climate change regime has been able to continue to exist even after the withdrawal of one of the largest emitters and key players that is the USA from the Kyoto Protocol.

In this regard, the position of the USA, as one of the key players, on climate change regime deserves special attention. Although the USA did not enter into any legally binding commitments under the climate change regime, it has taken many measures to deal with climate change at national level. Particularly, international community witnessed revival of the climate change issues in the USA with the Obama administration. This trend is getting clearer as a result of the recent developments in the USA such as the proposed legislation of the American Clean Energy Security Act covering mid-term and long-term greenhouse gas emissions targets for the USA. This promising position of the USA on climate change raised the expectations of the international community to establish a more ambitious and comprehensive climate change regime for the post-2012 period.

Japan is also a critical actor with its symbolic significance to the climate change regime on the grounds that the Kyoto Protocol, one of the major components of the climate change regime, was adopted in a Japanese city, Kyoto. Moreover, Japan is of vital importance to the climate regime in terms of its leading role in technological developments that is crucial for mitigation and adaptation actions and also its financial assistance for developing countries in the struggle with climate change.

The policies and position of the Russian Federation regarding climate change regime is also worthy of mention. The Russian Federation played a key role in the development of the climate change regime inasmuch as the Kyoto Protocol was entered into force by virtue of the Russian Federation ratification in 2004. As a key player in the production and export of fossil fuels in international energy market, the Russian Federation has the potential for affecting the outcome and success of the climate change regime. Obviously, the Russian Federation is not an ardent supporter of a strong climate change regime because of the fact that its economy relies heavily on the production and consumption of fossil fuels that are expected to be diminished during the course of struggle against climate change.

China, as the most populated country, is among the largest emitters and economies in the world. Owing to its rapid economic growth and ensuing increase in its

greenhouse gas emissions in the last decades, China has received much attention from international community. However, China as non-Annex-1 party to the UNFCCC is not obliged to mitigate its greenhouse gas emissions within the existing climate change regime. Therefore, China is currently under the pressure of international community, particularly developed countries, to take binding emission reduction or limitation targets in the post-2012 climate change regime. Certainly, China resists this pressure in order to keep its advantageous position in the current climate change regime as well as to carry on its economic development without any restriction in the future. Obviously, China has an essential place in the development of a powerful climate change regime and plays an important role that may determine how climate change challenge will be tackled in a comprehensive and cooperative manner.

With regard to the roles of the political negotiation groups and coalitions, the benefits of the inclusion of these groups in the climate change regime are twofold. Firstly, a number of developing countries having insufficient negotiating capacities are able to involve actively in the negotiations owing to their membership in one of these groups. Thus, they can take a stronger position in the formation of the climate change regime. Secondly, taking into consideration of numerous countries involved in the process, these negotiation groups, namely the G-77/China speaking on behalf of 135 individual country parties, are effective facilitators of the negotiations. As a result of the facilitating role of these groups, parties have been able to discuss and come to a conclusion concerning a wide range of issues in a limited time period. Obviously, without these groups, it would be more difficult and even impossible to reach a consensus during the negotiations where plenty of conflicting interests exist among parties. Remarkably, these groups consisting of different countries having divergent interests have been able to remain stable throughout the international climate change negotiations. This is partly because of the unique nature of climate change that poses a great threat to the world as a whole. Among these political negotiation groups and coalitions, the most vulnerable countries to the adverse effects of climate change, namely the members of the G77/China, have played influential roles in the formation of a potent climate change regime.

Currently, international community is negotiating objectives, policy measures and mechanisms for the post-2012 climate change regime. The negotiations for the post-2012 period focus primarily on mitigation, adaptation, technology and finance, which are the main building blocks of the BAP. There is a consensus among parties that a more comprehensive, innovative and ambitious climate change regime is required to prevent dangerous effects of climate change in the future. In this context, there is a need for achieving political acceptability to new climate change regime from all parties involved in the process through taking lessons from the past experiences. To this end, the principles of common but differentiated responsibilities, equity and respective capabilities of the parties should be incorporated into the future regime in a way that reflects the realities of today's world. All countries regardless of being developed or developing should join the global cooperation with concrete actions to curb greenhouse gas emissions according to their national capacities. Otherwise, developed country parties' efforts alone will not be sufficient to cope with this global challenge. Therefore, largest emitters and emerging economies among developing country parties such as Mexico, Singapore, the Republic of Korea, China, Brazil and rich oil exporter countries like Saudi Arabia should take more concrete actions in coping with climate change. Besides, the new regime should also be built in an inclusive manner in order to make the USA participation possible in the struggle with climate change. So, the future regime should also be designed in a goal-oriented and comprehensive manner. To this end, international community should determine its priorities in terms of the extent of mitigation actions as well as the nature of innovative and effective mechanisms for adaptation, technology and finance.

