

CHAPTER FOUR

THE DEVELOPMENT OF INTERNATIONAL ENVIRONMENT LAW TOWARD GLOBAL WARMING

The global environmental issues have captured the world's attention since the 1972 United Nations Conference on the Human Environment. After twenty years, representatives from every country gathered together again to find the resolution to address global environmental problems such as global warming, biodiversity, in Rio in 1992. The UNFCCC was one of documents signed in Rio which was the first result of international negotiation in global warming. After five years in 1997, Kyoto protocol was established to strengthen the UNFCCC in the 3rd Conference of Party of the UNFCCC in Kyoto, Japan. With the ratification of Russia, the Kyoto Protocol was put into effect in 2005. The process of international reaction toward global warming was discussed in this chapter.

4.1 The Science of Global Warming

In 1896, the Swedish chemist Svante Arrhenius first suggested that increasing atmospheric carbon dioxide could cause the planet to warm amplified by increased atmospheric moisture in a warmer world. He issued the first warning that human activities since the Industrial Revolution could lead to changes in the Earth's climate (Pittock, 2007). Since then, the global warming has become an issue in the whole world. It is necessary for us to understand the science of global warming so as we can know how it will affect the climate system to influence human beings' life. Then, effective measures and technology can be invented to curb global warming.

The greenhouse effect is a naturally occurring geophysical process, which over the course of time, with the advent of the Industrial Revolution and population growth and has become the greenhouse "problem" (Anand 2004). Carbon dioxide (CO₂), water vapor and other gases that have accumulated in the earth's atmosphere over a long period of time insulate the earth by absorbing energy from temperatures which would be approximately 33 degrees Celsius cooler than they are today (Bowser et al. 1992). The main gases that cause the greenhouse effect are water vapor, carbon dioxide (CO₂), chlorofluorocarbon (CFCs),

methane (CH₄) and nitrous oxide (N₂O), each of which is responsible for trapping heat in the atmosphere. However, CO₂ contributes the most to greenhouse warming (see table 4.1).

Table 4.1 Share of Greenhouse Warming Due to Different Gases

Greenhouse Gas	Share of Greenhouse Warming
Carbon Dioxide	64%
Methane	19%
Nitrous Oxide	6%
CFC-12	6%
Other Halocarbons	5%

Source: Houghton J.T. et al. (eds.) (1996)

Human activities seem the main source of CO₂ emissions, which are emitted as a byproduct of burning fossil fuels, such as coal, oil and natural gas and to a lesser degree from agricultural and industrial processes. Source of methane are rice paddy cultivation, ruminants like cows and sheep, biomass burning and decay, and releases from fossil fuel production. Sources of CFCs are solvents, refrigerants, aerosol spray propellants, and foam packaging manufacturing. The main anthropogenic sources of nitrous oxide are fertilizers, fossil fuel burning and land conservation for energy (Paterson 1996). There is no question that greenhouse gases have the potential to increase future temperatures.⁵⁴ These gases permit visible light to pass through but they block infrared heat from escaping. These gases behave just as glass does in a greenhouse. We can take our neighbors in the solar system as an example. Venus has a much higher concentration of these gases than the Earth, so it is much hotter. However, Mars is much colder because it has very little atmosphere (Ching et al. 2003). Many things would change with the direct increase of temperature from altered balance of greenhouse gases in the earth's atmosphere. For instance, the retreat of alpine and continental glaciers, decrease in snow cover and sea-ice, and recession of the ice cap all would increase the amount of water in the atmosphere and speed up hydrological cycle which would

⁵⁴ Since the nineteenth century, many scientists noted that increased emissions of carbon dioxide might lead to global warming which would result in climate change, see A. Barrie Pittock (2007), *Climate Change-turning up the heat*, chapter 11, CSIRO publishing Australia.

influence the energy balance of the climate system and result in extreme weather event.

