No.

THE PROJECT STUDY

ON

PRESENT STATUS OF RICE SUPPLY-DEMAND

IN ASEAN + 3 (Japan, Korea, China)

FINAL REPORT

(MAIN REPORT AND COUNTRY REPORT)

MARCH 2002

JAPAN INTERNATIONAL COOPERATION AGENCY

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Present Status of Rice Supply – Demand
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MAIN REPORT

AND

COUNTRY REPORTS

March 2002

Japan International Cooperation Agency (JICA)

Composition of the Reports

Report	Language
Main Report	Japanese
Main Report and Country Reports	English

Name of the Countries

Names used in the Report	Formal name
Brunei	Negara Brunei Darussalam
Cambodia	Kingdom of Cambodia
China	People's Republic of China
Indonesia	Republic of Indonesia
Japan	Japan
Korea	Republic of Korea
Laos	Lao People's Democratic Republic
Malaysia	Malaysia
Myanmar	The Union of Myanmar
Philippines	Republic of the Philippines
Singapore	Republic of Singapore
Thai	Kingdom of Thailand
Vietnam	Socialist Republic of Viet Nam

Currency Equivalent

(per 1 US$, as of February 2002)

3,950 Riel (Cambodia)
40.03 Baht (Thailand)
50.87 Peso (Philippines)
1295 Won (Korea)
735 Kyat (Myanmar, parallel rate)
10,200 Rupee (Indonesia)
130 Japanese Yen

PREFACE

In Asian countries, large number of people is engaged in rice production. Furthermore, rice is very important as a main commodity.

The East Asian (ASEAN+3) countries are major rice producers in the world. These countries account for about 80% of rice production, 75% of rice consumption, 57% of rice trade and 55% of rice reserve (average level of rice reserve is about 4 months of consumption) in the world.

Appropriate level of rice reserve and proper management system would be effective in stabilizing price against the fluctuation due to supply-demand imbalance in the market economy. Increase in rice production and rice stock in these years lowered the international rice price. Consequently, it led to the decrease in income of small-scale farmers' and poverty of rural residents arises in the ASEAN countries.

With background of this world rice situation, the Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry Plus 3 (SOM - AMAF+3), in April 2001, reached the following agreements: 1) Alleviating poverty and strengthening food security in the Asian region, 2) Research and development on food, agriculture fisheries and forestry, 3) Human resource development in food, agriculture fisheries and forestry, 4) Coordination and cooperation in international and regional issues in food, agriculture, fisheries and forestry and 5) Agriculture information networking and so forth. Regarding the strengthening the food security in the ASEAN region among these agreements, ASEAN+3 and the ASEAN secretariat entrust the coordination of the "Feasibility Study on Food Security Cooperation and Rice Reserve Management System in East Asia" to the Thailand Ministry of Agriculture and Cooperatives. Then, the Government of Thailand requested to the Government of Japan for support in implementation of the development study with the object of reviewing and strengthening the rice reserve system in the East Asian (ASEAN+3).

Based on the request from the Government of Thailand, the project study is object to collect/review the current status/trend of rice supply-demand, the policy of rice reserve and rice trade, and the current issues in each Ease Asian countries. Further, it is object to provide the fundamental information and data to the succeeding development study.

The study team held discussions with the officials concerned of the Government of the ASEAN +3 countries, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the succeeding study and to the enhancement of friendly relations between Thailand and Japan.

This project study was conducted by Overseas Merchandise Inspection Co., Ltd.

I wish to express my sincere appreciation to the officials concerned of the Government of Thailand and other ASEAN +3 countries for their cooperation extended to the study.

Ryuzo NISHIMAKI
Managing Director
Agriculture, Forestry and Fisheries
Development Study Department
Japan International Cooperation Agency (JICA)

March 2002

Mr. Ryuzo NISHIMAKI
Managing Director
Agriculture, Forestry and Fisheries
Development Study Department
Japan International Cooperation Agency

Dear Sir,

Letter of Transmittal

We are pleased to submit the final report for the Project Study on Present Status of Rice Supply-Demand in ASEAN + 3 (Japan, Korea, China). This report presents the result of all works performed in both the ASEAN +3 countries and Japan during the period of January 2002 to March 2002.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of your Agency, the Ministry of Agriculture, Forestry and Fisheries of the Government of Japan for the courtesies and cooperation kindly extended to our team.

We also wish to express our hearty appreciation and gratitude to the officials concerned of Thailand office of your Agency, the Ministry of Agriculture and Cooperatives of the Government of Thailand and other authorities concerned for their cooperation and assistance extended to our team during field surveys in the ASEAN +3 countries.

Very truly yours,

山崎 勇

Isamu Yamazaki
Team Leader
The Project Study on Present Status of Rice Supply-Demand in ASEAN + 3 (Japan, Korea, China)

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PART I

MAIN REPORT

Executive Summary

Rice market in East Asia is undergoing a major transition from a controlled environment to a market-based environment. This transition will have a significant impact on the international rice market.

The production of rice in this region has reached its historical high of 400 million tons in 1998/1999. Many countries have graduate from an importing country to an exporting country. The transition of China, Vietnam, Cambodia and Lao from a control system to a market system is a crucial development because these are all potential exporter of rice. China's committed to import 3.5 million tons of rice as new member of WTO.

Consumption of rice in the region does not grow as fast as production. Income increase and increase in urbanisation in East Asia slow down the pace of rice demand expansion. However, total consumption of rice still go up with the population increase. There are three types of rice consumed in this region - short grain (Japonica), long grain (Indica) and glutinous rice.

As a result, the level of stock current held in this region is very high, an average of 3.1 months of consumption compared to the 1.5 months of consumption recommended by FAO. The decision to hold stock is taken independently by each country - no coordination. This is because "food security" is a national policy.

The world trade in rice is a residual mechanism of the domestic market. Rice trade, especially, the quantity of import, is subject to government control. However, most governments now allow importers to manage the import process themselves. The volume of rice trade has gone up from the 11-14 million tons in the 1970s and 1980s to 19-26 million tons in late 1990s. However, there are more low quality rice coming into the market. Consequently, the world price of rice becomes lower.

Intra-East Asian trade in rice is about 36 percent. Thailand and Vietnam are the two most active suppliers. Most of the rice exports from Thailand to East Asian countries are high quality fragrant rice, e.g., to Brunei D, Singapore and China. The region also supplies lower quality rice to the other countries.

The supply chain of rice is adjusting to meet the new environment at the same time more sophisticate market instruments are enhanced by the development in the information technology. The internal market in each country has also become more integrated. New and advance marketing tools will be brought to bear with this new environment. There is a trend that a market base system will become the norm of the rice market both at the national and international level.

One particular function that the market mechanism still cannot handle is the holding of emergency reserve. Maintenance of an emergency reserve is important for the East Asian region because many countries is prone to natural disasters: Flood (China, Vietnam), (forest) fire (Indonesia and Thailand), typhoon (Philippines and Vietnam) and insect and pest (all countries). Among the ASEAN countries, the security reserve for rice was established since 1979. However, it is not very effective because rice reserve strategy in each member country is a nationally oriented.

Given the current trend in the production, consumption and stock level in East Asia, there is an urgent need for coordination in the industry. The market mechanism will play more and more role. There is a need to closely monitor the development to ensure the efficient development of the rice market in the region and develop instrument to complement this mechanism.

The study shows that the rice reserve in each country is kept for domestic purpose only. This has led to an overstock of rice in the region because individual country tends to hold higher amount of stock than what is really needed - a risk averse behavior. This has become a more important issue for consideration with a large country like China entering the arena. Improvement in the coordination of managing the rice reserve will benefit all parties because it will bring more stability to the market.
There are a lot to be learnt from the ASEAN Emergency Rice Reserve under the ASEAN Food Security Reserve. At the minimum an East Asia Rice Reserve System will give the policy maker an opportunity to discuss this sensitive issue. It will be a platform to discuss measures to take advantage of the synergy arises from the economy of scale in stock maintenance and the coordination in other aspects in the rice market. The weakness of ASEAN Emergency Rice Reserve are in the implementation mechanism. This will be an area that the subsequent phases of this study should focus.

Aside from the direct benefit from better coordinating in managing the challenges from the emergency situation, the cooperation activities in East Asia Rice Reserve System could open up other areas of cooperation between ASEAN and Northeast Asian countries.

In the light of the development in the international market, it is important to position East Asian Rice Reserve to benefit from the WTO and also to yield suggestion to be taken into consideration in the new round of negotiation in WTO.

Section 1: Background

At the AMAF +3 Meeting in October 2001, the Ministers recognized the need for an East Asia Rice Reserved System and agreed on the study on this mechanism [1]. The Term of Reference (TOR) of this study appears in the Study Plan appended as Appendix 1. This Report is the first of the 3 stages indicated in the TOR. The objective of this stage is to review the current status of the rice production, consumption, trade, stock holding behavior and related government policies in these countries and an assessment of the ASEAN Food Security Reserve.

Each country maintains some inventory of rice at different level in the marketing chain - farmers, miller, middlemen, and consumer. It is an instrument in the rice market that help the market to function property. However, the quantity of stock held in a country may not be sufficient for emergency situation such as a natural disaster or war. In order to ensure the availability of this staple grain, most governments in Asia maintain some rice stock for this purpose.

If all countries were to hold stock to prevent the food insecurity, the quantity of stock held would be larger than what the group could do together. Therefore, pooling of the stock would reduce the size of stock to be held by the group and the cost per country.

The current rice market condition has been influenced by 4 main factors:

1. Production increase in last half of 1990s.

   The production of rice in the world market has increased steadily from 1992 to 1998 when the output of rice hit the historical peak of 408 million tons in 1998 (see Table 1). Since then the level of output has declined slightly. The increase comes from the increase in yield and the introduction of new land area but most importantly good climatic condition.

   This increase in rice production has resulted in the building up of rice stock around the world and the depression of rice price. The stock of rice went up to million tons in 1999 an equivalent of 2 months consumption. This represents more than twice the amount of the total world rice trade.

2. Changes in rice consumption behavior

   Rice consumption behavior has been changing with the rapid increase in income and degree of urbanisation during the 1990s. There is a clear pattern of reduction of consumption per capita when income increases. The consumption of meat, vegetable and fruits increase to take up the share of expenditures on foods. Asian cities are becoming more and more cosmopolitan. The consumption of bread, potato chips etc has increased and the consumption of rice has declined.

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[1] For the purpose of this study, East Asia refers to ASEAN+China, Japan and Korea or ASEAN+3. Therefore, this study will not cover other countries such as Hong Kong, Taiwan, Macau, and North Korea although they are geographically part of East Asia.

3. Trade liberalisation efforts

   Most of the countries are member of WTO. The commitment made by each country is another factor that dominate the international rice market environment. Importing countries are required to open up the market for trade. This has resulted partly in the expansion of the world trade in rice.

   At the same time, the commitment to curtail agricultural subsidies has also reduced the production in a few countries, especially, the developed countries who are put large subsidies on rice production to pursue self-sufficiency.

4. Market evolution in each country

   Closely related to the trade liberalisation effort is the transition of the centrally control economies into a market oriented economies since mid-1980s and especially in late 1990s. This movement has reduced the control on their rice trade and allows the product to move more freely with and outside of the country. China and Vietnam in particular are the example of this transition.

   While the good weather is a temporary phenomenon and seems to reverse itself this year (2002), other factors continue to generate changes that impact on the structure of the international rice market. Different countries will be at different stage of development in the rice market because they all started from a different base.

   One clear direction that all the countries are moving towards is the closer integration of the global rice market, especially for higher quality rice. More rice will be moved around as the rice market become more and more sophisticated. The future market for rice will play a more and more important role both at both the international and domestic levels (like, sugar, wheat, corn and other grains).

   It is in this new international market environment that the East Asia Rice Reserve will have to prove its worthiness. The challenge is to establish a mechanism that will fit this new market environment.

This review provides an overall status of the rice market situation for these 13 countries with the emphasis on the rice reserve policy and mechanism in each country. This information will be used as a basis to study the possible reserve system in the subsequent stages.

Section 2: Present Production Status

2.1 Output of rice in East Asia

The production of rice in East Asia has increased steadily in the 1980s and expanded at a lower rate in the 1990s. It reaches the peak in 1998/1999 and declined slightly since then mainly because of the reduction in China (See Figure 1). This expansion came mainly as a result of the household output target system in China and Vietnam. As these countries have reached self-sufficiency level and the surplus output become an issue for the government.

There are there main types of rice grown in East Asia: the short grain (Japonica), the long grain (Indica) and glutinous . Essentially all the rice grown in ASEAN and southern part of China are long grain (Indica) rice. But Laos, Cambodia and Northern/'Northeast Thailand produce and consumer glutinous rice. The rice grown in the Japan, Korea and Northern Part of China are short grain (Japonica) rice. However, the information availability was not sufficient to disaggregate the production by types of rice. This information is important in the subsequent discussion on rice reserve.

2.2 Harvested Area and Yield

During the past two decades, there is a small increase in the harvested area increase (from 72 million ha to about 75 million ha) (Figure 2). Most of the additional cultivation areas are taken place in Vietnam, Myanmar, Cambodia and some in Thailand. The push by the government through the household target (e.g., Household Responsibility System in China) in the 1980s has forced a lot of land into rice cultivation, especially in the South. Vietnam, Laos and Cambodia follow the Chinese system but lack the same kind of urgency as the Chinese program.

In recent years, the potential production capacity of rice in some countries have far exceeded the demand, so that efforts are being made to balance the supply and demand through production adjustment and other initiatives.

In particular, as self-sufficiency has essentially been accomplished in China, the current strategy is to withdraw the subsidies given to the production of lower quality rice. This has resulted in the reduction of harvested area. However, the small countries like Laos and Cambodia, there are abundant potential cultivation land which can be brought into rice cultivation. More land will continue to be brought in for cultivation.

The output of rice per hectare is high for Japan and Korea because of the intensity of input use (See Figure 3). Rice yield in China has grown and match that from Japan and Korea. Indonesia also has high yield because of the intensity of cultivation in Java and the push for "self-sufficiency" of the government (through fertilizer subsidies).

2.3 Production Strategy and Policies

Among the East Asian countries, there are 2 steady exporters (Thailand and Vietnam), 4 exporters (Cambodia, China, Myanmar and Laos) and 7 importers (Brunei., Indonesia, Malaysia, Philippines, Singapore, Japan and Korea). This status play an important role in determine the production strategies and policies for the region.

In the 1980s, the main focus of most countries is to increase production either for more export or for increase in self-sufficiency. However, since mid-1990s, especially after 1995 when the increase in output starts to fill up the stockpile, there are significant change in the strategy in many countries that will have a large impact in the international rice market.

The most significant change is the transformation of China, Cambodia, Laos, Myanmar and Vietnam toward a market oriented system for rice. Historically, food security is one of the most important objectives of these countries. This is critical for a large country like China and Vietnam because they cannot depend on import from the small world market to meet their emergency need. For example, in 1985 import 1 percent of China consumption is about 10% of total world rice trade then. If China were to import just 1% of her consumption, it would push up the world rice price substantially. The adoption of a semi-market based system which started in mid-1980s (around 1986) had injected incentive into the system and helped to increase rice production. By allowing the farmer to sell the amount of rice beyond the set target induces the farmer to strive to produce beyond their target. Most countries meet the self-sufficiency objective by early 1990s and poise to become an exporter.

