

## CHAPTER I

### INTRODUCTION

Climate change has become one of the most serious environmental issues that have emerged in the few past decades because of the harms that it might bring. Many aspects of human lives are believed to be badly influenced by the climate change; economics, politics, social and human health are to mention a few.

Global climate change is a change in global climate caused by the greenhouse effect. Greenhouse gases (GHGs) naturally exist in the atmosphere to keep the earth warmer for human being and other living creatures to live by the energy originated from the sun. However, the accumulation of these GHGs like CO<sub>2</sub> or carbon dioxide, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydro fluoro carbon (HFCs), and sulfur hexa fluoride (SF<sub>6</sub>), since the Industrial Revolution in late 18<sup>th</sup> century, has been exceeding the limit. This is because almost all human activities from the industrial aspects release emissions doubled the concentration of the GHGs existence in the atmosphere. At this point, human beings are not aware of the consequences they might bring. After decades of GHGs accumulation in the atmosphere, a thick layer blocking the infra-red within the atmosphere is formed and causes the earth's surface become hotter, which is now called the climate change.

## **A. Research Background**

United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) established Intergovernmental Panel on Climate Change (IPCC) in 1988 to supply the scientific information that is related to the earth's condition and how it would affect people's life. Scientists of IPCC reports the results of studies with some assessments and supply relevant policies needed by the worlds' decision makers. The First Assessment of IPCC in 1990 states that global mean surface air temperature has increased by  $0.3^{\circ}$  to  $0.6^{\circ}$  C over the last 100 years. Studies show that this can happen because of human activities on industrial aspect that has caused the increasing GHGs concentration in the atmosphere and has led to the warming of earth's surface. The warming of earth's surface itself may give bad impacts to many aspects of people's life all around the world like economy, social, and most importantly, the health. Scientists believe that the worlds' decision makers have to tackle this problem seriously before things get worse.

The First Assessment Report of IPCC becomes the basic of international politics' respond toward the issue of climate change through the establishment of United Nations Framework Convention on Climate Change (UNFCCC or the Convention). The Convention was opened for signature at the United Nations Conference on Environment and Development (UNCED) or the 'Earth Summit' in Rio de Janeiro, Brazil, 1992. The ultimate objective of the Convention is to

stabilize the GHGs concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

The Convention classifies countries all around the world into two big groups that are called the Annex 1 parties and the Non-Annex 1 parties. Annex 1 parties are the developed countries that are believed to cause the climate change as they emitted massive GHGs emissions to the atmosphere since the Industrial Revolution in 18<sup>th</sup> Century. This is why they are the ones who are responsible to cut down their GHGs emissions level. The second group is the Non Annex 1 parties which are consist of the developing countries that are believed to be the victim of the climate change phenomenon caused by the Annex 1 parties. Hence, Non Annex 1 parties do not have the responsibility to cut their GHGs emissions level.

The parties of the Convention agree to hold annual meeting to take them closer to the Convention's main objective, which is to stabilize the GHGs concentration in the atmosphere to keep the earth safe from dangerous human interference on climate system that would bring climate change as a consequence. The annual meeting of the Convention is called the Conference of the Parties or the COPs. In the COPs, all parties of the Convention monitor the Convention's implementation and continue talks and discussions on how the best way to tackle the climate change.

The world's decision makers through COPs are trying to find the most effective method to combat the climate change. The third COPs that was held in Kyoto is the first signal of making the permit to emit GHGs emissions as a commodity to attract the industrial entities and companies in trying to curb the climate change through emissions trading. It is called the New Environmental Policy Instrument, or the Kyoto NEPI.

Kyoto Protocol, a Protocol that is resulted from the Third COPs in 1997 consists of 28 articles which rules and regulates on how the parties of the Convention are trying to respond to the climate change issue. The Third article of the Protocol stated that the parties to the Convention have to reduce their emissions level up to 5% below their 1990 level in 2008-2012. The Protocol supplies 'Three Flexible Mechanism' for its parties, they are: the 6<sup>th</sup> article which rules the 'Joint Implementation'; the 12<sup>th</sup> article that regulates the 'Clean Development Mechanism'; and the 17<sup>th</sup> article that sets the 'International Emissions Trading'.

The International Emissions Trading is the main method by which the Annex 1 parties of the Convention have to cut their GHGs emissions level with. The International Emissions Trading enables trading of the emissions permits among the Annex 1 parties.

European countries are the developed countries paying high attention on the environment problems. EU quickly responds the climate change issue through

the Commission's proposal on the world's first international emissions trading system for CO<sub>2</sub> and other GHGs. The Directive on the emissions trading was adopted in October 2003, called the Directive 2003/87/EC. In January 2005 the EU then formally launched European Union Emissions Trading Scheme (EUETS) act as a scheme for the member states of the Union that are also the signing parties of the Protocol to trade their EUAs among each other.

