Part I

CLIMATE CHANGE AND DEVELOPMENT

Chapter 1

Japan's Commitment to Climate Change Issues

(Source: AFP=Jiji)

Section 1. Discussions on Climate Change Issues in the International Community

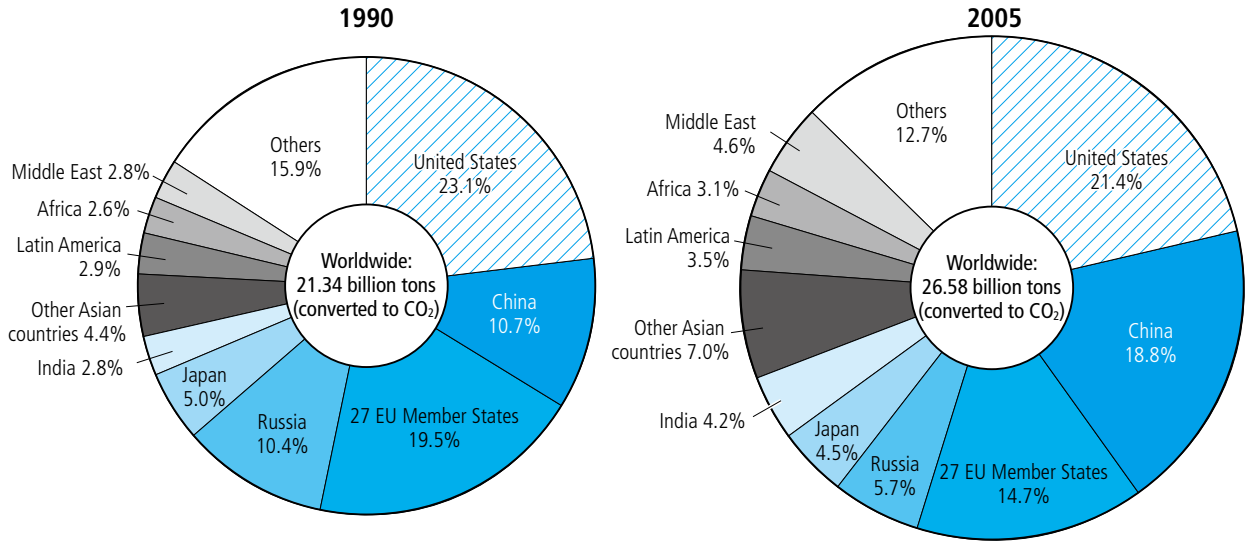
1. Climate Change Issues as Pressing Challenges

Climate change issues pose pressing challenges that threaten human security for both developed and developing countries, without regard for borders. The international community must urgently unite to cope with them. In November 2007, the Intergovernmental Panel on Climate Change (IPCC)[1] issued the Synthesis Report of the IPCC Fourth Assessment Report. The Report predicts a strong possibility that even if countries continue with existing mitigation policies and sustainable development measures, the worldwide volume of greenhouse gas (GHG) emissions will continue to rise in the next several decades. It further states that if greenhouse gas emissions rise faster than their current pace, it is highly likely that the 21st century will face more advanced warming, on a scale greater than that of the 20th century. It also illustrates the seriousness of these issues and the need to address them immediately.

It is said that the world is already undergoing apparent impacts caused by climate change due to global warming, through such phenomena as increased frequency of heavy rainfalls, rises in sea level, deaths from heat waves, spread of infectious diseases through intermediary organisms, and ecosystem changes such as shifts of animal and plant habitats toward higher latitudes and higher altitude lands. A greater range of phenomena is predicted to occur as global warming advances further. We are facing many challenges as we try to address these increasingly serious climate change issues. A major focus of the international community is placed on debates on the new framework beyond 2012, to succeed the first commitment period of the Kyoto Protocol, which will expire in 2012.

1 IPCC: Intergovernmental Panel on Climate Change
A global venue to assemble top-level experts from different countries to discuss and verify global warming issues, and give scientifically-based proposals to policy makers. It was jointly established in November 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

Chart I-1. Global Carbon Dioxide Emissions from Fossil Fuel Combustion



Source: OECD (2007), "CO_2 Emissions from Fossil Fuel Combustion, 1971-2005."