The achievement is supported by the adoption High Yielding Varieties rice and in the case of China also the introduction of hybrid rice variety. These varieties are more input intensive - more fertilizer, pesticide and irrigation are needed. The acquisition of these inputs are made possible by the favorable economic development which generate other income for the farm family and allows them to invest in fertilizer and pesticides.

One drawback of this quantity push strategy is the sacrifice on the quality. Naturally, farmers will produce the high yield but low quality rice to meet the assigned target and produce high quality rice for selling in the market.

The second largest producer of rice in the region is Indonesia. The trend shows an expansion of output in the 1980s through the fertilizer and pesticide support. However, in 1990s, the level of output moves in a narrow range from 48 and 52 million metric tons.

There are some fine-tunings of the policies in the remaining 5 market economies but their impacts is limited. Table 2 provides a snapshot summary the production status and policies of the 13 countries.

The three exporter of rice in ASEAN, namely, Myanmar, Thailand and Vietnam will play an important role in the future of the rice market. The output of Vietnam is expanding very rapidly. Its rich and fertile Mekong Delta is the second largest river delta in East Asia. The output of paddy has reached over 25 million tons in 2000, making Vietnam the third largest producer after China and Indonesia. The economic growth in Vietnam in early1990s also allow the country to lift the ban on rice export and become an important export in the world market.

The output of Myanmar has not increased much during the past 20 years. Given the rich Irrawadi River Delta, the 6 million hectares of land compared to 7.4 million hectares of Vietnam suggests that there are possible expansions of output by Myanmar. Myanmar is a small exporter at the moment. Any additional output beyond the current level will be exported.

The output of rice from Thailand may be reduced in terms of quantity as the emphasis of the farmers are toward higher quality rice which has lower yield. The potential for production expansion is not as good as Vietnam and Myanmar. Rice cultivating area has essentially saturated. The increase in production will have to count on other input, especially, irrigation.

Thailand has moved to become the producer higher quality rice and improving the post-harvest management of in the rice market, from the silo facility to rice milling and packaging of the product. This movement will benefit the rice farmer both in Thailand and in neighboring countries, especially, Laos, Cambodia and Myanmar. As Thailand moves toward the higher value added product, it leaves a vacuum for these countries to fill in. It will also clear the path for the development of the rice market for these countries.

China has now adopted a different strategy. The withdrawal of price subsidy to the "early rice" 2001 is a major move. This will have an impact on the planted area and yield in the coming years. This may reduce the output rice, especially, the lower quality early rice. The output of rice may be reduced.

For the net-importing countries, the change is less dramatic. Indonesia, Philippines, Malaysia are all trying to increase the production and improve the degree of self-sufficiency. This is partly a result of the financial crisis in the late 1990s which slows down the out-migration of workers from the farm sector into the non-farm sector. However, with the resumption of economic growth, the higher wage in the non-agricultural sector will again put pressure on the cost of rice production in these countries.

2.4 Rice Milling

Rice millers are important players in the rice marketing system in each country. Aside from providing the milling service, rice millers also performed many other functions, notably, purchase of paddy from the farmer and village middlemen, stock holding and drying, selling rice and export.

The role of rice mill varies widely across locations in the East Asian countries depending on the availability of transportation and communication system from the farm and to the market and the market environment.

With the improvement in transportation and communication system, the location and size of rice mill have changed across the region. Following patterns of changes can be seen:

a) Expansion of the number of small rice mills to replace villagers pounding tools

As some of the villagers accumulate some wealth, they will invest in a small milling machine to service the village. Farmers will bring their paddy to be process and the miller normally keep the husk, bran and broken rice. In Laos, Cambodia and Vietnam, the number of small rice mill had become popular past few years. In China, the village cooperative or enterprise will invest in such an equipment.

b) Increase in the size and sophistication of modern rice mill

As the transportation improve and the market are more concentrated, it becomes economical to invest in large and sophisticated rice mill, especially near the production area or exporting point. This is the pattern in Thailand, Malaysia, and closer to major city in China.

Large silo or storage facilities are also build side by side with these rice mills to store paddy because storage in the form of paddy is more economical.

2.5 Rice Production Policies

The objectives of rice production in East Asia are: Self-sufficiency, increase income of farmer, generate export revenue and quality improvement.

Self-sufficiency policy is adopted by net importing countries such as, Indonesia, Philippines and China. Malaysia pursues a slightly different strategy, a 65% self-sufficiency. (means that the remaining 35% will be imported). To accomplish this objective, the government would provide input subsidy (e.g., irrigation, fertilizer and pesticide) and price subsidies. High yield rice variety are used to ensure high level of output.

For the low income countries like Laos, Cambodia, Myanmar, Philippines and Vietnam, the poor population grow rice as their main occupation. In order to improve their income, the government subsidizes the production of rice which create employment as well as output.

Rice surplus countries would strive for increase the output and lower the cost in order to generate more revenue for the country. Thailand, Vietnam and Myanmar are major exporters of rice at different stage of production development. Myanmar and Vietnam are exporting lower quality rice which are surplus from the domestic market. It took Thailand many years to pass this stage to emphasis the production of quality product - the fragrant rice".

For the developed countries, e.g., Malaysia, Japan and Korea, more attention is given the quality improvement of rice.

The dynamic of production policy is such that one the self-sufficiency or the country hit the constraint, the country will start to look for higher quality rice. This movement will take sometime because the research to develop an appropriate variety rice takes time. However, in all the East Asia country, there are indigenous high quality rice varieties.

Section 3: Consumption

Global rice consumption rose from 338.2 million tons in 1990 to 401.0 million tons in 2000. ASEAN+3 member countries consume, on the aggregate, 57%, in which China alone consumes 34% and ASEAN consumes around 20%. China, Indonesia and Vietnam are prominent consumers, followed by Thailand, Myanmar and the Philippines. India and Bangladesh are also big rice consumer.

In most rice consuming country, there is very limited substitute for rice as a staple food grain. In the wheat base countries, the consumption of rice is almost nil. In the big countries like China, India and USA, these two main staple food grains are consumed. There are clear demarcation of the wheat consumer (in the north) and rice consumer (in the south). However, with the modernization of consumer, this has been changed. Consumers in the urban area are becoming more balance - consuming more bread in the "rice group" and eat more rice in the "bread group".

Among the East Asian countries, three main types of rice - Long grain rice, short grain rice and glutinous rice - needs to be recognized.

a) Long grain rice is commonly consumed in Brunei, some part of Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Vietnam, Central and Southern Thailand, and South and central China.
b) Short grain rice is commonly consumed in Japan, Korea and Northern China.
c) Glutinous rice is commonly consumed in Laos, North and Northeastern Thailand and some part of Cambodia.

This preference for the type of rice may have an impact of the consideration of the type of the stock held, e.g., for emergency purposes, in each country. It will affect the composition of regional rice reserve.

3.1 Changes in Rice Consumption in East Asia

In the past few years, the consumption of rice in East Asia is changing in both in terms of quantity and quality. A few factors are the cause of this change:

a) Decrease in per capita consumption of rice

As shown in Table 3, there is a general reduction of rice consumption per capita in the region. However, this statistic may not be accurate because of the extraordinary high consumption per capita in Cambodia, Laos, Myanmar and Vietnam.

The most significant change comes from China. The drop in the consumption of rice in China has increased the level of rice stock.

b) Preference for higher quality rice

As income increases and better access to the market, consumers around the region are changing the pattern of consumption from low grade and quality for a higher grade and quality, e.g., from rice with higher percentage of broken rice to 100% whole rice and from normal rice to specialty rice. Consumer in high income country like Japan would look for Koshihikari rice while Brunei and Singapore consumer will look for fragrant rice or Basmati rice. Supermarkets in China now carry fragrant rice.

3.2 Rice Consumption Policies

The objectives of the government in East Asia are: to make rice available, at a reasonably low and stable price and good quality. The degree of government intervention in the rice market to accomplish these objectives is different across the region. (See Table 4)

A few countries (Indonesia, Laos, Myanmar, Philippines) keep the price of rice in the urban area low in order to reduce the cost of living in the urban area, especially, in the capital. Thailand also adopted such policy from 1950s to early 1990s by taxing the export of rice. This may be "practical" politically however, many studies has shown that subsidizing the consumption of rice at the cost of the agricultural sector, especially the rice farmer has in fact dragged the over economic growth.

In a few countries, some civil servants, army and police get part of their income in the form of rice (Cambodia, China, Laos, and Myanmar). The rice distribution under such a scheme is usually has low quality because of there is no incentive to look after the quality of rice in the storage. Such programme is loosing attractiveness and most countries has graduated from it.

Government also controls the consumer price of rice to make it more steady. Given the seasonality of rice crop, the farm price will be fluctuating. There are many market instruments that perform this function. The forward market contract, commodity future market, storage facilities etc, help to smoothen the price of rice within a year. As the market become more sophisticated, this role of government has also reduced.

The trend is to allow the consumer to pay the right price for rice. Government is withdrawing slowing from all the function except the first one - availability. This will be discussed under the Reserve section below.

Section 4: Marketing System for Rice

The marketing mechanism ensures that the appropriate quantity of rice is deliver from the farmer to the consumer. In many countries, the government plays an important role in managing this process by controlling the quantity while in others the price is managed to attain this objective. In a more market, sophisticated market mechanism such as the future market is available to manage price and quantity. In general, the market is becoming more and more sophisticated in each country and in the international market. Governments are allowing the price mechanism to have more and more role.

4.1 Surplus Region to Deficit Region

This is particularly important for the large and medium size (area) countries. Movement of rice within the country is determined by the cost of transportation (and in some cases, government regulation regarding the movement of rice such as in China). The improvement of transportation system will increase the flow of rice and increase the production in the cost-effective region.

In China, the surplus region is in the South (Hunan, Jiangxi etc). As the transportation system improve and the government control of rice movement across provinces were lifted, rice production declines in the coastal provinces and rice were purchased from Jiangxi and other provinces. In Vietnam, the surplus rice from Mekong River Delta in the South can be shipped to the North. But the distance and the quality of the road making the land transportation cost very high.

For the market in transition in Laos and Cambodia, the road network is not good. It is difficult to move products from the surplus region to the deficit region. For many years, the deficit region in the northern part of Laos has to import rice from Thailand. However, there is a surplus production of rice in the south and export into Thailand is quite easy. The same goes for Cambodia and Myanmar. This makes the border trade quite active. (However, these border trade transaction are not recorded because trading of rice is not permitted by law.)

In Myanmar, rice is also moving from the Irrawadi delta to the northern region. The cultivating area in Malaysia is in the Northeast region. In the Philippines, rice is grown in the central region and shipped to the South and the North. In Thailand, the Southern provinces are deficit region. Rice from the Northeast and Central plain are shipped to the South.

More than half of the populations in Indonesia live on Java which made up about 20% of the total land area of the country. Even the soil in Java is fertile, rice output is not enough to feed the population here. Rice has to be brought in from other regions, e.g., Sumatra.

In the developed market, like in Japan and Korea, good transportation system allow the movement of rice from the surplus region to the deficit region. Smaller farmers scatter around the country side and the product can be consolidated through some agents.

As the market become more and more open (less government restrictions), there will be an increase in border trade. The pattern of movement of rice will change toward a more cross border, especially, those that can be connected by land.

4.2 Distribution Channel

The task of bring the rice from the farm to the consumer is mostly done by private business operator. This is the core of the rice market even in the socialist economy. However, the rice wholesalers and retailers are subject to some controls by the government.

There is an interesting contrast between the distribution system used in the big and small country. For example,

- In Brunei., one government agency - the State Store under the Ministry of Finance has to sole responsibility in buying rice. Wholesaler and retailer can buy rice from the State Store and distribute it.
- The movement of rice around in China is a big task. The rice market is still very much a provincial activity. Selling the outside of the province is almost like export because in many instances permit will be needed.

4.3 Market Development and Government Intervention

While the government promote the role of market in moving rice to the all the households, the importance of this commodity has made it necessary for the government to step in to ensure its supply, especially, during the emergency situation. However, once the government step in, there is a tendency where the extent of control become much larger than what is necessary to achieve the initial objective. The market in 13 member of East Asia are at different level of "marketization". They can be roughly classified into 5 groups based on the degree of maturity (where full range of infrastructure and institutions are available to buy and sell any form of rice at any time) and openness (where government interference with price and quantity is absence).

1.	Matured and open market	: Brunei, Singapore
2.	Matured market but government subsidize production and determine rice price	: Japan, Korea, Malaysia
3.	Medium market development and limited government intervention on price and quantity	: Thailand, Cambodia
4.	Medium market development but many Government intervention	: Indonesia, Philippines
5.	Market in transition	: China, Vietnam, Laos and Myanmar

The supply chain of rice starts from the farm and consumer. There are two dimension of rice movement: from surplus to deficit region and from producer to consumer (supply chain management).

While the economy in transition are shredding control and try to implement the market based system, the developed economies are sliding back from the mature and open regime to a more controlled system. In order for the market to function properly aside from the availability of the transportation and other physical infrastructure, the policy regime has to be favorable.

The current trend in policy development shows that more and more rice will be moved by the market force rather than by the guidance of government policy, especially, the movement within the country.

4.4 Price of Rice

The farm price of rice is kept below the market price in two countries - Indonesia and Myanmar. The objective is to keep the price of rice low for the consumer which will lower the cost of living and wages. Such strategy has been practiced in other countries in their earlier stage of development. Thailand, for example, had the export tax on rice during 1950s to 1992 to keep the price of rice low for the consumer.

However, four countries are supporting the price for the farmer in order to induce more production, especially, the net importing countries (Malaysia, Philippines and China). (See Table 5)

While the farm price of rice fluctuates seasonally, the market price of rice for the consumer is usually kept steady (see the discussion on Section 3.2: Rice Consumption Policies).

Section 5: Trade (Import and Export)

The international rice market is characterised by the control of quantity of import by government on the demand side and the excess of domestic production on the supply side. In other words, "food security" is the key driver of market - not the utility and resource costs. This has limited the capability of the rice market to fully function in allocating resources and even to handle the uncertainty of supply questions.

However, it is surprising to see that rice trade has expanded rapidly in the 1990s. The volume of trade ranges from 10 to 14 million tons a year in the 1970s and 1980s. But since 1993, the trade has expanded to peak at about 27 million tons in 1998 - which is about double that in the 1980s. This could be partly due to the devaluation of ASEAN currencies, especially, Thai Baht and Vietnamese Dong, the two major rice exporting countries. Nevertheless, the expansion of export, which currently declines slightly from its peak, may resume its upward trend again.

The region is a next export of rice. In the year 2000, exports of the region is about 12 million tons (or 56% of total world export). Intra-regional trade in rice accounts for 3.4 million tons or 28 % of total regional trade. While some of this will be for the import of short grain (from Japan or USA), a portion of it will be for the long-grain (Thailand, Vietnam and Myanmar).

5.1 East Asia is a net exporter of rice

There are two major world rice exporter in East Asia which makes the group a major player in the world rice market: Thailand and Vietnam. China also exports about 2.9 million tons in 2001. With the resumption of Myanmar in the export arena after many years of absence, the exporting position of the region will be further enhanced. This year (2002), India will also enter the world market making the competition even more challenging.