‘Climate’ is the typical range of weather, including its variability, experienced at a particular place. It is often expressed statistically in terms of averages over a season or number of years of temperature or rainfall and sometimes in terms of other variables such as wind, humidity, and so on. Climate is critical to the world, as we know it. Over geological time, climate has helped to shape mountains, build up the soil, determine the nature of the rivers, and build flood plains and deltas. At least until the advent of irrigation and industrialization, climate determined food supplies and where human beings could live. Climate has changed greatly over geological timescales, but what is of immediate concern is an unprecedented rapid global warming trend which could be due to human-induced increased greenhouse gas emissions in the last few decades (Pittock, 2007).

According to the past global warming research, change frequencies and intensities of extreme weather events are likely with global warming, including more hot days, fewer cold nights, greater heat stress, more droughts in mid-latitude continental areas, more intense rain events, and increased intensity and rainfall form in tropical cyclones or hurricanes. Possibilities exist for sudden rapid and long-term changes in global-scale climate-related systems, including more rapid sea-level rise due to more rapid disintegration and melting of the Greenland and West Antarctic ice sheets, major change of the circulation of the ocean with regional climate impacts (especially in regions bordering the North Atlantic). Accelerated release of carbon dioxide and its concentration into the atmosphere would accelerate global warming and has already had impacts on the climate, and on natural ecosystems and human societies (Pittock, 2007). Climate change, as defined in the UNFCCC, means to a change of climate that is attributed directly or indirectly to human activity and alters the composition of the global atmosphere, in addition to natural climate variability observed over comparable time periods (Article 1.2, UNFCCC).

Scientific research in the latter half of the twentieth century led many climate scientists to alert government to the issue of climate change and heightened the urgency of international cooperation to address the problem. Not until 1980s has the issue begun to get attention from the international world. This led to climate change becoming an agenda in United Nations General Assembly. The United Nation held its first World Climate Conference to discuss the cause and effect of climate change in 1979. In 1988, a special organization (the United

Nations Intergovernmental Panel on Climate Change, IPCC⁵⁵) was established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. Science proof helps to ascertain responsibility for the effects of global warming. Its evaluation and consensus formation played an inevitable role in the problem setting process. It also provided necessary information for the policy-makers either in international society or domestic government to solve the problem.

The IPCC has been attempting to reach a consensus view on the scientific aspects of global climate change as this is seen as necessary for obtaining policy decisions that are based on best available knowledge. In its first report, the IPCC in 1990 stated that continued greenhouse gas emissions would enhance the greenhouse effect. In its second report in 1996, it affirmed that 'the balance of evidence suggests that there is a discernible human influence on climate change'. In its third report in 2001, it noted that over the last century, the earth has warmed by 0.6°C, and the increase is at least partly due to the anthropogenic release of GHGs. In its forth Assessment Report in 2007, it again concluded: 'Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands years. The understanding of anthropogenic warming and cooling influences on climate has improved since the Third Assessment Report (TAR), leading to very high confidence that the globally averaged net effect of human activities since 1750 has been one of warming.'⁵⁶ These reports again proved that there is a high probability which human induced global warming, with associated changes in other climate condition, is happening. Human beings have to face a truth that the Earth is warming. Those greenhouse gases all have long life cycles⁵⁷ and are hard cleaned by nature to reduce their concentration in the atmosphere, so it really important that human-being take action to do something to

⁵⁵ IPCC is an interdisciplinary epistemic community which has more than 2000 scientist contributing to research work to pronounce scientific expertise on this issue.

⁵⁶ See IPCC, 2007: 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 [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Climate Change, <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html> (accessed on May 10th of 2008).

⁵⁷ The Life cycle of CO₂, CH₄, N₂O and CFCs are 50-200 years, 12-17 years, 120 years and 102 years.

address the problem immediately. If we do nothing, the environmental catastrophe in the near future would be inevitable.

