

# ODA Thematic Evaluation: Counter Global Warming– Related ODA

## Summary Report

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## Introduction

Global warming and climate change derives from the increase in concentration levels of greenhouse gases (GHG) in the atmosphere due to anthropogenic emissions. It causes a temperature rise on the earth's surface and in the atmosphere, which has an adverse impact on the natural ecosystem and humankind. Considering the magnitude and seriousness of its anticipated impact, it is regarded as one of the most crucial environmental problems, with an important bearing on humankind's very subsistence.

Based on the spirit of the United Nations Framework Convention on Climate Change (UNFCCC), Japan has taken various measures both domestically and internationally to counter global warming and the global risk presented to the sustainable development of human society. In the field of international cooperation, in particular, Japan has implemented diverse assistance for counter global warming efforts in developing countries, in accordance with its revised "Guideline of Measures to Prevent Global Warming", stating that "[Japan] is to harness its accumulated excellent technology and experience in environmental preservation, and play a leading role in worldwide efforts to this end through international cooperation." In the context of the Initiative for Sustainable Development (ISD) announced in 1997, which aims to provide a policy framework for Japan's environment- related official development assistance (ODA), it has designated counter global warming as one of the six major fields for ODA along with air and water pollution,

waste disposal, nature conservation and afforestation, "fresh water" problems, and public awareness and strategy building. Since 1998, Japan has provided some 867 billion yen in ODA for addressing global warming through ISD.

In the international community, the year 2001 saw both substantial turmoil and progress on the global warming and climate change issues, such as the United States' rejection of the Kyoto Protocol and the international agreement reached at COP8 (i.e., the Marrakech Accord). While the international community awaits the return of the United States, the country that emits the largest amount of GHG in the world, to the international cooperation framework, international measures to counter global warming and climate change are anticipated to gather momentum rapidly as the clean development mechanism (CDM) will be practically initiated and funds to support developing countries as agreed in Marrakech will be established. Since Japan is likely to face difficulty in achieving its Kyoto Protocol targets through only domestic measures while GHG emissions from developing countries are projected to increase, it is certainly extremely important for Japan to make an international contribution to counter global warming through its ODA.

This report concerns Japanese counter global warming- related ODA\* centered on the Kyoto Initiative, which has been promoted by Japan since 1998 under the ISD. It attempts to set forth recommendations for the future role of the counter global warming- related ODA as well as presenting a holistic, multifaceted assessment of this ODA in the aim of contributing to Japanese input into the World Summit on Sustainable Development (WSSD) which is due to be held in August- September 2002.

(\* For the purpose of this report, counter global warming- related ODA includes emission reduction, carbon sinks, and adaptation measures.)

## **Need for counter global warming- related ODA**

### **(1) Contribution to international cooperation addressing global warming**

UNFCCC and the Kyoto Protocol, which legally binds Annex-I countries (or developed countries and countries in economic transition) to reduce GHG emissions, call upon all parties to discharge common but differentiated responsibilities for countering global warming and climate change. Furthermore, even the non-Annex I countries under no reduction requirement (i.e., developing countries) are obliged to submit National Communications to the Convention, and this has to include their GHG inventory. Many developing countries need assistance, in terms of both know-how and funding, to develop GHG inventories and prepare for their National Communications.

Under these circumstances, the provision of Japanese support, through ODA, for efforts in developing countries to counter global warming by means of emission reduction/ carbon sinks as

well as adaptation to climate change, and meeting their requirements under the UNFCCC, will make a direct contribution to overall international efforts aimed at countering global warming and climate change. Therefore, counter global warming– related ODA by Japan should be vigorously promoted.

## **(2) Contribution to sustainable development in recipient countries**

The Intergovernmental Panel on Climate Change (IPCC) projects that, if socioeconomic activities were to continue in line with the trend to date, the average global temperature would rise by 2–5 degrees centigrade, thus resulting in a rise in sea level of 9–88 centimeters by the end of the 21st century. This will cause the submersion of low–lying areas and coastal zones, as well as an increase in torrential rains, floods, droughts, cyclones, and other such adverse climatic events. The picture also includes a change in meteorological patterns, the transformation of middle–latitude regions into subtropics, more extensive desertification, and the impact on agriculture (e.g., the shifting of grain belt zones to higher latitudes). In short, the change would exert a tremendous impact on all aspects of human society, including air and water resources, ecosystems, and health and hygiene (e.g., through the physical spread of tropical diseases such as malaria and dengue fever).

