

*Special Feature on the Kyoto Protocol*

# Evaluation and Future of the Kyoto Protocol: Japan's Perspective

Yasuko Kameyama<sup>a</sup>

The aim of this paper is to examine the repercussions in Japan wrought by the Kyoto Protocol, which it signed in 1997, and to point the way for the country's response in the next and future rounds of protocol-related negotiations. This challenge is met by first reviewing Japan's past negotiating positions at the international level and relevant movements inside the country prior to and after it signed the protocol, and then by examining the protocol's effects on Japan. This review finds that the following points are important to be aware of when attempting to understand Japan's dynamics relating to the Kyoto Protocol: (1) it is the only internationally agreed text to address climate change; (2) it is the only major multilateral environmental agreement ever adopted in Japan, giving it special significance to domestic actors; (3) the negotiation process represented a new approach to foreign policy; and (4) its negotiation was part of a learning process for Japan on multilateral negotiations on climate change. Japan has now begun to prepare for a new round of climate change negotiations, and the learning that has occurred is now reflected in two very distinct views within Japan as to the ways to move forward. As Japan's government works to merge the demands of all ministries concerned, its position in future negotiations is likely to remain vague externally; internally, on the other hand, the Japanese people will be increasingly concerned about climate change policies.

*Keywords:* Japan, Climate change, Kyoto Protocol, Negotiation, Third Conference of the Parties (COP 3).

## 1. Introduction

What are the effects of the Kyoto Protocol on Japan so far? This is a tough question to answer. At this point, it is not really practical to ask what if Japan had not ratified the protocol, and there is no way to prove what Japan would be like without it. Without Kyoto, there might have been no international agreement on addressing climate change at all; or rather, there might have been another type of agreement adopted. In this paper, the challenge to identify the protocol's effects on Japan is addressed by reviewing what has happened during the last decade in Japan, both at the international and domestic levels, and by explaining the current debate in Japan on the "post-2012" issue. The debate centers on the following question: What happens after the first Kyoto commitment period ends in 2012? Here the argument is presented that the Kyoto Protocol was effective in moving Japanese policies forward in several different ways. Such effects have given many players in Japan an interest in the next round of negotiations on climate change.

---

a. Senior Researcher, National Institute for Environmental Studies, Japan.

## 2. History of Japanese climate policy making before and after Kyoto

Although the main purpose of this article is not to look back at the history of Japan's positions during negotiations leading up to Kyoto, it is an important exercise to examine the priorities and concerns of Japan on climate change policy in order to fully understand Japanese views on the Kyoto Protocol and beyond. Looking at the last decade, one would find between the lines different ways of looking at the climate change problem by various stakeholders in the country.

### *2.1. Japan and adoption of the Kyoto Protocol*

Since the First Session of the Conference of the Parties (COP 1) of the United Nations Framework Convention on Climate Change (UNFCCC) in 1995 in Berlin, where Sohei Miyashita, Japan's Environment Minister at the time, announced Japan's desire to host the third or one of the later COPs, the Japanese government entertained the idea that it might bear responsibility as the host nation for the adoption of the anticipated protocol. This position created great interest in Japan regarding the negotiations on the protocol (Kawashima 2000). Especially after the formal announcement in July 1996 at COP 2 in Geneva that it would actually host COP 3 in its ancient city of Kyoto, Japan found itself in a very difficult position, as every government ministry and agency had a different agenda planned for it.

As COP 3 approached, Japan was pressured to submit a concrete proposal for an emissions reduction and limitation target, but because of the divergent interests domestically the Japanese government remained incapable of presenting a national position. In the run-up to COP 3 in August and September of 1997, relevant ministries held the final months of coordination to agree on a government position (Takeuchi 1998; Tanabe 1999).

