

4 Thailand: Toward a Developed, Rice-exporting Country

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THAILAND: TOWARD A DEVELOPED, RICE-EXPORTING COUNTRY

SHINICHI SHIGETOMI

Introduction

The sharp rise of the international rice price in the first half of 2008 instantly affected the domestic rice market of Thailand, causing the consumer price to double in just six months from December 2007 to May 2008. However, there was no hoarding reported among consumers and traders, much less demonstrations or riots in cities. Although the government released some of its rice stock through its own retailing routes at a cheaper price, its basic stance was to leave the market mechanism to work by itself. Rather, collective actions occurred in the countryside, not in cities. When the trend of farm-gate paddy price turned downward from the peak of 13,259 baht per metric ton in April, 2008,¹ farmers started to demonstrate collectively their dissatisfaction with the price. Even though the price was twice that of six months earlier, farmers blocked roads and demanded that the government intervene in the market. The government guaranteed the farmers the price of 14,000 baht in its price-support program.

In this way, amid the surge in domestic rice prices, the Thai government, instead of export restriction or price policy favoring the consumer, implemented a price-support intervention for farmers. Why did the Thai government respond to the price surge contrastingly to the other two major exporters, India and Vietnam? This was partly because Thailand has developed the capacity to provide enough rice to domestic consumers and, at the same time, the consumers are well enough off to accept the price rise of white rice. This chapter will describe how Thailand has reached the present position which allowed for the maintenance of its free trade policy in the storm of the food crisis.

This chapter is organized as follows. The next section will identify the position of the Thai rice industry both in the world rice market and in the Thai macro economy. Then, the process and factors which have raised Thailand's capacity of rice supply will be examined in Section 2. Section 3 identifies the role of the government in the recent production increase. The last section will be a discussion focusing on why the Thai government did not apply trade restriction policy but rather applied a price-support scheme in the price surge of 2008.

¹ The price of 5 percent white rice in April, 2008 based on the data of Office of Agricultural Economics (http://www.oae.go.th/oae_website/oae_monthprice.php).

1. Rice in Thailand, Thai Rice in the World

Thailand is the outstanding rice exporter in the world. Its export volume has ranked first for nearly three decades since 1982, and accounted for 30 percent of the world rice trade between 2003 and 2007, leaving the second and third largest exporters, India and Vietnam, far behind. Its wide coverage of the market is another outstanding feature of Thai rice. Its market is not limited to Asia, but now the largest portion (40 percent) goes to Africa. Europe, Latin America, and Oceania are also among the destinations for Thai rice export. Thailand can provide a wide variety of rice, both in terms of type, such as fragrant rice, white rice, and parboiled rice, and in terms of grade, from 100 percent long grain to broken rice. Another noteworthy fact is its high surplus of rice shared for export. At present, Thailand can spare about half of its rice production for export, which is exceptional among countries growing rice as the staple, including India and Vietnam.

In the Thai national economy, however, the rice industry is no longer a major sector. It produces only 2 percent of the total value added in Thailand in 2000, down from 13 percent in 1960 and 6 percent in 1980.² The share of rice in total export was only 3 percent in 2000, a considerable decline from 30 percent in 1960 and 15 percent in 1980.³ There was an export duty called the rice premium which provided 10 percent of the governmental revenue until the mid-1960s, but now the rice industry receives a subsidy from the government (Ammar 1975, p.151).

Compared with the declining importance of rice in terms of macro economy, there is still a considerable percentage of the population involved in rice cultivation. In 2003, the agricultural sector still comprised more than 40 percent of the total labor force in the rainy season,⁴ while nearly 70 percent of farm households were engaged in paddy cultivation (NSO 2005). A half of farmland is shared for paddy in 2000, and farmers earned nearly 30 percent of farm gross cash income from paddy in the 2001/02 season.⁵ Ninety percent of harvested crop was sold into the market in 2000, while the share was 60 percent in 1980.⁶ Paddy is now an important commercial crop for farmers.

On the other hand, consumers spend a smaller portion of their budget for rice than ever. On average, a Thai now eats 100 kilograms of rice per year, two-thirds of the volume which was consumed in the 1980s. The expenditure for grain as the staple was 1.3 percent of total household expenditure in 2004 among Bangkok residents, a considerable decline from the peak, 7 percent in 1975 (NSO 1979; 2004).

² Calculated from the National Income of Thailand, 1960-1975 edition and 1980-2001 edition of the National Economic and Social Development Board (retrieved from www.nesdb.go.th).

³ Calculated from the data in Bank of Thailand, *Monthly Report*, (December, 1967 and December, 1985) and Bank of Thailand homepage (www.bot.or.th/ENGLISH/STATISTICS/Pages/index1.aspx).

⁴ Calculated from the Labour Force Survey data (http://web.nso.go.th/eng/en/stat/lfs_e/lfs_e00.htm).

⁵ The farmland data is retrieved from the homepage of the Office of Agricultural Economics (OAE) (http://www.oae.go.th/download/article/article_20090417180859.html) while the income data is calculated from the OAE database.

⁶ Volume of rice for sale is assumed as total production minus self consumption of rice farming households. The volume of self consumption of rice farming households for 1960 is based on Ammar and Wirot (1990, pp.166, 379), while that for 2000 is calculated by multiplying the per capita rice consumption (retrieved from *FAOSTAT, Food Balance Sheet*) and the number of rice farming household members (based on NSO 2002; 2005). The volume of total rice production can be calculated from the data in the Statistical Yearbook of Agriculture edited by Office of Agricultural Economics. See more detail of the assumption applied for 1960 figure at Shigetomi (1996, p.46).