Because they are least able to adapt to these changes in the natural environment and concomitant changes in the socioeconomic environment, developing countries are said to be the most vulnerable to the impact of global warming and climate change. Therefore, assistance to their emission reduction, carbon sinks, and adaptation measures is in line with the objective of contributing to sustainable development of recipient countries, which is one of the fundamental principles of Japanese ODA and is also desirable from a humanistic perspective.

## **(3) Contribution to Japan’s national interest in connection with global warming**

The Kyoto Protocol, among other documents, states that developed countries account for most global GHG emissions, past and present. However, developing countries are those that are anticipated to account for most of the increase in these emissions in the future. Thus, unless efforts to reduce GHG emissions in developing countries make progress, the developed countries may face tougher emission reduction targets in the second and succeeding commitment periods of the Kyoto Protocol. It could be said that assisting reduction of GHG emissions in developing countries would also be beneficial for Japan in the long run, even without the acquisition of reduction credits, as it would help ease the pressure to reduce emissions domestically, where reduction costs are already among the highest in the world.

The Conference of Parties to the UNFCCC presumably faces more tough debate and negotiation ahead. In this atmosphere, initiatives by Japan to counter global warming through ODA, on top of

its domestic reduction efforts, will also play a vital role so that international community deepens its understanding of Japan's position.

## **Outline of Japanese counter global warming– related ODA**

### **(1) The Kyoto Initiative**

The Kyoto Initiative, which was announced at the Third Conference of Parties to the UNFCCC (COP3) held in Kyoto in December 1997, sets forth Japan's basic policy and specific measures for assistance to developing countries in connection with counter global warming.

The Initiative focuses on the following three priority fields: 1) cooperation in capacity development (in the areas of air pollution, waste disposal, energy-saving technologies, and forest conservation and afforestation), 2) ODA loans at the most concessional conditions (interest rate of 0.75 percent and repayment period of 40 years in the fields of energy saving, new/renewable energy sources, and forest conservation and afforestation), and 3) the exploitation and transfer of Japanese technology and know-how (in the areas of pollution prevention and energy conservation). Over the three-year period beginning in 1998, it has assisted in the training of some 4,600 personnel in developing countries and has provided financial and technical assistance of approximately 867 billion yen in total.

### **(2) Distribution of projects according to contribution to counter global warming**

Figure 2 is a conceptual depiction of the extent of Japanese counter global warming- related ODA, with the countermeasures on the horizontal axis and the degree of contribution to counter global warming on the vertical axis.

<Counter global warming based on loan aid>

Japan provides loan aid in fields that are deeply intertwined with economic development and industrialization. As many of the programs in these fields involve promoting greater efficiency in economic and industrial activities, this has led to increased efforts in the area of reduction. Afforestation is the focus in the area of carbon sinks, where types of projects are limited. Flood control projects are primary measures carried out as adaptation.

<Counter global warming based on grant aid>

Various such projects are executed in the area of carbon sinks, in particular. As they are virtually concentrated in a few countries such as China and Indonesia, synergies among these projects are also expected. In the emission reduction area, Japan is providing "rehabilitation assistance grant aid" aimed at improving power generation efficiency. In the area of adaptation, aid is being offered for the construction of embankments in the Maldives on a continuous, long-term basis.

<Counter global warming based on technical cooperation>

Japan is supporting a wide range of projects for capacity building in the areas of emission reduction and carbon sinks.



Source: Data from Ministry of Foreign Affairs of Japan and Japan International Cooperation Agency (JICA)

### **(3) Recent trends in the total amount of aid for counter global warming– related ODA**

The trend in the total amount of aid for counter global warming– related ODA projects over the fiscal years 1998–2000 reveals an increase in all areas; emission reduction, carbon sinks, and adaptation to climatic change.

