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CLIMATE CHANGE GOVERNANCE IN ASIA

Edited by

Kuei-Tien Chou, Koichi Hasegawa, Dowan Ku,
and Shu-Fen Kao



Climate Change Governance in Asia

Asian countries are among the largest contributors to climate change. China, India, Japan, and South Korea are among the top ten largest carbon emitters in the world, with South Korea, Japan, and Taiwan also some of the largest on a per capita basis. At the same time, many Asian countries, notably India, Taiwan, Japan, the Philippines, and Thailand are among those most affected by climate change, in terms of economic losses attributed to climate-related disasters. Asia is an extremely diverse region, in terms of the political regimes of its constituent countries, and of their level of development and the nature of their civil societies. As such, its countries are producing a wide range of governance approaches to climate change. Covering the diversity of climate change governance in Asia, this book presents cosmopolitan governance from the perspective of urban and rural communities, local and central governments, state-society relations, and international relations. In doing so it offers both a valuable overview of individual Asian countries' approaches to climate change governance, and a series of case studies for finding solutions to climate change challenges.

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1 Introduction

Kuei Tien Chou and Dowan Ku

Climate change is a cross-border risk that is global in nature. It exhibits the characteristics of being cross-scale, cross-spatial, and cross-border (Bulkeley 2005), and therefore compels people to develop new research methods to manage these highly complex and transdisciplinary issues. Many studies have pointed to how climate change has opened up new analytical orientations which have created new challenges to existing research. For example, Hannigan (1995), Reusswig (2010), and Heinrichs and Gross (2010) highlighted the challenges that acid rain and climate change bring to environmental sociology. In particular, Jasanoff (2010) pointed out that while global and large-scale representations of scientific knowledge articulated by the Intergovernmental Panel on Climate Change (IPCC) belong to the confines of the *scale of knowledge*, this should instead be changed to one of the *scale of meaning*. Such a viewpoint goes straight to the heart of the matter, that is, large-scale scientific knowledge should be translated into forms that would enable us to understand the impact on humans, life, production, consumption, and even on health, and how social science should also enter such research, in order to look at how it can be used to interpret, analyze, and construct astute governance, systems, and actions.

This book will discuss climate change governance in countries where a Western linear path to modernization has been adopted, and which have thus developed into high-carbon economies with a special focus on Asia, whether it be later-comer East Asian countries such as Japan, Taiwan, or South Korea, or developing countries like China, Southeast Asian, or South Asian countries. According to the Global Carbon Project (2018), China's population has grown to over 1.4 billion people and its carbon emissions are in excess of 9.8 billion metric tons, making it the world's largest carbon emitting country; Japan ranks fifth in carbon emissions, emitting more than 1.2 billion metric tons of emissions with a population of 127 million, and even though South Korea has a population of only about 51 million people, its carbon emissions rank seventh at 610 million metric tons, while Taiwan's population of 23 million with carbon emissions of 270 million metric tons (and per capita emissions of 10.8 metric tons) ranks eighth in carbon emissions among countries with a population of more than 10 million people. Not to be outdone by these East Asian countries, rapidly developing countries too have increasing carbon emissions. India, which has a population

of 1.33 billion and carbon emissions of 2.46 billion metric tons, ranks third in emissions. Thailand with a population of 69 million and carbon emissions of 330 million metric tons ranks twentieth in emissions, while the Philippines ranks thirty-seventh with 1.27 billion metric tons of carbon emissions. Basically, the post-war development in Asia has relied on a high-carbon society and a high-carbon economy model, on the back of a developmentalism model grounded in a high-carbon regime.

