Guideline on Environmental Impact Assessment of Economic Partnership Agreements and Free Trade Agreements in Japan
<English Summary>

March 2004

Japanese Study Group on Environment and

Economic Partnership Agreements

/Free Trade Agreements

Foreword

Striving to find a way to coexist and aiming for sustainable development while respecting the positions of trade and environment is a crucial issue to be tackled.

In 1994, the World Trade Organization (WTO) established the Committee on Trade and Environment (CTE), which has been examining trade and environmental issues. At the Fourth WTO Ministerial Conference (Doha, Qatar) held in November 2001, the Doha Development Agenda (DDA) was adopted. The DDA incorporates the issues that are to be negotiated until 2005 and “trade and environment” was identified as a new issue to be negotiated. Furthermore, an action plan was adopted at the World Summit on Sustainable Development (Johannesburg Summit) held in 2002, which included the necessity to promote endeavors in environmental impact assessments with respect to trade and environmental issues.

Meanwhile, looking at the situation in other countries, international organizations, including the Organisation for Economic Co-operation and Development (OECD) and the United Nations Environment Programme (UNEP) as well as countries, such as the United States, Canada and European Union (EU), are working to institutionalize environmental assessments in free trade agreements (FTAs).

As for the situation surrounding Japan, the Japan-Singapore Economic Partnership Agreement (JSEPA) was concluded in November 2002 as Japan’s first bilateral free trade agreement (FTA). Currently, Japan has either begun or is preparing to hold negotiations on Economic Partnership Agreement (EPAs) and FTAs with Mexico, the Association of Southeast Asian Nations (ASEAN) and the Republic of Korea (ROK).

In view of these circumstances, since there is a greater need to vigorously promote efforts to ensure that trade and environment are mutually supportive, it is necessary to incorporate environment-friendliness in EPAs/FTAs and consider methods to make EPAs/FTAs themselves environment-friendly.

From FY2000 to FY2001, the Ministry of the Environment commissioned the Mitsubishi Research Institute, Inc. to conduct a survey work on the environmental impact assessments in trade liberalization. The results of the study that was conducted were compiled in the Report of the Study Group on Environmental Impact Assessments in Trade Liberalization (November 2002). Following this project, in the considerations in FY2002, the Study Group on Environment and Economic Partnership Agreements/Free Trade Agreements (Chair: Professor Mitsutsune YAMAGUCHI) was newly established in the Mitsubishi Research Institute. This Study Group was composed primarily of academic experts and tasked with investigating the environmental impact assessment methods that would be applied in the event that Japan concluded an EPA/FTA. Considerations were also advanced on the

following main issues: 1) concrete methods to enhance the mutual supportiveness of trade and environment, 2) a guideline on environmental impact assessment methods involving EPAs/FTAs, and 3) implementation of case studies. The case studies were conducted based on a number of assumptions. Case studies on the environmental impact assessments in the Japan-ROK EPA/EPA as well as investigations on the applicability of the guideline were conducted under the hypothetical situation that an EPA/FTA is concluded between Japan and the ROK.

This document was written under the guidance of the Study Group on Environment and Economic Partnership Agreements/Free Trade Agreements and the Ministry of the Environment, Government of JAPAN. Contributors to drafting the main documents include Kiichiro HAYASHI, Norihisa MIYAHARA. Yoko WAKE, Jung Woojong and Naoko TAKENAKA were contributors to the international input-output analysis by the EDEN database. Juinich FUJINO supported the drafting work by conducting the AIM/CGE model analysis.

The following guideline summarizes the results of such considerations. Original report was written in Japanese (pp.149).

Study Group on Environment and Economic Partnership Agree
ments/Free Trade Agreements
March 2004

First published in Japan in 2004 by the Ministry of the Environment, Government of Japan

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CONTENTS

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Executive Summary

At the Fourth WTO Ministerial Conference (Doha, Qatar) held in November 2001, the Doha Development Agenda (DDA) was adopted. The DDA incorporates the issues that are to be negotiated until 2005 and “trade and environment” was identified as a new issue to be negotiated. And an action plan was adopted at the World Summit on Sustainable Development (Johannesburg Summit) held in 2002, which included the necessity to promote endeavors in environmental impact assessments with respect to trade and environmental issues. Then the Organisation for Economic Co-operation and Development (OECD) and the United Nations Environment Programme (UNEP) as well as countries, such as the United States, Canada and European Union (EU), are working to institutionalize environmental assessments in free trade agreements (FTAs).

