CHAPTER II

HISTORY OF KYOTO PROTOCOL TO THE UNITED NATIONS FRAWEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

This second chapter of this undergraduate thesis covers the history of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) as one of the international binding agreement in tackling the climate change issue. Each of sub-chapter within this chapter will explain the process of how Kyoto Protocol is established along with the principles and objectives.

A. Development of Climate Change Convention

The devastating result of climate change has brought many people to stand together to fight against it. The threat of climate change is real and threatening the life of every single person that live on this planet. As a matter of fact, climate change not only threatening the life of people that live in these days but also that of the next future generation. To prevent that thing from happening, people need to realize and start to act by having international agreements that are concerned with climate change.

a. Rio Earth Summit 1992

The Rio Earth Summit in 1992 was the first step of the international agreements, protocols, and treaties which talked about the environmental degradation. The summit was held by United Nations Conference on Environment and Development (UNCED). The two-week conference in Brazil was resulting The Rio Declaration on Environment and Development which contains about the global cooperation among people, societies, and states to sustain the environment. As

stated in the principles of the declaration, the actors, especially the states, were expected to meet their obligations as states in developing their country by considering the sustainability of their environment. Therefore, each of the states had different obligation one another. As stated in the principle 7, "States have common but differentiated responsibilities" (United Nations, 1992).

b. United Nations Framework Convention on Climate Change

The Rio Earth Summit in 1992 has resulted in three conventions which had different objectives, among others which are the Convention on Biological Diversity (CBD), United Nations Convention on Sustainable Development, and United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC is an international convention that concerned on climate change. The UNFCCC becomes the framework for negotiating specific international treaties that are related to the issue of climate change. The treaties or protocols that are negotiated in the convention eventually become a legal binding agreement that forces the parties to implement them.

The UNFCCC, as the international convention has specific principles, objectives, and commitments. Based on the second article of UNFCCC, the main objective 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 (originating in human activity) interference with the climate system" (United Nations Framework Convention on Climate Change, 2006).

The principles of UNFCCC are mostly adopted from Rio Earth Summit in 1992. They are purposed for the guidance for the states to maintain their environment. Although UNFCCC did not bind the states to implement the agreement, the parties were expected to do so. There are several principles from Rio Earth Summit that become the main principles in UNFCCC. For instance, the principle 7 of the 1992 Rio Declaration on Environment and Development about is the expectation for the parties in conducting the global cooperation to restore the good condition of the ecosystem. After realizing that, the states have various size and amount of waste, it affects the different responsibility one another. The main principle of the convention is mentioned in the article 3.1. This article stresses the principles of equity and of common but differentiated responsibilities. It is called as common but differentiated responsibilities because back in the day of industrialization era, industrialized countries have been producing a huge amount of greenhouse gases (GHG) emission to the atmosphere of the earth. So basically the industrialized countries produced the emission earlier than the other countries. Thus, in this case, they have to take more responsibilities to address the issue of climate change. Especially, the industrialized countries which produce bigger amount of waste carry bigger responsibility (United Nations Framework Convention on Climate Change, 2006).

Another principle is the principle 6 of the Rio Declaration on Environment and Development about the special concern toward the developing countries. Realizing it, the developing countries do not possess sufficient awareness as the developed countries do. This principle assumes that the environment in developing

countries and least developed countries was categorized in the vulnerable situation. The imbalance production amount of Green House Gasses (GHG) emission among states, especially the industrialized country and developing countries, could lead to the environmental degradation which slowly could affect the whole world. This principle demands the cooperation from the developed countries to have a significant role in contending the climate change (United Nations Framework Convention on Climate Change, 2006).

Related to the future generations, the UNFCCC also adopts the principle 3 of the 1992 Rio Declaration on Environment and Development which describes about the technology transfer for the certain countries which include in the Least Developed Countries (LDC). The limited capability of the LDC countries and some developing countries became the main reason of the special concern of UNFCCC. The developed states were expected to fulfill the special needs of the vulnerable countries through insurance, investment and most importantly, the technology transfer. In addition, the principle 12 is also in line with principle 3 which talks about the open international economic system. This article expects the developed states through trade policy for environmental objective (United Nations Framework Convention on Climate Change, 2006).

Regarding the commitments of the state, each of the states carries different responsibilities based on the emission of the state in 1990. It was reported that during the first meeting in 1992, there were 154 states signed the UNFCCC. As many states signed the UNFCCC, the states have to commit under the regulation of UNFCCC. There were some rights and obligations for the states depends on their

category. The category for the states divided into three, such as Annex I, Annex II and Non-Annex I. The countries that listed in the Annex I are the members of Organization for Economic Co-operation and Development (OECD) which is widely known as the industrialized countries that much contributed in releasing the GHG emission to the atmosphere in the earth throughout the years before 1990. Beside the industrialized countries, there were the Economies in Transition (EITs) countries (United Nations Framework Convention on Climate Change, 2014).