4.2 The political economy of the global warming issue

The IPCC's reports shows that global warming will continue, at an accelerating pace, through the twenty-first century and beyond, unless urgent measures are taken at international and domestic levels to slow and eventually reverse the greenhouse gases increase in the atmosphere. There is no question that climate change is a global environmental problem that needs global cooperation to solve. Compared with other global environmental issues, global warming issues have the following characteristics⁵⁸:

1. High uncertainty in decision making

Pittock (2007) pointed out that scientific uncertainty about the effect of future human behavior on the climate - especially future emissions of greenhouse gases- will influence policy-development. The costs of curbing climate change are more easily calculable in monetary amounts; the benefits of joining the climate change convention are not as clear or immediate. This is because while costs due to emission reductions are felt in the immediate future, the costs due to climate change impacts are likely to be manifested in the long-term only. In addition, technology development, interest conflicts between countries and control tools also pose uncertainty regarding policy-making.

2. Directly impact on industrial structure

Global warming issues will not influence only one industry or one sector, such as the Montreal Protocol, but will also have a great effect on whole industrial structure including energy, industry, transportation, residential and business sectors.

3. Different interest alliances in negotiation

With different geographic condition, degrees of industrialization, trade dependency, and ecological resources, countries with the same interests will form alliances to dialogue in the negotiation process. Finally, there will only leave three or four major opinions to debate.

⁵⁸ 葉俊榮 (2000)。溫室氣體管制立法之研究。行政院環境保護署八十九年委託研究計畫。執行單位:財團法人台大法學基金會

4. Developing issues

Issues regarding scientific discovery, the UNFCCC, the Kyoto Protocol, to post-Kyoto negotiation, are still developing. Measures to address these issues will also develop in quality and quantity. Although there are a lot of variables in the development of the global warming issue, all countries still have to do something in advance to address the issues to prevent possible impacts.

In fact, every country in the world contributes to greenhouse gas emissions. Because the gases mix in the atmosphere, the source of the emissions does not matter. All that matters is the global quantity of emissions, thus every country needs to be aware of how they contribute to this global total. Greenhouse gases are a long-term problem that began over a century ago and will extend for centuries into the future if no control policies are adopted. It is truly a global problem because the emissions are in fact emanating from every country in the world and that the impacts will be felt in every corner of the world, but not necessarily to the same level (Birnie and Boyle 2002). Greenhouse gases are expected to alter the climate of the entire earth; however, as stated, the impacts are not likely to be the same for each country. First, the climate is not expected to change uniformly. Some countries might experience a greater or lesser change in temperature. Second, each country begins with a different climate. Warming will fall more heavily on countries that are already too hot. The precipitation might change dramatically from country to country. The impact of changes in precipitation will depend greatly on how much precipitation is currently occurring. Third, only certain sectors will be affected by climate change. The magnitude of impacts will depend on the relative size of these climate sensitive sectors in each country (Ching et al.2003). The negotiating positions of countries revolve around the following issues (Gupta 1997):

- Issues of burden-sharing
- Responsibility for climate change
- Vulnerability to climate change
- Distribution of costs or burdens associated with climate change
- Capacity to deal with consequences of climate change
- Distribution of costs of adaptation
- Distribution of the costs of abatement
- Future emission rights

- Ensuring institutional and procedural fairness.

For example, European Community (Now European Union) and the small island states (such as low-lying Pacific islands, which might disappear altogether) have favored the establishment of targets and a timetable for limiting the emissions of GHGs, while the United States and the oil producing states have been against this procedure. Moreover, there are also some debates between the developing (Southern) countries and developed (Northern) countries such as the responsibility shoulder in reducing Carbon Dioxide emissions according to past emissions⁵⁹. For a participating country to accede to the climate change convention, it would need to be convinced that it is getting a fair deal. The expected costs of participating in the climate change convention should not exceed the benefits a country expects to receive (Anand 2004). However, added to the characteristics mentioned above, it is understandable that the negotiation process to draw up a global Framework Convention on Climate Change known as the UNFCCC is slow due to different interests between different countries involved in this complex issue.