There is therefore an urgent need to change the frame of discussion around climate change research from one held within the confines of traditional national boundaries to that of a cross-border framework, whether it be about international norms, systems, or actions or the alignment of national policies to international standards. As such, since the 2000s, research on cosmopolitanism has gradually received attention, with many academics arguing for the need for a new framework to understand transboundary risk issues. Western scholars, such as Beck (1996, 2002, 2008, 2009), Grande (2006), Delanty (2006), Hulme (2010), Zürn (2016), and Beck and Levy (2013), have also emphasized the need for such development, and Asian scholars, such as Chang (2010), Han and Shim (2010), Zhang (2015), Chou and Liou (2012), and Chou (2018), have also pointed to the importance of adopting a new methodology to understand these issues. Fundamentally, there is a need in the social sciences to move toward the adoption of methodological cosmopolitanism as a replacement for methodological nationalism (Beck and Sznaider 2006; Beck and Grande 2010), which is to say that, even as scholars are focused on transboundary and cross-national events, the research cannot be confined to the traditional social science concept of studying them from a domestic perspective, but should instead be grounded in universalism and the synchronicity of global events, with an eye on the specific political and economic contexts of each country, in order to understand their commonalities and differences.

Although the changes in research methods have resulted in paradigm shifts, there have also been various research developments, the first of which is international comparative research, but such research has been focused on risk shocks, the decision-making of governments, and the social resistance faced by individual countries. The second approach focused at the level of the country, but where the discussion is taken from a global framework, of global norms, systems, and governance, to the corresponding development of the country. The third approach analyzes systems, governance, and norms from a trans- and cross-national perspective, to understand how these impact on countries, and the adjustments countries subsequently make. The fourth approach uses the trans- and cross-national perspective to understand the non-governmental organization (NGO) network and actions, and to study them in terms of their identities, collectivities, and communities. These various approaches involve the exploration of normative research and action research in cosmopolitanism studies. Beck (2014) stressed that the analytical units of study in methodological cosmopolitanism should be *embedded in the national systems and processes*, and should *replace these national systems and processes* with

the cosmopolitanism governance approach, which would be in line with the first and second approaches mentioned above.

We start the discussion in this book by seeking to understand how people and governments in Asia address climate change, for instance whether it is being treated as a global, national, or local agenda, or whether it is seen as a scientific agenda, or an issue that touches on everyday life. We also look at the types of governances that have been constructed in Asia in order to tackle climate change. However, it is hard to find successful climate change governance in Asia because many Asian countries are trapped in the high-carbon economy model. Green politics on the basis of strong liberal democracy has not developed in Asia. Instead, the developmentalism model based on nationalism is a common characteristic in Asian countries. Nonetheless, environmentalists and local populations in Asia concerned about climate change have made a great effort to overcome climate change, and they have been working at the local, national, and global scales. It is also important to understand that the issue of climate change is constructed by various social forces. Social groups work together or fight each other over how climate change should be addressed. Climate change issues also cut across the traditional regime of governance.

However, new sustainability transition governance in which strong ecological modernization is successful can be constructed, if strong social solidarity movements for sustainability are sufficiently powerful. As it is, the cosmopolitan mindset has gained traction among peoples in Asia, though cosmopolitan governments have not yet taken root. In this book, we will therefore analyze how climate change governance in Asia is constructed and how it works on the national and local scales. Ultimately, climate change governance in Asia can be successfully constructed and implemented if governments are willing to work together not only with the business sector but also with civil society. In fact, there are already people in different parts of Asia who have mobilized themselves toward trying to achieve a sustainable society, thus the question is how we can take it to the next level.

Following this introduction, Chapters 2–5 discuss the Intended Nationally Determined Contributions (INDCs) (under the United Nations Framework Convention on Climate Change) which exhibit characteristics of cosmopolitan governance, as well as the carbon emissions policies, regulations, and timelines of each country, in addition to the transformational challenges faced by these high-carbon societies with regard to their country systems, decision-making processes, social pressures, and social conflict discourses, among other things. Superficially, these countries have responded to the Climate Change Convention by pledging to commit to the INDCs or establishing carbon pricing (such as a regional carbon trading platform). However, in reality, they are trapped in their domestic high-carbon economic structure thus resulting in transitional difficulties. The domestic path dependence has locked these countries into the brown economy, which has dominated the development of their industries and energy use. While this research orientation is aligned to the perspective of institutionalized cosmopolitanism, in order to carry out system intervention and

norm setting within a country as part of the Climate Change Convention, it requires further discussion on the transitional challenges, especially on the attitude of the country toward its economic development pathway, such as on the discursive struggle between the low-carbon economy and the brown economy between the government, industry, and society, whilst facing constraints imposed by the political and economic power of industry players and the capability of civil society.