There was an especially high rate of increase in the area of emission reduction from fiscal 1999 to 2000, which can be explained by the large number of loan aid projects adopted in this area in fiscal 2000.

### **(4) International perspective on Japanese ODA related to counter global warming**

Numerous developed countries are contributing to efforts to counter global warming through contributions to the Global Environment Facility (GEF). However, many of the leading ODA donors, including Japan, also provide bilateral assistance in this field in accordance with their own policies and strategies. This assistance varies greatly from country to country in terms of amount, intentions, geographical distribution, and subject areas.

When its loan aid program is included, Japan's ODA for counter global warming far exceeds that of other developed countries in terms of the amount and the extent of both subject areas and recipients. Japan is, in addition, the biggest GEF donor, providing 22 percent of GEF contributions to date.



# Conclusions

## Relevance

### **(1) Evaluation of subject areas of Japanese counter global warming– related ODA**

The Kyoto Initiative is the sole policy framework for Japanese counter global warming– related ODA. During the three–year period beginning in 1998, the Kyoto Initiative produced 867 billion yen in financial and technical support, including loan aid with the most concessional lending conditions. This is one of the largest amounts given in this field by any country.

Japan’s ODA for counter global warming, centered on the Kyoto Initiative, covers all of the areas in which action is needed to counter global warming. However, although the number of projects and level of funding for adaptation projects have reached a certain level, there is still room for improvement in the content of projects in this subject area. (Discussed in detail in the following chapter.)

### **(2) Project relevance in terms of countering global warming**

Many of the projects listed under the Kyoto Initiative were already being implemented or had been proposed before its adoption. As these projects were not initially designed for the purpose of counter global warming, it is not possible to evaluate the degree of its attainment or effectiveness in terms of counter global warming as no such design has been put in place for these projects. It is also extremely difficult to evaluate their contribution to counter global warming even for the projects proposed and implemented after the Kyoto Initiative, since counter global warming is, in most cases, still only a secondary project goal.

Some of the projects funded by loan aid, including those such as urban mass transit systems to reduce traffic congestion (subways, monorails, etc.) and electric power generation using natural gas, have a high potential to actually increase GHG emissions, even though GHG emission reductions are expected under project baseline methodology. It is essential for such projects, which could be considered as global warming countermeasures but which also lead to actual increased GHG emissions, to introduce certain mechanisms, such as strict standards for baseline calculations, to ensure their reliability as counter global warming activities.

Further investigation of measures in incorporating the consideration of counter global warming from the project formulation stage will be required from here on.

### **(3) Distribution of recipient countries**

The overall geographic distribution of Japanese counter global warming– related ODA, both in terms of monetary amounts and numbers of projects, is heavily weighted toward China, Indonesia, India, and other parts of Asia. This reflects Japan’s policy of focusing its ODA on the Asian region, as clearly stated in the ODA Charter.

Looking at project distribution by counter global warming sectors, the reduction projects are mainly implemented in China, the Philippines, and Indonesia. This generally agrees with the distribution of the actual state of energy efficiency (i.e., countries where reduction efficiency is relatively high.)

In the area of carbon sequestration, or carbon sinks, many projects are undertaken in China, Indonesia, the Philippines, Thailand, Vietnam, and Mongolia in the form of afforestation. Deforestation rates in Indonesia, the Philippines, Thailand, and Mongolia have been high over the past decade, and thus projects in these countries actually match needs. In the case of China, projects reflect the Chinese government’s national policy of promoting afforestation.

In the area of adaptation, projects are carried out in China, Pakistan, Bangladesh, the Philippines, Indonesia, and the Maldives. It is important that future support in this field expand to coastal regions and small island developing states, which are considered scientifically to be highly vulnerable to global warming and climate change.

#### **(4) Contribution to sustainable development of recipient countries**

Loan aid to emission reduction projects occupies the majority of the counter global warming– related ODA since loan aid with the most concessional lending conditions forms a pillar of the Kyoto Initiative. Specifically, the four main subject areas are (i) energy saving, (ii) new and renewable energy sources, (iii) forest protection and afforestation, and (iv) air pollution countermeasures. Since sustainable development is the primary goal for all of these projects (meaning that counter global warming is secondary), each of these assistance areas is likely to contribute to the sustainable development of the recipient country while contributing to the reduction/sequestration of GHG emissions.