2. 13th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP13)

Major political momentum was seen in 2007 as climate change was discussed at the summit level as a significant issue faced by the international community, which meant a shift from the previous standard view that climate change was simply one of many global environmental issues. A specific step taken was agreement on the Bali Action Plan at COP13, held on Bali Island, Indonesia from December 3 to 15, 2007. This Action Plan called for the establishment of a new working group, to be joined by all COP members, aimed at long-term cooperation under the Convention and at completing the group's mission by 2009. This was a landmark agreement in the field of climate change negotiations as it set up an arena for negotiating the framework beyond 2012. Japan presented specific proposals at an early stage, greatly contributing to the agreement on the Plan. As a result, the structure of the negotiation process largely reflected what Japan had proposed.

3. G8 Hokkaido Toyako Summit and Leaders' Meeting of Major Economies

The environment and climate change became one of the main agenda at the G8 Hokkaido Toyako Summit held from July 7 to 9, 2008. The following three points summarize the results of the discussions on climate change issues at the G8 Summit.

(1) Long-term Goals

With respect to the goal of achieving at least 50% reduction of global emissions by 2050, the G8 leaders agreed to seek to share, negotiate and adopt it with all Parties to the United Nations Framework Convention on Climate Change.

(2) Mid-term Goals

The G8 leaders agreed to implement ambitious, economy-wide mid-term goals, reflecting comparable efforts among

Prime Minister Taro Aso engaging in a general debate at the 63rd Session of the UN General Assembly
(Source: Cabinet Public Relations Office)

all developed economies, in order for each G8 country to recognize its leadership role and to achieve absolute emissions reductions. The leaders agreed, at the same time, that in order to ensure an effective and ambitious global post-2012 climate regime, all major economies will need to commit to meaningful mitigation actions.

(3) Relations with Developing Countries

The G8 leaders welcomed and supported the establishment, on July 1, of the Climate Investment Funds administered by the World Bank to support the efforts of developing countries to cut greenhouse gases and seek adaptation measures. Recognizing that poorer countries are among the most vulnerable to the adverse impacts of climate change, the leaders agreed to continue and enhance cooperation in

Chart I-2. Results for the Environment and Climate Change

G8 Heiligendamm Summit Outcomes

(a) Consider seriously at least a halving of global emissions of greenhouse gases by 2050
(b) Call for participation in COP13 to achieve a comprehensive post-2012 agreement that will include all major emitters.
(c) Welcome the proposal by the United States to host the major emitting countries meeting later in 2007

Main Results of G8 Hokkaido Toyako Summit on Climate Change

	G8	MEM (Major Economies Meeting) (G8+China, India, South Africa, Brazil, Mexico, Indonesia, Australia, Republic of Korea)
Long-term goal	• Seek to share with all Parties to the UNFCCC the vision of, and consider and adopt in the UNFCCC negotiations the goal of achieving at least 50% reduction of global emissions by 2050.	• Support a shared vision for long-term cooperative action, including a long-term global goal for emission reductions. • Desirable for the Parties to adopt a long-term global goal, taking into account the principle of equity.
Mid-term goal	• Acknowledge G8's leadership role and implement ambitious economy-wide mid-term goals in order to achieve absolute emissions reductions.	• The developed major economies will implement economy-wide mid-term goals and take corresponding actions in order to achieve absolute emission reductions. • The developing major economies will pursue, in the context of sustainable development, nationally appropriate mitigation actions, supported and enabled by technology, financing and capacity-building, with a view to achieving a deviation from business as usual emissions.
Sectoral approaches	• Useful tools for achieving national emission reduction objectives. • Can be useful tools to improve energy efficiency and reduce GHG emissions.	• Promote the exchange of mitigation information and analysis on sectoral efficiency. • Consider the role of cooperative sectoral approaches and sector-specific actions, consistent with the Convention.
Others	• Establish an international initiative to develop roadmaps for innovative technologies. • Welcome and support the establishment of the Climate Investment Funds (CIF) (G8 members have thus far pledged approximately US$6 billion).	• Recognize that actions to increase removals by sinks in the land use, land use change and forestry sector can make a contribution to stabilizing GHG in the atmosphere. • Work together to strengthen the ability of developing countries to adapt to climate change. • Affirm the critical role of technology and the need for technological breakthroughs.

their efforts to adapt to climate change including disaster risk reduction.

