

## **CHAPTER THREE**

### **LITERATURE REVIEW**

There is a lot of literature from different dimensions and angles with respect to ecological issues in the international society. There is no question that environmental concerns have gotten center stage in international forums and even in domestic debates. That is why more and more green politics (Young 1994; Barry 1999; Toke 2000; Lin 2007), environmental politics (Doyle 1998, 陳穎峰譯 2001), green economics (Wall 2006; Lawson 2006), environmental economics (Schulze and Ursprung 2001; 宮本憲一 1996), political economy of the environment (Clap and Dauvergne 2005; Stevis and Assetto 2001; Boyce 2002), and environmental justice (Anand 2004) literatures emerged to provide us different point of view to see the environmental issues.

This chapter comprises four sections. First, the theories of the political economy and the concept of sustainable development as well as their relationship with environmental issues will be introduced to help the following analysis. Then, this research will review domestic literature on how to compromise environment protection and economic development in Taiwan to know the political and economic interaction in the nation's development process in the past five decades. The research takes Taiwan's practice of the UNFCCC as a case study to see if state's policies correspond to the demand of international environmental principles or laws to protect the environment, so related literature will be examined as below.

#### **3.1. Theories of the Political Economy**

From a historical angle, the development of political economy can be divided into two camps: one is evolutionism perspective, and the other is the historical-structurism perspective. The representative theory of the first one is economic liberalism. Evolutionism takes human's behavior (from market behavior to general rational behaviour) being their research target to demonstrate the evolution process. From Adam Smith to the Chicago School, they analyzed industrial policy, international trade, economic growth in classical economic period, personal market behavior in neo-classical period, then all human being's behavior during the Chicago School period. They all focus on economic aspect and neglect the political factor in economic

behavior.

On the other hand, the historical-structuralism puts theories into a historical veining to control actors and build related theories and policies. Scholars from the historical-structuralism stressed that economic problems and solutions have to put in the historical veining and structure to think. Its representative theories are Mercantilism and Marxism. Both of the theories reflected specific actors' demand in the different structure in different period. Basically, the development and transition of political economy are closely related with the development of human history, especially the expansion of capitalism<sup>20</sup>. Today, political economy has assumed a variety of shades of meaning. It is now, in fact, a term that typically refers to the study of the collective or political processes through which public economic decisions are made.

Gilpin (1987) in his 'The Political Economy of International Relations' pointed out that political economy is "the field of study that analyzes the problems and questions arising from the parallel existence and dynamic interaction of 'state' and 'market' in the modern world."

Balaam and Veseth (2005) also captured the relationship between the states and the markets as followed:

The state is the realm of collective action and decision. The market is the realm of individual actions and decisions. The parallel existence of states (politics) and markets (economics) creates a fundamental tension that characterizes political economy. States and markets do not always conflict, but they do overlap to such a degree that their fundamental tension is apparent. The tensions created by their differing interests or values can be resolved in different ways at different times. The interaction of states and markets is dynamic, which means it changes over time. In particular, states influence markets and markets influence states, constantly changing the pattern of interests and values that political economists study.

### **3.1.1. Nationalism, Liberalism and Marxism**

As for how to go on an empirical research, Gilpin (1987) proposed three main theories which are often broadly termed: Nationalism, Liberalism and Marxism.

#### **3.1.1.1 Mercantilism**

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<sup>20</sup> 蕭全政(2003)。何謂政治經濟學? 政治經濟學學科定位學術研討會論文集。台南, 2003年10月18日

Mercantilism or economic nationalism is a theoretical perspective that accounts for one of the basic compulsions of all nation-states: to create wealth and power in order to preserve and protect their national security and independence (Balaam and Veseth 2005).

In Mercantilism point of view, state should advance these goals by playing a protectionist role in the economy by making efforts to promote exports and limit imports, thereby generating trade surpluses to create wealth and power. The most famous proponents of economic nationalism were the American Alexander Hamilton (1755-1804) and the German Friedrich List (1789-1846). In Hamilton's 'Report on the Subject of Manufactures' to the first Congress of the United States, he argued both of trade protection and for a strong role of the state in promoting domestic industries so as to beat back foreign economic competitors. List believed that state action was indeed needed to promote productive power in the form of education, technology, and industry so as state can achieve independence and security. Both of them support state policies that further the national interest by assisting the industrialization of the economy. Their views tie together the important notions of national interest (what is best for the country), a positive role for the state in the economy (Balaam and Veseth 2005). Under globalization, free trade and open markets create a dilemma between states and market. As Gilpin (1987) has written,

The logic of the market is to locate economic activities where they are most productive and profitable; the logic of the state is to capture and control the process of economic growth and capital accumulation.

Generally speaking, Mercantilism is most closely associated with national interest. The nationalism advocates enhancing national political power through pursuing national wealth. From this point of view, the only way for those less developing countries to catch up western developed countries is improving economic condition by industrialization. By setting clear industrial development policy and procedure, the government can actively interfere in economic system to reach national development goal. The states can be expected to use the economy as a means to generate more wealth and power, so the economic should service the national interest. In this development stage, environmental protection is less priority and would be easily and intentionally neglected by the government.

The nationalism economy is still found everywhere in the developing world. For example, many officials in developing nations such as newly industrialized countries (NICs)

views development and nation-building as processes of “catching up” with the western industrialized nations. They made the policy to promote domestic industries and to protect their infant industries against the more mature industries of the industrialized nations. Recently, environmental degradation has become their byproduct followed by their economic growth.