As compared to Part I of the book which is focused on the policy and structural analysis, Part II deals with climate knowledge on a micro level: the risks, environmental frames, and sustainability. Climate knowledge and the governance structure should not be seen only as an issue to be dealt with at the international level, and while it is the basis for government decision-making and regulations, at the same time it is also relevant at the level of local knowledge, and neither level should be neglected. Chapter 6 on the example of Thailand shows that in the actual management of climate policy, if the discussion and understanding of local knowledge were to be neglected, this would lead to a decision-making gap, in that the national interpretation of climate information at the global level is relative to the interpretation by local communities of climate information at the local level, which could result in differences in governance. Chapter 7 compares the risk perceptions and attitudes of Japanese and European citizens toward energy and climate policies and highlights the differences in their perceptions. We can therefore observe the attitudes of people in these countries toward climate and energy policies, and the differences in public opinion in relation to cosmopolitan governance. Chapter 8 adopts the systemic risk perspective to study the opportunities for transition and the structural challenges faced in Taiwan regarding its climate policy. The author analyzes the existing system of climate decision-making and real-time climate and energy landscape from the perspective of the transitional management of society and technology, and discusses the possibility of policy innovation. Chapter 9 adopts the perspective of ecological modernization to look at the issue of carbon capture and storage; it explores the struggles of environmental movements and the social impact of carbon capture and storage (CCS) framing.

The third part of this book is focused on the urban sustainability, climate change adaptation, disaster management, and social network orientation of four countries: participatory knowledge lies at the heart of all the cases depicted. Chapter 10 discusses three case studies in Seoul in South Korea, to explore how grassroots participation and institutional innovation were able to successfully develop a pathway for sustainability transition. Chapter 11 discusses coffee cultivation in India, and how the participation of local farmers and their knowledge was used to develop the adaptation strategies to mitigate climate change. It therefore captures the viewpoints of the traditional knowledge of local communities toward climate issues, which in turn lead to various planting strategies. Chapter 12 analyzes the framework for climate disaster management in the Philippines and includes various case studies to highlight how local government units train local communities how to respond to and form a strategy to deal

with climate disasters, and in the process construct relevant actions, highlighting the way in which the local governance of disaster reductions can be imbued with local knowledge. Chapter 13 discusses the climate strategies and the citizen participation network in Tainan, Taiwan. The authors adopted the social network perspective to analyze community participation, stakeholder perception, and local knowledge actions developed by the local flood control groups, so as to showcase the climate governance as developed by the urban social ecosystem. From these examples, it is possible to observe how different societies and their various contexts are able to produce the multitudes of actors and social networks that bring about very rich and diverse forms of governance.

Although the chapters do not directly address trans- and cross-national research, the authors in Chapters 2, 3, 4, and 5 review the carbon reduction timeline and targets of each country under the global norms of the INDC, and discuss the corresponding challenges faced under the framework of a high-carbon economy. Chapter 6 (in Part II) and Chapters 11 and 13 (in Part III) discuss climate change knowledge and its interconnection with national climate management and local knowledge, the climate knowledge of local coffee cultivation, and local flood control knowledge and networks, and how these interactions exemplify the diversity of social construction in cosmopolitan climate governance. Other chapters also include indirect discussion of cosmopolitanism in climate change issues in various social contexts, such as in the public's climate perception (Chapter 7), social transformation toward a low-carbon system (Chapter 9), and the innovative means of sustainability transition promoted in Seoul.

The reality is that the simultaneous climate change risks that Asian countries are facing already constitutes the compulsory cosmopolitanism that Beck (2008) detailed, and further research therefore needs to be conducted using this framework. This book is a preliminary attempt at using the approach of 'embedding the national' to discuss climate governance, climate norms, and climate knowledge at a global level, and their actual practice in various countries; these experiences highlight the diversity of approaches at the local and national level, reflecting the diverse meanings of cosmopolitan climate governance.