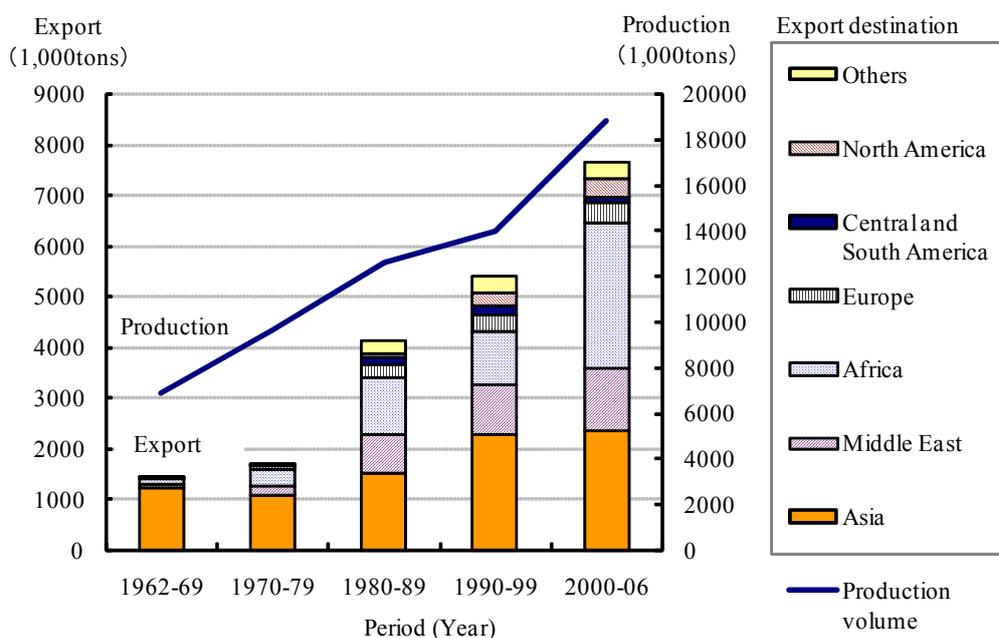
2. The Road to the Top of the World

There are three main factors which have established Thailand’s outstanding position as a rice-exporting country. This section will describe each factor in detail.

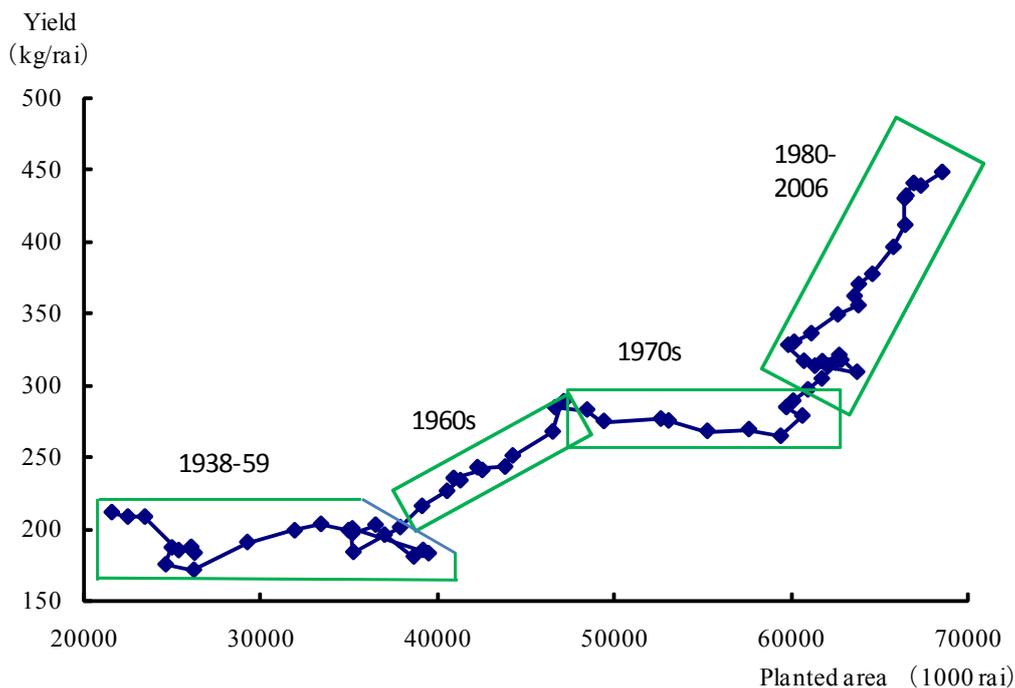
Production Increase

As shown in Figure 4-1, the rice-export volume of Thailand has been increasing along with production. The increase of production can be attributed to two factors, the increase of planted area and yield. Figure 4-2 plots the data from 1938 to 2008, using planted area as the horizontal axis and yield as the vertical axis.

The figure indicates that, until the 1950s, the yield increased little while the planted area expanded at a rapid pace. In the 1960s, the planted area continued to increase as the yield turned upward. In the 1970s, the yield became stagnant, but planted area continued to grow. After the 1980s, the increase of planted area slowed down while the yield increased remarkably.