### **3.1.1.2. Liberalism**

Liberalism, or economic liberalism, originated from eighteenth century-Adam Smith’s “Wealth of the Nation”. In 1776, Smith argued that the mercantilist state of the eighteenth century, a strong state established on the principle that the national interest is best served, produced even more power when state power is concentrated and used to create wealth. For Adam Smith, the individual freedom of the marketplace represented the best alternative to abusive state power (Balaam and Veseth 2005).

Economic liberalism is an ideology which supports the individual rights of property and freedom of contract, without which, it argues, the exercise of other liberties is impossible. It advocates laissez-faire capitalism, meaning the removal of legal barriers to trade and cessation of government-bestowed privilege such as subsidy and monopoly. Economic liberals want little or no government regulation of the market<sup>21</sup>.

The liberal perspective on political economy is perhaps best summarized by the phrase “Laissez-faire” or “let be”. Free individuals are best equipped to make social choices. The role of the state is to perform the limited number of tasks that individuals cannot perform by themselves, such as establishing a basic legal system, assuring national defense, and coining money. Basically the state’s job is to create the institutional environment that fosters individual action (Balaam and Veseth 2005).

As we look around the world today, we see that many nations are seeking to replace restrictive, mercantilist systems of political economy with new regimes that put more stress on market and less on state control. China and India are just two examples of nations that look to market reforms to stimulate economic growth and raise living standards. It believes in freedom, individual rights, and free markets. It focuses on organizing and administering market to get high economic growth and maximization individual profit. Under economic liberalism,

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<sup>21</sup> Refer to <http://en.wikipedia.org/wiki/Liberalism> (accessed on May 10th of 2008)

environmental degradation was also resulted from industrialization and income increase. Enterprises would disregard environmental pollution to maximize its profit. Income increase would result in over consumption as well as production more wastes and pollutants. How the government does to address the environmental problems determines on its domestic political system. In the authoritarian state, the environmental policy-making is controlled by government elites. If economic growth is national development goal under economic liberalism, environmental protection will get less emphasis by government elites and will not impede economic growth. In the early stage of democratic state, conglomerates are easily access to government policy-making process to influence environmental policy toward their favorable direction. When democratization becomes more mature, environment groups can gain public support to enter policy-making process to contend with those business interest groups. If those two interests reach balance, the “economic growth and environmental protection equally emphasized” policy could be made to solve environmental problems (Liao1998)<sup>22</sup>.

In the 1980s, the classical liberal view asserted itself through neoconservatism movement (today universal termed neoliberalism) which was advocated by Prime Minister Margaret Thatcher of Great Britain and U.S. president Ronald Reagan. The main neoliberalism policies of Reagan and Thatcher were reduction state control on private-sector activities. They supported free market at home and on the international front as well as minimal state interference in all spheres of activities except security.

The neoconservative perspective remains influential from African to Europe, from South America to Asia. It calls for a reduced state role in the market through such actions as deregulation of industry, privatization of state-owned enterprises, and lower tax burdens on businesses and individuals (Balaam and Veseth 2005).

### **3.1.1.3. Structuralism**

Structuralism, or Marxism, is most closely associated with the class interest (Balaam and Veseth 2005). Marxism incorporates notions of class struggle, exploitation, imperialism, and technical change to be important tools of political economy analysis. It emphasizes that

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<sup>22</sup>廖英良著(1998)。環境保護政策的政治經濟學分析。私立東海大學社會學研究所碩士論文，台中。

production structure should be the basic infrastructure of human society. Therefore, economics should be prior to politics and determine the nature of politics<sup>23</sup> (Shiau, 2003). Marx focused most of his analysis on national economies and how the class structure resulted in exploitation, conflict, and crisis within nation-states. He viewed the economic structure to be the strongest single influence on society and focused on the production structure inherent in capitalism, seeing in it a dynamic that produces classes, leads to class struggle, and generates crises that lead to revolution and the next stage in history. Marx sees political economy in terms of class exploitation driven by market forces. In his view, the state and the bourgeoisie are intertwined to such an extent that the two cannot be separated. The state exists to support and defend the interests of the dominant class of bourgeois capital owners (Balaam and Veseth 2005).

### **3.1.2. Green Perspective on Political Economy**

The mainstream political economy theories of economic nationalism, liberalism, and structuralism frame political economy issues in particular ways, but it is easy to oversimplify these theories. Liberalism is about laissez faire, free markets, and greed. Economic nationalism is about states, state power, and security. Structuralism is about how capitalism pushes states and markets into class warfare. Actually, political economy is more than states and markets in today's world. It is also about individuals and their interests as well as the balance of nature (Balaam and Veseth 2005). In the global environmental problems, green perspective on political economy theory reminds us the close relationship between the natural and human environments in the world today.

Markets are hard on nature and hard on the environment. Mainstream economic analysis recognizes that otherwise efficient markets may cause inefficient environmental damage, such as failure to address negative external cost. Mainstream economic theory also suggests that there are several effective strategies of government intervention to deal with the problem of external cost (Balaam and Veseth 2005).

Experience has demonstrated that the only thing that is harder on nature than the market is the state. The market tends to put the interests of individuals above the interests of

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<sup>23</sup> 蕭全政 (2003)。何謂政治經濟學？ (未出版) 成功大學政治經濟研究所主辦，政治經濟學學科定位學術研討會，台南成功大學。

nature, so do states put the “national interest” above natural interest in many situations. The problem may be that the environment belongs to everyone, which also means that it belongs to no one. While everyone has a general interest in preserving and protecting nature, no one has a special interest or obligation in doing so. In the policy-making process, special interests presented from the channel of political system often dominate the decision-making. That’s why the general interests of nature are not well represented in state policy. Big states and big markets, in the green perspective, create a world out of balance with ordinary life. The greens try to restore a balanced life, where people can live in an environment that economic, political, and social relationships can be more natural. The green perspective of political economy just wants to bring nature into consideration and attempts to make nature an actor in the analysis, to make the environment a value that we consider along with security, freedom, and justice (Balaam and Veseth 2005). Recently, some international environmental meetings, such as 1992 Earth Summit, began to design economic development measures combined with many provisions for protecting the environment, including promoting consumption and production patterns and educating people in order to reduce environmental stress in national policies and strategies.

