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WORKING PAPER 53

Integrated Report of the Project "Effects of Trade Liberalization on Agriculture in Selected Asian Countries with Special Focus on CGPRT Crops"

Michio Kanai
Boonjit Titapiwatanakun

The CGPRT Centre
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The CGPRT Centre

The Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Centre) was established in 1981 as a subsidiary body of UN/ESCAP.

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In co-operation with ESCAP member countries, the Centre will initiate and promote research, training and dissemination of information on socio-economic and related aspects of CGPRT crops in Asia and the Pacific. In its activities, the Centre aims to serve the needs of institutions concerned with planning, research, extension and development in relation to CGPRT crop production, marketing and use.

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In pursuit of its objectives, the Centre has two interlinked programmes to be carried out in the spirit of technical cooperation among developing countries:

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Integrated Report of the Project
"Effects of Trade Liberalization on Agriculture in Selected Asian Countries with Special Focus on CGPRT Crops"

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Regional Co-ordination Centre for
Research and Development of Coarse Grains,
Pulses, Roots and Tuber Crops in the
Humid Tropics of Asia and the Pacific

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Abbreviations

AFF	Agriculture, Forestry and Fisheries (Japan)
AFMA	Agriculture and Fisheries Modernization Act (the Philippines)
AFTA	ASEAN Free Trade Area
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
BERNAS	Beras Nasional Sdn. Bhd. (National Rice Private Limited) (Malaysia)
BPS	Badan Pusat Statistik (Central Bureau of Statistics) (Indonesia)
BULOG	Badan Urusan Logistik (National Logistic Agency) (Indonesia)
CCCN	Customs Cooperation Council Nomenclature
CEPT	Common Effectively Preferential Tax
CGPRT	Coarse Grains, Pulses, Roots and Tubers
CPI	Consumer Price Index
EC	European Community
EO	Executive Order (the Philippines)
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union
ETDZ	Economic Technological Development Zone (China)
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
GNP	Gross National Product
HS	Harmonized Commodity Description and Coding System
HTS	Harmonized Trade System
IAP	Individual Action Plan (of member countries of the APEC)
ILP	Import Liberalization Program (the Philippines)
IRRI	International Rice Research Institute
LDC	Least Developed Country
MAPA	Manila Action Plan for APEC
MO	Memorandum (the Philippines)
MPUPA	"Market Prospects of Upland Crop Products and Policy Analysis in Selected Asian Countries"
MTN	Multinational Trade Negotiation
NAP	National Agriculture Policy (Malaysia)
NE	National Expert (of the TradeLib project)
NFC	National Fertilizer Corporation (Thailand)
NTB	Non-Tariff Barrier
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PL	Project Leader (of the TradeLib project)
PPP	Purchasing Power Parity
QR	Qualitative Restriction
RA	Regional Advisor (of the TradeLib project)
R&D	Research and Development
RM	Malaysian Ringgit

SEZ	Special Economic Zone (China)
SITC	Standard International Trade Classification
SPS	Sanitary and Phytosanitary
TBT	Technical Barriers to Trade
TradeLib	"Effects of Trade Liberalization on Agriculture in Selected Asian Countries with Special Focus on CGPRT Crops"
TRP	Trade Reforms Program (the Philippines)
UR	Uruguay Round
WTO	World Trade Organization

Foreword

The research project "Effects of trade liberalization on agriculture in selected Asian countries with special focus on CGPRT crops (TradeLib)" has come to its final phase after three years.

The basic concept of the project was conceived in early 1995 leading up to the overall review of the WTO programme in 1999/2000. Funds were prepared in the government budget of Japan for the fiscal year of 1996/1997. The CGPRT Centre then formulated the project and proposed it to ESCAP. The proposal was approved in 1996 by ESCAP and the Government of Japan for funding. The project started in April 1997.

The project was implemented in collaboration with ten countries, China, India, Indonesia, Japan, Malaysia, Pakistan, the Philippines, the Republic of Korea, Thailand and Viet Nam. The project aimed in a practical sense to offer the participating countries a chance to study the effects of trade liberalization on their agriculture, primarily from the academic point of view, and to exchange information for further development of their agriculture.

Two phases of country study, which were the main parts of the project, produced the first and second country reports of the ten participating countries. This integrated report was compiled first to summarize those country reports and second to consolidate the overall findings, analyses and policy recommendations achieved in the project.

In this regard, I am very grateful for Dr. Boonjit Titapiwatanakun, Kasetsart University, Thailand, for his devoted services as the regional advisor of the project. I certainly believe that without his zealous assistance, the project, as well as this integrated report, could not have been completed. I thank Dr. Michio Kanai, National Research Institute of Agricultural Economics, Japan, who coordinated the project as the project leader and took initiative in drafting this integrated report. Dr. Douglas R. Stoltz deserves of many thanks for his editing services throughout the publication of the reports of the project.

It is really my pleasure to release this integrated report as the concluding achievement of the "TradeLib" project at a time when the whole world is seeking agreeable future direction and a framework of trade liberalization under the inevitable trend of trade globalization, particularly after the rupture of the Seattle conference of WTO in late 1999. I sincerely hope that this integrated report, together with the country reports of the ten participating countries, will provide readers with an opportunity to analyze and recognize again the influence of trade liberalization on agriculture in this region and to further discuss the preparedness of Asian countries.

Finally, I would like to express my sincere appreciation to the Government of Japan for its generous support in funding the project.

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Haruo Inagaki
Director
CGPRT Centre

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Michio Kanai, Project Leader
Boonjit Titapiwatanakun, Regional Advisor

Executive Summary

Framework of the project

The project "Effects of Trade Liberalization on Agriculture in Selected Asian Countries with Special Focus on CGPRT Crops (TradeLib)" was formulated based on general concerns regarding on-going trade liberalization policies adopted by both WTO and non-WTO members. The project was funded by the Government of Japan outside of the Japan ESCAP Cooperation Fund as a three-year collaborative research project. The project operationally started in April 1997 with ten countries in Asia: China, India, Indonesia, Japan, Malaysia, Pakistan, the Philippines, the Republic of Korea, Thailand and Viet Nam.

One driving force of the trade liberalization policy of a country is its commitments under the international trade organization and multilateral economic groupings. After the Second World War, the General Agreement on Tariffs and Trade (GATT) and the WTO successively played the most significant role in world trade. There are at least two other important economic groupings within the ESCAP region that emerged during the late 1980s and played a notable role in trade among the member countries. These are the Asia Pacific Economic Cooperation (APEC) and the Association of South East Asian Nations (ASEAN) Free Trade Area (AFTA).

Within each economic group, the member country is committed to liberalizing trade and providing special trade privileges to the member countries. The commitment and privileges with AFTA are somewhat more extensive than those of APEC, which is more in line with the WTO.

The project participating countries, except India and Pakistan, are members of APEC, while China and Viet Nam are not yet WTO members. Five out of the ten countries are members of AFTA, namely Indonesia, Malaysia, the Philippines, Thailand and Viet Nam.

The main objectives of the project are:

(i) to identify changes in international trade of agricultural products in the region under liberalized market conditions;
(ii) to characterize the situation and prospects of agriculture in selected Asian countries with special attention on the effects of trade liberalization;
(iii) to specify policy options for improving farmers' income in the process of trade liberalization; and
(iv) to provide concerned policy makers and researchers with discussions and suggestions on the above findings.

The project consists of three studies as follows:

(i) institutional study on international agricultural trade liberalization (institutional study);
(ii) study on effects of trade liberalization on commodities (commodity study); and
(iii) study on effects of trade liberalization on local agriculture (location-commodity study).

The institutional study and commodity study analyzed mainly macro level aspects of the effects of trade liberalization. On the other hand, the location-commodity study analyzed mainly intermediate and micro level aspects.

The institutional study attempted to highlight and analyze institutional aspects of trade liberalization. The study included reviews/analyses on:

(i) history of the trade regime;
(ii) the trade regime at present and towards year 2000 or 2004 (government policies, etc.); and
(iii) infrastructure related to foreign trade.

The commodity study attempted to highlight and analyze effects of trade liberalization on selected commodities. The study included reviews/analyses on:

(i) both sides of international trade, namely, export and import;
(ii) international trading patterns; and
(iii) international trade performance.

The location-commodity study (i) attempted to highlight effects of trade liberalization on agriculture at the local or farm level especially effects on small farmers and (ii) included reviews/analyses on effects of trade liberalization on selected commodities at the local or farm level.

The implementation period of the project was divided into a first phase (April 1997 - June 1998) and a second phase (July 1998 - December 1999). The institutional study was stressed in the first phase and the commodity study and the location-commodity studies were implemented in the second phase. Since the project was conceived and started before the Asian currency and economic crisis began in the middle of 1997, the study handled basically the period before the crisis. Seven countries, nevertheless, referred to the effects of the crisis on their economy and agriculture.

The ten participating countries can roughly be classified according to their overall trade performance with agricultural products as importing countries or exporting countries. Countries falling within the first category are Japan, the Republic of Korea and Malaysia, while the second category includes Indonesia, the Philippines, Thailand, India, Pakistan, China and Viet Nam.

These ten countries vary greatly in terms of population, GNP, social development indicators, finance, land, agriculture and trade.

Selection of commodities for the study in each country was made almost completely based upon the interest and priority of the country concerned. Nevertheless, rice was selected by all participating countries as a common commodity in the studies. Among other commodities, maize was selected by most of the countries followed by soybean. In addition, some countries studied livestock products such as pork, beef, mutton, poultry, eggs and milk as well as fish products, vegetables and perennial crops. In general, the commodity coverage in the first phase is boarder than that of the second phase. This is due mainly to the in depth analysis in the second and third studies and time constraints.

Progress of trade liberalization

According to the first phase study, the institutional study, the trade liberalization policy of each country very much depended upon (i) the status of socio-economic development of the country, (ii) the share of international trade in its GNP, and (iii) the comparative advantage of the country.

On the other hand, domestic and international political pressure as well as multilateral accords also had certain impacts on the country's trade liberalization policies. The starting point of trade liberalization varied among the ten participating countries, but the progress can be roughly divided into two periods.

Start of import liberalization (late 1950s – 1970s)

By and large, Japan started its trade liberalization policies on certain agricultural commodities in the late 1950s. There were at least two factors which motivated Japan to initiate the liberalization policies. First, the natural resource constraints faced by Japan could only be solved through international trade. Second, Japan was able to achieve rapid and sustainable economic growth in the mid 1950s.

During this period, the Republic of Korea and Malaysia, which are classified as food importing countries, concentrated their policies on import substitution and export promotion.

In the same period, the major emphasis was more or less put on production and input-oriented policies in the agricultural exporting countries such as India, Indonesia, the Philippines and Thailand. China, the largest country in the region, was in the process of domestic reform of its economy and agriculture and it maintained basically a closed economy.

Start of opening up and the WTO (1980 – present)

In fact, this period may be divided into two sub-periods, namely, 1980 – 1992 the pre WTO sub-period and 1993 – present or the WTO sub-period.

The economic expansion and growth of Japan enhanced its impact in international trade. Consequently, Japan was requested by major developed trading partners and ASEAN to further liberalize import of agricultural products. In addition, Japan was pressed to open up its agricultural market in compliance with the WTO commitment. The Republic of Korea gradually allowed its agricultural trade policy to liberalize international trade in line with the WTO commitment.

Most of the countries progressively opened up their agricultural trade, especially in imports of agricultural products during this period.

The most significant trade liberalization, which had strong impact on agricultural trade in the ESCAP region during this period, was the opening up of the Chinese economy and the gradual liberalization of trade policies in India.

In the WTO sub-period, trade liberalization has continued in all of the ten countries including non-member countries, China and Viet Nam.

Trade-related infrastructure

One important factor that determines the benefit of a country under free trade is the existing physical infrastructure of the country. The major physical infrastructure includes roads, railroads, rivers, airports and seaports. According to observations made during the interim reviews in the individual countries, most of the infrastructure in Japan and the Republic of Korea is well developed and developed, while that in the Philippines, Pakistan and Viet Nam is mostly under developed.

The existing infrastructure in Indonesia, Malaysia and Thailand is mostly in the developing stage, however, road and air infrastructure in Thailand is better developed. In general, the infrastructure of large countries like China and India is still in the developing stage.

As a matter of fact, development of infrastructure in each country very much depends upon the state of economic development and the natural resource endowment e.g. rivers and sea access. A good example is the development of infrastructure in the Philippines, which has almost stood still since the economic crisis in the 1980s.

Awareness of the WTO

According to observations made during the interim reviews in the individual participating countries, awareness of the WTO of concerned parties, including government officers, private firms, farmers and consumers, was very strong in the developed and agricultural importing countries such as Japan and the Republic of Korea. In general, the awareness of government officers in the ASEAN countries (except Viet Nam), China, India and Pakistan is strong, while that of the private sector is moderate. Nevertheless, the awareness of farmers and consumers is, generally, very weak or weak in most of the countries.

The awareness of the WTO of a country depends on the seriousness of its trade-related issues regardless of whether it is an exporting country or an importing country. Also it depends on the development of the country's information networks as well as the country's openness of society. Development of information networks depends largely on the economic development stage.

Reports on trade liberalization in each country written by both domestic and foreign researchers have been increasing, which reflects awareness and interest on the issue.

Trade performance

The structure of trade performance among the ten countries between 1992 and 1996, which represent the pre WTO sub-period and the WTO sub-period, is almost the same. As for the magnitude of trade values, countries can be divided into three groups, i.e. East Asia: Japan, Republic of Korea and China; ASEAN except Viet Nam: Malaysia, Thailand, Indonesia and the Philippines; South Asia and Viet Nam: India, Viet Nam and Pakistan.

Although the structure is the same during these years, the total merchandise trade among the ten countries almost doubled. This may suggest that the process of trade liberalization has benefited almost all of the ten countries in macro terms.

Effects of trade liberalization on specific commodities

The second phase study mainly consists of a commodity study and a location-commodity study. The commodity study analyzed the effects of trade liberalization at the national level using simple welfare analysis. According to the studies, net welfare gains due to trade liberalization are estimated for almost all the commodities. In the case of export commodities, producers' welfare gains are larger than consumers' welfare losses and in the case of import commodities, consumers' welfare gains are larger than producers' welfare losses.

Individual commodity results are shown by taking the example of rice, which is the only common commodity selected by all ten countries. Among the ten countries, the rice importing countries are Japan, Malaysia, the Republic of Korea, Indonesia and the Philippines. All estimations confirm the conventional theory that there is a consumer's surplus gain and a producer's surplus loss and the net difference is a net welfare gain except for the following. Indonesia assumed three cases: (i) an international price increase case, (ii) a import tariff decrease case, and (iii) a simultaneous international price increase and import tariff decrease case. Among them the results of the first case showed a producer's surplus gain, a consumer's surplus loss and a net welfare loss. Also for the case of the Philippines, which assumed a scenario of an increase in import tariff due to the present policy regime, the results showed a producer's surplus gain, a consumer's surplus loss and a net welfare gain.

China, India, Pakistan, Thailand and Viet Nam are rice exporting countries. The welfare analysis is in line with the expectation that there is a producer's gain and consumer's loss. However, the net welfare of China and India is negative, while that of Pakistan, Thailand and Viet Nam is positive. This may due to the fact that China and India are large countries and consume a large amount of rice domestically, and also due to the fact that India assumed the withdrawal of producers' subsidies.

Effects of trade liberalization on commodities at the local or farm level

The location-commodity study analyzed the effects of trade liberalization at the local or farm level using partial budget analysis. In general all analyses revealed that there is an increase in farmers' return or gross margin after trade liberalization for the export commodities, except

for a few commodities such as maize in China and non-Basmati rice in Pakistan. For the import commodities, trade liberalization decreased the return of farmers, except for maize in Pakistan and Thailand.

Export commodities are usually produced more efficiently, whereas import commodities are usually produced less efficiently. The latter are often grown by small farmers. Also they are often grown in less favored areas in a country. These facts lead to an interpretation that the adverse effects of trade liberalization go most seriously to small farmers and to farmers in less favored areas. The farmers in less favored areas are often small farmers.

Actual performance of trade-related figures after the introduction of the WTO

The actual performance of trade data was tested using a simple method for major commodities, namely, rice, maize, soybean and palm oil. In most cases no clear effects of trade liberalization were observed. Perhaps it was too early to observe effects of trade liberalization. It might also be due to the fact that measures to prepare for trade liberalization had not yet been adopted or even if adopted their effects will appear after a certain time lag. Or it might be due partly to unexpected disturbance by factors such as El Niño and the Asian economic crisis.

Nevertheless, some effects of trade liberalization were observed. For the assumed import case, these are maize of the Philippines and soybean of the Republic of Korea. For the assumed export case, these are rice of Thailand and palm oil of Malaysia.

Recommendations and future topics to be addressed

Various recommendations were proposed in the country reports, and these are roughly summarized as follows: (i) development of more efficient measures of production in both exporting and importing countries for higher income and food security, (ii) better policies and programs for crop diversification and direct payment to be implemented for small farmers and farmers in less favoured areas in a transition period of trade liberalization, (iii) improvement of trade-related infrastructure especially roads and ports, and (iv) more efficient information networks for farmers and consumers, the private sector and government institutions covering all the stages of production, consumption, marketing, and international trade.

Several important observations and issues were raised in the studies, but not discussed fully in the reports. These issues should be addressed in the future: (i) structural reform of government to handle sanitary and phytosanitary measures and technical barriers to trade, (ii) product quality, (iii) large countries such as China and India as prospective importers of staple food, (iv) short and long run problems to adapt to the freer trade situation, (v) environmental compatibility including genetically modified organism agricultural commodities, (vi) price instability, and (vii) new members of the WTO.

1. Introduction

1.1 General background

With the fast economic growth in the region, in particular in Asian developing economies, trade of agricultural products has been expanding. According to FAO data, agricultural trade in Asia and the Pacific recorded US$ 61,542 million in import and US$ 50,695 million in export in 1993 and their increases in the last ten years until 1993 were 54% and 82%, respectively.

Recent developments both in international and regional trade will further accelerate this trend. In 1993 the Uruguay Round negotiation on General Agreement on Tariffs and Trade (GATT), with some sensitive issues on agricultural products, reached final agreement based on comprehensive tariffication. Thereafter, GATT was dissolved to establish the World Trade Organization (WTO) for the purpose of strengthening its function. The movement towards trade liberalization accelerated in Asia and the Pacific region too.

However, concern has been growing about the effects of trade liberalization on ESCAP region agricultural production. Improving the economy of the agricultural sector and increasing farmers' income are the priority of all countries in the region. It is expected that these countries would take measures to support their domestic agriculture, especially the smallholder sector which is anticipated to be adversely affected by trade liberalization.

The extent and direction of impacts of trade liberalization on agricultural products differ by country and product. In order to smoothly proceed with the adjustment process towards more liberalized economic environments, the effects of trade liberalization, especially those on the smallholder sector, need to be analyzed and identified. The project "Effects of trade liberalization on agriculture in selected Asian countries with special focus on CGPRT crops (TradeLib)" was, therefore, formulated and funding was obtained from the Government of Japan. The project aim is to identify the changing international trade of agricultural products and characterize the economic situation in rural communities in selected Asian countries in the process of trade liberalization and, furthermore, to specify policy options for improving the welfare of farmers.

The TradeLib project is a continuation of the project "Market prospects of upland crop products and policy analysis in selected Asian countries (MPUPA)", also funded by the Government of Japan and implemented by the CGPRT Centre for two years during 1995-1997 in collaboration with seven countries in the region, namely, China, India, Indonesia, Pakistan, the Philippines, Thailand and Viet Nam. The MPUPA project identified domestic demand and the market structure of selected crop products and related policies. The results were published as the Centre's Working Papers No. 20-28 and Monograph No. 34 (see Bibliography).

While the main concern of the MPUPA project was domestic problems, the TradeLib project focuses on the effects of trade scheme changes on regional, national and local agriculture.

Considering the important role of these countries in regional agricultural trade, and in view of maintaining continuity between these two directly-related projects, all of the seven MPUPA countries were invited to join the TradeLib project. In addition, in line with the close economic relations with above countries and their rapidly expanding import markets, three other countries, Japan, Malaysia and the Republic of Korea were also invited to participate in the project.

The main objectives of the TradeLib project are:

(i) to identify changes in the international trade of agricultural products in the region under liberalized market conditions;
(ii) to characterize the situation and prospects of agriculture in selected Asian countries with special attention to the effects of trade liberalization;
(iii) to specify policy options for improving farmers' income in the process of trade liberalization; and
(iv) to provide concerned policy makers and researchers with discussions and suggestions on the above findings.

The project consists of economic analyses on institutional aspects and commodity aspects. It focuses on macro level as well as intermediate and micro level economic aspects. The project analyzes both sides of trade - export and import - as it involves both exporting and importing countries. The project stresses producers, especially small farmers. At the same time, the consumers' viewpoint is also addressed.

With its limited resources, the project did not try to develop any worldwide commodity projection models or national trade projection models. The project was more concerned with medium and long-term effects of trade liberalization than short-term ones. Efforts were made to compile information and lessons as practical as possible, so that policy makers, producers and exporters would get direct benefits from this collaborative research. Mathematical complication or inconclusive discussions are avoided.

Since this project was conceived and started before the current currency and economic crisis began in the middle of 1997, the study focuses basically on the period before the crisis with current information where possible.

1.2 Coverage of the study

The project consists of three studies as follows:

(i) institutional study on international agricultural trade liberalization (institutional study);
(ii) study on the effects of trade liberalization on commodities (commodity study); and
(iii) study on effects of trade liberalization on local agriculture (location-commodity study).

The institutional and commodity studies analyzed mainly macro level aspects. On the other hand, the location-commodity study analyzed mainly intermediate and micro level aspects.

The institutional study attempted to highlight and analyze institutional aspects of trade liberalization. The study included reviews/analysis on:

(i) history of the trade regime;
(ii) trade-related policies at present and towards 2000 or 2004; and
(iii) trade-related infrastructure.

The history of the trade regime intended to include at least a ten-year time span. The trade regime covered government policies, tariff structure, non-tariff restrictions, trade trends, exchange rate, etc. which relate to trade liberalization. Existing regulations on agricultural trade and counter measures taken by the government in favor of trade liberalization are also included.

The trade regime at present and towards 2000 or 2004 included preparations for GATT agreement and related government policies and predictions including schedules of transformation of trade policies.

Trade-related infrastructure includes transportation physical facilities, packaging, sanitary and phytosanitary, and technical barriers to trade.

The commodity study attempted to highlight effects of trade liberalization on country-specific commodities at the national level. The study included reviews/analyses on:

(i) both sides of international trade, namely, export and import;
(ii) international trading patterns for selected commodities; and
(iii) international trade performance of selected commodities.

The export and import structure of selected agricultural products was reviewed and their prospects under further liberalized economic environments were studied.

The location-commodity study attempted to highlight the effects of trade liberalization on agriculture at the local or farm level, especially effects on small framers, and included reviews/analyses on effects of trade liberalization on selected commodities at the local or farm level.

In view of the diversified production and trade in the participating countries, the commodity coverage is specific for each country. In the institutional study it covered as many commodities as possible including commodities which were slated for study in the commodity study and location-commodity study. In the commodity study rice and one, two or three of the major commodities (maize, soybean, cassava and wheat) were expected to be studied. In addition to the above, a few country-specific minor commodities were analyzed. They included other CGPRT crops such as vegetables, beverages and feed crops. Relations between livestock products and feed, especially imported feed, were studied.

In commodity selection, it was expected that at least one each of commodities positively and negatively impacted by trade liberalization would be included. Furthermore, in the location-commodity study commodities expected to be analyzed are similar to those in the commodity study. The commodities selected by country in each study are shown in Table 1.1.

Table 1.1 Commodities selected for the country studies.

Institutional study	Commodity
China	rice, maize, soybean, peanuts, frozen pork, canned food, raw silk, wheat, vegetable oils, sugar and raw wool
India	rice, soybean, oilseeds, wheat, sugar and nuts
Indonesia	rice, maize, soybean, sugar, rubber, coffee, tea and palm oil
Japan	rice, maize, soybean, wheat, orange, soybean, rapeseed, beef, pork, chicken, eggs, skimmed milk powder, butter and cheese
Malaysia	rice, palm oil, tobacco, wheat, maize, soybean, sweet potato, tapioca, pepper, logs and sawn-timber
Pakistan	rice, wheat, cotton, milk and milk products, coffee, tea and edible oil
Philippines	rice, maize, soybean, cassava, coconut, potatoes, poultry, hogs and beef
Republic of Korea	rice, soybean, potato, maize and wheat
Thailand	rice, maize, cassava, soybean, rubber, shrimp, chicken and dairy products
Viet Nam	rice, coffee, tea, rubber, cashewnut and groundnut

Commodity study and location-commodity study	Commodity
China	rice, maize, soybean, sweet potato, potato, other grains, pork, beef, mutton, poultry, egg, milk and fish
India	rice, maize, chickpea and rapeseed/mustard
Indonesia	rice, maize, soybean, potatoes and cassava
Japan	rice, sugar, potato, sweet potato and beef
Malaysia	palm oil, sugar and tobacco
Pakistan	rice, maize and wheat
Philippines	rice and maize
Republic of Korea	rice, soybean, ginseng and onion
Thailand	rice, maize, soybean and milk and milk products
Viet Nam	rice, coffee, tea, rubber and groundnut

1.3 Analytical framework

Both qualitative and quantitative analytical methods were applied. In the institutional study, qualitative analysis prevailed. In the commodity and location-commodity studies, simple quantitative analysis was applied with qualitative analysis in some cases.

In the institutional study, some trade-related indicators were included in the description. Future predictions of trade by quantitative methods, which were made by the expert or taken from other sources, are also included in the study.

In the commodity study to simplify the analytical structure and reduce unnecessary work, simple welfare analysis methods were used, and previous quantitative analyses were reviewed and their results used.

In case studies the use of more sophisticated and complicated quantitative methods was possible. China used a large agricultural sector model and Japan used more sophisticated models.

In the location-commodity study, partial budget analysis was used. The Philippines added a local level analysis using simple quantitative analysis.

Detailed description of the common methodologies is presented in Chapter 6.

1.4 Brief record of project implementation

The TradeLib project operationally started in April 1997. Dr. Michio Kanai, National Research Institute of Agricultural Economics, Japan, worked as the project leader (PL) under the direct supervision of the Centre's programme leader of the research and development programme and the overall supervision of the director. Dr. Boonjit Titapiwatanakun, Kasetsart University, Thailand, served the project as the regional advisor (RA) throughout the project implementation.

A preliminary discussion meeting was held at the Centre during 16-17 June 1997 with four senior agricultural economists from India, Indonesia, Pakistan and Thailand. The framework of project implementation was critically discussed at the meeting.

The participating countries nominated researchers as their national experts (NEs):

China	Dr. Jikun Huang Center for Chinese Agricultural Policy (CCAP) Chinese Academy of Agricultural Sciences (CAAS)
India	Dr. Ramesh Chand National Center for Agricultural Economics and Policy Research (NCAP)
Indonesia	Dr. Erwidodo Center for Agro-Socio Economic Research (CASER)
Japan	Dr. Hiroaki Kobayashi Japan International Research Center for Agricultural Sciences (JIRCAS)
Malaysia	Mr. Tengku Mohd. Ariff bin Tengku Ahmad Economic and Technology Management Research Centre, Malaysian Agricultural Research and Development Institute (MARDI)
Pakistan	Dr. Muhammad Ramzan Akhtar (except Mr. Khan's term) Mr. Naseer Alam Khan (the first part of the second phase) Social Science Institute (SSI) National Agricultural Research Centre (NARC)
Philippines	Dr. Minda Mangabat

	Bureau of Agricultural Statistics (BAS)
Republic of Korea	Dr. Myung-Hwan Sung
	Korea Rural Economic Institute (KREI)
Thailand	Dr. Kajonwan Itharattana
	Office of Agricultural Economics (OAE)
Viet Nam	Dr. Nguyen Trung Que
	Institute of Agricultural Economics (IAE)

The project period was divided into two phases: April 1997-June 1998 and July 1998-December 1999. In the first phase, the first study was mainly conducted and the second and third studies were carried out in the second phase.

A planning meeting for the first phase of the country study was held on 27-28 August 1997 at the Centre. NEs made an introductory presentation on the current situation of research and special interests in their countries concerning trade liberalization. A detailed framework of project implementation including aspects of work plan, commodity coverage, analytical methodologies and composition of reports was discussed. Separate planning meetings were held for Viet Nam in November 1997 in Hanoi and for China in July 1998 in Bangkok.

Interim project reviews were undertaken to discuss, monitor and advise the country studies:

Japan	19-23 January 1998
Malaysia	8-14 February 1998
Republic of Korea	4-11 April 1998
Thailand	20-25 July 1998
Indonesia	29 September - 3 October 1998
Pakistan	8-15 November 1998
The Philippines	6-12 December 1998
Viet Nam	10- 19 January 1999
India	31 January - 6 February 1999
China	21-29 March 1999

A draft report meeting for the first phase was held on 5-6 May 1998 at the Centre. The NEs presented their country studies. A schedule for revising the draft reports was agreed upon.

The first country reports were published in the Centre's Working Paper series (WP) as follows:

WP 33	Effects of Trade Liberalization on Agriculture in Pakistan: Institutional and Structural Aspects by Muhammad Ramzan Akhtar (October, 1998)
WP 34	Effects of Trade Liberalization on Agriculture in Malaysia: Institutional and Structural Aspects by Tengku Mohd Ariff bin Tengku Ahmad (October, 1998)
WP 35	Effects of Trade Liberalization on Agriculture in the Republic of Korea Institutional and Structural Aspects by Myung-Hwan Sung (October, 1998)
WP 36	Effects of Trade Liberalization on Agriculture in Japan: Institutional and Structural Aspects by Hiroaki Kobayashi (October, 1998)
WP 37	Effects of Trade Liberalization on Agriculture in the Philippines: Institutional and Structural Aspects by Minda Mangabat (October, 1998)
WP 38	Effects of Trade Liberalization on Agriculture in India: Institutional and Structural Aspects by Ramesh Chand (October, 1998)
WP 39	Effects of Trade Liberalization on Agriculture in Thailand: Institutional and Structural Aspects by Kajonwan Itharattana (January, 1999)
WP 40	Effects of Trade Liberalization on Agriculture in Vietnam: Institutional and Structural Aspects by Nguyen Trung Que (December, 1998)

WP 41 Effects of Trade Liberalization on Agriculture in Indonesia: Institutional and Structural Aspects by Erwidodo (January, 1999)

WP 42 Effects of Trade Liberalization on Agriculture in China: Institutional and Structural Aspects by Jikun Huang and Chunlai Chen (May, 1999)

A planning meeting for the second phase of the country study was held on 7-8 May 1998 at the Centre. The NEs made an introductory presentation of their county studies for the second phase. A detailed framework of project implementation including aspects of work plan, commodity coverage, selection of study sites, methodologies and composition of reports was discussed.

A draft report meeting for the second phase was held on 13-15 April 1999 at the Centre. The NEs presented their country studies. A schedule for revising the draft reports was agreed upon.

The second country reports were published in the Centre's Working Paper series (WP) as follows:

WP 43 Effects of Trade Liberalization on Agriculture in China: Commodity Aspects by Jikun Huang and Chunlai Chen (August, 1999)

WP 44 Effects of Trade Liberalization on Agriculture in Pakistan: Commodity Aspects by Muhammad Ramzan Akhtar (August, 1999)

WP 45 Effects of Trade Liberalization on Agriculture in India: Commodity Aspects by Ramesh Chand (September, 1999)

WP 46 Effects of Trade Liberalization on Agriculture in Malaysia: Commodity Aspects by Tengku Mohd Ariff bin Tengku Ahmad and Ariffin Tawang (September, 1999)

WP 47 Effects of Trade Liberalization on Agriculture in the Republic of Korea: Commodity Aspects by Myung-Hwan Sung (September, 1999)

WP 48 Effects of Trade Liberalization on Agriculture in Indonesia: Commodity Aspects by Erwidodo and Prajogo U. Hadi (October, 1999)

WP 49 Effects of Trade Liberalization on Agriculture in Thailand: Commodity Aspects by Kajonwan Itharattana (November, 1999)

WP 50 Effects of Trade Liberalization on Agriculture in Japan: Commodity Aspects by Hiroaki Kobayashi (November, 1999)

WP 51 Effects of Trade Liberalization on Agriculture in the Philippines: Commodity Aspects by Minda Mangabat (December, 1999)

WP 52 Effects of Trade Liberalization on Agriculture in Viet Nam: Commodity Aspects by Nguyen Trung Que and Nguyen Ngoc Que (January, 2000)

In order to discuss and disseminate the project findings and policy recommendations, a regional workshop "Effects of Trade Liberalization on Agriculture in Asia" was held during 5-8 October 1999 in Bogor, Indonesia. Country reports were presented by the NEs and comments were provided by commentators for the ten participating countries. In addition, six non-participating countries were invited. Dr. Keiji Ohga, University of Tokyo, Japan, provided a keynote address. Dr. Boonjit Titapiwatanakun, Kasetsart University, Thailand, presented a consolidated discussion on the project achievements. The proceedings of the regional workshop have been published by the Centre as Monograph No. 38.

A series of in-country seminars was planned for the period January to June 2000 in order to further discuss and disseminate those findings and policy recommendations achieved in the country studies implemented in the project.

1.5 Framework of the integrated report

This integrated report consists of eight chapters. Chapter 1 introduces the framework of the project including a brief record of project implementation.

Chapter 2 briefly summarizes the three trade-related international organizations based mainly on secondary sources. Chapter 3 is an overview of the economy and agriculture of the participating countries based on World Bank and FAO data.

Chapter 4 is devoted to the history and present and future regime of trade-related policies and performance of international trade in each country based on the first phase country reports.

Chapter 5 deals with trade-related infrastructure in the participating countries based on the country reports. It lays stress on transportation-related infrastructure. In some countries other physical infrastructure and institutional support services are added. In addition awareness of the WTO in the countries is discussed based mainly on those observations made during the in-country interim reviews.

In chapter 6, following a summary of the studies on trade liberalization in the participating countries based on the first phase country reports, the analytical methodology and the results of the second phase country reports are discussed; including (i) a quantitative analysis on effects of trade liberalization on selected commodities at the national level in each country using welfare analysis, and (ii) a budgetary analysis of the effects at the local or farm level in each country using partial budget analysis.

Chapter 7 examines impacts of trade liberalization after the introduction of the WTO. After comparing trade performance of the ten participating countries before and after the introduction of the WTO, the actual performance of trade of the main commodities was examined. In addition, the Asian economic crisis, which is the largest disturbance to the actual trade-related figures, and its effects on agriculture in most of the participating countries were summarized based on the second phase reports.

Chapter 8 is the concluding part of this integrated report. Conclusions are presented with summarized recommendations proposed in the country reports. In addition, topics to be addressed in future studies are added.

2. Overview of Trade Regimes and Commitments of Trade-Related International Organizations to Trade Liberalization

2.1 Introduction

Among trade-related international organizations, the World Trade Organization (WTO), the Asia Pacific Economic Cooperation (APEC) and the ASEAN Free Trade Area (AFTA) are the most relevant organizations to trade liberalization in the ten project participating countries. According to Nolland (1999), regional organizations such as APEC, and ASEAN have become more prominent in the policy area.

The WTO is a world organization, APEC is a regional organization in the Asia-Pacific region and AFTA is an organization under ASEAN, which is a sub-regional organization in the region. Their roles in trade liberalization are summarized in the following sections.

2.2 WTO

The shrinking market of the early 1980s resulted in worldwide surpluses of agricultural commodities. According to FAO trade yearbooks, world export value of agricultural products decreased from 233 billion dollars in 1980 to 209 billion dollars in 1985. Due to depressed economic conditions, many importing countries increasingly pursued restrictive trade policies resorting to import substitution measures and various other measures to restrict import with the aim of saving foreign exchange and insulating domestic farmers from drops in world prices. This further exacerbated the situation. As a result, major agricultural producers and exporters found it difficult to sell their products and their governments and taxpayers bore a large share of the cost of adjusting to slowed growth in trade.

The United States, being the most important agricultural exporter, was hard hit by this slowdown. US export value of agricultural products decreased from 42.9 billion dollars in 1980 to 30.6 billion dollars in 1985, and then to 28.1 billion dollars in 1986, whereas its import value of agricultural products increased from 18.2 billion dollars in 1980 to 21.1 billion dollars in 1985, and then 22.4 billion dollars in 1986. The increase of imports is partly due to agricultural products imported from EU with export subsidies. As a result the US trade balance of agricultural products decreased sharply from 24.7 billion dollars in 1980 to 9.5 billion dollars in 1985, and then to 5.6 billion dollars in 1986. On the other hand the US deficit in total merchandise trade increased sharply from 24.5 billion dollars in 1980 to 144.0 billion dollars in 1986.

The above data convinced the US of the benefits of a more liberal agricultural trading environment. This prompted the US and other major agricultural exporters, including Cairns group countries which advocate freer trade, to initiate a new round of multilateral trade negotiation (MTN) under the auspices of the General Agreement on Tariff and Trade (GATT). This resulted in a new round of MTN, the eighth since the establishment of GATT in 1948, known as the Uruguay Round (UR) in 1986, where agricultural trade became the main agenda. The objectives of this negotiation were (GATT 1989):

- to establish a fair and market-oriented agricultural trading system, and

- to reach this objective by substantial, progressive reductions in agricultural support and protection sustained over an agreed period of time resulting in correcting and preventing restrictions and distortions in world agricultural markets.

The UR negotiations culminated in the signing of the UR Agreement and the establishment of the World Trade Organization (WTO) on January 1, 1995. The WTO was established to oversee the implementation of the UR Agreement for freer trade. Agriculture is now covered under the UR Agreement through the Agriculture Agreement.

The UR agreement on agriculture consists of three main portions, namely: (i) the agreement on concessions and commitments on market access, domestic support and export subsidies (Table 2.1), (ii) the agreement on sanitary and phytosanitary measures, and (iii) the ministerial agreement concerning least-developed and net food-importing developing countries. The agricultural package also addresses many other issues of vital economic and political importance to many member countries, which are closely related to the issues of sustainability mentioned above. These include provisions that encourage the use of less trade-distorting domestic support policies to maintain agricultural and rural development, that allow actions to ease any adjustment burden, and also the introduction of properly prescribed provisions that allow some flexibility in implementation of commitments.

In the area of market access, non-tariff measures were replaced by tariffs that provide substantially the same level of protection. Tariffs resulting from this "tariffication" process, as well as other tariffs on agricultural products, are to be reduced by an average 36% in the case of developed countries and 24% in the case of developing countries, with a minimum reduction for each tariff line being required. Reductions are to be undertaken over six years in the case of developed countries and ten years in the case of developing countries. Least-developed countries are not required to reduce their tariffs.

The tariffication package also provides for the maintenance of current access opportunities and the establishment of minimum access tariff quotas (at reduced tariff rates) where current access is less than 3% of domestic consumption. These minimum access tariff quotas are to be expanded to 5% over the implementation period. In the case of tariffied products special safeguard provisions will allow additional duties to be applied in the case of shipments at prices denominated in domestic currencies below a certain reference level or in case of a surge of imports.

Domestic support measures that have a minimal impact on trade (green box policies) are excluded from reduction commitments. Such policies include general government services, for example in the areas of research, disease control, infrastructure and food security. It also includes direct payments to producers, for example, certain food of "decoupled" income support, structural adjustment assistance, and direct payments under environment and regional assistance programs. In addition, other policies need not be included in the total aggregate measurement support (total AMS) reduction commitment. These policies include direct payments of production-limiting programs, agricultural and rural development assistance and other support which makes up only a low portion (5-10%) of the value of production of individual products or the value of total agricultural production.

Members are required to reduce the value of mainly direct export subsidies to a level 36% below the 1986-90 base period level over the six year implementation period, and the quantity of subsidized export 21% over the same period. In the case of developing countries, the reductions are two-thirds for those of developed countries over a ten year period and subject to certain conditions; there are no commitments on subsidies to reduce the costs of marketing exports of agricultural products or of internal transport and freight on export shipments.

Another agreement concerns the application of sanitary and phytosanitary measures. This agreement recognizes that governments have the right to take sanitary and phytosanitary measures, but that they should be applied only to the extent necessary to protect human, animal or plant life or health and should not arbitrarily or unjustifiably discriminate between members

where identical or similar conditions prevail. In order to harmonize these measures on a wide basis, members are encouraged to base their measures on international standards, guidelines and recommendations. The agreement contains requirements on transparency, including the publication of regulations, the establishment of national inquiry points and notification procedures.