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Part I

Framework of climate change governance in Asian countries



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2 Climate change governance in Japan

Critical review on Japan's INDC and its energy policy

Koichi Hasegawa

Climate change governance in Japan

On greenhouse gas (GHG) emissions, Japan is the fifth largest emitter with a 3.5 percent world share following China with a 28 percent share, the US with 15 percent, India with 6.5 percent, and Russia with 4.5 percent in 2016. Germany with 2.3 percent and South Korea with 1.8 percent lesser emitters. Per capita, Japan is the fourth largest emitter with 9.0 tons following the US with 14.9 tons, South Korea with 11.5 tons, and Russia with 10.0 tons in 2016. Japan's GDP is the third largest following the US and China. Japan's responsibility to reduce GHG emissions is critical.

What are the major characteristics of climate change governance and climate change policy in Japan (Hasegawa and Shinada 2016)? On climate change policy, it has been criticized for being very tardy in taking active measures like introducing an aggressive carbon tax and carbon pricing system. The central government is reluctant to promote renewable energy resources, whereas it has been highlighting the role of coal-fired and nuclear plants. Although scholars and environmental non-governmental organizations (NGOs) sought "energy transition" prior to the 2011 Fukushima nuclear accident, government and mainstream economic sectors like Keidanren (Federation of Economic Organizations) have been negative about such a transition in order to protect their interests. The reform of energy policy is still very superficial. Even after the Fukushima accident, there are very few policy changes as described in detail later.

Why did Japan's energy policy remain almost the same in spite of the Fukushima accident? What are the political barriers to energy transition in Japan? The political opportunity structure on climate change policy and energy policy has been very closed. The Japanese government does not understand the real meaning of the system of climate change *governance*. Though the word of governance is ambiguous and has numerous connotations, in the context of environmental governance such as climate change governance, participatory governance has been focused. It stresses democratic engagement through the participation of multiple stakeholders, including NGOs and citizens in the processes of decision-making.

In Japan, the political leadership for tackling climate change issues has been unclear. A former Prime Minister Ryutaro Hashimoto and Minister of Environment Hiroshi Oki at the Kyoto Conference, called COP3, were exceptional. Both devoted their efforts to leading the conference successfully as the political leaders of the host country. Unfortunately, climate change issues do not have a high priority in Japanese politics. Most Ministers of Environment only hold the post for about a year. Prior to taking up the post they are not familiar with any environmental issues including climate change issues. In simple terms, they were non-professional, they could be called *amateur ministers*. Remember, the current German Chancellor Merkel was Minister of Environment from 1994 to 1998 under the Kohl administration. She has shown outstanding political leadership in climate change politics in her administration since 2005.

Historical Paris Agreement

On December 12, 2015, the Paris Agreement was adopted at the Paris Conference of the United Nations Framework Convention on Climate Change, called COP21. At the venue I was watching the historical scene when Chair, French Foreign Minister, Fabius announced he was adopting the document saying “this small wooden hammer adopts the large document.”

At the 1997 Kyoto Conference only 38 advanced countries set a target of decreasing GHG emissions by 2012. These countries are listed in Annex I of the Kyoto Protocol, including 15 EU Member States which had increased to 27 states by 2012. Among the countries listed the US didn’t ratify and Canada withdrew from the Kyoto Protocol in 2012.

In the Paris Agreement, all parties including developing countries agreed that the long-term temperature goal was to keep the increase in global average temperature well below 2 degrees Celsius above pre-industrial levels and that they should make every effort to limit the increase to 1.5 degrees Celsius, recognizing that this would substantially reduce the risks and impact of climate change. This should be done by peaking emissions as soon as possible, in order to “achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases” in the second half of the 21st century. It also aimed to increase the ability of parties to adapt to the negative impacts of climate change, and give financial support to developing countries.

Under the Paris Agreement, each country had to determine, plan, and regularly report on the contribution that it had made to mitigate global warming. Each country’s target should go beyond previously set targets. The target was not legally binding, whereas it had been under the Kyoto Protocol.

The world came to reach an agreement to move toward a decarbonizing society. It would be achieved by ending the burning of fossil fuels, developing the renewable energy market, and introducing a carbon pricing mechanism.