### **3.1.3. Summary**

The above theories or ideologies would be better to think as ‘points of view’ or ‘perspectives’ rather than ‘theories’, because each ideology has its own core beliefs and values, and see the same problems in a different light. Most political economy problems, like most aspects of human existence, can be understood best if a variety of viewpoints are considered, not just one, reducing the chance of overlooking some important aspects.

There are some literatures which begin to put environmental issues into the political economy analysis framework. In the book *Paths to a green world: the political economy of the global environment*, Clap and Dauvergne (2005) examines the main actors and forces shaping global environmental management, particularly focusing on the ways key economic processes affect environmental outcomes. Stevis and Assetto (2001) introduce a critical approach that focuses on the framing and solving of environmental problems. It also seeks to understand the social priorities or purpose that differing problems and solutions reflect. They find that structural inequities among social groups play a dominant role in the creation and

framing of problems. In *The Political Economy of the Environment*, Boyce (2002) puts power and distribution issues in the center-stage of environmental and resource economics study and finds that the only real solution to environmental problems is a democratic distribution of power and an equal distribution of wealth. Because where the powerful are negatively affected by the activities of the less powerful, the market failure will be corrected speedily and effectively, but where the poor and powerless are affected this is less likely to be the case.

From above political economy theories, this research finds that different national development policy would influence resource allocation and result in different impacts on the environment. In chapter five, nationalism, economic liberalism and Green perspective on political economy will be used to examine Taiwan's political economy system to understand the framing and solution of environmental issue in Taiwan.

### **3.2. The Concept of Sustainable Development**

The fundamental concepts behind sustainability are not new in many cultures. In fourth century B.C., Chinese philosopher Mencius already proposed the concept<sup>24</sup>. Indigenous peoples around the world, for example, have intricate belief systems interwoven with concepts of sustainability, and value the preservation of their natural and intellectual resources for future generations.

The Brundtland Commission-formally, the World Commission on Environment and Development was set up by the United Nations General Assembly published the "Our Common Future" in 1987 which coined the definition of sustainable development which was "meets the needs of the present generation without compromising the ability of future generations to meet their own needs" was to become the most often-quoted in the world. The concept of sustainable development represents a compromise on the most urgent and divisive questions of growth, development, equity, and ecology and ensures the sustainability of the global economy without the need to recognize the limits to growth. Sustainable development seemingly resolved many of the key differences between developmentalism and environmentalism in 1990s through the modification and extension of the time horizons of development (Dalby 1992).

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<sup>24</sup> 孟子梁惠王篇「斧斤以時入山林，材木不好勝用也。」以及「數罟不入洿池，魚鱉不可勝用也。」

Institutional changes, environmental agreements, and regulatory actions have, consequently, proceeded to grow in quantity to try to reach the goal-sustainable development after 1990s. The 1992 Rio Declaration on Environment and Development recognizes this element of integration of environmental and developmental aspect. It was in Rio that sustainability and development became synonymous, interpreting sustainability as a ‘statement of principles’, predominantly addressing environmental issues and economics in discussions of development. It is fair to say that the phrase “sustainable development” has become ubiquitous in contemporary culture.

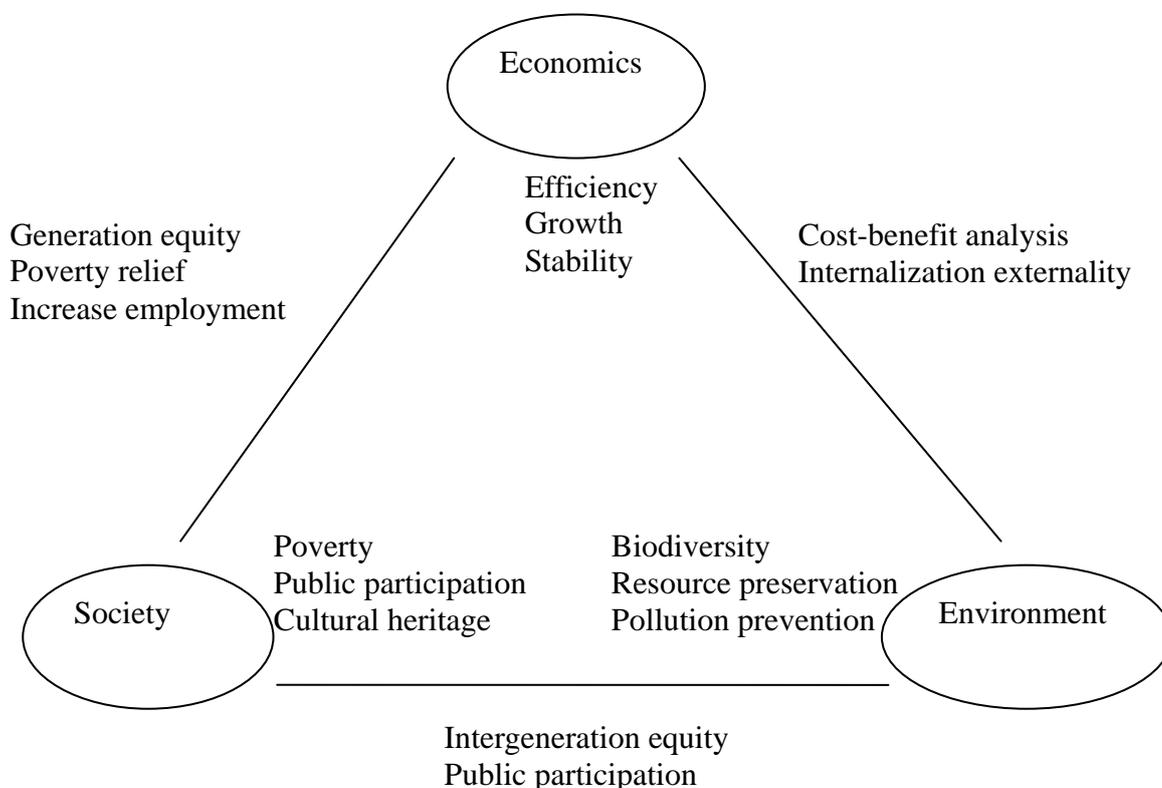
According to Munasinghe (1993), sustainable development framework should include three goals which are economic development, social justice and environmental sustainability (see figure 3.1). The relationship between economic development and social justice would be equity in the same generation, poverty decrease and employment increase. As for economic development and environmental sustainability, their relationship would be environmental impact assessment of economic policy and internalization the externality. The former should be done before the economic policy-making, and the latter focus on how to deal with the externality after the implementation of the economic policy. Intergenerational equity and public participation are the center issue between social justice and the environmental sustainability (Shaw 1998)<sup>25</sup>. The triangle relationship could establish an integrated analysis model for multi-dimension research.