#### **(5) Consistency with government policy of recipient countries**

Taking the examples of China and Indonesia, the consistency of Japanese counter global warming– related ODA with recipient countries’ national policies, namely energy policies and afforestation policies, was studied.

It could be argued that Japanese counter global warming– related ODA to China and Indonesia is being implemented in a consistent manner with the recipient countries’ policies, mainly due to the fact that Japanese ODA projects are based on requests from the governments of the recipient countries. In addition, Japanese embassies in the recipient countries maintain a close policy

dialogue with relevant government agencies, as well as with JICA and/or JBIC, which also helps to maintain consistency with the policies of recipient countries. However, owing to the low level of awareness and/or the priority of the counter global warming issue in the recipient countries, few ODA projects are requested for the primary purpose to counter global warming.

#### **(6) Donor coordination**

Field surveys in Indonesia and China revealed that basically donor coordination on global warming and climate change issues is practiced through the conventional forum of donor country coordination. However, global warming countermeasures are, in many cases, scattered among multiple government agencies within the recipient country, and even if coordination is carried out in individual policy areas, there is no mechanism of overall coordination regarding global warming and climate change. The lack of overall coordination within the recipient countries can be attributed to the fact that many recipient countries have multiple contact points for counter global warming related foreign assistance. Furthermore, individual donor countries are also taking actions of their own with anticipation of the full-scale implementation of CDM, which also likely impedes the function of coordination incentives amongst donors.

### **Effectiveness**

#### **(1) Contribution to GHG emission reduction and carbon sequestration**

Japanese counter global warming-related ODA does not include many projects which "directly" contribute to countering global warming, as most of the projects and activities in this area are either primarily aimed at sustainable development while addressing global warming as a secondary goal, or capacity building projects which require time for their outcomes to be seen and which are difficult to evaluate. However, the amount of Japanese counter global warming-related ODA far surpasses that of other countries (although a simple comparison should be avoided because of differences in the conditions of assistance, etc.) and it is expected to provide an effective means to counter global warming. Improvements should be made, however, to ensure a clear way to monitor and evaluate the degree of contribution to counter global warming.

#### **(2) Support for UNFCCC participation**

Technical cooperation includes projects to transfer counter global warming technologies, as well as to develop capacities needed in fulfilling commitments of the UNFCCC. This includes training courses such as "Formulation of National Inventories and Strategies on Climate Change" and "Technology for GHG Emission Mitigation". These programs are provided to many countries in a wide range of geographic distribution, ranging from East Asia, Southeast Asia, to Central and South America, and Africa.

There is still a need for technical cooperation to be provided to small island developing states with adaptation needs, African countries with rapid population growth, and Central Asia and Eastern European countries where there is room for improvement in energy efficiency. Further efforts are anticipated in these geographic areas.

### **(3) Application of Japan's technology and experience**

Evaluation team studied and evaluated characteristic cases and the results of field surveys regarding the application of Japan's technology as well as experience in cooperation in the energy and afforestation sectors, which are deeply intertwined with global warming countermeasures.

Results show that projects such as the following are representative of those which make effective use of Japan's expertise in an efficient manner while introducing the counter global warming agenda into recipient countries' sustainable development policies and processes: "Study on the optimal electric power development and operation in Indonesia," which is a development study implemented in fiscal 2000; model projects in the energy sector carried out by the Ministry of Economy, Trade and Industry (excluded from the overall policy evaluation portfolio); "Environmental infrastructure support credit program (Phase III)" implemented by JBIC in the Philippines in fiscal 1999; "Feasibility study on power distribution system improvement and expansion plan in the metropolitan area in the Kingdom of Thailand" (excluded from the overall evaluation because this was a fiscal 1993 project); and "The Japan-China Cooperation Science and Technology Center for Forest Tree Improvement Project", which was studied in the field survey.

## **Impact**

### **(1) Expected impacts**

As already discussed, Japan's counter global warming-related ODA consists of projects that support sustainable development as their primary objective while also being effective in terms of counter global warming. It could be argued that measures have already been taken to ensure that these projects have desirable social and environmental impacts because of the nature of this ODA, and, therefore, positive impacts in areas other than counter global warming are likely to occur.