Leaving from the second commitment of the Kyoto Protocol

One of the most impressive sights at the Paris Conference was the sign of *oideyasu* at the airport in Paris. *Oideyasu* means welcome in Kyoto dialect. “Welcome” was translated in ten languages on the sign, including *bienvenue* in French, *bienvenido* in Spanish, and *willkommen* in German. In Japanese, welcome was translated as *oideyasu*, in Kyoto dialect, not *yokoso* as usual. Why? In my opinion, for the same reason that the office of the United Nations Framework Convention for Climate Change (UNFCCC) gave the special thanks to Kyoto where the 1997 conference was held and the Kyoto Protocol was adopted. The Paris Agreement was based on the Kyoto Protocol. Without this protocol, it might not have been possible to get the Paris Agreement.

However Japanese leaders didn’t refer to the Kyoto Protocol at this conference. At the opening address of the first day, Prime Minister, Shinzo Abe only mentioned the fact that 18 years ago, the Kyoto Protocol was adopted as the first step toward protecting the world from global warming. In the second week, at the meeting of the Ministers, the Minister of the Environment, Tamayo Marukawa never mentioned the Kyoto Protocol. Although having been the host country of the 1997 Conference Japan should have reminded the other countries of the role and meanings of the Protocol, neither was mentioned. The chair of the Kyoto Conference and the Minister of the Environment at that time, Hiroshi Oki, passed away on November 13, 2015 at the age of 88 prior to the Paris Conference. Why did both Abe and Marukawa missed the opportunity to pay tribute to Oki? If they had mentioned his enormous contribution to the Kyoto Conference and his dying hope of the success of the Paris Conference, it might have made a deep impression on all of the delegates attending the conference. The Japanese government missed a wonderful opportunity to remind everyone of Japan’s deep commitment to and its political leadership on the climate change negotiation process. In the Japan pavilion of the conference venue, there was no reference anywhere to the Kyoto Conference and the former minister, Oki. Why did they miss this golden opportunity? Had they forgotten the Kyoto Conference, the scenes there, and Japan’s initiative at that time? Why did Japan’s government disregard them although the office of the UNFCCC paid special respects to Kyoto?

The reason is that the Japanese government didn’t positively evaluate the Kyoto Protocol and announced that it would not be signing up to the new targets in the second commitment period, along with New Zealand and Russia at the COP17 in Durban, South Africa, December, 2011. See Figure 2.1 which shows the relationship between the major signatories of the Kyoto Protocol, the first and second engagement, and the Paris Agreement. In my opinion not adopting the second commitment was one of the major misjudgments and failures of the Democratic Party of Japan (DPJ) administration at that time.

One of the major manifesto pledges by DPJ in the 2009 general election by was the ambitious target for a 25 percent decrease of GHG emissions including buying foreign credits from the 1990 level. It was one of the main reasons for