In the past fifty decades, the world development pattern over focused on economic growth by increasing input of factors of production to increase production. Later, human being found the gradual exhaustion of natural resources and serious environmental pollution due to over production and over consumption; then, they began to worry about the sustainable problem in social, economic and environmental aspect. The reasons that the world can not reach sustainable development would be policy mistake, market failure and unsound institution. Policy mistake means that policy direction is still toward overuse and squander of resources, low-efficiency use or use in unsustainable methods when resource exploitation has become an important problem. Market failure includes externality and common goods which will result in over pollution. Unsound institution means incomplete property right, and unsound legal system (Shaw, 1998).

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<sup>25</sup> 蕭代基 (1998)。永續發展的意義與政策方向。經濟前瞻，第 55 期，1998 年 3 月 5 日

**Figure 3.1 : Sustainable development framework**



Source: Mohan Munasinghe, 1993, *Environmental economics and sustainable development*, Washington DC, World Bank

Although sustainable development does not focus solely on environmental issues, more broadly, sustainable development policies encompass three general policy areas: economic, environmental and social. In support of this, several United Nations texts, most recently the 2002 World Summit Outcome Document, refer to the "interdependent and mutually reinforcing pillars" of sustainable development as economic development, social development, and environmental protection. There are different indicators and models developed by different scholars and international organizations to evaluate sustainable development and environmental performance. (Lee 2003)<sup>26</sup>.

Now, the sustainable development idea is also in the consideration of how to address

<sup>26</sup> 李永展 (2003)。解讀永續發展。(未出版) 桃園縣：92 年度桃園縣第一梯次社區動力營

global warming issue. The Delhi Ministerial Declaration was passed in the eighth Conference of Parties (COPs) of the UNFCCC in Delhi, India, in Oct 2002, to bring climate change issue into sustainable development strategy in every party state. The Declaration was based on the conclusion made in Johannesburg World Summit in Sep 2002 and stressed that reduction greenhouse gas emission and sustainable development both are important duties that all parties have to fulfill.

### **3.3. Domestic Environmental Debates-the Political Economy of Environment in Taiwan**

International environmental consciousness along with Taiwan's special economic and political structures would influence Taiwan's development pattern. The struggles between economic development and environmental protection just can be found in lately Taiwan's nation's development strategy. Scholars from different domains discussed Taiwan's environmental consciousness development in the political, economic, policy and political-economy angles.

#### **3.3.1. Political Angle**

Yeh (1996) pointed out that Taiwan's special development path is the trio of politics, economy and environment. By dividing Taiwan's development path over half a century into five stages-decolonization and rehabilitation (1945-1948), mobilization and political consolidation (1949-1970), diplomatic isolation and industrialization (1971-1986), political liberalization and pragmatism (1987-1991) and regional identification and internationalization (1992-), he assessed the environmental consequences in those different development stages and concluded that environmental degradation has been attributed to economic policies and political forces. However, he also found that continuous economic prosperity and various political reforms also have reinforced environmental awareness and institutional establishments. Taiwan's development experience just demonstrates that political democratization, economic development and environmental protection must go hand-in-hand and function together to achieve sustainable development.

Tang, S.-Y. and Tang, C.-P. (1997) examined the nationalist regime's response to the

environmental protest movement to see Taiwan's democratization process. They found that environmental interests were accorded a much lower priority by the ruling regime than such policy issues as economic growth in the early democratic transition stage, but later these interests began to seek access to formal processes when political system became more open.

Huang (1999)<sup>27</sup> used the positive and negative features of Taiwan's democratization process (1945-1996) to see their impacts on the environmental policy. He concluded that Taiwan's democratization did help the development of environmental policy, but still not enough. There are still some restrictions in the implementation of environmental policy, such as developmental-oriented national policy and competition status between Taiwan Strait. The reform of environmental policy should involve the basic change in the national policy and the rethink of industrial development direction.