Furthermore, the MEM Leaders' Meeting,[2] held on July 9, which served as the first venue for exclusive discussions on climate change issues, was joined by 16 leading economies including developing countries. MEM participants agreed, among other goals: (1) to share the vision of a long-term goal to reduce global GHG emissions and a desire that global long-term goals be adopted by the COP members through negotiations under its Convention, (2) that developing major economies will pursue nationally appropriate mitigation actions with a view to achieving a deviation from business as usual emissions, and (3) to jointly strive to help developing countries strengthen their adaptation abilities.

Section 2. Japan's Leadership

1. Announcement of the "Cool Earth Promotion Programme"

While climate change requires prompt actions, Japan is actively exhibiting its leadership on this issue.

In January 2008, then Prime Minister Yasuo Fukuda announced the Cool Earth Promotion Programme, in his special address at the annual meeting of the World Economic Forum (commonly known as the "Davos Meeting"). The Programme reflected Japan's determination that it would, along with other major emitters, set a quantified national target for GHG emissions reductions. In setting this target, the Programme called for the use of a bottom-up approach to ensure the equity of reduction obligations by compiling, on a sectoral basis, energy efficiency as a scientific and transparent measurement. It also proposed the tallying up of the potential reduction volumes that would be achieved based on the technologies that will be in use in the coming years.

Moreover, the Programme proposed the establishment of the "Cool Earth Partnership," targeting those developing countries that are aiming to achieve both emissions reductions and economic growth simultaneously, and are working to contribute to climate stability. Through the provision of new funding for this Cool Earth Partnership on the scale of US$10 billion, Japan would cooperate actively with developing countries to reduce emissions and conserve energy. Also through this Partnership, Japan aims at extending the hand of assistance to developing countries suffering severe adverse impacts as a result of climate change, in order to strengthen solidarity with developing countries and work towards the reduction of greenhouse gases globally.

2. In Pursuit of "Japan as a Low-Carbon Society" – Presentation of the Country's Targets

In June 2008, a month before the G8 Hokkaido Toyako Summit, then Prime Minister Fukuda delivered a speech entitled "In Pursuit of 'Japan as a Low-Carbon Society.'" In the speech, he called for the halving of global CO_2 emissions by the year 2050 to be a shared goal for the G8 and other major economies. Saying that developed countries should contribute more than developing countries, he presented Japan's long-term goal to reduce its current level of emissions by 60-80% by 2050. He said Japan would step up the development of innovative technologies, taking the lead to create a low-carbon society. As mid-term goals, he said he would persuade other nations to analyze the actual extent of their reduction potentials by applying a sectoral approach and to report on the results at the Fourteenth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP14). He also said he would strive to gain the understanding of nations around the world to establish a common methodology, bearing in mind other countries' assessments of the sectoral approach. As for Japan's quantified national target, he said that Japan intended to announce it at an appropriate time in 2009. He presented Japan's determination to lead the drive toward a low-carbon society by further accelerating its efforts to develop innovative technologies as essential tools for Japan to drastically cut emissions. He then laid out four main concrete measures: (1) developing innovative technologies while disseminating existing advanced technologies, (2) framework-building to move the entire country to lower carbon emissions, (3) active role of local regions, and (4) having each citizen act as a protagonist toward a low-carbon society. In line with the then Prime Minister's previously mentioned speech and proposals made by the Council on the Global Warming Issue in June 2008, the Government of Japan formulated the Action Plan for Achieving a Low-Carbon Society, which illustrated specific measures for each of the aforementioned policy plans.

2 MEM: Major Economies Meeting
Attended by 16 countries including the G8 nations, Australia, Brazil, China, India, Indonesia, Mexico, the Republic of Korea, and South Africa. Its commencement was proposed by U.S. President George W. Bush in May 2007, which was welcomed in the Leaders' Declaration issued at the G8 Heiligendamm Summit in 2007. Since then, the MEM was held on four occasions up to the time of the G8 Hokkaido Toyako Summit. At the Toyako Summit, the MEM held its first summit meeting.