In conclude, there is a need for a more integrated and comprehensive global approach to combat climate change challenge that pertains to a wide range of policy areas and requires a radical change in the consumption patterns of today's world. This initially requires a revolutionary change in energy policies. In this regard, efficient use of existing energy resources and a transformation from carbon economy into green economy is of critical importance to the struggle with climate change. Also, countries should follow a low carbon development path in their economic plans and strategies. Of course, it was not an easy task to achieve since climate change is

estimated to place a heavy economic burden on national economies. However, no action against climate change will probably lead to irrecoverable environmental and socio-economic consequences in the future. So, the international climate change regime is as an opportunity to tackle the problem of climate change in a cost-effective and cooperative manner.

Climate change issue is high on the agenda of international environmental politics since the last decades. Currently, international cooperation in the field of climate change turns out to be a universal regime encompassing the participation of almost all countries. Such a great participation shows how seriously countries regard climate change as a critical problem to the whole humanity. However, the magnitude of adverse effects of climate change will gradually increase in the future if international community takes no urgent and ambitious action on the problem. As the UN Secretary-General Ban Ki-moon underscores “climate change, and how we address it, will define us, our era and ultimately the global legacy we leave for future generations.”³⁴⁴ Therefore, international climate change regime can be seen as a precious experiment exemplifying how international community is and will be able to handle such a great challenge that humanity has faced so far.

³⁴⁴ UN Secretary-General Ban Ki-moon’s Initiatives on Climate Change, <http://www.un.org/climatechange/background/sginitiatives.shtml>, accessed on 29 June 2009.

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APPENDICES

Appendix A

Status of Ratification of the UNFCCC (as of 22 August 2007)

Country	Signature	Ratification	Entry into force
1. Afghanistan	12/06/1992	19/09/2002 (R)	18/12/2002
2. Albania	-	03/10/1994 (Ac)	01/01/1995
3. Algeria	13/06/1992	09/06/1993 (R)	21/03/1994
4. Andorra	-		
5. Angola	14/06/1992	17/05/2000 (R)	15/08/2000
6. Antigua and Barbuda	04/06/1992	02/02/1993 (R)	21/03/1994
7. Argentina	12/06/1992	11/03/1994 (R)	09/06/1994
8. Armenia	13/06/1992	14/05/1993 (R)	21/03/1994
9. Australia	04/06/1992	30/12/1992 (R)	21/03/1994
10. Austria	08/06/1992	28/02/1994 (R)	29/05/1994
11. Azerbaijan	12/06/1992	16/05/1995 (R)	14/08/1995
12. Bahamas	12/06/1992	29/03/1994 (R)	27/06/1994
13. Bahrain	08/06/1992	28/12/1994 (R)	28/03/1995
14. Bangladesh	09/06/1992	15/04/1994 (R)	14/07/1994
15. Barbados	12/06/1992	23/03/1994 (R)	21/06/1994
16. Belarus	11/06/1992	11/05/2000 (Ap)	09/08/2000
17. Belgium	04/06/1992	16/01/1996 (R)	15/04/1996
18. Belize	13/06/1992	31/10/1994 (R)	29/01/1995
19. Benin	13/06/1992	30/06/1994 (R)	28/09/1994
20. Bhutan	11/06/1992	25/08/1995 (R)	23/11/1995
21. Bolivia	10/06/1992	03/10/1994 (R)	01/01/1995
22. Bosnia and Herzegovina	-	07/09/2000 (Ac)	06/12/2000
23. Botswana	12/06/1992	27/01/1994 (R)	27/04/1994
24. Brazil	04/06/1992	28/02/1994 (R)	29/05/1994
25. Brunei Darussalam	-	07/08/2007 (Ac)	05/11/2007
26. Bulgaria	05/06/1992	12/05/1995 (R)	10/08/1995
27. Burkina Faso	12/06/1992	02/09/1993 (R)	21/03/1994
28. Burundi	11/06/1992	06/01/1997 (R)	07/04/1997
29. Cambodia	-	18/12/1995 (Ac)	17/03/1996
30. Cameroon	14/06/1992	19/10/1994 (R)	17/01/1995
31. Canada	12/06/1992	04/12/1992 (R)	21/03/1994
32. Cape Verde	12/06/1992	29/03/1995 (R)	27/06/1995
33. Central African Republic	13/06/1992	10/03/1995 (R)	08/06/1995
34. Chad	12/06/1992	07/06/1994 (R)	05/09/1994
35. Chile	13/06/1992	22/12/1994 (R)	22/03/1995
36. China	11/06/1992	05/01/1993 (R)	21/03/1994
37. Colombia	13/06/1992	22/03/1995 (R)	20/06/1995