One objective of the Ministry of Foreign Affairs (MOFA) for hosting COP 3 was to conclude a successful multilateral meeting in Japan, which in this case meant the adoption of the protocol without mishap. To do so, Japan needed to persuade the United States to agree to adopt the protocol. Inevitably, Japan would have to coordinate with other countries to bend to the wishes of the US. On the other hand, if Japan wanted to build its status as a leader in Asia, it needed to set a good example on global environment issues. Given that the European Union had been calling for a 15 percent flat rate reduction target since March the same year, MOFA felt that a reduction of 5 percent at the very least was necessary and argued for a target of 6.5 percent.

The Ministry of International Trade and Industry (MITI)—the name is now the Ministry of Economy, Trade and Industry (METI)—argued that stabilization of emissions (reducing emissions to 1990 levels by 2010) would be the most that Japan could hope to achieve because of opposition from industry. For, MITI, which is responsible for domestic energy supply and industrial policy, it was obvious that with one of the lowest per capita emissions among developed countries, Japan would find the task of reducing greenhouse gas (GHG) emissions to 1990 levels more arduous than others. MITI thus sought for some kind of differentiated targets. At the same time, it was crucial for MITI to gain US participation from the point of view of Japanese industry remaining internationally competitive.

On the other hand, the Environment Agency—now the Ministry of the Environment (MOE)—in looking at the climate change debate from a global environmental perspective, argued that Japan should

propose a draft protocol that incorporated emission reduction targets ambitious enough to avoid serious adverse climate change impacts and, at the same time, were realistic enough to be agreeable. The Environment Agency used economic models to claim that a target of a six to eight percent reduction from 1990 levels by 2010 could be reached if sufficient additional measures were implemented.

This clash of opinions continued until the end of September, when the Prime Minister's Office eventually intervened. Japan's proposal was finally settled, with a basic reduction of five percent and a proviso for exceptions for certain countries, including Japan. This proposal was actually a reflection of "the differences that existed among the major domestic players and interpretations of what might be acceptable internationally" (Schreurs 2002).

During the final round of negotiations in December 1997 at COP 3, all the proposals from various countries and regions on targets and timetables on greenhouse gases became ambiguous, as fundamental conditions for quantification of targets, such as inclusion of sequestration by sinks of carbon or of other kinds of gases, shifted from time to time (Grubb et al. 1999; Oberthür and Ott 1999). In such a state of confusion, countries' positions often tend to get simplified. Japan wanted to assure US participation in the protocol and started to insist on the US position rather than its own. Japan proposed an emission stabilization target, considering that the United States would never accept an emission "reduction" target. Japan also proposed developing countries' voluntary actions to take into account the Byrd-Hagel resolution, which was adopted by the US Senate in July 1997 (Harris 2000). Not surprisingly, the group of developing countries (G77 plus China) protested strongly, and Japan found itself caught between the two camps. In the end, the G77, plus China and the United States made a deal by themselves: the US accepted the idea of no emission commitments for developing countries but succeeded in getting international emissions trading included in the text.

Negotiations were finalized with an agreement that in the five years from 2008 to 2012, the European Union, the United States, and Japan were to reduce their emissions by eight, seven, and six percent, respectively, from 1990 levels. In a way, Japan got what it demanded: participation of the United States and differentiation of emission reduction targets among Annex I countries.<sup>1</sup>

## **2.2. Japan's response to the Kyoto Protocol since COP 3**

Japan was one of the countries that took action immediately after the adoption of the Kyoto Protocol at COP 3 in December 1997. The government set up the Global Warming Prevention Headquarters, which consisted of relevant ministries (Government of Japan 2002). The Headquarters drew up its *Guideline of Measures to Prevent Global Warming* in June 1998, which was characterized as a set of rigid rules that clearly allocated responsibilities to various sectors to reach the six percent emission reduction commitment as a whole. A 2.5 percent reduction was to be achieved by the industrial sector through further energy efficiency and by supplying less carbon-intensive energy. Emissions of hydrofluorocarbons (HFC), perfluorinated carbon (PFC), and sulfur hexafluoride (SF<sub>6</sub>) were to be limited to about a 2 percent increase. Net removal by sinks under Article 3.3 and 3.4 of the Kyoto Protocol—called land use, land-use change, and forestry (LULUCF)—was expected to amount to 3.7