Even if a system for burden sharing is negotiated at the international level, issues of non-cooperation may arise at the domestic level. Some domestic actors, such as interest groups, bureaucrats, and politician, may not support their governments entering into the international environmental agreements, because climate change will affect different groups of people differently, just as it affects different countries differently (Grubb 1995, Anand 2004). During the environmental problem-solving process, political and economic concern are involved that influence the solution at the international and domestic level.

4.3. The UNFCCC-the Kyoto Protocol

A series of scientific conferences during the 1980s built up a consensus that human emissions of carbon dioxide (CO₂) and other gases would lead to warming on the earth's surface, with associated climatic changes that could produce substantial detrimental effects on human society. That made climate change became a major political issue since then. To response the consensus, the IPCC was established in 1988 under the UN General Assembly

⁵⁹ Developed countries were responsible for 75 per cent of CO₂ emissions from fossil fuel combustion in 1990 and OECD countries for 62 percent of these Annex I CO₂ emissions. The 'per capita emissions in developing countries are still relatively low' owing to the industrialization process of developing countries that started in the middle of the twentieth century (Miguez 2002).

Resolution 43/45 to provide a scientific and policy assessment of the climate change issue so as to produce outlines of possible responses. The IPCC 's report influenced the result of the Second World Climate Conference (SWCC), held in Geneva in November 1990, which was a call for serious policy response to the Climate change issue. Shortly after the SWCC, the United Nations General Assembly set up an Intergovernmental Negotiating Committee (INC) for a Framework Convention on Climate Change (FCCC). The INC/FCCC met for the first time in February 1991 to negotiate a convention for signature at the UNCED in Rio de Janeiro in June 1992 (Jager and O'Riordan 1996).

It was hoped that the 1992 Rio Conference would conclude the convention on climate change. However, the negotiating climate in the Conference was often hostile, as major differences between developed and developing countries emerged on such basic questions: how should we weigh economic development and safety environment? Could the two be separately dealt with? Developing states characterized the environmental crisis as a long-term developmental one, while developed states saw it as a more immediate technical problem. For example, the pressure of global action on climate change from developed states was seen as an inequitable attempt to force developing states to share the costs and burdens of a problem created almost entirely by the industrial states (Birnie and Boyle 2002). Cooperation on the climate change issue is particularly difficult because possible response could reach into the heart of countries' political and economic structures. There are no effective measures to absorb greenhouse gases compared with the projected scale of emissions. It seems that the best way of reducing the greenhouse gas concentrations is to reduce emissions. Carbon Dioxide (CO₂) is the main contributor to the concentrations of greenhouse gas and comes mainly from the use of fossil fuel energy and from deforestation. Energy use is intimately related to economic development, and fossil fuel industries generally account for several percent of GNP and comprise some of the largest and most powerful industries in the world. The possible causes of deforestation could be consumption pressure from industrialized countries and various land-use pressures in many developing countries (Grubb and Paterson 1992). The measures to reduce Carbon Dioxide emission imply a complete structural change in production and consumption systems of goods such as energy, food and materials and have posed difficult challenges for many states in matters of economic and industrial policy. The adjustment in the use of energy is substantial for industrialized states, but it is also

fundamental to the development aspirations and priorities of developing states. Due to divergent vulnerability to the impacts of climate change and different executive cost, states will show different attitudes toward the negotiation of the convention. For example, some states, such as low-lying island states or states in semi-arid areas where rainfall may drop even further and climate change could affect their very existence, can expect to be more willing to promote the convention and more in favor of a strong convention, while others that may have small gains from climate change or have great pressure with poverty, budget deficits will be less active on the negotiation. Different opinions and interests are among the participating states as to the measures needed and the allocation of responsibility for addressing the problem in the Convention. Countries of OPEC oil producers such as Saudi Arabia and Kuwait, whose income and economies could have seriously impact if consumption of fossil fuels was reduced. The larger developing states such as China, Brazil, and India, were mainly concerned not to limit their own economic growth.