Laio (2000)<sup>28</sup> used strategy thinking to analyze the development of Taiwan's environmental policy. He found that Taiwan's past experience in addressing environmental problems is a stimulus and reaction model which can not manage natural resources immediately and effectively.

Kim in 2000 compared the democratization and environmentalism between South Korea and Taiwan and found that the environmental groups in Korea have maintained relative autonomy from political society, forging only tactical alignments with opposition parties, but the environmental movement in Taiwan has been closely affiliated with and depended upon the dissident movement. He concluded that the close relationship between environmental movement and the opposition party also entails certain problems. For example, environmental issues would become highly politicized, and would be influenced by party politics. Although environmental movement continues to play crucial roles in the democratic consolidation in Taiwan and South Korea, as for the future development of environmentalism in both countries, the author can't tell which types of the environmentalism will affect the further consolidation of these fledgling democracies.

Zen (2001)<sup>29</sup> used historical research approach to discuss Taiwan environmental history during 1950 to 1980's. She pointed that the government is the only power to dominate the

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<sup>27</sup> 黃錦堂 (1999)。民主化對環保政策衝擊與因應之道。台北：理論與政策季刊，第 13 卷第 3 期，頁 19-46。

<sup>28</sup> 廖章鈞 (2000)。台灣環境保護政策之研究(1992 年~2000 年)-戰略思考觀點之分析。淡江大學碩士論文

<sup>29</sup> 曾華璧 (2001)。人與環境-臺灣現代環境史論。台北：正中書局。

development of environment policy before 1980. During the period, economic development took all the priority and the government could not catch up the international trend to make the environmental policy in time. Even though the government had advanced legislation copied from developed countries, the implementation was not so well. She concluded that there are five characteristics of Taiwan's environmental policy which are the different administrations in charge of environment protection, the "challenge and response" model, the causal relationship between the policy and environment crisis, imitation from the U.S. legislation, and the lack private sectors' participation during 1980s.

Agoramoorthy and Hsu (2007) pointed out that continual economy growth brings the wealth to Taiwanese as well as the threats to wildlife populations and environment. The democratic process did not put Taiwan into an environmental friendly state. Besides, the Green Party did not gain enough support to become a strong political force to urge government to take balanced measure between economic growth and environmental protection. Even when the Democratic Progress Party (DPP) which used to be a strong political advocate of the environmental movement in Taiwan came into power in 2000, it also failed to undertake major environment-friendly projects and did very little towards environmental protection. They suggested that strengthening channels for government and society to communicate in environmental issues, developing new energy-efficient technology, providing market incentives for the industries to minimize environmental degradation, and increasing experienced environmental scientists in government offices may help to make sound environmental policy.

### **3.3.2. Economic Angle**

Lyons (2005) looked at the impact of industrial development on the environment in past fifty years to examine the environmental protection measure in Taiwan. He found that no specific responsible administration in central and local government, contradictory motives of individual institutions, and the largely unconcerned public helped fuel the environmental crisis in the early stage. Recent natural and man-made calamities such as landslides and water pollution gradually increase environmental consciousness among the general public. The survey he conducted among 35 petrochemical firms revealed that many firms view environmental regulations as a hindrance and the current activist climate is a detrimental

effect to continued growth. He proposed that greater cooperation between industry, government, and social actors are needed to design an environmental strategy so that the environmental policy can be not only effective in addressing environmental concerns but also in the realm of industry's ability.

Chien (1998)<sup>30</sup> urged that market mechanism could adjust the demand and supply of resources to find out the proper development pattern. The reasons that environmental protection would be neglected during economic development process are market failure and government failure. Market failure could contribute to externality, common goods, lack of market information, and uncompleted competition. However, government failure results from rent seeking. Internalization the externality during the consumption and production process and disclosure the information about economic activities' impact on the environment could be the right direction to work on. Sustainable development could be the ultimate goal. Through market mechanism, such as economic incentives and Green GDP, industrial structure adjustment, technical innovation, and proper environmental policy, the relationship between economic development and environmental protection could reach win-win situation.

### 3.3.3. Policy Angle

Oates and Portney (2001) examined European Union and United State's experience in the evolution of environmental management. They found that there exists a strong disposition toward command-and-control approaches to regulation in the 1960s and early 1970s on both sides of the Atlantic, but it has changed when the consideration of the cost-benefit analysis was brought into the policy-making process and incentive-based policy instruments was used for the attainment of environmental standards, such as environmental tax or system of tradable emissions allowances.

From policy mistake to examine the conflict phenomenon between economic development and environment protection, Shaw<sup>31</sup> (1998) suggested that government should take following measures to address unsustainable issues:

1. Market failure: use emission tax and tradable emissions allowances to internalize the cost of externality.

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<sup>30</sup> 錢玉蘭 (1998)。經濟發展與環境保護可雙贏,經濟前瞻,第 55 期,1998 年 3 月 5 日

<sup>31</sup> Ibid. 25.

2. Unsound institution: setting clear property right system and necessary administration institution.
3. Policy mistake: public participation and supervision, and institutionalization policy impact assessment system.