It should be noted that, as far as short grain is concerned, USA is the low cost large player and it dominates this segment of the market.

5.2 Pattern of Intra East Asia Trade

The volume of trade within the East Asian region has been increasing. The official statistic may not fully reflect the border trade of both paddy and rice along the borders between Cambodia, Laos, China, Myanmar and Thailand.

The Trade Matrix in Table 6 shows the direction of the movement of rice within the region. Figure 4 further illustrates the pattern of trade in the region.

There are border-trade between the border of Cambodia, China, Laos, Vietnam, Thailand. There is no official statistic to confirm the volume of these trade transactions. The trend is that these border transactions will be increasing in the future.

5.3 Trade Policies

(1) Trade Liberalisation Efforts

For the exporting countries, the government would like to have access to the importing country market. Thailand is a member of Cairns Group and pursue this strategy.

The discussion on the production policies suggests that all countries whether net importing or net exporting support the production of rice through various means. The increase in production in the importing country would lead to less deficit (and hence less import) but the increase in the production would lead to more surplus. Therefore, the production strategy adopted is inconsistent and creating problem in the rice market.

(2) Import Control

For the net importer like Brunei, Singapore and the Philippines, the government keeps close control on the import of rice. In the past, a central government agency will have absolute power to buy and sell rice. However, this role has become more and more in the hand of the private sector. The government agencies will determine the amount of import but it is up to the private sector to secure the right quality and price of rice.

For the importing countries, the government will manage the quantity of import in order to ensure that the quantity of supply is adequate to maintain the domestic balance. For Singapore where there is no domestic producer, the government would encourage the price to be as low as possible. For importing country which have domestic rice producer, this proves to be a much more complex task because the control on import is needed to also regulate the domestic price and quantity to prevent it from hurting their domestic producers. All importing countries have some programs (see Rice Production Policies above) to support rice production including maintenance of an attractive farm price.

Government of the exporting countries are trying to help their private sector in promoting the output, e.g., the effort of Thai government to promote Jasmine rice and Pakistan efforts to promote Basmati.

In the 1980, over 90% of world rice import are carried out by the government and 70% of export are conducted by the government. G-to-G transactions are predominant in rice trade transaction. The world rice market is not quite a "market" in that sense. The price of the transaction is determined by using the reference to the free market transaction. There is little room for the market force.

This has changed as the volume of trade has increased in the 1990s. More and more private sectors are the main player behind the government transactions allowing the market force to play more role in determining the price and quantity of each transaction. The international market for rice will become more sophisticated, e.g., with the use of future market and Internet tools, more and more traders can participate in the market under the supervision (not control) of the government.

Such a development would strip many functions away from the government except for emergency reserve.

5.4 World Price

The world price of rice has been declining steadily since 1996. The financial crisis in Asia further weaken the US$ price of rice (See Figure 5). However, after the crisis the price of rice has not improved due to the large increase in production - partly induced by the relatively attractive price of rice.

In a more detail inspection, it is found that the price of rice is fluctuating substantially since August 2000 (US$195/ton) and dipped down to the trough in April 2001 (US$162) and climb up to US$213/ton in September 2001.

With the possible reduction of rice output this year because of possible impact of the El Nino, the price of rice may increase.

Section 6: Rice Stock and Reserve [2]

Rice stock is held by various actors in the marketing chain - farmers, local middlemen, township middlemen, rice mill, wholesaler, retailers, exporters, importers and government. In general, the incentive of holding stock is to make sure that there will be rice available for sale at a higher price in the future. The level of commercial stock held by any party is then determined by the current price and future price and the cost of holding the stock (interest rate, leakage/damage, risk of price uncertainty).

However, rice is a staple food crop in many economies. Its continuous supply is one of the essential duties of the government. Food and Agricultural Organization (FAO) recommended that stock-to-utilization ratio of the world grain reserves should be around 17-18 per cent of the world consumption or about 1.5 months of food consumption. FAO believes that this amount will help avoiding chaotic market prices during crop failure.

The government has many mechanisms to choose from to discharge this responsibility. On one extreme, the government can manage a reserve stock by itself (buy, keep and release). On the other, the government can set a minimum quantity of stock target for different market players (importer, wholesaler and retailers). Each East Asian country is moving from the full government manage system to a more market based system.

6.1 Rice stock in East Asia

It is difficult to get an exact size of rice stock because of the lack of information of rice stock held by various players in the market at a particular point of time. At the same time, rice has been treated as a strategic commodity in many countries and hence the information on its inventory is treated a matter of national security. The stock level in many countries is therefore an estimated number based on production, trade, consumption, other utilization and loss.

The global rice stock based on the USDA data has been increasing in the mid-1990 to reach the all time peak in 1999 at 62.6 million tons or about 15.7 percent of total usage (as shown in Table 1). The USDA data shows that since 1974, the level of stock has been higher than the 1.5 month of consumption. This suggests that the individual country has taken precaution by holding the stock higher than the necessary level.

However, the level of rice stock in East Asia compiled from the country study is over 118 million metric ton (Table 7), almost twice the size of stock indicated by USDA. One of the sources of this discrepancy could be the estimation of the size of stock held by the farmer especially in China.

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[2] The word rice "stock" and rice "reserve" are used interchangeable in some cases. For the purpose of this study, "stock" refers to the inventory kept for commercial purposes and "reserve" refers to stock kept for emergency purposes.

In most East Asia, the largest holder of rice stock is perhaps the rice farmers, especially, in area where access to the market is difficult. Farmers held paddy as a source of food, seed and other direct utilization such as animal feed. Moreover, it is also a stock of wealth which can be converted into cash income and other goods. As such, the quantity of rice stock held by the farmer may be very different from the "commercial" stock of rice held by the middlemen.

Market instruments for the rice market are not well developed although it is evolving rapidly. For example, there is no future market for rice that allows the farmer and other market players to ascertain the price of their product once it is harvested. Such a mechanism allows the farmer to sell rice at a particular price before he harvests the crop. It is like a price guarantee scheme managed used by many governments now. But here the burden of risk is born by the participant in the future market, not the tax revenue. The level of stock kept by the farmer could be reduced as the market becomes more sophisticated.

The existing situation is quite different from the efficient level. Government intervention in the price (farm gate and consumer), distort the foundation of the market based stock system. One of the function of the stock holding to adjust for the uncertainty in the future of supply which will be signaled through the variation in prices. A possible future shortage would trigger a higher future price and induce produce to be drawn into stock now. This will increase the current price and reduce the current consumption. Price control kills this mechanism.

Government officers managing the rice stock are usually risk averse and thus tend to maintain higher level of stock than what would consider to be appropriate. The level of stock in East Asia is about 3.1 months of consumption. This is a very high level of stock, especially for China, which has 5 months of stock (mostly held by farmers). However, this stock has already included the emergency rice reserve.

6.2 Emergency Rice Reserve

FAO recommends a stock of 1.5 months of consumption for food security. Such a consideration may not be accurate for a small versus a large country. But it may make sense for the whole region.

In each East Asian country there is an emergency rice reserve because rice is the most important staple food crop. The size of this stock varies across countries (see Table 8). Some countries hold a lot larger stock than others, especially for smaller countries like Brunei and Singapore. This is because these two countries no or very little domestic production. However, China is also holding large reserve. This could be because the lack of good transportation system makes movement of rice across provinces difficult and hence each province is treated separately. It could also because the international rice market to too small and not a reliable source of supply to meet an emergency requirement in China.

The country study shows that the reserve policy and strategy in each country is inward look. There is no consideration of the benefit of pooling this emergency stock. On the contrary, it is considered to be an extra-burden to bear for the goodwill of the country. As such, the level of reserve stock should even be higher, not smaller.

There are two main problems: the reliability of the market and the government policies. If the rice market is not reliable, it is not possible for the country to rely on imports in the time of shortage. The rice market is restricted by government policies.

Most East Asia countries face recurrent natural catastrophes like flood (China), (forest) fire (Indonesia and Thailand), typhoon (Philippines and Vietnam), insect/disease. Need for emergency requirements is quite obvious. The World Food Program has developed activities to handle recurrent natural catastrophes with disaster-preparedness components. Such an approach if implemented at the broader cross country level would benefit the development of a more sophisticated market oriented instrument for the rice market in East Asia.

Section 7: International Commitment on Rice

7.1 Bilateral Arrangements

Many countries has developed bilateral instrument to reduce the risk of rice shortage and lower the cost of trade transaction:

- Singapore has an arrangement for emergency supply of rice from Thailand.
- Brunei has G-to-G arrangement with Thailand for importing fragrant rice.
- Memoranda of Understanding (MOU) with Malaysia : Malaysia will allow barter trade of palm oil to the equivalent value of 150,000 tons of rice from China.

These instruments are market consistent. It helps to fulfill some of the gap in the market that an open market does not have the tool to address.

7.2 WTO

The attempt to liberalize rice trade in WTO is a very sensitive subject. Table 9 shows the base and bound rate of tariff on rice. It shows that the import tariff has been reduced marginally over time. However, the minimum market access into Japan and now China will be an attraction for the exporter with the 3.99 million tons at 1% tariff rate. (Table 10)

Upon accession to WTO, China agrees to the followings:

- Grant an import quota of 3.99 million tons of rice in the first year upon entry into that organization, rising progressively to 5.32 million tons in the year 2004.
- Grant a one-percent tariff for rice imported within quota, while the above quota tariff would be reduced from 77 percent to 65 percent by the fifth year.
- Allocate 50 percent of the import quota rights to private sector from the first implementation year.

This opening up of China rice market will have a significant impact in the world rice market.

7.3 AFTA on Rice

The Special Arrangement for Sensitive and High Sensitive Products for the liberalization of the trade of agricultural product under the CEPT Scheme for the ASEAN Free Trade Area (AFTA) allows some agricultural products to have a longer time to be fully liberalized. Rice is the only is classified "Highly Sensitive" product.

Highly Sensitive products will be phased-in to the CEPT Scheme beginning on 1 January 2001 but no later than 1 January 2005 and shall complete their phasing in by 1 January 2010. However, the ending tariff rate may not be 0-5% as it is for other products under the CEPT Scheme.

Quantitative restriction and other non-tariff barriers will be eliminated by 1 January 2010 for all countries except for Vietnam (1 January 2013), Laos and Myanmar (1 January 2015) and Cambodia (1 January 2017).

Even rice will be trade freely among ASEAN countries. By 1 January 2010, rice can be moved around the region at a relatively low tariff. The commitments varies across countries.

7.4 ASEAN Food Security Reserve

The amount of reserve is pledged under the ASEAN Emergency Rice Reserve (AERR) is 87,000 tons (Table 11). ASEAN is currently reviewing the size of this reserve with the view to increase it.

The commitment under AERR has been earmarked within the national reserve in each country and is managed by the same agency that oversees the national reserve. Since its establishment in 1979, AERR has rarely been used. This is due to a few factors:

1. The criteria for releasing the stock is not clear. It is a request based - passive system.
2. The mechanism for release in each country is not spelled out. The reserve for each member is earmarked. During the emergency, the government has to device an ad hoc mechanism to get the required rice, determine the price etc. While some countries can be faster in responding to the request but it is difficult to see 9 countries acting promptly.
3. Releasing stock at market price - no preferential treatment. Without such preferential treatment, there is no incentive to make use of the reserve.

Section 8: Poverty and Food Aid

8.1 Poverty

Laos has the lowest per capital income in East Asia. A survey shows that 53% of the rural population are below the poverty line.

In 1970s and 1980, the incident of poverty is high in East Asia, especially in China. The World Bank estimated that 5% of China population lives below the poverty line. However, the number has declined rapidly (1978 = 270 million, 1985 = 100 million, 1994 = 80 million) through the introduction of several programs in providing inputs and infrastructure to the rural household.

8.2 Food Aid Program

There are both donor and donee for Food aid in East Asia. These are normally executed by international agencies such as the World Food Program (WFP). Receiving countries are China, Laos, Myanmar, Cambodia and Philippines.

It is interesting to note that:

- Even though self-sufficiency is accomplished at the national level, there will still be pocket of areas where accessibility if difficult (e.g., mountainous areas in Northeast Laos). An exporting country like Thailand also has many areas where there is rice shortage
- These programs are not only addressing short-term issues but they also address the fundamental problem, e.g., an integrated agricultural development plan in various provinces in Southwestern Mountains, Anhui province etc.

The food aid program is well research and prepared. It is very helpful for these countries. These programs do not aim at addressing the emergency issue.

Section 9: Observations of Rice Reserve System in East Asia

The review of the present development in the rice market in East Asia shows that:

a) There is a movement toward a market-based system for the international rice market

The Membership of WTO for China has a significant implication on the international rice market and the market in East Asia. The direct impact is the opening up of tariff quota of 3.99 million tons of rice - about 17% of the current world market. While some of this will be for the import of short grain, a portion of it will be for the long-grain (Thailand, Vietnam and Myanmar).

Vietnam has just signed the bilateral trade agreement with USA. Vietnam will soon become member of WTO. Vietnam will be opening up even more. More public enterprise will be privatized. Rice trade will be more open.

ASEAN countries are committed under AFTA to free up their trade in rice by year 2010 (2013 for Vietnam, 2015 for Laos and Myanmar and 2017 for Cambodia).

The pressure towards more open market will always be there. It is unlikely that this pressure will be less in the new Doha round.

b) More market instruments are evolving to make the rice market more complete

In the domestic market, the improvement of transportation and communication system will all information to travel quickly between the buyer and seller at each level. The pace of market integration would be much faster than in the past. Farmers will have access to better information. They have to improve their capability to make use of these new facilities.

Market instrument such as forward contract for rice already existing even in the rural area in some countries. These contracts will evolve and becoming more sophisticated. The future market for rice in the US will evolve to become an international market.

The transaction in the rice market itself may change as the volume of trade increase and there are more number of players.

c) Reserve system in some countries are market based

Thailand, Malaysian and Singapore system: reserve is held by the private sector as an obligation. Government can request the private sector to release the reserve stock.

Government reserve stock is costly to manage. In China, Japan and Korea, the cost of stock holding by the public sector is very high. The most fundamental problem with the public stock is the quality of rice. Rice is a sophisticated commodity.

The quality of rice sold to the public stock holder is usually low quality. Maintenance of the quality of rice in the stock is also costly. In Japan, rice stock is keep in temperature controlled facility.

d) There is a need for a regional wide rice reserve system

Emergency stock holding by each individual country tends to result in over stocking. To reduce this stock level and improve the efficiency, a regional rice reserve system would be appropriate. The new system should be market based and become a new instrument in the international rice market.

e) AERR is not effective and need to be revamped

AERR has served the purpose of bring policy marker together. It has accomplished some of the main objective. However for AERR to become effective as a rice reserve, it needs to have a better information system to allow it to become proactive, a clear stock release rule should be established and an incentive system should be devised based on the severity of the situation. For example, the natural disaster release, first the level of natural disaster should be defined, then different level of disaster should be established and finally the condition for release should be done.