In order to attain consensus between developed and developing states, a concept of “common but differentiated responsibilities” is adopted to create a new and equitable global partnership on the one hand, and to give the special situation and needs of developing countries on the other (Matsui 2004).

Although there are disagreements and interest conflicts during the negotiation process, a non-binding Framework Convention on Climate Change was adopted at the 1992 Rio Conference (Birnie and Boyle 2002). Many governments and NGOs expressed regret that the climate treaty was weakened. Only vague commitments were made by developed states on provision of financial resources and debt reduction. It is still worthy to note that more than 150 states and the EC at the Rio conference in June 1992 signed the Convention. After the signing of the Convention in Rio, several steps were needed to make it work. Fifty ratifications or similar approvals by signatories of the Convention were required for it to become legally binding. This was set to take place three months after the minimum number of ratifications had been deposited. After the 50th ratification was deposited on 21 December 1993 the convention came into force on 21 March 1994. The “supreme body” of the Convention is the Conference of Parties (COP) which is the highest decision making authority consisting of all the party countries. The first Conference of Parties (COP) was held in Berlin from 28 March to 7 April 1995. Until end of 2007, thirteen sessions of COP have been held to

continue address the reduction of greenhouse gas emission. The Convention currently has received 192 instruments of ratification as of 22 August 2007.

4.3.1. The goal of the Convention

The FCCC consists of a Preamble, 26 Articles and 2 Annexes. The Convention on Climate Change sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention sets an ultimate objective of stabilizing greenhouse gas concentrations ‘at a level that would prevent dangerous anthropogenic interference with the climate system’ (Article 2).

Under the Convention, governments should:

1. Gather and share information on greenhouse gas emissions, national policies and best practices.
2. Launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries
3. Cooperate in preparing for adaptation to the impacts of climate change

4.3.2. The Objective and Obligations under the Convention

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is “to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.” (FCCC Article 2)

Required efforts are paramount to achieve the objective, although the Convention contains no binding commitments on emissions levels, it does lay down some principles (FCCC Article 3) for parties to follow, which include:

1. The need to protect the climate system on the basis of equity and in accordance with

their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

2. The need to recognize the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable (such as low-lying island), and the need to give full consideration that developing countries would have to bear a disproportionate or abnormal burden under the Convention.

3. The need to take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects even under the lack of full scientific certainty, and the need to take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors so as to ensure that all the measures and policies should be cost-effective

4. The right to sustainable development, and the need to promote sustainable development. policies and measures adopting to address climate change should be taken into account economic development of each Party and integrated with its national development programmes.

5. The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.

According to the “common but differentiated responsibilities” principle recognized in Articles 3.1 of the UNFCCC, the Convention categorizes its Parties into four groups – Annex I country parties⁶⁰, Annex II country Parties, non-Annex I country Parties, and less developed countries- and imposes different treaty obligations accordingly.

⁶⁰ Meens Australia, Austria, Belarus a/, Belgium, Bulgaria a/, Canada, Czechoslovakia a/, Denmark, European Economic Community, Estonia a/, Finland, France, Germany, Greece, Hungary a/, Iceland, Ireland, Italy, Japan, Latvia a/, Lithuania a/, Luxembourg, Netherlands, New Zealand, Norway, Poland a/, Portugal, Romania a/, Russian Federation a/, Spain, Sweden, Switzerland, Turkey, Ukraine a/, United Kingdom of Great Britain and Northern Ireland, United States of America.

a/ Countries that are undergoing the process of transition to a market economy.

Annex I Parties include the industrialized countries that were members of the Organization for Economic Co-operation and Development (OECD) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States. They are industrialized countries which have been primarily responsible for climate change. These countries have a higher per capita emission rate for GHGs, but they also have stronger institutional and financial capacity to respond to the problems created by climate change.