As for the situation surrounding Japan, the Japan-Singapore Economic Partnership Agreement (JSEPA) was concluded in November 2002 as Japan’s first bilateral free trade agreement (FTA). Currently, Japan has either begun or is preparing to hold negotiations on Economic Partnership Agreement (EPAs) and FTAs with Mexico, the Association of Southeast Asian Nations (ASEAN) and the Republic of Korea (ROK).

From FY2000 to FY2001, the Ministry of the Environment commissioned the Mitsubishi Research Institute, Inc. to conduct a survey work on the environmental impact assessments in trade liberalization. Following this, in the considerations in FY2002, the Study Group on Environment and Economic Partnership Agreements/Free Trade Agreements was newly established in the Mitsubishi Research Institute to work out a guideline on EPAs/FTAs with a case study. This guideline summarizes the results of such considerations.

The environmental impact assessment procedure of this Guideline consists of each of the following stages: screening, scoping, impact assessments, and preventive and mitigating measures. Public-sector involvement should be introduced as the proper procedures in the various stages of environmental impact assessments.

Screening is a process to select EPAs/FTAs where impact assessments should be applied. Specifically, it is a process that categorizes trade liberalization, and narrows down the areas with a great need of environmental impact assessments considering the extent of their environmental impact. The overall situation of trade and environment in Japan and its partner countries (region) will be compiled. **Second,** scoping is a process of establishing the scope of considerations and selecting issues without being limited to the examination of impact assessment methods and items. Based on the screening results, the assessment items and assessment methods in impact assessment will be narrowed down. **Third,** based on available economic and environmental data, methods (including

quantitative model analysis) that should be used in impact assessments will be considered. Both qualitative and quantitative analyses will be made using these methods and the impact assessment will be conducted. **Fourth,** taking into account environment-friendliness in past trade liberalization, considerations will be made of the details of the concept of the preventive and mitigating measures.

Hypothetical Japan-ROK EPA/FTA was considered in the case study. This case study was conducted subject to this Guideline. In the **screening stage**, two types of screening sheet were created and the areas with a great need for environmental impact assessments were selected. A screening sheet, “Details of the EPA/FTA Discussed at the Joint Study Group”, includes items that consider whether they need to be incorporated into the text of the agreement (status). Furthermore, a screening sheet, “the Relationship Between Trade Liberalization and Environmental Impacts”, includes items that consider clarifying the differences in the environmental policy situation in Japan and ROK. **Second,** understanding the basic situation is a process of qualitatively organizing environmental impacts that a bilateral EPA/FTA may cause, based on the basic information on the economy and environment of Japan and ROK, which will contribute to the selection of content for which there should be prioritized considerations in environmental impact assessments. Scoping sheets on the economic, environmental and social situation contributing to impact assessments were prepared, and the items contributing to the establishment of impact assessment methods, items and scope of consideration and narrowing down the issues were extracted. **Third,** impact assessment of economic, environment and social were conducted by utlizing qualitative and quantitative methods, including the international input-output analysis and the AIM/CGE model analysis. The AIM/CGE model takes a macro perspective, namely, a closed model focusing on global equilibrium, while input-output analysis takes a micro perspective , an open model focusing on Japan and ROK.

According to the impact assessment, the conclusion of a Japan-ROK EPA/FTA will contribute to the expansion of economic activity in both Japan and ROK. However, the results show that the EPA/FTA will have a different impact on exports and imports as well as production volume in each industry in both countries. The impact on the environment is expected to steadily increase as a result of the expansion of economic activity. However, the growth rate of the environmental pressure will be lower than that of economic activity, and from a macro-level perspective, it is presumed that the spread of environment-friendly technology and structural changes aimed at becoming energy-efficient industries will be promoted. This trend became even more apparent through the international input-output analysis, which showed the relationship between the rate of change in CO_2 emissions and SO_2 emissions and economic growth rate. However, if the expansion of the environmental pressure is to be suppressed as much as possible while maintaining or increasing economic activity, it is necessary to consider measures to counterbalance the expansion of the environmental pressure arising from the expansion of economic activities.

Finally, considerations were given to three aspects: efforts in the industrial sectors, support in the policy and systemic aspects, and efforts in bilateral negotiations.