---

1. Annex I countries are the industrialized countries and economies in transition listed in Annex 1 of the UNFCCC.

percent. The rest (1.8 percent) was to be covered by acquiring emission permits from abroad by utilizing Kyoto Mechanisms such as international emissions trading, joint implementation, and the Clean Development Mechanism (CDM) (Government of Japan 1998). To facilitate implementation of the guideline, the Law Concerning the Promotion of the Measures to Cope with Global Warming was established the same year. The government also revised the Law Concerning the Rational Use of Energy to stimulate energy efficiency improvement in the industry sector.

The guideline seemed to light the way to meet the Kyoto emission target, but it was based on two crucial assumptions that prohibited Japan from ratifying the protocol immediately.

First, the calculation assumed that carbon sequestration by all managed forests in Japan during the first commitment period (2008–2012) would be counted under Article 3.4 of the Kyoto Protocol. About 66 percent of land in Japan is covered by forest, much of which was planted in the 1950s and 1960s. This was a disadvantageous situation under Article 3.3, which accepted only afforestation, reforestation, and deforestation *since* 1990 to be incorporated into the calculation of emissions. To meet its target, Japan was depending on being able to count on the sequestration of carbon dioxide (CO<sub>2</sub>) by managed forests that had existed since before 1990.

The second assumption was that the Kyoto Mechanisms would be available to help Japan meet its target. Principles, modalities, rules, and guidelines for international emissions trading were to be negotiated after COP 3, and Japan could not be sure if its *Guideline* could rely on those mechanisms until those rules were agreed on at the international level.

As a new phase of negotiation under the Buenos Aires Plan of Action, started at COP 4 in 1998, Japan concentrated on making progress on the two issues mentioned above. In addition, for compliance procedures, Japan preferred a facilitative type of procedure rather than a punitive one. It was difficult for Japan to commit to an international emissions trading scheme if committing to a binding consequence were to become a condition for eligibility to participate in the Kyoto Mechanisms.

The Buenos Aires Plan of Action called for an agreement to be reached by COP 6, but no agreement was reached when it was held at The Hague in November 2000 (Grubb and Yamin 2001). In January 2001, the new George Bush administration took power in the United States, and within three months it announced its withdrawal from the Kyoto Protocol. The European Union and Japan both tried to persuade the US to return to the regime but without success.

Although there were no major disagreements between the various ministries within Japan's government on the actual conditions for early ratification, opinion was divided on the extent to which Japan should follow the United States. One side, especially those around the industry sector, considered that Japan should not ratify the protocol unless the US did so. The other side felt that Japan should stop being a follower of the US and go its own way in seeking for a sound climate, while urging the US to return. Sensing such division inside Japan, the European Union made greater concessions in the re-opened COP 6 meeting held in Bonn in July 2001. Japan's terms on the volume of greenhouse gas emissions absorbed by forests were accepted to a sufficient degree, and its views on compliance measures were also reflected in the final text. Acknowledging the major concessions made by the European Union, Japan put aside the question of how to respond to the US withdrawal for the time

being and accepted the agreement. This round of negotiations was concluded at COP 7 in October/November 2001 as the Marrakesh Accords. The agreement officially allowed Japan to count sequestration by managed forests as defined in Article 3.4 for the first commitment period. It also set rules necessary for international emissions trading and the CDM to get started. Japan considered this agreement to be satisfactory and started the domestic procedure towards ratification of the Kyoto Protocol—ultimately ratifying it in June 2002.