The Annex I countries are expected to implement the UNFCCC regulation to their national policies. The regulation of UNFCCC demands the states to reduce their greenhouse gas emission to the base year 1990 levels by the year 2000. Certain countries which belong to the EITs countries have a different obligation. The EIT countries have the certain degree of flexibility regarding their obligations. In implementing the commitments, the EITs countries are getting a privilege that allow them to owe to the major economic and political upheavals that have taken place in the EITs countries.

Several of them are triggered by this clause to choose the earlier baseline from the 1990 baseline. The consideration to change the base year to the earlier 1990 is because it is the year before the changes of their economic which led them to reduce a huge amount of emission of their countries (United Nations Framework Convention on Climate Change, 2014). The countries that are included in Annex I to the convention are listed below:

Table 1

List of Annex I Countries of Kyoto Protocol to the UNFCCC

Annex I					
Australia	Czech*	Hungary*	**Luxembourg**	Romania*	Ukraine*
Austria	**Denmark**	**Iceland**	Malta	Russia Federation*	**United Kingdom**
Belarus*	Estonia*	**Ireland**	Monaco	Slovakia*	**United States**
Belgium	**European Community**	**Italy**	**Natherlands**	Slovenia*	
Bulgaria*	**Finland**	**Japan**	**New Zealand**	**Spain**	
Canada	**France**	Latvia*	**Norway**	**Sweden**	
Croatia*	**Germany**	Liechtenstein	Poland*	**Switzerland**	
Cyprus	**Greece**	Lithuania*	**Portugal**	Turkey	

* denotes countries with Economic in Transition (EIT)
Bold denotes countries also included in Annex II
Underline denotes countries added to Annex I at COP 3

Source: Guide to the Climate Change Negotiation Process of United Nations Framework Convention on Climate Change

Those countries have some obligations to submit regular reports, known as National Communications. This National Communications is reporting on the climate change policies and measures in the Annex I countries. In addition, Annex I countries also have to submit an annual greenhouse gas Emission Inventory. From the list Annex I above, the OECD members that are included in Annex I are also listed in the conventional Annex II. There are some special obligations for the countries included as the Annex II countries. These countries need to provide new and additional financial resources. These financial resources are meant to help

developing countries in tackling the climate change issue. Besides providing financial resources for the developing countries, the Annex II countries also need to facilitate the transfer of climate-friendly technologies to both developing countries and EITs. The obligation for countries that is also listed in the Annex II countries are bigger than countries that are only listed in the Annex I countries. Annex II countries also have to reduce the GHG emission and also need to add additional financial resources and transfer technology to the developing countries (United Nations Framework Convention on Climate Change, 2014).

The next category is the Non-Annex I countries. This category is all remaining countries, and most of them are the developing countries. The countries that are included in this category also have to report their actions to address the climate change. The report of their adaptations to the effects of climate change also need to be submitted. Different from the countries listed in the Annex I category, their time frame for the submission of the national communications and emission inventories is less stringent and depends on the receipt of funding from the Conventions financial mechanism. The Conventions financial mechanism is operated by the Global Environment Facility (GEF). This condition that makes the non-Annex I countries submit their national communications later than countries in the Annex I category (United Nations Framework Convention on Climate Change, 2014).

As it was mentioned before, Annex II countries are having a special obligation by adding a new and additional financial resources and transfer the technology that might help the developing countries, and in this case, they are

countries that are included in the non-Annex I category to address the climate change and adapt to its effects. The convention then recognizes that financial assistance and technology transfers are very important for the non-Annex I countries. Financial assistance that is provided by Annex II countries is channeled through the conventions financial mechanism. The convention is emphasizing to support the capacity-building initiatives in both non-Annex I countries and EITs (United Nations Framework Convention on Climate Change, 2014).

After UNFCCC was officially in entry into force in 1994, the UNFCCC held their first annual meeting called Conference of Parties 1 (COP 1). The COP 1 which was held in Berlin, Germany in 1995, discussed about the progess of future protocol that concerns on the climate change. Since the UNFCCC only contains about the general issue of climate change in the form of articles, the future COP was expected to discuss about an effective action for the states, such as the reduction targets, the method, or the penalty for the states that have not met their obligations. The COP 1 succeeded to attract the states, especially the developed states, to have national policies with the regard of UNFCCC articles as their commitment called 'Berlin Mandate'. Beside the Berlin Mandate, the COP also enacted the Ad Hoc Group to maintain the negotiation to discuss about the protocol (United Nations Framework Convention on Climate Change, 1995).