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Table 1: World Rice Supply and Utilization

Year	Area Harvested	Yield 1/	Production 2/ Rough	Production 2/ Milled	Exports 3/	Total Use 4/	Ending Stocks 5/	Stocks-to-Use ratio 6/
	Million Hectares	Mt/ha	---Million metric tons---					
1980/81	144.4	2.7	397.0	270.0	12.7	275.0	48.5	17.7
1981/82	144.4	2.8	408.3	277.9	11.5	283.1	43.3	15.3
1982/83	140.5	3.0	418.3	285.0	11.5	284.8	43.5	15.3
1983/84	144.6	3.1	450.9	306.9	12.1	302.6	47.9	15.8
1984/85	144.1	3.2	464.9	316.7	11.5	309.0	55.6	18.0
1985/86	144.8	3.2	467.2	318.0	12.4	319.1	54.4	17.1
1986/87	144.8	3.2	464.6	316.0	12.8	319.8	50.7	15.9
1987/88	141.6	3.3	464.0	314.6	11.2	320.5	44.8	14.0
1988/89	146.1	3.4	489.7	331.4	14.0	327.4	48.8	14.9
1989/90	146.6	3.5	508.1	343.9	11.7	338.2	54.5	16.1
1990/91	146.7	3.5	520.5	352.0	12.2	347.4	59.2	17.0
1991/92	147.5	3.6	525.2	354.7	14.3	356.7	57.2	16.0
1992/93	146.4	3.6	527.0	355.7	15.0	357.7	55.2	15.4
1993/94	144.9	3.6	527.0	355.4	16.3	358.2	52.5	14.6
1994/95	147.4	3.7	540.2	364.5	20.8	366.6	50.4	13.7
1995/96	148.1	3.7	551.3	371.4	19.7	371.4	50.4	13.6
1996/97	149.8	3.8	563.7	380.4	18.8	379.6	51.2	13.5
1997/98	151.2	3.8	574.2	386.8	27.3	383.3	54.7	14.3
1998/99	152.3	3.8	585.5	394.0	25.1	388.7	60.0	15.4
1999/00 7/	153.9	3.9	598.4	402.5	22.7	399.9	62.6	15.7
2000/01 8/	151.7	3.9	591.3	397.7	24.6	401.2	59.1	14.7

1/ Yields are based on rough production.
2/ Production is expressed on both rough and milled basis; stocks, exports, and utilization are on a milled basis.
3/ Exports quoted on calendar year basis. Trade data have been adjusted since July 1993 to exclude Intra-EC trade for the years 1980 to the present.
4/ For countries for which stock data are not available, utilization estimates represent apparent utilization, i.e., they include annual stock level adjustments.
5/ Stocks data are based on an aggregate of different market years and should not be construed as representing world stock levels at a fixed point in time. Stocks data are not available for all countries and exclude the former USSR, North Korea, parts of Eastern Europe, and Vietnam. China's reported rice stocks are government-held stocks only and exclude privately-held stocks.
6/ Stocks-to-use represents the ratio of marketing year ending stocks to total utilization.
7/ Preliminary.
8/ Forecast as of November 2000.

Source: World Grain Situation and Outlook, Foreign Agricultural Service, USDA.

Table 2: Production Status and Policy

Countries	Status	Policies	Remarks
Brunei	net importer: limited production by farmers in rural area	Subsidize income for farmer	Poverty not production
Cambodia	self-sufficiency moving toward permanent exporter	seed distribution to farmers (damage crops); support milled rice	Poverty not production
Indonesia	net importer; production expansion	1970s-1980s: self-sufficiency through input subsidies; 1990s: Price control to keep down the cost of living, input subsidies (fertilizers); 2000: change import tariff to manage domestic price	Mainly loan programme
Laos	net exporter; production expansion	Irrigation and other input subsidies – increase income of farmers; support improvement of milling quality	
Malaysia	net-importer: 65% self-sufficiency target exceed (72% in 2001)	Increase production of smalubsidies and quality improvement scheme	
Myanmar	net exporter; production expansion	Increase production and marketing	Increase 33% by 2004
Philippines	net importer: production expansion	1970s-1990s: low farm price + input subsidies (fertilizers, variety improvement) 2000: import control	
Singapore	net importer - no production	Supporting private investment in rice production in Vietnam and Myanmar	Iniciatives are driven by pivate enterprises
Thailand	net exporter: quality improvement	1950s-1980s: taxing the export of rice + variety improvement; 1990s: quality and variety improvement 2000: export promotion – branding quality rice	
Vietnam	net exporter: quality improvement	Post harvest management, milling, variety improvement	
China	net importer: quality rice production expansion	1960s-2000: self-sufficiency; hybrid rice research improvement, no subsidy on lower quality rice	
Japan	net importer: production control, quality improvement	After 1960s: self-sufficiency, production control	Target 45% of food sufficiency (2010)
Korea	net importer:	After 1997, self-sufficiency, Considering production control	

Table 3: Consumption per Capita (kg/cap/annum)

Year	1998	2000
Brunei	83	78
Cambodia	151.2	151.2
China	110	102
Indonesia 1/	134	130
Japan 2/	67.5	64.6
Korea	104.5	102.4
Laos	172	180
Malaysia	92	81
Myanmar	187.8	187.8
Philippines	95	101
Singapore	76	73
Thailand	109	110
Vietnam	165	173

1/ 1996 and 1999, respectively

2/ 1995 and 2000

Source: Country Reports.

Table 4: Objectives of Government Policies

	Availability	Low price	Stable price	Good quality
Brunei	X			X
Cambodia	X		X	
Indonesia	X	X	X	
Laos	X	X		
Malaysia	X			X
Myanmar	X	X	X	
Philippines	X	X		
Singapore	X		X	X
Thailand			X	X
Vietnam	X	X		
China	X		X	
Japan	X		X	X
Korea	X			X

Table 5: Producer and Consumer Prices

	Producer	Consumer	Remarks
Brunei			Market price
Cambodia			Market price
Indonesia		Regulated	
Laos			Market price
Malaysia	Supported	Regulated	
Myanmar		Regulated	
Philippines	Supported	Regulated	
Singapore			Market price
Thailand		Regulated	
Vietnam		Regulated	
China	Supported	Regulated	
Japan			Market Price
Korea		Regulated	

Table 6: Trade Matrix 2000

Exports to →

Imports from ↑	Brunei	Cambo-dia	Indone-sia	Laos	Malay-sia	Myan-mar	Philipp-ines	Singa-pore	Thai-land	Viet-nam	China	Japan	Korea	ASEAN+3	Total
Brunei	-													0	0
Cambodia		-			1,200			16,000						17,200	17,200
Indonesia			-											0	0
Laos				-										0	0
Malaysia			7,613		-									7,613	7,613
Myanmar			198		3,000	-								3,198	3,198
Philippines							-							0	0
Singapore	4,000							-						4,000	4,000
Thailand	26,000		361,734		330,519		26,644	263,167	-		272,298	128,287		1,408,649	1,408,649
Vietnam		5,000	369,546	1,550	153,004		496,323	53,034		-		15,445	5,500	1,099,402	1,099,402
China			476,776		119,200		60,920				-	70,687	131,000	858,583	858,583
Japan			35,020					37				-		35,057	35,057
Korea			0										-	0	0
ASEAN+3	30,000	5,000	1,250,887	1,550	606,923	0	583,887	332,238	0	0	272,298	214,419	136,500	3,433,702	3,433,702
USA		10,000	49,405				59,275					338,454		457,134	457,134
Pakistan			20,139		42,000							189		62,328	62,328
Others	4,000	5,000	23,852	3,450	6,723		252,797	316,201				102,698		714,721	714,721
Total	34,000	20,000	1,344,283	5,000	655,646	0	895,959	648,439	0	0	272,298	655,760	136,500	4,667,885	4,667,885

Table 7: Stock of Rice in each country, 1997 - 2000 (in million metric tons)

	1997/1998	1998/1999	1999/2000
Brunei	0.013	0.020	0.018
Cambodia	NA	NA	0.263
China 1/	93.000	96.000	98.500
Indonesia	2.172	1.297	1.052
Japan	2.970	2.330	1.620
Korea, S.	0.806	0.722	0.978
Lao	NA	NA	NA
Malaysia	0.260	0.270	0.270
Myanmar	0.566	0.595	2.219
Philippines	1.976	2.284	2.355
Singapore	0.037	0.044	0.042
Thailand	2.650	2.330	3.210
Vietnam	4.300	5.420	7.060
Total	108.750	111.312	117.587

1/ Based on Country paper. However, the paper on China presented at the TMRR1 put the reserve stock at 100 million MT.

Table 8 : Emergency Rice Reserve in each country

	Number of months of consumption/ quantity for National Reserve/ ARFS
Brunei	6 months
Cambodia	3,000 MT
Indonesia	1 million MT
Laos	3 months
Malaysia	2.5 months
Myanmar	3 months
Philippines	90 days
Singapore	3 – 6 months
Thailand	3 months
Vietnam	1 million
China	3 – 6 months
Japan	1million MT
Korea	1.15million MT

Table 9: WTO rate of ASEAN+3 countries

	Tariff (HS)/ Import duty (Percentage)							
	HS 1006.10		HS 1006.20		HS 1006.30		HS 1006.40	
	Base	Bound	Base	Bound	Base	Bound	Base	Bound
Thailand	58	52	58	52	58	52	58	52
Malaysia	45	40	45	40	45	40	20	15
Indonesia	180	160	180	160	180	160	180	160
Singapore	27	10	27	10	27	10	27	10
Brunei		50		50		50		50
Myanmar								
Philippines	Market liberalization under Annex 5:.There is no out-quota importation. Not binding to WTO out-quota tariff							
Korea	Market liberalization under Annex 5:.There is no out-quota importation. Not binding to WTO out-quota tariff							
Japan	Year 1995-1997, market liberalization under Annex 5.							
	402 Y/kg	341 Y/kg	402 Y/kg	341 Y/kg	402 Y/kg	341 Y/kg	402 Y/kg	341 Y/kg
	Year 1999-2000, market liberalization under tarification							
China	80	65	80	65	80	65	40	10

Note : Vietnam, Laos, Cambodia have not yet become the member of theWTO

Table 10 : Quota and In-Quota tariff rate of ASEAN+ 3 countries

Country	In-Quota tariff rate	Quota (Tons)	
	(%)	Initial Quota	Final Quota
Thailand	30	237,863	249,757
Indonesia	90	70,000	70,000
Philippines	50	59,730	238,940
Japan	0	379,000 (Year 1995-1998)	606,400
	0	643,000 (Year 1999-2000)	682,200
South Korea	5	51,307	205,228
China	1	3.99 (million tons) (Year 2002-2004)	5.32 (million tons)

Source: WTO.

Table 11: ASEAN Emergency Rice Reserve (AERR)

Country	Obiligated Volume of Rice Reserve
Brunei	3,000
Cambodia	3,000
Indonesia	12,000
Laos	3,000
Myanmar	14,000
Malaysia	6,000
Philippines	12,000
Singapore	5,000
Thailand	15,000
Vietnam	14,000
Total	87,000

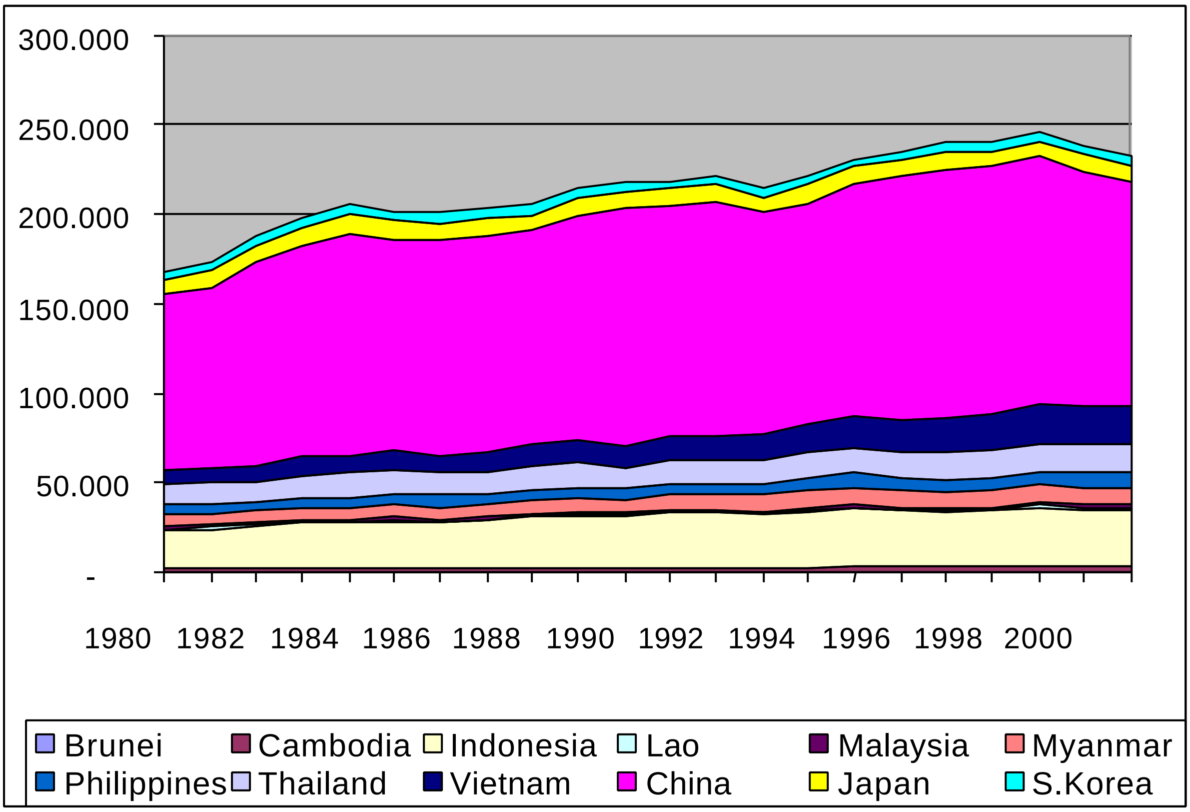


Figure 1: Paddy Output in each country (1,000 tons)