The Global Warming Prevention Headquarters revised its *Guideline of Measures to Prevent Global Warming* in June 2002 in order to adjust domestic policies according to what was agreed in the Marrakesh Accords. The revised guideline set the following sectoral targets:

- CO<sub>2</sub> emissions from energy sources shall be the same level as that of fiscal 1990 during 2008 to – 2012.
- CO<sub>2</sub> emissions from non-energy sources, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), shall be reduced 0.5 percent from the fiscal 1990 levels during 2008 to 2012.
- An additional 2 percent reduction should be achieved by using innovative technology.
- Growth in HFCs, PFCs, and SF<sub>6</sub> emissions should be limited to 2 percent between 1995 and 2008 to 2012.
- Removal of CO<sub>2</sub> by sinks stipulated in Article 3.3 and 3.4 should be about 3.9 percent of emissions in 1990.
- The remaining gap between the 6 percent reduction target and domestic emissions is to be eliminated using the Kyoto Mechanisms.

Under these revised guidelines, various policies and measures have been implemented to reach the assigned emission goals. Even with all these new developments, however, emissions from Japan are still on the rise. The latest data show that the emissions of total greenhouse gases from Japan in 2002 were 7.6 percent more than that of the 1990 baseline (tentative). Emissions growth can be seen especially in the residential/commercial and transportation sectors. Additional measures are necessary to achieve the 6 percent reduction target. The guidelines are to be revised again by the end of this year (2004) and additional measures are expected.

### 3. Evaluation of the Kyoto Protocol in Japan

As reviewed in the previous section, climate policies in Japan have developed rapidly since adoption of the Kyoto Protocol. On the other hand, its actual GHG emissions are still increasing, and there are various voices being raised for re-evaluation of the protocol. This section introduces those voices.

#### **3.1. Kyoto Protocol: The only internationally agreed text to address climate change**

The first and most significant impact of the Kyoto Protocol on Japanese climate policy is its existence as a treaty agreed multilaterally. If no agreement were reached at COP 3, there would not have been any pressure to set up the Global Warming Prevention Headquarters in 1997, and without the Headquarters it would have been difficult to reach an agreement on the *Guideline* as to how to mitigate GHG

emissions in Japan. All the various pieces of legislation on climate mitigation policies were established after COP 3, and these aim at achieving the 6 percent reduction target. This did not happen at the time of adoption of the UNFCCC in 1992. Without the Kyoto Protocol, with a clear emission target for Japan, such a goal could not have been agreed on at the domestic level. Thus, the protocol could be viewed as a justification for Japanese policy makers to introduce emission mitigation policies.

Japan may have reacted differently if another type of agreement had been reached at the international level. This assumption, however, is not appropriate by itself, as whoever was there negotiating at COP 3 considered the Kyoto Protocol to be the only achievable agreement at that time. Some suggest that the two years of negotiation might have been different if it was not for the Berlin Mandate, which called for a quantitative emission limitation and reduction objective for years beyond 2000. But negotiators at COP 1 found the mandate as the only achievable agreement possible in 1995. Again, the reality is that the Kyoto Protocol is currently still the only text available.

### ***3.2. Kyoto Protocol: The only major multilateral environmental agreement adopted in Japan and its influence on domestic actors***

The decision to host COP 3 in Kyoto stimulated a tremendous level of public interest in Japan. To prepare for the upcoming meeting, small Japanese non-governmental organizations (NGOs) gathered to establish a network called the Kiko (Climate) Forum in December 1996, one year before COP 3. This was the first NGO to deal mainly with climate change in Japan. The Kiko Forum later developed into the Kiko Network in April 1998, which has become the most influential environmental NGO in Japan on climate change policy. Similarly, the Japanese industry group, Keidanren, issued a report in June 1997 in which 36 industries covering 137 organizations set voluntary targets on climate-related actions (Keidanren 1997); the actions of those industries are reviewed almost every year. Both movements, those of the environmental NGOs and the industry group, were stimulated by holding COP 3 in Japan in 1997. Without the negotiating process that led to the meeting in Kyoto, such movements of domestic actors would not have occurred, and those movements still play significant roles in raising people's awareness on the issue.