#### **B. Research Question**

According to the background, this research focuses on answering this question:

Why did the European Union design European Union Emissions Trading Scheme?

#### **C. Theoretical Framework**

To understand the reason why the European Union established European Union Emission Trading Scheme can be drawn through the international regimes concept introduced by Stephen Krasner. This concept describes the existence of regime in shaping the countries' behavior in an issue of international relations. Whereas, the Sustainable Development concept describes the reason why European Union reduces their GHG emissions through Clean Development Mechanism, under the Kyoto Protocol.

### C.1. International Regime

According to Stephen D Krasner, international regimes are “sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations converge in a given area of international relations”.<sup>1</sup> He defined principles as “beliefs of fact, causation, and rectitude”. In other words, principles are the sharing beliefs about the same phenomenon that happens including the causal factors and the right things to do about the phenomenon. Krasner describes norms into “standards of behavior defined in terms of rights and obligations”. The share beliefs they have will guide them in forming the obligations respecting the right things they have to do and set some rights that each party have. Krasner also defines rules to make it clearer; “Rules are specific prescription or proscriptions for action”. Equipped with both principles and norms, regime will provide the direction for their action and also the limit or prohibit action they should not do. At last, Krasner delineates decision making procedures as “prevailing practices for making and implementing collective choice”.<sup>2</sup>

Krasner adds that there are three approaches to regime significance. He calls the first approach as ‘conventional structural’, the second approach as ‘modified structural’ and the third as ‘constructivists’ or ‘grotian’. Robert

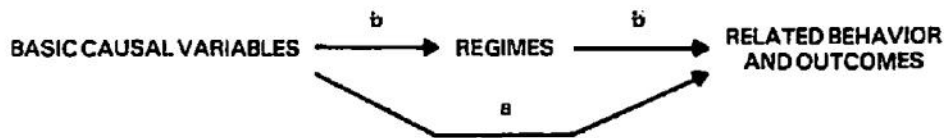
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<sup>1</sup> Stephen D. Krasner, “Structural Causes and Regime Consequences: Regime as Intervening Variables”, in Stephen D., Krasner, ed., *International Regime*, p.2., London, Cornell University Press, 1983. Derived from googlebooks database.

<sup>2</sup> *Ibid*

O. Keohane and Arthur A. Stein are to mention some of the authors from the modified structural. Both of the authors view regime from a conventional structural realist perspective, that states as the main actor of international relations which have sovereignty and always seek to maximize their interests and power. In this world of sovereign states the basic function of regimes is to coordinate states behavior to achieve desired outcomes in particular issue-areas. Stein and Keohane agree that regime can give an impact to the states' behavior when without coordinated individual calculations of self-interests the desired outcomes or Pareto-optimal could not be achieved. Stein adds regimes may give effect to outcomes when the behavior of states could cause the bad results for the parties. Haas also states that regimes may bring significant impact where self-interests of states will not provide the coordination level needed. In summary, those modified structural authors see that regimes have significant impacts, but only under restrictive conditions, as described in the figure below:

**Figure 1.1 Regime alters the behavior of parties**



Source: International Regime Concept by Stephen Krasner

In most situations, there is a direct link between basic causal variables and related behavior and outcomes (path a); however, under some restrictions

where causing the decision makers opt to suboptimal outcomes, regimes may be significant (path b).<sup>3</sup>

Kenneth Waltz has called international relations system as a *self-help system* which means that every state or country in the world is at the same level of power and that there is no state or country as the power leader of international system. Todd Lowry states that regimes are like contracts that seek to structure the relationships in stable and mutually beneficial ways.<sup>4</sup> Robert Keohane emphasized that the main function of international regime is “to facilitate the making of mutually beneficial agreements among the governments, so that the structural condition of anarchy does not lead to a complete ‘war of all against all’”.<sup>5</sup> In the world structure where no one is entitled to command and no one is required to obey or in other words, anarchy, the international regime is needed to be the higher authority available to resolve difficulties that states face.

To be called a regime, Kyoto Protocol has to fulfill elements of a regime Krasner has mentions namely: the principles, norms, rules and the decision making procedures. The principles of Kyoto Protocol are taken from the UNFCCC results and the IPCC reports that the rising of the earth’s

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<sup>3</sup> *Ibid*

<sup>4</sup> Lowry S, Todd, “Bargain and Contract Theory in Law and Economics”, in Warren J. Samuels, ed., *The Economy as a System of Power* (New Brunswick, N.J.: Transaction Books, 1979), p.276

<sup>5</sup> Keohane, O Robert, *The Demand for International Regimes*. Taken from <http://www.law.kyushuu.ac.jp/programs/english/materials/spring2009/internationallawintodayworld/topic1-2.pdf>, May 27<sup>th</sup>, 2010



surface temperature can cause the climate to change drastically and in consequences, there will be many problems occur, especially problems that are related to the climate which undoubtedly can affect the human's health all over the world. UNFCCC member states have agreed to get together to cope this environmental problems the world is facing. The norm of the Kyoto Protocol is the shared belief that world's decision makers have to set mechanisms on how they would address the problems.