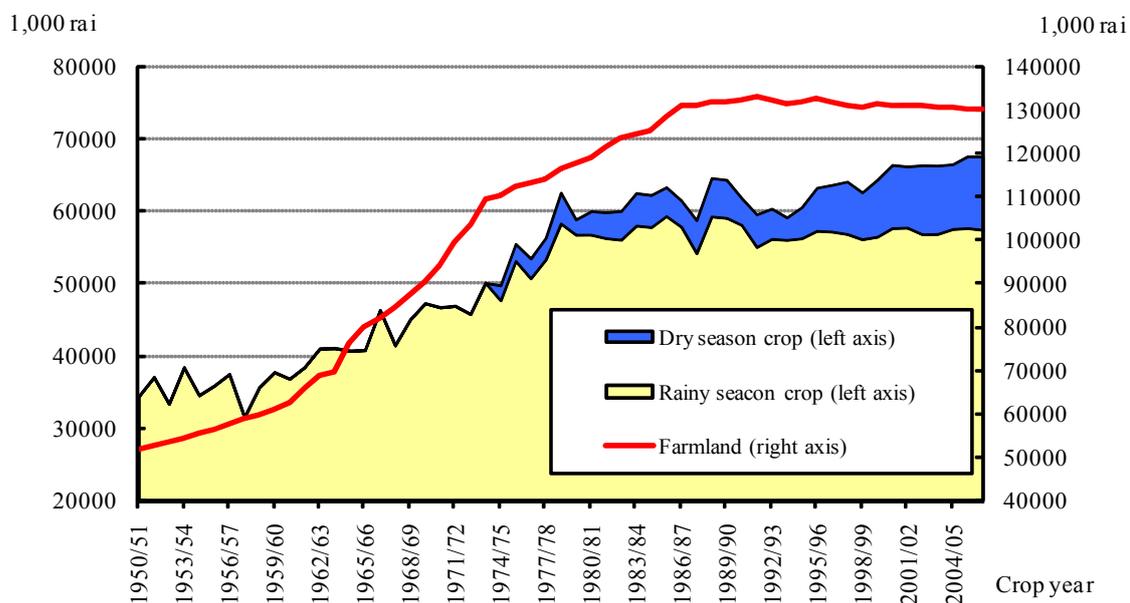
Source: Office of Agricultural Economics, *Agricultural Statistics of Thailand* .various years, and United Nations, *Uncomtrade* (comtrade.un.org/db/default.aspx).



Note: One rai is about 0.16ha.

Source: Office of Agricultural Economics, *Agricultural Statistics of Thailand*. various years.

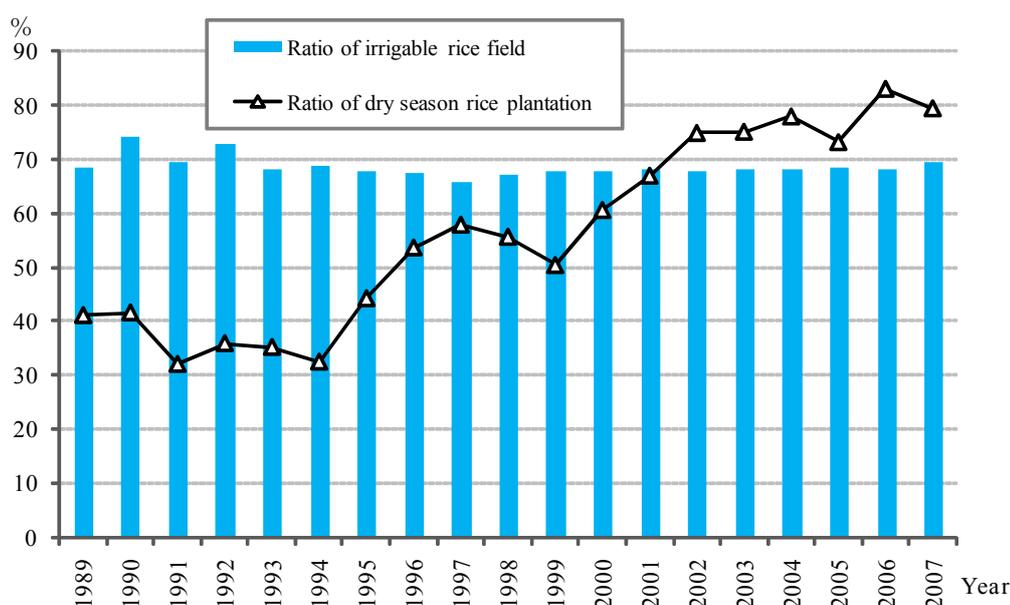
Figure 4-2 Change of Rice Planted Area and Yield (Three years moving average)



Note: One rai is about 0.16ha.

Source: Office of Agricultural Economics, *Agricultural Statistics of Thailand*. various years.

Figure 4-3 Change of Farmland and Rice Planted Area for Rainy Season and Dry Season Crop



Note: Ratio of Irrigable Area = Rice planted area in irrigable field / Total paddy field \times 100

Ratio of dry season rice plantation = planted area of dry season rice / planted area of rainy season rice \times 100

Source: Office of Agricultural Economics (OAE), database.