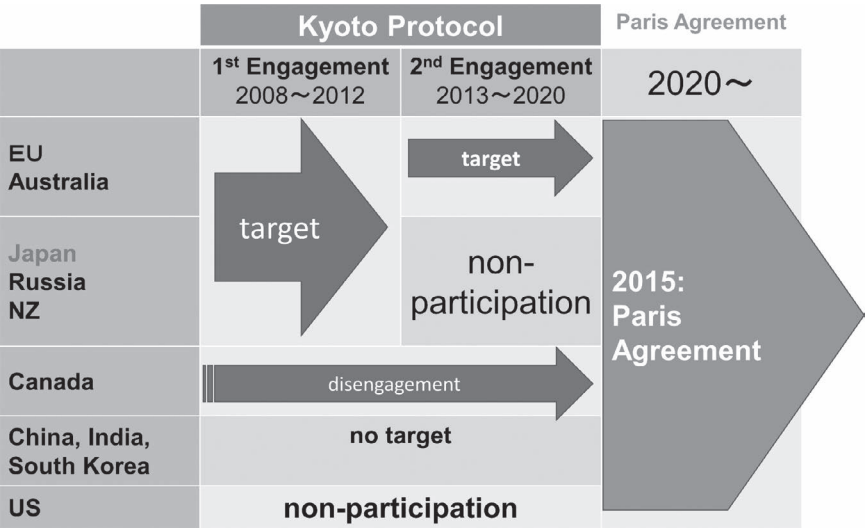


Figure 2.1 Kyoto Protocol and Paris Agreement

winning the election. However, immediately after the election the DPJ administration suddenly adopted a negative attitude toward protecting the world from climate change. Moreover, there were no political achievements in relation to climate change issues. The government revealed serious budget cuts for climate change protection and didn't sign up to the second commitment period of the Kyoto Protocol. The current second Abe cabinet is also reluctant to adopt a positive policy toward climate change protection.

Why did Japan's government adopt a negative attitude and leave the second commitment? The government claimed that it was unfair for advanced countries to take on the Kyoto target. China, the largest emitter of GHG at 25.5 percent, and the US, which was the second largest emitter at 16.9 percent in 2012, didn't ratify the Kyoto Protocol in 2001, nor did South Korea and the BRICS (Brazil, Russia, India, China and South Africa) countries adopt the target as Figure 2.1 shows. The government criticized the Kyoto Protocol for only covering 22.6 percent of the total amount of the world GHG emissions as Figure 2.2 shows. The industrial sector, for example Keidanren (the Japanese Business Federation), also claimed that due to being the host country of the Kyoto Conference, Japan had to concede and accept huge disadvantages. The Kyoto target of a 6 percent decrease was too tough for the Japanese economy.

The Kyoto Protocol was the first UN treaty to bear the name of the Japanese city, Kyoto. It was the symbol of Japan's commitment to climate change

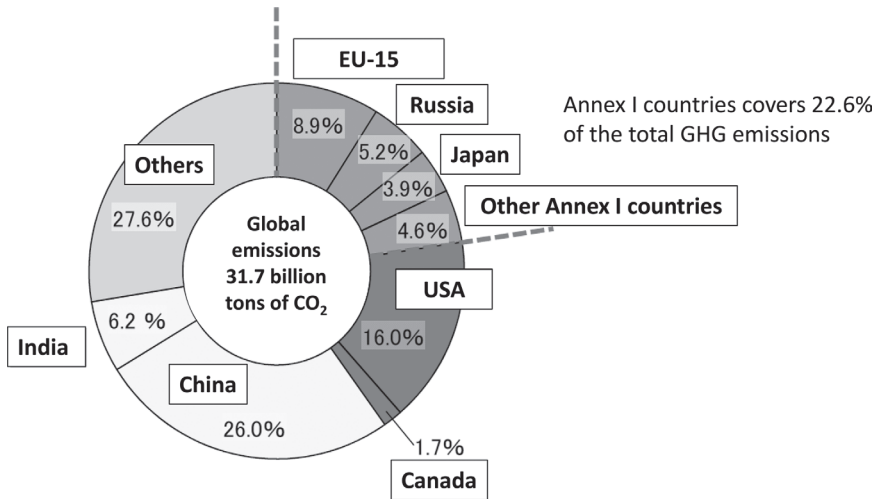


Figure 2.2 The Kyoto Protocol only covers 22.6 percent of the total GHG emissions

Source: The author revised and translated the figure from the Japanese Ministry of Environment website, 2014, accessed October 18, 2019 at www.env.go.jp/earth/cop/co2_emission_2012.pdf.

Note: Canada withdrew from the Kyoto Protocol in December 2012.

diplomacy. However, since it refused to sign up to the second commitment, Japan has been considered to be one of the countries with a huge economy that has a negative attitude toward climate protection. Since then Japan has not given any sign of taking a positive role toward climate protection including at the 2015 Paris Conference and at the more recent 2019 UN Climate Action Summit.

At the Paris Conference, Japan was eager to appeal confirming the strict qualification of enactment of the Paris Agreement because the Japanese government was afraid of free riding and that major emitters, such as the US, would not ratify the Kyoto Protocol. Finally, as Japan's position was accepted and entered into force, the Paris Agreement requires 55 parties to convention accounting for at least 55 percent of total GHG emissions have deposited their instruments of ratification. This was the same condition as for the Kyoto Protocol.