According to the first report of IPCC, the rising of earth's surface temperature is caused by the exceeding of GHGs emissions level from the developed countries. This is obvious that the GHGs emissions are needed to be reduced to get the earth's surface back to the safe level. This shared belief leads to a thought that the developed countries are obliged to reduce their GHGs emissions level through the main Kyoto Protocol's mechanism that is the International Emissions Trading in which each party can contribute in saving the earth while having its businesses in industrializations run well.

Krasner defines rules into specific prescription or proscriptions for action. In the case of Kyoto Protocol as a regime, its prescription is the directions for the members' actions that are all described at the articles within the Protocol itself. In these twenty eight articles, the directions of the actions that the members should do and also the prohibition or sanctions for actions that are not accordingly to the mechanism and other things that are

related to the mechanism on how the GHGs emissions should be reduced are described well.

## **C.2. Sustainable Development**

Based on the World Commission on Environment and Development, Brundtland-Kommission, the definition of 'sustainable development' is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Hans J. Munk in his writing, *Sustainable Development as a Task of the State: Ethical Aspects of Political-Legal Realization*, states that sustainable development contains of two key concepts; the first is the concept of needs, and the second is the concept of limitation. The concept of needs refers to the essential needs of the world's poor, and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.<sup>6</sup>

There is a close interaction between human development and the environment. Human depends on the environment to stay alive and to develop. The environment supplies all human needs, but since everything that nature gives are not infinite, human need to also consider the future generation's needs. This is what is called by Hahn J. Munk as limitation. The more the human's consumption on non-renewable environmental public

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<sup>6</sup> Munk, J. Hans, *Sustainable Development as a Task of the State. Ethical Aspects of Political-Legal Realisation*, Studia Moralia Vol. XXXVIII/1, p.218

goods without the sustainable development, the more the environmental degradation will be.

Talking about the sustainable development, there are three inseparable pillars in this topic, namely the economy, social and the environment. Sustainable development believes that these three factors should work in balance to create a better future of the earth. Former development theories believe that there is no possibility that the economic and the environment could walk in line; economic would definitely hurt the environment.

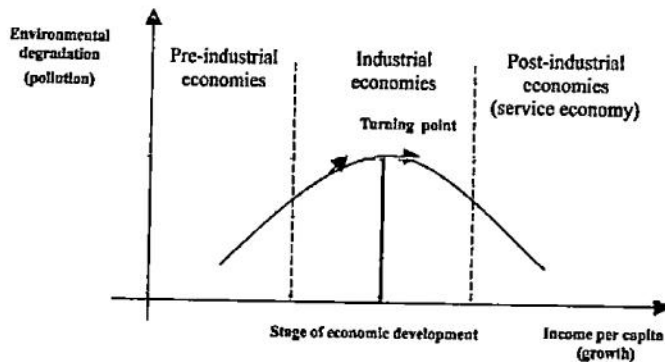
However, Simon Kuznets then draws a curve to be a model to show different possible relationships among energy use, economic growth and the environment, that is now known as the Environmental Kuznets Curve (EKC). The U-shape of EKC implies that the economic growth will redress the environmental degradation at the early phases of the economic development and the economic growth will lead to environmental improvements in developed countries. The rise of the curve means that at the pre-industrial level of economies, people tend to maximize the use of natural resources taken from the environment to run the production processes to produce more products which will generate more profits. This process actually causes what is now called the environmental degradation. As the more natural resources that are taken uncontrollably with non-environmental friendly method to be

processed with other non-renewable fossil fuels to get as much profits as possible, the more pollution made. This happens because the industrial units in the pre-industrial level of economies do not have the environmental-friendly method to run the production processes.

This phase of the economic growth takes time to get to the point where the actors get to the developed or the wealthy levels. Once the industrial units enter the industrial economy which means that they have got a higher level of economic, they would have better standard of living. This better standard of living means that they would have better educations, technology and would socially be more aware of their surroundings. In this phase, it can be called the turning point phase, as the technology used in the productions processes may be developed as well, making the industrial units began to apply greener method of productions, or in other words, the environmental-friendly method of productions. This environmental-friendly method of productions will push the curve of EKC to fall, as the higher income, the less they impair the environment. In other words, the fall of the curve shows that the economic growth encourages the environmental awareness to finally maintain or improve the environmental quality through various ways, like to use the environmental-friendly ways of productions, to use green technology for the sake of the environment through sustainable development, to mention one.