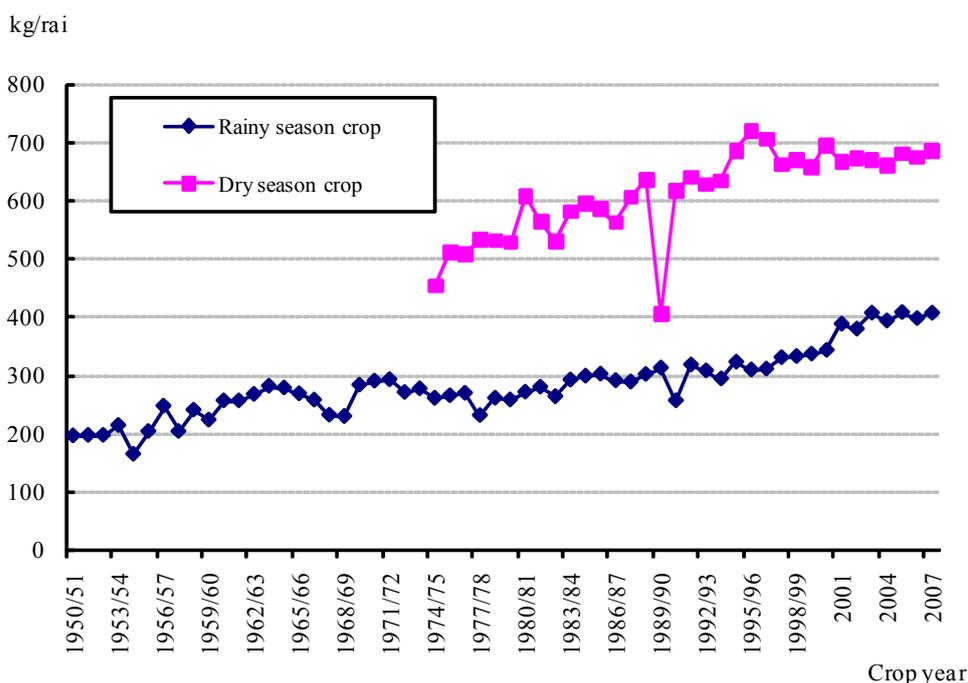
Figure 4-4 Change in Ratio of Dry Season Rice Plantation and Ratio of Irrigable Rice Field

The increase of rice planted area until the 1970s was attributed to the expansion of farmland. Figure 4-3 shows that the farmland had been expanding until the mid-1980s and its growth rate was considerable in the 1960s and 1970s. This was possible because there used to be plenty of land left in natural conditions, such as forest and swamp in Thailand. When this unused land became accessible through the construction of canals and roads, it was rapidly cleared and turned into farmland. However, the opportunity to find unoccupied land was already disappearing before the 1970s. The percentage of farmland has decreased since the late 1980s when the rapid economic growth stimulated non-farm use of land. The paddy field did not expand after the end of the 1970s, rather even showing some decline.

Even after the area of main season crop became stagnant or trended downward, the area of dry season crop has continued increasing. This is attributed to the expansion of planted area after the 1980s. It is noteworthy that the planted area accelerated its pace of increase after the 1990s. This is because multiple cropping of rice is disseminating rather than the expansion of area where dry season plantation is possible. Figure 4-4 shows that the ratio of dry season planted area to rainy season planted area has been increasing since the mid-1990s even though the ratio of irrigable land has not increased. The actual situation of multiple cropping in the main rice-growing area will be presented later.

Yield Increase

Despite Thailand having been one of the top rice-exporting countries since before World War II, its average yield gradually declined until the end of the 1950s. It turned upward after that, however, and reached a level more than twice that of 1960 (Figure 4-2). The yield increase in



Note: One rai is about 0.16ha.

Source: Office of Agricultural Economics, *Agricultural Statistics of Thailand*, various years.

Figure 4-5 Rice Yield for Planted Area

the 1960s was observed in every region but the South. According to a researcher of the Rice Research Institute, Ministry of Agriculture and Cooperatives, the increase was attributed to the construction of dams in the central region and the improvement of paddy fields by peasants themselves.⁷ In the 1970s, on the contrary, the yield was stagnant because there was little room left for these infrastructural developments by both the government and peasants. At that time, the high-yielding varieties of rice were not yet widely disseminated.

The development of rice variety in Thailand had started in the 1960s through the collaboration of the Thai government and the International Rice Research Institute (IRRI). In 1969, the first high-yielding varieties, such as RD1 and RD3, which were derived from IR8, the so-called "Miracle Rice," were developed in Thailand (SoWoThoCho 2001). In the 1970s, new varieties with short stature and photoperiod insensitivity, including IR varieties, were released to farmers. They were rapidly accepted, especially in the central region. Jerachone (1973) reported that in his sample villages in Suphan Buri province in 1971, the share of new varieties was 40 percent of total paddy planted area. A similar survey was implemented in the same villages for the 1978/79 season, and the share rose to more than 80 percent (Vivat 1979). However, this research also found that the share of new varieties in non-irrigated areas was only 9 to 11 percent. The dissemination of new varieties was limited to the dry season rice in irrigated areas where the water level could be controlled for the short stature and non-photo period sensitive varieties. The dissemination of new varieties in the 1970s contributed to the yield increase in the 1980s, since the average yield of dry season crop was twice that of rainy season crop (Figure 4-5).

⁷ An interview at the Rice Research Institute on August 20, 1999.

After the late 1990s, however, the yield of dry season crop became stagnant while the yield of rainy season crop trended upward. This reflects the fact that there is no experimental innovation for upgrading the yield of varieties for dry season crop while farmers became more and more active in investment and management for rice production.⁸ In summary, the growth of rice production from the mid-1990s is attributed to the yield increase of rainy season crop and the area expansion of dry season crop.