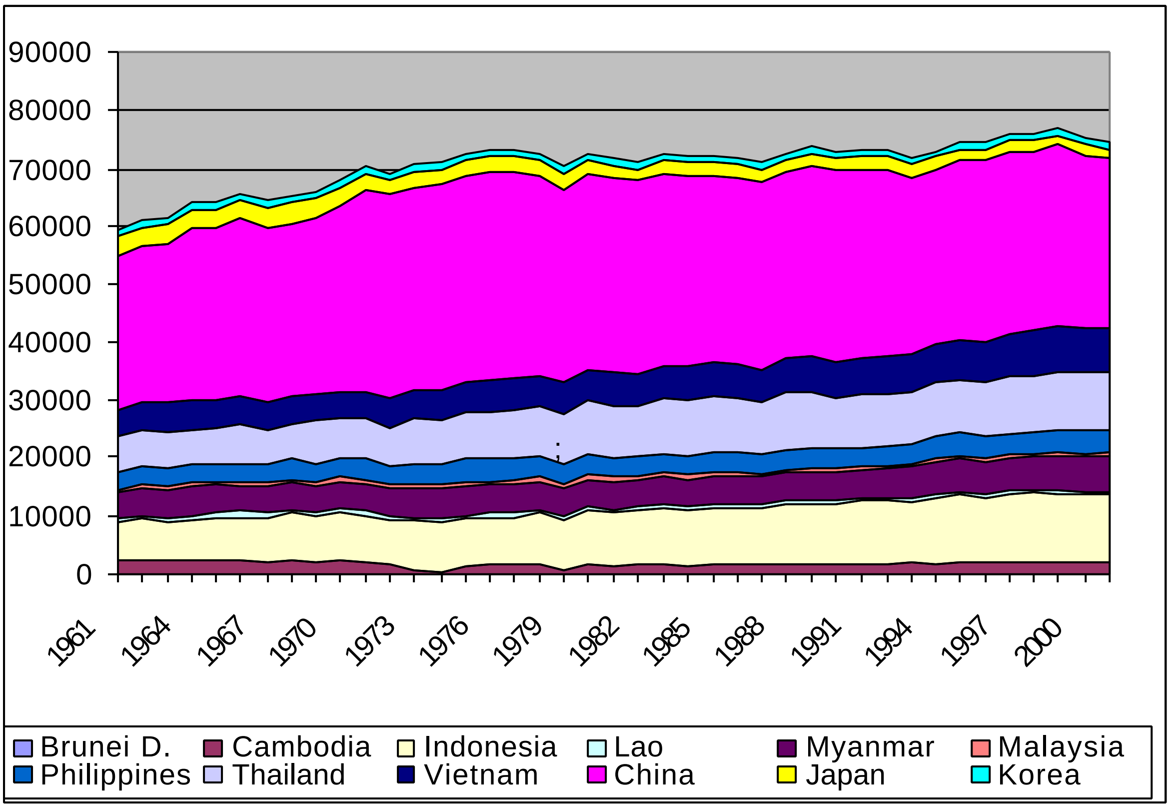


Figure 2: Harvested Rice Area in each country (1,000 ha)

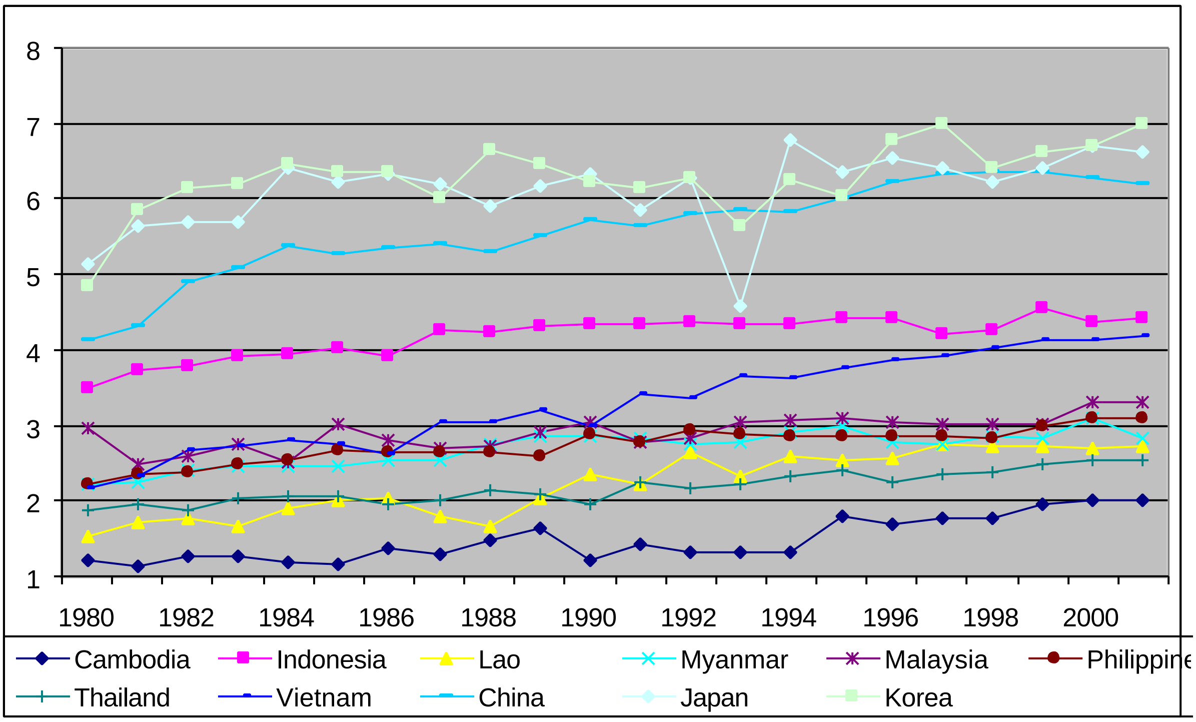


Figure 3: Yield in each country (1,000 ton/ha)

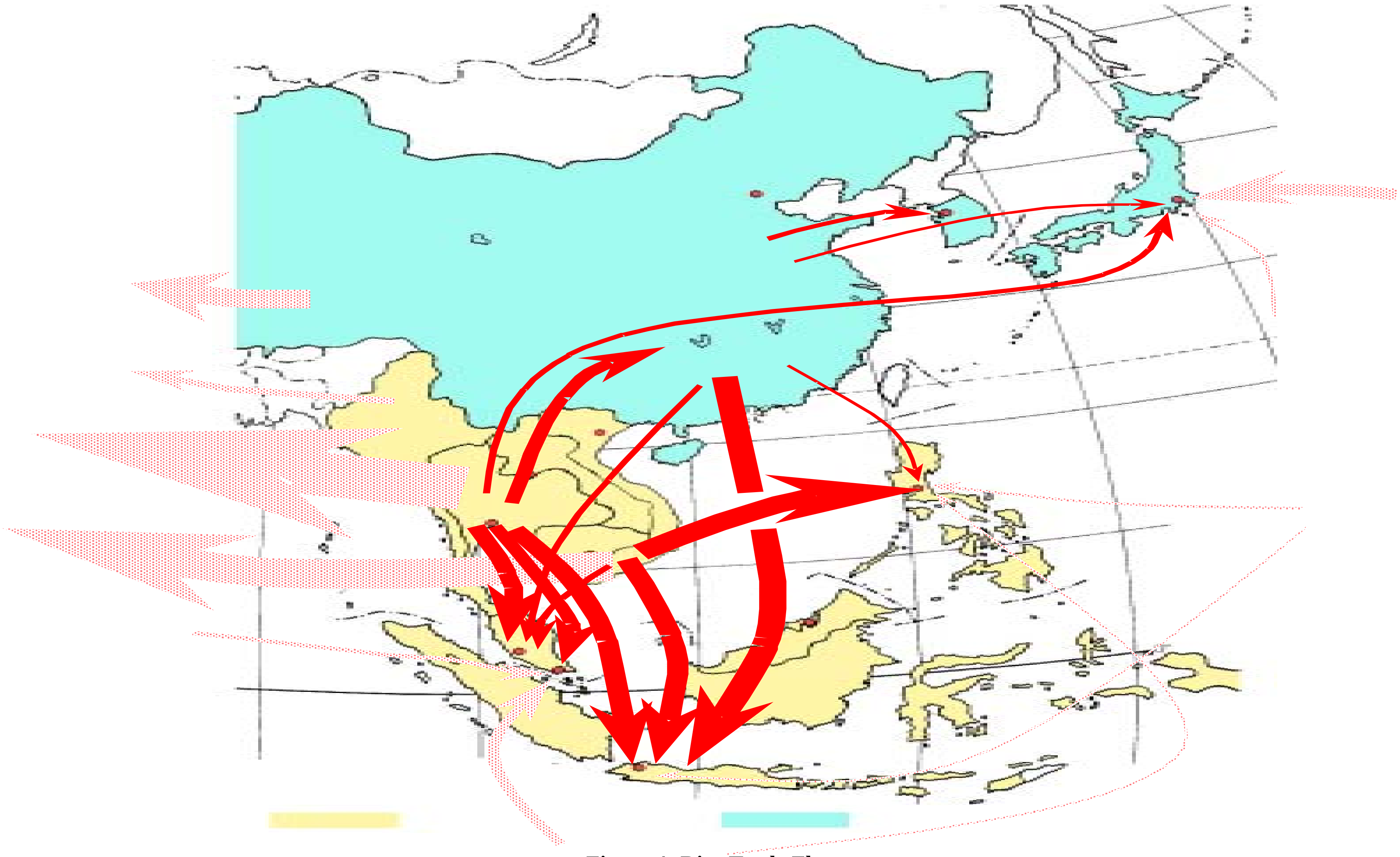
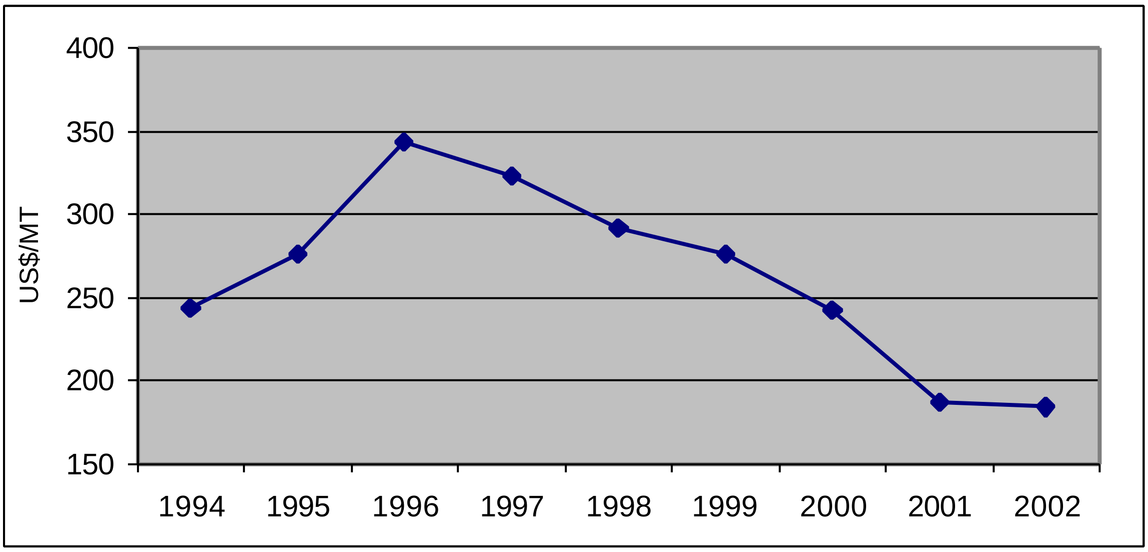


Figure 4: Rice Trade Flow



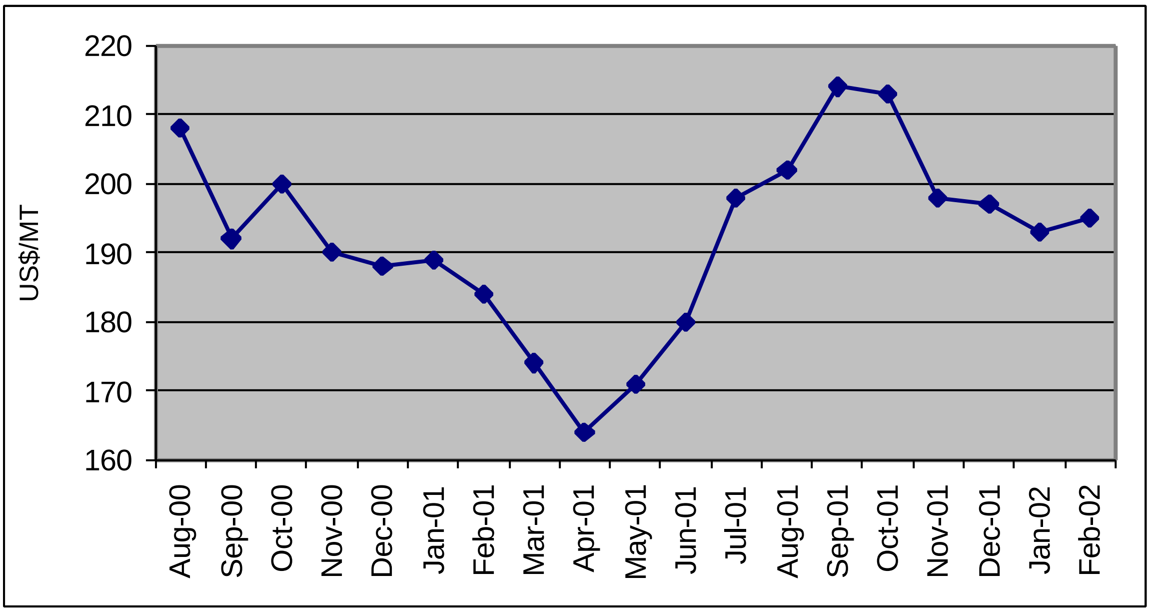


Figure 5: World Rice Price

Appendices

Appendix 1 Study Plan for the First Step Study

Appendix 2 Situation of Poverty by Country

Appendix 3 Situation of Food Aid by Country

Appendix 1

Study on
East Asian / ASEAN Rice Reserve System

STUDY PLAN
FOR THE FIRST STEP

January 2002

Ministry of Agriculture and Cooperatives, Thailand

Japan International Cooperation Agency


China
Beijing
Korea
Soul
Japan
Tokyo
Myanmar
Laos
Hanoi
Vienchan
Vietnam
Yangon
Thai
Bangkok
Cambodia
Phnom Penh
Manila
Philippine
Brunei
Darussala
Bandar Seri Begawan
Malaysia
Kuala Lumpur
Singapore
Indonesia
Jakarta
ASEAN
＋3（Japan、Korea、China）

Study Area

Study on
East Asian / ASEAN Rice Reserve System

Study Plan
For the First Step

Contents

Country name used in the report	Formal name
Brunei	Negara Brunei Darussalam
Cambodia	Kingdom of Cambodia
China	People's Republic of China
Indonesia	Republic of Indonesia
Japan	Japan
Korea	Republic of Korea
Laos	Lao People's Democratic Republic
Malaysia	Malaysia
Myanmar	The Union of Myanmar
Philippines	Republic of the Philippines
Singapore	Republic of Singapore
Thai	Kingdom of Thailand
Vietnam	Socialist Republic of Viet Nam

Chapter 1 Introduction

1.1 Background of the Study

Rice is very important as a main staple food in many countries of Asia. Also large number of people engaged in rice production and rice industry in Asian countries. Therefore the situation surrounding the "rice" is complicated and sensitive in each aspect of its production, marketing, consumption and reservation.

When compare the world production of rice with that of wheat, rice production was 390 million ton (milled rice base) and wheat production was 440 million ton (flour base) in 1999, and there was about 10% difference in consumable quantity between them. On the other hand, the world trade volume for rice was 2.3 million ton (account for about 6% of production) and 120 million ton (account for about 20% of production) for wheat. Thus, larger proportion to its production is consumed in the producing area (country). According the record of year 2000/2001, the East Asian (ASEAN+3) countries account for about 60% of rice production, consumption and trade in the world.

The average level of rice reserve in the East Asia is about 4 months of consumption. China hold 8 months reserve while other countries hold 0.7 month reserve.* South Korea and Japan hold 2 months reserve, respectively. Appropriate level of rice reserve and proper management system would be effective in stabilizing price against the fluctuation due to supply-demand imbalance in the market economy. However, the maintenance of rice reserve is costly and not all country can afford to keep the level of reserve that provide a full insurance of its consumption requirement, especially during the time of shortage. Thus, it is hoped that collaborate system of rice reserve is elaborated by the countries in East Asia.