Chart I-3. Japan's Climate Change Policies

Cool Earth 50 (May 2007)

1. Long-Term Strategy

- Share global long-term goal of reducing global greenhouse gas emissions by 50% from the current level by 2050.
- Long-term vision of developing innovative technology and building a low-carbon society.

2. Three Principles to Build a Framework beyond 2012

- (a) All major emitters must participate and reduce global emissions, moving beyond the Kyoto Protocol.
  (b) Adopt a flexible and diverse framework to meet the circumstances of each country.
  (c) Utilize energy saving and other technologies to achieve both environmental protection and economic growth.
- Build a new financing mechanism of an appropriate scale over the long term to support ambitious developing nations.

3. Mobilize people to achieve the Kyoto Protocol target

- Call for reducing GHGs by "1 person, 1 day, 1 kg"; solicit new proposals.

Cool Earth Promotion Programme (January 2008)

1. Post-Kyoto Framework

- IPCC warning that global greenhouse gas emissions must peak within 10 to 20 years, and to be reduced by at least half by 2050.
- Establish quantified national emission reduction targets for each country with the major emitting countries toward reducing greenhouse gas emissions.
- Ensure fair the equity of reduction obligations when setting goals by calculating energy efficiency by sector and tallying up the reduction volume that will be achieved based on the technology to be in use in the future.

2. International Environmental Cooperation

- Share a goal of improving global energy efficiency by 30% by 2020.
- Establish the Cool Earth Partnership, a new financial mechanism on the scale of US$10.0 billion to support efforts by developing countries to combat global warming.

3. Innovation

- Develop innovative technologies and shift to a low-carbon society. Invest about US$30.0 billion over the next 5 years with an emphasis on R&D for the environment and energy.

In Pursuit of "Japan as a Low-Carbon Society" (June 9, 2008)

1. Japan's Mid-Term and Long-Term Goals

1) Long-Term Goals
- Share a goal of reducing global greenhouse gas emissions by 50% by 2050 with G8 and major emitters.
- Japan, as a developed country, must contribute more than developing countries and will set a goal of reducing greenhouse gas emissions by 60 to 80% from current levels by 2050.

2) Mid-Term Goals
- In order to achieve the long-term goal of 50% reduction by 2050, it is necessary that global emissions peak in the next 10 to 20 years. Sectoral approaches will be effective tools to meet these goals.
- Promote an establishment of international consensus on methodology to set national goals. Urge each country to report on outcomes of analysis for this subject in COP14. Japan will announce its national target at an appropriate time in 2009.

2. Concrete Measures (Four Pillars)

1) Develop new innovative technologies and disseminate existing advanced technologies
- Contribute a maximum of US$1.2 billion to a new multinational fund to support efforts by developing countries to deal with climate change.
- Propose International Partnership for Environment and Energy at the G8 Hokkaido Toyako Summit to accelerate efforts toward innovative technologies.
- Increase use of solar energy by 10 times by 2020 and by 40 times by 2030 in order to recover position as world leader in solar energy.
- Convert all light bulbs from incandescent to low-energy bulbs by 2012.
- Develop systems to oblige energy efficient homes and buildings, and promote housing which last 200 years.

2) Structure to move the entire country toward a low carbon society
- Trial run integrated domestic market for emissions trading from the fall of 2008.
- Implement a comprehensive review of the tax system including green taxation such as introduction of environmental taxes.
- Implement trial carbon footprint system from FY2009 to promote visibility of CO_2 emissions.

3) Regional activities
- Select 10 environmental model cities, and provide government backing for bold breakthrough efforts.

4) Nation-led low-carbon society
- Consider introduction of summer time system, and establish July 7 as Cool Earth Day.

Chapter 2

Promotion of the Cool Earth Partnership

Then Prime Minister Yasuo Fukuda holding a press conference at the G8 Hokkaido Toyako Summit (July 2008) (Source: Cabinet Public Relations Office)

Section 1. Measures against Climate Change by Developing Countries

1. Climate Change Adaptation and Mitigation Measures

A characteristic of climate change countermeasures is that they cannot be addressed by a single country and require global-scale approaches. To take climate change countermeasures at such a level, individual countries must take international as well as domestic actions. Promoting climate change countermeasures is critical for developing countries in particular, as their rapid economic growth is expected to boost greenhouse gas (GHG) emissions.