Changing Farm Management of Rice Cultivation

The recent change of rice cultivation can be confirmed by a field observation in Suphan Buri province, located at the northwest fringe of the Chao Phraya Delta, which is the major rice production area for export in Thailand.⁹ The present method of rice cultivation in this province can be roughly described as follows. Farmers plow and level the field and fill it with water at the depth of five to ten centimeters. After discharging the water for a while, farmers broadcast germinated seeds on the wet field. Amid the growth of young plants, farmers apply herbicides and fertilizers, and irrigate the field. Rice is harvested by a combine harvester into bags and loaded on a truck waiting on the side of the paddy field. The truck goes to rice mills and paddy markets directly. Farmers burn paddy straw and stalks left on the field.

Most work is now done with the help of machines. Not only plowing and harvesting, but also the broadcasting of seeds and chemicals is performed by small machines carried by workers. Instead of inputting their own family labor, farmers hire workers and machine operators to carry out these works. This sort of job, the contracting-out by farmers in paddy cultivation, has become more and more popular in this last decade. The volume of fertilizer for paddy has rapidly increased in this decade. Farmers used to apply less than 180 kilograms of chemical fertilizers per hectare ten years ago while they now input more than 300 up to 360 kilograms of chemical fertilizers plus 180 to 300 kilograms of organic fertilizers.

Paddy is planted three times a year now. An agricultural extension officer remembers that there were only two crops, rainy season and dry season crop, in Suphan Buri in 1999, which means that the change occurred within this decade. The main varieties used to be those which take 120 days until harvest. Now farmers apply the short maturity date variety of 90 days and plant the rainy season crop from May to August, the first dry season crop from September to December, and the second dry season crop from January to April. It used to be difficult to plant rice during the September to December season because the dry season variety is too short to resist the high water level of the rainy season. However, the introduction of large pumps and drainage facilities has lowered the water level enough to allow for planting new varieties. This means that there is no interval between rice crops. It is not rare to see a paddy field with brown rice plants waiting for harvest and a field with green young rice plants side by side. Farmers burn straw and stalks after harvest since the short interval may otherwise allow insects to survive until the next plantation. Many farmers have sold their land ownership to capitalists from the non-farm sector and continue to cultivate the land while paying rent to their landowners.

⁸ An interview at the Bureau of Rice Research and Development, Rice Department on April 28, 2009.

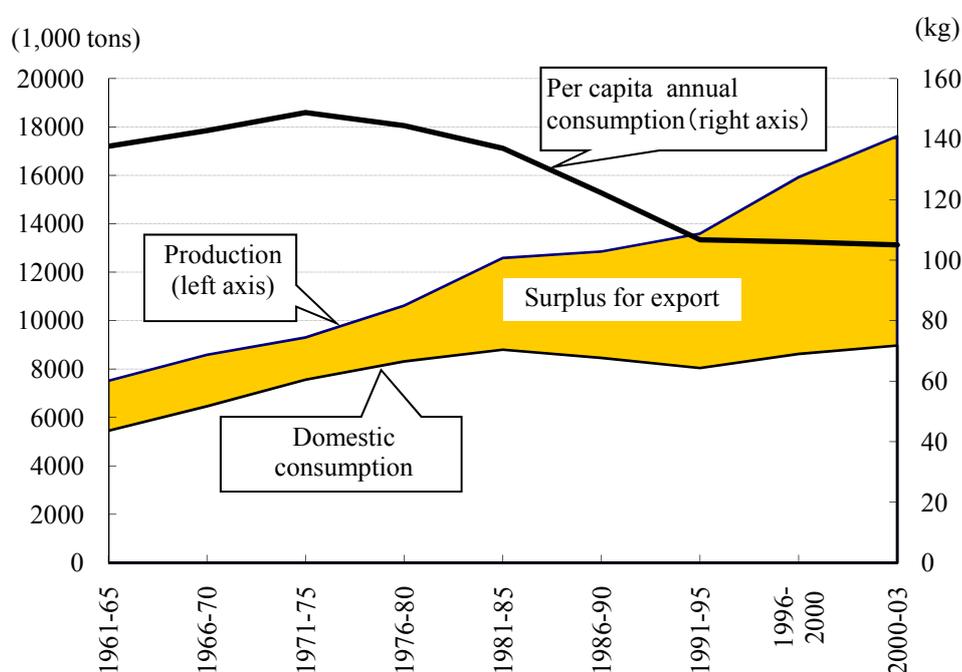
⁹ Following description on Suphan Buri province depends on the data obtained by a field visit to Suphan Buri province and an interview to an agricultural extension officer of Suphan Buri Agricultural Extension Office on May 1, 2009.

In this way, the rice farmers in Suphan Buri secure most factors of production from out of their own household. The remaining tasks of farmers are to pay attention to the condition of rice plants, control the water level, and hire contractors. The extension officer described present-day rice farmers as managers rather than peasants. In summary, rice farming in Suphan Buri province comes to be more land- and capital-intensive while farmers are now managers who procure various inputs, including the labor force, from out of their family. The increase of rice production is based on such a change of farm management in rice-growing areas.

Downward Turn of Domestic Consumption

In 1960, Thailand produced around five million tons of rice, of which 1.3 million tons were exported. In those years, there was a pessimistic prediction that all the rice would be consumed domestically within a decade or two because of the population increase (Chaiyong 1960, p.188).