Note*: Rice reserve data of China was revised in May 2001 from about 2.5 months to 8.5 months in the USDA data (World Agricultural Supply and Demand Estimates). This is due to change in the calculation of domestic consumption from1980 onwards.

International rice price was in a level of around US$350/ton since the middle of 1995. However, due to economic crisis, it had fallen to US$260/ton in November 1997. In 1998, large import by Indonesia raised the price, but it fall down again since the autumn of 1998.

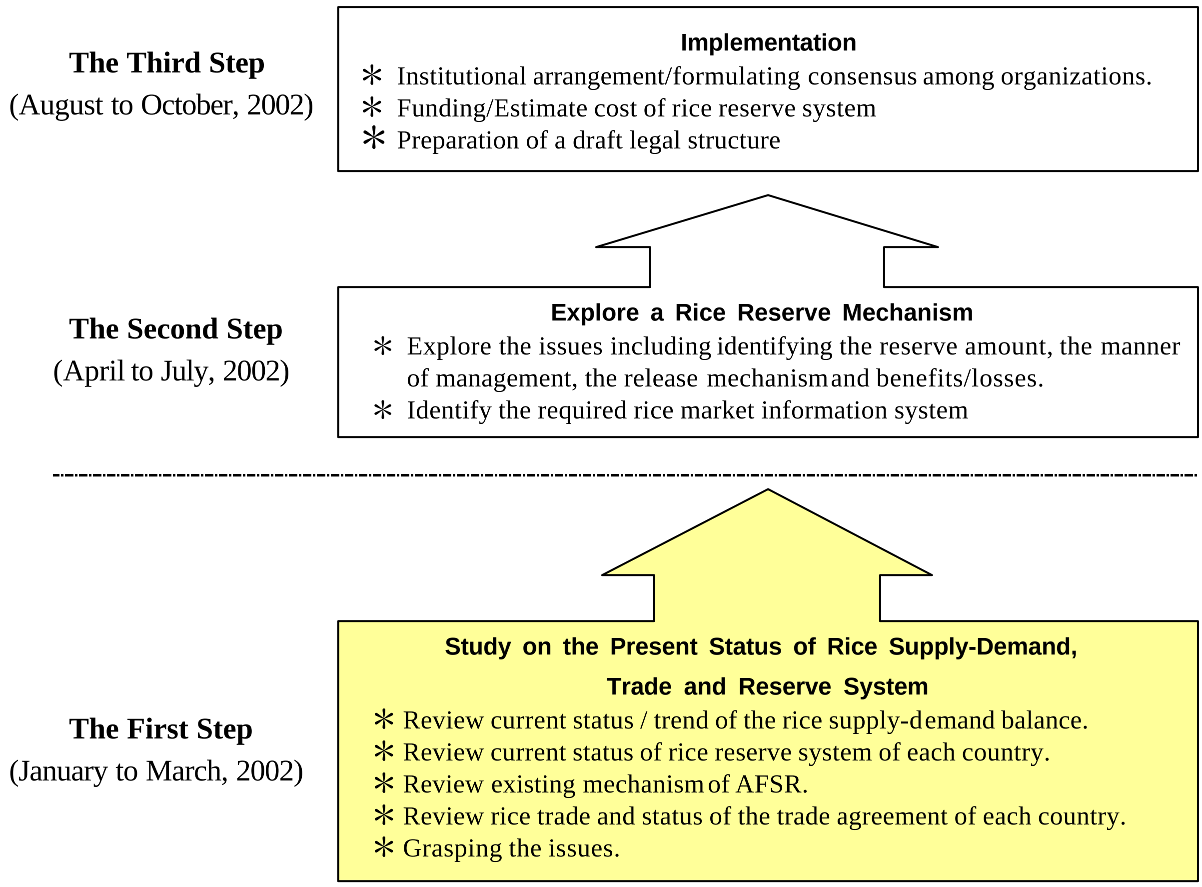
With background of this world rice situation, the Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry Plus 3 (SOM - AMAF+3), in April 2001, reached the following agreement:

- Alleviating poverty and food security in the Asian region
- Research and development on food, agriculture fisheries and forestry
- Human resource development in food, agriculture fisheries and forestry
- Coordination and cooperation in international and regional issues in food, agriculture, fisheries and forestry
- Agriculture information networking and trade facilitation

In addition, it is agreed to study about strengthening the food security in the ASEAN region and to report the results of the study in the AMAF+3 in October 2002. Based on this agreement, Thailand Ministry of Agriculture and Cooperatives organized the workshop on "Food Security Cooperation and Rice Reserve Management System in East Asia" in July 2001 and came up with the Term of Reference (TOR) for the Study on East Asian Rice Reserve System. In October 2001, implementation of the Study in accordance with the TOR was agreed in AMAF+3, and ASEAN+3 and the ASEAN secretariat entrust the coordination of the Study to the Thailand Ministry of Agriculture and Cooperatives. Then, the Government of Thailand requested to the Government of Japan for support in implementation of the Study.

1.2 Objectives of the Study

The whole study is composed with the 3 steps. The first step of the study (herein after called as " the First Step Study") is object to review current status / trend of rice supply-demand, the policy of rice reserve and rice trade. The collect data and information in the First Step Study shall be utilized for the succeeding steps. The whole study should be completed before AMAF+3 in October 2002.



1.3 Study Area

Study area covers the following 13 countries.

ASEAN countries	:	Thailand, Philippines, Brunei, Indonesia, Vietnam, Laos, Cambodia, Myanmar, Malaysia, Singapore
+3 countries	:	China, Korea and Japan

JICA Study Team will subcontract the study in 7 countries to a Thai consultant firm. The allotted countries for the JICA Study Team and a Thai consultant firm is as follows:

JICA Study Team	Thai Consultant
Philippines	Thailand
Cambodia	Vietnam
Myanmar	Singapore
Indonesia	Brunei
South Korea	Malaysia
Japan	Laos
	China

1.4 Scope of the First Step Study

The scope of the First Step Study to be undertaken shall include:

(1) Review the rice reserve policy and management system in each country. The study shall review rice production, marketing, supply-demand balance, trade, and reserve situation;

(2) Review the commitment of each country for rice trade transaction, bilateral and multilateral, with AFTA and WTO (or expected arrangement);

(3) Review the rice trades (quality, quantities, price) and food aid of each country;

(4) Review the existing mechanism under the Agreement of ASEAN Food Security Reserve with the view to assess its strengthens and weaknesses.

Chapter 2 Implementation Plan of the First Step Study

2.1 Contents of works and schedule

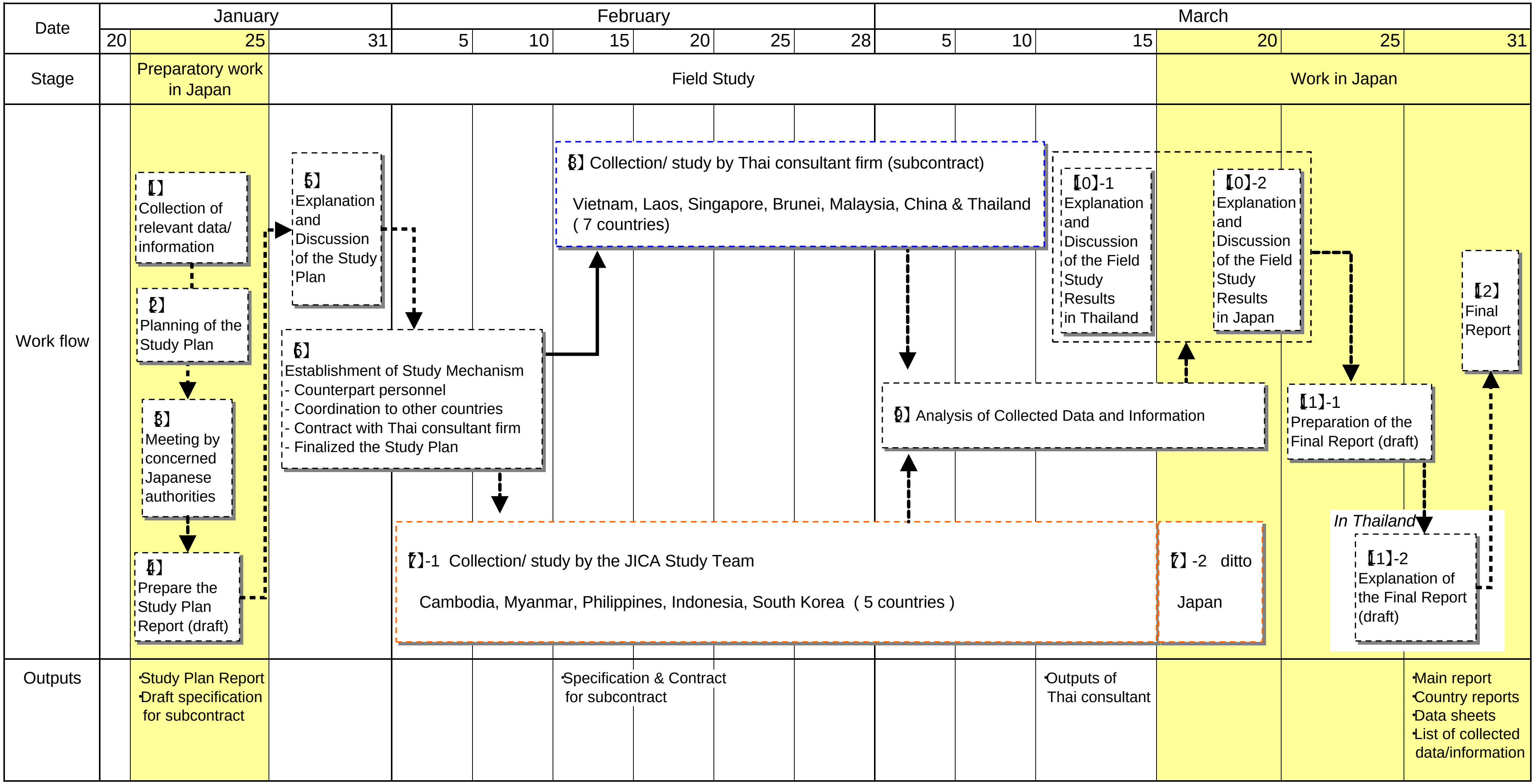
In order to achieve the objectives of the Study, the First Step Study will be conducted during the period from January 21 until the end of March in 2002, with the overall period of 2.3 months.
The First Step Study is composed of 12 works and their time schedule is planed as follows:

Works and Time schedule

Stage	Time schedule	Works
Preparatory work in Japan	Jan. 21 ～ Jan. 26	【1】 Collection of relevant data/information
		【2】 Planning of the Study Plan - Preparation of forms/check lists of study items - Clarification of informants in each country - Preparation of the draft specification for subcontract
		【3】 Meeting by concerned Japanese authorities
		【4】 Prepare the Study Plan Report (draft)
Preparatory work in Thailand	Jan. 28 ～ Feb. 08	【5】 Explanation and Discussion of the Study Plan
		【6】 Establishment of Study Mechanism - Confirm counterpart personnel from Thai side - Assist/confirm coordination works done by Thai side to other countries - Contracting with Thai consultant firm - Finalize the Study Plan
Field study	Jan. 31 ～ Mar. 19	【7】-1 Collection/study by the JICA Team (Cambodia, Myanmar, Indonesia, Philippines, Korea)
		【7】-2 Collection/study by the JICA Team (Japan)
	Feb. 11 ～ Mar. 11	【8】 Collection/study by Thai consultant firm (Thailand, Vietnam, , Malaysia, Laos Singapore, Brunei, China)
Analysis & Reporting	Mar. 01 ～ Mar. 20	【9】Analysis of collected data and information
	Mar. 11 ～ Mar. 12	【10】- 1 Explanation and Discussion of the Field Study Results in Thailand
	Mar. 20	【10】-2 Explanation and Discussion of the Field Study Results in Japan
	Mar. 21 ～ Mar. 27	【11】- 1 Preparation of the Final Report (draft)
	Mar. 28	【11】- 2 Explanation of the Final Report (draft) in Thailand
	Mar. 29	【12】Submission of the Final Report

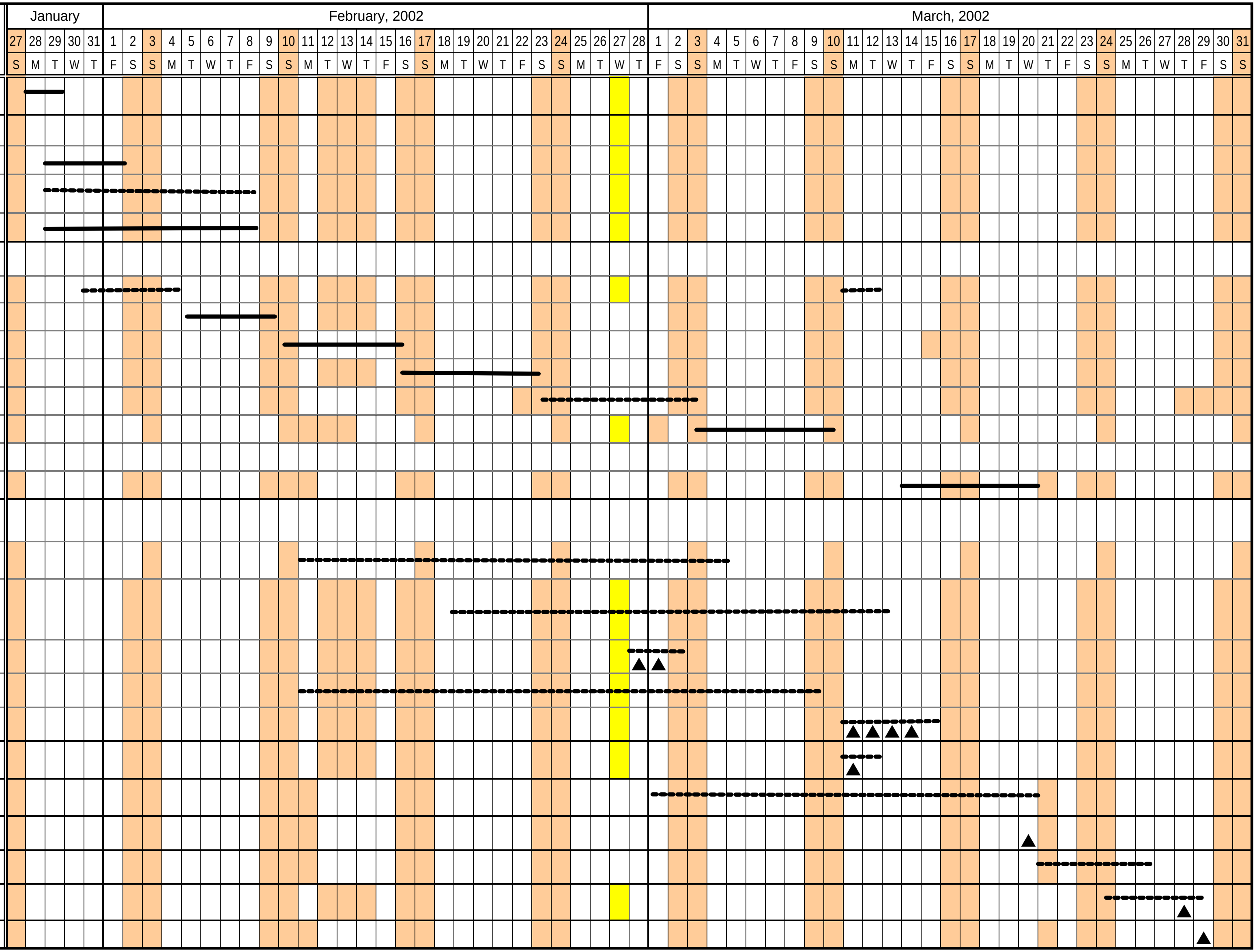
The sequence of above 12 works is illustrated in a flow chart in page 5. Detail schedule plan is shown in page 6.