Chapter 1 Introduction

1.1 Objectives and aims of the Guideline

1. In order to solve environmental issues, it is necessary for all countries, including developing countries, to take environmental protection measures. To achieve this, it is effective, through trade policy and other means, to indirectly promote environmental protection in other countries counterparts and encourage these countries to strengthen environmental protection in conjunction with environmental cooperation.

2. Endeavors to strengthen bilateral and multilateral economic partnerships currently underway are wide-ranging. They are not limited to reciprocal trade liberalization, but also aim to harmonize its counterpart's domestic systems and reform systems. It is presumed that through these means, it will be possible to strengthen environmental measures in other countries more effectively. Furthermore, it is important to conduct an environmental impact assessment of the Economic Partnership Agreement (EPA) /Free Trade Agreement (FTA) that will be concluded, which would include not only the liberalization of trade and but also the liberalization of investment. It is also necessary to develop methods by conducting trial environmental impact assessments. Furthermore in conducting appropriate environmental impact assessments is quite feasible in order to encourage other countries to strengthen their environmental measures.

3. This report may be utilized as a guideline on environmental impact assessment methods to be applied in the event Japan concludes bilateral or regional FTAs or EPAs with other countries.

1.2 Issues concerning trade and environment

4. In 1991, yellowfin tuna incident triggered the issue of trade and environment to capture the limelight. Later on, the Rio Declaration on Environment and Development and Agenda 21 were adopted at the Earth Summit in 1992, and the direction of providing mutual support for trade policy and environmental policy became international common understanding.

5. In response to the environmental commitments of the Meeting of OECD Environmental Ministers, the Environmental Policy Committee and Trade Committee of the Organisation for Economic Co-operation and Development (OECD) established in 1991 the Joint Working Party on Trade and Environment, which considers measures to realize mutual support for environmental protection and free trade.

6. Newly established in 1995, the World Trade Organization (WTO) sets up the Committee on Trade and Environment (CTE) which examines various issues on trade and environment. At the new WTO round launched at the Fourth Ministerial Conference (Doha) in November

2001 it was concluded in the Doha agenda that negotiations on trade and environment would take place. However, there has not been much progress in the considerations at the WTO because negotiations failed to reach agreement at the WTO Ministerial Conference in Cancun, Mexico in September 2003 due to disagreement between developing countries and developed countries.

7. Furthermore, at the World Summit on Sustainable Development (Johannesburg Summit) held from August to September 2002, trade was one of the focal issues of discussions. An accomplishment of this Summit is that the Plan of Action that was adopted confirmed that mutual support would be given to trade, environment and development, and that environmental impact assessment would be promoted on a national-level to elucidate the interrelationship between trade, environment and development.

8. Thus, in recent years issues concerning trade and environment have come to be discussed at various international fora, and are becoming increasingly important as a major concern for the world to address.

1.3 Background of environmental impact assessments in EPAs/FTAs

9. Japanese first bilateral FTA was signed with Singapore on 13 January 2002. Then, a Japanese FTA Strategy, released by the Ministry of Foreign Affairs in October 2002, outlines the advantages of promoting FTAs, important points in promoting FTAs and the type of FTA Japan should be aiming for. This strategy also describes the strategic priorities for FTAs, calling for an immediate response from 1) particularly Republic of Korea (ROK) and ASEAN, which are the most promising counterparts in negotiations, and 2) Mexico, where Japanese businesses have to pay relatively high tariffs in comparison to those parties in the North American Free Trade Agreement (NAFTA) and in the European Union that have already concluded an FTA with Mexico. With this background, Japan is dynamically undertaking endeavors aimed at concluding a regional EPA/FTA. One of the factors why FTA/EPAs have prompted global attention in recent years is that negotiations have stalled at the WTO. Meanwhile, bilateral and regional FTAs and EPAs are progressing in response to the accelerating trend for globalization.

1.3.1Environmental Impact Assessments of EPAs/FTAs in Other Countries

10. International organizations including the OECD, and the United States (US), Canada and the European Union (EU) have already developed assessment methods on the environmental aspects of trade liberalization, and are implementing environmental impact assessments.