### ***3.3. Kyoto Protocol negotiations: A new approach to foreign policy***

Japanese foreign policy since the end of the Second World War in 1945 has been based particularly on maintaining good relations with the United States (Hasegawa 2004). Japan has relied on the US for its national security, and it has been one of Japan's largest trading partners, although American industries are tough competitors for Japanese industries at the same time. For Japanese policy makers, maintaining peaceful relations with the United States was considered to be the safest way to secure prosperity. Thus, during the negotiations leading up to COP 3, the Japanese government was keen to satisfy the conditions set by the US for accepting the Kyoto Protocol. When the United States accepted a 7 percent reduction target, Japan had no other choice but to accept a 6 percent target for itself.

When the United States withdrew from the Kyoto Protocol, Japan made efforts to bring it back to the regime. When these efforts failed, internal debates started on whether or not Japan should follow the US. Those who considered traditional foreign policy to be important insisted that Japan should also

withdraw and announce that it would not ratify the protocol unless the US did. Meanwhile, others said that Japan should go its own way on issues in which it had different interests from the United States. Indeed, the US and Japan face very different challenges from the climate policy point of view, such as the amount of coal and oil reserves in their respective territories and the relatively higher energy efficiency of appliances in Japan. In this sense, the Bonn meeting in 2001 was a landmark for Japanese foreign policy, where Japan began to walk its own road without the United States, which has led to a new dimension in Japanese foreign policy.

It is unknown, however, whether Japan will continue walking this new road in the future. There is always strong pressure to stay in line with the United States, and the Japanese position may return to the traditional one again in future negotiations. This element is elaborated in the next section.

### ***3.4. The Kyoto Protocol: Part of a learning process in multilateral negotiations on climate change***

There is a wide variety of sentiments in Japan towards the Kyoto Protocol at this moment. It may have been the most that was achievable at COP 3, but is it still the best seven years later. The experience of being involved in negotiating the adoption of the Kyoto Protocol and the Marrakesh Accords was important for Japan to learn how to respond to this complicated global problem.

From the environmentalist's point of view, emission targets in Annex B countries are considered only the first step of a more ambitious challenge towards mitigation of climate change.<sup>2</sup> The Kyoto Protocol also allows countries to use the Kyoto Mechanisms, so that the emission targets may be met by purchasing emission allowances from abroad rather than by reducing emissions at home. With the "hot air" attributed to some countries, the emission targets of the Kyoto Protocol were made even more lenient. In the case of Japan, its response to negotiations after COP 4 was also criticized, because Japan drove itself into negotiating positions that focused on minute details to reach the 6 percent reduction target by changing definitions and calculation rules, but these had little to do with actual emissions reduction in physical terms. This approach was evident in Japan's positions on the LULUCF in Article 3.4 and on the availability of the Kyoto Mechanisms. With the Marrakesh Accords it became methodologically easier for Japan to achieve the 6 percent target, but it still has no long-term national climate strategy for the years beyond 2012.

On the other hand, especially for those related to industry, the 6 percent reduction target is a tough one to achieve. Emissions are still increasing, and there are no sufficient policies agreed and measures in place in Japan to change the trend. Japanese industry is strongly opposed to a carbon tax and other means to reduce CO<sub>2</sub> emissions—insisting that such policies would harm the economy and that Japanese industry would lose competitiveness under the current regime, because industries in the United States and the developing countries do not face the same constraints. In addition, after the US withdrew from the Kyoto Protocol in 2001, industry called the protocol a failure for allowing the largest emitter to so easily abandon its commitment. At the time of COP 3, the Japanese government agreed to the 6 percent reduction target set by the protocol, not because it was satisfied with it but because the US agreed to a 7

---

2. These are the emissions-capped industrialized countries and economies in transition listed in Annex B of the Kyoto Protocol.

percent reduction target. Since March 2001, the US has stayed out of the Kyoto arena. Those critical of the protocol say that Japan should not have committed to the 6 percent reduction target if the United States was not part of the game.