Figure 4-6 shows the margin between the volume of rice production and domestic consumption in the colored space. This margin shows the capacity of rice export from Thailand. The gap did not expand until the early 1970s since domestic consumption increased parallel to production. The situation changed in the 1980s when the increase of domestic consumption slowed down while production continued to grow. The gap between production and domestic consumption apparently started to widen and, in the 1990s, widened more rapidly. The ample supply margin for export in present-day Thailand, thus, has been created since the 1980s.



Source: FAOSTAT, Commodity Balances, Crops Primary Equivalent (<http://faostat.fao.org>).

Figure 4-6 Balance Sheet of Rice

The decrease in per capita rice consumption and the population growth rate have left the domestic consumption volume stagnant. As the bold line graph in the figure shows, per capita rice consumption increased until the early 1970s, turned downward in the late 1970s, and became stable after the 1990s. As for the population, the growth rate exceeded 3 percent in the early 1960s, and turned down to 2 percent in the late 1970s and 1.6 percent in the early 1980s.

Developing International Markets

The excess of rice would deter production if it were not sold in the foreign markets and piled in stock. In other words, Thailand could enhance its rice production because it could sell rice in the international market. Thailand became the top exporter in the 1980s when the trade volume as a whole in the international market did not expand. In that decade, Thailand was in a fierce competition with the United States.

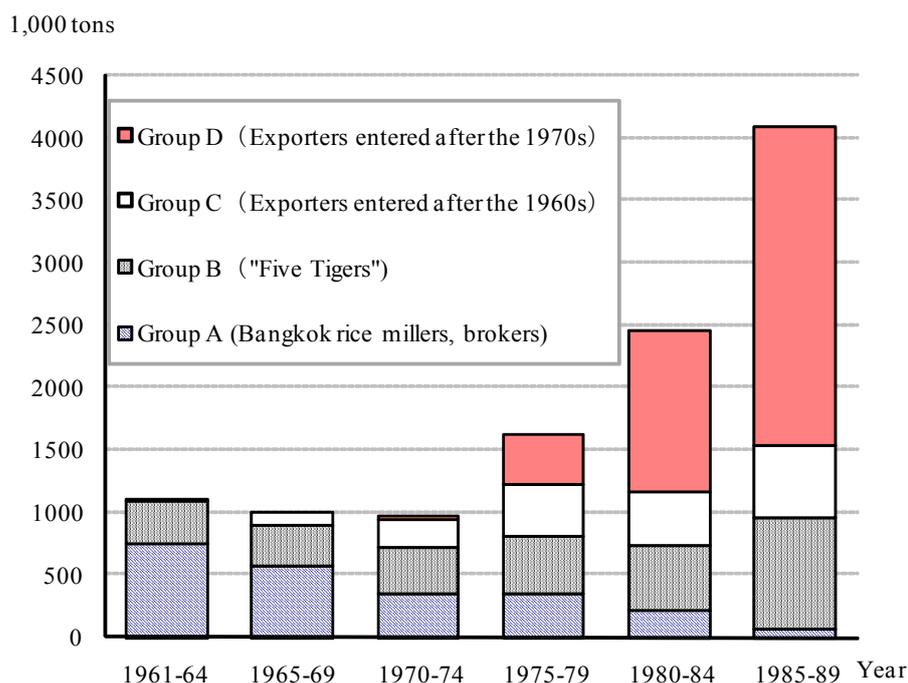
The stagnation of total trade volume was caused by the decrease in imports by Asian countries, from five million tons in 1980 to three million tons in 1990.¹⁰ This dramatic decline occurred because major importing countries, such as Indonesia and the Philippines, raised their self-sufficiency in rice supply. However, Middle Eastern and African countries increased their imports from 1.4 million to 1.8 million tons and from 2.5 million to 3.1 million tons, respectively. Thailand successfully increased its market share in these areas in the 1980s. In the Middle Eastern market, Thailand used to be far behind the US, but it caught up to the US in the 1980s. It competed closely with the US in the African market, but left the US far behind in the 1980s.

In the 1980s, the US government tried to control the production volume of rice in order to lessen the fiscal burden of subsidy. On the contrary, the Thai government stimulated rice production by cutting down the rice premium, an export duty. The policy toward rice production contrasted sharply between these two governments. The aggressive policy of Thailand ended in a success because it could develop the emerging markets such as the Middle East and Africa.

Entrepreneurship of Rice Exporters

Market development owes its success to the efforts of Thai rice exporters. Figure 4-7 shows the rises and falls of rice exporters which are put into categories by the period of their entrance into the rice-export industry. Group A are the exporters who have existed since World War II. Group B consists of the exporters called the 'Five Tigers' which cooperated with each other, for example by sharing orders and exchanging information, to gain market share from Group A. Groups C and D are the exporters who entered into the rice-export industry in the 1960s and 1970s to catch up with the Five Tigers. In the late 1970s, the exporters were in fierce competition, and those categorized as Group D performed better than the others in the 1980s.

¹⁰ Based on FAOSTAT data (faostat.fao.org/site/535/default.aspx#ancor), retrieved August 23, 2010.



Source: Foreign Trade Department, Ministry of Commerce and the Thai Rice Exporters' Association.