Not signing up to the second commitment meant the loss of the legal base of the reduction target. After the first commitment period ended in FY 2012, Japan no longer had a target. The mid-term goal was finally set in November 2013. But it was a very small target of a 3.8 percent decrease from the FY 2005 level by FY 2020, that is equivalent to allowing a 3.1 percent increase from the

FY 1990 level. This was 30 percent lower than the target recommended by the EU Commission which proposed Japan should make a 24 percent decrease from the FY 1990 level by FY 2020 (Asuka 2015: 87).

Declining social interest on climate change issue after the Fukushima accident

Figure 2.3 shows the change in the number of news articles including the phrases “climate change” or “global warming” in major Japanese newspapers and the *New York Times* (NYT). The peak year with more than 3,000 articles was 2008 when the G8 Toyako Summit was held in Hokkaido at which one of the major topics was climate change. In 2007, former US vice-president Al Gore’s film *Inconvenient Truth* was extremely popular all over the world. In 2009, the media hoped that an agreement on the new framework after 2012 – when the Kyoto target ended – would be reached at COP15 in Copenhagen, Denmark. However, the number of articles in Japanese newspapers as well as the *NYT* dropped dramatically thereafter. Japanese papers remained at about the 700 level and the general interest moved to nuclear issues or electricity supply. After the Paris Agreement, it continued to decline. The drop in the number of articles in the *NYT* in 2010 reflects the disappointment at the failure of the Copenhagen



Figure 2.3 Number of newspaper articles including the phrases “climate change” or “global warming” from 1997 to 2019

Note: The solid line is the average number of articles in the Japanese papers, *Asahi*, *Yomiuri*, and *Nikkei*; the dotted line is the number of articles in the *New York Times*.

Conference. But since 2013 the number of articles in the *NYT* has been increasing constantly. This is a sharp contrast between Japan and the US.

Prior to 2007 and 2008, the number of articles in Japanese papers had three peaks in 1997, 2001, and 2005: 1997 was the year of the COP3 Kyoto Conference; 2001 was the year the Bush administration declared it would not be ratifying the Protocol; and 2005 was the year the Protocol finally entered into force.

Meeting the Kyoto Target

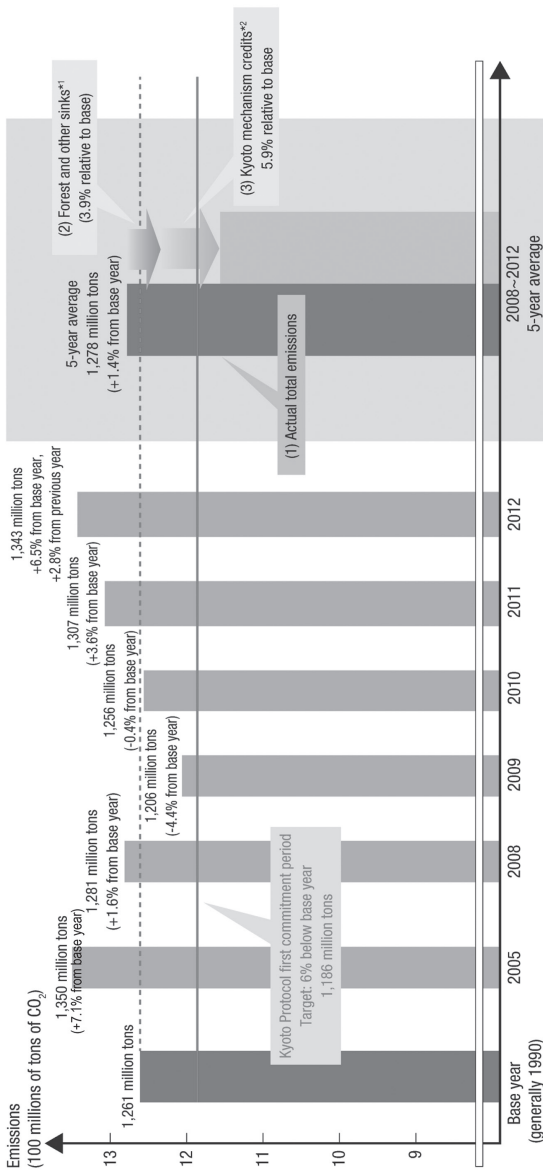
In February 2015, the UNFCCC announced that many advanced countries had met the Kyoto target and a 23 percent decrease in GHG emissions had been reached from the 1990 level. The original goal was a 5 percent decrease. Internationally, the Kyoto target was recognized to be working quite successfully. This is why the office of the UNFCCC praised the Kyoto Protocol.