Table 1.1 Development of EIA of EPAs/FTAs in other bodies

	Details
US	Executive Order 13141 - Environmental Review of Trade Agreements, 64 Fed. Reg. 63,169 (Nov. 18, 1999) (Order) and implementing guidelines, 65 Fed. Reg. 79,442 (Dec. 19, 2000) ● US-－Jordan(2000)、US－Chile(2001)、US－Singapore(2002)
Canada	1999 Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals and Framework for Conducting Environmental Assessments of Trade Negotiations
EU	Sustainability Impact Assessment: SIA ● WTO New Round Sustainability Impact Assessment Study Phase One report, Phase Two report and Phase Three report（2001-2005） ● EU－Chile(2003)、EU-MERCOSUR(2002－2005)、EU-ACP（African, Caribbean and Pacific States）（2002-2006）、EU-GCC（Gulf Cooperation Council(2002-2005) ● Etc.
OECD	An Assessment of the Environmental, Economic and Development Benefits of Future Global Trade Liberalisation.(2000)) ASSESSING THE ENVIRONMENTAL EFFECTS OF SERVICES TRADE LIBERALISATION: A METHODOLOGY(2002）

Chapter 2 Environmental Impact Assessment Guideline for EPAs/FTAs

2.1 Basic concept of environmental impact assessments in EPAs/FTAs

11. The environmental impact assessment procedure of this guideline consists of each of the following stages: screening, scoping, impact assessments, as well as preventive and mitigating measures. Public-sector involvement should be introduced as proper procedures in the various stages of environmental impact assessments. Table 2.1 describes the steps in environmental impact assessment procedures in EPAs/FTAs together with a summary of these steps.

Table 2.1 Environmental Impact Assessment Procedures in EPAs/FTAs

Procedure	Details
Screening	Screening is a process to select EPAs/FTAs where impact assessments should be applied. Specifically, it is a process that categorizes trade liberalization, and narrows down the areas with a great need of environmental impact assessments considering the extent of their environmental impact. The overall situation of trade and environment in Japan and its partner countries (region) will be compiled. A **screening sheet** will also be created and the areas with a great need of environmental impact assessments will be narrowed down taking into account the two viewpoints given below. <Content of the screening sheet> **1) Details of the EPA/FTA as discussed in a joint study group between Japan and the partner countries** **2) Relationship between trade liberalization and environmental impact**
Scoping	Scoping is a process of establishing the scope of considerations and selecting issues without being limited to the examination of impact assessment methods and items. Based on the screening results, the assessment items and assessment methods in impact assessment will be narrowed down taking into account the three viewpoints given below. **<Understanding the basic economic, environmental and social situation>** This is a process which contributes to the selection of content for which there should be prioritized considerations in environmental impact assessments by gathering basic economy- and environment-related information on Japan and its partner countries (region) and by qualitatively organizing the environmental impact of bilateral (regional) EPAs/FTAs based on this information. Furthermore, **a scoping sheet on the economic, environmental and social situation** will be created incorporating the three viewpoints given below. The scope of considerations will then be established and issues will be narrowed down, and items contributing to the selection of impact assessment items and methods will be extracted. **<Content of the scoping sheet>** **1) Scoping sheet on the economic impacts of the conclusion of a EPA/FTA** **2) Scoping sheet on the environment impacts resulting from economic impacts** **3) Scoping sheet on social impacts resulting from economic impacts** **<Scoping coverage>** Based on the content of the scoping sheet and taking into account the three viewpoints given below, the scope of considerations will be established and the issues will be focused and items that will contribute to the selection of impact assessment items and methods will be extracted. **1) Geographic scope of application** **2) Scope of application of the impact assessment items** **3) Methods for impact assessment**

Implementation of impact assessments	Based on available economic and environmental data, methods (including quantitative model analysis) that should be used in impact assessments will be considered. Both qualitative and quantitative analyses will be made using these methods and the impact assessment will be conducted.
Consideration of preventive and mitigating measures	Taking into account environment-friendliness in past trade liberalization, considerations will be given to the details of the concept of the preventive and mitigating measures.

12. It is essential that the entity implementing the environmental impact assessments constitute the systemic basis and that there is cooperation between the environment-related bureaus and trade-related bureaus.

13. Decision-making on trade liberalization shall advance taking into account various aspects such as the economy and society. In line with this decision-making flow, environmental impact assessments in trade liberalization shall provide the decision-making entity with information that will help decision-making from the perspective of the environment.

2.2 Screening

14. There are various levels of trade liberalization that are included in the scope of environmental impact assessments. For example, they include: cross-sectoral, multilateral (global scale) trade liberalization negotiations (WTO negotiations, etc.), cross-sectoral, bilateral and multilateral (regional scale) trade liberalization, and bilateral and multilateral (regional scale) trade liberalization in the field of natural resources.