The results of the UR Agreement represent a comprehensive attempt towards strengthening the rules and disciplines of the multilateral trading system. The UR Agreement will govern trading relations among GATT trading parties and among members of the WTO. Global trade liberalization commitments under UR/WTO should bring substantial benefits for all participating countries and for the trading system as a whole.

Table 2.1 Basic provisions of the Uruguay Round Agreement on Agriculture.

Improvement in Market Access

- Conversion of all existing non-tariff barriers into tariff equivalents, to be added to the existing level of tariffs.
- Cut in import duties by an unweighted average of 36% in equal installments over six years for developed countries and by 24% over ten years for developing countries (from a base of 1986-88).
- Reduction in each individual tariff line of a minimum of 15% by developed countries and 10% by developing countries.
- Establishment of "minimum access" import quotas for products, where imports have faced prohibitive barriers in the past, equal to 3% of domestic consumption and rising to 5% at the end of six years.

Reduction in Domestic Support to Agriculture

- Obligation to reduce the Aggregate Measure of Support (AMS) or the total amount of government aid to the agricultural sector by 20% over six years, in equal annual installments for developed countries (from base levels of 1986-1988) and by 13% over 10 years for developing countries.
- Support policies, which have a minimal impact on trade, may be excluded from the AMS calculation. These "green box" policies include research services, pest and disease control, inspection services, environmental and conservation programs, stockholding for food security, domestic food aid, crop insurance, disaster relief, regional and structural investment aid.
- Direct payments to farmers (e.g., deficiency payments) are not considered part of the AMS and do not have to be reduced if they are made under production-limiting programs.
- A "de minimis" provision allows countries to exclude product-specific support from AMS calculation, when it does not exceed 5% of the value of production of that commodity.

Reduction in Export Subsidies

- Requirement for developed countries to reduce export subsidies by 36% in value terms over six years in equal installments (from a 1986-1990 base year level) and by 21% in volume terms. Developing countries must carry out these reductions at 24% and 14% in equal installments over ten years, respectively. These commitments (like those for lowering of domestic subsidies) have been fixed in ad valorem terms without allowance for inflation adjustment, so that subsidy reduction in real terms will continue after transition periods.
- Reductions apply to specific products or products groups, generally defined on a 4 digit HTS level.
- Countries commit not to grant export subsidies on products that currently do not benefit from such assistance.
- Privately financed export aid is not covered by the agreement.

Source: GATT (1989).

2.3 APEC

Asia Pacific Economic Cooperation (APEC) was established with twelve founding member countries including Indonesia, Japan, Malaysia, the Republic of Korea and Thailand in response to the growing interdependency among Asia-Pacific economies. Its goal is to advance Asia-Pacific economic dynamism and sense of community. By the time of the second meeting of APEC economic leaders in Bogor, Indonesia in November 1994, a further six economies including China had joined. In 1998, Peru, Russia and Viet Nam joined.

The initial years of APEC were focused largely on exchanges of views and project-based initiatives. The concerns were simply to advance the process of Asia-Pacific economic

cooperation and to promote a positive conclusion to the Uruguay Round of GATT negotiations. In response to needs, APEC has evolved into a forum of greater substance and higher purpose, namely to build the Asia-Pacific community by economic growth and equitable development through trade and economic cooperation.

When the economic leaders met for the first time for informal discussions at Blake Island near Seattle in November 1993, they envisioned a community of Asia-Pacific economies based on the spirit of openness and partnership, of cooperative efforts to solve the challenges of change, of free exchange of goods, services and investment, of broadly-based economic growth and higher living and educational standards and of sustainable growth that respects the natural environment. In subsequent annual meetings, APEC ministers and leaders further refined the vision and launched mechanisms to translate it into action.

In Bogor in November 1994, APEC economic leaders discussed where the economies of the region should to go in the next 25 years. In their Declaration of Common Resolve, which is known as the Bogor Declaration, the economic leaders agreed to achieve the goal of free and open trade and investment in the region no later than 2010 for the industrialized economies and 2020 for developing economies. The economic leaders further agreed to narrow the gap in the stages of development among Asia-Pacific economies. To this end, APEC will provide opportunities for developing economies to further increase their economic growth and level of development consistent with sustainable growth, equitable development and member economic stability.

In Osaka in November 1995, APEC economic leaders initiated the work of translating the Blake Island vision and the Bogor goals into reality. They adopted the Osaka Action Agenda, a blueprint for implementing their commitment to free and open trade and investment, business facilitation and economic and technical cooperation. Part I of the Action Agenda deals with trade and investment liberalization and facilitation. Part II deals with economic and technical cooperation in areas such as energy and transportation, infrastructure, small and medium enterprises, and agricultural technology. A Trade and Investment Liberalization and Facilitation (TILF) Special Account was established under the APEC Central Fund for APEC projects that support implementation of the Osaka Action Agenda.

The Osaka meeting laid out a set of nine clearly defined principles for APEC. They are (i) comprehensiveness, (ii) WTO-consistency, (iii) comparability, (iv) non-discrimination, (v) transparency, (vi) standstill, (vii) simultaneous start, continuous process and differentiated timetables, (viii) flexibility, and (ix) cooperation.

The Manila Action Plan for APEC (MAPA), adopted by economic leaders on 25 November 1996 includes the individual and collective action plans and progress reports on joint activities of all APEC economies to achieve the Bogor objectives of free and open trade and investment in the APEC region by 2010 and 2020 and joint activities among members under Part II of the Osaka Action Agenda. MAPA revolves around six themes: (i) greater market access in goods, (ii) enhanced market access in services, (iii) an open investment regime, (iv) reduced business costs, (v) an open and efficient infrastructure sector, and (vi) strengthened economic and technical cooperation. Table 2.2 shows objectives and guidelines of tariffs in individual action plans.

The pace of implementing progressive tariff reductions will take into account differing levels of development among APEC members, with the industrialized economies achieving the goal of free and open trade and investment no later than 2010 and developing economies no later than the year 2020.

Table 2.2 Objectives and guidelines of tariff reductions in individual action plans of APEC countries.

Objectives
APEC economies will achieve free and open trade in the Asia-Pacific region by:
a. progressively reducing tariffs; and
b. ensuring the transparency of APEC economies' respective tariff regimes.
Guidelines
Each APEC economy will:
c. take into account, in the process of progressive reduction of tariffs, intra-APEC trade trends, economic interests and sectors of products related to industries in which this process may have positive impact on trade and on economic growth in the Asia Pacific region;
d. ensure that the progressive reduction of tariffs is not undermined by the application of unjustifiable measures; and
e. consider extending, on a voluntary basis, to all APEC economies the benefits of tariff reductions and eliminations derived from sub-regional arrangements.

Source: APEC (1999).

APEC members committed to undertake trade liberalization further than Uruguay Round commitments, except on agriculture for some member countries including Indonesia. Agreements on planned tariff reductions are contained in APEC members' individual action plans, some of which are quite far-reaching and nine of which are "WTO plus", or go beyond Uruguay Round commitments. Several did not offer any further liberalization beyond the Osaka offer. The US, for example, did not offer tariff reduction beyond its present commitments, since its average tariffs are already low.

APEC members have been lowering tariffs and reducing the number of non-tariff barriers (NTB) based on their unilateral reform and deregulation initiatives since 1989. As a result, the average tariff level (unweighted) between 1988 and 1996 has been lowered by almost half from 15% to 9%. Currently, 14 members have average tariff levels below 15% with the majority of those below 10%. The three other members are already close to 0%.

Unilateral reforms have also reduced the number of non-tariff barriers. For APEC as a whole, the non-tariff barriers have been cut by half, from 9% of import coverage to 5% during this period. In some economies such as Australia, Chile, Indonesia, New Zealand and Singapore, the decline in non-tariff barriers has been dramatic leading almost to elimination. The use of import licensing and restriction in Indonesia, Malaysia, the Philippines, and Thailand for example is not more than 2 to 3% of all tariff lines. Singapore has continuously followed a free trade regime.

APEC tariff reductions are well on track in terms of approaching the Bogor Declaration target, and the progress is even faster and deeper than that the Uruguay Round commitments. There are some champion countries in APEC, namely those which already have low tariffs and are at or near the indicative Bogor target (Hong Kong, Brunei, and Singapore), and there are some that have committed to extensive tariff reduction so that their IAP is more progressive than the Bogor trend lines (Chile, China, Indonesia, and the Philippines). Because of the voluntary nature of APEC, keeping the liberalization process on track in terms of the Bogor target is very important. It means that tariff reduction will follow a downward trajectory, or at least not return to higher bound tariff levels.

2.4 AFTA

There has been a strong need among ASEAN members for closer cooperation to further strengthen regional stability and foster economic growth in the region. The third Summit Meeting in Manila, December 1987, set the ASEAN Plan of Action in economic cooperation.

At the fourth Summit in Singapore, January 1992, the heads of ASEAN signed the Singapore Declaration and agreement for enhancing ASEAN economic cooperation. The major outcome of this summit was to set up the ASEAN Free Trade Area (AFTA). AFTA has been considered the most important sub-regional economic endeavor of ASEAN in recent years. AFTA has been conceptually recognized as a GATT-consistent regional trading arrangement. AFTA was also created to provide an integrated market that would be attractive to foreign investors and encourage them to build plants of efficient scale and promote the growth of intra-industry trade within ASEAN. This movement has become important for ASEAN countries considering the emergence of other destinations for investment such as China, India and Viet Nam.

The agreement to realize AFTA is implemented through the scheme of Common Effective Preferential Tariff (CEPT), which was introduced in January 1993 and expected to come into effect in January 1994. The core of the scheme is centered around the realization of a common, low and effective tariff of 0-5% for all intra-ASEAN trade. The time framework for realization of this objective was originally 15 years. However, various forces including UR, progress in APEC and unilateral liberalization have contributed to a process of acceleration and deepening of AFTA and ASEAN cooperation since the ASEAN Economic Ministerial Meeting in Chiangmai, Thailand in September 1994.

The timetable by which all products in CEPT will have tariff rates of not more than 0-5% was accelerated from 15 to 10 years from the base year of 1993. The target date for realizing AFTA is now 2003. This means that by 2000, the tariff rates will be 0-5% for about 90% of tariff lines. The new timetable means that both the normal and fast tracks are accelerated. More recently a number of products have also been accelerated to year 2000 and 88% of tariff lines in the CEPT scheme will be in the 0-5% tariff range by the year 2000. Tables 2.3 - 2.7 present average tariff reduction schedules under the CEPT scheme.

Table 2.3 CEPT tariff reduction (%) for all sectors.

Country	Number of Tariff Lines	1996	1997	1998	1999	2000	2001	2002	2003
Indonesia	7,910	11.56	10.56	8.80	7.87	5.83	5.68	5.00	4.25
Malaysia	10,494	6.11	5.38	4.66	3.92	3.23	3.03	2.86	2.58
The Philippines	4,694	8.24	7.50	6.48	5.86	4.85	4.37	4.36	3.28
Thailand	8,867	14.14	12.73	10.18	9.31	7.03	6.99	5.80	4.62
Viet Nam	857	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88

Source: ASEAN (1996).

Table 2.4 CEPT tariff reduction (%) for live animals (HS: 1-5).

Country	Number of Tariff Lines	1996	1997	1998	1999	2000	2001	2002	2003
Indonesia	286	14.55	14.48	11.91	10.97	8.53	7.92	6.35	4.44
Malaysia	274	3.17	2.93	2.71	2.40	2.04	1.74	1.39	1.04
The Philippines	121	12.18	11.69	7.79	7.05	6.77	5.53	5.36	3.81
Thailand	269	20.79	20.79	16.49	16.49	12.25	12.25	8.41	4.62
Viet Nam	7	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29

Source: ASEAN (1996).

Table 2.5 CEPT tariff reduction (%) for vegetable products (HS: 6-14).

Country	Number of Tariff Lines	1996	1997	1998	1999	2000	2001	2002	2003
Indonesia	372	9.51	9.30	8.11	7.17	6.48	5.95	5.27	4.29
Malaysia	321	1.11	1.07	1.01	0.93	0.82	0.76	0.68	0.60
The Philippines	166	12.23	11.51	8.45	7.61	5.44	4.44	4.27	3.52
Thailand	279	19.08	19.08	14.89	14.86	11.21	10.94	7.69	4.50
Viet Nam	23	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87

Source: ASEAN (1996).

Table 2.6 CEPT tariff reduction (%) for fats and oils (HS: 15).

Country	Number of Tariff Lines	1996	1997	1998	1999	2000	2001	2002	2003
Indonesia	88	7.93	6.62	5.43	5.20	4.74	4.74	4.63	4.63
Malaysia	182	1.50	1.49	1.47	1.44	1.38	1.38	1.38	1.38
The Philippines	32	13.00	12.06	6.22	5.44	3.88	3.88	3.66	3.19
Thailand	112	15.42	12.89	9.42	7.65	5.31	5.31	4.42	4.16
Viet Nam	16	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Source: ASEAN (1996).

Table 2.7 CEPT tariff reduction (%) for prepared foodstuffs (HS: 16-24).

Country	Number of Tariff Lines	1996	1997	1998	1999	2000	2001	2002	2003
Indonesia	353	19.24	18.12	15.30	13.98	11.20	10.38	7.93	4.89
Malaysia	393	5.09	4.50	3.90	3.25	2.60	2.55	2.49	2.27
The Philippines	130	15.39	13.98	12.05	9.27	8.42	6.92	5.50	4.03
Thailand	253	22.71	22.71	17.96	17.96	13.33	13.33	9.05	4.91
Viet Nam	1	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Source: ASEAN (1996).

The product coverage of CEPT was broadened to include unprocessed agricultural products. This means that all goods are under the CEPT scheme and the only exceptions are what is classified under general exclusions. Unprocessed agricultural products are further categorized in the inclusion, temporary exclusion and sensitive lists. Items in the sensitive list will be liberalized under a separate schedule, but it is intended to go beyond ASEAN's commitments in agriculture under the WTO. It is expected that approximately 70% will be on the inclusion list. The temporary exclusion list will also be phased into the inclusion list by 2003. There is agreement that the sensitive list should be kept at a minimum and currently it comprises around 10% of the tariff lines in unprocessed agricultural products.

Despite the accelerated progress, there have been some difficulties in reaching agreement on agricultural items, which are included in the temporary exclusion and sensitive lists, and the time by which all items are to be phased into the inclusion list. At the ASEAN summit in 1995, Indonesia reintroduced 15 agricultural products to its sensitive list, products which had earlier been in the temporary exclusion list. The majority of these items are rice, sugar, wheat flour, and soybean commodities. At the AFTA council meeting in Singapore in April 1996, it was decided that the 15 sensitive agricultural commodities would be included into the CEPT scheme under the temporary exclusion list and will be liberalized starting in 2003 and ending in 2010.

Indonesia's decision to postpone the liberalization of these 15 sensitive agricultural commodities dominated the 10th AFTA Council meeting in Jakarta in September 1996. Indonesia, supported by the Philippines, refused to accept the 2010 deadline for including rice and sugar into the CEPT scheme. In addition to the sensitive list, Indonesia proposed a new list the "highly sensitive list" and included two food items (rice and sugar) on the list. On the other side, Thailand insisted that all unprocessed agricultural commodities be phased into the scheme by January 1, 2003 and be totally liberalized by 2010. By the end of the meeting, an agreement was reached and it was agreed that the liberalization of sensitive agricultural commodities would begin in January 2003 and end in 2010, but Indonesia and Philippines were allowed some flexibility on the ending tariff rates and utilization of safeguards in 2010. With such flexibility, Indonesia can still maintain import tariffs on rice and sugar above 5% after 2010 and introduce safeguard measures to protect domestic producers.

Apart from the setback in agricultural liberalization, discipline was introduced in the use of temporary exclusion lists by requiring member countries to phase all goods, which have been temporarily excluded from tariff reductions, into CEPT by January 2001. Products in the

temporary exclusion list were transferred to the inclusion list in five equal installments of 20% beginning January 1, 1996. There are indications of further broadening, especially to include new issues that have been included in the WTO such as services, investment, and intellectual property rights. A framework agreement on services was agreed on at the fifth ASEAN Summit in December 1995 in Bangkok.

The above summary is mainly based on ASEAN (1993, 1995a, 1995b, 1996).

2.5 Membership of the project participating countries in the international organizations

The membership of the ten project participating countries in the three trade-related international organizations is shown in the Table 2.8.

Table 2.8 Membership of the project participating countries in three trade-related international organizations.

Country	WTO	APEC	AFTA
Japan	•	•	X
The Republic of Korea	•	•	X
Malaysia	•	•	•
Indonesia	•	•	•
The Philippines	•	•	•
Thailand	•	•	•
India	•	X	X
Pakistan	•	X	X
China	X	•	X
Viet Nam	X	•	•

• = Member; X = Non-member.

It may be noteworthy that, in addition to the three organizations described above, there is an organization called the Cairns Group, which consists of self-identified non-subsidizing agricultural exporters which generally support a more market-oriented global agricultural trade regime. Among the 15 members in the Cairns Group in April 1999 are Indonesia, Malaysia, the Philippines and Thailand from the ten countries of the TradeLib project.

In following sections, the country order shown in Table 2.8 will be applied. This country order is based on several considerations:

(i) First, WTO member countries; then non-member countries.

(ii) Among the WTO member countries, first, three food importing counties, then five agriculture exporting countries. The three food importing countries are in the order in which they became food importing countries.

(iii) Among WTO member countries which are agriculture exporting countries, first APEC member countries then non-APEC member countries in alphabetical order.

(iv) Non-WTO member countries are in alphabetical order.

3. Basic Socio-economic Information on the Participating Countries

A general overview of economy and agriculture of the ten participating countries, including population, GNP, social development, finance, land and agriculture, and trade performance is summarized in this chapter (Tables 3.1 - 3.7). Data were collected from World Bank and FAO statistics.

3.1 Population

China has the largest population of 1,227 million and Malaysia has the smallest population of 21 million. The total population of the ten participating countries reaches 2,929 million, which constitutes a majority of the population of Asia and is 50.2% of the world population.

As for the growth rate the difference among the countries is remarkable. The highest is Pakistan, which was 3.1% in the eighties and 2.9% in the nineties, and the lowest is Japan, which was 0.6% in the eighties and 0.3% in the nineties. However, for all the countries except Viet Nam, the annual growth rate in the eighties is higher than in the nineties. Decreases in the nineties in Japan, Thailand and China are remarkable.

Population density is varied from the highest in the Republic of Korea at 456/km^2 to the lowest in Malaysia at 61/km^2 (Table 3.1).

3.2 GNP

GNP per capita is very diverse. The highest is Japan at US$ 37,850 followed by the Republic of Korea, Malaysia, Thailand, the Philippines, Indonesia, China, Pakistan, India and the lowest is Viet Nam at US$ 320.

However, if we accept the Purchasing Power Parity (PPP) figures computed by the World Bank, the gaps among countries become smaller and some changes in the order are observed. After the Philippines the order becomes China, Indonesia, Viet Nam, India and Pakistan. The financial and economic crisis after the middle of 1997 may change GNP figures remarkably. Some countries' figures may become smaller due partly to smaller figures in local currencies and also due partly unfavorable exchange rates of local currencies against the US dollar.

The participating countries may be divided into two groups. The first group is the lower economic growth countries in the eighties and nineties such as Japan and the Philippines. The second group is the higher economic growth countries in the same period including all the rest. Among them Malaysia, Indonesia, India, China and Viet Nam achieved higher growth rates in the nineties than in the eighties.

Also among them are such countries as the Republic of Korea, Malaysia, Indonesia, Thailand, China and Viet Nam which enjoyed a very high growth rate of more than 7% per year in the nineties. The financial and economic crisis hit most of them severely (Table 3.2).

Table 3.1 Population profiles.

	Japan	Republic of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
Population (millions in 1997)	126	46	21	200	73	61	961	137	1,227	77
Annual growth rate (%)										
1980-1990	0.6	1.2	2.6	1.8	2.6	1.7	2.1	3.1	1.5	2.1
1990-1997	0.3	1.0	2.3	1.7	2.3	1.2	1.8	2.9	1.1	2.1
Population density (person/km^2) 1997	377	456	61	107	236	116	313	169	129	227

Source: World Bank (1999).

Table 3.2 GNP profiles.

	Japan	Republic of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
GNP per capita (US$ in 1997)	37,850	10,550	4,680	1,110	1,220	2,800	390	490	860	320
GNP per capita measured as purchasing power parity (US$ in 1997)	23,400	13,500	10,920	3,450	3,670	6,590	1,650	1,590	3,570	1,670
GDP average annual growth rate (%)										
1980-1990	4.0	9.5	5.2	6.1	1.0	7.6	5.8	6.3	10.2	4.6
1990-1997	1.4	7.2	8.7	7.5	3.3	7.5	5.9	4.4	11.9	8.6

Source: World Bank (1999).

Table 3.3 Social development profiles.

	Japan	Republic of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
Adult illiteracy rate (% in 1995)										
Male	---	1	11	10	5	4	35	50	10	4
Female	---	3	22	22	6	8	62	76	27	9
Life expectancy at birth (years)										
Male	77	69	70	63	64	67	62	62	68	66
Female	83	76	74	67	68	72	63	65	71	70
Prevalence of malnutrition of children under age 5 (% in 1990-1996)	3	---	23	40	30	13	66	40	16	45

Source: World Bank (1999).

Table 3.4 Finance profiles.

	Japan	Republic of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
Current account balance (US$ million)										
1980	-10, 750	-5,273	-266	-566	-1,904	-2,076	-2,897	-869	5,674	---
1996	65,884	-23,061	-7,362	-7,023	-1,980	-14,692	-4,601	-4,208	7,243	-2,636
External debt (% of GNP, 1996)	---	---	52	64	51	56	22	39	17	123
Official development assistance (% of GNP)										
1991	---	0	1	2	2	1	1	3	1	2
1996	---	0.0	-0.5	-0.5	1.0	0.5	0.6	1.4	0.3	4.0

Source: World Bank (1999).
Note: Figures of current account balance in 1996 of Malaysia and the Philippines are for years other than those specified.

3.3 Social development

Social development in the ten countries is at various stages (Table 3.3). The present situation of social development in each country is based here on information regarding illiteracy rate, life expectancy and child malnutrition.

In all countries (except maybe Japan) women have a higher illiteracy rate than men. The Republic of Korea has a very low rate, and the Philippines, Thailand and Viet Nam have low rates. However, Malaysia, Indonesia and China have modest rates, while India and Pakistan have high rates.

Life expectancy is greater for females than males in all the ten countries. Both males and females in Japan have exceptionally longer life expectancies. India and Pakistan have the lowest life expectancy.

Child malnutrition in India is serious. In Viet Nam, Indonesia and Pakistan, it is also critical. The Philippines, Malaysia, China and Thailand have lower figures. There is a strong negative relationship between child malnutrition and per capita GNP.

3.4 Finance

Only Japan in 1996 and China in 1980 and 1996 have positive balances of current accounts among the ten countries. The other countries (except Viet Nam) have larger deficits in 1996 than in 1980. Rapidly growing economies tend to have deficits in their current account payments. For example, the Philippines with a lower growth rate of per capita GNP during 1980-1996 has the smallest increase of deficit. Also, the Republic of Korea, Thailand, Malaysia and Indonesia have larger deficits. The financial and economic crisis hit most those countries with lower growth rate of per capita GNP.

The external debt share in GNP is smaller in China, India and Pakistan. It is larger in the Philippines, Malaysia, Indonesia and Thailand. The financial and economic crisis hit these countries severely. Viet Nam with its fast economic growth has the largest external debt share in GNP.

Official development assistance shares are small and decreasing in the ten countries except Viet Nam, the Republic of Korea and Japan. In Viet Nam it is increasing (Table 3.4).

3.5 Land and agriculture

The Republic of Korea, the Philippines, Viet Nam, Malaysia and Japan belong to the small category in terms of land area among the ten countries. Thailand and Pakistan belong to the middle group, while Indonesia, India and China belong to the large group.

The percentage of cropland in total land differs very much by country. China and Japan are in the small category. Indonesia, the Republic of Korea, Viet Nam, Malaysia, Pakistan and the Philippines are in the middle group, whereas Thailand and India are in the large category.

Arable land per capita is small in all ten countries. Japan, the Republic of Korea, the Philippines, China, Viet Nam, Malaysia and Indonesia have less than 0.1 ha/capita. In these countries more efficient agriculture is required. Pakistan and India have a little larger figure. Even the country with the highest per capita arable land, Thailand, has only 0.29 ha.

Agriculture's share in GDP decreased in all of the countries (except Viet Nam, which has no 1980 figure) from 1980 to 1997. This may due to the fact that other industries developed further in these years. As for agriculture's share in GDP in 1997. Japan and the Republic of Korea are less than 10%, whereas Thailand, Malaysia and Indonesia are less than 20%. The Philippines and China are around 20% and Pakistan, India and Viet Nam are around 27%.

The agricultural population in FAO terms clearly divides the ten countries into three groups. The first group consists of Malaysia, the Republic of Korea and Japan, which have less than ten million. The second group includes the Philippines, Thailand, Viet Nam, Pakistan and Indonesia, which have less than one hundred million. The third group includes India and China, which have more than five hundred million.

More than 3% annual growth of agriculture was achieved by Thailand, Indonesia, India, Pakistan, China and Viet Nam in both the eighties and the nineties and by Malaysia and Indonesia in the eighties. However, the rates in the eighties were higher than in the nineties, except for Viet Nam.

According to the World Bank's estimation real agricultural productivity per worker increased in all the countries (except Viet Nam, which lacks 1979-1981 data) from 1979-1981 to 1994-1996. However it differed largely among the ten countries. In 1994-1996, Japan recorded the highest productivity with US$ 16,716 per worker and China recorded the lowest with US$ 193. Japan, the Republic of Korea and Malaysia are in the leading group followed by Viet Nam and the Philippines. Thailand, Indonesia, Pakistan and India are in the next group followed by China.

The same was true for real agricultural productivity per unit land area. In 1994-1996, Japan, the Republic of Korea and Viet Nam were in the first group followed by Malaysia and the Philippines. Indonesia, India, Thailand and Pakistan were in the next group followed by China.

The food production index increased in all ten countries from 1979-1980 to 1994-1996. A large increase was achieved by China, Malaysia, Viet Nam, Pakistan and Indonesia, followed by the Republic of Korea, Thailand and the Philippines.

3.6 Trade

Table 3.6 shows that exports and imports in general merchandise trade in dollar terms differ very much among the ten countries. In 1996, the largest export was achieved by Japan with 410,481 million dollars and the smallest by Viet Nam with 7,016 million dollars. All countries increased the amount of export from 1980 to 1996. Viet Nam increased the amount remarkably by 57 times, followed by the Republic of Korea, Thailand, China and Malaysia, which made increases of more than 6 times.

Almost the same figure is found for imports. The increase in Viet Nam was remarkable and reached as high as 22.5 times, followed by the Republic of Korea, Malaysia, Thailand and China, which reached over 7 times. Japan, Malaysia, Indonesia and China were net exporters in 1996, whereas the Republic of Korea, the Philippines, Thailand, India, Pakistan and Viet Nam were net importers in the same year.

Trade shares in GDP are diverse by country. In 1996, Malaysia contributed the highest share with 183% followed by Viet Nam, the Philippines, Thailand, the Republic of Korea and Indonesia with more than 50%. China, Pakistan, India and Japan belong to the lower group. The share increased from 1980 to 1996 in Malaysia, the Philippines, Thailand, India and China.

The export of agricultural products in 1996 was largest in China with 14,343 million dollars followed by Thailand, Malaysia, Indonesia and India, which recorded more than 5,000 million. The smaller group consists of the Republic of Korea, the Philippines, Japan, Pakistan and Viet Nam. Exports of agricultural product increased from 1980 to 1996 in all the countries, except the Philippines, where it decreased.

Table 3.5 Land and agriculture profiles.

	Japan	Republic of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
Land area (thousand km^2 1995)	377	99	329	1,812	298	511	2,973	771	9,326	325
Cropland (% of land area 1995)	12	20	23	17	32	40	57	28	10	21
Arable land per capita (ha 1994-1996)	0.03	0.04	0.09	0.09	0.08	0.29	0.18	0.16	0.08	0.08
Agriculture in GDP										
(% in 1980)	4	15	22	24	25	23	38	30	30	-
(% in 1997)	2	6	13	16	20	11	27	26	20	27
Agricultural population (thousands 1997)	6,010	4,842	4,183	93,884	29,147	30,382	541,391	75,117	851,841	52,485
Agriculture in economically active population (%, 1997)	4.8	12.0	21.0	50.4	41.4	58.8	61.0	48.4	68.5	68.6
Average annual growth of agriculture										
(% in 1980-1990)	1.3	2.8	3.8	3.4	1.0	4.0	3.1	4.3	5.9	4.3
(% in 1990-1997)	-2.0	2.1	1.9	2.8	1.9	3.6	3.0	3.8	4.4	5.2
Agricultural productivity in 1987 dollars										
per worker										
(1979-1981)	9,832	1,950	2,235	422	777	375	304	323	113	-
(1994-1996)	16,712	5,302	4,052	481	780	554	404	466	193	801
per ha of agricultural land										
(1979-1981)	11,279	5,229	941	376	782	338	338	227	106	-
(1994-1996)	12,445	6,961	942	591	835	488	520	382	184	2,640
Food production index (1989-1991 = 100)										
1979-1981	94	78	55	64	86	80	68	66	61	64
1994-1996	98	115	122	119	116	108	115	125	144	127

Source: World Bank (1999). Agricultural population and agriculture in economically active population, FAO (1997).

Note: Figures of agriculture in GDP in 1997 of Japan, Malaysia, Indonesia, Thailand, India, Pakistan and Viet Nam are for years other than those specified.

Figures of average annual growth rate of agriculture of Japan, Malaysia, Thailand, India, Pakistan and Viet Nam in 1990-1997 are for years other than those specified. The same applies for the figures of Viet Nam in 1980 –1990.

Table 3.6 Trade profiles.

	Japan	Republic of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
Trade merchandise (US$ million)										
Export 1980	129,542	17,446	12,939	21,909	5,751	6,369	7,511	2,588	18,136	123
1996	410,481	124,404	78,151	49,727	20,328	55,789	32,325	9,266	151,047	7,016
Import 1980	139,892	22,228	10,735	10,834	8,295	9,450	13,819	5,350	19,501	618
1996	347,496	144,724	76,082	42,925	34,663	73,289	36,055	11,812	138,833	13,910
Trade share of GDP (%)										
1980	28	74	117	54	52	54	17	37	13	-
1996	17	69	183	51	94	83	27	37	40	97
Agricultural products 1980										
Export	928	638	3,953	2,737	1,977	3,344	2,472	937	-	-
Import	17,740	3,300	1,361	1,555	578	634	1,455	689	-	-
Share in total (export %)	0.71	3.64	30.54	11.42	34.16	51.41	29.51	39.64	-	-
Merchandise (import %)	12.52	14.80	12.64	14.35	7.48	6.71	10.33	14.54	-	-
Agricultural products 1996										
Export	1,582	1,761	7,822	5,905	1,756	9,518	5,564	1,396	14,343	1,081
Import	41,790	10,755	4,383	5,624	2,805	3,230	2,301	2,087	17,519	1,101
Share in total (export %)	0.38	1.36	10.01	11.85	8.55	17.08	16.91	16.73	5.38	15.23
Merchandise (import %)	11.96	7.15	5.59	13.10	7.08	4.56	6.01	17.37	7.26	9.92
Food and animals 1980										
Export	604	424	341	1,071	1,264	2,542	1,806	525	-	-
Import	10,952	1,754	1,045	1,265	455	310	476	360	-	-
Share in total (export %)	0.46	2.42	2.63	4.47	21.84	39.08	21.56	22.21	-	-
Merchandise (import %)	7.73	7.87	9.71	11.68	5.89	3.28	3.38	7.59	-	-
Food and animals 1996										
Export	861	1,208	1,555	2,084	953	6,652	4,194	693	9,642	858
Import	29,170	6,234	3,266	3,815	2,382	1,669	754	886	8,097	478
Share in total (export %)	0.21	0.93	1.99	4.18	4.65	11.94	12.75	8.34	3.61	12.08
Merchandise (import %)	8.35	4.15	4.16	8.89	6.01	2.35	1.97	7.37	3.36	4.31

Source: World Bank (1999).
Agricultural products and food and animals and their share in total merchandise in export and import: FAO (1986) and FAO (1996).

The export share of agricultural products in total exports decreased from 1980 to 1996 in all the countries except Indonesia. Among them decreases in Thailand and the Philippines were remarkable becoming less than one-third.

The export share of agricultural products in total exports in 1996 is the largest in Thailand with 17.08% and smallest in Japan with 0.38%. The first group consists of Thailand, India, Pakistan and Viet Nam, which were more than 16%. The second group consists of Indonesia, Malaysia, the Philippines and China, which were between 8% and 12%. The third group consists of the Republic of Korea and Japan, which were less than 2%.

The import of agricultural products in 1996 was largest in Japan with 41,790 million dollars, followed by China, the Republic of Korea, Indonesia and Malaysia. Thailand, the Philippines, India, Pakistan and Viet Nam are in the next group. All the countries increased imports of agricultural products from 1980 to 1996.

The import share of agricultural products in total imports decreased from 1980 to 1996 in all countries except Pakistan. Among them decreases in the Republic of Korea and Thailand were remarkable becoming less than half.

The import share of agricultural products in total imports in 1996 was largest in Pakistan with 17.37% and smallest in Thailand with 4.56%. The first group consists of Pakistan, Indonesia, China and Japan, which were more than 11%. The second group consists of the Republic of Korea, Viet Nam, the Philippines, India, Malaysia and Thailand, which were less than 8%.

Exports increased from 1980 to 1996 in all countries except the Philippines.

The export share of food excluding fish in total exports decreased from 1980 to 1996 in all the countries except Indonesia.

The export share of food excluding fish in total exports in 1996 was largest in Viet Nam with 14.91% and smallest in Japan with 0.19%. The first group consists of Viet Nam, Thailand and India, which were more than 9%. The second group consists of Pakistan, Malaysia, the Philippines, China and Indonesia, which were between 8% and 4%. The third group consists of the Republic of Korea and Japan, which were less than 1%.

The import of food excluding fish in 1996 was largest in Japan with US$ 28,91 million followed by China, the Republic of Korea, Indonesia and Malaysia, which were more than US$ 3,000 million. The second group consists of the Philippines, Thailand, Pakistan, India and Viet Nam. Import increased in all ten countries from 1980 to 1996.

The import share of food excluding fish in total imports decreased from 1980 to 1996 in all countries except Japan, the Philippines and Pakistan. Among them, the decrease in Viet Nam and China was remarkable with less than one-third.

The import share of food excluding fish in total imports in 1996 was largest in Pakistan with 13.52% and smallest in Thailand with 1.77%. The first group consists of Indonesia, Japan, China and the Philippines, which were more than 6%. The second group consists of India, the Republic of Korea, Malaysia, Viet Nam and Thailand, which were less than 5%.

Table 3.7 shows the trade balance of agricultural commodities by country during 1980-1997. The balance is shown in three categories:

(i) Agricultural trade excluding fishery and forestry products, which includes inedible products such as cotton and tobacco (A),

(ii) Food (excluding fish) products (FF). This coverage is not the same as that of "SITC Section 0", that is, food and live animals. It includes edible products of other sections and excludes inedible products of section 0.

(iii) Food and live animals (FA) (SITC section 0). It does not include oilseeds, oils and fats.

Table 3.7 Trade balance of agricultural commodities by country.

Year	Japan			Republic of Korea			Malaysia			Indonesia			The Philippines			Thailand			India			Pakistan			China			Viet Nam		
	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA	A	FF	FA
1980	-	-	-	-	-	-	+	+	-	+	-	-	+	+	+	+	+	+	+	-	+	+	+	+	N	-	N	N	-	N
1981	-	-	-	-	-	-	+	+	-	+	-	-	+	+	+	+	+	+	+	-	+	+	+	+	N	-	N	N	-	N
1982	-	-	-	-	-	-	+	+	-	+	-	-	+	+	+	+	+	+	+	-	+	+	-	+	N	-	N	N	-	N
1983	-	-	-	-	-	-	+	+	-	+	-	-	+	+	+	+	+	+	+	-	+	+	-	+	N	-	N	N	+	N
1984	-	-	-	-	-	-	+	+	-	+	-	+	+	+	+	+	+	+	+	-	+	-	-	+	N	-	N	N	-	N
1985	-	-	-	-	-	-	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	-	-	-	N	+	N	N	+	N
1986	-	-	-	-	-	-	+	+	-	+	-	+	+	+	+	+	+	+	+	-	+	-	-	-	+	+	+	-	-	-
1987	-	-	-	-	-	-	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	-	-	+	-	+	-	-	+
1988	-	-	-	-	-	-	+	+	-	+	+	+	+	+	-	+	+	+	+	-	+	+	-	+	+	-	+	+	+	+
1989	-	-	-	-	-	-	+	+	-	+	-	+	+	+	-	+	+	+	+	+	+	+	-	-	-	+	+	+	+	+
1990	-	-	-	-	-	-	+	+	-	+	+	+	-	+	-	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+
1991	-	-	-	-	-	-	+	+	-	+	+	+	+	+	-	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+
1992	-	-	-	-	-	-	+	+	-	+	+	+	+	+	-	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+
1993	-	-	-	-	-	-	+	+	-	+	+	+	-	+	-	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+
1994	-	-	-	-	-	-	+	+	-	+	+	+	-	-	-	+	+	+	+	-	+	-	-	-	+	+	+	+	+	+
1995	-	-	-	-	-	-	+	+	-	+	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	+	+	+	+
1996	-	-	-	-	-	-	+	+	-	+	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	+	+	+	+
1997	-	-	-	-	-	-	+	+	-	+	+	-	-	-	-	+	+	+	+	+	+	-	-	-	-	+	+	+	+	+

Source: FAO.

Note: A = Agricultural products; FF = Food (excluding fish) products; FA = Food and live animals (SITC section 0); + = Credit; - = Deficit; N = No data.

The data are summarized as follows:

- Japan and the Republic of Korea are net importers in all three categories, whereas Thailand is a net exporter throughout the period.
- Malaysia is net exporter in the first two categories and a net importer in the last one throughout the period. This is mainly due to the fact that Malaysia's main export commodities are rubber and palm oil.
- Pakistan and the Philippines became net importers in all three categories since 1990 and 1994, respectively.
- Viet Nam and India became net exporters in all three categories since 1988 and 1989, respectively (except India's FF in 1994).
- Indonesia and China have been basically net exporters in all three categories after 1985 with some deficit years. The deficit appears in the most recent three years in both countries.

4. Overview of Trade-Related Policies and Trade Performance of the Participating Countries

4.1 Introduction

This chapter summarizes trade-related policies reported in the institutional study of each country consisting of history, the current situation and future directions of the trade-related policies. Discussions on the impact of trade liberalization are included. Also the performance of international trade of each country is summarized. Policies are described first about food importing countries, i.e. Japan, the Republic of Korea and Malaysia and then, about agricultural exporting countries, i.e. Indonesia, the Philippines, Thailand, India, Pakistan, China and Viet Nam. Then the common orientation of their policies is discussed. Analysis of international trade performance in each country follows.

Trade liberalization covers a wide range of policies and measures that are either directly or indirectly related to trade, which are adopted by the countries concerned as well as by the major importing and exporting countries in the world markets. For instance, direct policy includes tariff and non-tariff and any measures that are barriers to trade, while indirect policies include policies or government intervention starting from the farm level to the wholesale and the retail levels (e.g. production and input subsidies, production control, market and price policies, etc.) and policies such as direct foreign investment policy, foreign exchange and fiscal policies.

The effects of trade liberalization on agricultural trade are, indeed, the result of many direct and indirect policies as well as interactions of all the aforementioned policies implemented by the countries concerned. Therefore, from a practical research point-of-view, the TradeLib project embraced almost all aspects of trade liberalization policies in the institutional study, whereas more specific trade policies are analyzed in the welfare and partial budget analysis in the commodity and the location-commodity-specific studies, respectively.