Annex II Parties consist of the OECD members in the Annex I, but not the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to "take all practicable steps" to promote the development and transfer of environmentally friendly technologies to the EIT Parties and developing countries. Funding provided by Annex II Parties is channeled mostly through the Convention's financial mechanism.

Non-Annex I Parties are mostly developing countries. Certain groups of developing countries are recognized by the Convention as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce) feel more vulnerable to the potential economic impacts of climate change response measures. The Convention emphasizes activities that promise to answer the special needs and concerns of these vulnerable countries, such as investment, insurance and technology transfer.

The 48 Parties, classified as least developed countries (LDCs) by the United Nations, are given special consideration under the Convention on account of their limited capacity to respond to climate change and adapt to its adverse effects. Parties are urged to take full account of the special situation of those LDCs when considering funding and technology-transfer activities⁶¹.

Obligations for all parties are provided in Articles 4.1, 4.5, 4.6, and 12.1 of the Convention. These mainly include: to develop national inventories of anthropogenic

⁶¹ Refer to UNFCCC website: http://unfccc.int/parties_and_observers/items/2704.php (accessed on May 10th of 2008)

emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to formulate, implement national climate change policy programmes, to promote and to co-operate in scientific research to address climate change, exchange of information, education, training, and public awareness related to climate change, and, finally, to communicate to the COP its national inventories and implementation steps. These commitments apply equally to all Parties.

In addition to the aforementioned obligations, further commitments for “the developed country Parties and other Parties included in Annex I” are set out in Articles 4.2, 4.5 and 12.2. These include a quasi-target and quasi-timetable to return GHG emissions to 1990 levels by the year 2000, and more stringent reporting requirements. Furthermore, commitments regarding financial assistance and technology transfer have been undertaken by “the developed country Parties and other developed country Parties included in Annex II” in Articles 4.3 to 4.5. As for the extent to implementation of developing country Parties, it will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology according to Article 4.7 (Shih 2002).

4.3.3 Mechanisms and Institutions under the Convention

The Convention designed three mechanisms and institutions to achieve the goals to reduction GHGs. They include(Gupta 1997):

1. Mechanisms to promote bilateral and multilateral actions:
 - Transfer of technology (Articles 4, 9, and 11)
 - Transfers through the financial mechanism (Article 11)
 - Joint Implementation (Articles 3.3,4.2, 7.2 and 11.5)
 - Scientific cooperation (Article 5)
2. Organizations to promote the implementation of the Convention:
 - Conference of the Parties (COP), which consists of negotiators from ratifying countries, and which meets once a year to review the implementation and to take decisions on how to improve the implementation process (Article 7)
 - A secretariat to undertake the day-to-day activities of coordinating the implementation (Article 8)

-A Subsidiary Body for Scientific and Technological Advice has been established to advise the COP about the latest developments in the scientific and technological area and to provide policy recommendation (Article 9)

-A Subsidiary Body for Implementation will assist the COP in reviewing the (domestic) implementation of the Convention (Article 10)

3. Other mechanisms:

-Communications and review of communications (Article 4 and 12)

-Resolution of questions regarding implementation (Article 13)

-Dispute prevention, conciliation and settlement (Article 14)

4.3.4. The Kyoto Protocol

The adoption of the UNFCCC in 1992 was a major step forward in tackling the problem of global warming, but firm and binding commitment for Parties is still lack to achieve its ultimate goals. Parties of the Convention began to negotiate a Protocol linked to the Convention. The first meeting of the COP was held in Berlin in April 1995. The “Berlin Mandate” was passed to create a negotiating group (Ad hoc Group on the Berlin Mandate) to develop a legal instrument in time for the third COP in Kyoto, Japan in December 1997. Following the second COP in Geneva, Switzerland, “The Geneva Ministerial Declaration” was adopted to further appeal to legally binding objectives and significant reductions in GHG emissions. After two and a half years of intense negotiations, the Kyoto Protocol was adopted at the third Conference of the Parties to the UNFCCC (COP 3) in Kyoto, Japan, on 11 December 1997. Parties signed the Kyoto Protocol to make up reducing measures and some principles which commits developed nations and countries in transition (former Soviet bloc countries) to achieve quantified reductions in greenhouse gas emissions.