### **3.3.4. Political-Economy Angles**

In 1994, Chi already argued that scholars of development studies in the past have focused too much on the economic aspect of development in developing countries in general and in Taiwan in particular, so he pointed out that economic development in Taiwan are not all successful stories. The environmental degradation -the dark side of the “Miracle”- has become an important problem which would decrease the welfare of the people in Taiwan in the long run. He provided data and evidences (such as air pollution, water pollution, accumulations of solid and industrial wastes) to prove that the “economic miracle” of Taiwan has been achieved partly by destroying the environment and that continuing achievement of economic growth further degrades the environment-even more effectively and at a faster rate. Besides rapid population growth and high population density, he claimed that other socio-economic-political factors (for example, the KMT government-led state-capitalist system, political-industrial complex) are more responsible for the speed and intensity of environmental degradation. In 1998, Chi argued that environmental problems are problems specific to class, ethnic groups and territory, which require corresponding solutions no matter in domestic or international level, so the environmental issues must be analyzed in political economy, environmental justice, and risk shoulder approach. The only way he proposed to properly solve environment problem is taking into account the protection of basic human rights and resource rights in the environmental protection measures.

Wu (1995) in his thesis<sup>32</sup> used political economy approach to research Taiwan’s environmental problem. He found out that the framing and solution of the problem all depended on the political-economic structure of Taiwan. He found that the political-economic environment is seriously unfavorable for the promotion of environmental protection before 1987. Although the political-economic environment has changed after 1987, it is still

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<sup>32</sup> 吳振源著(1995)。,臺灣環保問題的政經分析。國立成功大學政治經濟研究所碩士論文,台南

disadvantageous for environment at least until 1995. He concluded that only political democracy and economical liberalism could bring social force of environmental protection into national policy-making center to contend with those polluted-oriented interest groups; then the environmental problems could be finally addressed.

Liao (1998)<sup>33</sup> also used political economy theories to examine Taiwan's environmental policy, especially in air, water and waste aspects from 1987 to 1995. He took the establishment of Environmental Protection Agency as a watershed to review the development of Taiwan's environmental policy in social-political angles and compared different government policy-making processes before and after 1987.

Liu (2000) in his dissertation<sup>34</sup> used a historical-structure analysis to examine if Taiwan's national development policy is toward sustainable development in nation-society angles in the past decades. He separated Taiwan's national development process into three stages. The first stage is from 1950s to 1970s. During this period, economic development got the priority in national development goal, so ecological environment was neglected. The second stage is from 1970s to mid-1980s. The national development strategy began to take environmental protection concern into its economic development policy. For example, the second import substitute policy turned its focus on the low energy exploitation, low pollution, and high value-added industry. In the early years of the second stage, government still focused on economic development and had a kind of neomercantilism phenomenon. However, after 1980s, democratic society forced government for ballots and legitimacy to take care the disadvantaged minority and environment protection. The third stage is after the mid-1980s. Influenced by the international society, Taiwan was entering the promotion stage of sustainable development. After the 1992 World Summit, the Executive Yuan established the National Council for Sustainable Development to coordinate policies from different government departments to reach national goal of sustainable development. However, the development process is still affected by other political and social forces.

### **3.4. The Practice of the UNFCCC in Taiwan**

It is evident that the same environmental issue, such as climate change, may be

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<sup>33</sup> Ibid 22.

<sup>34</sup> 劉阿榮著(2000)。臺灣之永續發展-國家與社會觀點。台北,國立臺灣大國家發展研究所博士論文。

examined in terms of environmental politics-global governance or environmental justice, green politics, environmental economics, or ecological science. Some analysts approach governance from the angle of regimes while others emphasize the role of organizations. Different approaches or angles give us different points of view to see the same question. Thus, relevant literature on the UNFCCC mostly focuses on international regime, environmental politics, international economics, international political economy, international environmental law, and economic policy. For the case study, only literature on environmental politics, international law and domestic policy will be reviewed for the following analysis.

### **3.4.1. Environmental politics**

In the process of reaching cooperation on the global warming issue, there are some literatures argues the difficulty in the negotiation process between countries which have different political and economic structures. If the climate change issue fits the existence of state, those countries would put it in their policy priority. While countries face more poverty, budget deficits or other problems vital to the survival of their people, they definitely would put the climate change issue at the end of their policy list (Crubb and Paterson 1992, Ching, et al. 2003).

In the global warming issue, the time from causes (greenhouse gas emission) to impacts (climate change) is discreteness. However, every human being on the planet is a potential stakeholder, so the ethics and equity (intergeneration) consideration was proposed to help determine a response strategy (Rosa, Luiz pinquelli and Munasinghe 2002). Some literature from North-South dimension discuss environmental problem. The North-South debate in global warming issue just create a deadlock with developed countries looking only at the future while forgetting past emissions and developing countries looking at the past and being concerned with their own future emissions to improve their economic condition (Miguez 2002). Environmental justice was derived from environmental politics to be a feasible solution for those environmental problems. Procedural and distributive procedural justice in the context of international environmental politics is important, because it concerns to determine whether or not the solution would be success (Anand 2004). Lee (2004a)<sup>35</sup> and

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<sup>35</sup> 李河清(2004a)。知識社群與全球氣候談判。問題與研究雙月刊，43卷6期，2004年11月。

Grundmann (2007) explored the scientific dimension of climate change negotiations and discussed how climate science and knowledge-based epistemic communities influence decision-making process in global warming issue. Fu (2005)<sup>36</sup> discussed the negotiation process of the Kyoto Protocol from global governance, and found that state would adjust the framework to fit its own benefit. Chen (2002)<sup>37</sup> discussed the Kyoto Protocol from the formation of international regime and pointed out that the real damage from global warming and social cost to enter the Kyoto Protocol would be the crucial factors of country to sign the protocol or not. Hsiao(2004)<sup>38</sup> argued that the Kyoto protocol adopted a soft law principle to urge countries to participate. That was the outcome of environmental politics. Environmental issues are urgent and need to be dealt with immediately, so the soft law becomes a good tool in the international negotiation. However, it has the problem which do not have powerful enforcement to force Parties to implement efficiently.