To get the life support systems sustained, human have to have applied the sustainable development. Sustainability would provide space for serious efforts to cope the climate change from the economies, social, and natural environment fields, and also between the past, present and the future generations.

**Figure 1.2 Environmental Kuznets Curve<sup>7</sup>**



Source: Emeraldinsight

It is widely known that ever since the Industrial Revolutions, human have been using raw materials taken from the environment to be transformed into finished products through processes that require energies and most of them are usually non-renewable energy. This leads to the problem of resource depletion and environmental degradations. The materials processes undoubtedly cause pollution. The wastes pollute the wafer, land and also the air which are the global environmental public goods. The GHGs emissions

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<sup>7</sup> Environmental Kuznets Curve. Retrieved on 17 March 2011. Taken from [http://www.emeraldinsight.com/content\\_images/fig/0830180506003.png](http://www.emeraldinsight.com/content_images/fig/0830180506003.png)

that are emitted from the manufacturing processes pollute the atmosphere and cause the world's climate to change drastically. This, scientists believe, will lead to worse problems that are varied from social, economic, politics and especially the health issues all over the world.

Now that the climate change is happening, the developed and the developing countries all over the world are facing its effects. IPCC states in 2001 that the adaptive capacity of the developing countries in Asia especially those whose populations are large, is very low, unlike the developed ones. This is the reason why, the climate change conference also discussed the adaptability.

In the Kyoto Protocol, the sustainable development is included within the 'Three Flexible Mechanisms', which is the 'Clean Development Mechanism' or the CDM. The mechanisms are alternative choices to help the Annex-1 parties or the developed countries having the historical debts to developing countries to reduce their GHGs emissions through many ways. Programs that are available is like giving the renewable energy, energy efficiency, fuel switching, the transfer of green technology, special climate change fund or the adaptation funding and many others. These can be done between the developed and the developing countries, or the Annex-1 parties and the Non-Annex parties.

In the EUETS, CDM is set in the Linking Directive as the opportunity for the member countries or companies to acquire Certified Emission Reductions (CER) that can be used to meet their commitments by investing in projects in developing countries or the Non Annex parties. The CDM projects encouraged by the Protocol using the sustainable concept for the developing countries that is also in line with the Convention's objectives.

#### **D. Hypothesis**

The European Union designed the European Union Emission Trading Scheme because EUETS is an instrument that is used by the EU to fulfill its commitment to the Kyoto Protocol.

#### **E. Aims of The Research**

This research aims at:

1. Understanding how the international society through international regime and convention copes with political and environmental issues.
2. Understanding the reason behind the design of European Union Emissions Trading.
3. Explaining the International Emission Trading mechanism, especially the one in the European Union, through European Union Emission Trading Scheme.
4. Explaining the Clean Development Mechanism, especially the ones from the European Union.

## **F. Research Method**

The research employs a deductive method. It means that the theoretical frameworks and approaches are explored first then the hypothesis can be drawn. The hypothesis will be proven through data and analysis.

The method of collecting the data employed is library research in which the data are secondary sources. Therefore, all data are taken from books, scientific papers, scientific journals, magazines, newspapers, and electronic books from database, websites, and other relevant data. Those data will be analyzed using the theories that are determined before. It is to prove that the hypothesis is accurate and finally answer the core problem. Although this paper uses secondary data, the author selects the accurate and checks the reliability of the data to accomplish the trustworthy research.

## **G. Scope of Research**

The research focuses on the reason of the establishment of the European Union Emissions Trading Scheme that was designed by the European Union to help reducing the GHGs emissions level through Kyoto Protocol's mechanisms, namely International Emission Trading and Clean Development Mechanism through the period of 2005-2009.



## **H. Organization of the Thesis**

Chapter I gives a brief explanation of the paper. It explains the background and also the core problem that needs to be figured out. Besides, it also shows the theoretical framework that is used to explain the problem of the research. It draws the hypothesis that will be proven in the next chapter. Furthermore, it also explains the objectives, range, method, and system of the research.

Chapter II elaborates the issue of climate change and how the world's decision makers try to cope with it through an international regime called the Kyoto Protocol.

Chapter III explains the formation of the Emissions Trading Directive or the European Union Emissions Trading Scheme and how the emissions trading works. Also the Linking Directive or the Clean Development Mechanism the Union does, from the early ideas to how this supplementary method of reducing emissions works.

Chapter IV explains how the Kyoto Protocol as a regime shapes the European Union behavior to design the European Union Emission Trading Scheme (EU ETS) as the Union's commitment to reduce the GHGs emissions, also the results from the EUETS and the CDM projects that have been done.

Chapter V is a conclusion from Chapter I to Chapter IV.