The Kyoto Protocol consists of a Preamble, 28 Articles as well as Annex A and Annex B. It shares the objectives and institutions of the Convention. The major distinction between the two is that while the Convention encouraged developed countries to stabilize GHG emissions, the Protocol commits them to do so. The Protocol gave the Annex I Parties legally binding on achieving quantified reduction on GHG emissions. The Annex I parties agreed to cut down their emissions of six GHGs to an average of 5.2% below their 1990 emission levels in the commitment period 2008 to 2012. The detailed rules for their implementation were adopted at

COP 7 in Marrakesh in 2001, and are called the “Marrakesh Accords.” The Kyoto Protocol is considered to be the most far-reaching agreement on environment and sustainable development ever adopted in the international environment regime.

The main provisions for the Kyoto Protocol are as the following:

1. Reduction and Limitation Commitments of Annex I Parties: Article 3.1 in connection with Annex B lays down the obligations undertaken by those States. The overall target is to reduce global emissions by at least 5 per cent in the commitment period 2008 to 2012. These reduction or limitation commitments are not limited to CO₂ but to a “basket” of six gases (listed in Annex A). These commitments are to be achieved through policies and measures on the national level and by using the “mechanisms”.
2. Policies and measures (Article 2): Article 3 gives examples of such policies and measures, but does not provide for specific ways and means which parties have to adopt on the national level. It is left to each party to adopt most efficient policies and measures under national circumstances.
3. Three mechanisms (the so-called Kyoto/flexible mechanisms are designed to direct investments to areas where they would achieve emission reductions in the most efficient way):
 - (1) Joint Implementation (JI, Article 6): JI refers to the generation and transfer of emission reductions by investment in a project in one Annex I country by another, thereby generating credit for the investing Party.
 - (2) An Emissions Trading Scheme (Article 17): Emissions trading allows for the buying or selling of emission allowances between Annex I countries. It is expected that domestic and international trading schemes will be set up to facilitate this, as is happening in the EU in 2005.
 - (3) A Clean Development Mechanism (CDM, Article 12). The CDM is similar to JI, but generates credit for investing Annex I Parties from project investments in non-Annex I Parties.

Although the Kyoto Protocol established these mechanisms, it leaves the elaboration of more detailed rules to future negotiations. Uncertainty about the operation of the mechanisms was seen as an obstacle to the ratification of the Kyoto Protocol.

During COP 4 to COP 7, negotiations were continue to give Parties clarity about the

operation of the Kyoto Protocol and made it “ratifiable” for them.

COP 8 at Delhi 2002 called upon all Parties “to continue to advance the implementation of their commitments under the Convention to address climate change and its adverse effects in order to achieve sustainable development.” It concentrated on “technical issues” through underlined that “international cooperation should be promoted in developing and disseminating innovative technologies in respect of key sectors of development, particularly energy and of investment in this regard...”

For the Protocol to come into force it had to be ratified by at least 55 countries, and also by enough Annex I countries on account for at least 55% of global carbon dioxide emissions in 1990. Although most of the world’s countries eventually agreed to the Protocol, but some nations chose not to ratify it. Because the ratification of the protocol will affect virtually all major sectors of the economy, some Parties were ambivalent or disapproving in the process due to their special interests regarding the ratification of Protocol, such as the U.S.. Compromises and concessions are made during those COPs to create incentives for countries to ratify the Protocol. As of mid-2004, 122 countries had ratified the Protocol, but only 32 were Annex I countries and these accounted for only 44.2% of the global carbon dioxide emissions. Finally, with the ratification of Russia, the Kyoto Protocol entered into force on 16 February 2005. As of 15 January 2008, 177 countries and one regional economic integration organization (the EEC) have deposited instruments of ratification, accession, approval or acceptance. The total percentage of Annex I Parties’ GHG emission reaches 63.7% of global carbon dioxide emissions in 1990.