## **(2) Visibility of Japanese ODA**

Since ODA is an important foreign relations tool for Japan, it is crucial that Japanese ODA projects are properly recognized by governments, industries, and citizens of recipient countries. Although it is based on limited information obtained during the field survey in China and Indonesia, the following observations were made regarding the magnitude of exposure of “Japanese” assistance.

- In general, more effort should be given to publicity regarding Japanese ODA in the recipient countries.
- The ODA logo is coming into regular use in machinery and materials provided through ODA.
- To improve the effectiveness of publicity, further activities by local embassies and consulates are desirable. Much depends on the efforts of the recipient country government as well, but in addition to the well-established practice of inviting the media to project completion and inauguration ceremonies, exploration of other opportunities to expand information dissemination, especially on projects that are not generally exposed to the public and those which have been completed for several years, is needed.

## **Sustainability**

### **(1) Consideration for maintenance and management**

The issue of maintenance and management in ODA projects has been a subject of debate for quite some time. As a result, mechanisms have been put in place in many cases to ensure the sustainability of project outcomes at a variety of stages, including project selection, formulation, detailed design, implementation, and management.

The field survey concerning two grant aid projects revealed that a great deal of consideration had been given to maintenance and management of procured goods in terms of project budgets. However, it also found that some of the machinery and materials were no longer used effectively, where actual expenditure needs for maintenance and management exceeded the predicted budget.

## **(2) Promoting sustainability through capacity building**

Since the counter global warming is the secondary objective of practically all of Japan's counter global warming-related ODA, it is crucial to take a long-term approach in improving the capacity of recipient countries' counterparts in order to effectively sustain the outcome and impacts of the ODA. Based on this perspective, one of the three pillars of the Kyoto Initiative is capacity building, and approximately 4,600 persons from developing countries were trained during a three-year period between 1998 and 2001. This shows the proper consideration being given in sustaining the outcome and impacts of measures in Japan's overall counter global warming-related ODA portfolio.

# Recommendations for future counter global warming– related ODA

## **(1) Need for a comprehensive ODA strategy to counter global warming**

In March 2002, Japan revised its “Guideline of Measures to Prevent Global Warming”. The revised Guideline states that “[Japan] is to harness its accumulated excellent technology and experience in environmental preservation, and play a leading role in worldwide efforts to this end through international cooperation.” It further cites the Kyoto Mechanism, including CDM, as a means to achieving the quantitative emission reduction targets under the Kyoto Protocol. Regarding these national policies, Japanese counter global warming– related ODA should not only contribute to sustainable development in the recipient countries, but also be closely coordinated with and contributing to the strategy for achieving Japan’s reduction targets. To this end, it would be desirable for Japan to formulate a comprehensive strategy for counter global warming– related ODA that is coordinated with the Guideline and sets forth perspectives on CDM and adaptation projects, interest in which is bound to mount over the coming years.

## **(2) Promotion of the counter global warming agenda at up–stream policy level with regards to project identification and formulation**

Japanese ODA is provided only in response to requests made by prospective recipient countries. As such, the identification and formulation of projects should, in general, be undertaken on the responsibility of the recipient country. In many cases, however, the recipient side has a relatively low awareness to counter global warming and also lacks the know–how needed in specific areas. For these reasons, it would be rather unrealistic to expect these countries to prepare requests for ODA for counter global warming purpose entirely on their own.

Furthermore, to bolster the identification and formulation of projects in this area, Japan should make arrangements to incorporate the counter global warming agenda into the latest proposal–oriented ODA initiatives. This includes providing more extensive “policy/program support and cooperation” and initiating “proposal– and identification– oriented project formulation studies” associated with loan aid programs.

The specific recommendations based on the above considerations are as follows.