Flow chart for the First Step Study **(sequence of the works)**



Overall Work Schedule

	Contents of Work	Work place
【5】	Explanation and Discussion of the Study Plan	Thailand
【6】	Establishment of Study Mechanism	Thailand
	Finalize the Study Plan	Thailand
	Assist/confirm coordination works done by Thai side to other countries	Thailand
	Contracting with Thai consultant firm	Thailand
【7】-1	Collection/study by the JICA Team	5 countries
	ASEAN Food Security Reserve	Thailand
	Cambodia	
	Indonesia	
	Myanmar	
	Philippines	
	South Korea	
【7】-2	Collection/study by the JICA Team	1 country
	Japan	
【8】	Collection/study by Thai consultant firm (subcontract)	
	Collection/study by Thai consultant firm	7 countries
	Analysis of collected data and study results, Data input, Preparation of Report	Thailand
	Supervision of progress by the Study Team	Thailand
	Supervision of progress by Thai Counterparts	Thailand
	Inspection of outputs by the JICA Team	Thailand
【10】-1	Explanation and Discussion of the Field Study Results	Thailand
【9】	Analysis of collected data and information	Thailand/ Japan
【10】-2	Explanation and Discussion of the Field Study Results	Japan
【11】-1	Preparation of the Final Report (draft)	Japan
【11】-2	Explanation of the Final Report (draft) in Thailand	Thailand
【12】	Submission of the Final Report	Japan



Legends： Works done by the JICA Team　Works done by other parties　Holiday　Holiday (moveable)

Weekend of each countries： Thailand/Sat & Sun, Cambodia/Sat&Sun, Myanmar/Sat&Sun, Brunei/Fri & Sat, Indonesia/Sat & Sun, Philippines/Sat &Sun, Korea/Sun, Japan/Sat & Sun

2.2 Preparatory work

Prior to the field study in each country, preparatory works of 【1】 to 【6】were conducted in Japan and in Thailand.

【1】 Collection of relevant data/information
【2】 Planning of the Study Plan
- Preparation of forms/check lists of study items
- Clarification of informants in each country
- Preparation of the draft specification for subcontract

【3】 Meeting by concerned Japanese authorities
【4】 Prepare the Study Plan Report (draft)
【5】 Explanation and Discussion of the Study Plan
【6】 Establishment of Study Mechanism

2.3 Field study

【7】 Collection/study by the JICA Team
(Cambodia, Myanmar, Indonesia, Philippines, Korea and Japan)

The JICA Team will conduct the field study in 6 countries out of 13 countries; namely Cambodia, Myanmar, Indonesia, Philippines, Korea and Japan. The field study in Japan will be conducted after completion of the study in other 5 countries. Schedule of the field study is shown in page 6.

Information / data to collect in the field study are listed in the following table. These items are briefly divided into two (2) categories: a) Statistic data and b) Information about policy, system, mechanism and present situation. Basics principal for information/data collection are:

- Statistic data of available latest year shall be collected. In addition, latest 3 - 5 years' statistic data shall be collected in case analyzing the changes/trend.
- Existing information in paper-form (publications/reports) shall be collected about the system / mechanism / present situation. In addition, hearing survey from concern organizations/ agencies shall be conducted to clarify further details.

To ensure the smooth implementation of the study, following measures should be taken by the Thailand side.

- Inform the study items to the counterpart agency and concern organizations in every country.
- Arrange the provision of the conveniences in every country. (refer to Chapter 3 for details)

Study Items of each country	Information/data collection	Hearing survey
Rice Production Basic Statistics on Agriculture/Rice Production Land use, Number of farm household, Agricultural population, Farming scale, Land tenure, Use of farm machinery, Use of fertilizer/chemicals, etc.	Statistic books Data for latest 3 years	×
Basic Information on Rice Production Cropping patterns, Rice cropping intensity, Farmers organization (type, scale, activity, management), Production Costs, Government control system, etc.	Publications/Reports	△
Law/Decree/Regulation/Order regarding the Rice production Subsidy/loan (Production promotion), Production control, etc.	Copy of Articles with English translation	△
National Agricultural Development Plan (latest plan)	Publications/Reports	
Rice Marketing Information/data on; Marketing channels, Trade flows, Farm marketing, Rice milling, Transport, Storage, Marketing costs & margins, Characteristics of marketing agencies (paddy trader, rice trader, etc.), Outline of Trader's association, Rice procurement by government (Police/Army), Roles of concern administrative government agencies, Rice quality standard, Market information system, etc.	Publications/Reports	△
Law/Decree/Regulation/Order regarding the Rice Marketing Quality inspection/standard	Copy of Articles with English translation	△
Rice Price Policy Information on; Price policy & Government price control system - System of market intervention by the Government - System of price protection/stabilization by the Government - etc.	Publications/Reports	○
Rice Trade (Overseas) Statistics on; Export/Import (amount / value, by month, by country, by rice grade)	Statistic books Data for latest 5 years	×
Information on; Bilateral/Multilateral International Agreement on Rice Trade	Copy of Agreement papers, Publications /Reports	△
Information on; System (mechanism) of rice export/import, Export/import procedures, Government control system of export/import (export license system, quota system, etc.) Roles of concern government agencies, Roles of concern public organization/agencies, etc.	Publications/Reports	○
Law/Decree/Regulation/Order regarding the Rice Export/Import	Copy of Articles with English translation	△

Study Items of each country	Information/data collection	Hearing survey
Rice Reservation by the Government <u>Information/data on;</u> Quantity of reserve (monthly national inventory data), System of rice reservation Responsible agency, Procurement system, Distribution/sales system, Period of storage, Management of storage facilities, Total capacity of storage facilities, Quality control, Roles of concern agencies, Financial resources, etc.	Statistic data for past 3 - 5 years, Publications/Reports	○
Rice Reservation for ASEAN Food Security Reserve (AFSR) <u>Information/data on;</u> Actual quantity of reserve (for the past 3 – 5 years) System of rice reservation for AFSR Responsible agency, Roles of concern agencies, Procurement system, Distribution/sales system, Period of storage, Management of storage facility, Quality control, Financial resources, etc.	Statistic data for past 3 - 5 years, Publications/Reports	○
Rice Demand/Consumption <u>Data/Information on;</u> Per capita consumption Amount of domestic consumption Seasonal balance of supply-demand Regional balance of supply-demand Consumers' purchasing behaviors/preference	Statistic data Publications/Reports	△
<u>Data/Information on;</u> Problem/Constraints on Rice Supply-demand Situation	Publications/Reports	○
Rice/Paddy Price <u>Data on;</u> Rice prices in the major urban markets (retail/wholesale, major varieties), Paddy price in some provinces (major varieties)	Data for latest 5 years	×
<u>Data/Information on;</u> Problem/Constraints on the Rice/paddy Price	Publications/Reports	○
Food Aid <u>Data/Information on;</u> Received amount of Food aid (amount, donor, type of aid) Rice procurement system of Food aid organizations	Statistic data for past 5 years, Publications/Reports	△
Poverty <u>Data/Information on;</u> Situation of poverty Policy on poverty alleviation, Major projects for poverty alleviation by the government, Major projects for poverty alleviation supported by International Organizations/Foreign donor	Statistic data for past 5 years, Reports/Publications	△
National Food Security Policy	Publications/Reports	△

○ : shall be applied △ : shall be applied supplementary, × : must no need to apply

Notes: *- Collection of data/study on Poverty shall not be applied to Japan, South Korea and Singapore.*
- In addition, the Study Team shall conduct the collection/study on the present AFSR in Thailand.

【8】 Collection/study by Thai consultant firm

(Thailand, Vietnam, Malaysia, Laos Singapore, Brunei and China)

A consultant firm in Thailand will conduct the field study in 7 countries out of 13 countries; namely Thailand, Vietnam, Malaysia, Laos Singapore, Brunei and China. Study items are same with other countries as shown in the above table.

To ensure the smooth implementation of the study, same measures described in previous section 【7】should be taken by the Thailand side. Specially, such measures are considered essential for China and Vietnam.

2.4 Analysis and Reporting

【9】Analysis of collected data and information

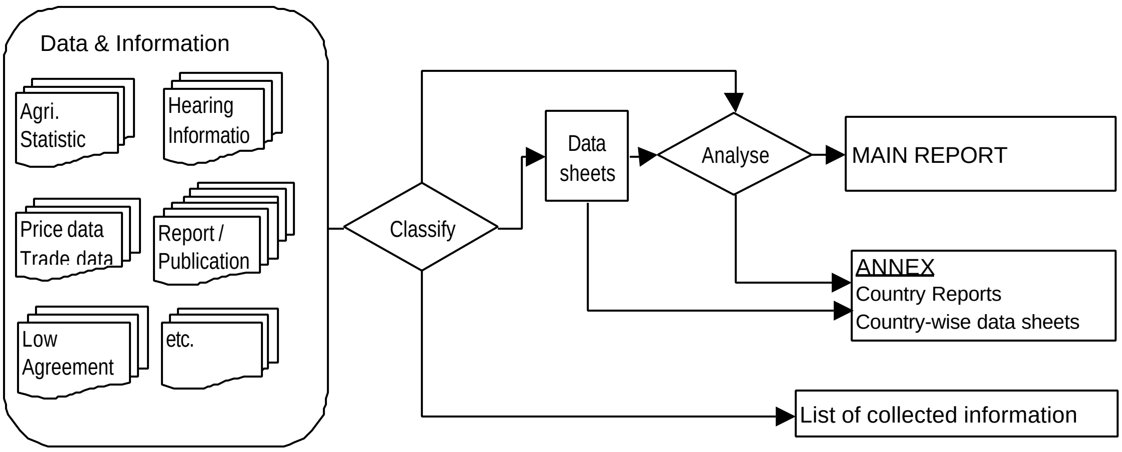
<u>Statistic data and Publications/reports</u>

Collected statistic data of each country shall be summarized into to the data sheets and they shall form a part of the ANNEX of the report.

Collected publications/Reports are classified and make a list in according with the JICA form.

<u>Analysis of the collected data/study results and Preparation of the report</u>

Analyze the collected data/information to prepare the report, which shall be utilized as a fundamental information in the succeeding development study. Preparation of the report shall be made in the following manner. Outline of the main report is shown in a next page.



Main Report of the First Step Study (Outline)

1. Study of the present status (Country data 1990-present)

- Production (including production control), distribution (including prices)
- Trade (including food aid: donor and recipient sides)
- Stock levels (through supply chain), storage infrastructures
- Poverty (based on readily available data)

2. Study of the present status (Country policies on food security)

- Policies on prices (mechanisms, interventions), production controls, etc.
- Policies on trade (management of imports/exports, bilateral/multilateral agreements, food aid, etc.)
- Policies on stock management, reserve strategies
- Present rice problems by country (Price, food security, production, poverty, etc.)

3. AFSR: present status and issues

(1) The Agreement
(2) Operation mechanism
(3) Development in the recent years and future prospect
(4) Issues encountered

4. Preliminary Policies Review

(1) Regional rice situation (chart): production, consumption, trade and stocks based on data in item 1
(2) Worldwide trade picture based on data from FAO & USDA
(3) Specific characteristics of the regional rice situation
(4) Countries policy on poverty reduction and food security in East Asia/ASEAN

【10】-1 Explanation and Discussion of the Field Study Results in Thailand

The Study Team will come back to Thailand after the field study in 5 countries to explain and discuss about the field study results to the Thailand Ministry of Agriculture and Cooperatives during March 11 – 12.

【10】-1 Explanation and Discussion of the Field Study Results in Japan

The Study Team will explain the field study results to the Japanese parties concerned in Japan on March 20.

【11】- 1 Preparation of the Final Report (draft)

Based on the discussion/comment in the above two meetings, prepare the draft final report.

【11】- 2 Explanation of the Final Report (draft) in Thailand

The Study Team (Team Leader) will attend a meeting, which is scheduled to be held on March 28, 2002 in Bangkok, by both of Thai and Japanese side, and explain the results of the Study with the draft Final Report.

【12】Submission of the Final Report

The Study Team will submit the final report to JICA on March 29 in Japan.

Chapter 3 Undertakings

3.1 The Government of Thailand

To facilitate smooth implementation of the Study at all of 13 countries, the Government of Thailand shall take necessary measures to ensure the provision of following conveniences to both the Japanese Study Team and the Thai consultant firm in each country.

(1) To provide the available data and information related to the Study,

(2) To secure permission to take all data and documents, including photographs and maps, related to the Study out of the country to Japan and/or Thailand, and

(3) To secure the safety of the Japanese Study Team and the Thai consultant firm.

3.2 Thailand Ministry of Agriculture and Cooperatives

Thailand Ministry of Agriculture and Cooperatives shall act as a counterpart agency to the Japanese Study Team and also as a coordinating body in relation with other relevant organizations in Thailand for smooth implementation of the Study.

Thailand Ministry of Agriculture and Cooperatives shall, at its own expense, provide the Japanese Study team with the following, in cooperation with other relevant organizations in Thailand:

(1) Available data and information related to the Study,

(2) Counterpart personnel,

(3) Suitable office space with necessary equipment and furniture in Bangkok City, and

(4) Credentials or Identification cards.

ANNEX 1

THE FIRST MEETING OF THE ASEAN AGRICULTURE AND FORESTRY MINISTERS AND MINISTERS OF THE PEOPLES REPUBLIC OF CHINA, JAPAN AND REPUBLIC OF KOREA (AMAF Plus Three)

5 October 2001, Medan, North Sumatera, Indonesia

JOINT PRESS STATEMENT
(Extract)

AREAS AND MODALITIES OF COOPERATION IN FOOD, AGRICULTURE, FISHERIES AND FORESTRY

9. In moving the cooperation forward, the Ministers identified the following areas of collaboration between ASEAN and Plus Three Countries:

i) Poverty Alleviation and Food Security in the Asian Region;
ii) Research & Development on Food, Agriculture, Fisheries and Forestry;
iii) Human Resource Development in Food, Agriculture, Fisheries & Forestry;
iv) Coordination and Cooperation in International and Regional Issues in Food, Agriculture, Fisheries & Forestry;
v) Agriculture Information Networking; and
vi) Trade Facilitation.