As global warming goes on, climate change issues pose a new, major challenge for mankind. If we remain inactive, we may face a catastrophe that would engulf both the natural environment and socio-economic activities. Particularly in many developing countries, their possibility of facing negative impacts of climate change in the near future is increasing, for they are not able to cope with current climate conditions sufficiently.

(1) Adaptation – Response to Adverse Effects of Climate Change

In developing countries in particular, climate change and development are closely related and cannot be approached separately. The Human Development Report 2007/2008 of the United Nations Development Programme (UNDP) warned that climate change was hampering efforts to deliver on the promises of the Millennium Development Goals. According to the report, climate change stalls and reverses progress made in the eradication of extreme poverty, promotion of health, nutrition, and education, and work in other areas of human development.

An effective approach to climate change requires the organization of social and economic factors, including infrastructure, technology, information, financial resources, and management capabilities. Developing countries tend to lack these assets, and this situation results in delayed measures against climate change.

To avoid such adverse impacts, short-term, and fast-acting measures must be advanced through further enhancement of support in various areas that would suffer due to the impacts of climate change like water resources, forest

conservation, agriculture, health, education, infrastructure, and disaster countermeasures. In addition, mid- to long-term initiatives to strengthen social resilience are also necessary. Such initiatives should be based on the perspective of adaptation in developing countries through development policies carried out by themselves.

Some people identify climate change and development as separate issues. They regard climate change as a new problem which has arisen in addition to existing development themes such as poverty reduction. Based on this perspective, they argue that funding for climate change should not be diverted from that for poverty reduction. However, we cannot fundamentally separate climate change from development. No development project disregarding climate change issues can reach positive results. And vice versa, we need approaches based on a national-level perspective to advance climate change countermeasures.

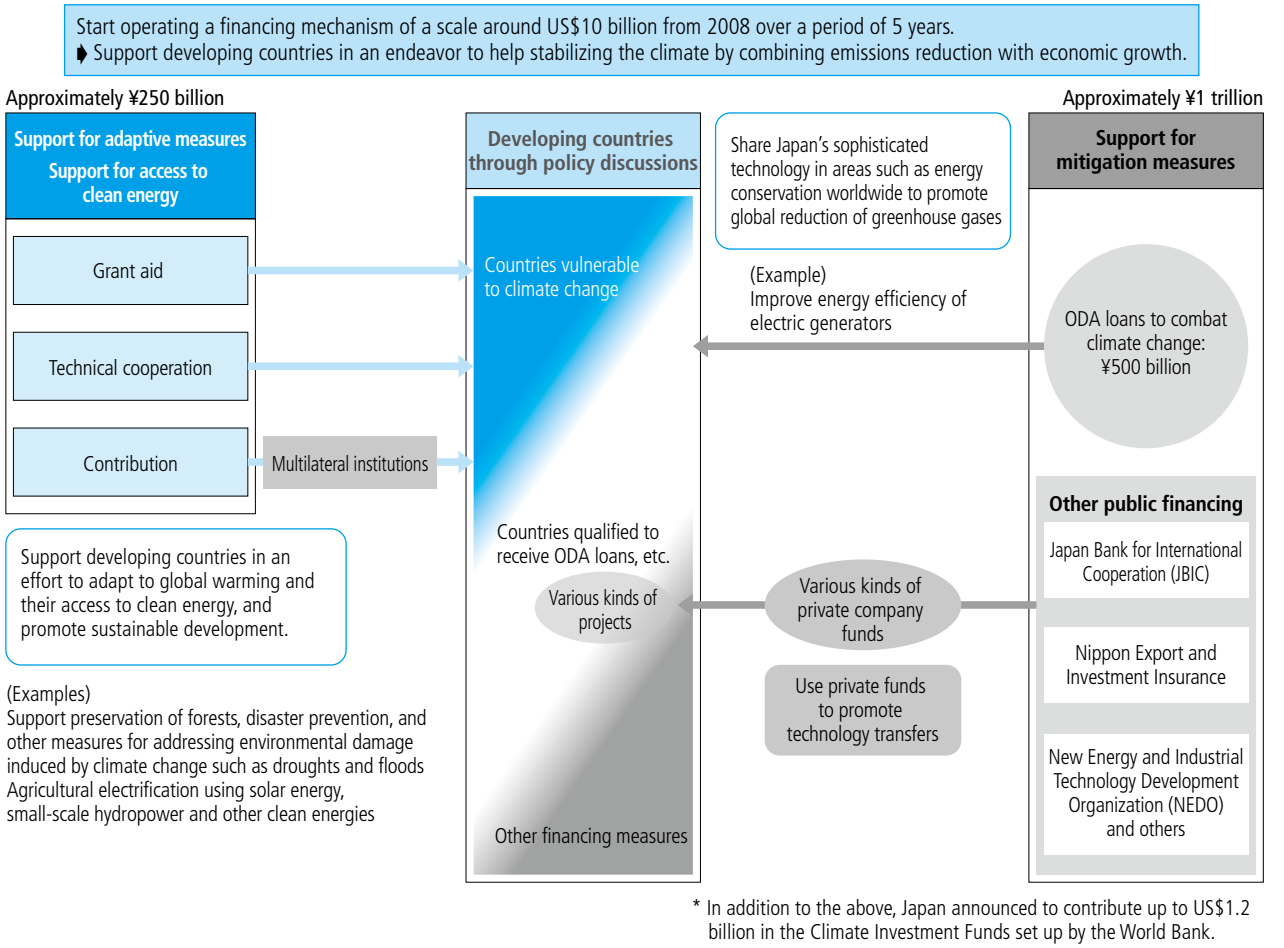
(2) Mitigation – Reduction of Greenhouse Gas Emissions