15. In the screening procedure, which individually determines whether environmental impact assessments will be made, there should be a decision based on certain standards as to whether screening should be carried out. There should not only be a public disclosure of the results of the decision, but also an opportunity for the public to submit opinions before decision is made. In this context, it is useful to create a screening sheet as demonstrated in the case study and examine whether an individual EPA/FTA environmental impact assessment is necessary.

2.3 Scoping

16. Scoping is a process that is conducted in the early stage of environmental impact assessment with the purpose of establishing and narrowing down the scope of considerations for environmental impact assessments in trade liberalization.

17. With respect to the selection of the geographic scope of application, the effects of trade liberalization may affect a third country in addition to Japan and its partner countries. A variety of stages can be assumed in the process of considering impacts, including the

impact on both Japan and its partner countries, impact on neighbouring countries, impact on other countries, especially developing countries, and impact on the world as a whole. It is preferable that each country participating in the agreement conducts an assessment with focus on the environmental impact on its own country, while taking into account the effects on a third country. However, when an FTA is signed between a developed country and a developing country, if the developing country lacks the personnel and information for conducting assessments, it is realistic for the developed country to cooperate with its partner country and conduct an assessment of the effects on its partner countries as well.

18. As for assessment items, it is desirable that a balanced, integrated assessment be made of the economy, society and environment. However, because it is technically difficult to conduct social impact assessments, it is appropriate to focus on impact assessments in the economy and environment at this point, since they are areas that can be analyzed according to already developed quantitative and qualitative methods. Especially in trade liberalization involving partner countries that are developing countries, it is presumed that environmental and social issues will arise together in such cases as local residents facing development in their own residential area, and it will be necessary to assess the environmental and social aspects together. Table 2.2 is a list of the potential items that will be assessed in terms of economic, environmental and social impacts.

Table 2.2 Items for assessment of economic, environmental and social impacts

Items	Details
Economic impact	● Impact on the domestic economy and other areas ➢ Changes in the macroeconomic GDP of Japan and its partner countries and in added value by industry (quantitative assessment) ➢ Structural changes in the economy and industry (qualitative assessment) ➢ Technological impact such as changes in the production process (qualitative assessment) ➢ Impact on employment (qualitative assessment) ➢ Fluctuations in the use of environment-related technology (qualitative assessment) ● Impact on trade flow ➢ Changes in trade of principal items (quantitative assessment)
Environmental impact	● Environmental impact caused by baseline changes resulting from economic impact ➢ Changes in air quality (SO_x, NO_x, etc.) ➢ Impact on the global warming issue ➢ Impact on the ozone layer protection issue ➢ Impact on the waste and recycling issue ➢ Impact on the quality and volume of freshwater, rivers and seas ➢ Impact on nature conservation and environmentally sensitive areas ➢ Impact on endangered species and possibility of increase in new species ➢ Impact on the ecosystem ➢ Possibility of increased environmental issues concerning toxic substances as the environment is related to people's health ➢ Other impacts on environmental issues considered particularly important to Japan and its partner countries
Social impact	● Impact on poverty ● Impact on health and education ● Impact on equitability

19. As for the Guideline procedures, based on **a scoping sheet on the economic, environmental and social situation** which will be created in the early stages of scoping, it is desirable to narrow down the areas by 1) focusing on the large fields and sectors that have a substantial impact on the environment resulting from changes in the economic and industrial structures, 2) taking into account the magnitude and order of priority of the effects from the perspective of sustainability, and 3) confirming whether the analytical tools and necessary information exist.

2.4 Impact assessments

20. As a basis for assessment, among the factors in trade liberalization, it is necessary to conduct an assessment for the reduction/elimination of tariffs assuming several scenarios, and to individually and specifically consider the impact on the environment (environmental regulations) for the reduction/elimination of non-tariff barriers. Moreover, from the standpoint of using the results of environmental impact assessments to bolster environmental policy, it is effective to include environmental assessments in the examination of several scenarios if particular environmental policies are implemented.

21. Regarding technical methods in assessment, this is the stage for deciding which impact assessment method should be applied to each item. A suitable assessment method (quantitative and qualitative assessment methods) will be employed for each of the items of economic assessment, environmental assessment and social assessment (Table 2.3).