Figure 4-7 Rice Export Volume by Rice Exporters Group

The representative exporters of this group were Soon Hua Seng, Capital Rice, and Chaiyaporn Rice. These firms had kept the top three positions among more than one hundred exporters for the 13 years from 1989 to 2002.¹¹ Compared with the former exporters whose main market was Asia, the Group D exporters had been very eager to penetrate emerging markets, such as Africa and the Middle East. For example, Soon Hua Seng established its offices in Paris, Lomé in the Republic of Togo, and Dubai in the United Arab Emirates in the 1980s in order to respond to the needs of customers. This company sometimes sold rice directly to African customers without relying on international rice traders and brokers. It surprised other traders when it floated a rice cargo ship near the African coast to sell rice immediately when African customers, who often had financial difficulty, were ready to pay.¹² These methods were new for Thai rice exporters in those years. Capital Rice started its rice business by targeting the African market, and took the order of Europe for its food assistance program for Africa. Later, it expanded its market into Europe, the Middle East, communist countries such as the USSR and China, and the South American countries of Brazil, Chile, and Peru.¹³ Chaiyaporn Rice exported rice to Nigeria and Brazil, Chile, and Peru, and it later penetrated the rice markets in other African countries and the Middle East.¹⁴ In this way, the

¹¹ The author calculated the figures from the data of Adisak (2003) and the Thai Rice Exporters Association. In the case that there are more than two companies registered as rice exporters under the same proprietor, the figure of the leading firm represents the total export volume of group companies.

¹² Based on the author's interview at Soon Hua Seng on June 25, 1990 and the reports in *Prachachat Thurakit* (1989) and Wirat (1986).

¹³ Interview at Capital Rice on June 13, 1990.

¹⁴ Interview at Chaiyaporn Rice on June 14, 1990.

fastest growing rice exporters in the 1980s were those which dared to find new markets in Africa, the Middle East, and South America. In other words, these challenging exporters contributed to expanding the Thai rice market into new parts of the world.

As for the African market, the role of government-to-government (G-to-G) trade played a role to some extent. In the early 1980s, 20 to 30 percent of total export to Africa went through G-to-G contacts.¹⁵ In cases regarding importers insecure in payment, finance institutions may not open the letter of credit (L/C). As a result, it is often the case that private trade is mediated by credible international rice traders or that the government assumes the risk of the trade.

3. Government Intervention and Its Impact on the Rice Industry

The Thai government did not intervene in rice export even during the unprecedented price surge in early 2008 simply because there was no scheme ready to do so. It seems as if the Thai government applies the laissez-faire principle in rice trade. However, the role of government considerably influences the present performance of rice production and export in Thailand.

Market Mechanism for Delivering Price Signal

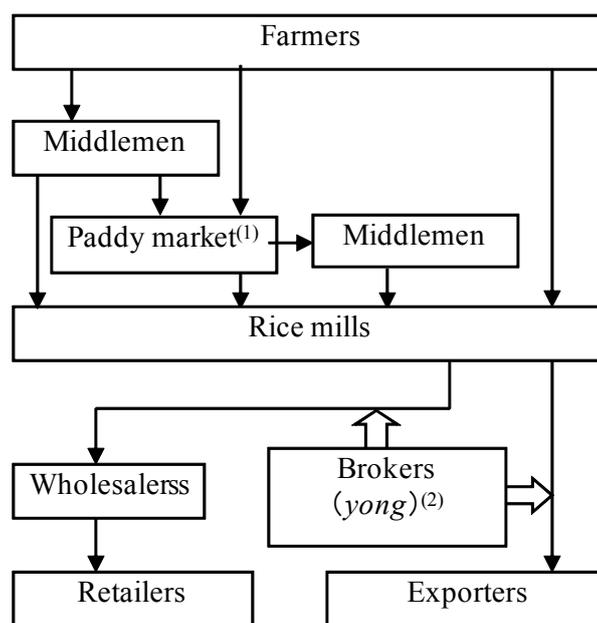
In Figure 4-8, the author roughly sketches the domestic channels of rice trade in Thailand. Farmers sell paddy to local traders or rice mills through direct negotiation. In some cases, they bring their paddy into a local paddy marketplace to find traders who may offer the most favorable price.

Rice millers usually purchase paddy by spot payments and mill it into white rice. When millers sell the white rice to exporters and/or wholesalers on the domestic market, they settle the trade through brokers called *yong*, originally a Chinese word. A *yong* collects information about the volume, kind, and price of rice which exporters and wholesalers want to purchase, and delivers the information to rice millers in the provinces. When the trade is settled, millers pay a commission, usually 0.75 percent of the trade value, to the *yong* and send the rice to the exporters and wholesalers. Millers get payment one to three months later.

A rice miller does not care whether its rice is sold for export or the domestic market, but care how much the purchaser offers for its rice. As a result, wholesalers have to offer prices as high as those offered by exporters in order to secure rice for their business. In this way, the price change in the international market immediately affects the wholesale price in the domestic market through the competition in purchasing rice at rice millers. This results directly in the change of retail price.

To sum up, there is no system to partition the flow of rice for export and domestic outlets. Stakeholders in trade compete with each other at each trade level. The price surge in the international market in early 2008 was immediately reflected in the rice price in each domestic trade level.

¹⁵ Calculated from the data of the Foreign Trade Department (1990).



Source: Prepared by the author.

Note: (1) The marketplace facilitated for farmers and merchants to negotiate and trade paddy.

(2) There are two types of brokers, one for the domestic and the other for the export market.