Without developing countries' participation in the Kyoto protocol, there are no distinguished results in the long run, so Vons (2003) discussed the benefit that the developing countries can get from the Kyoto mechanism and provides suggestion for those policy-makers in those developing countries.

### **3.4.2. Environmental law**

#### **3.4.2.1. Domestic environmental law**

Yeh (1993)<sup>39</sup> pointed out that the problems during the establishment process of environmental legal system are bad coordination between different administrations, discordant policy implementation between central and local governments, passive enforcement of the environmental laws, and lack of public participation in the policy-making process. He suggested that single administration to solve coordinating problem between central and local governments, environmental legal system integration to positively carry out related policy, and enhancement precaution measure against possible environmental

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<sup>36</sup> 傅岳邦(2004)。全球治理運作模式之研究：以締約關係途徑分析《京都議定書》個案為例。台北,國立政治大學公共行政研究所碩士論文。

<sup>37</sup> 陳佳成(2002)。國際體制形成之探討：以京都議定書為例。台中,東海大學政治學研究所碩士論文。

<sup>38</sup> 蕭旻禎(2004)。從環境政治觀點論地球暖化現象之防制-以 1997 年京都議定書為例。台北,中國文化大學政治學研究所碩士論文。

<sup>39</sup> 葉俊榮(1993)。透析台灣環境政策與環保法令,載於蕭新煌,蔣本基,劉小如,朱雲鵬合著,台灣 2000 年(1993),(頁 207-232),台北:天下出版社。

degradation are all essential measures to help solving the problems. Huang (1994)<sup>40</sup> also discussed the environmental problems and legislative background of environmental law from environmental right, environmental legislature, environmental penalty, environmental impact assessment, public participation in policy-making process and pollution disputes aspects. He provided not only theoretical analysis but also some important case studies to help us to understand the law principle behind those environmental polices.

### 3.4.2.2. How to address international environmental law

From the impact of international environmental law issues, Yeh (1999)<sup>41</sup> analyzed the impact and correlation of different international environmental laws to provide suitable response for policy-maker in Taiwan. Under the existing legal regulations as well as Taiwan's special international political situation, Shih (2005b)<sup>42</sup> tried to seek the feasibility of Taiwan's formal participation in these international environmental institutions and agreements. She concluded that the government has to ponder on the question of 'why' do we want to participate in international environmental institutions and agreements before trying to look for ways and strategies for formal participation.

Ni (2002)<sup>43</sup> pointed out that Taiwan could use the Committee on Trade and Environment of WTO to take part in related international environmental affair although Taiwan is non-membership in the system of the U.N. and non-contracting Party of all Multilateral Environmental Agreements (such as the UNFCCC).

Shih (2002) examined the reasons why Taiwan as a non-Party decided to voluntarily comply with the UNFCCC to discuss the strategies that Taiwan took to implement the obligation and to investigate obstacles of Taiwan's implementation on the Convention.

Kung (2004) in his thesis<sup>44</sup> explored the possibility that internalized the Kyoto Protocol into domestic environmental legal system. He discussed environmental protection measures in Taiwan and specially focused on law angle and took the implementation of the Kyoto

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<sup>40</sup> 黃錦堂(1994)。台灣地區環境法之研究。台北:月旦出版社。

<sup>41</sup> 葉俊榮 (1999)。全球環境議題-台灣觀點。台北:巨流出版社。

<sup>42</sup> 施文真(2005b)。台灣參與國際環保類之組織與公約的意義與可行性。台灣國際法季刊2(1), 125-173。

<sup>43</sup> 倪貴榮 (2002)。臺灣在國際環境法上之地位(The Status of Taiwan in International Environmental Law), 臺大法論叢,第三十一卷,第二期,頁 97-130

<sup>44</sup> 宮文祥(2004)。環境保護規範手段之研究-以溫室效應公約內國法化為例。(未出版),台北,國立臺北大學法學研究所碩士論文。

Protocol in Taiwan as a case study. First, he took the U.S. as comparative study, and then he introduced Taiwan's government responsibility to environmental protection under the constitution, law and environmental administrative law system. Later, He proposed three ways to build environmental protection legal framework: more diverse and flexible in government and regulatory measures, bringing economic incentive into the environmental legal system to encourage private sectors to comply with those regulations, and citizen suit.

Song (2007)<sup>45</sup> first compared the related Acts concerning greenhouse gas emissions control of five main countries in the world to provide valuable lessons for Taiwan in the implementation of GHG reduction policy, and then reviewed the Draft of Greenhouse Gas Emission Reduction Act of Taiwan. She concluded that only with deliberately elaborate legislation could efficiently bring the emission reduction into well implementation.

### **3.4.3. Domestic Policy**

#### **3.4.3.1. Organization**

Lo and Yen (2002)<sup>46</sup> compared other nation's experience to discuss the role and authorities of the Ministry of the Environment and Resources (MOER) which organization law is still on the law-making process. MOER would be a new agency organized all the authorities related environmental protection (including environmental protection and resources conservation) under the Executive Yuan. They argued that the division of labor between internal organizations and operation system are the determinants to decide if the MOER would enhance the environmental protection work even though its institution-building direction met the demand of sustainable development trend.

#### **3.4.3.2. Economic Incentive Policy**

Hsu (2003)<sup>47</sup> from economic aspect suggested that government should introduce economic incentives (such as price mechanism) to reach the best consumption of natural resources to protect environment.