14. The Ministers agreed to study/start the specific cooperation in the framework of ASEAN Plus Three aimed at reducing poverty and strengthening food security in East Asia. In this regard, the Ministers agreed to task Thailand to coordinate a study on East Asian Rice Reserve System and to report the outcome of the Study at the next AMAF Plus Three Meeting for their deliberation. The Ministers welcomed the assistance by Japan for the implementation of the Study.

ANNEX 2

Terms of Reference for the Study on

East Asian Rice Reserve System

I. Background*

1. Rice is a complex and very sensitive commodity, especially, in Asian countries where rice is the main staple and large number of people are engaged in rice production. East Asian(ASEAN+3) is the major producer and consumer of rice in the world. These countries account for about 80% of the total world rice production, 75% the world consumption, 57% to world rice trade and holding 55% of the total world rice stock.

2. The average level of rice stock in East Asia is about 4 months of consumption. China who hold as much as 8 months stock while other hold a little as 0.7 month stock. The maintenance of stock contravenes the function of the market to allow price to rise during time of shortage and fall during the time of surplus.

3. Quantity of rice production and stocks increased in recent years. Its international prices have declined by a large margin, causing reduced incomes to small farmers and poverty in rural populations in ASEAN countries.

4. The Asian region has suffered from frequent natural disasters of a large scale. It resulted in repeated rice imports and food aids. Rice price fluctuated greatly whenever the production reduction took place, because of limited amount of export capacity. Therefore, establishment of food security has been one of important policy agendas for these countries.

5. This maintenance of this reserve is costly. Not all countries can afford to keep the level of stock that provide a full insurance of its consumption requirement, especially during the time of shortage. There is enough variation between the supply of fluctuation among the East Asian countries that would allow them to jointly manage a system of rice reserve system.

II. Agreement reached by SOM-AMAF+3

6. SOM-AMAF + 3, in Seamreap, agreed to conduct a study on the possible arrangement of a rice reserve management system in East Asia. Specifically, Thailand was tasked to organize the Workshop and come up with the Terms of Reference for the study. A proposal should be prepared and presented to the AMAF+3 in October 2001, with the view to strengthen the existing ASEAN Food Security Reserve Board (AFSRB) to serve as a key mechanism to ensure rice supply stabilization in East Asia, stabilize rice price and improve efficiency of rice stock holding.

III. Objective and approach

7. Surpluses in rice production should depress price and hence discourage the farmer from producing more rice. However, this downward price triggering mechanism does not function in the rice market. As the price of rice declines, often governments will be forced to intervene and absorb this surplus. This results in higher reserve stock and subsequently increased government expenditures. The governments may have to sell this excess stock in

the international market. At the same time, pressures are mounting against agricultural subsidies. This mechanism thus becomes less and less feasible.

8. In order to circumvent the precipitation of such a problem and better co-ordination between the producers and consumer in East Asia is necessary. A more efficient management of the rice reserve stock is a core of this exercise. The system should also be transparent.

9. It is agreed that the objectives of the East Asian Rice Reserve are to:

a) Ensure security in the supply of rice among the East Asian countries.

b) Maintain price stability in an efficient manner.

c) Improve the efficiency in manage the rice stock through a reserve system.

10. It is view that ASEAN Food Security Reserve System will be more effective if it could extend to cooperate with China, Korea, and Japan.

IV. Scope of the Study

11. The scope of the study to be undertaken would include:

11.1 To study the present status (First step)

(a) Review the rice reserve policy and management system in each country. The study should review rice utilization, production, trade, and stock situation;

(b) Review the commitment of each country for rice trade transaction, bilateral and multilateral, especially, with AFTA and WTO (or expected arrangement);

(c) To review trades (qualities, quantities, price) and food aid (mechanism) of each country;

(d) Review the existing mechanism under the Agreement of ASEAN Food Security Reserve with the view to assess its strengths and weaknesses.

11.2 To explore a rice reserve mechanism in East Asia (Second step)

(e) Explore the issues related to the include China, Japan and Korea, including:
- identify the total amount of reserve and the reserve for each country;
- determine the manner in which the stock can be maintained and managed efficiently;
- elaborate on the trigger and release mechanism and its relation to WTO's Agreement on Agriculture
- determine options for pricing mechanism and its relation to food aid programmes;
- identify the stock management;

- assess benefits and losses of each member countries participating in the scheme.

(f) Identify the required rice market information system
- coverage of information,
- acquisition, management and dissemination of the information,
- frequency of the dissemination (quarterly or twice a year)

11.3 Implementation (Third step)

(g) institutional arrangement/ formulating consensus among organizations concerned
(h) funding/ estimated cost of Reserve System
(i) preparation of a draft legal structure

V. Outputs

- report on the reviews,
- report on the mechanism options,
- draft legal structure

VI. Schedule

12. The study would take 10 months.
    - First Step would take 3 months;
    - Second Step would take 4 months;
    - Third Step would take 3 months.

13. International Workshops
    - First workshop (March/April 2002): to discuss the finding from the review present status);
    - Second workshop (July 2002): to discuss the proposed mechanism; and
    - Third workshop (September 2002): to discuss the final draft.

    The final draft will be (after necessary modifications) submitted to AMAF+3 for approval.

VII. Coordinating Bodies: ASEAN Secretariat/ Thailand

ANNEX 3 The Study Team

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Appendix 2

Poverty Status and Program by Country

Brunei	N/A
Cambodia	The poverty is measured relative to a level of expenditures that allows some minimum standard of living, i.e. "poverty line". In Cambodia, it is defined as food consumption that provides at least 2,100 calories of energy per person per day and a small allowance for non-food consumption to cover basic items like clothing and shelter. Based on 1997 data, it is estimated that 36% of the population was poor and the poverty rate was higher in rural areas (40%), which is four times higher than poverty in Phnom Penh (11%). Rural households, especially those for whom agriculture is the primary source of income, account for 88% of the poor. In Cambodia, rice accounts for an estimated 75% of daily calorie intake, and rice availability is a critical element of overall food security. Although there has been an overall rice surplus since 1995, yet food insecurity in rural areas remains a major aspect of poverty in Cambodia. According the 1997's data of food poverty line, 20% of rural population were unable to secure enough food to meet the nutritional norm of 2,100 calories a day. However, the inequalities among the poor are higher for other urban areas than for the rural sector. Some urban areas outside Phnom Penh have a significant minority of their population with very low living standards. A particular characteristic of urban poverty is the presence of about 35,000 squatters families in all seven wards of Phnom Penh. There are approximately 170,000 squatters living legally or illegally in the capital, of which more than 50% are children. The monthly per capita income was estimates as at only $20 (79,355 Riel) in the results of the Socio-Economic Survey 1999.
Indonesia	Programs for supporting poverty through OPK, RASKIN.
Laos	Laos is considered as least developed country. It received several aids from foreign donors specifically Japan, and USA. Information from Asian Development regarding Laos's poverty situation shows that 53% of rural people are below the poverty line, whereas 24% of urban population is under this line. Laos has requested aids from international organization such as World Bank, International Monetary Fund (IMF), World Food Program, etc. In 2001, the government of Laos submitted the Interim Poverty Reduction Strategy Paper to the IMF and International Development Association, based on five-year National Socio-Economic Development Plan (NSEDP) for 2001-2005[1].

[1] International Monetary Fund, Assessment of the Interim Poverty Reduction Strategy Paper, Poverty Net Library

Malaysia	The overall incidence of poverty declined from 32.1% in 1980 to 6.8% in 1997. The incidence of poverty in the rural areas decreased from 39.5% in 1980 to 11.8% in 1997. Similarly for the urban areas, it decreased from 16.3% to 2.4%, respectively. The significant reduction in the incidence of poverty was attributed to the rapid and continuous economic growth, which increased employment opportunities. Government programmes aimed at rural and agricultural households such as the Integrated Agriculture Development Projects, replanting schemes, land consolidation and rehabilitation, provision of agriculture infrastructure and support services contributed to the fall in the incidence of poverty. For the hardcore poor, special programmes were implemented through provision of housing, education and training in income-generating activities, and basic infrastructural facilities. The Development Programme for the Hardcore Poor (DPHP) was introduced in 1989 to deal specifically with hardcore poor household and to meet the varying needs of different subgroups among the hardcore poor. In addition to this programme, the non-governmental organisations, in particular Amanah Ikhtiar Malaysia, and the various state-based poverty eradication foundations also contributed towards increasing the income of hardcore poor households.
Myanmar	Based on the 1997 Households Income & Expenditure Survey and using estimates of minimum subsistence costs based on nutritional norms provided by the Ministry of Health, Central Statistical Organization (CSO) reported that the incidence of poverty is 23.9% in urban areas and 22.4% in rural areas. There is significant regional variation in poverty rates with the highest levels for Chin and Kayah States and Maqway Division. The poverty is not concentrated in outlying regions away from metropolitan area but most of the poor, about 70% live in rural areas. A substantial share of the rural poor has either no land or plots that are too small to be available. The monthly household expenditure on food and beverages for the Union is 71% of the total monthly household expenditure, 68% for the urban and 72% for the rural.
Philippines	NFA's TGL Program is an integrated distribution program designed to provide rice and other basic food commodities to the poor sector. TGL Program aims to provide market access to consumers with affordable quality rice and other basic food commodities.
Singapore	N/A
Thailand	N/A
Vietnam	In 2000, the whole country has 1.7 million households, of which 8.5 million people belonging to poor and hungry households, lacking food and foodstuff, of which 90% in rural area, mostly concentrating on upland area and ethnic minority areas. By the year 2005, Vietnam government will be taking effective measures to eradicate basically the status of food shortage and reduce considerably the proportion of poor households.

China	According to Worldbank, about 5% of population in China are below national poverty line. Since 1978, China's success in poverty reduction has been remarkable. In that year the number of absolute poor--living mostly in the rural areas without the basic necessities of food, clothing and shelter--was estimated to be about 270 million. In the period between 1978 and 1985, the number of absolute poor fell to about 100 million. China introduced a sweeping rural economic reforms, including the breakup of the commune system, the redistribution of lands and other fixed assets to households on an equitable per capita basis, the introduction of macroeconomic policies encouraging productive agricultural and industrial activities and the encouragement of rural market economy functioning. These policies fostered rapid expansion of agricultural production and family incomes. Between 1986 and 1994, poverty alleviation declined more slowly from 100 million to 80 million. This was a consequence of the more intractable nature of residual poverty in the more remote, mountainous rural areas of Western and parts of Central China where lack of dependable rainfall, poor soil conditions and shortage of other natural resources impeded more rapid economic and social development.[2] UNDP and WFP also provide support for poverty alleviation programme in China focusing on integrated agricultural development, targeting assistance to people living in the poorest areas. Activities can be broken into two categories: • Large labour-intensive food-for-work public service projects • Food-for-training human capacity-building activities
Japan	N/A
Korea	KR food supporting and emergency food aid were proceeded according the request of countries with shortage.

[2] UNDP Support To China's 8-7 Poverty Reduction Programme, http://w ww. unchina. org/ undp/ shd/ html/support.htm 08/03/2002

Appendix 3

Situation of Food Aid by Country

Brunei	The government will distribute rice for free during emergency circumstance. There is no foreign food aid program in Brunei.
Cambodia	The food distribution measures against poverty and support measures against calamity sufferers correspond to this item. WFP: WFP financially supported by international donors, procures rice from both external and internal sources. It then distributes this rice with other basic commodities to deficit and vulnerable areas. Food-for-Work program accounts for 85 % of its activities. Disaster Relief Scheme: The National Committee for Disaster Management (NCfDM) under the Prime Minster's office is responsible to implement the disaster relief scheme, which was established in 1996. NCfDM has an allocated budget of 1 billion Riels (equivalent to about 1,200 tons of white rice) for periodic flood damages as well as draught damages that occur annually.
Indonesia	WFP' main activity are to convey the supporting rice WFP procured to the Bulog. WFP's procurement records of country origins the last 4 years, from 1998 to 2001 in Indonesia, were stated as below: <u>Country of origin</u> <u>Quantity (ton) from 1998 to 2001</u> Thailand 115,499.00 USA 115789.75 Australia 56,435.67 Vietnam 36,367.05 Main donor countries were Japan, USA, and Australia. USA and Australia supported Indonesia by in-kind using trier own origin of rice.
Laos	In 2001, Laos received food aid, specifically, 4.10 (000 Mt) rice aid from United States of America. This amount was inform of rice via the World Food Program, which worth 1,086.50 (000 $)[1]. Several other projects of food aid via World Food Program to Lao PDR include[2]: ▪ Primary Education for Girls and Boys in Remote Areas of Laos (1 August 2001-31 July 2004) ▪ Improvement of household food security (3 years, through July 2003) ▪ Emergency operation under Assistance to Flood Affected People in Lao PDR (November 2000 to March 2002) ▪ Emergency operation under Support for Worst Affected Flood Victims (1 October 2000- 31 December 2000) In most programs above, rice will be bought from Thailand , Vietnam or China. Other parts will be source locally where there is surplus in rice.
Malaysia	N/A

[1] Foreign Agricultural Service, Food Aid Statistics, USDA, Online Edition

[2] World Food Program, Projects –Laos, WFP assisted projects, Online Edition

Myanmar	Myanmar government has no activity to distribute support rice to the poor/vulnerable people. WFP has been operating since 19994 in the North Rakhine State, bordering Bangladesh and the returnee comprise approximately 29% of the population of the area. In the year 2000, 8,100 ton of low-grade domestic rice (Emata 35% broken rice) was procured through MAPT and supplied to about 470,000 beneficiaries.
Philippines	N/A
Singapore	The government will distribute rice for free during emergency circumstance. There is no foreign food aid program in Singapore. Singapore contributes toward is some Food Aid program but not substantial.
Thailand	The government will distribute rice for free during emergency or natural disasters. There were World Food Program for the refugees in Thailand. Thailand contributes toward is some Food Aid program e.g., to Indonesia (and East Timor), to China during the big flood etc.
Vietnam	Vietnam had been given the funding under the FAO Food Aid Program when a severe flooding occurred in Vietnam in 1999. The aid was provided in the form of money, rather than rice or commodities, so that the Government could allocate the funds to buy the rice and necessary commodities for their people.
China	▪ World Food Programme (WFP), a UN specialised Agency, is one of the major food aid donors to China. China's government has built an increasingly effective partnership by closely matching WFP's contribution with its own contributions over the last two decades. ▪ WFP classified China as a low-income food-deficit country. Despite of China's impressive economic progress and near food self-sufficiency, an estimated 34 million rural people continue to live below the Government's austere poverty line of Yuan 635 per person per year (approximately US$0.66 per day).[3] ▪ With the achieve of food self-sufficiency 95 percent target reached in 1999), a phasing-out framework was discussed and a Country Strategy Outline (CSO) was introduced, whereby WFP assistance would be decreased over a five-year period, moving towards phasing out of WFP food assistance by 2005.
Japan	At the large-scale food emergency in case of Indonesia (1998) and North Korea (2000), the government supported them in response to their request and/or appeals for food aid issued by FAO/WFP
Korea	The government proceeded with food aid of rice to North Korea. Quantity and locality of Rice — Program 1995: 150,000 MT of rice from South Korea to North Korea — Grant Aid 2001: 300,000 MT of rice from S. Korea + Thailand to N. Korea — Loan

[3] Project 2002 Needs, World Food Programme http://www.wfp.org/country_brief/index.asp?continent=2 06/03/02