The critics also view the Kyoto Protocol as an unfair treaty, because they consider that emissions from some European Union member countries had been reduced due to factors not directly related to climate, such as political and economic changes. With the enlargement of the EU, CO<sub>2</sub> emissions from the European Union as a whole could be further reduced at relatively little cost, especially if the base year for comparison was kept as 1990. More than just a small part of Japanese industry is unhappy with this approach that set an emission target in comparison with 1990. They insist that Japanese energy efficiency improvements and energy substitutions occurred mainly in the 1970s, in response to the two oil shocks in that decade. For Japan, it is more beneficial to compare emissions from the 1970s or compare by other criteria, such as emissions per capita.

The formation of different emotions towards the Kyoto Protocol is a kind of learning process that arose from COP 3 and later. Japanese stakeholders now have a clearer view on how the next round of negotiations should be.

#### 4. Towards the future

Japan has been very interested in current debates on what should be done after 2012, the end of the first commitment period of the Kyoto Protocol. Such high awareness has been developed based on what was suggested as a “learning process” in the previous section. The internal debate became popular, especially after COP 8, when the timing of Kyoto Protocol’s entry into force became increasingly vague.

In July 2003, METI’s Environmental Committee, under the Industrial Structure Council, published an interim report of their debate on the future framework for climate change negotiation (METI 2003). The report asserts that there are four fundamental bases on which a future climate framework should stand: (1) the need for technological breakthrough; (2) a diversified agenda in each nation, region, and sector; (3) the tremendous global cost of mitigation policies; and (4) the reality that scientific uncertainties remain. The report emphasizes the scientific uncertainties, stating, “[T]he mechanisms and effects of climate change still have significant uncertainties.” At the same time, it says, “[P]revention of global warming will require the world to bear enormous costs for measures.” Thus, the report expresses the view that a major technological breakthrough is needed, saying that “a future framework should take into account development and dissemination of innovative technology related to mitigation of climate change.” Such technology should be developed and disseminated mainly in a voluntary manner, because “the actions required to prevent global warming may vary widely depending on the specific situation of each nation, region, and sector, and there are very significant variations in the costs for those actions.”

Japan’s MOE also requested the Global Environment Committee, under the Central Environment Council, to publish an interim report in January 2004 (Ministry of the Environment 2004). This report proposed the following seven fundamental bases for the way forward:

- maintain progress towards meeting the ultimate objective of the UNFCCC,
- bring the Kyoto Protocol into effect and fulfill commitments,



- achieve global participation,
- ensure equity based on the principle of common but differentiated responsibilities,
- build negotiations on existing international agreements,
- formulate an international consensus-building process by national governments with the participation of various actors, and
- make the environment and economy mutually reinforcing.

The report refers to the Third Assessment Report (TAR) of the Intergovernmental Panel on Climate Change (IPCC) and concluded that “relevant scientific work over several decades has reduced scientific uncertainty.” The Kyoto Protocol is considered an important first step towards meeting the ultimate objective of the UNFCCC, which is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. In the next round of negotiations for the years after 2012, the report considers that “ensuring environmental integrity of the climate regime requires global participation” and, therefore, that “the climate regime beyond 2012 needs to achieve the participation of all countries, including the USA and developing countries.” The level of participation needs to be differentiated based on the principle of common but differentiated responsibilities.

Both METI's Environmental Committee and the Global Environment Committee are now engaged in deeper discussions to finalize their work by the end of 2004. There are both similarities and differences in the two interim reports that the two committees produced. Both consider the participation of the United States and major developing countries to be indispensable in the next round of negotiations; this is an aspect that the current Kyoto Protocol could not achieve. Both reports also acknowledge the roles of the economy and technology, and encourage incentives for countries and domestic actors to shift towards more climate-friendly actions. The three flexibility mechanisms (international emissions trading, joint implementation, and the Clean Development Mechanism) that were established in the Kyoto Protocol have been driving forces in Japan since COP 3. Institutional arrangements for them have been progressing independently from the protocol's prospects for entry into force, a sign of the value that Japan sees in the economic incentives created through the protocol.