4.2 Policies in food importing countries

4.2.1 Japan

- Japan started to open its markets of agricultural products in the 1960s, when its economy was taking off. The process partly involved a series of policy changes when Japan was becoming a developed country.
- From the late 1960s, political pressure from the US became a major driving force to open Japanese agricultural markets, although the more recent situation was induced through implementation of the UR agreement.
- When facing trade liberalization of a specific commodity that is expected to cause a serious problem, the Japanese government introduced countermeasures to support the corresponding domestic production. Typical examples are found in the cases of oil crops such as soybeans and rapeseed, sugar and beef calves. While specific purposes were not declared in law to weaken the effects of liberalization, Japan is administering a large number of domestic support policies for some important products, such as rice, wheat, meat and dairy products. How and to what extent domestic production and farm incomes would be affected by changes in trade policies are closely linked to the effectiveness of those domestic measures.

- Agricultural products on the negative list were tariffied, with the exception of rice. The Japanese government has taken great care of the rice sector in the post-war period. However, in April 1999, rice was tariffied with a high tariff rate.
- Trade barriers besides the SPS controls seem to be relatively high, even under comprehensive tariffication, in cases of wheat, starch, pork, sugar, the designated dairy products and vegetable oils in particular. In addition, tariffs applied to some commodities are often very sophisticated and complicated, such as tariff escalation cases, tariff 'de-escalation' cases, seasonally different duties on some fruits, application of TQs to liberalized items, and introduction of the differential duty system on pork products.
- Many measures other than trade policies have played important roles in market openings of some commodities, especially those which affect domestic production.
- Commodities for which domestic production is limited, such as maize, soybeans, sorghum and coffee, tended to be liberalized earlier. The livestock sector in Japan could import a large amount of feed at lower prices, which promoted domestic production of this sector. Trade barriers on imports of livestock products have been relatively high on the other hand.
- Exports of agricultural products, food in particular, are very limited. Japan has been a net food importer for a long time, reflecting its basic economic condition, i.e. that land is scarce.

4.2.2 The Republic of Korea

- Korean exports have been significant, following economic growth from the 1960s.
- Trade policy has its major emphasis on protection of the domestic industry, stabilization of prices, improvement of the balance of payments, increase in employment, and efficient usage of production factors.
- In the 1960s, the Republic of Korea's trade policy had its main focus on promoting exports and improving the balance of payments by controlling imports.
- In the 1970s, the trade policy emphasized increasing exports and stabilizing domestic prices, and it partially allowed liberalization of imports for stabilization of domestic prices of consumer goods.
- In the 1980s, the main goal of trade policy was to improve the balance of payments.
- In the 1990s, strengthening competitiveness in the international trading market has emerged as the government's major task.
- Government fiscal policy functions by allocating resources, distributing income, and stabilizing the economy. The operation of public finance basically aims at economic stability; however, income distribution, which might be a main function of public finance, is inferior in the Republic of Korea.
- The fiscal scale in the Republic of Korea increased in the 1960s and 1970s, when there was rapid economic growth. Although the scale of government expenditure rapidly increased, it tended to decrease relative to the whole economy after reaching a maximum level in the early 1980s.
- The monetary and credit policy fixed a goal for M2 at 11.5-15.5% in order to ensure a stable monetary supply and maintenance of aggregate money demand at the optimum level. Furthermore, the stable relation between total monetary supply and the price level was weakened due to progress of financial deregulation and openness. In this situation, throughout the year the monetary and credit policy stressed stability of financial markets to increase flexibility of currency operations with a stable management of mid and long run liquidity.

4.2.3 Malaysia

- Malaysia's domestic and trade policy planning can be divided into three phases. The first phase ran from 1956 to 1970, the second from 1971 to 1990 and the third from 1991 to 2000.
- During the first phase, the main thrust was in the provision of social and industrial infrastructure to lay the foundation for a free market economy for growth.
- The second phase of development planning was influenced by efforts to narrow income gaps along racial and regional lines towards establishing political and economic stability.
- Built on the success of the second phase, the new era maintains the ultimate goal of achieving a united society and of becoming a developed nation by the year 2020. This new phase, referred to as the New Development Policy era, has set the stage for increased opening of the economy to external competition including the agricultural sector.
- Agricultural development strategies in the 1960s and 1970s mainly focused on providing employment, as well as earning and saving foreign exchange. Strategies and programs during the period were also designed to raise farm incomes to reduce poverty in agriculture. Export crops such as rubber, oil palm and cocoa were actively promoted. Many subsectors in agriculture were protected through tariffs and nontariff barriers such as quotas and other import barriers to protect producers and save foreign exchange in line with the import substitution strategy during this period. High emphasis was given to food security where a 100% self-sufficiency target was set for domestic rice production.
- The launching of the National Agricultural Policy (NAP 1984) marks the actual beginning of liberalization of the agricultural sector. Productivity, efficiency and competitiveness were the main focus of the policy. Self-sufficiency for rice was rationalized to 85% of domestic consumption. The period of 1984 - 1990 marks an important threshold in the transformation and development of the Malaysian economy. This era saw rapid expansion of the manufacturing sector and altered relative importance of the agricultural sector. The overall development of the agricultural sector was beset with problems including more favorable policies towards manufacturing, labor shortages and increasing wages, increasing competition for land for other uses and others.
- A second NAP was introduced in 1992. Greater emphasis was given to productivity, efficiency and competitiveness issues in the context of sustainable development and linkages with other sectors of the economy, in particular the manufacturing sector. The development effort was geared towards modernization and commercialization of the sector and tariffs on many agricultural products were dismantled to prepare the sector for increased competitiveness. The food security issue was further rationalized and the self-sufficiency level for rice was further revised downwards to 65%. Exports were further encouraged. The government also introduced new and additional incentives to attract investments in the agricultural sector.
- Malaysia has a fairly liberal trade regime with low tariffs for most products. In 1993, the simple average and ad volorem tariff was 14%. The average was lower for agriculture at 10.4%, while for industry it was 14.4%. The level of tariff protection is regularly revised to harmonize the tariff structure and to reduce excessive protection. In most cases, tariffs on products are revised downwards, except for products that are luxurious and unhealthy, such as luxury cars, cigarettes and alcohol where increased import tariffs were imposed.
- With respect to nontariff measures, Malaysia also practices import quotas and licensing (automatic and nonautomatic) on a fairly wide range of products. This is used

both for restricting imports to protect certain industries, to ensure adherence to sanitary, phytosanitary, safety, environmental protection as well as copyright requirements and also for the purpose of monitoring.

- For rice, an import monopoly is held by BERNAS, the privatized state enterprise of the National Paddy and Rice Board.
- Export duties are levied on a number of primary commodities for revenue and to encourage domestic processing.
- Malaysia does not have any export subsidies but provides incentives such as tax rebates for certain promoted export-oriented industries.
- The effective duty rates on imported agricultural products are low by international standards and protection afforded to the industrial sector is still considerably higher than that for agriculture. Over the years, and more so in the 1990s, tariffs have been reduced on a broad range of products to meet Malaysia's obligations to international and regional trade agreements. In addition voluntary cuts have been made to ensure competitiveness of agricultural subsectors in the long term. The reduction has been more rigorous for the 1988 - 1997 period.
- In general, the government maintains a non-interventionist policy for palm oil and the CGPRT crops such as maize, tapioca and sweet potato. In palm oil, direct policy measures that distort trade flows in the edible oil and fats market can be considered as insignificant. However, institutional support from the government for production, marketing, promotion and research and development of palm oil is strong. This includes direct involvement of government-owned agencies in production, processing and marketing, the provision of incentives and export credit financing.
- Maize, tapioca and sweet potato, being important raw materials for other agricultural industries, have always enjoyed free market status.
- On the other hand, rice and tobacco, being important socio-economic crops have been subjected to heavy intervention by the government in the marketplace. In the rice industry, a host of interventions are in place, including monopoly on imports, guaranteed minimum price for paddy, controlled prices at milling, wholesaling and retailing, fertilizer subsidy and price support. In addition, the government also provides drainage and irrigation facilities and undertakes research and development for rice.
- Apart from being protected by high tariffs, the Malaysian tobacco industry also received other forms of support from the government. The major interventions include licensing of curers and cigarette manufacturers and registering of growers, implementing production quotas to balance production with demand, setting proper grading and pricing of green and cured leaves and control and regulating the marketing of green and cured leaves.

4.3 Policies in agricultural exporting countries

4.3.1 Indonesia

- Prior to 1985, Indonesia was oriented mainly towards a protected domestic market, creating a high-cost economy the benefits of which were mostly enjoyed by those favored by protection. Since then significant progress has been made in opening up the economy. Many sources of high costs have been exposed to competitive pressures of world competitors.
- In general trade-related reform packages introduced since the early 1980s have focused on (i) simplifying ports and customs procedures including enactment of a new customs law, (ii) lowering tariffs and surcharges, (iii) reducing import licensing and other non-tariff barriers, (iv) deregulating import and distribution systems, (v) deregulating the

investment regime, and (vi) establishing bonded zones and export processing entreports.

- Despite deregulation efforts, Indonesia's trade policy continues to be biased against exports. In addition, wide disparities of protection between industries remain. This policy bias will certainly hinder non-oil export growth and result in a loss of economic efficiency as resources are drawn to less efficient import-competing activities than would be the case in freer trade. One of the sectors where protection is high enough is the food and beverage sector.
- A policy mix has been implemented to attain interrelated objectives through better coordination and a more appropriate balance of growth and equity. On the demand side, efforts were aimed at striking a balance between domestic investment and consumption and export-oriented activities, given constraints on the balance of payments. On the supply side, efforts were aimed at expanding production capacity through streamlining investment, and import and export procedures as well as providing incentives for improving efficiency and productivity in targeted sectors.
- Cautious monetary and fiscal policies along with efforts for maintaining a realistic exchange rate have been implemented to control inflation and the current account deficit. A competitive exchange rate under a "managed floating" policy has accelerated growth rates of non-oil exports and reduced the current account deficit.

4.3.2 The Philippines

- The Philippines has undergone a long history of protective trade policies, which resulted in the country's limited participation in international trade in the past. Import and exchange controls were employed in light of recurrent disequilibrium in the country's balance of payments and were used increasingly to promote industrialization through import substitution. Import substitution policies, exchange rate and import controls also contributed to the declining share of the agriculture sector to GDP.
- Attempts towards unilateral trade reforms in the country took place initially in the 1960s and resumed in the 1980s.
- The first attempt in trade reform took place in the early 1960s. Under a decontrol program, imports and export licenses were no longer required.
- Trade policy continued to protect domestic industries in the 1970s. Import controls became more restrictive as the number of regulated commodity lines increased. Instead of tariff reforms, export promotion compensated for the continued bias against exports.
- Due to major flaws and limitations of past protective policies, a second attempt at trade reform began in 1981 amidst a worsening trade deficit due to an expansionary fiscal policy. As part of the country's industrial structural adjustment program, a Tariff Reform Program (TRP) and an Import Liberalization Program (ILP) were implemented. The TRP provided for a uniform level of protection among and within sectors of the economy, reduced effective protection rates and reduced tariff rates. The initial schedule of the ILP included the removal from the list of restricted items, reducing the number of restricted items from the previous year's levels.
- Due to a balance of payment crisis which began in 1983, the ILP was postponed for three years and exchange and import controls were re-imposed. In order to discourage imports, the peso was devalued three times from mid-1983 to mid-1984 and floated in late 1984.
- Import liberalization resumed in 1986 with more items liberalized but mostly manufactured goods; agricultural export taxes were abolished; fertilizer and wheat imports were liberalized but maize imports were banned temporarily.

- Partial trade liberalization continued in the 1990s and intensified at the onset of regional trading agreements such as the ASEAN, AFTA-CEPT and the multilateral trading agreement under the GATT-UR/WTO.
- After the completion of the TRP in 1985, a new round of unilateral tariff reductions followed. Executive Order (EO) 470 in mid-1991 reduced the number of high tariff commodity lines and increased the number of low tariff commodity lines. EO 8 issued in mid-1992 replaced QRs by tariffs, but was later reversed by the Magna Carta for Farmers which required the imposition of QRs as a means of protecting agricultural products in sufficient supply. In early 1993, Memorandum (MO) 95 restored the QRs on certain commodities including maize, pork and poultry meat.
- Trade reforms intensified with recent multilateral and regional trading agreements. Under the GATT-UR/WTO, the Philippines is committed to two of the four major areas of concern of the UR Agreement on Agriculture: market access and sanitary and phytosanitary (SPS) measures.
- There are no export subsidies in the country and the value of agricultural subsidies is less than the 10% ceiling level for developing countries; hence, the country made no commitments on these areas.
- Under market access, the tariffication of quantitative restrictions (QRs) is legislated. The tariffs for sensitive agricultural products were mostly 100% in 1995 and 1996, which is generally above the nominal protective rates under the QRs. These rates will be reduced to within the range of 10 to 50% by the years 2003 and 2004. The Philippines sought the postponement of rice tariffication.
- Tariff reduction is also the major feature of the ASEAN Free Trade Association (AFTA). For the Philippines a total of 391 primary agricultural products are included in the Common Effective Preferential Tariff (CEPT) scheme of the AFTA. By the year 2003, lower tariff rates will be imposed on these products, although highly sensitive imports may still be allowed higher tariffs. The Philippines suggested exclusion of rice in the AFTA-CEPT scheme, as it is deemed that Filipino rice farmers are not yet prepared to face competition from neighboring ASEAN partners.
- Under the Asia Pacific Economic Cooperation (APEC), the Philippine tariff reductions under the UR bound tariffs, APEC Bogor and individual action plan follow a downward trend but with lower rates for the IAP.

4.3.3 Thailand

- Price support and the price guarantee programs have often been implemented since 1955. Commodities often under them include rice, maize, sugarcane, cotton, mungbean, coffee, soybean, groundnut, garlic, shallots and more recently para rubber.
- The buffer stock scheme was a second stabilizing measure employed for rice, cassava, certain beans and maize.
- Since 1983 the government forced dairy processing firms producing ready-to-drink fluid milk to adhere to a ratio of local raw fresh milk to milk powder import to support domestic dairy production.
- In addition to the dairy import control, other commodities such as coffee, onion seeds, onion, tea, rice, palm oil, soybean meal, copra, potatoes, garlic and silk also have import restrictions. The importers must request permission to import with specific rates of tariff. The measure aims to assist farmers and infant industries in the country.
- Historically tariffs have been powerful pricing policy instruments imposed on farm exports and later on imports. The taxes in most cases have been aimed at reducing local price swings. For imports, both taxation and restrictions have been employed to protect segments of manufacturing industries. Some imports are banned; others require

permission. The controls on rice and sugar aimed at preventing re-importing when these products have been exported. To protect the producers, such products as kenaf, soy oil, milk and milk products, tea and palm oil have been put under import control.

- Another measure to stabilize domestic consumption was the commodity reserve requirement. The rice reserve requirement program first came into existence at a time of rice shortage in 1973 and it terminated in 1982.
- Tariffs have been powerful pricing policy instruments imposed on farm exports and imports. Rubber, in addition to rice, was highly taxed. Since around 1982, the heavy taxes on exportable supplies began to decline. Almost all export taxes on rice were abolished in 1986 and the rubber tax was steadily reduced and finally removed in 1989.
- Rice, a main foreign exchange earner, had long been taxed several ways, namely the premium, an export duty (ad valorem tax) and a requirement for rice reserve (tantamount to an ad valorem tax). When the international prices for rice were too low to keep the export premium and to keep stabilized domestic and farm prices, the rice premium was abolished. The export tax depressed farm paddy prices and simultaneously rural incomes.
- Quantitative restriction on exports is imposed to assist domestic consumers and control export quantities consistent with the importers' purchase contract.
- The government was involved in allocation and distribution of maize contracts to Thai exporters in 1967. Only qualified and registered exporters were chosen to obtain quotas. However, the quota system was abolished in 1981 due to a rapid expansion of the domestic market for animal feed and an increase in export opportunity to other markets. In addition, the world price of maize was declining. So since 1981, export of maize was really liberalized.
- For cassava, the EC has imposed a Voluntary Export Restraint (VER) on Thailand since 1982. By this Thailand received a cassava quota as a restraint agreement with the EC. The VER benefit to exporters is higher prices in the quota controlled by the EC market. However, this restriction led to a domestic surplus. Since 1984, the government has encouraged exports to non-EC markets by rewarding the exporters with an additional export quota to the EC market. This action raised the cassava pellet demand and prices.
- Trade policy measures since Plan I (1960-1965) have been used to set the pace of industrialization, and the most commonly used measure has been different protecting tariff rates on imports. For some commodities, the import tax rates are ad valorem, for others, specific. However, many import items are set with both ad valorem and specific rates of tax. The rate to be used in any given year may differ from one commodity type to another. Further it may also differ over time. Customs tariff decrees to adjust the tariff schedule are issued.
- Other instruments include quantitative restrictions, credit assistance to exporters, and tax refunds on exports. These measures have more impact than the investment promotion program, which has also been employed largely as a trade policy measure benefiting only the companies granted the privileges, while protection has been granted to all those involved in the international trade concerns.
- Revenue from tariffs, duties and charges collected from imports and exports of various types of products were and still are an important source of government income. However, as the country becomes more economically developed, the major dependence on tariffs is diminishing, relatively if not absolutely. In 1994, the contribution from customs duties declined to 16% from 50% in 1961.
- For export, only 7 groups of products including rice, rubber, teak, etc. were subject to export duty, which remained in 1982-1986.

- In 1987, the tariff system was restructured, to provide a new instrument that could handle and update the system according to changing international economic and trade policies. The new customs tariffs employed product classification and customs codes according to the International Convention on the Harmonized Commodity Description and Coding System, which was further developed from CCCN.
- Although a flexible exchange rate was managed after 1984, it was tied to a basket of currencies, so a close tie to the US dollar was kept until late 1997. While the trading system is relatively open, a stable exchange rate has been maintained up to the first half of 1996.
- The fertilizer policy of Thailand has been dominated by a program known as the National Fertilizer Corporation (NFC), which was a national project to produce fertilizer domestically. The project was not successful due to the high cost of local natural gas and lack of competition with the international price for fertilizer. Thus, the project was terminated in 1991.
- A government enterprise, the Marketing to Organization of Farmers supplies fertilizer to paddy farmers at a low price.
- The import of farm machinery has not been restricted and local machinery production is not protected.
- For almost all agro-chemicals, process and usage are determined by market forces, as the subsidy has not been large enough.
- On the market access side of commitments under the WTO agreement, Thailand must open the market for 23 farm commodities which had import controls. In this regard, a switch from non-tariff measures in agricultural trade to tariff measures has to be undertaken.
- On internal supports, Thailand has to reduce domestic support of 873 million dollars in 1995 to 761 million dollars in 2004 or 13% within 10 years.
- With regard to export subsidies, Thailand has no commitment for this category. However, no more export can be subsidized in the future.

4.3.4 India

- India embraced a new Economic Policy in 1991 in the wake of compelling domestic economic factors. The country at that time was suffering from serious fiscal indiscipline and a severe balance of payments crisis.
- The new policy adopted at that time consisted of two components: (i) short term stabilisation measures which included reduction of the fiscal deficit, devaluation of the currency (rupee), and dismantling of barriers to the free flow of foreign capital; and (ii) medium term structural programmes involving reforms in fiscal policy, exchange rate policy, trade and industrial policy and policies on financial sector reform and capital market reforms.
- Agricultural exports and imports in the country were until recently strictly regulated through quantitative restrictions such as quotas and licenses or channelled through a trading organisation or some combination of both.
- With the new trade policy initiated in 1991, three major changes were effected in agricultural export-import. First, channelling of trade has been abandoned and now the government does not determine the value or nature of the import or exports, except for exports of onion and import of cereals, pulses and edible oils. Second, most of the quantitative restrictions on agricultural trade flow have been dismantled. Third, there is some reduction in tariffs.
- This period coincided with the new GATT, which makes it obligatory for the member countries to reorient their domestic as well as external trade policies consistent with the

GATT agreement. Thus, the new economic policy had to meet the twin objectives of adjusting to domestic needs and changes in the international scene.

- A new Export-Import Policy for 1992-1997 was also announced. The main feature of the policy is that trade is free except for a short negative list of imports and exports.
- The policy of trade liberalisation has provided impetus to agricultural exports which have registered remarkable growth during the 4-5 years.
- Economic reforms introduced in India since 1991 and policy changes effected in the light of obligations to the WTO have focused mainly on industry. Nevertheless, the agriculture sector has been affected by the reforms through adjustment in exchange rates, which has bearing on agricultural exports and on input - output prices. A strong feeling has emerged in the country that the agriculture sector should not be kept outside the purview of direct reforms for several reasons.
- Opinions on whether India should go for globalisation and liberalisation of its agriculture are at present sharply divided. Those who support trade liberalisation of Indian agriculture argue that India has a strong comparative advantage in agriculture over most of the developed world and the WTO-induced trade liberalisation has made agricultural exports more attractive and remunerative. This advantage is said to be strong in the case of high value crops such as fruits, floriculture products and vegetables, basmati rice, and cotton. Opening up trade in these crops has already shown that there is considerable potential to promote export of such crops.
- On the other hand, those opposing globalisation of Indian agriculture assert that liberalisation of agricultural trade will destabilise prices and expose Indian markets to violent fluctuations in the international market. It is also feared that liberalisation of agricultural exports will change the crop pattern away from food and cause problems for one-third of the country's population, which is below the poverty line and cannot afford to buy adequate foodgrains even at the existing price structure. There are also fears that liberalisation will result in a steep hike in foodgrain prices and jeopardise food security and that promotion of export-oriented crops in some parts of the country is adversely affecting marginal and small farmers.
- Notwithstanding this unresolved debate concerning liberalisation of agriculture, the Indian government during the last 4-5 years has taken bold initiatives to promote farm exports. India is also adjusting, albeit slowly, its policies to meet the WTO requirements.
- The export-import policy, which is announced every 5 years, for the period 1997-2002 shows that several restrictions on free import and export of agricultural commodities have been removed or made less stringent.

4.3.5 Pakistan

- There is no direct government intervention in the production and investment decisions of farmers in the country. However, the government indirectly intervenes through the legal, material and economic environment in which the producers of various agricultural commodities operate.
- In the past, the government intervened considerably in the agriculture sector through output and input markets, fixing support prices below world prices, supporting research, extension, etc.
- Compared to international market prices, domestic prices of most of the commodities were low, and a significant quantity of resources was transferred from agriculture to the industrial sector, which is also indirectly dependent on the agricultural sector. Government fully enjoyed a monopoly on export and import of agricultural traded goods.

- In recent years, direct intervention by the government has diminished considerably, and now the private sector is allowed to participate in the export and import business of many agricultural commodities. For example, now the private sector is allowed to export cotton and rice, the main export products of the country.
- However, the government is still involved in output markets and distorts market signals, and prices of agricultural commodities are not market determined, implying that all forms of price support controls, subsidies for import of wheat, taxes on cotton exports, duties on sugar imports and quantitative restrictions, and other trade-related distortions need to be reviewed.
- Pakistan signed the final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations on April 15, 1994, which also includes the trade agreement on agriculture. As a signatory, Pakistan accepted all the Uruguay Round trade agreements under the WTO, and is currently in the process of implementing most of the undertakings and modifying its domestic legal and administrative rules to ensure their consistency with the WTO obligations.
- The agreement on agriculture consists of four parts: the agreement on agriculture; concessions and commitments made on market access, domestic support, and export subsidies; the agreement on sanitary and phytosanitary measures; and the decision concerning least developed and net food-importing developing countries.
- To fully benefit from the Uruguay Round agriculture agreement, Pakistan needs to modify its extent of present involvement in the agricultural product and input markets and all other policies which discriminate against the agriculture sector, such as the price support programme, import subsidies, taxes on exports, etc.
- It is anticipated that after complete implementation of trade liberalization in the country, market forces might change the present low domestic output prices to the level of world market prices.
- To meet the country's obligation towards globalization of merchandised trade under the WTO, the government has taken various steps including reducing tariffs from more than 90% to 45% on many products, lifting of some bans and quantitative restrictions, simplifying the existing complicated rules and procedures of export and import, privatizing many government-owned trade-related institutions, instituting market-oriented monetary and fiscal policies and outward-looking trade policy and investment-friendly policies for both local and foreign investors, developing a package of incentives for exporters and importers, establishing industrial and free trade zones, etc.

4.3.6 China

- China's foreign trade regime can be broadly divided into two periods: the highly centralized foreign trade regime under the planned economy before 1978 and the increasingly liberalized foreign trade regime since economic reforms started in 1979. The foreign trade regime in China before 1978 was characterized as a state monopoly, with administrative management, central planning, and budget financing.
- Reform and trade liberalization in China's external sector, because of its strategic role in the economy, has proceeded gradually. Gradual trade liberalization consistent with reforms in other sectors of China's economy has its logic.
- In the initial stage, reform was tried for some "non-strategic products" and in specialized or designated regions. The institutional structure was altered partially. And more efforts were put in the incentive and management system instead of fundamental changes in decision-making and trade control. As experience was gained from increasing reforms and the objectives of trade could be achieved through alternative

settings of institutions and policies, trade liberalization has proceeded smoothly since the late 1980s.

- During the past 20 years the highly centralized and monopolized foreign trade operation system has been gradually reformed and decentralized through granting trade rights to more trade corporations and production firms.
- The trade planning system has gradually moved from a strictly mandatory plan to a combination of mandatory and guidance plans with flexible adjustments based on the market situation.
- The planning system was first replaced by a quota and licensing system, and then moved to a tariff-quota system.
- While state trading and decision-making processes are still concerns of many negotiations in China's access to the WTO, foreign trade corporations and companies have been gradually reformed and largely commercialized by reducing government direct administrative intervention and by introducing trade instruments to manage foreign trade.
- Commercialization of the state trade corporations was initially promoted by introducing the trade contract responsibility system, and then by transforming trade companies into handling agents and letting trade companies trade their commodities based increasingly on market forces and implementing various other trade-related policies on monetary, foreign exchange, financial and trade controls.
- The trade regime has also been gradually moving from an import substitution system to a more export-oriented system since the reforms were initiated.
- The major policies to improve the efficiency and responsiveness of state trading and to promote export included introducing the export tax rebate policy, implementing the trade contract responsibility system, reducing the number of commodities requiring import and export licenses, reducing tariffs, and shifting the management of foreign exchange, etc.
- Moving toward a more market-oriented trade system is evidenced from various aspects of China's trade policies and trade patterns. For example, the centralized trade management and operation system was first replaced by a foreign trade contract responsibility system, which was in turn replaced by a tax system; the foreign exchange retention system was abolished and replaced by a foreign exchange bank settlement system; a single managed floating foreign exchange system was introduced in 1994; government export subsidies were phased out; and the financial system related to foreign trade was adjusted to meet the reformed trade system.
- With experience gained from Special Economic Zones (SEZs) in Economic Technological Development Zones (ETDZ), the uneven regional open strategy was revised. The regional open policies were expanded from the SEZs in the coastal cities to entire coastal areas, and then implementation of the open policies was gradually extended throughout China. Regional preferential policies have been gradually phased out.
- Foreign exchange control, though still highly interventional, has been relaxed significantly since the late 1980s by introducing a foreign exchange retention system and establishing a foreign exchange swap center in the early reform period, and the two-tier exchange rate was consolidated in December 1993. The Yuan became convertible on current accounts at the end of 1996.
- While tariffs now are still high compared to existing WTO member countries and some non-tariff measures are commonly applied to "strategic products" such as agricultural and food products, foreign trade control in China has also been significantly liberalized since the early 1990s.

- China's average tariffs were reduced from 47.2% in 1991 to 17% in 1998. China's tariffs on agricultural trade have also been largely reduced since the early 1990s. The simple average agricultural import tariff decreased from 42.2% in 1992 to 23.6% in 1998.
- During the 1980s China extensively used quotas and licensing to control its foreign trade. However, since the early 1990s China has progressively and drastically reduced the number of items subject to export and import quotas and licensing administration. The products subject to quota, licensing and other import control measures accounted for only 5% of the total import tariff lines in 1998.
- In sum, through nearly 20 years of reform, China's foreign trade regime has gradually changed from a highly centralized, planned and import substitution regime to a more decentralized, market-oriented and export promotion regime. While significant progress has been made since the economic reform in liberalizing the trade regime, China's foreign trade regime still has major inefficiencies. China still largely monopolizes international trade in agricultural products.

4.3.7 Viet Nam

- 1986 was a turning point in the renovation of economic policy and mechanisms in general and of market and commercial service sectors in particular. Gradually, policies were changed towards a freer market system.
- Resolutions of the 7th Party Congress in 1991 provided the prerequisites for the development of market and commercial services following the liberalization mechanism applied with free market prices. And it also provided the right to carry out a multiple-component commodity policy, abolished the barriers in commodity circulation and encouraged economic joint ventures in a multilateral and diversified sector.
- Decrees issued in 1992 and 1994 aimed at renovating the state-owned enterprises in import and export with a view to guaranteeing consistent state management in import and export and relaxing the management mechanisms to encourage export in difficult areas, expanding the right to take part directly in export for production enterprises, updating the tariff and taxation system as well as management tools to meet the demands of reality and in accordance with international regulations.
- An environment that creates equality for competition among enterprises in the market was established. The state-owned commercial enterprises were rearranged and, step by step, subsidies were abolished, self-governing rights in running businesses were expanded, shifting from the command-planned mechanism to directive planning and financial independence along with enforced obligations to the state.
- The banking system was reorganized to a "state bank" and bank, credit cooperative and financial companies.
- Since late 1988, Viet Nam started carrying out comprehensive pricing reforms and commercial liberalization. The state abolished most of the prices applied to farm products and input materials that used to be managed by the state. The foreign exchange rate was reunified and left floating. The interest rate of savings and lending loans was increased. This means that the state let the price be self-regulated according to market realities.
- The system of tax and fee policies has been amended since 1990. The improvement of tax collection and management has helped obtain an increase in tax revenue and fees collected.
- Taxes and fees have become the main source of national revenue and state budget (making up more than 90% of the revenue). In import and export, the control over tax

policy plays a vital role in maintaining the traditional market, encouraging the opening of new markets, protecting domestic products and stimulating the expansion of commodities that have comparative advantages over other regional countries.

- One important issue in the reform program of the import and export tax and fee system is to rearrange the structure of taxes suitably for each type of tax and fee and for international practices, to expand the scope of collection, to stipulate the tax rates rationally in order to encourage enterprises and the population to further intensify investment and to apply advanced technology.
- The import and export tax should be continuously altered to protect to some extent domestic-produced commodities, encourage the production of processed export commodities and reduce the export of raw materials.
- In 1995, Viet Nam officially became a member of ASEAN and later AFTA. In the future, Viet Nam will have to reform the tariff system according to AFTA regulations.

4.4 Common orientation of economic and agricultural policies

As described, trade-related policies and trade liberalization policies of each country very much depend upon the state of socio-economic development of the country and the share of international trade in the country's GNP as well as the comparative advantage of the country.

Nevertheless, domestic and international political pressure faced by the country concerned as well as multilateral accords also impose certain impacts on trade-related policies and trade liberalization policies of the countries. Although the starting points of trade liberalization policies vary among the ten participating countries, they could roughly be divided into two periods, that is (i) starting of import liberalization (late 1950s-1970s) and (ii) starting of opening up and the WTO (1980 - present).

Start of import liberalization (late 1950s-1970s)

By and large, Japan started a trade liberalization policy on certain agricultural commodities in the 1950s. At least two reasons explain the liberalization policies. First, the natural resource constraint faced by Japan could only be solved through international trade. Second, Japan was able to achieve rapid and sustainable economic growth by the beginning of 1955. The main liberalized agricultural commodities included coarse grain (maize and sorghum), soybean oil and meal, coffee and cocoa bean, poultry meat (frozen), raw sugar and refined sugar.

During this period, two countries, which are classified as agricultural importing countries were very much concentrated on the import substitution and export promotion policy. For example, in the 1950s, the Republic of Korea adopted trade policy to protect its domestic industry, while in 1960s, policy was shifted to export promotion. As for Malaysia, the national policies focused more on growth and diversification policy and implemented protectionism policies on selected sectors.

In the same period, production and input-oriented policies were more or less the major emphasis for those agricultural exporting countries such as India, Indonesia, the Philippines and Thailand. China, the largest country in the region, was in the process of domestic reform and it was basically a closed economy.

Start of opening up and the WTO (1980-present)

In fact, this period may be divided into two sub-periods namely 1980 - 1992 or the pre WTO sub-period and 1993 - present or the WTO sub-period. The following discussion mainly focuses on the so-called pre WTO sub-period.

The expansion and economic growth of Japan enhanced the import role in international trade. As a result, Japan was requested by major developed trading partners such as the US, Canada, Australia and New Zealand as well as economic groups such as the EU and ASEAN to further liberalize import of agricultural products. In addition, Japan had to open up its agricultural markets in compliance with the WTO commitments. As for the Republic of Korea, agricultural trade policy has gradually started to liberalize in line with the WTO commitment.

During this period most of the countries progressively opened up their agricultural trade, especially in imports of agricultural products. For example Malaysia slightly liberalized its rice market by decreasing its self-sufficiency level on rice. Pakistan imported more vegetable oils and Thailand imported maize and more soybean and soymeal in this period. Indonesia has slowly restructured and liberalized its imports of agricultural products. Despite internal political and economical problems, the Philippines has striven to liberalize its trade policies.

The most significant trade liberalization and reforms with strong impacts on the agricultural trade in the region were the opening up of the Chinese economy and the gradual liberalization of trade policies of India. The pace of trade liberalization of these two countries is somewhat different; China had to expedite its preparedness for its liberalization policy to join the WTO as soon as possible, while India has been very cautious. Nevertheless, both huge countries have very strong impacts on the world trade of agricultural commodities whenever they enter the market.

In the WTO sub-period trade liberalization has been continuing in all of the ten countries including the non-member countries, i.e. China and Viet Nam.

4.5 Performance of international trade

4.5.1 Japan

- In post-war Japan imports dominated exports in the field of international trade of agricultural, forestry and fisheries (AFF) products. In 1963, exports of AFF products amounted to US$ 546 million, i.e., 10.3% of the US$ 545 billion of total exports, while imports of AFF products amounted to US$ 2.9 billion, i.e., 43.4% of the total imports. The percentage share of AFF products in Japanese exports decreased considerably to 1.3% in 1984 and to 0.7% in 1996, while nominal values of AFF product exports increased to US$ 3.0 billion in 1996. Imports of AFF products amounted to US$ 2.9 billion, i.e., 43.4% of the total imports. Imports of AFF products in nominal value also increased drastically to US$ 75.1 billion, but the share in total imports decreased to 21-25% in recent years.
- Trends in imports by major agricultural product are: (i) while Japan accepted the minimum access commitment of rice according to the UR agreement, the volume of rice imported has been very limited; (ii) self-sufficiency ratios of other crops, such as wheat, soybeans, feed crops, raw sugar and oil crops have been very low since decades ago; and (iii) imports of livestock products have considerably increased since the late 1980s.

4.5.2 The Republic of Korea

- With respect to trade value, the negative balance of payments has persisted since 1990 with the exception of 1993. Korea exported 128,250 million dollars and imported 143,528 million dollars in terms of value in 1996. As a result, the negative trade balance amounted to 15,300 million dollars.
- The value of agricultural and forestry product imports increased from 2,460 million dollars in 1985 to 10,940 million dollars in 1996 and the latter amount represented 7.6% of the total imported products in 1996.

- The value of agricultural and forest product exports has continuously grown from 652 million dollars in 1985 to 1,829 million dollars in 1996, representing only 1.4% of the total value of exported products in 1996.
- The major export categories in 1996 were processed fruits, apple, pear, Kimchi, vegetable seeds, red pepper, cucumber, strawberry, tomato, cactus, and ginseng. Exports of livestock and poultry have increased from 94.1 million dollars in 1992 to 260 million dollars in 1996.
- Japan, Russia, Hong Kong, China, USA, Taiwan, Spain, Thailand, Indonesia, and Malaysia were the major purchasing countries in 1997 for Korean exports.
- Japan ranks first in order in purchasing Korean agricultural, forest, and marine products. Of the total value of exports from Korea, Japan imported 68% in 1993, 61.3% in 1995, 58.9% in 1996, and 54.8% in 1997, making Japan the largest buyer of Korean agricultural goods. However, its relative importance has been declining over time, which may be attributed to expansion of export product categories and the development of export target countries.
- The value of some imported agricultural products - cereals, livestock, vegetable oil, fats, and other luxury foods - was greater than that of others among agricultural and forestry products. Trends in imports of such products reflect household consumption patterns as income has grown, possibly as a result of the agricultural trade liberalization policy in Korea.
- The US, China, Australia, Indonesia, Malaysia, New Zealand, Brazil, Thailand, Canada, and Japan were the major source countries for imports in 1997. Of the total value of imports, imports from the US were 34.3% in 1996 and 28.2% in 1997. In 1997, China contributed 13.8% of the total import value in Korea, and its major items were maize, wood and cottonseed oil. Australia held 6.2% of the total import value and its major items were cane sugar, beef, wheat and lupine seed in 1997. Indonesia held 5.5% of the total imports of agricultural, forest, and marine products; its major items were materials related to wood in 1997.

4.5.3 Malaysia

- The growing significance of Malaysia in international trade is reflected in the expansion of imports and exports. Total imports and exports increased 5.75 fold during the 1985-1996 period from RM 68.5 billion to RM 394.0 billion. In 1994, Malaysia ranked 19th in the world in terms of exports and 18th in terms of imports.
- Malaysia is increasingly becoming a trade-oriented economy with the ratio of exports and imports to GDP increasing form 0.49 to 0.78 and 0.39 to 0.79, respectively, between 1985 and 1996.
- The trade balance was positive most of the time for the period under study, except in recent years. The agricultural balance has always been positive and increasing.
- Agricultural trade grew at a rate of 10% per annum, from RM 19 billion to RM 52 billion during the same period. Agricultural exports mainly consisted of primary commodities, while imports were mainly food items. The agricultural sector is also becoming more trade-oriented with the ratio of exports and imports to agricultural GDP increasing from 0.86 to 1.2 and 0.32 to 0.58, respectively, between 1985 and 1995.
- At the aggregate level, ASEAN particularly Singapore, Japan, the USA and the EU continued to be major markets for Malaysia products. Together they accounted for more than 75% of Malaysian exports for the last two decades. Singapore, the USA and Japan together have consistently accounted for more than 50% of total exports. Thus,

the Malaysian export market remained highly concentrated with limited progress being made in market diversification.

- The direction of imports was also similar, with Japan, Singapore, the USA and the EU being the major source of Malaysia's imports. The trend showed an increased concentration in the sources of Malaysia's imports.
- Trade in agriculture, on the other hand, is more successful in terms of diversification. The ten major export destinations for Malaysian agricultural products were Japan, Singapore, the USA, China, Hong Kong, Korea, the Netherlands, Thailand, Taiwan and Pakistan. There is a decrease in concentration of exports to these countries from 64% of total agricultural exports in 1985 to 54% in 1995. For agricultural products, the Asian market is becomingly increasingly important with China and Pakistan displacing the USA in the top five export destinations. The sources of agricultural imports were also becoming less concentrated.
- Imports of selected agricultural and agriculture-related products such as agricultural inputs and machinery, fish products, feed grains and livestock products have shown tremendous increases over the years. Ratios of the value of these imports to agricultural GDP have also been continuously increasing over the 1985-1996 period, from 0.016 to 0.034 for fish and fishery products, 0.012 to 0.025 for feed grains and from 0.011 to 0.018 for livestock and livestock products. For food crops the ratio increased from 0.11 to 0.15 for the period. These subsectors as a whole have become more import-oriented.
- Analyses of ratios of f.o.b. and wholesale prices to world prices of major export commodities showed that Malaysia is still competitive in the production and export of palm oil, cocoa beans, saw logs and pepper. Both the f.o.b. and wholesale price to world price ratios were less than 1.
- The situation is not so true for rubber where these ratios were consistently above 1 for the 1994-1996 period.
- For palm oil, the average f.o.b. to world price ratio for 1985-1990 was 0.66 compared to 0.84 for the 1991-1996 period. This indicates that although Malaysian palm oil can still be considered efficient and competitive, its competitiveness seems to be lower in recent times.
- In general, although the ratios indicated that Malaysian cocoa beans and pepper were still competitive, labour problems and better economic returns from other crops, especially palm oil, have induced many investors and producers to exit the industry for more lucrative ventures.
- Malaysia is not competitive in rice and tobacco production. The ratios of wholesale price to world price of these commodities were consistently more than 1. For rice, the average ratio increased from 1.17 for the 1985-1990 period to 1.51 for the 1991-1996 period, indicating decreasing economic efficiency and decreasing competitiveness.