Country	Signature	Ratification	Entry into force
38. Comoros	11/06/1992	31/10/1994 (R)	29/01/1995
39. Congo	12/06/1992	14/10/1996 (R)	12/01/1997
40. Cook Islands	12/06/1992	20/04/1993 (R)	21/03/1994
41. Costa Rica	13/06/1992	26/08/1994 (R)	24/11/1994
42. Cote D'ivoire	10/06/1992	29/11/1994 (R)	27/02/1995
43. Croatia	11/06/1992	08/04/1996 (At)	07/07/1996
44. Cuba	13/06/1992	05/01/1994 (R)	05/04/1994
45. Cyprus	12/06/1992	15/10/1997 (R)	13/01/1998
46. Czech Republic	18/06/1993	07/10/1993 (Ap)	21/03/1994
47. Democratic People's Republic of Korea	11/06/1992	05/12/1994 (Ap)	05/03/1995
48. Democratic Republic of the Congo	11/06/1992	09/01/1995 (R)	09/04/1995
49. Denmark	09/06/1992	21/12/1993 (R)	21/03/1994
50. Djibouti	12/06/1992	27/08/1995 (R)	25/11/1995
51. Dominica	-	21/06/1993 (Ac)	21/03/1994
52. Dominican Republic	12/06/1992	07/10/1998 (R)	05/01/1999
53. Ecuador	09/06/1992	23/02/1993 (R)	21/03/1994
54. Egypt	09/06/1992	05/12/1994 (R)	05/03/1995
55. El Salvador	13/06/1992	04/12/1995 (R)	03/03/1996
56. Equatorial Guinea	-	16/08/2000 (Ac)	14/11/2000
57. Eritrea	-	24/04/1995 (Ac)	23/07/1995
58. Estonia	12/06/1992	27/07/1994 (R)	25/10/1994
59. Ethiopia	10/06/1992	05/04/1994 (R)	04/07/1994
60. Fiji	09/10/1992	25/02/1993 (R)	21/03/1994
61. Finland	04/06/1992	03/05/1994 (At)	01/08/1994
62. France	13/06/1992	25/03/1994 (R)	23/06/1994
63. Gabon	12/06/1992	21/01/1998 (R)	21/04/1998
64. Gambia	12/06/1992	10/06/1994 (R)	08/09/1994
65. Georgia	-	29/07/1994 (Ac)	27/10/1994
66. Germany	12/06/1992	09/12/1993 (R)	21/03/1994
67. Ghana	12/06/1992	06/09/1995 (R)	05/12/1995
68. Greece	12/06/1992	04/08/1994 (R)	02/11/1994
69. Grenada	03/12/1992	11/08/1994 (R)	09/11/1994
70. Guatemala	13/06/1992	15/12/1995 (R)	14/03/1996
71. Guinea	12/06/1992	07/05/1993 (R)	21/03/1994
72. Guinea-Bissau	12/06/1992	27/10/1995 (R)	25/01/1996
73. Guyana	13/06/1992	29/08/1994 (R)	27/11/1994
74. Haiti	13/06/1992	25/09/1996 (R)	24/12/1996
75. Holysee	-		
76. Honduras	13/06/1992	19/10/1995 (R)	17/01/1996
77. Hungary	13/06/1992	24/02/1994 (R)	25/05/1994
78. Iceland	04/06/1992	16/06/1993 (R)	21/03/1994
79. India	10/06/1992	01/11/1993 (R)	21/03/1994
80. Indonesia	05/06/1992	23/08/1994 (R)	21/11/1994
81. Iran (Islamic Republic of)	14/06/1992	18/07/1996 (R)	16/10/1996
82. Iraq	-		
83. Ireland	13/06/1992	20/04/1994 (R)	19/07/1994
84. Israel	04/06/1992	04/06/1996 (R)	02/09/1996
85. Italy	05/06/1992	15/04/1994 (R)	14/07/1994
86. Jamaica	12/06/1992	06/01/1995 (R)	06/04/1995