In 1996, the COP 2 which was held in Geneva, Switzerland, discussed about the method of the development, the transfer of technologies, and the future work of Ad Hoc team and announced first yearly report from Intergovernmental Panel on Climate Change (IPCC). The report concluded that the environmental degradation

was caused by human activity and if the climate change was not maintained properly, it could affects the human existence and economic development in future. This conference also bridged the Annex I states to have communication to discuss about their schedules, targets, and guidelines. During this conference, the Government of Japan offered to host the third Conference of Parties (COP 3) in Japan (United Nations Framework Convention on Climate Change, 1996).

B. Kyoto Protocol to the United Nations Framework Convention on Climate Change

In 1997, the third Conference of Parties (COP 3) of UNFCCC was held in the early of December in Kyoto, Japan. This conference was attended by many participants, such as non-governmental organizations, press, intergovernmental organizations, and representatives from governments. Because of the importance of COP 3 in creating protocol, before the COP 3 was held, there were many meetings from the Ad Hoc Group of Berlin Mandate (AGBM) in order to prepare the material that would be discussed in COP 3, such as the the possible approaches policies, measures for the limit of emission, frameworks, proposals and many others. This third COP established protocol that eventually binds each party to implement the protocol. The protocol named as Kyoto Protocol were adopted on 11 December 1997. The protocol aims each state to limit and reduce their emission. This protocol only came into force on 16 February 2005 after the ratification of at least 55 States to the Convention. Kyoto Protocol first commitment to reduce and limit the emission was started in 2008 and ended in 2012. In the first commitment, parties had to reduce the number of emissions by five percent below the 1990 levels.

In COP 3, parties that are involved in the conference discussed about the obligation of each state. The obligation of each state was classified depending on the division of Annex I, Annex II and Non-Annex I. The Kyoto Protocol used this classification of the states to determine the obligation of the states. In order to promote sustainable development, the states in the Annex I were expected to implement the value of UNFCCC in accordance with the situation of each state, progressive reduction of emission, promotion of eco-friendly technology and management of the emission covers the transport, production, distribution of energy as well as the waste management. Countries that had ratified the protocol must have reached their target of emission reduction primarily through national policy. However, the Kyoto Protocols offers the other way in reducing the emission to reach their target. These additional means are three market-based mechanisms called the Kyoto mechanisms. There are International Emission Trading, Joint Implementation, and Clean Development Mechanism (UNFCCC, 1998).

a. International Emission Trading

Parties that are ratified and included in the Annex I category have a commitment to limit and reduce their emissions under the Kyoto Protocol. These parties have accepted the target of limitation and reduced emissions. These targets are known as level of allowed emissions, or "assigned amounts" which mean that parties are allowed to produce emissions but still in the number that has been set out under the Kyoto Protocol. These targets are expressed over the first commitment which was started in 2008 – 2012 commitment period. The allowed emissions are

divided into “assigned amounts units” (AAUs) (United Nations Framework Convention on Climate Change, 2014).

Through the process of the emission reduction by the Annex I countries, a new commodity has emerged. Carbon dioxide as a principal greenhouse gas now can be tracked and traded like any other commodities. The trading of carbon is now known as “carbon market’. In the Article 17 of the Kyoto Protocol, it sets out countries that have unused emission - emissions that are permitted but not “used” – units that are allowed to sell their excess capacity to the countries that their emission levels are above the grid. This excess capacity can be used to reach their emission reducing and limiting target (United Nations Framework Convention on Climate Change, 2014).

There are many other ways that the emission unit can be traded and sold in the emission trading scheme under the Kyoto Protocol. The other units may be transferred under the scheme and it is equivalent to one tonne of CO2 each. The other units may be in the form of a removal unit (RMU), an emission reduction unit (ERU), and a certified emission reduction (CER). The RMU is a unit that is created on the basis of land use, land-use change and forestry (LULUCF) activities such as forestry. The ERU is a unit that is generated by one of the Kyoto Protocol mechanisms called joint implementation mechanism. The CERs are generated from Clean Development Mechanism (CDM) project activity in the developing countries. There is a system that tracks and records the transfer and acquisitions of these units called registry systems which is under the Kyoto Protocol and an international

transaction log ensures transfer of emission reduction units between countries (United Nations Framework Convention on Climate Change, 2014).