4.5.4 Indonesia

- During the 1985-96 period, the total volume of Indonesia's trade expanded substantially at an average annual rate of 12%, growing from around US$ 29 billion in 1985 to US$ 93 billion in 1996. During that period, the total value of exports increased from US$ 18.5 billion to US$ 49.8 billion at a rate of 10.8% per annum. Meanwhile, total import value grew at a higher annual rate of 13%, from around US$ 10 billion to US$ 42 billion. This higher growth rate of imports as compared to exports has caused Indonesia's balance of trade to deteriorate. This was caused mainly by rapidly growing imports of raw materials and capital goods that outpaced the significant improvement in non-oil as well as oil exports.

- Indonesia's external trade has been heavily biased towards three countries, namely Japan, the USA, and Singapore, which accounted for more than 49% of total exports and around 40% of imports in 1996. However, Indonesia's dependence on these three countries has been declining steadily. Despite the relative importance of the European Union as a group, its individual member countries play comparatively small roles in Indonesia's foreign trade, and their share of both imports and exports remained unchanged during the period 1985-96. Similarly, the share of the countries of Central and Eastern Europe has also been very small, although Indonesia has been attempting to develop these markets for its exports since 1984.
- At the aggregate level, Japan, the USA, and Singapore continued to be the major export markets for Indonesian products. However, the total share of these three countries decreased from around 77% in 1985 to 49% in 1996. This indicates that Indonesia has been successful in diversifying its export markets. In 1985, Japan was the largest export market for Indonesian products accounting for 46%, but its share then decreased to only 26% in 1996. Similarly, the share of the USA decreased from 22% to 14% during the period. On the other hand, the European Union and ASEAN have become more important export markets for Indonesian products. The market shares of the European Union increased from only 6% in 1985 to more than 15% in 1996, and ASEAN's market increased from 11% to 15%.
- Japan, the USA, and Singapore have been the main sources of Indonesia's imports. Together they accounted for between 38% to 51% of Indonesia's total imports for the last decade. The relative importance of Japan and the USA as the main sources of Indonesia's imports decreased slightly over the period 1985-1996, although they remain important in absolute terms. Over the period, the share of Japan decreased from 26% to 20%, in spite of its increased value from US$ 2,644 million to US$ 7,273 million. Similarly, the share of the USA decreased from 17% to 12%. The shares of ASEAN and other Asian countries increased slightly from 9 to 11% and from 17 to 21%, respectively.
- Over the period 1985-96, Indonesia experienced surpluses in its agricultural trade. Agricultural exports grew at an average rate of 10% per annum, increasing from US$ 3.2 billion in 1985 to US$ 10.6 billion in 1996. Meanwhile, the total imports increased at a much faster rate of 15% per annum. As a result, the agricultural trade surplus has been declining over time.
- Despite its rapid growth rate, agricultural trade remains small compared to both total GDP and agricultural GDP. The ratio of total agricultural exports and imports to GDP remained small and constant over the 1985-92 period, from 0.04 to 0.5 for exports/GDP, and from 0.02 to 0.03 for imports/GDP. In 1996, total agricultural trade accounted for more than 51% of the total agricultural GDP, increasing from 23% in 1985. The share of exports in Agricultural GDP increased from only 16% in 1985 to 29% in 1996. Similarly, the share of agricultural imports to agricultural GDP increased from 7% to 21% during that period. Again, this indicates that agricultural development in Indonesia has not really been "export led".
- Natural rubber, palm oils, coffee, tea, and shrimps remain the major sources of foreign exchange earnings for Indonesian agriculture. Both export volume and value of some export commodities increased steadily over the period 1985-96. Cacao, palm oils, shrimps and lobster experienced the highest growth rates compared to other commodities. Meanwhile, the export value of coffee, tea, pepper, and rawhide shrank over the 1985-96 period.
- Rice, wheat, cotton, sugar, feedstuffs for animals, sugar, dairy products and honey are the main agricultural import commodities. The import value of wheat grew steadily at 4.9% per annum, from US$ 259 million in 1985/86 to US$ 1.1 billion in 1996/97.

Import demand for wheat was mainly driven by the rapid development of food processing industries, and it is expected to increase steadily in the future.

- Since 1994, Indonesia has turned back into the world's leading rice importer. Severe drought in 1994 and 1995 affecting parts of Java and many of the outer islands led to significant area abandonment and reduced yields in these producing regions. Consequently, in 1995 the rice import was around 2 million tons, the most ever taken in one year by a single country.
- At the aggregate level, the USA, Japan, Netherlands, Singapore, and Germany have been the five main countries of destination of Indonesia's agricultural exports. The USA alone accounted for 19-27% of Indonesia's total agricultural exports for the period 1985-1996. In 1985, agricultural exports to the USA accounted for 24%, increasing to 27% in 1988 but then fluctuating and dropping to 19% per cent in 1994 and increasing again to 24% in 1996. In terms of value, however, total agricultural exports to the USA increased steadily from only US$ 544 million to US$ 1,100 million at an average annual growth of 6.1% over the period 1985-1996.
- The position of the USA as the main export market has gradually been replaced by Japan. The share of Japan increased from 14% in 1985 to 22% in 1996, while the export value to Japan increased from US$ 308 million to US$ 1,028 million. In contrast, the share of Singapore slightly declined in the past few years, from 11% in 1992 to 5% in 1996. This is also the case for the Netherlands, as its share decreased from 11% to 7% during the 1985-1996 period.
- The direction of agricultural exports exhibited no significant change over the past decade. The export markets of Indonesia's agricultural products are becoming more concentrated. In 1985, the share of the USA and Japan together accounted for 38% of the country's total agricultural exports, while in 1995 the share increased to 46%. Nevertheless, it is important to note that the direction of trade and the relative importance of each export destination vary from one commodity to another.

4.5.5 The Philippines

- The value of exports and imports increased beginning in 1987, but imports have outpaced exports, which resulted in large trade deficits. The trade deficit-GDP ratio in 1997 doubled that in 1980. The proportion of total export value to GDP was increasing, but the level of export earnings was not sufficient to cover the import needs of the other sectors of the economy.
- Consistent with the declining relative importance of the agricultural sector to GDP is a corresponding decline of agricultural foreign trade. In the early 1980s, agricultural exports, which include processed agricultural products (e.g. coconut oil and pineapple juice) and agro-industrial products (e.g. agricultural machinery), contributed about one-third to total export value. This share dropped to 9% in 1997 in view of the increasing non-agricultural manufactured exports especially electronics. Also, the share of agricultural imports to total imports declined from 11% in the early 1980s to about 9% in 1997.
- The Tariff Reform Program and Import Liberalization Program resulted in increased agricultural trade beginning in 1988. However, agricultural imports exceeded exports, which gradually eroded the agricultural trade balance such that deficits were incurred beginning 1994 and increased further with trade liberalization.
- "Food and Live Animals Chiefly for Food" captured, on average, 90% of total agricultural imports in the period 1980-1997. Under this classification, the three major exports and their contributions are vegetables and fruits (50%), fish and fish preparations (17%), and sugar and sugar preparations and honey (12%).

- Over the reference period of 1980-1997, seven commodities have been consistently in the top ten exports: coconut oil, desiccated coconut, copra oil cake/meal, sugar, fresh banana, pineapple and pineapple products, and tuna in fresh, frozen and chilled forms. Shrimps and prawns, fresh, frozen and chilled, were also in the top ten exports except in 1980 and 1982. Coconut oil remains the largest contributor to agricultural exports. The value of exports in 1997 reached US$ 673 million, 18% above the 1996 level. Export proceeds from desiccated coconut ranked among the top five from 1980-1987 but went down to number eight mostly after this period. The value of exports in 1996 to 1997 averaged US$ 86 million. Copra oil cake/meal and copra exports have declined in importance especially copra due to a shift from raw to processed coconut product exports.
- Earnings from centrifugal sugar exports were second to coconut oil from 1980 to 1985 but declined to lower rankings, sixth in 1996 and ninth in 1997. The volume of annual exports has declined substantially from an average of 963 thousand tons in the first half of the 1980s to 198 thousand tons in 1987. This has been attributed to the removal of preferential treatment of Philippine sugar in the US, emergence of sugar substitutes and declining productivity.
- Pineapple and pineapple product exports were stable, mostly either as the number four or number five agricultural export earner. Annual export values in 1996 and 1997 averaged US$ 153 million. Fresh banana was the second largest agricultural export from 1995 to 1997, contributing on average US$ 226 million annually.
- The fishery export is dominated by tuna, shrimps and prawns, seaweed and carageenan. Shrimps and prawns accounted for the second largest share of agricultural export earnings from 1987 to 1992 and 1994 with a yearly average of US$ 225 million. It ranked sixth in 1996 and 1997 with annual earnings of US$ 140 million. Seaweed and carageenan were in the leading ten agricultural exports beginning in 1995, contributing US$ 83 million or the seventh largest. Annual export receipts in 1996 and 1997 were US$ 94 million.
- Between 1998 and 1997, the annual average value of manufactured fertilizer exports was mostly the seventh largest at US$ 94 million. As a non-traditional export crop, green coffee bean shipments earned substantially from 1984 to 1986 with peak of US$ 119 million in 1986 resulting from the coffee frost in Brazil. Exports dwindled, and starting in 1990 the value of exports was no longer in the top ten. As for traditional export crops, unmanufactured tobacco was last included in the top ten exports in 1994 and abaca registered in the top ten only in 1983 and 1984 in the whole period of 1980-1997.
- The US is the major trading partner of the Philippines for its coconut oil, desiccated coconut, sugar, coffee, unmanufactured tobacco, abaca, pineapple and pineapple products, tuna and seaweed and carageenan in more recent years. Japan is the biggest market for fresh banana, shrimps and prawn and also a major destination for tuna and pineapple and pineapple products. Copra oil cake/meal, seaweed and carageenan are shipped largely to European markets. In 1996 and 1997, Viet Nam was the biggest buyer of manufactured fertilizer.
- A consistent pattern between trade reform and share of agricultural imports to GDP is observed. When import controls were re-instituted in the mid-1980s, the share of agricultural imports to GDP decreased. It increased during the trade reforms in the late 1980s. This pattern became more apparent in 1995 to 1997. The impact of reforms in import policies is more indicative in foodcrops and livestock imports. The percentage share to agricultural GDP in 1997 was more than twice the share in 1980 and almost doubled in the case of foodcrops.

- Food and live animals chiefly for food constitute the bulk of agricultural imports. It accounted for about two-thirds, on average, of the annual total agricultural import value from 1990 onwards. In the first year of the GATT-UR in 1995, import values increased by 38% from the 1991 levels. The second and third largest groups of agricultural imports during the 1980-1997 period were, respectively, inedible raw materials and manufactured fertilizer. The values of imports of other commodity groups such as animal and vegetable oils, agricultural chemicals and materials, agricultural machinery and manufactured fertilizer have increased from 1994 to 1997.
- From 1980 to 1997, six commodities were consistently in the top ten imports: wheat and meslin, milk and cream products, urea, soybean oil/cake and other residue, cotton and unmanufactured tobacco. Flour, meals and pellets of fish, meat and crustaceans were in the leading ten imports except in 1983. Whole and ground malt were in the top ten list until 1993. Unmilled maize, rice, meat of bovine animals and agricultural machinery were in the top list for several years. Soybean and manufactured tobacco were in the top ten, respectively, only in 1991 and in 1993.
- The three leading imports are wheat and meslin, milk and cream products and soybean oil cake/residue. Wheat is used both as food substitute for rice and as a feed substitute for maize. As a result of the lower tariff for wheat used for food compared to a higher tariff for wheat as feed, part of wheat imported for food were diverted to feed. Wheat and meslin imports have been increasing. In 1997, the value of imports was US$ 423 million, which was 13% more than its 1996 level and 21% above 1995 imports. The US is the largest supplier of wheat with an average value of US$ 245 million from 1991 to 1997.
- About 90% of the country's dairy products are imported. Milk and cream products ranked as the second largest imports in most years from 1990 to 1997. Imports in 1996 amounted to US$ 329 million but decreased to US$ 303 million in 1997. Australia is the largest source of dairy products, accounting for 48% and 43% of total value of imports in 1996 and 1997, respectively.
- Most soybean product imports are in the form of oil cake and other residue. From 1991 to 1997, average annual imports were US$ 142 million. In more recent years the US has captured the Philippine market for soybean. In 1996 and 1997, annual imports from the US averaged US$ 64 million representing 46% of total annual imports in the two-year period.
- Rice imports were the third largest in 1996 and 1997. The value of imports peaked in 1996 at US$ 294 million. Another large shipment occurred in 1997 valued at US$ 211 million, as a hedge against expected production shortfalls in the first quarter of 1997 due to the El Niño. Imports from Viet Nam comprised 41% of the total value of imports in 1996 and 47% in 1997. Thailand was the second largest source, accounting for 18% of total import expenditures in 1996 and 29% in 1997.

4.5.6 Thailand

- Thailand often experiences a deficit trade balance due to the fact that its imports of goods and services tend to increase more than exports. The rise in imports has resulted from the development of the country.
- Although Thailand has experienced unfavorable trade balances, the agricultural trade account has always been favorable. This indicates that non-agricultural sectors caused the unfavorable balance of trade.
- Agricultural commodities have long been Thailand's major exports with a growth rate of 11% during the 1980-1996 period. The increase was due to rising trade of several export items, namely rice, rubber, sugar, and frozen chickens and shrimp products. The

export of maize decreased tremendously as a result of increase in the domestic livestock industry requiring feed for raising animals. It declined at a rate of 18.8%

- Total export value of agricultural commodities was 16,500 million dollars in 1996 in which rice was a major export commodity since the beginning of the nineteenth century. Rubber became a major export item in the twentieth century. Rice and rubber took turns being in the first rank of total agricultural exports. Furthermore, many agricultural products, namely maize, cassava, shrimps, frozen chicken, etc. were added to the list of Thailand's important export items.
- Considering the percentage share of each agricultural commodity to the total export, it was found that the percentage share of rice to total agricultural exports declined from 29.88% in1960 to 3.59% in 1996. Rubber fell from 30% to 4.5% during the same period. Fisheries products, shrimps and shrimp products in particular became a major source of income.
- Thailand's total import has increased along with its development trend with a rate of 17.4% during 1980 to1996. Pulp and paper products have been a major agricultural import group of Thailand followed by dairy products and soybean products.
- Although international trade has played a significant role in the Thai economy as a source of national income and agricultural trade is a leading sector, the export statistics of farm commodities show that its value has been dependent on export of a few traditional crops, such as rice, rubber and cassava. However, between 1980-1995, the value of these products showed a declining trend and their percentage shares of the total export decreased. This indicates that there has been an increase in export value of other agricultural commodities. The sectors which become more important are livestock and fisheries, poultry and shrimps in particular.
- Nevertheless, statistics also show that the import value of agricultural products increased over time with higher rates relative to the export. If this trend persists, the farm sector may confront a trade imbalance in the future.

4.5.7 India

- India continued to have a negative trade balance since the beginning of the era of planned development in 1950/51.
- India's exports increased steadily from 10,000 million dollars in 1986/87 to about 33 thousand million dollars in 1996/97. Imports also showed a rising trend throughout and reached a figure of 38.5 thousand million dollars. Since imports remained higher throughout than exports, the trade balance has remained negative. The trade balance was about -6 thousand million dollars in 1986/87 and in 1990/91 when India was suffering from serious BOP problems. The economic reforms initiated in mid 1991 improved the trade balance for a few years, but the data for the recent two years indicate that the trade balance has again started deteriorating.
- The ratio of trade balance to the country's GDP at current prices in the domestic economy was close to 3% in 1986/87 and it was 2.23% in 1990/91. The year 1991/92, when economic reforms were started and the rupee was devalued, witnessed a sharp drop in the trade deficit to a level 0.69%. The trade gap further declined to -0.46% of GDP in 1993/94 but showed a sharp rise thereafter. In 1995/96 the trade deficit was 1.66% of GDP, which showed further deterioration in the next year.
- There has been a constantly rising trend during the last 11 years in the proportion of GDP exported. From a modest level of 4.79%, the ratio of export to GDP rose to about 8% in 1991/92 and got further momentum as economic reforms progressed. At present, 11.24% of GDP goes as export.

- The ratio of import to GDP also followed a rising trend, but growth in import was lower than the growth in the export when we consider the entire period from 1985/86 to1996/97. The ratio of imports to GDP rose from 7.73% during 1986/87 to 13.10% in 1996/97. Between 1991/92 and 1996/97 the ratio of imports to GDP witnessed higher growth compared to the ratio of export to GDP.
- Agricultural exports comprised about 27% of the total exports from India during 1986/87 and the share dropped sharply during the next two years. Agricultural export in the latest year comprises one-fifth of the total exports from India and the balance 80% consists of non-agricultural exports. The value of agricultural exports remained below 1.32% until 1990/91, but thereafter the ratio showed some increase. In the latest year agricultural exports comprise 2.07% of total GDP. The proportion of agricultural exports in agricultural GDP remained below 6% until 1994/95 and in the next year it rose to 7.44%.
- Agricultural exports witnessed an increase of about 500 million dollars between 1986/87 and 1991/92 and started brightening up after that. During the 6 years of economic reforms, agricultural imports more than doubled showing an increment of about 3.5 thousand million dollars.
- There is tremendous year to year variation in India's trading partners and the volume of trade with them for most agricultural commodities. The reason for this is that export is not planned for most of the agricultural commodities; it is residual. Due to lack of planned and sustained export, it has been difficult to maintain a hold on overseas markets.
- The share of agricultural imports in total imports was around 10% in 1986/87 and it rose to 13% in 1980/89. During 1989/90 to 1991/92 the ratio kept on falling and after that it fluctuated between 5.65 and 8.88%. Except in the year 1988/89, agricultural imports varied between 2 and 2.5% of GDP of the agriculture sector. During the economic reform period, the ratio of agricultural imports to agricultural GDP exceeded 3% in the latest two years.
- Agricultural imports remained significantly lower than agricultural exports, whereas non-agricultural imports remained higher than non-agricultural exports in the last decade.
- Import of rice declined from $ 170 million in 1989/90 to nil in the last two years. However, India continued to be an occasional importer of sizable quantities of wheat following poor domestic harvests. Among all agricultural commodities, oilseeds comprise the largest share in imports in most years during the last decade. This happened despite a spurt in edible oilseed output in recent years. Nearly half of the agricultural imports consists of fertiliser imports in most of the years.

4.5.8 Pakistan

- Since 1950, Pakistan has continued to face serious balance of payment problems, not only because of international economic conditions, but also due to its adoption of restrictive trade policies to provide protection to infant industries. Due to over-protection of domestic industries, domestic production of commodities became less competitive in the world market.
- The total exports of Pakistan increased significantly from only US$ 2.96 billion in 1981 to $ 8.7 billion in 1996. Total imports rose sharply from only $ 5.41 billion to $ 11.81 billion during the same period. The trade balance increased from $ 2.45 billion to $ 3.16 billion from 1981 to 1996, mainly due to higher imports than exports.

- In Pakistan, agricultural exports by SITC selection show that exports of the food group were around US$ 600 million per year from 1982 to 1994. The export of the beverages and tobacco group and vegetable oil and fats was slight during the same time period.
- Raw cotton, rice, fruits and vegetables, and fish and its preparations are the major export commodities of Pakistan.
- Among these, cotton is the most important export commodity, as raw cotton and all its manufactured products constitute more than two-thirds of exports from Pakistan. However, the foreign exchange earnings from cotton varied between US$ 930 million in 1989 and only $ 62 million in 1994 mainly because this crop is more prone to natural calamities, like cotton leaf-curl virus and climatic factors.
- The other main export commodity is rice, and its exports also varied a lot during the last ten years due to climatic factors. Export of rice varied between US$ 222 million in 1981 and 566 million in 1996. Despite the diverse agro-climatic conditions in the country, the export of fruits and vegetables has not increased from around US$ 50 million during the last 10 years.
- Export earnings from fish and its preparations almost doubled from 1981 to 1996, and this sector has a lot of potential to grow.
- Agricultural imports by SITC selection show that import of food items increased by more than 50%, the beverages and tobacco group by 60%, and the vegetable oil and fats group by more than 40% from 1982 to 1994.
- Wheat, edible oil, tea, and milk and its products are the major agricultural import commodities in Pakistan. The drain of foreign exchange by import of wheat increased from only US$ 64 million to US$ 452 million, import of edible oil from $ 265 million to $ 997 million and import of tea from US$ 119 million to US$ 171 million from 1981 to 1996.
- Pakistan mainly imported wheat from the USA, edible oil from Malaysia and the USA, tea from Kenya and Sri Lanka, and milk and its products from European countries.
- In addition to imports of food commodities, Pakistan also imported agricultural inputs including fertilizer (mainly DAP), pesticide/insecticide, seeds and farm machinery.
- Pakistan trades agricultural products almost globally. The principal trade partners for Pakistani agricultural export commodities in 1996 were Indonesia, Dubai, Iran, Thailand, Hong Kong, some African countries, Japan, China, Bangladesh, and Saudi Arabia. Countries from which Pakistan imported major agricultural commodities during 1996 include the USA, Malaysia, Indonesia, Kenya, Argentina, Brazil, Germany, Canada, Sri Lanka, Singapore, Australia, and Bangladesh.

4.5.9 China

- One of the most significant features of China's open door policy is the remarkable expansion of China's foreign trade.
- Comparing the 1980-1984 average and the 1995-1999 average, the export increased more than 7 times, whereas the import increased more than 6 times. This led China to move from a trade deficit in the 1980s to a significant trade surplus in the 1990s.
- Agricultural trade had been an important contributor to China's foreign trade. However, because of the declining trend of agriculture in China's economy, the importance of agricultural trade in China's total trade has been declining since 1980 and particularly since the early 1990s.
- Although the share of agricultural trade in China's total trade has declined, China's agricultural trade has also increased during past decades, but with a slower growth rate compared to the much faster rate of China's overall foreign trade.

- In aggregate, China has been exporting mainly horticultural products and animal products and importing mainly grains and edible vegetable oils in its agricultural trade.
- Also in aggregate, China has been exporting mainly labor intensive agricultural products and labor/capital intensive agricultural products and importing mainly land intensive agricultural products.
- This has revealed that the pattern of China's agricultural trade has been consistent with its resource endowments of scarce land resources and abundant labor supply.
- The seven major export agricultural commodities are rice, maize, soybean, peanut, frozen pork, canned food and raw silk. Those commodities were exported to Japan, Russia, Hong Kong, the Republic of Korea, Germany, Malaysia, Indonesia, Singapore, Holland, the USA and the People's Republic of Korea.
- The four major import commodities are wheat, vegetable oils, sugar and raw wool. For those commodities, Canada, the USA and Australia have large shares.

4.5.10 Viet Nam

- Over ten years (1980-1990) under the old centrally planned system, the total value of foreign trade increased 3.12 times. However, it increased 3.89 times during 1990-1997.
- Export during 1980-1990 increased 7.09 times, whereas that during 1990-1997 increased only 3.68 times. This decrease could be explained by the collapse of Viet Nam's traditional markets in the former Soviet Union and Eastern Europe.
- With regard to the import, its value increased 2.09 times during 1980-1990 and 4.07 times during 1990-1997.
- The major ten export destination countries in 1990 in decreasing order of value were the USSR, Japan, Hong Kong, Singapore, France, the Philippines, Thailand, Czechoslovakia, East Germany and the Republic of Korea. However, this changed in 1995, to Japan, Singapore, Taiwan, China, Hong Kong, the Republic of Korea, Germany, the USA, France and Malaysia. Russia was the 12th.
- The major ten import origin countries in 1990 were the USSR, Singapore, Hong Kong, Japan, France, East Germany, Hungary, the Republic of Korea, Taiwan and West Germany. However, this changed in 1995 to: Singapore, the Republic of Korea, Japan, Taiwan, Thailand, Hong Kong, China, France, Malaysia and Indonesia. Russia was the 12th.
- Agriculture, forestry and fishery product's share in total export is on the average more than 50%.
- Agricultural products alone accounts for more than 30% for exports.
- Export of agricultural products increased 3.17 times during 1985-1990 and 3.06 times during 1990-1997.
- In 1995-1997 the exports of major agricultural commodities such as rice, coffee, rubber, groundnut, cashewnut and tea grew significantly in terms of quantity and quality.
- For most of the years between 1980-1997, Viet Nam's trade balance was a deficit and the deficit has been increasing greatly in recent years. This deficit is mainly due to the increasing import of manufactured production inputs as well as consumer goods. The amount of agricultural products is relatively small.

5. Trade-Related Infrastructure and Awareness of the WTO

Physical structures related to international trade are road, rail, air and water transportation. Also, some other infrastructure such as information systems, post-harvest storage and bonded zones are also important. In addition to the above physical infrastructure, institutional support services, such as export promotion, finance, quality standardization/coding and sanitary and phytosanitary measures are important.

Also included in this chapter are observations of awareness of the existence and commitment of the WTO of government officers, private sectors, farmers and consumers in participating countries. This awareness is related not only to the degree of seriousness of the trade liberalization but also to quality and quantity of the information networks in the countries.

5.1 Infrastructure related to trade and transportation

According to World Bank statistics, data are available on the proportion of roads paved for eight countries excluding the Philippines and China (Table 5.1). In 1996 these countries were categorized into four groups. First is Thailand, which has as astonishingly high share of 98% and it increased considerably in the 1990s. The second group consists of three countries, Japan, the Republic of Korea and Malaysia, with relatively high shares around 75%, which increased in the 1990s. Third, are Pakistan, Indonesia and India with around 50%, which did not increase much in the 1990s. Fourth is Viet Nam with a low share and little increase.

As for goods transported by road, there is not much information available (Table 5.1). The role of roads has been becoming important in China during the 1990s.

Data on goods transported by rail per GDP (PPP base) are available for nine countries with the exception of the Philippines (Table 5.1). Rail transportation of goods is playing an extremely important role in the two large continental countries, namely, China and India. Then, Pakistan and the Republic of Korea follow. Viet Nam, Thailand, Japan, Malaysia and Indonesia have smaller figures. Data for seven countries show decreases in the nineties, while only Viet Nam is increasing.

Air passengers carried are basically according to per capita income from 95,914 in Japan to 2,505 in Viet Nam (Table 5.1). China, which is a large continental country and Indonesia, which is a widespread group of islands, have relatively large figures compared to their income.

Communication data consist of daily newspapers, radios, television sets and telephones (Table 5.1). Daily newspapers per capita vary almost in accordance to income per capita. The Philippines has a large figure compared to income. Radio data are only available for five countries. The Korean people have more than one radio per person, whereas less than one-fourth of the population in China, Indonesia, Malaysia and Viet Nam has a radio.

Television sets are spreading almost according to per capita income. However, in China, Indonesia and Viet Nam, the distribution is higher compared to the income. Telephones are also spreading almost according to the income. However, the distribution in China is higher compared to per capita income.

Conditions of transportation-related infrastructure in each country taken from in the country reports are summarized as follows:

Table 5.1 Trade-related infrastructure profiles.

	Japan	Rep. of Korea	Malaysia	Indonesia	The Philippines	Thailand	India	Pakistan	China	Viet Nam
Paved road (% of total)										
1990	69	72	70	46	-	55	-	54	-	24
1996	74	76	75	46	-	98	50	57	-	25
Goods transported by road (million ton-kilometer)										
1990	-	-	-	-	-	-	-	-	335,810	-
1996	-	410	-	-	-	-	-	-	463,000	-
Goods transported by rail (ton-km per US$ million of GDP (PPP))										
1990	11,937	40,675	11,915	8,541	-	14,804	248,766	41,402	600,269	16,279
1996	8,896	24,665	6,867	6,843	-	-	177,267	25,084	360,383	20,223
Air passengers carried ('000) 1996	95,914	33,003	15,118	16,173	7,263	14,078	13,255	5,375	51,770	2,505
Daily newspapers per '000 people 1994	576	404	124	20	65	48	-	21	23	8
Radios per '000 people 1996	-	1,208	-	-	168	204	105	-	161	-
Television sets per '000 people 1996	700	326	228	232	125	167	64	24	252	180
Telephone main lines per '000 people 1996	489	430	183	21	25	70	15	18	45	16

Source: World Bank (1999).

Note: The figure of goods transported by road of the Republic of Korea in 1996 is for a year other than that specified. The same for figures of goods transported by rail of Viet Nam in 1990 and 1996 and Japan, the Republic of Korea, Malaysia, Indonesia, India, Pakistan in 1996. Figures of radio of the Philippines and Thailand are years other than those specified.

Japan

- Equipment for transportation both from abroad and in country has not restricted international trade.
- Containerization, which has developed since the mid 1960s, is one of the most significant changes in the field of international transportation in post-war Japan.
- Cargo shipments by aircraft contributed to the development of international trade of perishable products.

The Republic of Korea

- The shares of domestic freight traffic by road, shipping, railway and aviation were 68.6%, 22.7%, 8.6% and 0.1% in 1996, respectively.
- The total road length increased by 1.58 times from 1985 to 1996.
- Although the competitiveness of railways was recently weakened due to the development of vehicle transportation and construction of new expressways, the railway is still the main axis of ground transportation in view of mass transport.
- The total cargo capacity in ports increased by 2.4 times from 1985 to 1995.
- Air transportation has secured its important position as a means of long distance and high speed transportation of both passengers and high value-added products.

Malaysia

- A three-pronged strategy is adopted for road development: i) increasing the road network, especially between towns; ii) overcoming constraints to capacity; and iii) increasing the road network for new growth centers and rural areas.
- More than 90% of international trade is conducted by seaports. The total capacity of ports increased by nearly 45% from 1990 to 1995 and cargo handling increased nearly 47% during the same period.
- The nation has an adequate airport network. The main thrust is to accommodate and adequately respond to the growing demand for air travel and air cargo resulting from greater industrialization. Total air cargo handled by airports increased by 3.25 times between 1985 and 1995.

Indonesia

- Road length increased by about 19% between 1990 and 1996. However, substantial capacity expansion is still needed especially in the congested key transport corridors of northern Java.
- Rail transportation in Indonesia exists only in Java and Sumatra. During 1992 and 1996 railway freight in Sumatra grew at a higher rate (6.1%) than that in Java (3.8%), where it has to compete with a better road network.
- The two most international seaports are Tanjung Priok in Jakarta and Tanjung Perak in Surabaya, both of which have highly diversified handling facilities, including international container terminals for varied cargo. Most of the other ports are geared to the export of agricultural and mineral raw materials.
- In 1996, Indonesia had well-developed air transport services. Between 1990 and 1996 airfreight carried by Indonesian airlines in both domestic and international routes increased nearly 68% (ton-km basis).

The Philippines

- Investment in infrastructure intensified in the late of 1960s and continued until the late 1970s. After this period, due to fiscal constraints, it continued at a reduced pace.

In the early 1990s, it accounted for only 2% of GDP compared with a 5% share in the late 1970s to the early 1980s.

- The total length of roads increased by 2.08 times between 1970 and 1985. However, it has remained almost the same until 1997.
- The commodity value carried via water increased 27% between 1990 and 1995 and that via air increased 61% between 1990 and 1996.

Thailand

- Between 1983 and 1997 more than 90% of the government budget for transportation and communication programs was allocated to land transportation.
- Road transportation developed considerably both in length and quality. In the fifth development plan (1982-1986) building of highways, except rural roads, was intentionally brought to a standstill. Instead, four peripheral freight terminals were built at the Bangkok outskirts and one each for Khon Kaen, Chiang Mai and Songkla to ease the congested freight traffic.
- Expressway networks between cities to promote efficient transport systems were developed in the seventh development plan (1992-1996).
- Expansion of the rail freight service was remarkable. It increased by 2.06 times between 1980 and 1986.
- Basic facilities for water transport services including dredging of water routes and linkages of the different transportation systems were improved and constructed in the sixth development plan (1989-1991). A greater utilization of coastal and international seaport services was planned in the seventh development plan (1992-1996).
- Both international and domestic air transportation facilities have developed very much. During the seventh development plan (1992-1996) standards of regional airports were upgraded.

India

- Infrastructure development is slowing down as public sector capital formation is following a declining trend. The existing infrastructure is not geared to meet the opportunities and challenges due to trade liberalization.
- The share of roads in total freight is more than 60% in recent years. In contrast to the 65-fold increase in road traffic during the last four and a half decades, the road network has expanded by only seven times.
- Railways are the principal mode of transport. Although there has been very little progress in route length, there has been substantial progress in electrifying routes and in gauge conversion from meter gauge single line to broad gauge and double line. Freight traffic increased by 22.6% between 1990/1991 and 1995/1996.
- Since the cargo handled at 11 major ports exceeds capacity, there is congestion at these ports.

Pakistan

- The transport network is still not sufficiently well developed to meet growing needs of the expanding economy.
- Road transport has been improving, but the railway system needs significant overhauling to overcome present constraints. As in air transport, the entry of the private sector in railways is a good sign. The road system accommodates 80% of the country's total passenger and freight traffic and the rest is shared by railways and air.

- More than 90% of trade is sea-borne mainly due to lack of required infrastructure for trade across land borders with India, Iran and Afghanistan.

China

- Although China has made great progress in the construction and improvement of its transportation system and trade-related physical infrastructure, China's existing transportation network and physical infrastructure are still behind the growing needs of the rapidly expanding economy and international trade and need to be improved.
- The road system has been the most important means of transportation bearing 78% of the total freight traffic in 1997. The total length of all types of roads increased nearly 50% between 1980 and 1997. However, the road network is still very limited for the growing needs.
- The railway system is the second most important system bearing 13.5% of the total freight traffic in 1997. However, the share has presented a declining trend since 1980.
- Since 1980 airway services have been growing very rapidly. However, in terms of freight traffic, they account for a very small share of the total.
- The number of berths in major coastal ports increased significantly between 1985 and 1997. The total volume of freight handled there increased more than 4 times between 1980 and 1997. Also total freight traffic conducted on navigable inland-waterways increased nearly 3 times during the same period.

Viet Nam

- The total length of the road network and length of asphalt roads almost doubled between 1985 and 1994.
- Railway length increased slightly between 1985 and 1992 as efforts were made on upgrading and modernization of the railway system. The volume of goods carried (ton-km basis) increased by 24% during the period.
- The volume of goods handled at the 8 major ports under the central government increased 2.9 times between 1985 and 1997.
- Investment was made to upgrade two international airports, namely, Hanoi and Ho Chi Minh airports.

Summary

One important factor that determines the benefit of a country under free trade is the existing physical infrastructure of the country. The major physical infrastructure includes roads, railroads, rivers, air and ports (sea and river). The state of development of this infrastructure in each participating country was discussed in the interim review of the country studies. Most of the infrastructure in Japan and the Republic of Korea is well developed and developed, while that in the Philippines, Pakistan and Viet Nam is mostly under developed.

The existing infrastructure in Indonesia, Malaysia and Thailand is mostly in the developing state, however, road and air infrastructure in Thailand is somewhat better developed. In general, large countries such as China and India are still developing their infrastructure (Table 5.2).

Table 5.2 Development stage of existing infrastructure related to international trade as of 1998.

Country	Under developed	Developing	Developed	Well developed
Japan				
Road				X
Railroad				X
River			X	
Air				X
Port				X
Rep. of Korea				
Road				X
Railroad				X
River			X	
Air			X	
Port				X
Malaysia				
Road		X		
Railroad		X		
River		X		
Air		X		
Port		X		
Indonesia				
Road		X		
Railroad		X		
River	X			
Air		X		
Port		X		
Philippines				
Road	X			
Railroad	X			
River	X			
Air		X		
Port		X		
Thailand				
Road			X	
Railroad		X		
River		X		
Air			X	
Port		X		
India				
Road		X		
Railroad			X	
River		X		
Air		X		
Port		X		
Pakistan				
Road		X		
Railroad	X			
River	X			
Air		X		
Port	X			
China				
Road	X			
Railroad	X			
River		X		
Air		X		
Port		X		
Viet Nam				
Road	X			
Railroad	X			
River	X			
Air		X		
Port	X			

Source: Observations by RA and PL.

As a matter of fact, development of infrastructure in each country very much depends upon the state of economic development and the natural resource endowment e.g. river and sea access. A typical case is the development of infrastructure in the Philippines, which has almost stood still since the economic crisis in the 1980s.

5.2 Other physical infrastructure and institutional support services

Other physical infrastructure and institutional support services mentioned in the country reports are summarized as follows:

The Republic of Korea

- Local telephone subscribers increased by 3 times between 1985 and 1996.
- In addition to 7,535 normal temperature storage facilities for agricultural products, there were 1,529 cold storage facilities in 1996. The volume of the latter increase by 3 times between 1990 and 1996.
- Standardization of quality, size, packing and indication of agricultural products is commencing.

Indonesia

- The National Agency for Export Development is an institution whose main function is to promote export products to the global market.
- Industrial estates, bonded zones and export processing entry ports in several places in the country may promote international trade.

The Philippines

- Warehouse and rice mill capacities increased 90% and 77%, respectively, between 1980 and 1995.
- The department of Trade and Industry provides various assistance or services relating to international trade, whereas the Philippines Economic Zone Authority is in charge of operations of four government controlled economic zones.
- The Philippines has committed itself to harmonizing its SPS measures with those of international standards.

Thailand

- The Cold Storage Organization is a public enterprise to provide cold storage facilities. However, as it experienced financial problems, the government is attempting to privatize it.
- The government is attempting to increase central markets and paddy silos.
- The Department of Export Promotion and the Export-Import Bank of Thailand were established for export promotion.
- Quality standardization services are provided by many agencies. However, they are not effective.

India

- For the most part, the Agricultural Produce Export Development Authority and the Marine Product Export Development Authority are involved in export promotion of agricultural commodities.

Pakistan

- The Export Promotion Bureau, the Rice Export Corporation of Pakistan, and the Cotton Export Corporation of Pakistan are institutions that promote exports.
- The Pakistan Standard Institute acts as an agent of international and other standards bodies for procuring and selling the standard required in the country. Presently it is not directly involved in the rapidly changing scenario of international trade of many products, especially since Pakistan needs to improve the standards of many products to compete in international markets.

China

- Marketing information systems (both domestic and international) need to be improved.
- The total number of installed telephones increased 46 times during 1970-1997.

Viet Nam

- The total number of telephones increased by almost 6 times between 1991-1995.

5.3 Awareness of the WTO

The establishment of the WTO in 1994 with the enforcement of commitments enacted in 1995 marked the starting point of a new era of liberalization of world agricultural trade. The details of commitments were discussed in Section 2.1.

Attempts were made to assess the awareness of concerned parties including government officers, the private sector, farmers and consumers to the WTO based on observations made during the interim reviews in each participating country. The awareness to the WTO of government officers, the private sector and farmers in the developed and agricultural importing countries such as Japan and the Republic of Korea was very strong or strong. The awareness of government officers in ASEAN countries, China, India and Pakistan (except Viet Nam) was strong, while that of the private sector was moderate. Nevertheless, the awareness of farmers was generally weak or very weak in most of the countries. The awareness of consumers was stronger; it was moderate in Japan, Malaysia, the Philippines and India. It was weak or very weak in the other countries. Comparing farmers' awareness and consumers' awareness, the farmer awareness is stronger in Japan, whereas the farmer is weaker in Malaysia, the Philippines, Indonesia, India and China. In the other countries, they are the same.

It is worth noting that the strong or very strong awareness of government to the WTO has not been reflected yet in the restructuring of concerned government agencies. Restructuring has been more or less under consideration in most of the countries, while it has progressed somewhat in Japan.

There have been programs for disseminating information on the WTO in some countries through workshops and seminars, especially at the central level among government officers and the private sector. However, the Asian financial crisis has slowed down the process of promoting awareness of the WTO in some countries like Thailand, Malaysia, Indonesia and the Philippines.

Awareness of the WTO of a country depends on the seriousness paid to trade liberalization issues regardless of its position as either an exporting country or an importing country. Also awareness depends on the level of development of the country's information network and the country's openness of the society. Development of information networks depends largely on the country's stage of economic development.

Table 5.3 Awareness of the existence and commitments of the WTO.