Country	Signature	Ratification	Entry into force
87. Japan	13/06/1992	28/05/1993 (At)	21/03/1994
88. Jordan	11/06/1992	12/11/1993 (R)	21/03/1994
89. Kazakhstan	08/06/1992	17/05/1995 (R)	15/08/1995
90. Kenya	12/06/1992	30/08/1994 (R)	28/11/1994
91. Kiribati	13/06/1992	07/02/1995 (R)	08/05/1995
92. Kuwait	-	28/12/1994 (Ac)	28/03/1995
93. Kyrgyzstan	-	25/05/2000 (Ac)	23/08/2000
94. Lao People's Democratic Republic	-	04/01/1995 (Ac)	04/04/1995
95. Latvia	11/06/1992	23/03/1995 (R)	21/06/1995
96. Lebanon	12/06/1992	15/12/1994 (R)	15/03/1995
97. Lesotho	11/06/1992	07/02/1995 (R)	08/05/1995
98. Liberia	12/06/1992	05/11/2002 (R)	04/02/2003
99. Libyan Arab Jamahiriya	29/06/1992	14/06/1999 (R)	12/09/1999
100. Liechtenstein	04/06/1992	22/06/1994 (R)	20/09/1994
101. Lithuania	11/06/1992	24/03/1995 (R)	22/06/1995
102. Luxembourg	09/06/1992	09/05/1994 (R)	07/08/1994
103. Madagascar	10/06/1992	02/06/1999 (R)	31/08/1999
104. Malawi	10/06/1992	21/04/1994 (R)	20/07/1994
105. Malaysia	09/06/1993	13/07/1994 (R)	11/10/1994
106. Maldives	12/06/1992	09/11/1992 (R)	21/03/1994
107. Mali	30/09/1992	28/12/1994 (R)	28/03/1995
108. Malta	12/06/1992	17/03/1994 (R)	15/06/1994
109. Marshall Islands	12/06/1992	08/10/1992 (R)	21/03/1994
110. Mauritania	12/06/1992	20/01/1994 (R)	20/04/1994
111. Mauritius	10/06/1992	04/09/1992 (R)	21/03/1994
112. Mexico	13/06/1992	11/03/1993 (R)	21/03/1994
113. Micronesia (Federated States of)	12/06/1992	18/11/1993 (R)	21/03/1994
114. Monaco	11/06/1992	20/11/1992 (R)	21/03/1994
115. Mongolia	12/06/1992	30/09/1993 (R)	21/03/1994
116. Montenegro	-	23/10/2006 (Su)	21/01/2007
117. Morocco	13/06/1992	28/12/1995 (R)	27/03/1996
118. Mozambique	12/06/1992	25/08/1995 (R)	23/11/1995
119. Myanmar	11/06/1992	25/11/1994 (R)	23/02/1995
120. Namibia	12/06/1992	16/05/1995 (R)	14/08/1995
121. Nauru	08/06/1992	11/11/1993 (R)	21/03/1994
122. Nepal	12/06/1992	02/05/1994 (R)	31/07/1994
123. Netherlands	04/06/1992	20/12/1993 (At)	21/03/1994
124. New Zealand	04/06/1992	16/09/1993 (R)	21/03/1994
125. Nicaragua	13/06/1992	31/10/1995 (R)	29/01/1996
126. Niger	11/06/1992	25/07/1995 (R)	23/10/1995
127. Nigeria	13/06/1992	29/08/1994 (R)	27/11/1994
128. Niue	-	28/02/1996 (Ac)	28/05/1996
129. Norway	04/06/1992	09/07/1993 (R)	21/03/1994
130. Oman	11/06/1992	08/02/1995 (R)	09/05/1995
131. Pakistan	13/06/1992	01/06/1994 (R)	30/08/1994
132. Palau	-	10/12/1999 (Ac)	09/03/2000
133. Panama	18/03/1993	23/05/1995 (R)	21/08/1995
134. Papua New Guinea	13/06/1992	16/03/1993 (R)	21/03/1994
135. Paraguay	12/06/1992	24/02/1994 (R)	25/05/1994

