

**Introduction**  
**THE SCOPE OF TIMBER TRADE POLICY**  
**TO SUPPORT SUSTAINABLE FOREST MANAGEMENT**

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**1. Targets**

The target of this sub-team studying timber trade policy (TT) is to advocate appropriate strategies to form timber trade policy leading to sustainable forest management. The study program is composed of four sections as shown in Fig.1. First, frameworks and data availability for forest resource accounting will be studied. Second, sustainable forest management will be discussed from the viewpoint of the measures relating to risk management and forest/timber certification. Third, timber trade structures and policies of major timber-trading countries will be clarified from their historical perspective. In particular, econometric analyses using time-series data will reveal impacts of customs duties and non-tariff barriers on the international timber trade. Finally, a spatial equilibrium model for timber trade in the Asia-Pacific region will be built to simulate the regional timber trade in order to assess various policy measures. In addition, the TT sub-team will provide relevant inputs to the Legal and Administrative Supporting Measures (LA) sub-team of this project.

**2. Background**

Recently, global timber trade structures have been changing drastically from trade in raw logs to trade in wood products. This change seems to reflect the trends in environmental movements around the world and the depletion of useful forest resources. Considering changes in the timber trade, we believe that orderly timber trade is needed in order to realize sustainable management of forests.

If we see the situation of global forests from the bird's-eye view, we may notice increases in forest area in many of developed countries and decreases in virtually all the developing countries. Although we should not overlook new kinds of forest degradation in Europe, the situation in developing countries is so devastating that we would summarize the overall view as we state at the beginning of this paragraph.

This cross-sectional view can be translated into a time-series setting. At the onset of economic development natural forests may exist in abundance. People live in harmony with the ecosystems of rich forests, utilizing and collecting their necessities from the forest. As people cultivate land, they convert forests into farmland. Agricultural production enables the human population to grow, accelerating deforestation. Industrialization further hastens the speed of deforestation, because a larger human population can now be supported by greater agricultural production boosted by chemicals and mechanization. But somehow, somewhere in the course of economic development, the pressure of deforestation declines. Historically, perhaps because of comparative advantage in manufacturing, industrialized economies import forest products in exchange for exports of manufactured products. Thus the need to use their own forests as sources of timber declines. Partly because of experience with degraded forests due to their past overuse, they realize the need to restore forests to health. They change forest policies from exploitation and development to reforestation and protection. Admittedly, this explanation is oversimplified but it does have some truth to it.

In the course of economic development, many developed countries import timber from other countries today to lessen the pressure on their own forest resources. Eventually many deforested developing countries may find it necessary to import timber from the restored forests of developed countries. Clearly the importance of timber trade policy on forest resource management cannot be ignored.

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### **3. Objectives**

#### **3.1 Assessing timber trade structure**

We would like to assess the trade structure of forest-based products. Since trade emerges as the difference between domestic production and domestic consumption, we first focus on timber production and consumption in major timber-trading countries. However, it also depends on production and consumption of trade partners, as well as transportation infrastructure and trade policies. Analysis is required in both physical and social terms.

Thus in order to study the trade in forest-based products, we need to investigate not only exporting countries but also importing countries. We need to gather both socio-economic and forest-related statistical data, as well as to study the legal and infrastructural situation of the subject countries.

#### **3.2 Building Econometric Model to describe timber trade structure**

Utilizing the data collected under Objective 1, we will build econometric models. We are planning to build multi-equational econometric model for major timber-trading countries. Depending on the quality and period of data availability, we may apply standard statistical estimation techniques to derive the needed parameters, or we may resort to using hypothetical parameters to circumvent estimation difficulties. Spatial equilibrium models similar to those employed by International Institute for Applied Systems Analysis (IIASA) may be applied here.

In general, trade restrictions will decrease forest trade, but the restrictions themselves are often put in place as a response to forest resource depletion in an exporting country, which itself can be a major reason for trade decrease. In the international timber trade many factors change over the years -- not only forest resources and models of forest management, but also other social and economic factors. The purpose of constructing econometric model is to clarify the many entangled factors related to the timber trade.