Country	Very weak	Weak	Moderate	Strong	Very strong
Japan					
Govt. officer					X
Private sector					X
Farmer					X
Consumer			X		
Rep. of Korea					
Govt. officer					X
Private sector					X
Farmer				X	
Consumer				X	
Malaysia					
Govt. officer				X	
Private sector			X		
Farmer		X			
Consumer			X		
Indonesia					
Govt. officer				X	
Private sector			X		
Farmer	X				
Consumer		X			
Philippines					
Govt. officer				X	
Private sector			X		
Farmer		X			
Consumer			X		
Thailand					
Govt. officer				X	
Private sector			X		
Farmer		X			
Consumer		X			
India					
Govt. officer				X	
Private sector			X		
Farmer	X				
Consumer			X		
Pakistan					
Govt. officer				X	
Private sector			X		
Farmer	X				
Consumer	X				
China					
Govt. officer				X	
Private sector		X			
Farmer	X				
Consumer		X			
Viet Nam					
Govt. officer		X			
Private sector		X			
Farmer	X				
Consumer	X				

Source: Observations by RA and PL.

6. Effects of Trade Liberalization on Selected Agricultural Commodities

This chapter is mainly based on the second country reports, that is, the commodity study and the commodity-location study. It consists of four sections:

(i) Review of past studies on trade liberalization of the participating countries based on the first study, that is, the institutional study.
(ii) The commodity study is a national level analysis using welfare analysis and the commodity-location study is a local or farm level analysis using partial budget analysis. Methodologies for analyses and their limitations are discussed
(iii) Results of the analyses at the national level are discussed.
(iv) Results of the analyses at the local or farm level are discussed.

6.1 Review of studies on trade liberalization in the participating countries

This section presents a brief review of preceding studies on trade liberalization in the participating countries. Reports on trade liberalization published by both domestic and foreign researchers in the participating countries have been increasing, which reflects awareness and interest on the issue.

Japan

- Many articles analyze trade liberalization implementation issues and some have conducted evaluations employing econometric analyses. The amount of research focusing on effects of import liberalization on domestic production and consumption has increased since the early 1980s.
- Studies were done mainly by Japanese researchers. However, those done by foreigners have increased. Serious arguments have been fought among Japanese researchers and foreign researchers on trade liberalization of commodities such as beef, oranges and rice.

The Republic of Korea

- Since the end of the 1980s several studies both quantitative and qualitative on trade liberalization were done by Korean researchers.
- They stressed the effects on domestic economy and agriculture.

Malaysia

- Many papers discuss trade liberalization in developing countries including Malaysia. A few papers were presented by Malaysian researchers on trade liberalization of commodities such as tobacco and palm oil.

Indonesia

- In recent years, several papers by Indonesian and foreign researchers analyzed effects of trade liberalization on Indonesia alone or as a member of ASEAN, AFTA or APEC as well. These studies mainly used various econometric methods.

The Philippines

- Trade policies and reforms have been rather well documented by Filipino and foreign researchers in the literature since the early 1970s.

Thailand

- Several commodity studies on trade liberalization exist. There are two important studies. One done by Economic Business Department with the cooperation of Kasetsart University studied the impact of subsidy policies and measures on the agricultural sector. The other analyzed impacts of the GATT upon Thai agricultural economy employing a general equilibrium model built by the Office of Agricultural Economics (OAE) and National University of Australia.

India

- Economic liberalization was initiated in 1985 with a wide range of economic policy reforms. Since mid 1991 there have been studies on agricultural trade liberalization by Indian researchers. They focused on domestic prices and export volume, price volatility, institutional reform, agricultural growth, impacts on cropping pattern, food security and consumers.

Pakistan

- Both positive and negative effects on agriculture have been discussed during the last decade by Pakistani researchers and some foreigners.
- Most of the studies on trade liberalization on agriculture have just discussed the possible effects and did not quantify these impacts, which is more important in countries like Pakistan.
- Major subjects of studies were comparative prices, effects of exchange rate, increasing domestic agricultural prices and structural changes in agricultural sector.

China

- Since China applied to join the GATT and then the WTO in 1986, both positive and negative effects of trade liberalization on China's agriculture have been widely discussed within China and abroad. In general, these studies can be classified into two groups.
- The first group of studies focuses on the general effects of China joining the WTO and implementing trade liberalization on China's agricultural production and agricultural trade.
- The second group of studies focuses on specific commodities.

6.2 Methodologies for analyses and their limitations

In this section, the basic conceptual framework of effects of tariff and free trade is explained. Then, simple welfare analysis, which was used for the commodity study, is explained in detail. A brief explanation on partial budget analysis used for the commodity-location study and economic models used for China and Japan follows.

6.2.1 Basic conceptual framework of effects of tariffs and free trade

A brief review of basic concepts of effects of tariff on production, price, import/export, producer's welfare (producer's surplus), consumer's welfare (consumer's surplus) and tariff revenue is presented. The discussion aims at providing some background rather than a comprehensive trade theory discussion. The basic concept is the assumption of a small country

in world trade. That means that no matter how much this country imports or exports of a given commodity, it will not have any effect on the world price. In other words, the small country is a price taker in the world market. On the contrary, if a country's import or export has impacts on world price, then it is called a large country.

Effects of import tariff: a small importing country

Assuming that country A is a small country in the world market of a commodity called "x ", the domestic demand and supply of the said commodity of the country A are known as Da and Sa (Figure 6.1a). Given Da and Sa, the excess demand of country A (EDa1) in the world market faced by the country can be derived, when the world price is less than the domestic equilibrium price of Pe (Figure 6.1b). Given the excess supply of the world (ESw) faced by country A, the world price or import price of commodity "x" for country A is Pw. Then the domestic price in country A will be Pd1 equal to Pw (ignoring the transfer costs). This will give in equilibrium under free trade (no import tariff) in the domestic market of country A with the domestic price at Pd1, the domestic quantity demanded as Qd1 and domestic supply as Qs1 and the total quantity imported is Qs1Qd1 or 0Qi1 (Figure 6.1).

Suppose country A imposed an import tariff at T $ per unit, then the incidence of import tariff can be analyzed through the world market faced by country A through a shift of excess demand of country A or EDa. That means that there will be a parallel shifted of EDa1 to EDa2 by a magnitude equal to the import tariff of T (Figure 6.1b). As EDa2 intersects the excess supply of the world (Pw) faced by country A, it gives a new lower level of quantity imported at Qi2, which in turn gives a new domestic price level at Pd2 (Pd2 is equal to the world price Pw plus the import tariff T). At the new higher domestic price level of Pd2, the domestic production will increase to Qs2, whereas the domestic quantity demanded decreases to Qd2 (Figure 6.1a). The effects of import tariff imposition on price, production and domestic demand or consumption are summarized in Table 6.1.

Table 6.1 Effects of import tariff imposition.

	Without import tariff or free trade	With import tariff imposed	Change
World price	0Pw	0Pw	No
Domestic price	0Pd1	0Pd2	Increase
Quantity imported	Qs1Qd1 or 0Q i1	Qs2Qd2 or 0Qi2	Decrease
Domestic supply	0Qs1	0Qs2	Increase
Domestic demand	0Qd1	0Qd2	Decrease

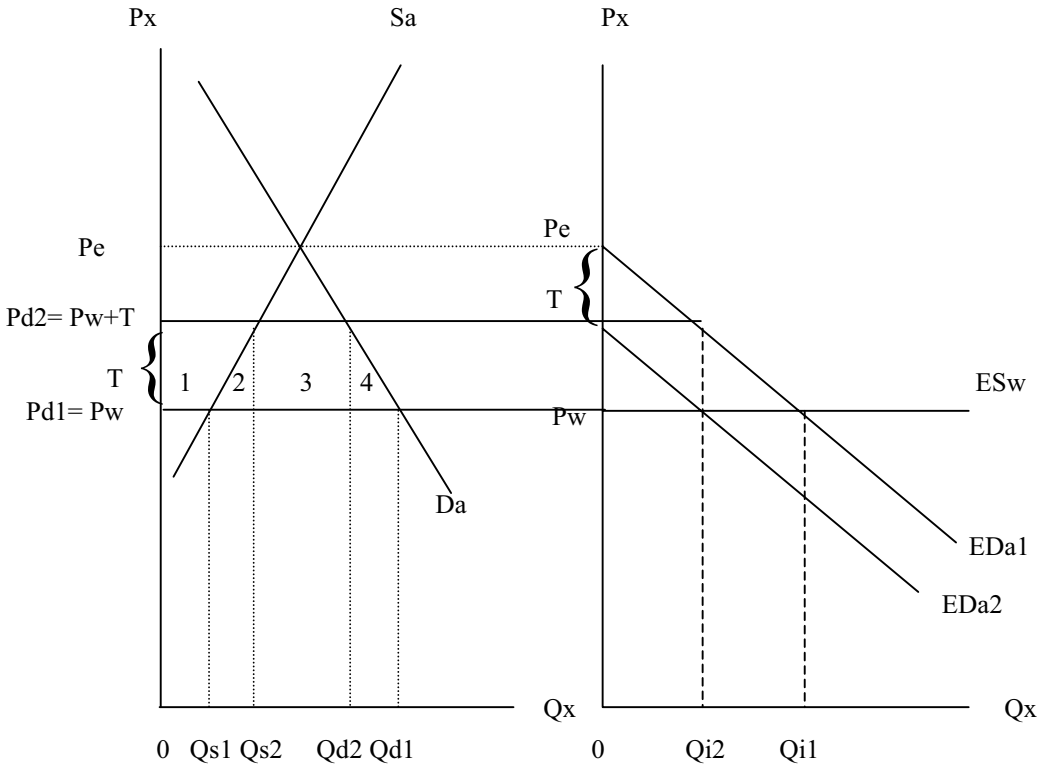
In addition to these effects, the tariff impacts can also be analyzed in terms of producer's and consumer's welfare loss or gain. Essentially, this is a welfare transfer among the concerned parties of net social gain and loss. The import tariff impacts on welfare can be classified as follows (Figure 6.1a):

- producer's surplus gain, which is shown by area 1;
- consumer's surplus loss, which is shown by area 1 + 2 + 3 + 4;
- government tariff revenue, which is shown by area 3 (or equal to Qs2Qd2 x T); and
- Social deadweight loss, which means nobody in the society received that welfare transferred. In this case the consumer's surplus loss area 2 and area 4 are not received by or transferred to anyone in the society. Conceptually these areas are called:
  (i) efficiency or net social loss in production (area 2); and
  (ii) efficiency or net social loss in consumption (area 4).

It should be pointed out that if the import tariff is removed then the market will go back to the free trade situation. Consequently, all the consumer's surplus loss (area 1 + 2 + 3 + 4) will go back to the consumer, which is called the welfare gain or consumer's surplus gain. Obviously, there will be no social loss (area 2 + 4), and the government tariff revenue (area 3)

will be transferred back to consumer. This is a simple comparison of net welfare gain between producer and consumer.

Figure 6.1 Effects of import tariff: a small importing country.



(a) Domestic market of country A (b) World market faced by country A

Effects of export tax: a small exporting country

Assuming that country A is a small country in the world market of a commodity "y", by the same analogies as above, the domestic demand and supply of the said commodity of the country A are known as Da and Sa (Figure 6.2a). Given Da and Sa, the excess supply of country A (ESa1) in the world market faced can be derived, when the world price is greater than the domestic equilibrium price of Pe (Figure 6.2b). As country A is a small country, the excess demand of the world faced by country A will be EDw. Then the world price or export price of commodity "y" for country A is Pw. The domestic price in country A will be Pd1 equal to Pw (ignoring the transfer costs). This will give an equilibrium under free trade (no export tax) in the domestic market of country A with the domestic price at Pd1, the domestic quantity demanded as Qd1 and domestic supply as Qs1 and the total quantity exported is Qd1Qs1 or 0Qe1 (Figure 6.2).

Suppose the government of country A intervened in the export of commodity y by imposing an export tax of T $ per unit. The impacts of export tax can be analyzed through the world market faced by country A. After the export tax is imposed, there will be a parallel shift of ESa1 to ESa2 by a magnitude equal to the export tax of T (Figure 6.2b). ESa2 intersects EDw to give a new lower level of quantity export at 0Qe2. The new level of export gives a new lower domestic price level at Pd2 (Pd2 is equal to the world price Pw minus the import tariff T). At the new lower domestic price level of Pd2, domestic production will decrease to Qs2,

whereas the domestic quantity demanded increases to Qd2 (Figure 6.2a). The effects of export tax on export, price, production and consumption/domestic demand are summarized in Table 6.2.

Table 6.2 Effects of export tax imposition.

	Without export tax or free trade	With export tax imposed	Change
World price	0Pw	0Pw	No
Domestic price	0Pd1	0Pd2	Decrease
Quantity imported	Qd1Qs1 or 0Q e1	Qd2Qs2 or 0Qe2	Decrease
Domestic supply	0Qs1	0Qs2	Decrease
Domestic demand	0Qd1	0Qd2	Increase

The impacts of export tax can also be analyzed in terms of welfare transfer or producer's and consumer's welfare loss or gain. The welfare gain and loss can be classified as follows (Figure 6.2a):

- producer's surplus loss, which is shown by area 1 + 2 + 3 + 4 + 5;
- consumer's surplus gain, which is shown by area 1 + 2;
- government tariff revenue, which is shown by area 4 (or equal to Qd2Qs2 x T); and
- social deadweight loss:
  - (i) efficiency or net social loss in consumption (area 3); and
  - (ii) efficiency or net social loss in production (area 5).

Again, if the country removed the export tax, the domestic market would go back to the free trade condition. Then all the producer's surplus loss will be transfer back to the producer. The analogy is similar to that of import tariff removal.

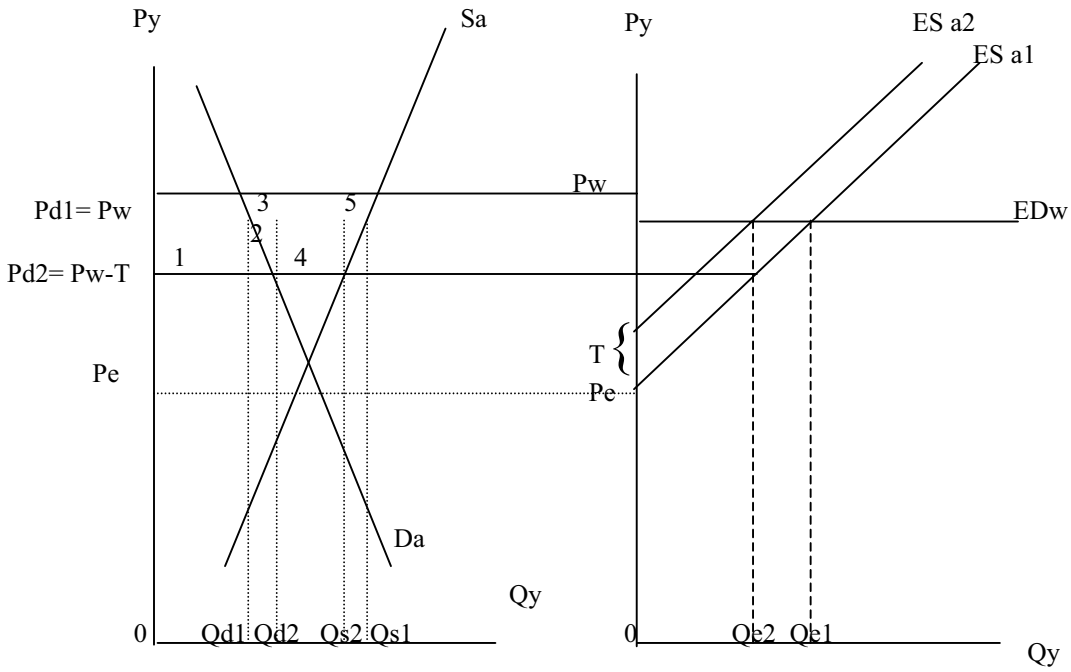
Effects trade liberalization in the world market on a small exporting country.

Assuming that country A is a small export country in the world market of commodity "z", by the same analogies as above, an excess supply of country A in the world market faced by country A can be derived, when the world price is greater than the domestic equilibrium price of Pe (Figure 6.2b). Now consider the world market for commodity z in which the world demand and supply are represented by Dw1 and Sw1, respectively (Figure 6.3c). The intersect of Dw1 and Sw1 gives an equilibrium world price at Pw1, which will become the world excess demand faced by country A (Figure 6.3b). At this level of world price or Pw1, which is the export price of commodity z for country A, the quantity export of country A is Qd1Qs1 or 0Qx1 (Figure 6.3). This will give an equilibrium in the domestic market of country A with the domestic price at Pd1, the domestic quantity demanded of Qd1, domestic supply of Qs1 and the total quantity exported is Qd1Qs1 or 0Qe1 (Figure 6.3).

As world trade is liberalized, the export subsidies of export countries are abolished, then the world supply will shift backward from Sw1 to Sw2. Furthermore, the open market access commitment under trade liberalization will increase the world demand. This means that the world demand will shift forward from Dw1 to Dw2. Consequently, the intersect of new world demand Dw2 and supply Sw2 gives a new higher world price at Pw2 (Figure 6.3c). The new higher world price of Pw2 will be the new export price faced by county A. Then the domestic price of country A increases to Pd2, with a new domestic market equilibrium domestic production increases to Qs2, domestic demand decreases to Qd2, and the export of the country increases to Qd2Qs2 or 0Qx2.

In terms of welfare, there is a producer's surplus gain as shown by area 1 + 2 + 3, while the consumer's surplus loss is depicted by area 1 + 2 (Figure 6.3a). It should be noted that in this case there is no net social loss and no revenue to government. This shows that under free trade or trade liberalization commitment, there will be a change in world demand and supply, which generates welfare gain to producers and welfare loss to consumers in the exporting country.

Figure 6.2 Effects of export tax: a small exporting country.



(a) Domestic market of country A (b) World market faced by country A

6.2.2 Simple welfare analysis

Simple models

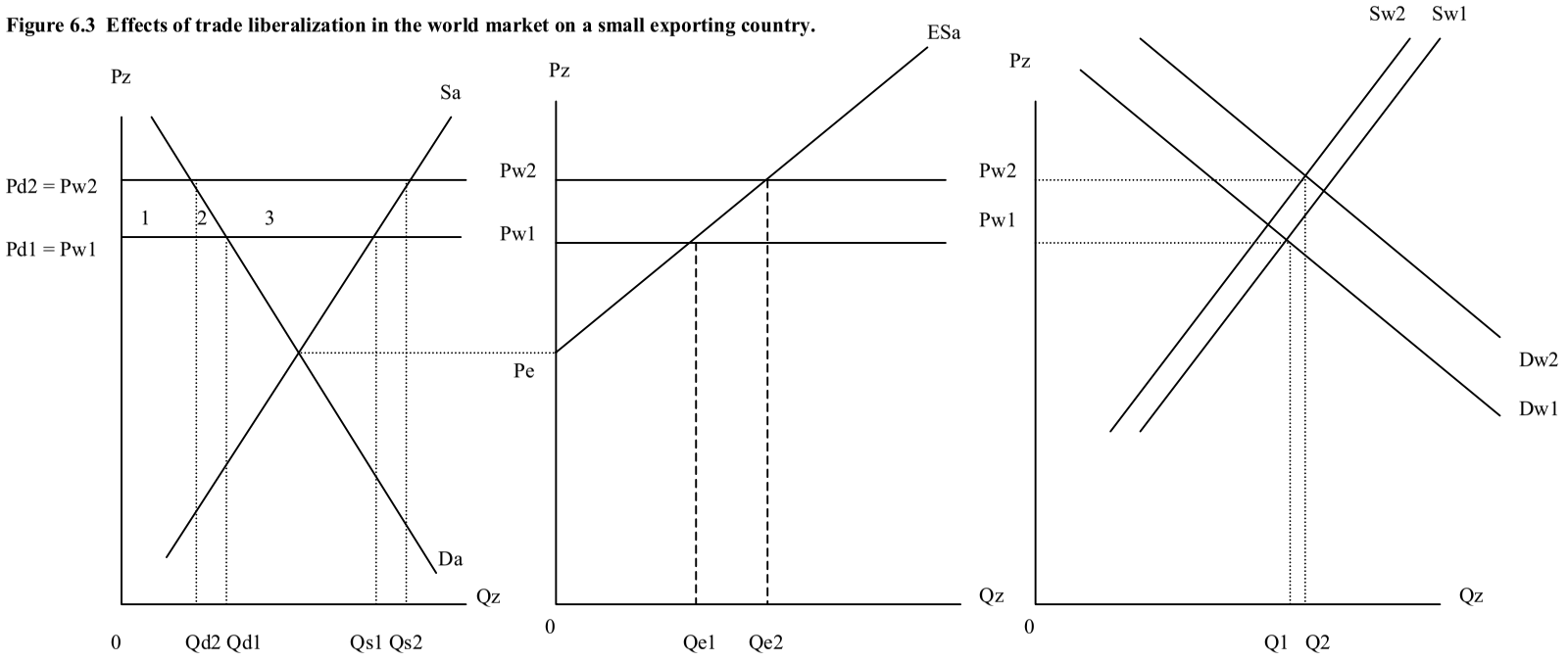
From the above basic concepts of effects of tariffs and free trade, a simple welfare analysis was employed to assess the effects of trade liberalization of the selected products in each participating country at the national level. The simple analysis uses three equations as follows:

- Domestic demand

  Qdi = f(Pwi, Ps, Pc, I)…….. (Equation 1)

  Where: Qdi = Quantity demanded in domestic market of commodity "i"
  Pwi = Domestic wholesale price of commodity "i"
  Ps = Domestic market price of commodity that can be a substitute of commodity "i"
  Pc = Domestic market price of commodity that can be used as a complementary commodity with commodity "i"
  I = Consumer's income

Figure 6.3 Effects of trade liberalization in the world market on a small exporting country.



(a) Domestic market of country A

(b) World market faced by country A

(c) World market

- Domestic supply

  Qsi = f(Pfi, Pai, Pfs, T) …….. (Equation 2)

  Where: Qsi = Domestic supply of commodity "i"
  Pfi = Price of commodity "i" at the farm level
  Pai = Price of major agricultural inputs used
  Pfs = Price of commodity "s" that can be produced instead of commodity "i"
  T = Trend

- Price Linkage

  Pfi = f(Pwi, T)……. (Equation 3)

  Where: Pfi = Price of commodity "i" at the farm level
  Pwi = Domestic wholesale price of commodity "i"
  T = Trend

These three equations are estimated and the own-price elasticity of demand and supply as well as the elasticity of price transmission between farm and wholesale are derived from the respective equations. These elasticities are used for the simple welfare analysis.

Essentially the simple welfare analysis consists of the following steps:

- Estimating the own price elasticity of demand and supply, the price elasticity of price transmission between the two market levels e.g. international price and domestic price, or wholesale price and farmgate price (or price received by farmer);
- Computing the consumer's surplus using the estimated demand elasticity and the new price level after trade liberalization (e.g. tariff decreased, world price increased);
- Computing the farmgate price using the estimated elasticity of price transmission and the new wholesale price;
- Computing the producer's surplus using the estimated supply elasticity and the new farmgate price; and
- Computing the difference between the consumer's and producer's surplus or the approximate net welfare gain or loss.

The computed approximate net welfare gain or loss is used as an indicator of the effects of trade liberalization on the selected commodity.

Limitations of the analysis

The simple welfare analysis suffered at least four limitations.

(i) It is a static equilibrium analysis, where the changes and dynamic impacts of trade liberalization as a whole are not considered.
(ii) The initial level of consumption and production has a significantly effect on the estimated magnitude.
(iii) Substitution among commodities, which are consumed, is not considered.
(iv) The quality of a commodity imported is assumed to be the same as that produced domestically.

Common difficulties in the analyses

The most common difficulties encountered by the participating countries were (i) lack of data, (ii) estimation of demand and supply, and (iii) estimation of elasticity of price transmission.

Problems related to lack of data are quite common. Some countries did not have time series data sufficient for estimating the equations. As a matter of fact, one country had to drop the analysis of a selected crop, which is an import crop of the country, due to lack of data.

The statistical estimations of demand and supply equations were tedious. In some cases, the estimated equation was statistically sound, but the derived price and elasticities were rather unusual and even contradicted basic economic theory. Some countries had to drop the intended demand or supply shifter variables and income variables so as to obtain meaningful estimated elasticities, while some countries had to use the elasticities estimated by well accepted previous studies. In fact, one country could not estimate the demand and supply functions, because of the intensive government intervention in production and marketing of the selected crop.

The elasticity of price transmission is derived from the estimated price linkage equations that faced problems in estimation. The first problem was lack of data. The second problem was the sign of the estimated co-efficient. The third problem was magnitude of the derived elasticity of price transmission. The fourth problem was government price control measures, which have been implemented for years.

Assumptions used in the welfare analysis

The study suggested the following assumptions:

- The 1996-97 data should be used for the base year.
- Since internal prices of commodities change due to trade liberalization, the changes due to the impact of the Uruguay Round in "Impact of the Uruguay Round on Agricultural" Table in FAO (1995) should be used in computing the price levels of selected commodities.

However, for a few countries, it was difficult to use these assumptions due to their own particular situations. Attempts had been made to unify other assumptions. Nevertheless sometimes it was difficult. Some of the reasons are due to the difficulties described the above. Also there are some other reasons. For example, most of the rice importing countries analyzed welfare assuming tariff decreases. However, in case of the Philippines a tariff increase was assumed. The import of rice in the Philippines was monopolized by the National Food Authority with zero tariff. However, the Filipino government is beginning to permit private companies to import rice if they pay some tariff. (Privatization is one of the shapes of the trade liberalization). Thus, assumptions may differ by country and by commodity due to the country's situation including interests and priorities of the country concerned (Table 6.3).

Another example is Malaysia's rice import. Since the domestic price of rice is high in Malaysia compared to the international price, the 7% increase of the latter does not cause much effect to Malaysia. Therefore, Malaysia is more interested in effects of the subsidy decrease to rice.

6.2.3 Partial budget analysis

Partial budget analysis is used to assess the profitability of the selected crop or commodity after trade liberalization policies are implemented at the local or farm level. The application of this method started with the estimation of changes in input prices after liberalization and the farmgate price, which was obtained from the simple welfare analysis, then the gross return was computed and compared with the initial level. See Appendix 1 for a more detailed explanation of the analysis.

The simplicity of partial budget analysis has a few limitations. First, the productivity changes after trade liberalization are not included. Second, substitution among inputs is neglected. And third, structural changes in both markets and marketing after trade liberalization are not included in the analysis.

Table 6.3 Results of welfare analysis of the selected commodities.

Country and Commodity	Assumption Import (IM) or Export (EX)	Producer's Surplus (1)	Consumer's Surplus (2)	Net Surplus Difference Between (1) and (2)	Assumptions
Japan					
Rice	IM	L	G	G	Zero tariff, no import quota
Rep. of Korea					
Rice	IM	L	G	G	IQI
Soybean	IM	L	G	G	IQI
Onion	IM	L	G	G	IQI
Ginseng	IM	L	G	G	IQI
Malaysia					
Rice	IM	L	G	G	DPD due to SD
Palm Oil	EX	G	L	G	TD 15%, PI
Tobacco	IM	L	G	G	TD 270%
Indonesia					
Rice (TD)	IM	L	G	G	TD 16.5%
Rice (PI)	IM	G	L	L	PI 7%
Rice (TD, PI)	IM	L	G	G	TD 16.5%, PI 7%
Maize (TD)	IM	L	G	G	TD 5%
Maize (PI)	IM	G	L	L	PI 4%
Maize (TD, PI)	IM	L	G	G	TD 5%, PI 4%
Soybean (TD)	IM	L	G	G	TD 5%
Soybean (PI)	IM	G	L	L	PI 7%
Soybean (TD, PI)	IM	G	L	L	TD 5%,PI 7%
Potato (TD)	IM	L	G	G	TD 5% (22% to 17%)
Cassava (PI)	EX	G	L	G	PI 6%
The Philippines					
Rice (TI)	IM	G	L	L	TI 50%, TI 200%
Maize	IM	L	G	G	TD
Thailand					
Rice	EX	G	L	G	PI 7%
Maize	IM	G	L	G	PI 4%
Soybean	IM	L	G	L	TD
Milk	IM	L	G	G	TD
India					
Rice	EX	G	L	L	PI 7%, SD
Maize	EX	G	L	G	PI 4%, SD
Rapeseed/Mustard	IM	L	G	G	PI 4%, SD
Pakistan					
Rice	EX	G	L	G	PI 7%
Maize	IM	G	L	L	PI 4 %
Wheat	IM	G	L	L	PI 7%, FPI 7% due to SD
China					
Rice	EX (EX)	G, I	L, D	G,D	
Maize	EX (IM)	L, D	G, I	L,D	
Wheat	IM (IM)	L, D	G, I	G,I	
Other Grains	EX/IM (IM)	L, D	G, D	G,D	
Soybean	IM (IM)	L, D	G, I	G,D	
Potato	EX (IM)	L, D	G,D	G,D	
Sweet Potato	EX (IM)	L, D	G,D	G,D	
Pork	EX (EX)	G, I	G,I	G,I	
Beef	EX (IM)	G, I	G,I	G,I	
Mutton	IM (IM)	G, D	G,I	G,I	
Poultry	EX (EX)	G, I	G,D	G,I	
Eggs	EX (EX)	G, I	G,I	G,I	
Milk	EX (IM)	G, D	G,I	G,I	
Fish	EX (EX)	G, I	G,I	G,I	
Viet Nam					
Rice	EX	G	L	G	PI 7%, ETD
Coffee	EX	G	L	G	PI 7%, ETD
Tea	EX	G	L	G	PI 7%, ETD
Groundnuts	EX	G	L	G	PI 7%

Note: DPD = Domestic price increase; ETD = Export tax decrease; FPI = Farmgate price increase; G = Gain; IQI = Import quota increase; L = Loss; PI = International price increase; SD = Subsidy decrease; TD = Tariff decrease; TI = Tariff increase.

Remarks: For China EX and IM show a net exporter or importer of the commodity as of 1998, respectively. Also in the parentheses, they show as of 2005. D and I show welfare with trade liberalization decrease and increase compared to that without it, respectively. China's results were estimated using Center for Chinese Agricultural Policy's Simulation and Projection Model (CAPSiM).

The partial budget analysis was carried out to estimate impacts by considering the changes in output prices and also changes in the variable costs. This includes consideration of all subsidies and supports.

Output prices were calculated with the same assumptions as the welfare analysis. Some countries had difficulties calculating subsidies and support. The assumptions differ by country and by commodity due to each country's situation. The assumptions used by each country are included in Table 6.4.

6.2.4 Economic models

In order to fully capture the actual situation and on going research on trade liberalization issues in the participating countries, accepted economic models were used in the welfare analysis. For example, Japan used a sophisticated model to estimate the effects of trade liberalization on rice, while China employed a large agricultural sector model to analyze the welfare gain and loss due to trade liberalization of the selected commodities.

Also Japan used sophisticated models to assess the effects of the trade liberalization on beef and sugar-related products, i.e., sugarcane, sugarbeet, potato and sweet potato.

China's welfare analysis was performed by:

(i) Calculation of welfare gain and loss in the years between 2000 and 2005, based on the baseline scenario (without trade liberalization).

(ii) Calculation of welfare gain and loss in the same years based on the free trade scenario (with trade liberalization). Under the free trade scenario, both import tariff and trade barriers for agricultural inputs such as fertilizer and pesticides will also be reduced and eventually be phased out in 2005. Therefore, the fertilizer and pesticide prices are assumed to decline by 20% from 2000 to 2005. All other assumptions are the same as those defined in the baseline scenario. Also simulation of changes in world prices was tried.

(iii) Calculation of the balance of welfare gain and loss between with and without trade liberalization (the free trade and the baseline scenarios).

In Table 6.3 the results based on (ii) and (iii) above are shown, with the total welfare in six years between 2000 to 2005. It is noteworthy that China's consumer's welfare gains for feed grains are not in the vegetable sector, but in the animal sector.

6.3 Results of analyses at the national level

Results of the welfare analyses at the national level analysis are shown in Table 6.3. They include the assumptions adapted by countries and commodities. For Indonesia a tariff decrease was assumed for rice, maize, soybean and potato and a price increase was assumed for rice, maize soybean and cassava. In addition the cases assuming both tariff decrease and price increase simultaneously were added for rice, maize, and soybean.

The results are interpreted in the following order of commodities: rice, maize, soybeans and other commodities. Rice, maize and soybeans are common commodities selected by ten, six and four countries, respectively. In each commodity, the interpretation starts with the importing countries or countries which assumed import, followed by the exporting countries or countries which assumed export.

According to the conventional theory of the effects of trade liberalization, in the import case, there is a producer's surplus loss and a consumer's surplus gain and the net difference is a net welfare gain (which might be called a L-G-G case). In the export case, the conventional

theory is that there is a producer's surplus gain and a consumer's surplus loss and the net difference is a net welfare gain (which might be called a G-L-G case).

Table 6.4 Results of partial budget analysis of the selected commodities and assumptions.

Country and Commodity	Assumption Import (IM) or Export (EX)	Return Increase (I) or Decrease (D)	Assumptions	Study Site
Rep. of Korea				
Rice	IM	D	FPD 7% due to IQI, PI	Chung Nam
Soybean	IM	D	FPD 5.4% due to IQI, PI	Chonnam
Onion	IM	D	FPD 7.5% due to IQI, PI	Cheju
Ginseng	IM	D	FPD 0.5% due to IQI, PI	Chungbuk
Malaysia				
Rice	IM	D	FPD due to SD	NADA
Palm Oil	EX	I	FPI 3.2% due to TED 15%	FELDA
Tobacco	IM	D	FPD due to TD 270%	Kelantan
Indonesia				
Rice (TD)	IM	D	TD 16.5%	West Java
Rice (PI)	IM	I	PI 7%	West Java
Rice (TD, PI)	IM	D	TD 16.5%, PI 7%	West Java
Maize (TD)	IM	D	TD 5%	East Java
Maize (PI)	IM	I	PI 4%	East Java
Maize (TD, PI)	IM	D	TD 5%, PI 4%	East Java
Soybean (TD)	IM	D	TD 5%	East Java
Soybean (PI)	IM	I	PI 7%	East Java
Soybean (TD, PI)	IM	I	TD 5%, PI 7%	East Java
Potato (TD)	IM	D	TD 5% (22 to 17%)	West Java
Cassava (PI)	EX	I	PI 6%	East Java
The Philippines				
Rice	IM	I	TI, TID	Nueva Ecija
Yellow maize	IM	D	TD, TID	Pampanga
Thailand				
Rice	EX	I	PI, SD	North, North East and Central Economic Zone 12 Skothai
Maize	IM	I	PI, SD	
Soybean	IM	D	PI, SD	
India				
Rice (PI)	EX	I	PI 7%	Punjab
Rice (PI, SD)	EX	D	PI 7%, SD	Punjab
Maize (PI)	EX	I	PI 4%	Madhya Pradesh
Maize (PI, SD)	EX	I	PI 4%, SD	Madhya Pradesh
Rapeseed/Mustard (PI)	IM	D	PI 4%	Rajasthan
Rapeseed/Mustard (PI, SD)	IM	D	PI 4%, SD	Rajasthan
Pakistan				
Basmati Rice	EX	I	PI 7%, IPI	Punjab
Non-Basmati Rice	EX	D	PI 7%, IPI	Punjab
Wheat	IM	D	FPI, IPI	Punjab
Maize	IM	I	FPI, IPI	Punjab
China				
Rice	EX	I	FPI, YI, IPD	22 provinces
Maize	IM	D	FPD, YI, IPD	20 provinces
Wheat	EX	D	FPD, YI, IPD	19 provinces
Viet Nam				
Rice	EX	I	PI	Mekon Delta
Coffee	EX	I	PI	Dac Lac
Tea	EX	I	PI	Thai Nguyen
Groundnuts	EX	I	PI	Nghe An

Note: FPD = Farmgate Price Decrease; FPI = Farmgate price increase; IPD = Input price decrease; IPI = Input price increase; IQI = Import quota increase; PI = Price increase; SD = Subsidy decrease; TD = Tariff decrease; TI = Tariff increase; TED = Tariff of export destination decrease; TID = Tariff on input decrease; YI = Yield increase.

Remarks: For China EX and IM show a net exporter or importer of the commodity as of 1998, respectively.

If the results do not match the conventional theory they are interpreted further. All of the results of China and Japan, except for rice, are interpreted separately, because China's results were obtained using a large dynamic agricultural sector model and Japan's results were obtained using sophisticated models.

Rice

Japan, the Republic of Korea, Malaysia, Indonesia, and the Philippines assumed import. Among them Indonesia's price increase case and the Philippines did not follow conventional theory.

Indonesia's price increase case assumed an international price increase and no tariff change. As a result, there was a producer's price increase, a farmer's surplus gain, a consumer's surplus loss and a net surplus loss (G-L-L case).

The Philippines case assumed a tariff increase. In the Philippines the rice import was monopolized by the government without tariff. However, the export has begun to be privatized with tariff. The introduction of import tariff caused a producer's price increase, a farmer's surplus gain, a consumer's surplus loss and a net surplus loss (G-L-L case).

Thailand, India, Pakistan and Viet Nam assumed export. All of the countries except India followed the conventional theory. India's case assumed 7% increase of the international price according to FAO (1995) and a decrease of subsidy. The results show a producer's price (the farmgate price) increase, a producer's surplus gain, a consumer's surplus loss and a net social surplus loss. However, the net social loss is very small: about 0.3% of the producer's surplus gain. The result may be due to the fact that India is a large country and its transportation cost is high.

Maize

Indonesia, the Philippines, Thailand and Pakistan assumed import. Indonesia (tariff decrease case and combined tariff decrease and price increase case) and the Philippines followed conventional theory.

Indonesia's price increase case and Pakistan are G-L-L cases. They assumed a 4% increase of the international price according to FAO (1995). This increase causes a producer's price increase, domestic supply increase and domestic demand decrease. There is a producer's surplus gain but the consumer's surplus loss is larger.

Thailand is a G-L-G case. The process is the same but the producer's surplus gain is larger than the consumer's surplus loss.

It is noteworthy that Thailand, Pakistan and Indonesia became net importers of maize in the first half of the 1990s. Imported maize is used mainly as feed.

India assumed export. The result followed conventional theory.

Soybean

The Republic of Korea, Indonesia and Thailand assumed import. The Republic of Korea and Indonesia's tariff decrease case followed conventional theory.

Indonesia's price increase case and combined price increase and tariff decrease case are G-L-L cases, whereas Thailand is a L-G-L case. Import of soybean in Thailand has been increasing rapidly since 1990. It is used mainly for crushing for processing uses and feed.

Other commodities

The Republic of Korea's onion and ginseng, Malaysian tobacco, Indonesia's potato, Thailand's milk, India's rapeseed/mustard and Pakistan's wheat assumed import. Among them, all except Pakistan's wheat followed conventional theory.

Pakistan's wheat is a G-L-L case. The 7% increase of the international price based on FAO (1995) results and discontinuation of domestic subsidies were assumed. This will increase the producer's price and supply but decrease demand. The total effect is a net surplus loss.

Malaysia's palm oil, Viet Nam's coffee and groundnuts and Indonesia's cassava assumed export. All commodities followed conventional theory.

China

As already mentioned, China's results are based on the sum of the six-year welfare analysis results between 2000 to 2005 and consumer welfare gains for feed grains are counted in the animal sector.

It is convenient to describe separately the vegetable sector and the animal sector. The vegetable sector consists of rice, maize, wheat, other grains, soybean, potato and sweet potato, whereas the animal sector consists of pork, beef, mutton, poultry, eggs, milk and fish.

China was a net exporter of rice, maize, potato, sweet potato and some other grains in 1998. It is estimated by the model that China will turn to a net importer of all the above commodities, except for rice, in 2005.

Among net import commodities in 2005, all except maize followed conventional theory (L-G-G case).

Maize became a L-G-L case, due to the fact that consumer's welfare gains for feed grains is counted in the animal sector.

Rice as an export commodity followed the conventional theory. In the comparison of welfare between with and without trade liberalization, producer's surplus decreased except rice with trade liberalization, whereas net surplus decreased for all commodities except wheat.

China was a net exporter of all the commodities in the animal sector except mutton in 1998. In 2005 it is expected to continue to be a net exporter of all of these commodities, except beef, mutton and milk. However, in actual sense beef and mutton are almost self-sufficient as the shares of net import in consumption are only 0.9% and 3.4%, respectively. It is noteworthy that medium and small animals (sheep, pigs and poultry) may enjoy more benefits. A producer's surplus gain, consumer's surplus gain and a net surplus gain are expected in all the commodities. One reason for this is that consumer's welfare gains for feed grains are counted in the animal sector.