Country	Signature	Ratification	Entry into force
136. Peru	12/06/1992	07/06/1993 (R)	21/03/1994
137. Philippines	12/06/1992	02/08/1994 (R)	31/10/1994
138. Poland	05/06/1992	28/07/1994 (R)	26/10/1994
139. Portugal	13/06/1992	21/12/1993 (R)	21/03/1994
140. Qatar	-	18/04/1996 (Ac)	17/07/1996
141. Republic of Korea	13/06/1992	14/12/1993 (R)	21/03/1994
142. Republic of Moldova	12/06/1992	09/06/1995 (R)	07/09/1995
143. Romania	05/06/1992	08/06/1994 (R)	06/09/1994
144. Russian Federation	13/06/1992	28/12/1994 (R)	28/03/1995
145. Rwanda	10/06/1992	18/08/1998 (R)	16/11/1998
146. Saint Kitts and Nevis	12/06/1992	07/01/1993 (R)	21/03/1994
147. Saint Lucia	14/06/1993	14/06/1993 (R)	21/03/1994
148. Saint Vincent and the Grenadines	-	02/12/1996 (Ac)	02/03/1997
149. Samoa	12/06/1992	29/11/1994 (R)	27/02/1995
150. San Marino	10/06/1992	28/10/1994 (R)	26/01/1995
151. Sao Tomé and Príncipe	12/06/1992	29/09/1999 (R)	28/12/1999
152. Saudi Arabia	-	28/12/1994 (Ac)	28/03/1995
153. Senegal	13/06/1992	17/10/1994 (R)	15/01/1995
154. Serbia	-	12/03/2001 (Ac)	10/06/2001
155. Seychelles	10/06/1992	22/09/1992 (R)	21/03/1994
156. Sierra Leone	11/02/1993	22/06/1995 (R)	20/09/1995
157. Singapore	13/06/1992	29/05/1997 (R)	27/08/1997
158. Slovakia	19/05/1993	25/08/1994 (Ap)	23/11/1994
159. Slovenia	13/06/1992	01/12/1995 (R)	29/02/1996
160. Solomon Islands	13/06/1992	28/12/1994 (R)	28/03/1995
161. Somalia	-		
162. South Africa	15/06/1993	29/08/1997 (R)	27/11/1997
163. Spain	13/06/1992	21/12/1993 (R)	21/03/1994
164. Sri Lanka	10/06/1992	23/11/1993 (R)	21/03/1994
165. Sudan	09/06/1992	19/11/1993 (R)	21/03/1994
166. Suriname	13/06/1992	14/10/1997 (R)	12/01/1998
167. Swaziland	12/06/1992	07/10/1996 (R)	05/01/1997
168. Sweden	08/06/1992	23/06/1993 (R)	21/03/1994
169. Switzerland	12/06/1992	10/12/1993 (R)	21/03/1994
170. Syrian Arab Republic	-	04/01/1996 (Ac)	03/04/1996
171. Tajikistan	-	07/01/1998 (Ac)	07/04/1998
172. Thailand	12/06/1992	28/12/1994 (R)	28/03/1995
173. The Former Yugoslav Republic of Macedonia	-	28/01/1998 (Ac)	28/04/1998
174. Timor-Leste	-	10/10/2006 (Ac)	08/01/2007
175. Togo	12/06/1992	08/03/1995 (At)	06/06/1995
176. Tonga	-	20/07/1998 (Ac)	18/10/1998
177. Trinidad and Tobago	11/06/1992	24/06/1994 (R)	22/09/1994
178. Tunisia	13/06/1992	15/07/1993 (R)	21/03/1994
179. Turkey	-	24/02/2004 (Ac)	24/05/2004
180. Turkmenistan	-	05/06/1995 (Ac)	03/09/1995
181. Tuvalu	08/06/1992	26/10/1993 (R)	21/03/1994
182. Uganda	13/06/1992	08/09/1993 (R)	21/03/1994
183. Ukraine	11/06/1992	13/05/1997 (R)	11/08/1997
184. United Arab Emirates	-	29/12/1995 (Ac)	28/03/1996

Country	Signature	Ratification	Entry into force
185. United Kingdom of Great Britain and Northern Ireland	12/06/1992	08/12/1993 (R)	21/03/1994
186. United Republic of Tanzania	12/06/1992	17/04/1996 (R)	16/07/1996
187. United States of America	12/06/1992	15/10/1992 (R)	21/03/1994
188. Uruguay	04/06/1992	18/08/1994 (R)	16/11/1994
189. Uzbekistan	-	20/06/1993 (Ac)	21/03/1994
190. Vanuatu	09/06/1992	25/03/1993 (R)	21/03/1994
191. Venezuela	12/06/1992	28/12/1994 (R)	28/03/1995
192. Viet Nam	11/06/1992	16/11/1994 (R)	14/02/1995
193. Yemen	12/06/1992	21/02/1996 (R)	21/05/1996
194. Zambia	11/06/1992	28/05/1993 (R)	21/03/1994
195. Zimbabwe	12/06/1992	03/11/1992 (R)	21/03/1994
Organization	Signature	Ratification	Entry into force
196. European Economic Community	13/06/1992	21/12/1993 (Ap)	21/03/1994
TOTAL	165	192	-

Notes:

R: Ratification
At: Acceptance
Ap: Approval
Ac: Accession
Su: Succession

Source: United Nations Framework Convention on Climate Change: Status of Ratification (last modified on: 22 August 2007), http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/unfccc_conv_rat.pdf, accessed on 28 July 2009.

Appendix B

Status of Ratification of the Kyoto Protocol (as of 8 July 2009)