There are some problematic situations regarding the excess carbon capacity that can be sold. It is worried that the parties could "oversell" a number of carbon units, and eventually, they are unable to meet their own emission targets. Therefore, in order to address those problems, each party is required to maintain a reserve of those units in its national registry. This reserve should not drop below 90 per cent of the assigned amount by the parties or 100 per cent of five times on its most recent reviewed inventory. This reserve, known as the "commitment period reserve" (United Nations Framework Convention on Climate Change, 2014).

b. Joint Implementation

The other flexible mechanisms that are provided under Kyoto Protocol are the Joint Implementation (JI) mechanism. The parties that are involved this mechanism are among Annex I countries and other Annex I countries. So basically it is a mechanism to reach the target of emission reduction of each Annex I country. This mechanism is defined in Article 6 of the Kyoto Protocol. This mechanism allows countries with an emission reduction and limitation commitment under the Kyoto Protocol precisely the countries that are included in the Annex I category to earn Emission Reduction Unit (ERUs) from the project of emission reduction or emission removal (United Nations Framework Convention on Climate Change, 2014).

The project under the joint implementation mechanism must be conducted with other countries that are listed in the Annex I. The project under the JI

mechanism must provide an additional result of emission reduction or sinks removals from what would have occurred in order to get approval. There has to be an agreement among the parties that participate in the JI projects. The host party and participants need to be authorized in participating to be directly involved in the project (United Nations Framework Convention on Climate Change, 2014). The ERUs that are issued after finishing the emission reduction or removal project are equivalent to one tonne of CO2 and they can use it to reach their part of emission reduction target. The joint implementation gives benefit between two parties. This mechanism helps the countries having a reduction project in other Annex I countries to be able to reach their reduction and limitation emission target. The host parties will get benefits on foreign investment and technology transfer from other countries. The JI projects eventually will improve the conditions of the surrounding environment and social conditions of the host country.

c. Clean Development Mechanism

Clean Development Mechanism (CDM) is one of Kyoto Protocol to help Annex I countries to reach their target in reducing the amount of emission in the atmosphere. This mechanism requires parties that are alisted in the Annex I to help the non-Annex countries that mostly are the developing countries in facing the issue of climate change. Clean development mechanism is a flexible mechanism provided by Kyoto Protocol allowing Annex I countries to have an emission-reduction project to earn certified emission reduction (CER) credits equivalent to one tonne of CO2. The tradable and saleable CER credits can be used by industrialized countries to reach their target in reducing the emission under the Kyoto Protocol.

These CDM projects are mostly done in the developing countries to help them in addressing and adapting against the effect of climate change (United Nations Framework Convention on Climate Change, 2014).

CDM projects give benefits to the developing countries. Benefits of CDM projects cover investment in climate change mitigation projects in developing countries. The projects also will provide the host countries with a technology that is capable in helping them to address the effect of climate change. The condition of livelihood will also be improved through the availability of employment or even the increasing of surrounding economic activity. The mechanism stimulates the sustainable development in the developing countries and reduces the amount of emission while giving industrialized countries an opportunity to reach their emission reduction limitation targets (United Nations Framework Convention on Climate Change, 2014).

There are several procedures that need to be fulfilled in developing and implementing CDM projects. The participant of the CDM projects must prepare the Project Design Document (PDD), make use of approved emissions baseline and monitoring methodology. In making CDM projects, participants have to check whether or not the projects is eligible as CDM projects. The projects have to be eligible to reduce the greenhouse gas emission. The projects have to estimate the amount of emission that would occur in the absence of the CDM projects which called the baseline. The project design document includes the description of the activities and participants, a methodology for calculating emission reduction, monitoring plan, and the duration of the project.

The making of PDD could be done by the consulting firm or the participant itself. The PDD need to be approved by the Designated National Authority (DNA) of a party involved. The DNA that had approved the proposed CDM project, shall submit a letter indicating that the country has ratified the Kyoto Protocol, the parties that are involved in the projects are voluntary, and the projects need to contribute to a sustainable development. The approved PDD is then validated by a private third-party certifier, Designated Operational Entity (DOE). This validation is a process in which DOE evaluates the CDM projects to see whether the projects are in-line with the CDM requirements. After validation, the project is then submitted to the CDM Executive Board to request for registration. This registration process is the formal acceptance by the Executive Board that are required for verification, certification, and issuance of CER related to that project activity. The project can be started and the participants have a responsibility to keep monitoring the actual emissions according to the approved methodology after the registration process. After monitoring process, the DOE verifies the emission reduction. This verification process is a review of the monitored reductions emission that occurred as a result of the CDM projects. After verification, the DOE write an assurance that the project activity is achieving the emission reduction during the certain period. The Certified Emission Reduction (CER) issuance can be issued after the DOE submits the verification report to CDM executive Board. Then after that, the CERs eventually are tradable and sellable to the countries that need to reduce their emission. CERs are equivalent to one tonne of CO_2 each (UNFCCC: Clean Development Mechanism, n.d.).