If net surplus gain were compared between with and without trade liberalization, it would be larger with trade liberalization for all the commodities.

It can be concluded that in China net social gains are expected for all the commodities. Producers in the animal sector and rice might enjoy the benefits of trade liberalization, whereas the vegetable sector other than rice may suffer due to trade liberalization.

Japan

The Japanese study used some economic models.

Under a situation of perfect trade liberalization or significantly reduced level of tariff, most producers of rice and crops related to sweetener products, such as sugarcane, sugarbeet, potatoes, sweet potatoes, cannot survive.

The Japanese beef market consists of Wagyu beef, dairy variety beef, domestically produced and imported beef. Further deductions of tariff on beef might seriously affect the dairy variety beef sector including milk production.

Under a situation of trade liberalization of rice a large consumer surplus will be realized, although part of it might be offset through a possible decrease in positive externalities of rice production or paddy fields.

Conclusions

Welfare analysis of the selected commodities or crops was conducted in each country study. Table 6.3 shows results. Rice is the common commodity selected by all countries. Among the ten countries, the rice importing countries are Japan, Malaysia and the Republic of Korea. All estimations confirm the conventional theory that there is a consumer's surplus gain and a producer's surplus loss and the net difference is a net welfare gain. However, for Indonesia's international price increase case, the results showed a producer's surplus gain, a consumer's surplus loss and a net welfare loss. Also for the case of the Philippines, which assumes a scenario of increase in import tariff, the results showed a producer's surplus gain, a consumer's surplus loss and a net welfare gain.

China, India, Pakistan, Thailand and Viet Nam are the rice exporting countries. The welfare analysis is in line with the expectation that there is producer's gain and consumer's loss. However, net welfare of China and India is negative, while that of Pakistan, Thailand and Viet Nam is positive or a gain. This maybe due to the fact that China and India are large countries and consume a large amount of rice domestically. Also India assumes the withdrawal of subsidies.

Maize is the second common crop that was selected for welfare analysis. Indonesia, the Philippines, Thailand and Pakistan selected maize as an import commodity. For all, except Indonesia's international price increase case and Pakistan, the net welfare is positive. China and India evaluated maize as an export commodity. However, China estimated a consumer's surplus gain and a producer's surplus loss with a net welfare loss, while India was the opposite.

Soybean was selected as an import commodity by the Republic of Korea, Indonesia, Thailand and China. All these countries estimated a producer's surplus loss and a consumer's surplus gain, except Indonesia's international price increase case. However, both China and Thailand estimated a net welfare loss, while the net welfare of Indonesia and the Republic of Korea was positive.

Wheat was selected by Pakistan and China. Pakistan estimated a producer's surplus gain, a consumer's surplus loss and a net surplus loss, which was the opposite for China.

Most of the other commodities were selected by one country only, varying a lot from cassava, potato, sweet potato, groundnut, vegetable (onion) to oil products (rapeseed/mastard and palm oil), sugar, ginseng, table luxuries (tea, coffee and tobacco), livestock (beef, milk, pork, mutton, poultry, eggs) and fish.

For most of the other commodities welfare analysis results are according to the expected impact of trade liberalization. For example, Malaysia, the largest palm oil exporting country, estimated a producer's surplus gain and a consumer's surplus loss with a net welfare gain after trade liberalization.

The above results show that, at the national level, net welfare gains due to trade liberalization are estimated for most of the commodities, because producer's (farmer's) welfare gains are larger than consumer's welfare losses in the case of export commodities and consumer's welfare gains are larger than producer's welfare losses in case of import commodities.

6.4 Results of analyses at the local or farm level

Results of the partial budget analysis at the farm level are shown in Table 6.4, which includes the assumptions and study sites. Partial budget analysis revealed that for the import commodities, there is a decrease in farmer's return or gross margin after trade liberalization, except for a few commodities or cases. For the export commodities, trade liberalization will increase the return of farmers, except for a few commodities or cases.

The results are interpreted in the following order of commodities: rice, maize, soybean and other commodities. Rice, maize and soybeans are common commodities selected by nine, six and three countries, respectively.

In each commodity, cases which assumed import are interpreted first then cases which assumed export. As the Philippines and Japan made analyses at the local (provincial) level, the results are interpreted as analyses at the local level.

Rice

The Republic of Korea, Malaysia, Indonesia and the Philippines assumed import. All of the cases except Indonesia's price increase case and the Philippines, showed decreased farmers' returns.

Indonesia's price increase case assumed a farm price increase due to the 7% international price increase. Nevertheless, if a tariff decrease were assumed in addition to the price increase, then the farmer's return changed to a decrease.

The Philippines assumed a tariff increase in addition to the decreased tariff on inputs. The import of rice was monopolized by the government with no tariff. Nevertheless, in 1999 the private sector was allowed to enter the market with tariff as one of the means of trade liberalization. Therefore, a tariff increase was assumed.

Thailand, India, Pakistan, China and Viet Nam assumed export. All the cases except India's (both the price increase and the subsidy decrease case) and the Pakistani non-Basmati rice case showed increased return.

For India if the price increase only prevails the return will be increased. Nevertheless, if the government's subsidy decreases it will turn to a decrease.

Pakistani non-Basmati rice showed decreased farmer's return, whereas Basmati rice showed increased return. Pakistani Basmati rice is more competitive in the international market than Pakistani non-Basmati rice.

Maize

Indonesia, the Philippines, Thailand, Pakistan and China assumed import. All, except Indonesia's price increase case, Thailand and Pakistan, showed an increase in farmer's return. Indonesia's price increase case showed an increase in farmer's return due to the farm price increase owing to the 4% international price increase. If the 5% tariff decrease were added, it would turn to a decrease in farmer's return.

For Thailand, the increased price received by the farmer due to a higher international price could offset the increased cost of fertilizer due to the removal of the fertilizer subsidy.

For Pakistan, the increased price received by farmers due to a higher international price could offset the increased cost of production too.

India assumed export. The increased international price brought an increase in the farmer's return; even if the government subsidy decreased, the farmer's return increases.

Soybean

All the three countries, that is, the Republic of Korea, Indonesia and Thailand assumed import. In all except Indonesia's price increase case and Indonesia's price increase plus tariff decrease case, the farmer's return decreased.

For Indonesia, the price received by farmers increased due to the 7% increase of the international price. This is the same if the tariff decrease were introduced in addition to the price increase, as the 7% price increase could offset the 5% tariff decrease.

Other commodities

The Republic of Korea's onion and ginseng, Malaysia's tobacco, Indonesia's potato, Thailand's milk, India's rapeseed/mustard and Pakistan's wheat assumed import. All commodities showed a decrease of returns.

Malaysia's palm oil, Indonesia's cassava, China's wheat and Viet Nam's coffee, tea and groundnuts assumed export. All commodities except China's wheat showed increased returns. In China, the farmgate price of wheat is expected to fall. Such a decrease in farmgate price cannot be offset by yield increase and cheaper input prices.

Analyses at the local level.

In addition to the common analysis, for the Philippines, analyses at the regional level using welfare analysis and partial budget analysis were tried for rice and yellow maize in Central Luzon region.

Rice producer's surplus gains, consumer's surplus losses and net social gains were observed for both 50% and 200% tariff increase cases. According to the partial budget analysis based on increased farmgate prices due to the rice tariff increases and the reduction of fertilizer and machinery costs due to their tariff reduction, the returns were estimated to increase in both 50% and 200% tariff increase cases.

Yellow maize producer's surplus losses, consumer's surplus gains and net social gains were observed for both 15% and 30% tariff decrease cases. According to the partial budget analysis based on decreased farmgate prices due to the yellow maize tariff decreases and the reduction of the fertilizer costs due to its tariff reduction, the returns were estimated to decrease in both 15% and 30% tariff decrease cases.

Japan's local level study on production of Wagyu calves and crops related to sweetener products suggests an important point to be taken into consideration in evaluating effects of trade liberalization. A large part of the production of these commodities is located in less favored areas such as small islands and mountainous areas, and they play an important role for the farm economy in the corresponding district, even though they are not very profitable.

Conclusion

Export commodities are usually produced more efficiently, whereas import commodities are usually produced less efficiently. And the latter are often grown by small farmers. Also they grow in less favored areas in a country. These facts mean adverse effects of trade liberalization go most seriously to small farmers and to farmers in the less favored areas, who are often small farmers.

7. Impacts of Trade Liberalization after Introduction of the WTO

The WTO regime began in January 1995. In the previous chapter the effects of trade liberalization with the WTO regime were measured by comparative static methods, that is, simple welfare analysis and partial budget analysis. In order to support the results in that chapter the situations before and after the introduction of the WTO, that is, before 1994 and after 1995, were compared using a simple methodology.

First, overall trade performances in the ESCAP region and among the ten countries before and after the WTO, are compared (Section 7.1).

Second, actual performances of trade, production, traded price and farmgate price of selected commodities are compared before and after the WTO using a simple methodology. Rice, maize, soybean and palm oil were selected.

In the early WTO regime two major unexpected factors disturbed agriculture in the region. The first was El Niño which occurred during early 1997 to middle 1998. It was the 13th since 1951, the longest and the severest. It brought climatic changes and affected agricultural production, and then trade. It affected ASEAN countries among participating countries the most.

The second, the Asian economic crisis, brought a far more severe disturbance to agriculture in the region. It started in Thailand in the middle of 1997 and spread rapidly throughout the region. According to Diaz-Bonilla et al. (1999) "Asia, the largest source of net demand for world agricultural products, has been hit by a crippling financial crisis that has spread to other countries. The crisis highlights the complexity and could pose a threat to greater market openness". All the ten participating countries have been affected by it and have not yet completely recovered.

All the countries except Japan and China discussed the effects of the Asian economic crisis on their economy and agriculture in their second country reports. The reports are summarized in Section 7.4.

7.1 Overall trade performance before and after the introduction of the WTO

According to ESCAP (1998) between 1992 and 1996 imports of countries in the ESCAP region increased from 917 billion dollars to 1,502 billion dollars, whereas exports increased from 978 billion dollars to 1,494 billion dollars. Among the imports those from the ESCAP region increased from 425 billion dollars in 1992 to 708 billion dollars in 1996, whereas those from outside the ESCAP region increased from 477 billion dollars in 1992 to 749 billion dollars in 1996. Among exports those to the ESCAP region increased from 417 billion dollars in 1992 to 712 billion dollars in 1996, whereas those to outside the ESCAP region increased from 556 billion dollars in 1992 to 747 billion dollars in 1996.

Tables 7.1 and 7.2 present a trade matrix in US dollar terms among the ten countries in 1992 and 1996, respectively. Table 7.3 is a summary of Table 7.2. The important points in the tables are highlighted.

The situation in 1992 (Table 7.1) is summarized below:

- Japan is the largest exporter to all other countries and the largest importer from them.
- Viet Nam is the smallest exporter to five countries and Pakistan is the smallest exporter to four countries and the Philippines to two countries.

- For export, the order according to descending magnitude of values is: Japan, the Republic of Korea, China, Indonesia, Malaysia, Thailand, India, the Philippines, Viet Nam and Pakistan.
- For import, the order according to descending magnitude of values is: Japan, the Republic of Korea, China, Thailand, Malaysia, Indonesia, the Philippines, Pakistan, India and Viet Nam.
- The largest trade (export and import) relation is found between Japan and China, followed by Japan and the Republic of Korea, Japan and Thailand, Japan and Indonesia, Japan and Malaysia, and the Republic of Korea and China.
- The smallest trade relation is found between Pakistan and Viet Nam, followed by the Philippines and Pakistan, the Philippines and Viet Nam, the Philippines and India, India and Viet Nam, and Malaysia and Viet Nam.
- Trade relations among the three East Asian countries are strong.
- Trade relations among ASEAN countries including Viet Nam are relatively strong. However, in many cases, their relations with East Asian countries are much stronger. Their relations with South Asian countries are weak.
- Trade relations between the two South Asian countries, Pakistan and India, are relatively weak. Their relations with ASEAN countries are weaker than those with the East Asian countries.

The situation in 1996 (Tables 7.2 and 7.3) is summarized below:

- For export, the country order according to the size of values is: Japan, China, the Republic of Korea, Malaysia, Indonesia, Thailand, the Philippines, India, Viet Nam and Pakistan.
- For import, the descending order is: Japan, the Republic of Korea, China, Thailand, Malaysia, Indonesia, the Philippines, India, Viet Nam and Pakistan.
- Japan is the largest exporter to all other countries except Viet Nam, while the Republic of Korea is the largest exporter to Viet Nam.
- Japan is the largest importer from all other countries.
- Pakistan is the smallest exporter to six countries whereas Viet Nam is to four countries.
- The largest trade (export and import) relation is found between Japan and China, followed by Japan and the Republic of Korea, Japan and Thailand, Japan and Malaysia, Japan and Indonesia, and the Republic of Korea and China.
- The smallest trade relation is found between Pakistan and Viet Nam, followed by the Philippines and Pakistan, India and Viet Nam, India and Pakistan, the Philippines and India, and Thailand and Pakistan.
- Trade relations among the three East Asian countries are strong.
- Trade relations among ASEAN countries (including Viet Nam) are relatively strong. However, in many cases, their relations with East Asian countries are much stronger. Their relations with South Asian countries are weak.
- Trade relations between the two South Asian countries, Pakistan and India, are weak. Their relations with ASEAN countries are weaker than those with East Asian countries.

While the basic structure of trade performance is almost same between 1992 and 1996, the following points are noted:

- In this period, the total (average) trade value increased 1.94 times in nominal US$ terms. This increase is larger than that of the ESCAP region as a whole.
- The export values of China, the Philippines, Viet Nam, Thailand and Malaysia more than doubled.
- The import values of Viet Nam, the Philippines, China, India and Malaysia more than doubled.

- However, trade from Japan and the Republic of Korea to Pakistan decreased slightly. Also trade from Pakistan to Malaysia, Thailand, India and China decreased. Trade from Viet Nam to Thailand and India decreased.
- The balance is positive for a few countries. In 1992, Japan and Indonesia and in 1996 in addition to these two countries China had positive trade balances. All other countries have negative balances.
- In terms of percentage share of export to the total value of trade among the ten countries between the two periods (1992 to 1996), Japan decreased from 43% to 39%, while Indonesia deceased from 11% to 8%.
- The export share of the Republic of Korea, Malaysia, the Philippines, India, Pakistan and Viet Nam maintained the same level at 15%, 8%, 2%, 2%, 1% and 1%, respectively.
- The export share of China increased substantially to 17% from 12%, while that of Thailand slightly increased from 6% to 7%.
- As far as the percentage share of imports in the total value of trade is concerned, Japan's import share decreased from 35% in 1992 to 32% in 1996, and that of the Republic of Korea also decreased from 18% to 16%. This may due to the economic recession in these countries.
- The import shares of Thailand, Malaysia, Indonesia, India, and Pakistan were more or less constant at 10%, 9%, 6%, 2%, and 2%, respectively.
- China was the only country that had a significant increase in import share from 12% to 15%, while Viet Nam experienced an increase from 1% to 2%. Most of the imports of these two countries came from Japan, the Republic of Korea, Indonesia, Malaysia, Thailand and the Philippines.

Based on these changes between the two periods, it may be concluded that the process of trade liberalization has benefited the ESCAP region and almost all of the ten countries. It is, however, still premature to conclude that all of this increase in trade performance is due to the WTO trade liberalization movement.

Table 7.1 Trade relations among the ten countries in 1992 (million US$).

Destination:	Japan	Rep. Korea	Malaysia	Indonesia	Philippines	Thailand	India	Pakistan	China	Viet Nam	Total	Balance
Origin												
Japan		17,793	8,115	5,576	3,515	10,360	1,486	1,295	11,926	450	60,516	+10,537
Rep. Korea	11,599		1,136	1,935	746	1,532	438	372	2,654	436	20,848	-3,959
Malaysia	5,476	1,396		507	478	1,489	431	369	771	50	10,967	-801
Indonesia	10,761	2,083	488		181	353	70	81	1,396	191	15,604	+6,510
Philippines	1,745	176	128	40		98	9	1	114	30	2,341	-3,048
Thailand	5,686	533	842	283	155		65	71	386	77	8,098	-7,106
India	1,605	195	212	155	61	283		57	158	19	2,745	-115
Pakistan	560	169	75	94	27	114	135		54	3	1,231	-1,567
China	11,679	2,405	645	471	210	895	158	551		106	17,120	-412
Viet Nam	868	57	127	33	16	80	68	1	73		1,323	-39
Total	49,979	24,807	11,768	9,094	5,389	15,204	2,860	2,798	17,532	1,362	140,793	

Source: ESCAP (1998).

Note: Figures are exports from countries of origin to countries of destination, except Viet Nam, where figures are not available. Figures of Viet Nam are imports from other countries.

Table 7.2 Trade relations among the ten countries in 1996 (million US$).

Destination:	Japan	Rep. Korea	Malaysia	Indonesia	Philippines	Thailand	India	Pakistan	China	Viet Nam	Total	Balance
Origin												
Japan		29,328	15,328	9,059	8,404	18,263	2,432	1,156	21,887	1,139	106,996	+18,380
Rep. Korea	15,767		4,333	3,198	1,906	2,664	1,177	358	11,377	1,600	42,380	-2,749
Malaysia	10,565	2,407		1,218	938	3,203	1,206	645	1,909	323	22,414	-3,527
Indonesia	12,885	3,281	1,110		688	823	531	125	2,057	364	21,864	+4,789
Philippines	3,671	371	687	142		780	36	18	328	130	6,163	-7,860
Thailand	10,212	1,219	2,593	1,095	660		197	126	1,890	468	18,460	-9,138
India	2,006	518	331	592	184	447		157	615	118	4,968	-1,341
Pakistan	606	273	39	139	31	97	42		119	12	1,358	-1,852
China	30,886	7,500	1,370	1,428	1,015	1,255	686	623		842	45,605	+5,114
Viet Nam	2,018	232	150	204	197	66	2	2	309		3,180	-1,816
Total	88,616	45,129	25,941	17,075	14,023	27,598	6,309	3,210	40,491	4,996	273,388	

Source: ESCAP (1998).

Note: Figures are exports from countries of origin to countries of destination, except Thailand and Viet Nam, where figures are not available. Figures of Thailand and Viet Nam are imports from other countries. The figure of export from Thailand to Viet Nam is for 1995.

Table 7.3 Trade relation among three country groups in 1996 (million US$).

Destination:	East Asia	ASEAN	South Asia	Total
Origin				
East Asia	116,745	71,804	6,432	194,981
ASEAN	53,354	15,839	2,888	172,081
South Asia	4,137	1,990	199	6,326
Total	174,236	89,633	9,519	273,388

Source: calculated form Table 7.2.

Note: East Asia = Japan, Republic of Korea and China.
ASEAN = Malaysia, Indonesia, the Philippines, Thailand and Viet Nam.
South Asia = India and Pakistan.

7.2 A simple methodology for analysis of the impacts after introduction of the WTO

The findings of the participating countries confirmed the theoretical concept of gainers and losers in trade liberalization. At the national level, in the case of import commodities, there is a consumer's gain due to the increase of import and a lower import price, which is reflected in decreases in the retail price and/or the consumer's price. For the case of export commodities there is a producer's gain due to the increase in export quantity and price. In addition, the farm level analysis also confirmed that farmers' gross return (and net return in some cases) decreased due to decrease in farmgate price for import commodities, while the reverse is true for the case of export commodities.

Consequently the commodity production decreased for import commodities and increased for export commodities.

Based on these concepts, hypotheses were set up and tested for the impact of trade liberalization after the introduction of the WTO in 1995 as follows:

- National level:
  - Import commodity: the quantity increased, import price and domestic production decreased.
  - Export commodity: the quantity, export price and domestic production increased.
- Farm level
  - Import commodity: production and farmgate price decreased.
  - Export commodity: production and farmgate price increased.

In this section a simple methodology of testing these hypotheses, a simple time trend analysis is described and in the next section the results are shown.

7.2.1 Simple time trend analysis

The trend line was calculated using the following equation:

$$Y = a + bT \qquad \text{(Equation 1)}$$

Where Y = annual imported quantity and T = year.

There are two time trend equations covering different periods as follows:

1980 to 1994 or the before WTO (b1)

1980 to 1998 of after WTO (b2)

If the estimated coefficient of T or b is statistically significant (based on the t-value), the computed b1 and b2 are compared:

If b2 is greater than b1, then the hypothesis is accepted.

If b2 is less than b1, then the hypothesis is rejected.

To further verify the above conclusions the time trend equation is calculated covering the period from 1980 to 1998 and using a dummy variable to test the impact of WTO:

$$Y = a + bT + cD \qquad \text{(Equation 2)}$$

Where Y = annual quantity or price

T = year

D = 0 starting from 1980 to 1994

D = 1 starting from 1995 to 1998

If the estimated coefficients T or "b" and D or "c" are statistically significant and "c" is positive, then the hypothesis is accepted.

Equation 2 can be further expanded to include the slope dummy. The new equation is specified as follows:

$$Y = a + bT + cD + dDT \qquad \text{(Equation 3)}$$

Where Y = annual quantity or price

T = year

D = 0 starting from 1980 to 1994

D = 1 starting from 1995 to 1998

If the estimated coefficients T or "b" and DT or "d" are statistical significant and "d" is positive, then the hypothesis is accepted.

The above explanation uses the example of import quantity. A similar explanation is possible for export quantity, import price, export price, production quantity and farmgate price. Some conditions may differ for acceptance of the hypothesis. For example, for the production quantity example "c" in the equation 3 should be negative.

7.2.2 Selected commodities and related data

Rice, maize, soybean and palm oil are selected. The first three commodities are common commodities. Palm oil is produced and exported by Malaysia as the largest producer and exporter in the world.

According to FAO statistics in 1995, the rice import share of Asian countries in the world is 57.6% and that of the ten selected countries is 25.0%, whereas the export share is 71.0%, and 67.5%, respectively. The rice production share of Asian countries in the world is 91.3% and that of the ten selected countries is 80.4%. The maize import share of Asian countries in the world is 60.3% and that of five selected countries is 17.1% whereas the export share is 6.4% and 3.8%, respectively. The maize production share of Asian countries in the world is 28.8% and that of the four selected countries is 25.3%. The soybean import share of Asian countries in the world is 34.5% and that of the four selected countries is 15.5%, whereas the export share is 1.4% and 1.2%, respectively. The soybean production share of Asian

countries in the world is 20.4% and that of the four selected countries is 17.9%. The palm oil import share of Asian countries in the world is 66.4% and that of Malaysia is 0.4%, whereas the export share is 92.1% and 69.2%, respectively. The palm oil production share of Asian countries in the world is 80.9% and that of Malaysia is 49.1%.

FAO data were used as national level data. At farm level analysis FAO production at the local level was used as proxy and farmgate price data were taken from local sources. As for FAO data yearly data during 1980-98 were used unless otherwise specified. Units of the data are metric tons (quantity), 1000 US$ (value) and 1000 ha (area).

Price data at the national level were available as value divided by quantity from the FAO data. Price data at the farm level were obtained from the national experts of the TradeLib project except for Indonesia. These data were expected to be monthly data, but if they were not available yearly data were used. Monthly data cover January 1989 - December 1998 unless otherwise specified. They were deflated by the consumer price index (CPI).

The following data were used as price data at the farm level (farmgate price).

Rice

- Republic of Korea: traditional rice, polished, medium quality, won/40kg, CPI (1995 = 100).
- Malaysia: paddy, Rm/ton, yearly 1980-96, CPI (1990 = 100).
- Indonesia: paddy, IR36, West Java, Rp/100 kg, January 1987 - November 1997, CPI (April 1988 – March 1989 = 10,000)
- The Philippines: paddy (rough rice), pesos/kg, CPI (1994 = 100).
- Thailand: rice 5% broken, baht/ton, CPI (whole country, 1994 = 100).
- Pakistan: paddy, Basmati and non-Basmati (IRRI type), Punjab, Rs/100kg, yearly 1981-98, CPI (1981 =100).
- China: paddy, Indica and Japonica, free market, yuan/ton, yearly 1986-98, CPI (rural, 1985 = 100).

Maize

- Indonesia: yellow maize, East Java, Rp/100kg, January 1987 - November 1999, CPI (April 1988 - March 1989 = 10,000).
- The Philippines: yellow maize, pesos/kg, CPI (1994 = 100).
- Thailand: baht/ton, CPI (whole country, 1994 = 100).
- Pakistan: Punjab, Rs/100kg, yearly 1981-98, CPI (1981 = 100).
- China: free market, yuan/ton, yearly 1986-98, CPI (1985 = 100).

Soybean

- Indonesia: East Java, Rp/100kg, January 1989 - November 1999, CPI (April 1988 - March 1989 = 10,000).
- Thailand: baht/ton, CPI (whole country, 1994 = 100).
- China: free market, yuan/ton, CPI (rural, 1985 = 100).

Palm oil

- Malaysia: oil palm, fresh fruit bunches (1% extraction), CPI (1994 = 100).

7.2.3 Statistically significant level

The term "statistically significant" means that all the coefficients of an equation have t values significant at the 90% level.

An equation is termed successful if it is statistically significant, its coefficients have appropriate characters (signs and/or comparable magnitude), and its adjusted (multiple) correlation coefficient is more than 0.1.

7.3 Results of the analyses

First, the hypotheses are explained. Then the results are interpreted, with some comments and discussion.

7.3.1 Hypotheses

A systematic flow of testing hypotheses is shown in Figure 7.1. Each hypothesis is explained as follows:

- A: Traded quantity significantly increased. Both import and export commodities were tested.
- B: Traded price significantly decreased for import commodity and significantly increased for export commodities.
- C: Production quantity significantly decreased for import commodities and significantly increased for export commodities.
- D: Farmgate price decreased for import commodities and increased for export commodities.

7.3.2 Rice

Six countries, namely, Japan, the Republic of Korea, Malaysia, Indonesia, the Philippines and China are assumed importers.

- For the import quantity, A hypothesis was only successful for the Republic of Korea as follows:

$$Y = 171422000 + 86154T \qquad \text{(before WTO)}$$
$$(2.456)$$
$$R^2 = 0.264$$

( ) = t - value; R^2 - adjusted (multiple) correlation coefficient.

$$Y = 106069490 - 53567T \qquad \text{(after WTO)}$$
$$(2.340)$$
$$R^2 = 0.199$$

- For the import price, B hypothesis was rejected for all the importing countries.
- For the production of import commodities, the C hypothesis case, only Indonesia was successful as follows:

$$Y = -2400000000 + 1241693T - 2630275D$$
$$(13.227) \qquad (2.086)$$
$$R^2 = 0.939$$

$$Y = -2500000000 + 1273760T + 29051733D - 1827808DT$$
$$(16.930) \qquad (2.936) \qquad (3.218)$$
$$R^2 = 0.962$$

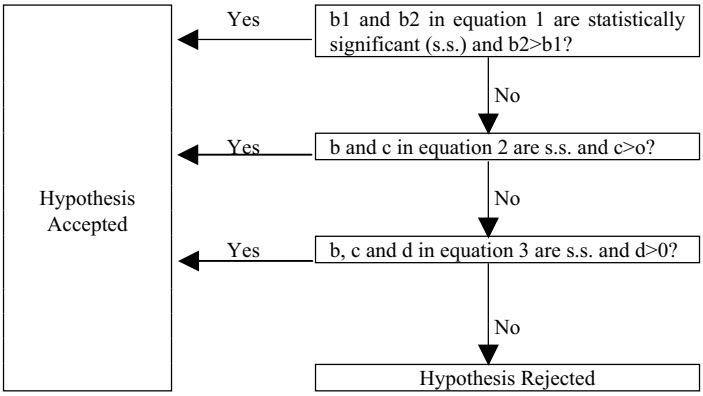
- For the farmgate price, D hypothesis, only the Philippines and China's Indica cases were successful:

The Philippines

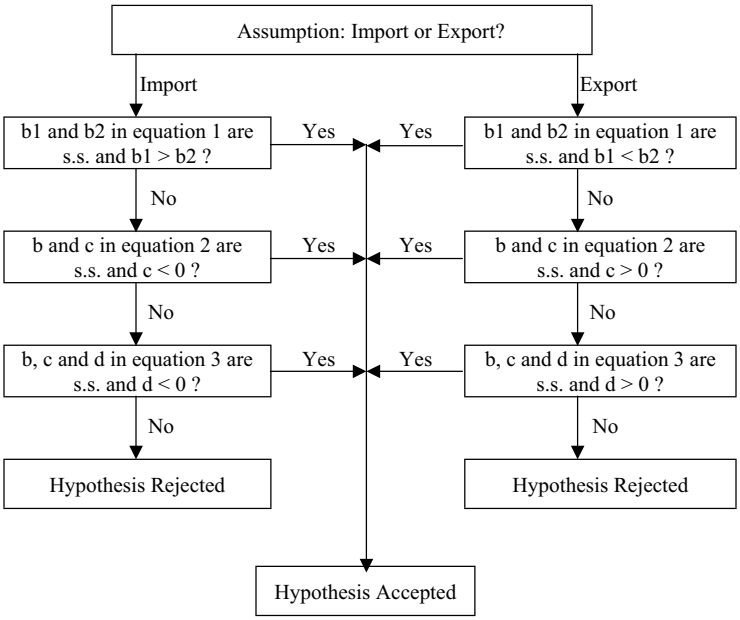
$$Y = 6.464 - 0.0134T + 1.3010D$$
$$(5.285) \qquad (17.327)$$
$$R^2 = 0.315$$

Figure 7.1 Flow chart to test the hypotheses on the effects of trade liberalization.

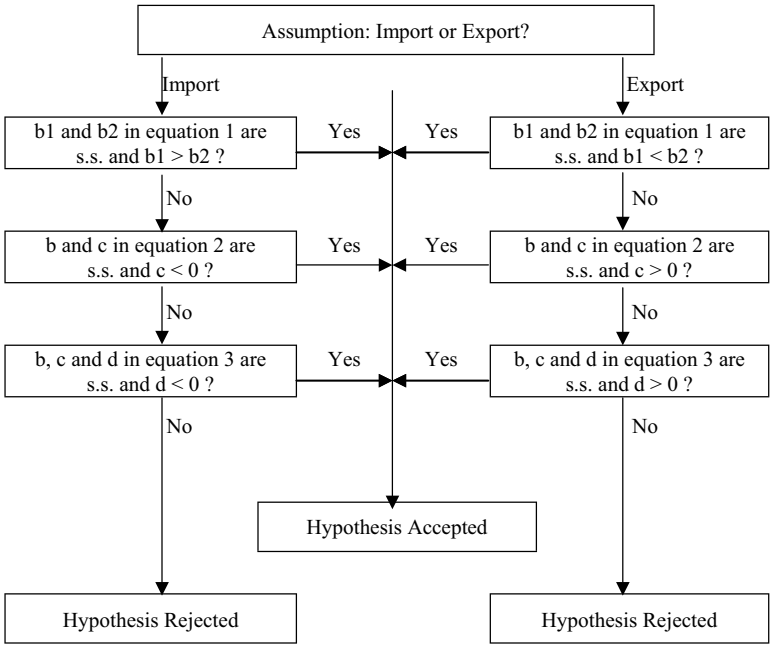
Trade Quantity (A)



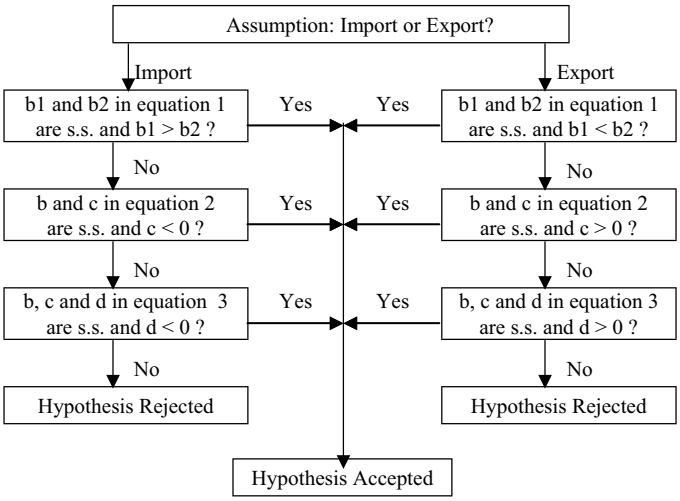
Trade Price (B)



Production (C)



Farmgate Price (D)



$$Y = 6.387 - 0.0113T + 2.073D - 0.00122DT$$
$$(3.933) \quad (3.926) \quad (1.539)$$
$$R^2 = 0.323$$

The first equation shows that the price is decreasing and the second equation shows it is decreasing and after 1995 its rate of decrease increased.

China (Indica type rice)

$$Y = 5.696 - 0.204T + 1.513D$$
$$(2.083) \quad (1.840)$$
$$R^2 = 0.155$$

Five countries, namely, Thailand, India, Pakistan, China and Viet Nam are assumed exporters.

- For the export quantity, A hypothesis case, only Thailand was successful as follows:

$$Y = -278929760 + 142572T \quad \text{(before WTO)}$$
$$(3.558)$$
$$R^2 = 0.454$$

$$Y = -294395390 + 150385T \quad \text{(after WTO)}$$
$$(5.799)$$
$$R^2 = 0.644$$

- For the export price, B hypothesis, only Pakistan was successful as follows:

$$Y = 18.600 - 0.00920T \quad \text{(before WTO)}$$
$$(3.198)$$
$$R^2 = 0.397$$

$$Y = 13.215 - 0.00649T \quad \text{(after WTO)}$$
$$(3.309)$$
$$R^2 = 0.356$$

- For the production quantity, C hypothesis, Thailand, China and Viet Nam were successful as follows:

Thailand

$$Y = 290921000 + 156312T \quad \text{(before WTO)}$$
$$(1.975)$$
$$R^2 = 0.172$$

$$Y = 17329114 + 258669T \quad \text{(after WTO)}$$
$$(4.678)$$
$$R^2 = 0.537$$

$$Y = 17931081 + 158341T + 1906230D$$
$$(2.188) \quad (1.960)$$
$$R^2 = 0.603$$

China

$$Y = -4674750000 + 2380734T \quad \text{(before WTO)}$$
$$(4.438)$$
$$R^2 = 0.572$$

$Y = 154401220 + 2429962T$ (after WTO)
(7.189)
$R^2 = 0.738$

Viet Nam

$Y = 15000000 + 781202T$ (before WTO)
(12.797)
$R^2 = 0.926$

$Y = 10025575 + 922745T$ (after WTO)
(18.483)
$R^2 = 0.952$

$Y = 10883798 + 793781T + 2231534D$
(13.596) (3.063)
$R^2 = 0.969$

- For the farmgate price, D hypothesis, only Thailand was successful as follows:

$Y = 54.234 – -0.291T – -34.811D + 0.577DT$
(11.885) (7.741) (11.293)
$R^2 = 0.624$

This equation shows that the price decreased until 1994, but turned to an increase after 1995.

7.3.3 Maize

Five countries, namely, Indonesia, the Philippines, Thailand, Pakistan and China are assumed importers.

- For the import quantity, A hypothesis, Indonesia, the Philippines and China were successful as follows:

Indonesia

$Y = -81132243 + 40920T$ (before WTO)
(2.863)
$R^2 = 0.340$

$Y = -193718 + 49007T$ (after WTO)
(4.295)
$R^2 = 0.492$

The Philippines

$Y = 342953 – 22731T + 401455D$
(2.887) (3.795)
$R^2 = 0.410$

China

$Y = 3502410 + 13227T$ (before WTO)
(2.947)
$R^2 = 0.352$

$Y = 3265740 + 187581T$ (after WTO)
(2.822)
$R^2 = 0.281$

- For the import price, B hypothesis, only the Philippines was successful as follows:

$Y = -52.802 + 0.02671T - 0.330D$
(3.414) (3.139)
$R^2 = 0.373$

- For the production quantity, C hypothesis, the Philippines and Pakistan were successful as follows:
  The Philippines

$Y = 3050120 + 123791T$ (before WTO)
(6.735)
$R^2 = 0.760$

$Y = 3401872 + 66490T$ (after WTO)
(3.643)
$R^2 = 0.405$

$Y = 3081908 + 119817T - 1013219D$
(6.384) (4.018)
$R^2 = 0.686$

Pakistan

$Y = 921110 + 23865T$ (before WTO)
(11.088)
$R^2 = 0.897$

$Y = -38000000 + 19624T$ (after WTO)
(11.186)
$R^2 = 0.873$

$Y = 921111 + 123865T + 479890D - 31725DT$
(11.815) (1.806) (2.080)
$R^2 = 0.918$

- For the farmgate price, D hypothesis, the following were successful:
  The Philippines

$Y = 6.564 - 0.0303T + 1.366D$
(8.651) (5.511)
$R^2 = 0.416$

$Y = 6.408 - 0.0260T + 2.913D - 0.0187DT$
(6.644) (4.039) (2.276)
$R^2 = 0.436$

Thailand

$Y = 35.715 - -0.104T + 10.568D$
(5.894) (8.481)
$R^2 = 0.390$

China

$Y = 4.836 - 0.146T + 1.220D$
(2.515) (2.502)
$R^2 = 0.273$
$Y = 4.626 - 0.104T + 4.452D - 0.294DT$
(1871) (2.663) (2.001)

$R^2 = 0.429$

India and China assumed export.

- For the export quantity, A hypothesis was rejected for both countries.
- For the export price, B hypothesis was successful for China as follows:

$$Y = 5.460 - 0.00268T + 0.04420D$$
$$(2.276) \quad (2.796)$$
$$R^2 = 0.250$$

- For the production quantity, C hypothesis, both India and China were successful as follows:

India

$$Y = 390000000 + 198977T \quad \text{(before WTO)}$$
$$(3.503)$$
$$R^2 = 0.446$$

$$Y = 6228230 + 329029T \quad \text{(after WTO)}$$
$$(6.351)$$
$$R^2 = 0.686$$

China

$$Y = 6500000000 + 3312968T \quad \text{(before WTO)}$$
$$(10.442)$$
$$R^2 = 0.885$$

$$Y = 7400000000 + 3772780T \quad \text{(after WTO)}$$
$$(12.135)$$
$$R^2 = 0.890$$

- The farmgate price, D hypothesis, was not accepted for China.

7.3.4 Soybean

Four countries, namely, the Republic of Korea, Indonesia, Thailand, and China are assumed importers.

- For the import quantity, A hypothesis, all the countries except Indonesia were successful as follows:

The Republic of Korea

$$Y = -1038244200 + 52712T \quad \text{(before WTO)}$$
$$(8.913)$$
$$R^2 = 0.849$$
$$Y = 478307 + 55554T \quad \text{(after WTO)}$$
$$(13.444)$$
$$R^2 = 0.909$$

Thailand

$$Y = -11715867 + 5908T \quad \text{(before WTO)}$$
$$(2.529)$$
$$R^2 = 0.298$$

$$Y = -181428 + 31198T \quad \text{(after WTO)}$$
$$(4.191)$$
$$R^2 = 0.479$$

China

$Y = -14604226 + 74475T$ (before WTO)
(5385)
$R^2 = 0.667$

$Y = -344468964 + 174406T$ (after WTO)
(5.708)
$R^2 = 0.637$

$Y = -174095035 + 88575T + 1630783D$
(2.716) (3.723)
$R^2 = 0.793$

$Y = 1307457 + 74457T – 12317346D + 804735DT$
(3.737) (4.700) (5.350)
$R^2 = 0.924$

- For the import price, B hypothesis was rejected for all the countries.
- For the production quantity, C1 hypothesis, all the countries except China were successful as follows:

The Republic of Korea

$Y = 255304 – 4994T$ (before WTO)
(3.384)
$R^2 = 0.428$

$Y = 259716 – 5728T$ (after WTO)
(6.187)
$R^2 = 0.674$

Indonesia

$Y = 395476 + 94002T$ (before WTO)
(10.432)
$R^2 = 0.885$

$Y = 596677 + 61768T$ (after WTO)
(6.082)
$R^2 = 0.667$

$Y = 426656 + 90104T – 538399D$
(8.267) (3.677)
$R^2 = 0.808$

$Y = 395476 + 94002T + 3312337D – 22158DT$
(11.136) (2.983) (3.486)
$R^2 = 0.887$

Thailand

$Y = 81017 + 35291T$ (before WTO)
(6.626)
$R^2 = 0.754$

$Y = 194355 + 16709T$ (after WTO)
(3.030)
$R^2 = 0.312$

$Y = 88404 + 34368T - 335511D$
(6.784) (4.930)
$R^2 = 0.710$

- For the farmgate price, D hypothesis, the Republic of Korea was successful as follows:

$Y = 503.512 + 0.678T + 222.208D - 1.450DT$
(2.714) (4.830) (2.772)
$R^2 = 0.660$

China is the only country which is an assumed exporter.