Country	Signature	Ratification	Entry into force
1. Albania	-	01/04/2005 (Ac)	30/06/2005
2. Algeria	-	16/02/2005 (Ac)	17/05/2005
3. Angola	-	08/05/2007 (Ac)	06/08/2007
4. Antigua and Barbuda	16/03/1998	03/11/1998 (R)	16/02/2005
5. Argentina	16/03/1998	28/09/2001 (R)	16/02/2005
6. Armenia	-	25/04/2003 (Ac)	16/02/2005
7. Australia	29/04/1998	12/12/2007 (R)	11/03/2008
8. Austria	29/04/1998	31/05/2002 (R)	16/02/2005
9. Azerbaijan	-	28/09/2000 (Ac)	16/02/2005
10. Bahamas	-	09/04/1999 (Ac)	16/02/2005
11. Bahrain	-	31/01/2006 (Ac)	01/05/2006
12. Bangladesh	-	22/10/2001 (Ac)	16/02/2005
13. Barbados	-	07/08/2000 (Ac)	16/02/2005
14. Belarus	-	26/08/2005 (Ac)	24/11/2005
15. Belgium	29/04/1998	31/05/2002 (R)	16/02/2005
16. Belize	-	26/09/2003 (Ac)	16/02/2005
17. Benin	-	25/02/2002 (Ac)	16/02/2005
18. Bhutan	-	26/08/2002 (Ac)	16/02/2005
19. Bolivia	09/07/1998	30/11/1999 (R)	16/02/2005
20. Bosnia and Herzegovina	-	16/04/2007 (Ac)	15/07/2007
21. Botswana	-	08/08/2003 (Ac)	16/02/2005
22. Brazil	29/04/1998	23/08/2002 (R)	16/02/2005
23. Bulgaria	18/09/1998	15/08/2002 (R)	16/02/2005
24. Burkina Faso	-	31/03/2005 (Ac)	29/06/2005
25. Burundi	-	18/10/2001 (Ac)	16/02/2005
26. Cambodia	-	22/08/2002 (Ac)	16/02/2005
27. Cameroon	-	28/08/2002 (Ac)	16/02/2005
28. Canada	29/04/1998	17/12/2002 (R)	16/02/2005
29. Cape Verde	-	10/02/2006 (Ac)	11/05/2006
30. Central African Republic	-	18/03/2008 (Ac)	16/06/2008
31. Chile	17/06/1998	26/08/2002 (R)	16/02/2005
32. China	29/05/1998	30/08/2002 (Ap)	16/02/2005
33. Colombia	-	30/11/2001 (Ac)	16/02/2005
34. Comoros	-	10/04/2008 (Ac)	09/07/2008
35. Congo	-	12/02/2007 (Ac)	13/05/2007
36. Cook Islands	16/09/1998	27/08/2001 (R)	16/02/2005
37. Costa Rica	27/04/1998	09/08/2002 (R)	16/02/2005

Country	Signature	Ratification	Entry into force
38. Cote D'ivoire	-	23/04/2007 (Ac)	22/07/2007
39. Croatia	11/03/1999	30/05/2007 (R)	28/08/2007
40. Cuba	15/03/1999	30/04/2002 (R)	16/02/2005
41. Cyprus	-	16/07/1999 (Ac)	16/02/2005
42. Czech Republic	23/11/1998	15/11/2001 (Ap)	16/02/2005
43. Democratic People's Republic of Korea	-	27/04/2005 (Ac)	26/07/2005
44. Democratic Republic of the Congo	-	23/03/2005 (Ac)	21/06/2005
45. Denmark	29/04/1998	31/05/2002 (R)	16/02/2005
46. Djibouti	-	12/03/2002 (Ac)	16/02/2005
47. Dominica	-	25/01/2005 (Ac)	25/04/2005
48. Dominican Republic	-	12/02/2002 (Ac)	16/02/2005
49. Ecuador	15/01/1999	13/01/2000 (R)	16/02/2005
50. Egypt	15/03/1999	12/01/2005 (R)	12/04/2005
51. El Salvador	08/06/1998	30/11/1998 (R)	16/02/2005
52. Equatorial Guinea	-	16/08/2000 (Ac)	16/02/2005
53. Eritrea	-	28/07/2005 (Ac)	26/10/2005
54. Estonia	03/12/1998	14/10/2002 (R)	16/02/2005
55. Ethiopia	-	14/04/2005 (Ac)	13/07/2005
56. European Community	29/04/1998	31/05/2002 (Ap)	16/02/2005
57. Fiji	17/09/1998	17/09/1998 (R)	16/02/2005
58. Finland	29/04/1998	31/05/2002 (R)	16/02/2005
59. France	29/04/1998	31/05/2002 (Ap)	16/02/2005
60. Gabon	-	12/12/2006 (Ac)	12/03/2007
61. Gambia	-	01/06/2001 (Ac)	16/02/2005
62. Georgia	-	16/06/1999 (Ac)	16/02/2005
63. Germany	29/04/1998	31/05/2002 (R)	16/02/2005
64. Ghana	-	30/05/2003 (Ac)	16/02/2005
65. Greece	29/04/1998	31/05/2002 (R)	16/02/2005
66. Grenada	-	06/08/2002 (Ac)	16/02/2005
67. Guatemala	10/07/1998	05/10/1999 (R)	16/02/2005
68. Guinea	-	07/09/2000 (Ac)	16/02/2005
69. Guinea-Bissau	-	18/11/2005 (Ac)	16/02/2006
70. Guyana	-	05/08/2003 (Ac)	16/02/2005
71. Haiti	-	06/07/2005 (Ac)	04/10/2005
72. Honduras	25/02/1999	19/07/2000 (R)	16/02/2005
73. Hungary	-	21/08/2002 (Ac)	16/02/2005
74. Iceland	-	23/05/2002 (Ac)	16/02/2005
75. India	-	26/08/2002 (Ac)	16/02/2005
76. Indonesia	13/07/1998	03/12/2004 (R)	03/03/2005
77. Iran (Islamic Republic of)	-	22/08/2005 (Ac)	20/11/2005
78. Ireland	29/04/1998	31/05/2002 (R)	16/02/2005
79. Israel	16/12/1998	15/03/2004 (R)	16/02/2005
80. Italy	29/04/1998	31/05/2002 (R)	16/02/2005
81. Jamaica	-	28/06/1999 (Ac)	16/02/2005
82. Japan	28/04/1998	04/06/2002 (At)	16/02/2005
83. Jordan	-	17/01/2003 (Ac)	16/02/2005
84. Kazakhstan	12/03/1999	19/06/2009 (R)	17/09/2009
85. Kenya	-	25/02/2005 (Ac)	26/05/2005
86. Kiribati	-	07/09/2000 (Ac)	16/02/2005