Greenhouse gases are not only emitted by developed countries. Today, about half of all GHG emissions come from developing countries that are not obliged to reduce GHG emissions under the Kyoto Protocol. Developing countries, too, need to work on cutting their own GHG emissions.

On the other hand, developing countries often face shortages of expertise and funding to promote emissions reductions on their own, therefore they require active support from developed countries to advance reduction initiatives. Since greenhouse gases have various sources of emission and absorption, they require a comprehensive set of measures that include approaches targeting both GHG reductions and preventing environmental pollution (co-benefit approaches), while covering various fields such as energy, transportation and forest conservation.

Some developing countries are wary of addressing climate change issues as they believe that economic growth can be hampered by cutting GHG emissions. On

Chart I-4. Overview of Cool Earth Partnership (Image)



* In addition to the above, Japan announced to contribute up to US$1.2 billion in the Climate Investment Funds set up by the World Bank.

the contrary, however, the reality is that negative impacts on economic growth and development can be minimized by launching countermeasures for climate change at an early stage and continuing for a long period, which in the long run could cause grave impacts on the global economy.

2. Clean Development Mechanism (CDM)

The Clean Development Mechanism (CDM) is a scheme introduced under the Kyoto Protocol that helps developing countries address global warming. While developed countries are given goals for reducing their GHG emissions under the Kyoto Protocol, the CDM has these countries contribute to the sustainable development of developing countries, as developing and developed countries work together on projects that contribute to cuts and absorption of GHG emissions in developing countries. By joining in these efforts, developed countries are eligible to receive credit (cap) that represents the amount of reduction/absorption achieved through the country's commitment. The CDM affords developing countries additional investment for development in energy and other sectors. Japan, which has the potential to gain credit under the CDM, intends to promote support for developing countries to advance the CDM and actively register its ODA projects in the CDM. At the same time, Japan will use the co-benefit approach as a base to promote anti-pollution measures in developing countries.

However, the current CDM is seen to have a tendency to allow more funds to flow into those countries that have already achieved certain levels of economic development and that have greater potential to reduce emissions. This issue should be reviewed in order to ensure unbiased distribution of funds to its member countries without regional gaps. The CDM must also provide incentives to advance developing countries' efforts for reducing emissions.

(Source: AFP=Jiji)

Section 2. Cool Earth Partnership

1. Strengthening of Ties with Developing Countries

Japan, during its period of rapid economic growth, experienced both industrial development and serious degradation of the environment. The country sought to advance energy-saving technologies through the years of the oil crisis that followed the economic boom. These experiences have turned Japan into a leader in energy conservation commitments. In particular, Japan's experiences have made it a model for energy-saving efforts. For example, with regard to consumer appliances, the latest refrigerators consume 50% less power than those manufactured a decade ago. Given the widespread use of refrigerators, this represents major energy saving effects. Furthermore, if the level of efficiency proved by Japan's coal power generation were adopted by the United States, China, and India, it would reduce CO_2 emissions by 1.3 billion tons, equivalent to the total amount emitted by Japan alone.