#### **3.3 Evaluate the effects of timber trade policies on social welfare**

In the progress of constructing econometric models, demand and supply functions will be estimated. These functions will be utilized to evaluate the welfare effects of trade policy. Demand functions will be used to estimate consumption surplus, which is a legitimate measure of consumers' welfare, and supply functions will be used to estimate producers' surplus, which is equivalent to producers' profits.

#### **3.4 Evaluate the effects of timber trade policies on forest resources**

We plan to utilize the technique of forest resource accounting to evaluate the effects of timber trade policy on forest resources. It is very difficult to directly connect forest resource accounting with econometric models. One way of circumventing this difficulty is to evaluate forest resources in monetary terms, utilizing national income accounting frameworks. However, forest resource accounting expressed in monetary terms is only one aspect of the multi-dimensional characteristics of resource accounting. We will not limit ourselves to monetary expressions.

#### **3.5 Measures of sustainable forest management**

We believe special attention should be paid to risk management and forest/timber certification schemes in forest management. In recent years, forest fires are growing in frequency and in scale, evident in the extensive fires in recent years in Siberia and Indonesia. The fires influence the production and consumption of forest products, affecting timber trade. Forest fires occur as natural calamities in some cases, but human activities induce them in others. Prevention is difficult for natural forest fires, but early monitoring may reduce their disastrous effects. Since monitoring and

fire fighting are costly activities, especially for low-income countries, optimal resource allocation to deal with this problem is very important. Forest fires are just one example of the many possible risks involve in forest management. We should study them in a risk management framework.

Forest/timber certification schemes are major topics relating to timber trade issues these days. Forest/timber certification certifies that the forest from which the timber is harvested is managed in a sustainable manner. The idea of forest/timber certification seems to be sound, but there are problems in implementation and possible conflicts with free trade doctrines.

Basic problems in implementation include “how” to conduct certification and “who” will do it. Another problem is how to trace timber from sustainably managed forests to final products. Certification schemes may attract more demand for certified timber, and some producing countries are advocating them, but they may levy enormous costs and others are against the idea.

Free trade doctrine emphasizes the merit of comparative advantage. In order to assure the functioning of comparative advantage, discrimination of products due to difference in process is prohibited. The certification schemes discriminate products, (i.e. timber) based on processing (i.e. mode of forest management). Ways must be found to reconcile the issues of forest/timber certification and free trade doctrine.

Ideally, both certification and trade measures must contribute to protection against further forest degradation. Furthermore, results of the studies will be linked strongly with the analysis of forest resource accounting.

### **3.6 Study strategic policies for forest-based products trade to support sustainable forest management**

Utilizing the knowledge derived through the process of studying under the objectives mentioned above, we would like to study strategic policies for the trade in forest-based products to support sustainable forest management. We realize that a jurisprudence-policy scientific approach should be utilized here.

## **4. Schedule and subject places**

The schedule and target places for study are shown in Fig. 1.

### **Fig. 1 Research Project of Timber Trade Policy Sub-Theme**

#### **Target: Strategies to Form Timber Trade Policy for Sustainable Forest Management**

##### **Section 1: Forest Resources**

###### *<Objectives>*

- a. Resource Accounting
  - On a macro-scale (country base): FY 1998-1999
  - On a micro-scale (plot base): FY1999-2000
- b. Forest Management
  - Timber Harvesting and Management: FY1999-2000
  - Risk Management: FY1999-2000

###### *<Policies >*

- a. Forest Resources Accounting(F.R.A.) Policy:
  - F.R.A. framework
  - F.R.A. data availability

- b. Forest Resources Management Policy
  - Forest / timber certificate
  - Concession royalty

## **Section 2: Forest-related Industries and Timber Trade**

### *<Objectives>*

- a. Forest-related Industries and Timber Trade: Time Series Timber Trade Analysis
  - <Major timber-importing countries>
    - Japan: FY1999
    - Korea: FY1998
    - Taiwan: FY1999-2000
    - Thailand: FY1999
    - China: FY1999-2000
  - <Major timber-exporting countries>
    - Indonesia: FY1999
    - Malaysia: FY1998
    - Philippine: FY1998
    - PNG: FY2000
- b. Analysis by Spatial Equilibrium Model: 1998-2000

### *< Policies >*

- a. Promotion Policy to Forest-related Industry and Timber Trade
- b. Timber Trade Policy
  - Customs duties
  - Non-tariff barrier