Table 2.3 Technical methods in assessment

Stage	Details
Stage 1 (Economic impact assessment)	・ Qualitative assessment ・ Quantitative assessment using economic models
Stage 2 (Environmental impact assessment)	・ Qualitative assessment using the results of Stage 1 ・ Quantitative assessment partly using models
Stage 3 (Regulatory impact assessment)	Confirmation and assessment by persons in charge of environmental administration

22. In conducting environmental impact assessments in trade liberalization, it is considered appropriate to comprehensively reveal environmental impacts by 1) quantitatively showing the macroeconomic environmental impacts through quantitative assessments, and 2) conducting qualitative assessments for microeconomic environmental impacts that cannot be quantitatively assessed or biodiversity and other environmental factors that defy quantitative description or assessment.

2.4.1 Quantitative analysis methods

23. Several numerical models for quantitative assessment methods have already been developed to measure the impact of an EPA/FTA on the macroeconomy and trade. On the other hand, quantitative analysis models for environmental aspects are limited. Table 2.4 shows examples of quantitative analysis models that may be applied in environmental impact assessments in particular. In the case study of the following chapter, inter-industrial analyses were made using AIM/CGE and the EDEN database, and quantitative analysis methods were used for environmental impact assessments in carbon dioxide and SO_2.

Table 2.4 Examples of quantitative analysis models

Model name	Model type	Model developer	Environmental impact	Overview
Global Trade Analysis Project (GTAP)	Applied general equilibrium	Purdue University		The GTAP model is an applied general equilibrium model that was developed by the Global Trade Analysis Project established in 1992. Led by Professor Thomas W. Hertel, this project was founded with the purpose of assessing the impact of international trade on countries around the world.
Second Generation Model (SGM)	Applied general equilibrium	Pacific Northwest National Laboratory	Greenhouse gas emissions	The SGM is a classical applied general equilibrium model that was built based on the national income account developed by the Pacific Northwest National Laboratory (PNNL). This model integrates the activities of four economic entities: the household, corporation, government and overseas sectors. This model also enables an analysis considering the impact that rising energy prices, caused by an introduction of a carbon tax to reduce CO_2, will have on each of these sectors. This model also allows for the analysis to consider the effect that tax return measures, such as the use of tax revenues, income tax credits or increased government expenditures caused by the abovementioned carbon tax, will have on the production volume of each sector and real GDP. Moreover, the National Institute for Environmental Studies (NIES) and PNNL have worked together to improve the SGM. Using this improved SGM, an analysis has been made of the global economic impacts of trade resulting from attaining the Kyoto Protocol's reduction targets, as well as an estimate of the economic impact of CO_2 emission restrictions on Japan.
Multiple Area Resource and Industry Allocation (MARIA)	Dynamic optimization	Tokyo University of Science	Greenhouse gas emissions	A nonlinear, dynamic optimization model, the MARIA model was developed with Professor Shunsuke Mori of the Tokyo University of Science playing a leading role. The model divides the world into eight regions and an analysis is conducted in ten-year intervals from 1990 to 2100. This model enables the formulation of a strategy in global environmental measures and