But let us look at the case of Japan more closely. Japan also met the original target of a 6 percent decrease in GHG emissions from the 1990 level. This was officially announced by the Ministry of the Environment in April 2014. But the ministry and media were reluctant to publicize this fact and most citizens were unaware of it. Why were they reluctant to publicize it?

Until FY 2007, Japan's GHG emissions increased gradually. Central government estimated meeting the Kyoto target would be impossible or too tough. Indeed, the FY 2007 emissions increased 8.6 percent, in Figure 2.4 the FY 2005 emissions increased 7.1 percent from the 1990 level. How was the target reached?

Figure 2.4 shows that during the target years from FY 2008 to FY 2012, Japan produced an annual average 1,278 million tons of carbon emissions, 1.4 percent higher than the FY 1990 level. However, based on the protocol, Japan was recognized as nominally having achieved a 9.8 percent decrease, comprised of a 3.9 percent decrease from sink of forests, called LULUCF, land use, and land-use change and forestry, and a 5.9 percent decrease from buying foreign carbon credit. Subtract a 1.4 percent increase from a 9.8 percent decrease, then you get 8.4 percent decrease. It means the target of a 6 percent decrease was achieved. This is the secret of Japan's success in meeting the Kyoto target.

In Figure 2.4, the standard of the FY 1990 level was 1 261 million tons. In only two cases, FY 2009 and FY 2010, was the emissions level lower than that of FY 1990. The decline from FY 2008 to FY 2010 was brought about by the economic recession triggered by the bankruptcy of Lehman Brothers in the US. The tsunami disaster on March 11, 2011 affected the emissions in FY 2011. The tsunami disaster affected the emissions in FY 2011. In summing up, Figure 2.4 reveals the economic recession from FY 2008 to FY 2012 was the most critical factor in reducing GHG emissions rather than any measures that were taken. The nominal 3.9 percent decrease from sink of forests and 5.9 percent decrease from buying foreign carbon credit were also critical factors. This was not the most impressive way for the Ministry of Environment to meet the Kyoto target. In my opinion, this may be the reason why the government was reluctant to publicize it.



Notes:

1. Volume of emissions that can be offset by forest and other sinks (forest sink and urban greening measures, etc.) when calculating target achievement. Since the volume of emissions absorbed as a result of Japan's forest sink measures exceeded the maximum forest sink offset allowance of 238.3 million tons established for the five-year period, the maximum allowance was used to calculate the average value.
2. Government-acquired: Total volume of Kyoto mechanism credits acquired through credit acquisition projects as of the end of FY 2013 (97 493 million tons)
Privately acquired: Volume of credits held by the Federation of Electric Power Companies of Japan. (Source: Environmental Action Plan by the Japanese Electric Utility Industry, FY 2013 version)
3. Final emissions and absorption volumes are to be decided on the basis of investigations conducted in FY 2014 under the United Nations Framework Convention on Climate Change and the Kyoto Protocol.
Kyoto mechanism credits are to be decided after the end of the adjustment period following the first commitment period (expected to be no earlier than the second half of 2015)

Figure 2.4 How Japan met the Kyoto target

Source: Japanese Ministry of Environment, 2014, accessed October 18, 2019 at <https://www.env.go.jp/en/wpaper/2014/pdf/02.pdf>.

Note: A 1.4 percent increase minus a 3.9 percent of LULUCF minus a 5.9 percent of credits is a 8.4 percent decrease beyond the Kyoto target, a 6.0 percent decrease from the 1990 level.