Country	Signature	Ratification	Entry into force
87. Kuwait	-	11/03/2005 (Ac)	09/06/2005
88. Kyrgyzstan	-	13/05/2003 (Ac)	16/02/2005
89. Lao People's Democratic Republic	-	06/02/2003 (Ac)	16/02/2005
90. Latvia	14/12/1998	05/07/2002 (R)	16/02/2005
91. Lebanon	-	13/11/2006 (Ac)	11/02/2007
92. Lesotho	-	06/09/2000 (Ac)	16/02/2005
93. Liberia	-	05/11/2002 (Ac)	16/02/2005
94. Libyan Arab Jamahiriya	-	24/08/2006 (Ac)	22/11/2006
95. Liechtenstein	29/06/1998	03/12/2004 (R)	03/03/2005
96. Lithuania	21/09/1998	03/01/2003 (R)	16/02/2005
97. Luxembourg	29/04/1998	31/05/2002 (R)	16/02/2005
98. Madagascar	-	24/09/2003 (Ac)	16/02/2005
99. Malawi	-	26/10/2001 (Ac)	16/02/2005
100. Malaysia	12/03/1999	04/09/2002 (R)	16/02/2005
101. Maldives	16/03/1998	30/12/1998 (R)	16/02/2005
102. Mali	27/01/1999	28/03/2002 (R)	16/02/2005
103. Malta	17/04/1998	11/11/2001 (R)	16/02/2005
104. Marshall Islands	17/03/1998	11/08/2003 (R)	16/02/2005
105. Mauritania	-	22/07/2005 (Ac)	20/10/2005
106. Mauritius	-	09/05/2001 (Ac)	16/02/2005
107. Mexico	09/06/1998	07/09/2000 (R)	16/02/2005
108. Micronesia (Federated States of)	17/03/1998	21/06/1999 (R)	16/02/2005
109. Monaco	29/04/1998	27/02/2006 (R)	28/05/2006
110. Mongolia	-	15/12/1999 (Ac)	16/02/2005
111. Montenegro	-	04/06/2007 (Ac)	02/09/2007
112. Morocco	-	25/01/2002 (Ac)	16/02/2005
113. Mozambique	-	18/01/2005 (Ac)	18/04/2005
114. Myanmar	-	13/08/2003 (Ac)	16/02/2005
115. Namibia	-	04/09/2003 (Ac)	16/02/2005
116. Nauru	-	16/08/2001 (R)	16/02/2005
117. Nepal	-	16/09/2005 (Ac)	15/12/2005
118. Netherlands	29/04/1998	31/05/2002 (At)	16/02/2005
119. New Zealand	22/05/1998	19/12/2002 (R)	16/02/2005
120. Nicaragua	07/07/1998	18/11/1999 (R)	16/02/2005
121. Niger	23/10/1998	30/09/2004 (R)	16/02/2005
122. Nigeria	-	10/12/2004 (Ac)	10/03/2005
123. Niue	08/12/1998	06/05/1999 (R)	16/02/2005
124. Norway	29/04/1998	30/05/2002 (R)	16/02/2005
125. Oman	-	19/01/2005 (Ac)	19/04/2005
126. Pakistan	-	11/01/2005 (Ac)	11/04/2005
127. Palau	-	10/12/1999 (Ac)	16/02/2005
128. Panama	08/06/1998	05/03/1999 (R)	16/02/2005
129. Papua New Guinea	02/03/1999	28/03/2002 (R)	16/02/2005
130. Paraguay	25/08/1998	27/08/1999 (R)	16/02/2005
131. Peru	13/11/1998	12/09/2002 (R)	16/02/2005
132. Philippines	15/04/1998	20/11/2003 (R)	16/02/2005
133. Poland	15/07/1998	13/12/2002 (R)	16/02/2005
134. Portugal	29/04/1998	31/05/2002 (Ap)	16/02/2005
135. Qatar	-	11/01/2005 (Ac)	11/04/2005