- For export quantity, A, both cases were rejected for China.
- For export price, B case, China was successful as follows:

$Y = 1.362 - 0.000683T + 0.01126D$
(3.032) (3.719)
$R^2 = 0.403$

- For production quantity, C hypothesis was rejected for China.
- The farmgate price, D hypothesis was rejected for China.

7.3.5 Palm oil

Malaysia is the only country which is an assumed exporter.

- For the trade quantity, A hypothesis, Malaysia was successful as follows:

$Y = 1623778 + 323694T$ (before WTO)
(17.699)
$R^2 = 0.957$

$Y = 1542235 + 337513T$ (after WTO)
(22.660)
$R^2 = 0.968$

These equations are estimated for 1980-97.

- For export price, B hypothesis was rejected for Malaysia.
- For the production quantity, C hypothesis, Malaysia was successful as follows:

$Y = 10022857 + 1892143T$ (before WTO)
(19.011)
$R^2 = 0.963$

$Y = 9977193 + 1908596T$ (after WTO)
(24.703)
$R^2 = 0.971$

- For the farmgate price, D hypothesis, Malaysia was successful as follows:

$Y = 0.07624 + 0.0003572T - 0.110D + 0.001497DT$
(2.732) (4.590) (5.475)
$R^2 = 0.660$

7.3.6 Comments on the results of simple analyses

Table 7.4 summarizes the results.

Only one commodity was accepted by all the hypotheses, i.e. the Philippines' maize. According to the Philippines second report, maize consists of white maize, which is mainly used for food – one of the staple foods of the Philippine people - and yellow maize, which is used for feed (FAO statistics do not distinguish white and yellow maize).

The import maize is mainly yellow maize. Production and harvested area of white maize have been decreasing from 1995, whereas those of yellow maize increased until 1994 then became stagnant. In 1994 production of yellow maize exceeded that of white maize. As yield of yellow maize is much higher than that of white maize, the harvested area of white maize is still much higher that that of yellow maize.

As feed demand for yellow maize is increasing, the Philippines has to increase its import. In 1995 the Philippine government changed the maize import system from a quota system to a tariff system. Therefore reduction of the tariff is the major concern.

Table 7.4 Results of simple analyses of actual performance of the major commodities.

		Traded Quantity	Traded Price	Production Quantity	Farmgate Price	
	Hypothesis	A	B	C	D	D
Rice						
Japan	import	R	R	R	-	-
Rep. of Korea	import	A	R	R	R	-
Malaysia	import	R	R	R	R	-
Indonesia	import	R	R	A	R	-
The Philippines	import	R	R	R	A	-
China	import	R	R	R	A	R
Thailand	export	A	R	A	A	-
India	export	R	R	R	-	-
Pakistan	export	R	A	R	R	R
China	export	R	R	A	R	R
Viet Nam	export	R	R	A	-	-
Maize						
Indonesia	import	A	R	R	R	-
The Philippines	import	A	A	A	A	-
Thailand	import	R	R	R	A	-
Pakistan	import	R	R	A	R	-
China	import	A	R	R	A	-
India	export	R	R	A		-
China	export	R	A	A	R	-
Soybean						
Rep. of Korea	import	A	R	A	A	-
Indonesia	import	R	R	A	R	-
Thailand	import	A	R	A	R	-
China	import	A	R	R	R	-
China	export	R	A	R	R	-
Palm oil						
Malaysia	export	A	R	A	A	-

A= Hypothesis accepted; R = Hypothesis Rejected. In farmgate price of rice the first column is for are Indica (for China) and Basmati (for Pakistan), whereas the second is for Japonica (for China) and non-Basmati (for Pakistan).

Traded price here is trade value divided by traded quantity stated in US dollars. It may be affected by bias due to changes of exchange rates between the US dollar and local currencies and inflation during the analysis period. Also it may not include changes in trade liberalization policies such as tariff changes. Tariff decrease may not be included in the import case.

If the hypothesis on the trade price is not counted, Thailand's rice and Malaysia's palm oil have the possibility of enjoying positive effects of the trade liberalization. Thailand was the largest exporter of rice and Malaysia was the largest exporter of palm oil in 1995. Despite decreasing export prices, Thailand's export value of rice and Malaysia's export value of palm oil are increasing as traded quantities are increasing.

Korea's soybean may be added as a recipient of adverse effects of trade liberalization. According to the Korean second report, between 1990 and 1997 total consumption for increased 1.48 times. Production and planted area decreased by 37% and 34%, respectively, whereas

import increased 1.49 times between the years. As a result the import in 1997 became 10 times the production. The majority of the soybean produced in Korea was consumed for food, whereas the majority of the import was used for processing and feed. Between 1990 and 1997 soybean for food, processing and feed increased 1.15 times, 1.22 times and 1.63 times, respectively.

Hypotheses for all other commodities were not accepted. This might be due to the fact that measures to prepare for trade liberalization had not been adopted yet or even if adopted their effects might appear after a certain time lag. Or it might be due to some other disturbing factors such as climatic changes due to El Niño and the Asian economic crisis.

For example, according to the Philippines second report, from 1994, total maize output followed a decreasing trend partly due to the prolonged dry season, the typhoons that hit the country during the period and decreasing area harvested for white maize. The prolonged dry season was induced by the El Niño.

For another example, Japan's rice production in 1993 decreased by 26% compared to that in 1992 due to unusually cool weather during the rice growing season, which occurred once in several decades. As a result Japan's import of rice increased 6.0 times in 1993 and 141.6 times in 1994 compared to 1992. The actual amount of import in 1994 is more than 2.5 million tons. This amount is nearly eight times and more than five times the average import of rice during 1995-97 and during 1996-98 after the introduction of the WTO, respectively.

For other commodities it might also have been too early to analyze any effects of trade liberalization they might have received.

In summary, stronger export commodities like rice of Thailand and palm oil of Malaysia may have benefited by trade liberalization. These commodities have strong bases in production, marketing and trade internationally and domestically. On the other hand import commodities like maize in the Philippines and soybean in the Republic of Korea may receive adverse effects from trade liberalization. They have a weaker domestic background. They are grown widely in the country including in remote areas. Despite rapidly increasing demand for feed and/or crushing and government efforts, their domestic production is decreasing in the 1990s.

7.4 The Asian economic crisis and its impact on agriculture

The currency crisis, which began in the middle of 1997 as a sudden devaluation of the Thai baht to foreign currencies especially against the US$, spread to other Asian countries and caused the Asian economic crisis. Since the TradeLib project was conceived and started before the crisis, these studies handled basically the period before the crisis. Nevertheless, eight countries made analyses on the crisis and its impact on agriculture. The reports are summarized below.

The Republic of Korea

- The rising exchange rate increased production costs in the agricultural sector.
- The income and expenditure of farm households became worse due to increased costs, increase in the interest rate, constraints of loans by financial institutes and decrease in consumption of agricultural products.
- An analysis attempted to divide the effects of changes of prices of four imported agricultural commodities, soybean, wheat flour, feed for beef cattle and feed for pigs into changes in import prices and changes in exchange rates. The results indicated that (i) all four commodities had higher changes in exchange rate than changes in import price, (ii) as for import prices, soybean was the highest, then feed for swine, then wheat flour and the lowest was feed for beef and (iii) as for changes in exchange rate, soybean was the highest, followed by wheat flour, then feed for beef and feed for pigs.

Malaysia

- The crisis weakened the financial sector, affected the real economy and had socio-economic implications in the agricultural sector as well as in the non-agricultural sector.
- Agricultural production was burdened with higher import prices resulting from depreciation of the currency.
- The tariff reduction on imported products would be negated by increases of import prices.
- Unemployment increased and real income declined, resulting in a decline in demand for imported goods.
- Exports declined in 1998 and imports declined during the 1996-1998 period.
- Due to the crisis, the Malaysian government is attempting to reduce dependence on imports in agriculture, especially for food products.

Indonesia

- Since the economic crisis hit the country, the government has undertaken massive policy reforms in agriculture, including:
  a. eliminating the BULOG import monopoly over wheat, wheat flour, sugar, soybeans, garlic, and quite recently rice,
  b. reducing tariff rates on all food items to a maximum of 5% and abolishing local content regulations,
  c. removing restrictive trade and marketing arrangements for a number of commodities including local content requirements,
  d. deregulating trade in agricultural products across district and provincial boundaries including cloves, oranges, and livestock.
- Despite the ongoing reforms, the economy remains in a deep crisis. The massive currency depreciation has serious implications on domestic demand, the banking system, corporate balance sheets, inflation, trade and the balance of payments, government finance, and eventually growth, incomes, employment, welfare, and poverty.
- The most immediate effect of the exchange rate depreciation was a collapse in domestic demand. The collapse of domestic demand overwhelmed producers of import substitutes who might otherwise have benefited from the exchange rate depreciation.
- Exporters of manufactured products have been handicapped by a shortage in trade finance, due to lack of confidence among the trading partners.
- The main gainers were exporters, especially those exporting agricultural and natural resource based products.
- The currency depreciation caused inflation to soar. Inflation over the 12 months to the end of June 1998 had reached 59%. The bulk of this increase was caused by a rise in the price of tradable goods, especially food and clothing. This has serious implications for the welfare of the poor.
- Agricultural supply shocks due to weather problems combined with the high inflation have sharply reduced consumer purchasing power and triggered an alarming rise in the number of food insecure families. A large number of families with incomes marginally above the poverty line in 1996 have found that their incomes no longer keep pace with the rapidly rising prices of essential goods.
- Up to now, the government is retaining a targeted subsidy on rice, particularly to food insecure families, and it is still seeking the most appropriate mechanisms to deregulate trading in this staple and to make the price affordable. Market operations to help

people severely affected by the crisis have been conducted in 23 out of the country's 27 provinces.

- Weather problems and the economic crisis have pushed Indonesia into a serious food crisis. In terms of rice, the supply shocks occurred after several years of slow growth of rice production. The monetary crisis, which has disrupted agricultural input and output markets, seriously affected the food supply.
- The decline in domestic food supply has been partially offset by an increase in food imports. Imports of rice, soybeans and sugar, in particular, have increased significantly to offset the low level of domestic production. The import of wheat has also increased to meet an increasing demand in relation with the food and social safety net program.
- The decline in rice production in 1997 was offset by a rice import of 3.6 million tons plus 4.3 million tons of wheat import.
- Whether it is timely to undertake abrupt policy reforms in agriculture when the delivery system has collapsed, is now a controversial policy issue. Many argued that before the subsidies were removed, the government should have secured an effective food delivery system in order to reach those who are food insecure.
- In terms of fertilizer subsidy removal, negative reaction spread out not long after the policy was announced, since fertilizers not only disappeared from the market but their prices were too expensive. Many people suggested that subsidy elimination should instead have been done gradually.

The Philippines

- The depreciation of the peso rendered Philippine products more price competitive in the world market resulting in improved merchandise exports.
- The higher growth in exports vis-à-vis imports improved the trade deficit of the country.
- Growth in real investment declined.
- The Philippines was not as badly hit as some of its Asian neighbors; the economic disturbance in the region contracted the country's economic growth to a negative value in 1998.
- The agriculture and fishery sector suffered the most, but it was caused primarily by El Niño and typhoons during the last quarter of the year, not the crisis.

Thailand

- There is reason to believe that the economic crisis has hit rural areas somewhat less than urban areas.
- The positive impacts upon the Thai farm sector are seen as follows:
  a. Exports of farm commodities and agro-industrial products involving domestic tradable inputs are more competitive, which is leading to trade expansion.
  b. The export-oriented farm products earn better prices due to the greater demand.
  c. A relief of the farm labor shortage is seen as a major result of the industrial layoffs as out of work laborers go back to their home-based farm sector, while farm wages remain at least the same or maybe even have adjusted downwards.

- However, the negative effects include:
  a. The government needs to adjust its public spending for farm promotional programs and market intervention downwards. Therefore, there may be a reduction of certain farm production.

b. Farm production costs including the tradable inputs of agro-chemicals, cultivars and breeding stock, feed supplements, fuel and certain farm machinery are high. Furthermore, the marketing cost of farm transport is high.
c. Lack of credit and high interest costs affect farm investment and liquidity of the farm operator, local trader, processor and lastly the exporter, which affects farm transactions.

India

- India's agricultural exports to the four crisis ridden countries, namely, Indonesia, Malaysia, the Republic of Korea and Thailand had been growing rapidly until 1997. However, during 1997/98 India's agricultural exports plummeted by 22% compared to the previous year. This decline is the result of both very high devaluation of currencies of the countries and worsening of their economic conditions.
- Total imports from these countries increased significantly due to exchange rate developments.
- Depreciation of the countries' currencies has adversely affected India's export and balance of payments. Due to this depreciation, competition for export from India has increased.

Pakistan

- Pakistan's exports, imports and access to foreign capital became more vulnerable after the crisis.
- Massive devaluation of East and South-East Asian currencies did not threaten Pakistani exports beyond manageable limits, because Pakistan mainly exports value-added cotton to these countries.
- Pakistan did not suffer severely from the contagion effects of the Asian financial turmoil, mainly because its foreign capital inflows consisted of direct investments, limited portfolio inflows and build-up of foreign short-term debt.
- During 1998, Pakistan's economy was mainly effected by the nuclear test sanctions of the G-7 countries and international financial institutions.

Viet Nam

- The influence of the regional crisis has not yet been observed clearly in Vietnamese agriculture, since there is still little foreign investment and very few joint ventures in this sector.
- The hardest hit domain was the export market of agricultural produce as buying power of the countries hit by the crisis decreased.
- The government has made great efforts to keep the exchange rate stable between the Vietnamese dong and the US dollar.

8. Recommendations, Conclusions and Future Topics to be Addressed

This chapter consists of three parts, namely, a summary of recommendations given in the country reports, conclusions of this integrated report, and discussion of the topics, which were not fully developed or not handled in the TradeLib project.

8.1 Recommendations

Diverse recommendations are advocated by the country studies for coping with the negative or positive effects of trade liberalization. Some of the recommendations are quite general and some others are quite specific for the country concerned. These recommendations are classified in ten categories. Recommendations, which cover more than one category, are placed in the most appropriate category. There is no priority or order of importance. Recommendations by country with priority attached by country experts are in Appendix 2.

Production

- to strengthen the economic foundation and increase efficiency of agricultural industries.
- to promote improved cultural and intensive management practices.
- to re-structure production to allow farm consolidation and operation of better economy of scale.
- to promote programs that are targeted for increased participation of larger operators to exploit economies of scale.
- to provide the necessary environment conductive for the private sector to invest in food production on a large-scale commercial basis.
- to set zoning according to suitability of production with quality control.
- to diversity cropping patterns from food grains towards high-valued crops or export crops.
- to practice efficient farm management by agricultural mechanization.
- to invest in irrigation development and readjustment of arable land.
- to restructure tobacco production by replacing the curer system with the grower-curer system for increased economy of scale and lower cost of production.
- to reduce labor requirement in the palm oil production process.
- to increase productivity of local wheat.
- to increase adjustment of upland fields for the major upland crops such as fresh fruits, vegetables and ginseng.
- to increase productivity of export commodities such as rice, cotton, fruits and vegetables.
- to increase more value-added and downstream products.
- to form soybean and dairy farm groups for better bargaining positions.
- to increase rural industrialization to create better employment and income generating activities from competitive industries.
- to establish some system which introduces direct payments to support producers' income especially in less-favored areas.

- to introduce a de-coupled income support program in tobacco.
- to consider some combinations of de-coupled elements and market support (market distorting elements).

Marketing

- to enhance efforts for market diversification and deepening.
- to devise mechanisms to protect small and marginal farmers and to strengthen their market capacity.
- to widen product range and value-added to increase product competitiveness and industry profit.
- to promote internal liberalization of marketing.
- to develop higher agricultural technology and construct a better distribution system.
- to improve methods of processing, storage and preservation.
- to establish a food reservoir system.
- to promote standardization of farm products both domestically and internationally.
- to further promote the use of palm oil in order to better compete against other edible oils.
- to strengthen institutional support and market diversification and deepening (palm oil).

Export and import

- to help export products compete successfully with these from other LDCs.
- to look carefully at the possibilities to export existing varieties of rice to East Asian countries.
- to import more land-intensive agricultural products and export more labor-intensive products.
- to diversify trading countries, including overseas production development to secure food grain imports.
- to achieve structural adjustment to complete in an internationally open market.
- to change policies including tariff reductions to fulfill obligations under the WTO.
- to lower the tariff for maize to render the domestic livestock industry more competitive.
- to increase private sector participation to import rice with tariff.
- to strengthen trade relations with neighboring countries in the South Asian Association for Regional Cooperation.

Infrastructure

- to increase continuous investment in readjustment of arable land.
- to reduce production costs by investment in agricultural infrastructure.
- to establish new and additional infrastructure in new production areas, and improve infrastructure including farm consolidation in existing areas.
- to improve infrastructure such as transportation facilities.
- to invest in infrastructure such as farm-to-market roads, irrigation systems, R&D, facilities for bulk handling in the case of yellow corn.
- to improve grain handling, internal transport and external port facilities.
- to improve trade-related physical infrastructure such as the transportation network, equipment for quality control, bulk storage and handling facilities, railway sheds, etc.
- to improve trade-related physical infrastructure through increased private investment.

- to improve institutional structure, and infrastructure to meet the challenges due to liberalization.
- to expand and upgrade facilities and capabilities for food inspection and quality control.
- to strengthen banking systems.
- to increase financial and capital institutional support.
- to improve production technology and farm credits.

Technology

- to invest in technology generation and dissemination.
- to improve processing technology.
- to use better post-harvest technology and marketing.
- to introduce new technological initiatives that are appropriate to different producing areas and conserve the environment.
- to develop and upgrade commodities with adequate supply and good quality in accord with consumers' preferences.

Information

- to establish marketing information systems in producing areas and marketing regions.
- to promote public awareness programs.
- to provide information to policy makers.
- to establish information networks for export.
- to develop and distribute agricultural databases and software for supplying agricultural information to producers.
- to establish an integrated agricultural information network to improve producing areas, marketing regions, specific technology and regional information systems.

Human resource development

- to pursue public awareness programmes on the impacts of the trade liberalization.
- to increase human resource development including farmers and related private and public personnel.
- to improve the technical and managerial capacity of government officers in related fields.
- to invest in human resource development and staffing patterns in agriculture in order to improve formation of policies, implementation and extension services.
- to strengthen education to producers concerning utilization of agricultural information.
- to promote programs for creating awareness among producers on the importance of and adherence to the proposed health and safety standards.

Administration

- to reform administrative procedures.
- to modify formal and informal restrictions on inter-state movement of agricultural products.
- to strengthen institutional support especially research, extension and technological transfer.
- to assist farmers in adjusting their production and employment structure, obtaining better tax and income distribution, and access to credit and market information.

Policy

- to improve land policy to meet the challenge due to liberalization.
- to ameliorate laws and policies to adjust to the trade liberalization system.
- to revise grain self-sufficiency policies to move feed grain production to exportable products.
- to establish policies to minimize the shock of trade liberalization by using minimum access, quota tariff and depreciation of currency during the transition period.
- to establish new policies to minimize any adverse impacts of trade liberalization on income and welfare redistribution among subsistence farmers and farmers of grains, edible oil and cotton.
- to slowly phase out all forms of price support policies and control on output markets in the country to give farmers incentives to produce for market-oriented prices.
- to keep aggregated domestic supply growth larger than the demand growth.
- to implement a gradual structural adjustment program by gradually dismantling tariff especially to ASEAN (tobacco).
- to practice market-based strategy not society-based strategy.
- to prepare for adjustment in affected sectors including planning for income support programs.
- to accelerate agricultural diversification, income generation and poverty alleviation programs in rural and marginal areas.
- to use combined policies of direct payments and investments to increase productivity in the affected areas.
- to accelerate development programs that would improve rice production and marketing efficiency.
- to promote policies such as production support for the purpose of food security and consolidating competitiveness for self-sufficiency of food, especially rice.
- to transfer trade policy of food grains from import restriction to efficient import management.
- to establish linkage among development, trade and environment policies.
- to remove implicit taxes on farmers and reform domestic grain pricing and marketing
- to reform the insufficient state enterprise sector.
- to create more access for the private sector to domestic and foreign trade.
- to expand programs for enhancing product quality.
- to assess effects of policy changes on the market and the farm economy at commodity-location specific levels in the domestic context and in international relations.
- to make a fundamental policy shift in investment policy, domestic agricultural marketing policy and foreign exchange policy, if China wants to maintain its self-sufficiency policy of grains especially wheat and maize.

Research and Development (R&D)

- to increase investment in agricultural research and extension.
- to promote R&D of seeds of maize and soybeans.
- to conduct research and extension for grains.
- to develop new varieties with high yield and high quality.
- to practice R&D in white corn and help small farmers shift from yellow corn to white corn.
- to promote R&D on alternative crops.
- to enhance productivity gains via R&D on quality improvement, product development and diversification.

- to improve technological research and control of plant diseases.
- to improve research and development on storage management, grading, packing and procurement systems for export of fruits and vegetables.

8.2 Conclusions

According to the first phase study, the institutional study, the trade liberalization policy of each country very much depends upon (a) the status of socio-economic development of the country, (b) the share of international trade in it's GNP and (c) the comparative advantage of the country.

On the other hand, domestic and international political pressure as well as multilateral accords also have certain impacts on the country's trade liberalization policies. The starting point of trade liberalization varied among the ten participating countries. Nevertheless, most of the countries progressively opened up their agricultural trade, especially in imports of agricultural products in the 1980s and early 1990s.

During the period, the most significant trade liberalization and reforms, which gave strong impacts on agricultural trade in the ESCAP region, were the opening up of the Chinese economy and the gradual liberalization in trade policies of India.

After the Uruguay round concluded in 1993, trade liberalization has been continued in all of the ten countries including the non-WTO member countries, China and Viet Nam.

One important factor that determines the benefit of a country under free trade is the existing physical infrastructure of the country. The major physical infrastructure is roads, railroads, rivers, air and sea ports. According to authors' assessments, most of the infrastructure in Japan and the Republic of Korea is well developed and developed, while that in the Philippines, Pakistan and Viet Nam is mostly under developed.

The existing infrastructure in Indonesia, Malaysia and Thailand is mostly in the developing stage; however, road and air infrastructure in Thailand is comparatively better developed. In general, large countries such as China and India are still in the developing stage with their infrastructure.

As a matter of fact, development of infrastructure in each country very much depends upon the status of economic development and the natural resource endowment e.g. rivers and sea access.

Another important factor reflecting a country's preparation for trade liberalization is the awareness of the WTO. According to authors' assessments of concerned parties including government officers, private firms, farmers and consumers, the awareness of the WTO was very strong in the developed and agricultural importing countries such as Japan and the Republic of Korea. In general, the awareness of government officers in ASEAN countries (except Viet Nam), China, India and Pakistan is strong, while that of the private sector is moderate. Nevertheless, the awareness of farmers and consumers is, generally, very weak or weak in most of the countries.

The awareness of the WTO of a country depends on the seriousness of its trade-related issues regardless of whether it is an exporting country or an importing country. Also it depends on the development of the country's information network as well as the country's openness of society. Development of information networks depends largely on the country's economic development stage.

Reports on trade liberalization in various countries written by both domestic and foreign researchers have been increasing, which reflects awareness and interest in the issue.

The structure of comparative trade performance among the ten countries between 1992 and 1996, which represents pre WTO period and WTO period, is almost the same. Based on the magnitude of trade values, the countries can be divided into three groups, (i) East Asia: Japan, the Republic of Korea and China, (ii) ASEAN (except Viet Nam): Malaysia, Thailand,

Indonesia and the Philippines, and (iii) South Asia and Viet Nam: India, Viet Nam and Pakistan.

Although the trade structure is the same during these years, the total trade among these ten countries almost doubled. This increase in rate is larger than that of the ESCAP region as a whole during the same years. It is sufficient to say that the process of trade liberalization has benefited almost all of the ten countries.

The second phase study consists of commodity studies and location-commodity studies. The commodity study analyzed effects at the national level using simple welfare analysis. According to the studies, net welfare gains due to trade liberalization are estimated for most commodities with a few exceptions, because producers' welfare gains are larger than consumers' welfare losses in the case of export commodities and consumers' welfare gains are larger than producers' welfare losses in import commodities. This indicates that trade liberalization will be favourable for a nation as a whole.

The location-commodity study analyzed the effects at the local or farm level using partial budget analysis. In general all partial budget analyses revealed that there will be an increase in farmers' returns or gross margin after trade liberalization for the export commodities, except for a few commodities such as maize in China and non-Basmati rice in Pakistan. For the import commodities, trade liberalization decreased the return of farmers, except for maize in Pakistan and Thailand.

Export commodities are usually produced more efficiently, whereas import commodities are usually produced less efficiently, and the latter are often grown by small farmers. Also import commodities often grow in less favored areas in a country. These facts mean that the adverse effects of trade liberalization impact most seriously on small farmers and farmers in the less favorable areas, and the farmers in less favored areas are often small farmers.

The welfare analysis and the partial budget analysis are comparative statistical analyses. They may be said to analyze mid-term or long-term effects. To check the results of the above analyses, actual performance of the trade data of rice, maize, soybean and palm oil were examined using simple growth methods.

The results show that it is too early to say there are trade liberalization effects, except in some cases. Exceptional cases which show possible effects of trade liberalization are the stronger export commodities, that is, rice in Thailand and palm oil in Malaysia and the weaker import commodities, that is, maize in the Philippines and soybean in the Republic of Korea.

To survive in the era of trade liberalization, it is necessary to strengthen the bases of export agricultural commodities, especially for countries where agricultural commodities are important foreign currency earners. Increasing export of agricultural commodities may increase net social welfare.

Also, increased import of agricultural commodities may increase net social welfare. However, the net social welfare increase tends to depend on the loss of domestic producers of the commodities. The producers may be small farmers and/or farmers who live in less favored areas. Increasing their welfare is more important.

A wide range of recommendations was suggested in the reports to increase farmer's welfare under trade liberalization. Among them the following are important: (i) development of more efficient measures of production in both exporting and importing countries for higher income and food security; (ii) policies and programs for crop diversification and direct payment to be implemented for small farmers and farmers in less favored areas in the transition period of trade liberalization; (iii) improvement of trade-related infrastructure especially roads and ports to be better equipped for freer trade; and (iv) more efficient information networks for farmers, consumers, the private sector and government personnel covering all stages of production, consumption, marketing and international trade.

8. 3 Future topics to be addressed

Several observations and issues were raised by the studies but not discussed in detail in the reports. These issues are briefly highlighted here to stimulate further studies.

Structural reform of government

It is quite obvious that under WTO there are certain agreements that require good cooperation and rapid response of the member countries. For example, the agreement on sanitary and phytosanitary measures (SPS measures) and the agreement on technical barriers to trade (TBT) are very important to the agricultural sector as a whole. However, the implementation of these agreements cuts across many ministries within the conventional administration of a country. These two agreements can generate both positive and negative impacts on agricultural trade of the countries concerned. Although some inter-ministry level ad hoc committees and working groups have been set up in some participating countries to deal with these two agreement, the effectiveness of such arrangements to handle problems arising from these two agreements is still questionable. The issue here is how to restructure the government agencies concerned to effectively deal with these agreements.

In fact, the SPS measures have created a dispute on cotton trade between India and Pakistan. The Indian authorities banned the import of cotton from Pakistan on the grounds of phytosanitory considerations, which went into effect on 11 January 2000. As reported in the newspaper: "There shall be no import of any cotton from Pakistan into India as the presence of cotton seeds of exotic origin, of dried leaves and their stalks in the imported consignment carry exotic strains of destructive bacterial, viral and fungal disease which are virulent under Indian climatic conditions" (The News International, Monday, January 17, 2000, Karachi, Pakistan)

As far as Pakistani authorities are concerned, there are grounds for lodging a complaint with the WTO to take punitive action against India. It will be interesting to see how long it takes for this dispute to be settled and what the effects on the cotton farmers are.

Product quality issues

Product quality issues can be viewed as a barrier to trade. In some cases, there is an intrinsic quality difference between the imported product and the domestically produced one, for example, domestically produced and imported beef in the Japanese market. Quality issues also can be found in the international rice market. As far as consumers' tastes are concerned, varieties of rice, to a great extent, cannot be perfectly substituted among themselves such as Basmati rice and IRRI rice. In fact, the usage of rice determines the rice price, so that the price of rice for direct human consumption is much higher than that for processing. That means that open access of the rice market in developed countries may lead to an increase of imports of rice for processing rather than for human consumption. This would imply that the WTO open access commitment on rice would only be applied to a certain quality. These issues deserve close investigation.

Large country

According to international trade theory, when a country's import or export of a given commodity has impacts on its world price, then it is called a large country. On the contrary, when a country's import or export has no impact the on a world price, it is called a small country.

In all the ten country studies, the small country assumption is implicitly applied. However, a country like China or India is, indeed, a large country, when it becomes an importer of a basic stable commodity such as rice in the world market. In fact, it would be a totally different scenario if these big countries relaxed their food security and self-sufficiency

objectives of the basic staple foods. For example, if China or India has to import rice from the world market, then the price will be increased, which in turn will have strong impacts on both production and consumption of rice in both importing and exporting countries.

Short and long run

It is noteworthy that positive impacts from trade liberalization on agriculture in almost all selected commodities take place, more or less, in the long run rather than in the short run. This does not mean that in the short run the positive impacts can be realized without passing through any adjustment. It implies that the short run adjustment process will play an important role for achieving the long run positive impact.

In reality, most of the agricultural sectors in the developed and developing countries are classified as comparatively poor sectors in the economy. These sectors will not have adequate resources to live on in the short run. Therefore, the survival of agricultural sectors in the short run is very important and it must be treated as high priority in research and economic policy agenda.

Environmental issues

Environmental issues on trade are not considered in almost all the country studies. There is a strong tendency for environmental issues to become major issues in agricultural trade in the years to come. Obvious issues include: chemical inputs used in agricultural production that generate undesirable and toxic residuals in agricultural products, contamination of chemical inputs in water and land, and bio-diversity.

Furthermore, the current issue of genetically modified organism (GMO) agricultural commodities has created more and more public awareness in both agricultural importing and exporting countries. The issue of GMO has been discussed not only along with environmental impacts, but also along the line of many other issues i.e. health, trade, production and marketing systems, etc. Although efforts have been made to initiate and arrive at some preliminary agreement on GMO, the issue has yet to be resolved.

Price instability

The intrinsic problem in commodity trade is price instability or fluctuation. Many government interventions and measures have been set up to achieve price stability. Some of these measures are more or less prohibited under WTO commitments. Therefore, there is a need for new and feasible stabilization measures to be set up in commodity exporting countries.

In the past, there were cases where the commodity price fluctuated more than 100%, which may be more than the decrease in tariff on some commodities. One factor causing price fluctuation is exchange rate fluctuation. The exchange rate fluctuation due to the recent Asian economic crisis, which is an extreme case, caused price changes that converted a country from an importing country to an exporting country like the case of Indonesia. The issue is whether trade liberalization generates a more stable commodity price or not. If trade liberalization creates more price instability in internationally traded commodities, then what will be the impact on developing countries that depend on the export of a few basic commodities?

New member of WTO

Since China and the US were able to reach some trade agreements in 1999, the time for China to become a new member of WTO has been shortened. The joining of China in the WTO has been regarded as favorable to most of the Asian countries as well as to the rest of the world. Certainly, China with more than 20% of the world population will be a big market for both agricultural and industrial products for many exporting countries. For example, it is expected that under the open access commitment, China will have an open access for rice at about 2.6

million tons per year, which is about 10% of the current world trade of rice. Obviously, this amount will impact on the rice market of the world.

9. Bibliography

ADB. 1996. Key Indicators of Developing Asia and Pacific Countries. Vol. 27. Economic and Development Resource Center, ADB, Manila.

Akhtar, Muhamad Ramzan. 1997. Market Prospects for Upland Crops in Pakistan. Working Paper No. 23. Bogor, CGPRT Centre, Indonesia.

Akhtar, Muhammad Ramzan. 1998. Effects of Trade Liberalization on Agriculture in Pakistan: Institutional and Structural Aspects. Working Paper No. 33. Bogor, CGPRT Centre, Indonesia.

Akhtar, Muhammad Ramzan. 1999. Effects of Trade Liberalization on Agriculture in Pakistan: Commodity Aspects. Working Paper No. 44. Bogor, CGPRT Centre, Indonesia.

Anderson, K. 1999. Cairns Group Perspective, Getting Ready for the Millennium Round Trade Negotiations. IFPRI, Washington DC.

APEC. 1998. Individual Action Plan: Indonesia, as of 15 October 1998. APEC Secretariat, Singapore.

APEC. 1999. Home Pages updated in March 1999. APEC Secretariat, Singapore.

ASEAN. 1993. AFTA Reader Volume 1. ASEAN Secretariat, Jakarta.

ASEAN. 1995a. AFTA Reader Volume 2. ASEAN Secretariat, Jakarta.

ASEAN. 1995b. AFTA Reader Volume 3. ASEAN Secretariat, Jakarta.

ASEAN. 1996. AFTA Reader Volume 4. ASEAN Secretariat, Jakarta.

BPSa. Economic Indicators, Monthly Statistical Bulletin, various months. Biro Pusat Statisk (Central Bureau of Statistics), Jakarta.

BPSb. Statistik Harga Produsen Sektor Pertanian di Jawa dan Sepuluh Propinsi Luar Jawa (Statistics of Producer's Price of Agricultural Commodities in Java and Other Provinces). various years, Biro Pusat Statistik, Jakarta.

Chand, Ramesh. 1998. Effects of Trade Liberalization on Agriculture in India. Working Paper No. 38. Bogor, CGPRT Centre, Indonesia.

Chand, Ramesh. 1999. Effects of Trade Liberalization on Agriculture in India: Commodity Aspects. Working Paper No. 45. Bogor, CGPRT Centre, Indonesia.

Chien, Dao Huy. 1996. Market Prospects for Upland Crops in Vietnam. Working Paper No. 26. Bogor, CGPRT Centre, Indonesia.

Diaz-Bonilla, E.; and Robinson, S. 1999. Overview, Getting Ready for the Millennium Round Trade Negotiations. IFPRI, Washington D.C.

Erwidodo. 1999. Effects of Trade Liberalization on Agriculture in Indonesia: Institutional and Structural Aspects. Working Paper No. 41. Bogor, CGPRT Centre, Indonesia.

Erwidodo; and Hadi, Prayogo U. 1999. Effects of Trade Liberalization on Agriculture in Indonesia: Commodity Aspects. Working Paper No. 48. Bogor, CGPRT Centre, Indonesia.

ESCAP. 1996. Economic Liberalization and Rural Poverty - A Study on the Effects of Price Liberalization and Market Reforms in Asian Developing Countries. United Nations, New York.

ESCAP. 1998. Foreign Trade Statistics of Asia and the Pacific 1997-1998 Edition. UN, New York.

ESCAP. 1999. Impact of Trade Liberalization on the Commodity Sector - Commodity Exports: A Post-Uruguay Round Appraisal. Ad Hoc Expert Group Commodity-related Issues (Restricted), ESCAP, Bangkok.

FAO. 1995. Impact of the Uruguay Round on Agriculture. FAO. Rome.
FAO. 1999. FAOSTAT Database. FAO. Rome.
FAO. Production Year Book. various years, FAO. Rome.
FAO. Trade Year Book. various years, FAO. Rome.
GATT. 1989. Global Proposal of the European Community of the Long Term Objectives for the Multilateral Negotiation on Agricultural Questions, Special Distribution (Restricted), GATT Secretariat.
Goldin, I.; and Knudsen, O. (eds). 1990. Agricultural Trade Liberalizatrion. OECD, Paris.
Goldin, I.; Knudsen, O.; and van der Mensbrugghe, D. 1993. OECD, Paris and World Bank, Washington, D.C.
Goldin, I.; van der Mensbrugghe, D. 1995. The Uruguay Round: an assessment of economy wide and agricultural reforms. *In* Martin, W. and Winters, L.A., (eds). The Uruguay Round and the Developing Economies, Discussion Papers 307, World Bank, Washington, D.C.
Gunawan, Memed. 1997. Market Prospects for Upland Crops in Indonesia. Working Paper No. 25. Bogor, CGPRT Centre, Indonesia.
Guoqiang, Cheng. 1997. Market Prospects for Upland Crops in China. Working Paper No. 24. Bogor, CGPRT Centre, Indonesia.
Hathaway, D.E.; and Ingco, M.D. 1995. Agricultural liberalization and the Uruguay Round. *In* Martin, W. and Winters, L.A., (eds). The Uruguay Round and the Developing Economies, Discussion Papers 307, World Bank, Washington, D.C.
Huang, Jikun; and Chen, Chunlai. 1999. Effects of Trade Liberalization on Agriculture in China: Institutional and Structural Aspects. Working Paper No. 42. Bogor, CGPRT Centre, Indonesia.
Huang, Jikun; and Chen, Chunlai. 1999. Effects of Trade Liberalization on Agriculture in China: Commodity Aspects. Working Paper No. 43. Bogor, CGPRT Centre, Indonesia.
Imamura, N.; Hattori, S.; Yaguchi, Y.: Kagatsume, M.; and Suganuma, K. 1997. Agricultural Strategy under the WTO: A Comparative Study on US, EU, Australia, China and Japan (in Japanese). Nosangyoson Bunkakyokai, Tokyo.
Inoue, Sotaro; and Titapiwatanakun, Boonjit. 1997. Integrated Report of the Project "Market Prospects for Upland Crops Products and Policy Analysis in Selected Asian Countries". Working Paper No. 28. Bogor, CGPRT Centre, Indonesia.
Inoue, Sotaro; Titapiwatanakun, Boonjit; and Stoltz, D.R. (eds). 1997. Market Prospects for Upland Crops in Asia: Proceedings of a Workshop Held in Bogor, Indonesia, February 25-28,1997. Monograph No. 34. Bogor, CGPRT Centre, Indonesia.
Itharattana, Kajonwan. 1997. Market Prospects for Upland Crops in Thailand. Working Paper No. 21. Bogor, CGPRT Centre, Indonesia.
Itharattana, Kajonwan. 1999. Effects of Trade Liberalization on Agriculture in Thailand: Institutional and Structural Aspects. Working Paper No. 39. Bogor, CGPRT Centre, Indonesia.
Itharattana, Kajonwan. 1999. Effects of Trade Liberalization on Agriculture in Thailand: Commodity Aspects. Working Paper No. 49. Bogor, CGPRT Centre, Indonesia.
Khalid, R.; Levy. P.; and Suleem, M. 1999. The World Trade Organization and the Developing Countries. The OPEC Fund for International Development, Vienna.
Kobayashi, Hiroaki. 1998. Effects of Trade Liberalization on Agriculture in Japan: Institutional and Structural Aspects. Working Paper No. 36. Bogor, CGPRT Centre, Indonesia.
Kobayashi, Hiroaki. 1999. Effects of Trade Liberalization on Agriculture in Japan: Commodity Aspects. Working Paper No. 50. Bogor, CGPRT Centre, Indonesia.
Kumar, Praduman. 1996. Market Prospects for Upland Crops in India. Working Paper No. 20. Bogor, CGPRT Centre, Indonesia.

Kumar, R.; and Debroy, B. 1999. The Asian Crisis: An Alternate View. Economics and Development Resource Centre, ADB, Manila

Kyi, Hla; Mruthyunjaya; Khan, Nasseer Alam; Liyanapathirana, Rupasena; and Bottema, J.W. Taco. 1997. Market Prospects for Pulses in South Asia: International and Domestic Trade. Working Paper No. 27. Bogor, CGPRT Centre, Indonesia.

Lantican, Josefina M. 1997. Market Prospects for Upland Crops in the Philippines. Working Paper No. 22. Bogor, CGPRT Centre, Indonesia.