With all the commonalities, however, there is still a large gap between the two reports as to the process needed to move forward. And there is a large discrepancy between the two on perceptions of and ways to deal with scientific uncertainty, on how much equity is considered as important, and on the role of governments. These differences led to two different positions on how international society should deal with the climate problem in the future. Such divergent views are a reflection of the two different views in Japan on the Kyoto Protocol. As Japan's government consolidates its national positions on issues by merging the demands of all ministries concerned, its position in future negotiations is likely to remain vague externally. Internally, however, the positions of domestic actors in Japan on the climate change issue will be much clearer than before. The Japanese people are becoming increasingly concerned about climate change policies and are starting to throw their support on one side or the other of Japan's views on the Kyoto Protocol.

Many crucial moments still lie ahead for Japan. Until the United States returns to the Kyoto Protocol, or any kind of international negotiations on a future climate regime, Japan will be constantly compared to the European Union, whose positions on climate change policy have been much more proactive than Japan. And developing countries will continue to criticize Japan for not being able to reduce its own emissions. Under these circumstances, Japan's future decisions should not be formulated only through internal coordination among relevant government ministries and influential industries, but by involving all stakeholders. The nation as a whole must address the issue. It is already being affected by climate change. Just two examples: cherry trees that used to reach full bloom in April have been blooming in March in recent years, and the snowcap on Mount Fuji is shrinking and in danger of disappearing (Harasawa and Nishioka 2003). Japan's citizens need to be fully informed of the impacts of climate change on their daily lives and to come up with their own evaluation of the Kyoto Protocol and beyond. It is their voices that should be fully reflected in Japan's national positions on climate change.

## Acknowledgements

This study was conducted under a research project on the future international climate change regime after 2012 funded by the Ministry of the Environment of Japan. The author would like to thank the ministry its support.

## References

- Government of Japan. 1998. Guideline of measures to prevent global warming. Tokyo: Government of Japan.
- . 2002. Japan's third national communication under the United Nations Framework Convention on Climate Change, submitted to UNFCCC Secretariat. Tokyo: Government of Japan.
- Grubb, M., and F. Yamin. 2001. Climatic collapse at The Hague: What happened, why, and where do we go from here? *International Affairs* 77 (2): 261–276.
- Grubb, M., with C. Vrolijk and D. Brack. 1999. The Kyoto Protocol: A guide and assessment. The Royal Institute of International Affairs. London: Earthscan.
- Harasawa, H., and S. Nishioka, eds. 2003. *chikyuu ondanka to Nippon* [Global warming and Japan]. Tokyo: Kokin Shoin.
- Harris, P. 2000. Climate change: Is the United States sharing the burden? In *Climate Change & American Foreign Policy*, ed. P. Harris, 29–50. New York: St. Martin's Press.
- Hasegawa, Y. 2004. *Nippon Gaiko no Aidentiti* [Identity of Japanese foreign policy]. Tokyo: Nansousha.
- Kawashima, Y. 2000. Japan's decision-making about climate change problems: Comparative study of decisions in 1990 and in 1997. *Environmental Economics and Policy Studies* 3 (1): 29–57.
- Keidanren. 1997. *Keidanren voluntary action plan on the environment*. Tokyo: Keidanren.
- Ministry of Economy, Trade and Industry, Japan (METI). 2003. Perspectives and actions to construct a future sustainable framework on climate change. Interim report, Global Environmental Subcommittee Environmental Committee Industrial Structure Council. Tokyo: METI.
- Ministry of the Environment (MOE), Japan. 2004. Climate regime beyond 2012: Basic considerations. Interim report. Global Environment Committee, Japan's Central Environment Council. Tokyo: MOE.

Oberthür, S., and H. Ott. 1999. *The Kyoto Protocol: International climate policy for the 21st century*. Berlin: Springer.

Schreurs, M. 2002. *Environmental politics in Japan, Germany, and the United States*. Cambridge: Cambridge University Press.

Takeuchi, K. 1998. *Chikyu Ondanka no Seijigaku* [The politics of global warming]. Tokyo: Asahi Sensho.

Tanabe, T. 1999. *Chikyu Ondanka to Kankyo Gaiko* [Global warming and environmental diplomacy]. Tokyo: Jijitsushinsha.