				technologies, land use and climate change, taking into account the international trade balance. However, since the economic sector is limited to one sector—macroeconomic activities—this model has some features that make it ill-suited for inter-sectoral mutual impact assessments and short-term analyses.
Goto's Dynamic Macroeconomic Energy Equilibrium Method (GDMEEM)	Dynamic optimization	University of Tokyo	Greenhouse gas emissions	Developed by Noriyuki Goto of the University of Tokyo, the GDEEM is a dynamic market equilibrium model for the macroeconomy and energy market. This model aims to simulate the future economy and energy demand by inputting technology and economic conditions. CO_2 emissions are calculated using a submodel. The GDEEM is also a bottom-up model that partially incorporates technical data from the AIM/Enduse Model. Conversely, it is possible to estimate the amount of carbon tax necessary for stabilizing CO_2 emissions. As a case for reference, it is also possible to estimate the carbon tax necessary for achieving the reduction targets if combined with emission trading.
International Food and Policy Simulation Model (IFPSIM)	Partial equilibrium	Japan International Research Center for Agricultural Sciences (JIRCAS)	Cultivated acreage, forest acreage	Led by Professor Keiji Ohga of the University of Tokyo, the IFPSIM model was developed by the International Food Policy Research Institute (IFPRI) and Japan International Research Center for Agricultural Sciences (JIRCAS). This model is a dynamic partial equilibrium model specific to the agricultural sector that allows the simulation of the impact of policy such as tariffs and subsidies. In addition, regions and items can be freely established in the IFPSIM. Also, submodels are currently being developed since they are required for environmental impact assessments. So far, in addition to worldwide agricultural production forecasts, IFPSIM has been used to predict changes in China's agriculture caused by its accession to the WTO, analyze deforestation in Thailand and Indonesia, and forecast the nutritional status in the Philippines.
Asian Pacific Integrated Model (AIM)	Integrated (general equilibrium or bottom-up)	National Institute for Environment-al Studies (NIES), Kyoto University	Greenhouse gas emissions, SO_2	The AIM was developed through joint research by Kyoto University, various research institutes in the Asia-Pacific region and the National Institute for Environmental Studies (NIES) in Japan. The AIM is a large-scale model that assesses policy options in climate stabilization aimed at greenhouse gas reductions and easing the effects of climate change, with a particular emphasis on the Asia-Pacific region. AIM is an integrated model. Many models have been developed thus far. Among them, it is possible to assess economic impacts taking into account

				trade in Asian countries by using AIM/CGE in coordination with AIM/local and AIM/Material.
EDEN database	International input-output analysis	Keio University, etc.	SO_2	Created by Keio University together with statistical institutions of Asian countries as a part of the "Environmental Protection in Asia," a future academic promotion project of the Japan Society for the Promotion of Science, EDEN is a database used for international input-output analysis.

2.5 Consideration of preventive and mitigating measures

24. In regard to the consideration of preventive and mitigating measures, an investigation of environmental policy methods for Japan and partner countries will be conducted with the intention to further augment the positive effects on the environment and to prevent and mitigate the negative effects expected to arise from the environmental impact assessment in question. It is desirable for the results of these considerations to be reflected in the text of the EPA/FTA document. It is also desirable for these results to be reflected in decision-making through their implementation by such means as economic cooperation through EPA/FTA, dialogue with the partner country established by the EPA/FTA, and opportunities for dialogue on environmental cooperation.

25. Specifically, preventive and mitigating measures will be organized based on the results of the abovementioned impact assessment on the overall trends in economic activity and overall environmental impact and individual measures will be considered thereafter. In particular, it is necessary to organize these measures bearing in mind the ways in which to respond to the industrial sector, systemic and policy aspects, and bilateral negotiations.

2.6 Conclusion of assessment of impacts

26. Conclusion of assessment of impacts will be made after consolidating the abovementioned analyses. The economic, environmental and social impact will be individually assessed and an assessment will be compiled after these results have been consolidated.

2.7 Concept of public involvement

27. Public participation in the environmental impact assessment process will depend on the degree of openness of the trade negotiation process. Public disclosure in the appropriate stage of the trade negotiation process is crucial, since the EPA/FTA will have various effects on each sector. Environmental information is held by a wide range of sources such as the Government, local governments, experts, environmental and development non-governmental organizations (NGOs), the public and industries. It is necessary for a broad spectrum of parties to be involved. Therefore, the participation of the public and experts is an essential step in the environmental impact assessment procedure. It is not only necessary

to work toward thorough information disclosure and listen to opinions from the public in the various stages including scoping and assessment, but also for government-wide working organizations to seek the participation of these parties and to have a mechanism for setting up for a for exchange of opinions with these parties concurrent with the work on environmental impact assessments.

2.8 Examination of environmental impact assessments

28. To ensure that environmental impact assessments are scientifically and objectively valid, it is necessary to establish an examination process and to have the involvement of organizations responsible for environmental protection as the main entities conducting the examination. Potential choices for the main entities conducting these examinations include organizations responsible for environmental protection (Ministry of the Environment) and review panels composed of experts. It is necessary for the examination to be conducted by a third party independent of the entity conducting the assessment.

2.9 Ex-post evaluation and follow-up

29. It is desirable for EPAs/FTAs to include a pledge to have follow-ups and for the results of follow-ups to be periodically compiled into a document and publicly released. Furthermore, it is possible that follow-ups will be conducted at fora for dialogue on environmental cooperation with the partner country, or at environmental centers set up by the Japan International Cooperation Agency (JICA) if it involves countries in which JICA has set up such centers.