Mangabat, Minda C. 1998. Effects of Trade Liberalization on Agriculture in the Philippines: Institutional and Structural Aspects. Working Paper No. 37. Bogor, CGPRT Centre, Indonesia.

Mangabat, Minda C. 1999. Effects of Trade Liberalization on Agriculture in the Philippines: Commodity Aspects. Working Paper No. 51. Bogor, CGPRT Centre, Indonesia.

Myung-Hwan Sung. 1998. Effects of Trade Liberalization on Agriculture in the Republic of Korea: Institutional and Structural Aspects. Working Paper No. 35. Bogor, CGPRT Centre, Indonesia.

Myung-Hwan Sung. 1999. Effects of Trade Liberalization on Agriculture in the Republic of Korea: Commodity Aspects. Working Paper No. 47. Bogor, CGPRT Centre, Indonesia.

Nguyen Trung Que. 1998. Effects of Trade Liberalization on Agriculture in Vietnam: Institutional and Structural Aspects. Working Paper No. 40. Bogor, CGPRT Centre, Indonesia.

Nguyen Trung Que; and Nguyen Ngoc Que. 2000. Effects of Trade Liberalization on Agriculture in Viet Nam: Commodity Aspects. Working Paper No. 52. Bogor, CGPRT Centre, Indonesia.

Nolland, M. 1999. Asian Perspective, Getting Ready for the Millennium Round Trade Negotiations. IFPRI, Washington DC.

Stephenson, S; and Erwidodo. 1995. The Impact of the Uruguay Round on Indonesia's Agricultural Sector (restricted edition).

Tengku Ahmad, Tengku Mohd. Ariff. 1998. Effects of Trade Liberalization on Agriculture in Malaysia: Institutional and Structural Aspects. Working Paper No. 34. Bogor, CGPRT Centre, Indonesia.

Tengku Ahmad, Tengku Mohd. Ariff; and Tawang, Ariffin. 1999. Effects of Trade Liberalization on Agriculture in Malaysia: Commodity Aspects. Working Paper No. 46. Bogor, CGPRT Centre, Indonesia.

Titapiwatanakun, Boonjit. 1994. The effects of ASEAN free trade area (AFTA) on the production, consumption and trade of palm oil in Thailand. A Report prepared for the Regional Office for Asia and the Pacific Food and Agriculture Organization of the United Nations, Bangkok.

USDA. 1987. Government Intervention in Agriculture: Measurement, Evaluation and Implications for Trade Negotiations. Washington D.C.

World Bank. 1997. World Bank Atlas 1997. Washington DC.

World Bank. 1998. Global Development Finance 1998 - Country Tables. Washington D.C.

World Bank. 1999. World Development Report 1998/1999-Knowledge for Development. Washington D.C.

Appendices

Appendix 1

Partial budget analysis

Partial budget analysis is generally used in farm management research. Partial budgets are used to evaluate the effect on farm profits of a proposed change in the way a farm is operated, for example, different methods of weed control, purchase of equipment for a farm operation or doing contract work for other farmers. Basically, the partial budget analysis deals with the comparison of both advantages and disadvantages between the situation with and without the change. Therefore, those items which remain constant with and without the change are not considered in the analysis, such as fixed costs.

In general, partial budget analysis involves estimating the costs and returns which are due to the changes. These cost and return items, steps, and other related issues are discussed below.

Identification of variable inputs and costs

All variable inputs should be identified and the magnitude of each input used should also be known. Normally, inputs can be divided into: i) purchased inputs such as seeds, pesticide, fertilizer, irrigation water, etc.; and ii) non-purchased inputs such as home grown seeds and family labor.

An appropriate price or cost of each variable input should be applied in estimating the variable costs. In principle, the cost of inputs is the cost of the input at the farm gate or field. Issues to be considered are:

(i) Price of purchased inputs: this is price or cost that farmer has to pay for the inputs, which includes the cost of inputs and the transportation cost from the local market to the farm field. In practice, the price of inputs packaged in a certain size of package that the farmer normally purchases should be used, rather than the bulk price in the capital city.

(ii) Hired labor cost or wage rate: this is the current labor wage in the locality. Normally, the hired labor cost is the wage rate per day plus any non-monetary payment such as meals, drinks and transportation. Although, family labor is not an out-of-pocket cost (non-cash cost) of the farmer, the opportunity cost of family labor has to be considered in calculating the total labor cost. It is rather difficult to accurately estimate the opportunity cost of family labor. The general rule of thumb is to treat the opportunity cost of family labor the same as hired labor cost. One should notice that there are seasonal fluctuations of wage rates; during the peak season the wage rate is high and it is low during the off season. Therefore, appropriate wage rates should be used.

(iii) Equipment and machinery: this is the cost for using equipment and machinery. It can be calculated using the concept of investment analysis, however, it is easier to use the average rental rate of the equipment.

Price received by farmers or farmgate price

In computing the farmer's gross income or revenue derived from the farm produce, the unit price of the commodity is used. However, one should also consider the place where the

farmer sells and delivers his produce. Thus, if the farmer sells and delivers his product at the local market, the local market price of the commodity is used and transportation from farm to local market must be deducted to obtain a farmgate price of the commodity. Nevertheless, the accurate price the farmer received for his produce must also considered regarding the form of produce sold, and to what extent the harvesting cost is calculated and up to which point the product is transported.

In addition, the revenue from by-products or residue of the commodity in question should be considered. If there is no market price for the by-product, then one should consider the possibility of estimating the economic value through indirect methods.

An example of partial budget analysis is shown in the following Table.

Example of partial budget of maize.

Item	Without	With	Difference
Returns Yield (kg) Price ($/kg) Gross Returns ($)			
Variable Costs 1. Seeds Amount Unit price 2. Fertilizer Amount Unit price 3. Herbicide Amount Unit price 4. Equipment (tractor) Amount Unit price 5. Labor cost for: Fertilizer application Amount Unit price Herbicide application Amount Unit price			
Total cost (1-5)			
Cost of working capital Interest rate (%/year) Crop growing duration			
Total Variable Cost			
Net Return			

Appendix 2

Recommendations given in the country reports

Recommendations in the country reports.

Country and Category	Recommendations	Priority*
Japan		
Production	• To establish some systems which introduce direct payments to support producers' income especially for those living in less favored areas.	B
	• To consider some combinations of de-coupled elements and market support (market distorting elements).	A
Policy	• To assess the effects of policy changes on the market and the farm economy at the commodity-location-specific level in the domestic context and in international relations.	A
Republic of Korea		
Production	• To practice efficient farm management by agricultural mechanization.	A
	• To invest in irrigation development and readjustment of arable land.	B
	• To increase adjustment of upland fields for the major upland crops such as fresh fruits, vegetables and ginseng.	C
Marketing	• To develop high agricultural technology and construct a better distribution system.	B
	• To improve methods of processing, storage and preservation.	B
	• To establish a food reservoir system.	A
Export and Import	• To diversify trading countries, including overseas production development to secure food grains import.	C
Infrastructure	• To increase continuous investment in readjustment of arable land.	B
	• To reduce production costs by investment in agricultural infrastructure.	A
Information	• To establish marketing information systems in producing areas and marketing regions.	B
	• To develop and distribute agricultural databases and software for applying agricultural information to producers.	A
	• To establish an integrated agricultural information network to improve producing areas, marketing regions, specific technology and regional information systems.	B
Human Resources Development	• To strengthen education of producers for utilizing agricultural information.	B
Policy	• To promote policies such as production support for the purpose of food security and consolidating competitiveness for self-sufficiency of foods, especially rice.	A
	• To transfer the trade policy of foodgrains from import restriction to efficient import management.	C
Research and Development	• To conduct research and extension for grains.	C
	• To develop new varieties with high yield and high quality.	A
	• To improve technological research and control of plant diseases.	B

* The priority of the recommendations: A = Immediate; B = Intermediate; and C = Long-term.

Continued ……..

Appendix 2

Recommendations in the country reports (continued).

Country and Category	Recommendations	Priority*
Malaysia		
Production	• To strengthen the economic foundation to increase efficiency of agricultural industries.	B
	• To restructure production to allow farm consolidation and operation of better economy of scale.	B
	• To restructure production by replacing the curer system with the grower-curer system, to increase economy of scale and lower cost of production (tobacco).	A
	• To reduce labor requirement in the palm oil production process.	B
	• To increase rural industrialization to create better employment and income generating activities from competitive industries.	C
	• To increase productivity (tobacco).	A
	• To introduce a de-coupled income support program (tobacco).	B
	• To increase productivity and efficiency of the industry (palm oil).	A
	• To produce more value-added and downstream products.	A
	• To provide the necessary environment conductive for the private sector to invest in food production on a large-scale commercial basis.	B
	• To promote programs that are targeted for increased participation of larger operators to exploit economies of scale.	B
Marketing	• To enhance marketing efforts for market diversification and deepening.	A
	• To widen product range and value-added to increase product competitiveness and industry profits.	A
	• To promote further the use of palm oil in order to better compete against other edible oils.	B
	• To strengthen institutional support and market diversification and deepening (palm oil).	B
Export and Import	• To make the negotiating platform larger than ASEAN including other smaller countries with similar interests.	A
	• To achieve structural adjustment to compete in an internationally open market.	C
Infrastructure	• To establish new and additional infrastructure in new areas, and infrastructure improvement including farm consolidation in existing areas (rice).	B
	• To improve infrastructure, finance and capital institutional support.	B
	• To expand and upgrade facilities and capabilities for food inspection and quality control.	B
Human Resources Development	• To improve human resource development.	C
	• To promote programs for creating awareness among producers on the importance of and adherence to the proposed health and safety standards.	B
Administration	• To strengthen institutional support especially research, extension and technology transfer (rice).	A
Policy	• To implement a gradual structural adjustment program by gradually dismantling tariffs especially to ASEAN (tobacco).	B
	• To practice market based, not society based strategies.	A
	• To prepare for adjustments in the affected sectors including planning for income support programs.	B
	• To use combined policies of direct payments and investments to increase productivity in the affected areas.	A
Research and Development	• To promote R&D on alternative crops.	B
	• To enhance productivity gains via R&D and quality improvement, product development and diversification (palm oil).	B

* The priority of the recommendations: A = Immediate; B = Intermediate; and C = Long-term.

Continued ……..

Recommendations in the country reports (continued).

Country and Category	Recommendations	Priority*
Indonesia		
Production	• To increase farm productivity and marketing efficiency.	A
Infrastructure	• To improve infrastructure such as transportation facilities.	A
	• To improve production technology and farm credits.	A
Human Resources Development	• To invest in human resource development.	B
Policy	• To accelerate the pace of policy reforms and in particular to reduce the remaining disincentives against agriculture and agro-based manufacturing industries.	B
	• To deregulate food, increasing food processing and export crop sectors.	B
The Philippines		
Export and Import	• To increase private sector participation to import rice with tariff.	B
	• To lower the tariff for maize to render the domestic livestock industry more competitive. (The marginal and subsistence yellow corn farmers may be displaced, but the resources would flow to the small livestock raisers who have a better edge. The displaced yellow corn farmers can shift to white corn and other crops that are more profitable).	B
Infrastructure	• To increase investment in infrastructure such as farm to market roads, irrigation systems, R&D, bulk handling facilities for corn, and the efficient and timely delivery of this infrastructure.	B
Human Resources Development	• To invest in human resource development and staffing pattern in agriculture in order to improve formulation of policies, implementation and extension services.	B
Policy	• To accelerate development programs that would improve rice production and marketing efficiency.	A
Research and Development	• To invest R&D in white corn and help small farmers shift from yellow corn to this crop.	A
Technology	• To invest in technology generation and dissemination.	A
Thailand		
Production	• To set zoning according to suitability of production with quality control concerning rice, soybean and milk.	A
	• To form soybean and dairy farm groups for better bargaining positions.	A
Marketing	• To promote standardization of farm products both domestic and international.	B
Infrastructure	• To develop facilitative measures on trade and transportation.	B
Technology	• To use better post-harvest technology and marketing.	A
	• To introduce new technological initiatives that are appropriate to different producing areas while conserving environments.	B
	• To develop and upgrade commodities with adequate supply and good quality in accord with consumers' preferences (processing and packaging).	B
Information	• To provide information for policy makers.	A
	• To establish a network for export.	C
Human Resources Development	• To improve human resource development including farmer and related private and public personnel.	A
Policy	• To establish linkage among development, trade and environment policies.	A
Research and Development	• To promote R&D of seeds of maize and soybeans.	A

* The priority of the recommendations: A = Immediate; B = Intermediate; and C = Long-term.

Continued ……..

Recommendations in the country reports (continued).

Country and Category	Recommendations	Priority*
India		
Production	• To improve efficiency of production.	C
Marketing	• To devise a mechanism to protect small and marginal farmers and to strengthen their market capacity.	A
Infrastructure	• To improve institutional structure and infrastructure to meet the challenges due to liberalization.	B
Administration	• To modify formal and informal restrictions on inter-state movement of agricultural products.	A
Policy	• To improve land policy to meet the challenges due to liberalization.	C
	• To keep aggregated domestic supply growth larger than the demand growth.	C
Pakistan		
Production	• To promote improved cultural and intensive management practices.	A
	• To diversify cropping patterns from food grains towards high valued crops or export oriented crops.	B
	• To increase productivity of local wheat in order to decrease its imports.	B
	• To increase productivity of exporting commodities such as rice, cotton, fruits and vegetables.	B
Marketing	• To promote internal liberalization of marketing.	A
Export and Import	• To help export products compete successfully with those extended by other LDCs.	B
	• To change policies including tariff reductions to fulfill obligations under WTO.	A
	• To strengthen trade relations with the neighboring countries in the South Asian Association for Regional Cooperation.	C
	• To look carefully at the possibilities to export existing varieties of rice to East Asian countries.	B
Infrastructure	• To improve trade-related physical infrastructure such as the transportation network, equipment for quality control, bulk storage and handling facilities, railway sheds, etc.	C
	• To improve trade-related physical infrastructure through increased private investment.	C
Human Resources Development	• To pursue public awareness programmes on the impacts of the trade liberalization.	A
Policy	• To phase out slowly all forms of price support policies and control on output markets in the country to give farmers incentives produce for to market-oriented prices.	C
Research and Development	• To improve research and development on storage management, grading, packing and procurement systems for export of fruits and vegetables.	C
China		
Export and Import	• To import more land-intensive agricultural products and to export more labor-intensive products.	C
Infrastructure	• To improve grain handling, internal transport and external port facilities.	B
	• To raise investments in extensive irrigation and other productivity enhancing activities.	B
Administration	• To assist farmers adjusting their production and employment structures, for better taxation, income redistribution and access to credit and market information.	A

* The priority of the recommendations: A = Immediate; B = Intermediate; and C = Long-term.

Continued ……..

Recommendations in the country reports (continued).

Country and Category	Recommendations	Priority*
China		
Policy	• To revise grain self-sufficient policy, and to move feed grain production to exportable products.	B
	• To establish policies to minimize short-time shock of liberalization, such as minimum access, quota tariff, transition period and depreciation of currency.	A
	• To remove implicit taxes on farmers and reform domestic grain pricing and marketing.	A
	• To make a fundamental policy shift in investment policy, domestic agricultural marketing policy and foreign exchange policy if China wants to maintain its self-sufficiency policy of grains especially wheat and maize.	B
	• To establish new policies to minimize any adverse impacts of trade liberalization on income and welfare redistribution among subsistent farmers and farmers of grains, edible oil and cotton.	B
Research and Development	• To increase investment in agricultural research and extension.	A
Viet Nam		
Infrastructure	• To upgrade infrastructure.	B
	• To strengthen the banking system.	B
Technology	• To improve processing technology.	A
Human Resources Development	• To improve the technical and managerial capacity of government officers in related fields.	A
Administration	• To reform administrative procedures.	A
Policy	• To ameliorate laws and policies and to adjust to trade liberalization.	A
	• To expand programs for enhancing product quality.	B
	• To reform the state enterprise sector.	A
	• To create more access for private sector in domestic and foreign trade.	B
	• To accelerate agricultural diversification, income generation and poverty alleviation programs in rural areas.	B

* The priority of the recommendations: A = Immediate; B = Intermediate; and C = Long-term.

Appendix 3

Data in the analyses in Section 7.3 (excluding the FAO statistical data)

Farmgate price

Rice: Republic of Korea

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	42,754	42,795	46,325	47,248	50,033	52,470	54,096	66,055	66,908	68,032
Feb	43,029	43,881	46,936	47,199	50,190	52,614	54,121	65,964	67,008	68,426
Mar	43,231	44,412	47,148	47,388	50,485	52,198	53,975	65,831	67,282	68,582
Apr	43,243	45,345	47,301	48,365	51,559	52,297	54,042	67,577	67,538	68,983
May	43,061	46,896	47,653	49,021	50,981	52,922	54,529	68,694	67,953	69,044
Jun	43,050	47,907	47,805	50,276	50,756	53,417	54,570	68,322	68,419	69,771
Jul	42,994	48,645	47,688	50,276	50,829	53,378	55,403	68,218	68,987	72,749
Aug	42,031	48,152	47,851	50,286	50,886	53,157	55,635	67,741	69,664	75,877
Sep	41,426	47,615	48,093	50,293	50,921	52,649	56,011	67,562	69,175	75,324
Oct	42,105	46,903	47,432	49,592	50,823	52,342	56,032	67,298	68,463	73,908
Nov	43,025	45,651	47,259	49,540	51,272	52,054	59,224	67,156	67,944	73,699
Dec	42,956	46,034	47,325	49,854	51,746	52,333	63,453	67,068	67,704	73,830

Note: Traditional rice: Polished, Medium quality, Won/Package (40 kg).
Source: National Expert of Republic of Korea.

Rice: Malaysia

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
770	769	771	771	772	771	772	771	770	769	769	769	769	769	769	769	769

Note: Paddy, Rm/ton.
Source: National Expert of Malaysia.

Rice: Indonesia

Month	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Jan	21,046	26,002	26,914	29,689	33,636	37,670	34,293	38,402	51,696	50,672	51,134
Feb	20,700	27,357	26,718	30,129	33,670	38,431	32,595	38,705	53,143	50,748	51,967
Mar	19,042	25,117	25,002	28,601	32,576	33,666	30,675	35,957	49,418	48,560	51,655
Apr	17,924	22,311	24,157	27,540	30,152	31,757	29,589	33,214	45,776	48,046	51,738
May	17,968	21,432	24,324	27,309	29,531	31,862	29,057	34,037	45,684	48,521	51,826
Jun	17,899	21,946	24,526	27,981	30,039	32,381	29,182	32,205	44,885	48,701	52,137
Jul	18,245	23,315	25,004	28,339	31,090	32,585	29,938	39,292	45,423	48,944	53,482
Aug	18,945	24,367	25,079	28,381	31,970	33,230	30,763	42,306	45,650	48,435	56,456
Sep	21,109	25,132	25,596	29,085	33,764	33,320	31,831	43,076	47,947	48,721	57,788
Oct	21,561	26,424	27,590	29,891	35,091	33,483	32,949	44,334	49,265	48,921	59,764
Nov	23,590	26,926	28,100	31,373	35,519	33,734	35,390	47,300	50,344	49,391	62,717
Dec	24,717	27,055	28,733	33,149	36,190	34,122	36,643	48,727	50,581	50,067	-

Note: Paddy, IR 36, West Java, Rp/100 kg.
Source: BPS b.

Appendix 3

Rice: The Philippines

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	3.41	4.54	4.96	4.37	4.94	5.70	5.83	8.78	7.58	8.07
Feb	3.57	4.71	4.90	4.40	5.11	5.88	5.91	9.05	8.09	8.14
Mar	3.65	4.71	4.65	4.52	5.18	5.68	6.33	8.84	8.12	8.19
Apr	3.90	4.76	4.68	4.65	5.27	5.85	6.82	9.03	8.04	8.33
May	3.88	4.77	4.69	4.94	5.35	5.90	7.14	9.02	8.14	8.71
Jun	3.95	4.83	4.67	5.05	5.54	6.11	7.46	8.78	8.23	8.63
Jul	4.31	4.96	4.84	5.31	5.67	6.34	7.60	8.71	8.58	8.91
Aug	4.43	4.85	4.92	5.32	5.95	6.39	8.40	8.11	8.54	8.94
Sep	4.25	4.63	4.63	5.11	5.90	6.02	8.16	6.99	7.88	8.05
Oct	4.05	4.66	4.33	4.65	5.21	5.60	7.95	7.06	7.48	7.38
Nov	4.26	4.68	4.19	4.64	5.29	5.68	7.65	6.91	7.30	7.27
Dec	4.49	4.72	4.30	4.74	5.34	5.76	8.01	7.15	7.72	7.77

Note: Paddy (rough rice), Pesos/kg.
Source: National Expert of the Philippines.

Rice: Thailand

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	3,896	3,846	3,780	3,759	3,275	4,046	3,619	4,738	5,335	7,063
Feb	4,006	3,998	4,078	3,817	3,299	4,137	3,729	4,870	5,333	7,114
Mar	4,063	4,022	3,977	3,837	3,228	3,898	3,741	4,920	5,358	6,548
Apr	4,169	3,923	3,879	3,851	3,007	3,663	3,771	5,026	5,478	6,420
May	4,375	3,758	3,951	3,870	2,922	3,708	3,843	5,246	5,387	6,467
Jun	4,732	3,808	4,121	3,915	2,951	3,751	4,177	5,458	5,555	6,634
Jul	5,095	3,782	4,326	4,155	2,977	3,776	4,702	5,483	5,868	6,914
Aug	4,981	3,876	4,825	4,156	3,060	3,894	4,949	5,546	6,134	7,074
Sept	4,959	3,827	4,586	3,972	3,069	4,009	4,891	5,895	6,030	7,325
Oct	4,924	3,761	4,635	3,848	3,227	3,920	5,160	5,973	5,920	6,827
Nov	3,900	3,567	3,966	3,505	3,692	3,814	4,580	5,638	5,433	5,807
Dec	3,741	3,310	3,704	3,523	3,877	3,628	4,443	5,681	6,075	5,598

Note: Rice, 5% broken, Baht/ton.
Source: National Expert of Thailand.

Rice: Pakistan

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989
Basmati (Rs/100 kg)	2,000	2,350	2,450	2,000	2,525	2,875	2,800	3,500	3,375
Non-Basmati (Rs/100 kg)	1,300	1,450	1,550	1,600	1,650	1,500	1,325	1,775	1,850
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998
Basmati (Rs/100 kg)	3,400	3,550	3,850	4,725	4,825	4,750	5,850	7,075	9,375
Non-Basmati (Rs/100 kg)	1,775	2,100	2,550	2,950	2,575	3,400	4,650	4,325	4,375

Note: Both paddy rice in Punjab. Non-Basmati rice is IRRI type.
Source: National Expert of Pakistan.

Rice: China

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Indica Paddy	484	553	732	1011	760	679	612	770	1,186	1,813	1,678	1,314	1,272
Japonica Paddy	507	612	741	1046	876	785	756	878	1,395	1,970	1,986	1,555	1,501

Note: Free Market, Yuan/ton.
Source: National Expert of China.

Maize: Indonesia

Month	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Jan	14,678	21,291	16,763	20,245	23,199	26,353	21,215	29,766	40,026	46,723	55,818
Feb	14,553	19,534	16,261	20,437	22,925	23,833	21,720	30,436	37,972	46,574	55,795
Mar	14,571	18,397	16,783	21,185	22,407	23,173	22,684	29,170	35,713	47,468	56,900
Apr	14,970	18,611	17,636	22,109	22,210	23,607	23,385	31,104	37,209	51,489	60,007
May	15,524	18,808	18,361	22,197	22,721	23,996	25,132	33,489	38,326	59,294	60,457
Jun	15,959	18,548	19,477	22,737	23,882	24,106	26,532	35,013	39,111	61,838	60,118
Jul	16,370	19,882	20,217	22,805	24,741	24,065	27,936	37,951	40,152	61,523	60,353
Aug	16,611	19,751	21,228	22,390	27,124	24,292	29,592	38,038	40,461	59,554	62,218
Sep	18,403	19,670	22,481	23,187	29,885	23,888	30,078	38,255	43,220	58,089	65,304
Oct	20,879	19,363	22,685	22,804	30,205	23,676	30,499	37,872	43,501	58,577	68,660
Nov	22,526	18,170	22,152	23,263	29,758	22,859	30,340	37,547	44,202	57,610	71,846
Dec	21,794	17,078	21,056	23,400	28,092	21,270	29,961	37,453	43,954	55,628	-

Note: Yellow maize, East Java, Rp/100 kg.
Source: BPS b.

Maize: The Philippines

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	3.19	5.33	3.93	4.37	4.82	5.02	6.42	6.87	6.64	5.90
Feb	3.53	5.31	3.63	4.32	4.73	5.05	6.43	6.84	6.65	5.92
Mar	3.76	4.81	3.42	4.73	4.70	4.94	6.70	6.87	6.62	5.87
Apr	4.11	4.78	3.36	4.83	4.79	5.40	6.71	6.62	6.75	5.84
May	4.08	4.79	3.53	5.39	4.51	5.06	6.36	6.42	6.39	6.28
Jun	3.85	5.10	3.60	5.89	4.59	5.12	6.85	5.64	6.16	6.95
Jul	4.10	4.58	3.65	6.98	4.55	4.65	5.63	5.11	5.69	7.52
Aug	4.18	3.74	3.79	4.98	4.54	4.40	5.37	5.51	5.69	5.98
Sep	4.42	3.62	3.72	4.32	4.57	4.34	5.53	5.69	5.59	5.32
Oct	4.53	3.99	3.85	4.75	4.34	4.54	7.22	5.70	5.40	4.85
Nov	4.55	4.29	3.78	4.63	4.58	4.57	6.76	5.38	5.29	4.91
Dec	4.60	3.46	4.15	4.56	4.54	5.06	6.46	5.59	5.60	4.43

Note: Yellow maize, Pesos/kg.
Source: National Expert of the Philippines.

Maize: Thailand

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	2,820	2,970	2,460	2,890	2,710	3,030	3,440	4,440	3,840	4,810
Feb	2,850	3,040	2,610	3,090	2,680	3,000	3,520	4,540	3,760	5,050
Mar	2,870	3,100	2,700	3,340	2,620	2,990	3,570	4,780	3,810	5,000
Apr	2,850	2,960	2,580	3,400	2,570	2,960	3,710	4,960	4,010	4,870
May	2,800	2,930	2,760	3,000	2,780	(3,045)	(3,770)	5,160	4,000	5,240
Jun	(3,120)	(2,885)	(2,810)	3,000	2,870	3,130	(3,830)	5,200	3,890	5,340
Jul	3,440	2,840	2,860	(3,150)	2,840	3,120	3,890	4,330	3,960	5,440
Aug	3,000	2,600	2,650	3,300	2,970	3,190	3,320	3,810	4,260	4,700
Sept	2,820	2,310	2,660	3,060	2,830	2,710	3,410	3,970	4,450	3,820
Oct	2,810	2,380	2,620	2,570	2,650	2,560	3,870	4,050	4,360	3,710
Nov	2,940	2,530	2,750	2,650	2,730	2,820	4,320	3,960	4,180	3,460
Dec	2,980	2,390	2,800	2,660	2,780	3,010	4,380	3,850	4,130	3,380

Note: Baht/ton, Figures with parenthesis are estimated by the authors.
Source: National Expert of Thailand.

Appendix 3

Maize: Pakistan

1981	1982	1983	1984	1985	1986	1987	1988	1989
1,823.85	2,265.075	2,035.575	2,145.15	2,179.125	2,356.875	2,245.725	3,270.6	3,055.5
1990	1991	1992	1993	1994	1995	1996	1997	1998
3,022.65	3,676.95	4,629.825	3,905.55	4,578.75	5,671.8	5,583.825	7,099.875	7,684.425

Note: Punjab, Rp/100kg.
Source: National Expert of Pakistan.

Maize: China

1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
453	503	571	782	690	596	628	731	1,009	1,580	1,487	1,156	1,274

Note: Free Market, Yuan/ton.
Source: National Expert of China.

Soybean: Indonesia

Month	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Jan	61,345	74,541	68,549	80,335	89,628	94,765	83,806	111,253	123,533	115,257	134,991
Feb	62,087	76,621	67,583	84,014	90,103	94,130	91,332	112,755	123,879	115,314	137,137
Mar	63,298	77,464	67,738	86,938	90,517	92,322	100,611	111,041	119,841	120,273	141,909
Apr	64,488	79,687	69,296	90,720	93,740	94,926	100,058	113,340	118,822	124,615	141,143
May	65,449	77,926	69,428	87,989	94,865	89,847	98,457	112,977	116,838	123,182	137,629
Jun	65,135	70,835	68,470	82,991	91,744	84,717	96,537	109,938	109,068	122,726	134,711
Jul	63,793	71,444	68,278	80,941	88,340	82,794	97,338	110,652	105,687	123,720	135,721
Aug	64,992	70,601	70,401	82,293	90,434	83,200	99,051	112,113	104,863	123,868	138,137
Sep	66,253	69,260	72,386	82,795	91,691	82,176	99,755	110,252	107,075	124,971	139,864
Oct	67,181	67,085	73,168	82,265	91,095	80,599	101,660	118,025	108,082	127,445	145,738
Nov	70,130	67,460	74,858	83,236	92,534	79,760	105,584	119,075	111,151	128,325	156,494
Dec	71,792	68,769	79,993	85,933	94,199	81,914	108,752	121,516	113,163	131,199	-

Note: East Java, Rp/100 kg.
Source: BPS b.

Soybean: Thailand

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	9,010	7,180	7,310	8,130	7,910	8,350	8,100	8,290	8,780	12,270
Feb	9,140	7,280	7,480	8,210	7,980	7,750	7,590	8,400	(8,670)	11,900
Mar	8,740	7,300	7,560	7,870	8,020	8,390	7,780	9,250	8,560	11,420
Apr	9,570	7,100	7,280	8,120	7,930	8,070	7,710	9,710	8,400	10,520
May	9,220	7,270	7,330	8,090	7,790	8,030	7,720	9,870	8,610	10,800
Jun	8,000	7,310	7,140	7,800	7,500	8,010	7,780	8,750	7,850	11,250
Jul	8,260	7,000	(7,245)	8,300	(7,470)	(7,720)	(7,570)	7,000	(7,705)	(11,160)
Aug	7,780	6,890	7,350	7,500	7,440	7,430	7,360	8,800	7,560	11,070
Sept	7,580	7,690	7,850	7,720	7,790	7,090	7,700	8,830	8,890	9,750
Oct	7,610	7,540	7,540	7,660	7,640	8,030	8,510	9,150	9,850	9,760
Nov	7,090	6,830	7,820	7,580	8,250	7,960	8,730	8,410	10,160	9,940
Dec	7,180	7,100	7,750	7,310	8,430	8,670	8,390	8,640	10,530	10,350

Note: Baht/ton, Figures with parenthesis are estimated by the authors.
Source: National Expert of Thailand.

Soybean: China

1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
1001	1102	1296	1785	1591	1493	1806	2206	2451	2711	3212	3418	3079

Note: Free Market, Yuan/ton.
Source: National Expert of China.

Palm Oil: Malaysia

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	8.76	5.84	8.18	8.61	9.02	8.57	14.28	11.98	13.37	23.88
Feb	8.77	5.73	7.92	8.47	9.46	8.76	15.07	11.90	13.70	23.08
Mac	8.77	6.07	7.98	8.88	9.20	9.07	15.65	11.66	12.72	22.71
April	8.69	5.87	6.97	8.77	8.82	9.84	13.88	12.38	12.94	23.70
May	9.02	6.04	7.00	8.33	7.88	10.92	12.98	12.86	13.03	25.40
Jun	8.32	5.89	6.77	8.63	7.49	11.40	12.88	11.89	11.80	23.76
July	6.88	5.92	7.47	8.36	7.37	10.89	13.60	10.92	11.77	24.72
Aug	6.21	5.81	7.69	7.78	6.78	12.77	13.77	11.49	12.14	25.08
Sept	6.44	5.79	7.30	8.07	6.55	13.26	13.13	11.88	13.82	24.38
Oct	6.73	5.91	7.81	8.22	5.69	12.96	13.78	11.48	16.26	23.73
Nov	6.10	6.84	7.98	8.84	6.31	15.42	14.09	11.82	16.55	24.37
Dec	5.46	7.92	8.11	8.74	7.78	15.84	13.60	12.41	18.77	23.11

Note: Fresh fruit bunches (1% extraction).
Source: National Expert of Malaysia.

Consumer Price Index: Republic of Korea

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	66.2	71.1	77.6	83.6	87.4	93.0	97.8	102.5	107.3	116.2
Feb	66.5	71.6	78.7	84.2	88.0	94.0	98.2	102.9	107.9	118.2
Mar	67.0	72.3	79.6	85.0	89.1	94.8	99.2	103.6	108.3	118.0
Apr	67.3	73.1	80.0	85.6	89.6	95.0	99.8	104.3	108.8	118.4
May	68.1	73.9	80.2	86.1	89.9	95.0	100.0	104.9	108.9	117.8
Jun	68.2	74.3	80.8	86.2	90.4	95.7	99.7	104.9	109.1	117.3
Jul	68.2	74.5	81.3	86.6	90.3	96.5	100.0	105.4	109.3	117.3
Aug	68.7	74.8	81.9	86.8	90.6	97.3	100.6	105.9	110.1	117.7
Sep	69.3	75.3	82.4	87.0	91.0	97.0	101.5	106.1	110.6	118.2
Oct	69.4	75.5	82.5	87.0	91.4	96.7	101.0	106.1	110.6	118.6
Nov	69.6	75.6	82.9	86.5	91.3	96.8	100.8	106.1	110.7	118.2
Dec	69.5	76.0	83.0	86.8	91.8	96.9	101.5	106.5	113.5	118.0

Note: 1995 = 100.
Source: National Expert of Republic of Korea.

Consumer Price Index: Malaysia

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
72.9	8.0	84.6	87.7	91.2	91.5	92.2	92.4	94.8	97.4	100.0	104.4	109.3	113.2	117.4	123.6	128.0

Note: 1990 = 100.
Source: National Expert of Malaysia.

Consumer Price Index: Malaysia

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	82.03	84.07	87.22	91.06	95.14	98.60	102.10	105.50	108.90	112.60
Feb	82.09	84.58	87.65	91.40	95.40	99.60	102.70	106.20	109.50	114.30
Mac	82.09	84.58	87.82	91.57	95.57	99.30	102.60	105.90	109.30	114.90
April	82.15	85.01	88.42	92.33	95.83	99.30	102.60	106.30	109.10	115.20
May	82.40	85.18	88.84	93.19	96.17	99.40	103.20	106.90	109.60	115.50
Jun	82.40	85.09	89.44	93.27	96.42	99.30	103.20	107.10	109.50	116.30
July	82.71	84.84	89.10	93.53	96.85	99.90	103.40	107.30	109.60	116.00
Aug	82.77	84.84	89.35	93.95	96.59	100.10	103.70	107.30	110.90	116.10
Sept	82.95	85.18	89.10	93.95	96.68	100.60	104.00	107.70	110.20	116.30
Oct	83.02	85.60	89.35	93.70	96.93	100.80	104.20	107.70	110.60	116.40
Nov	83.45	86.29	89.86	94.63	97.53	101.30	104.70	108.20	111.00	117.20
Dec	83.70	86.88	90.63	94.97	98.21	101.60	104.90	108.40	111.50	117.20

Note: 1994=100.
Source: National Expert of Malaysia.

Appendix 3

Consumer Price Index: Indonesia

Month	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Jan	27,624	30,175	31,920	34,000	11,790	12,920	14,180	15,070	16,510	18,170	19,160
Feb	28,028	30,334	32,320	34,340	11,820	12,950	14,180	15,330	16,720	18,480	19,360
Mar	27,949	30,350	32,390	34,200	11,830	13,030	14,420	15,440	16,820	18,360	19,340
Apr	27,975	30,570	32,900	10,960	12,050	13,150	14,440	15,500	17,100	18,510	19,440
May	28,492	30,850	33,110	11,020	12,070	13,170	14,440	15,560	17,190	18,520	19,480
Jun	28,579	30,970	33,040	11,160	12,120	13,250	14,570	15,580	17,210	18,510	19,450
Jul	28,689	31,320	33,190	11,410	12,350	13,280	14,620	15,790	17,340	18,630	19,580
Aug	28,845	31,440	33,220	11,480	12,590	13,300	14,660	15,930	17,390	18,630	19,750
Sep	29,049	31,430	33,290	11,530	12,600	13,330	14,740	16,020	17,460	18,680	20,000
Oct	29,447	31,550	33,540	11,650	12,700	13,380	14,800	16,160	17,570	18,750	20,400
Nov	29,963	31,690	33,710	11,690	12,840	13,420	14,800	16,230	17,640	18,860	20,740
Dec	30,075	31,760	33,700	11,700	12,860	13,510	14,880	16,320	17,780	18,960	-

Note: Jan. 1987 - Mar. 1990 (April 1977 - March 1978 = 10,000).
April 1990 - Nov. 1997 (April 1989 - March 1989 = 10,000).
Source: BPS a.

Consumer Price Index: The Philippines

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	60.4	68.6	78.1	85.4	90.4	98.4	104.4	118.7	122.4	128.3
Feb	60.6	68.5	79.4	85.4	90.4	98.3	104.6	119.5	122.3	129.8
Mar	60.5	68.6	79.9	85.5	90.3	98.2	104.5	119.5	123.0	130.8
Apr	61.1	68.9	80.4	85.6	90.4	98.5	105.0	119.7	123.1	131.9
May	61.9	69.5	80.7	86.5	90.5	99.1	106.1	120.0	123.3	134.3
Jun	62.7	70.2	81.3	87.3	91.1	99.5	107.0	120.3	124.3	136.9
Jul	63.6	77.1	82.2	88.1	92.6	100.3	108.0	120.5	124.4	136.8
Aug	65.3	71.4	83.6	88.7	93.2	101.4	110.7	121.9	125.2	137.3
Sep	65.9	72.3	84.6	89.9	94.9	101.6	114.5	121.4	126.0	137.8
Oct	66.4	73.0	84.1	89.9	95.8	101.7	114.4	121.3	126.3	138.7
Nov	67.0	73.9	84.6	90.1	95.9	101.5	114.4	120.8	126.7	142.1
Dec	68.0	70.7	84.9	90.0	96.5	101.6	114.8	121.4	127.2	141.4

Note: Food, beverages and tobacco (1994 = 100).
Source: National Expert of the Philippines.

Consumer Price Index: Thailand

Month	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	76.7	81.0	86.0	90.3	92.9	97.4	102.1	109.6	114.4	124.2
Feb	77.6	81.8	86.6	90.6	93.6	97.8	102.5	110.1	114.9	125.1
Mar	77.8	82.2	86.5	90.4	93.6	98.3	102.9	110.5	115.5	126.5
Apr	78.0	82.7	87.8	90.7	94.4	98.5	103.8	111.0	115.7	127.4
May	78.6	83.2	88.4	92.1	94.6	99.6	104.9	111.4	116.2	128.1
Jun	78.9	83.4	88.5	92.5	95.0	100.2	105.6	111.5	116.4	128.8
Jul	80.0	83.6	88.2	92.7	95.6	100.3	106.0	111.7	117.2	128.9
Aug	80.7	83.8	89.0	93.5	95.8	100.8	106.9	112.8	120.3	129.4
Sept	81.2	84.3	89.8	93.6	96.7	101.8	108.0	113.0	120.8	129.2
Oct	81.7	85.9	90.5	93.4	96.6	102.2	108.9	113.6	121.8	129.0
Nov	81.6	86.3	90.2	92.9	96.3	101.6	108.9	114.1	122.8	128.6
Dec	81.2	85.9	89.9	92.6	96.8	101.4	108.9	114.1	122.8	128.1

Note: Whole country (1994=100).
Source: National Expert of Thailand.

Consumer Price Index: Pakistan

1981	1982	1983	1984	1985	1986	1987	1988	1989
100	111.1	116.29	124.76	131.83	137.57	142.52	151.49	167.23
1990	1991	1992	1993	1994	1995	1996	1997	1998
177.33	199.78	220.92	242.43	269.98	305.12	338.05	377.94	405.37

Note: 1981 = 100.
Source: National Expert of Pakistan.

Consumer Price Index: China

1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
106.1	112.7	132.4	157.9	165.1	168.9	176.8	201	248	291.4	314.4	322.3	319.1

Note: Rural (1981 = 100).
Source: National Expert of China.