At the Davos Meeting in January 2008, then Prime Minister Yasuo Fukuda laid out the Cool Earth Partnership fund on the scale of 1.25 trillion yen (about US$10 billion) for a period of five years, as part of the Cool Earth Promotion Programme. Through this, he said, Japan would cooperate actively with developing countries' efforts to reduce emissions, such as efforts to enhance energy efficiency, while seeking economic growth, thereby contributing to climate stabilization.

Specifically, a total of about 250 billion yen in support over five years, starting from 2008, will be granted to developing countries which make efforts to both reduce GHG emissions and achieve economic growth in a compatible manner on the basis of policy consultations between Japan and those countries. These funds will be offered through grant aid, such as program grant aid for Environment and Climate Change, technical cooperation, and through international organizations such as UNDP. Japan has also established the Climate Change Japanese ODA Loan (Cool Earth Loan) which will be disbursed up to about 500 billion yen with special interest rates, for the purpose of supporting implementation of recipients' programs to address global warming. Furthermore, through capital contribution and guarantees by the Japan Bank for International Cooperation (JBIC), trade and investment insurance by the Nippon Export and Investment Insurance (NEXI), government subsidies, and private funds, up to 500 billion yen will be

provided over five years for projects to reduce GHG emissions in developing countries.

Through these initiatives, Japan will actively cooperate with developing countries in their efforts to reduce emissions, and will also support developing countries suffering serious damage caused by climate change. In these ways Japan will strengthen solidarity with developing countries in order to tackle this global issue. Specific plans include projects to cope with climate change such as forest conservation and disaster prevention (droughts, floods, etc.), technical support for disaster prevention and planning adaptation measures, support for rural development through electrification by clean energy, yen loans for reductions of GHG levels through energy conservation measures, etc.

2. Cooperation with Individual Countries

Under these policies, Japan is currently working with about 60 countries to promote measures under the Cool Earth Partnership (as of October 2008).

Japan offered Indonesia the first yen loan scheme based on the Cool Earth Partnership in the amount of US$300 million as a climate change program loan. Indonesia has evaluated highly the ideas laid out by Japan to cope with climate change issues, such as the Cool Earth Promotion Programme. Indonesia, which hosted COP13 on Bali Island, is actively committed to creating a framework beyond 2012. The country has also made efforts to tackle global warming internally by formulating its own national strategy to address climate change. By supporting Indonesia's measures against climate change through policy dialogue, this program loan will contribute to (1) mitigation of global warming by carbon absorption and emission control through the creation of GHG emission reduction goals and roadmaps that reflect the ideas of the sectoral approach, (2) strengthening adaptability to the negative effects of climate change, and (3) responding to cross-sectoral issues of climate change.

Furthermore, in relation to Tuvalu, a country facing the negative impacts of climate change, Japan dispatched a mission to the country from February to March 2008 to seek out possibilities of cooperation in countermeasures for climate change issues. Based on the results of the investigation, Japan plans to promote cooperation with Tuvalu in three areas (seashore preservation, disaster prevention, and alternative energy).

Moreover, Japan promotes Cool Earth Partners meetings on occasions such as international conferences in order to help deepen their understanding of Japan's views regarding the negotiations for the next framework for climate change. Japan also seeks to offer information to these countries through embassies.

Japan expects that these efforts will enhance the global reduction of GHG emissions and help developing countries overcome their fragility regarding climate change. Japan moreover hopes these measures will promote the active commitment of all parties to make the next framework effective.

No matter how stringent the measures countries take to reduce GHG emissions are, and regardless of whether a country is developed or developing, the whole world is currently facing the inevitable risks of climate change over the next few decades. Climate change issues will continue to be part of the most urgent development agenda. Japan will continue to be committed to its Cool Earth Partnership and will further promote policy dialogue with developing countries to concurrently seek GHG reductions and economic growth.