It is important to remember that the Kyoto Protocol emissions targets, and exclusion of the commitment of developing countries, apply only until 2012, after which a new formula must be developed. Negotiations began to focus on post- Kyoto agreements. Latest COP 13, held in Bali, Indonesia from the 3rd to 15th of December 2007 finally culminated in the adoption of the Bali Roadmap, which consists of a number of forward-looking decisions that represent the various tracks that are essential to reaching a secure climate future. The Bali Roadmap includes the Bali Action Plan, which charts the course for a new negotiating process designed to tackle climate change, with the aim of completing this by 2009. It also includes

the AWG-KP⁶² negotiations and their 2009 deadline, the launch of the Adaptation Fund, the scope and content of the Article 9 review of the Kyoto Protocol, as well as decisions on technology transfer and on reducing emissions from deforestation.

Although the Bali roadmap did not set up next stage (after 2012) reduction target and timetable, it ensured the strategy that mitigation much be in tandem with adaptation. Other important achievement is the establishment of the Adaptation Fund which can provide financial aid to developing countries to build their adaptation mechanism and action plan. Post Kyoto Protocol negotiation framework may adopt multi-way, flexible mechanism (soft law) form. The CDM, Emission Trade Mechanism, Carbon Neutral Fund, new energy technology development would be important policy tools for countries to adapt domestic economic and energy structure transition⁶³ in the post-Kyoto period.

4.3.5. The Achievement of the UNFCCC

In spite of the ‘Framework Convention’, the UNFCCC contains more than other similar framework convention. It has laid down the ‘cornerstones’ for the evolution of the climate change regime, leaving it to future negotiations to elaborate more detailed rules supporting the aim to achieve sustainable development (Loibl 2004). It has more extensive commitments than the other conventions: it sets up a number of new institutions and provides financial assistance and technology transfer for developing countries. The Convention also states that ‘the Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects’, thus establishing the precautionary principle as a guiding principle in the international response to climatic change (Jager and O’ Riordan 1996). Consider the difference between the North and South, the ‘common but differentiated’ approach was adopted to give Parties difference commitments regarding their different economic conditions. In addition, encouraging scientific research, promoting technology transfer, and establishing a financial mechanism are also taken by the

⁶² The AWG-KP (the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol) was established by the Conference of the Parties at its first session held at Montreal from 28 November to 10 December 2005 according to the Article 3, paragraph 9 of the Kyoto Protocol to initiate consideration of future commitments for Annex I Parties at least seven years before the end of the first commitment period. The AWG-KP aims to complete its work and have its results adopted by the Conference of the Parties at the earliest possible time to ensure that there is no gap between the first and second commitment period of the Kyoto Protocol. (Refer to UNFCCC website: http://unfccc.int/kyoto_protocol/items/3878.php)

⁶³ Refer to Taiwan Environmental Information Center website: <http://e-info.org.tw/taxonomy/term/13043>

UNFCCC to promote fair and efficient solutions and to be flexible enough for Parties to implement the Convention(Gupta 1997). However, the challenge for the Convention is the way how the responsibility for addressing climate change problem will be shared fairly between developed Parties and developing Parties. Each country wishes to maximize domestic benefits while minimizing domestic sacrifice. All Parties hope that the Convention may bring economic opportunities, but they are also afraid that they may only incur the disadvantages. For developed countries, the potential opportunity is in developing and marketing technologies; while the potential sacrifice is that they may have to drastically reduce their emissions and perhaps have lower economic growth. For developing countries, the Convention provides a path of accelerated development in the short-term, but emission reduction may prevent their future economic growth (Gupta 1997).