Country	Signature	Ratification	Entry into force
136. Republic of Korea	25/09/1998	08/11/2002 (R)	16/02/2005
137. Republic of Moldova	-	22/04/2003 (Ac)	16/02/2005
138. Romania	05/01/1999	19/03/2001 (R)	16/02/2005
139. Russian Federation	11/03/1999	18/11/2004 (R)	16/02/2005
140. Rwanda	-	22/07/2004 (Ac)	16/02/2005
141. Saint Kitts and Nevis	-	08/04/2008 (Ac)	07/07/2008
142. Saint Lucia	16/03/1998	20/08/2003 (R)	16/02/2005
143. Saint Vincent and the Grenadines	19/03/1998	31/12/2004 (R)	31/03/2005
144. Samoa	16/03/1998	27/11/2000 (R)	16/02/2005
145. Sao Tomé and Príncipe	-	25/04/2008 (Ac)	24/07/2008
146. Saudi Arabia	-	31/01/2005 (Ac)	01/05/2005
147. Senegal	-	20/07/2001 (Ac)	16/02/2005
148. Serbia	-	19/10/2007 (Ac)	17/01/2008
149. Seychelles	20/03/1998	22/07/2002 (R)	16/02/2005
150. Sierra Leone	-	10/11/2006 (Ac)	08/02/2007
151. Singapore	-	12/04/2006 (Ac)	11/07/2006
152. Slovakia	26/02/1999	31/05/2002 (R)	16/02/2005
153. Slovenia	21/10/1998	02/08/2002 (R)	16/02/2005
154. Solomon Islands	29/09/1998	13/03/2003 (R)	16/02/2005
155. South Africa	-	31/07/2002 (Ac)	16/02/2005
156. Spain	29/04/1998	31/05/2002 (R)	16/02/2005
157. Sri Lanka	-	03/09/2002 (Ac)	16/02/2005
158. Sudan	-	02/11/2004 (Ac)	16/02/2005
159. Suriname	-	25/09/2006 (Ac)	24/12/2006
160. Swaziland	-	13/01/2006 (Ac)	13/04/2006
161. Sweden	29/04/1998	31/05/2002 (R)	16/02/2005
162. Switzerland	16/03/1998	09/07/2003 (R)	16/02/2005
163. Syrian Arab Republic	-	27/01/2006 (Ac)	27/04/2006
164. Tajikistan	-	05/01/2009 (Ac)	05/04/2009
165. Thailand	02/02/1999	28/08/2002 (R)	16/02/2005
166. The Former Yugoslav Republic of Macedonia	-	18/11/2004 (Ac)	16/02/2005
167. Timor-Leste	-	14/10/2008 (Ac)	12/01/2009
168. Togo	-	02/07/2004 (Ac)	16/02/2005
169. Tonga	-	14/01/2008 (Ac)	13/04/2008
170. Trinidad and Tobago	07/01/1999	28/01/1999 (R)	16/02/2005
171. Tunisia	-	22/01/2003 (Ac)	16/02/2005
172. Turkey	-	28/05/2009 (Ac)	26/08/2009
173. Turkmenistan	28/09/1998	11/01/1999 (R)	16/02/2005
174. Tuvalu	16/11/1998	16/11/1998 (R)	16/02/2005
175. Uganda	-	25/03/2002 (Ac)	16/02/2005
176. Ukraine	15/03/1999	12/04/2004 (R)	16/02/2005
177. United Arab Emirates	-	26/01/2005 (Ac)	26/04/2005
178. United Kingdom of Great Britain and Northern Ireland	29/04/1998	31/05/2002 (R)	16/02/2005
179. United Republic of Tanzania	-	26/08/2002 (Ac)	16/02/2005
180. United States of America	12/11/1998	-	-
181. Uruguay	29/07/1998	05/02/2001 (R)	16/02/2005
182. Uzbekistan	20/11/1998	12/10/1999 (R)	16/02/2005
183. Vanuatu	-	17/07/2001 (Ac)	16/02/2005
184. Venezuela	-	18/02/2005 (Ac)	19/05/2005

Country	Signature	Ratification	Entry into force
185. Viet Nam	03/12/1998	25/09/2002 (R)	16/02/2005
186. Yemen	-	15/09/2004 (Ac)	16/02/2005
187. Zambia	05/08/1998	07/07/2006 (R)	05/10/2006
139. Zimbabwe	-	30/06/2009 (Ac)	28/09/2009
TOTAL	84	187	-

Notes:

R: Ratification
 At: Acceptance
 Ap: Approval
 Ac: Accession

Source: Kyoto Protocol: Status of Ratification (last modified on: 8 July 2009),
http://unfccc.int/files/kyoto_protocol/status_of_ratification/application/pdf/kp_ratification_20090708.pdf, accessed on 28 July 2009.