- i. Conduct surveys to ascertain potential and needs concerning counter global warming in developing countries
- ii. Dispatch missions aimed at formulating counter global warming projects
- iii. Establish a subcommittee on strategy for counter global warming– related ODA under the Board on Comprehensive ODA Strategy

- iv. Actively dispatch experts or policy advisors in development studies on “power sector master plans” to support the selection of an appropriate power mix incorporating the counter global warming agenda

### **(3) Promotion of appropriate consideration of contribution to counter global warming**

As noted above, counter global warming agenda must be properly incorporated and built in to the mainstream of ODA policy of both the donor and recipient countries. For this purpose, each counter global warming– related ODA project should report its degree of contribution to counter global warming, as far as possible.

The following are specific proposals for ways to mainstream the counter global warming agenda in to Japanese counter global warming– related ODA.

- i. Establish a scheme to validate “counter global warming projects” at an early stage of project selection
- ii. Establish a scheme in selecting and monitoring “counter global warming projects”
- iii. Develop guidelines for reporting on counter global warming projects

### **(4) Need for discussions of approaches to CDM**

The Marrakech Accord stated that “public funding for CDM projects from Parties in Annex I [of the Kyoto Protocol] is not to result in the diversion of ODA.” Based on this precondition, it would be valuable to develop a pilot program aimed at supporting extensive participation by Japanese firms in CDM projects.

Some prospects for CDM pilot projects are the construction of power distribution networks for rural electrification and the improvement of road infrastructure for the sake of efficient transportation and distribution. This would presumably be easier for both sides to accept, as it would lower barriers to participation from the private sector and be linked to an expanded inflow of funds for the developing countries.

Another item to be considered is a scheme to preclude the diversion of ODA funds while preventing projects from resulting in the additional expenditure of public funds. One of the ideas is studying the establishment of a Japanese version of a “carbon fund” which will operate on funds collected from interested private firms while identifying suitable candidates for ODA projects involving emission reduction and/or carbon sinks, and acquiring emission reduction credits based on the projects concerned.

An additional task is the promotion of a capacity building program to develop and improve capacities for the implementation of a CDM project in host countries, and encourage extensive private–sector participation in CDM. More specifically, the project should address matters such



as the development of domestic institutions, including support for the establishment of a designated national authority (DNA); administrative capacity building of CDM-related line ministries and agencies; and support for the identification of eligible CDM projects.

#### **(5) Study of adaptation projects**

While the reduction of GHG emissions takes priority in countering global warming, IPCC's Third Assessment Report projected that global warming would proceed even if all global countermeasures were undertaken as planned. Developing countries would be the most vulnerable in this event, given their lack of capacity to adapt to global warming and climate change. In keeping with the philosophy of ISD – Japan's ODA policy on promoting sustainable development and "human security" – extended support in adaptation projects in response to the requests of highly vulnerable developing countries is also in line with the national policy of Japan.

Surveys and studies should be undertaken jointly with prospective recipient countries to determine the appropriate technologies and measures for adaptation, as well as the development of aid strategy on adaptation.

#### **(6) Strengthened support for raising public awareness and education activities relating to counter global warming**

The field survey found that, in developing countries, levels of knowledge and awareness of global warming and its adverse implications were low not only among the general public, but also among government officials and policymakers at the national level. This could be due to the characteristics of the global warming issue, and specifically: 1) a low sense of urgency to act and respond, 2) a lack of economic incentives, and 3) a strong perception that responsibility lies with developed countries.

In response, Japan and other developed countries should take action to ensure a rapid rise in awareness of the issue, especially in those developing countries where GHG emissions are expected to grow rapidly.

Japan has accumulated experiences in awareness raising and education on global warming, for instance, through the revised "Guideline of Measures to Prevent Global Warming" and programs at the local level introducing detailed specifications of tasks to be tackled by the household and commercial sector. This experience could be applied to developing countries while taking into account the differences in lifestyle.

The following are specific measures to be considered.

- i. Dispatch Senior Volunteers and Japan Overseas Cooperation Volunteers in the area of public awareness raising and education related to global warming

- ii. Incorporation and expansion of awareness raising and educational activities in TORs of experts dispatched in the area of global warming
- iii. Incorporation and expansion of awareness raising and educational activities in the current counter global warming training programs under technical cooperation
- iv. Provide awareness raising and educational programs relating to global warming through effective use of innovative tools such as e-learning