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<sup>45</sup> 宋書帆 (2007)。論我國應有之溫室氣體減量法制。(未出版), 新竹: 國立清華大學科技法律研究所碩士論文。

<sup>46</sup> 駱尚廉, 顏秀慧 (2002)。環境資源主管機關之定位與職權探討。國家政策季刊 (創刊號)。

<sup>47</sup> 許志義著 (2003)。環境基本法通過之後資源永續發展及利用應注重誘因機制, 經濟前瞻, 2003年1月5日。

Shaw et al. (2007)<sup>48</sup> discussed that imposing energy tax could be a good way to improve environmental protection, to save energy, to promote international competitiveness and to reach an environmental-friendly economy.

Liang (2007)<sup>49</sup> assessed the effects of the Kyoto Protocol and energy pricing policies on Taiwan's economy and found that a progressive energy pricing policy will be useful to achieve the target of CO<sub>2</sub> emission reduction without significantly damaging economic growth. If further CO<sub>2</sub> emission reduction is needed, a progressive carbon tax together with a package of green tax reform is then recommended.

As for economic policy tools to address the climate change issue, Wei (2003)<sup>50</sup> analyzed four main economic policy tools which are price control tool (carbon tax) and quantity control tools (emissions trading, cross national joint implementation and clean development mechanism) to explain their implementation methods, advantages and disadvantages, their correlation and other related literature.

### 3.4.3.3. Energy Policy

The main source of CO<sub>2</sub> comes from the burning of fossil fuel from energy sector, so the energy policy plays a crucial role in the result if CO<sub>2</sub> emission can be reduced effectively. Chiang et al. (2006)<sup>51</sup> reviewed and explored the causes that conclusions of the 1998 National Energy Meeting cannot be well implemented. They suggested that government could adopt tangible evaluation mechanisms, such as setting up objectives and targets of GHG reduction policy, addressing material action plans, establishing the inventory system and benchmarking targets, promoting the audit mechanism of GHG, as well as developing the agenda and anticipated objectives for the 2008 and 2011 National Energy Meetings to carry out the review of GHG reduction outcomes.

By reviewing recent energy policy which has put into practice since 1996 and recently

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<sup>48</sup> 蕭代基,王京明,黃耀輝 (2007)。能源稅是永續發展稅制改革的契機,經濟前瞻,2007年7月5日

<sup>49</sup> 梁啓源 (2007)。我國永續發展之能源價格政策。台灣經濟預測與政策,32(2)。

<sup>50</sup> 魏國棟(2003)。氣候變遷與因應經濟政策工具：文獻回顧。經濟研究 第39期第1期,臺北大學經濟學系出版。

<sup>51</sup> 蔣本基,顧洋,林志深,鄭耀文 (2006)。我國溫室氣體減量整體因應策略。科學與工程技術期刊,2(1),1-8。

important domestic and international energy condition, Wu and Huang (2004)<sup>52</sup> suggested that greenhouse gas emission reduction and nuclear-free homeland plan should be taken into consideration in the amendment of energy policy.

From energy policy and structure of energy demand and supply perspective, Liu et al. (2005)<sup>53</sup> pointed out that increasing the usage of clean energy and promoting energy efficiency are effective direction for energy sector to work on to manage the global warming issue.

### **3.5. The Literature Findings**

The international environmental concern would indirectly constrain and affect domestic relative activities, such as the UNFCCC to Taiwan. However, the domestic special political and economic situation would also be the main factors influencing the environmental policy implementation.

In domestic environmental debates, literature in the political angle provides basic understanding of special political and economic structure of Taiwan. Taiwan's main political characteristic is that developmental-oriented national policy results in the negligence of environmental protection and environmental degradation (Yeh 1996; Tang, S.-Y. and Tang, C.-P.1997; Huang 1999; Zen 2001). Some literature from democratization process discusses Taiwan's environmental movement (Tang, S.-Y. and Tang, C.-P. 2000). As Taiwan has become a newly democratized polity, their analyses could provide different dimensions to look at Taiwan's environmental protection development. Some literature from economic aspect advocates that environmental problems could be solved by economic means (Chien 1998). Lyons (2005) tries to present views from industrial sectors by interviewing some petrochemical firms and suggested ways to compromise interests between industry, government and social actors to get win-win solution. The political-economy angle can provide us a different approach to analyze the framing and solution of environmental problems in Taiwan from more dimensions. All of these literature gives the background information of environmental degradation in Taiwan in the past five decades. However, it is still lack analysis in the environmental protection performance of the ruling party (DPP)

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<sup>52</sup> 吳再益、黃釋偉 ( 2004 ) 。 政府能源政策之制定及執行成效探討。國家政策季刊，3 ( 2 ) ， 51-78 。

<sup>53</sup> 劉哲良,吳珮璠,溫麗琪(2005)。台灣能源供需結構與能源相關環保議題之回顧及展望。全球變遷雜誌第48期 2005年12月

which used to be pro-environmental friendly plan.

In the related literature on the practice of the UNFCCC in Taiwan, this research finds that state with different political and economic structures will have different response toward global warming issue. That results in the North-South (developed countries- developing countries) debate in the international climate change negotiation. As a non-party state, this research can refer to above analyses to find a suitable strategy to comply with the Convention. Some literatures in environmental law area provide some institution-building suggestions. As for domestic policy, the issues of organization type to administer environmental affairs, economic incentives to implement greenhouse gas reduction policy, and energy policy have all been discussed to give comprehensive view about Taiwan's response and problems in the process of addressing global warming issue. However, recent development in respect to organizations, related regulations (such as the draft of Greenhouse Gas Emission Reduction Law), as well as policies which are all highly related to the outcome of the implementation of the global warming policy are not discussed in aforementioned literatures.