Figure 4-8 Domestic Market Channels of Rice

Governmental Intervention into Rice Trade

At present, traders who registered as rice exporters to the government can export rice without any restriction except that they must submit trade documents, such as the L/C and contract, and receive the standard quality inspection.¹⁶ Although the government requires exporters to submit request forms of export, this is just to collect export data. This regulation was defined in the revision of the Commerce Ministry's regulations on rice export in 1991.

Before that, there used to be several regulations that controlled rice export. Table 4-1 shows the major programs of the Thai government to intervene in the rice price mechanism. These programs are categorized into those which are expected to push down the domestic price (in the upper half of the table) and those which are for pulling up domestic price (in the lower half columns).

The most effective device for pushing down domestic price was the rice premium. The government could absorb the impact of a price rise in the international market by raising the rate of the rice premium. Until the 1970s, the rice premium accounted for 20 to 30 percent of the export price at Bangkok.¹⁷ Another frequently applied program was the compulsory

¹⁶ The regulation of rice export is explained at the homepage of the Foreign Trade Department ([www.dft.moc.go.th/the_files/\\$\\$8/level4/rice_export.html](http://www.dft.moc.go.th/the_files/$$8/level4/rice_export.html)). See also Foreign Trade Department, "Khumu kan song ok khao" (Manual for rice export), retrieved from ([www.dft.moc.go.th/level4Frame.asp?sPage=the_files/\\$\\$16/level4/a_w%20book.pdf&level3=370](http://www.dft.moc.go.th/level4Frame.asp?sPage=the_files/$$16/level4/a_w%20book.pdf&level3=370)).

¹⁷ Data from Thai Rice Exporters' Association.

Table 4-1 Government Programs for Price Intervention

Expected impact on domestic rice price	Program name	Start year	End year
Down	Rice premium	1954	1986
	Export tax	1952	1985
	Compulsory storage	1960	1982
	Export quota ⁽¹⁾	1974	1978
Up	Export quota ⁽²⁾	1984	1986
	Direct purchase by state agencies	1975 ⁽³⁾	1980s and 1990 ⁽⁴⁾
	Pledging	1982	2009

Source: Benchang (2000, pp.30-31), Supiya (1991, pp.85-86), Ammar and Suthad (1989, p.30), Ammar (1975, p.238), Sukchai et al. (1982).

Note: (1) The purpose was controlling the volume of export. The quota was distributed according to the past records of export.

(2) The quota was distributed according to the stock volume for encouraging exporters to purchase rice from the domestic market.

(3) The initial program started in 1966, but has become substantially effective since 1975.

(4) The programs were gradually replaced by the pledging scheme in the 1980s and 1990s.

storage scheme, in which exporters were forced to sell a certain amount of rice to the government at the officially fixed price. The amount of enforced delivery was occasionally set as high as 200 percent of export volume (Supiya 1991). This purchased rice was stored and sold to urban consumers at a relatively low price when the market price surged. The export quota in the 1970s was to control the volume of rice exported during periods of strong demand in the foreign market.

These programs for price control had been abolished by the mid-1980s. On the contrary, price enhancement schemes have been seriously implemented from the 1980s up to the present. The export quota in the 1980s was allocated according to the stock volume of the exporter, which is intended to motivate exporters to purchase more rice in the domestic market. Although the scheme of purchasing paddy by government agencies started in 1966, it has only functioned practically since the mid-1970s. The volume of purchase started to increase in the 1980s. The paddy pledging scheme started in 1982 as a governmental program for pulling up farm prices, and became the major scheme for supporting farmers. The volume of procurement in this program reached 20 percent of total production in the year 2000.

In this way, the Thai government changed its price intervention policy from a consumer-oriented to a producer-oriented one in the 1980s. This contrasts with India and Vietnam, which still keep schemes to protect consumers from price surges. This transformation happened in the 1980s partly because per capita rice consumption had already started to go downward and because the expenditure for rice dropped in the household budget. According to the government's household expenditure survey, a household in Bangkok spent

Table 4-2 Volume of Pledged Rice and its Share in Total Production

Crop year	Pledged rice (1,000 tons)	Share in total production (%)
1995/96	1,180	5.4
1996/97	860	3.9
1997/98	780	3.3
1998/99	670	2.9
1999/2000	698	2.9
2000/2001	2,076	8.0
2001/2002	6,091	21.7
2002/2003	5,584	19.9
2003/2004	2,502	8.5
2004/2005	6,093	21.4
2005/2006	7,466	24.6
2006/2007	3,445	11.6
2007/2008	4,368	13.6
2008/2009	10,680	33.3

Source: Internal Trade Department, homepage (www.dit.go.th),
Benchang (2000, p.33), Uti sapha (2010).

on average 7 percent of total expenditure for grain in 1975, but only 3 percent in 1988 (NSO 1979; 1990). When the government started its price-support scheme for farmers in 1976, urban sector workers in Bangkok immediately protested against the policy, whereas there was no collective action among urban dwellers in 1981 when the price of white rice rose sharply.

In the midst of the price surge in 2008, urban consumers stayed calm, too. Rather, the export control was called for by rice exporters who had to purchase rice in the domestic market at surging prices (*Prachachat thurakit* 2008). However, the Commerce Minister insisted that there was no need of intervention by referring to his calculation that six million tons of domestic need could be secured by 2.1 million tons of governmental rice stock and the coming harvest of four million tons of dry season crop (TREA 2008).

Paddy Pledging Scheme

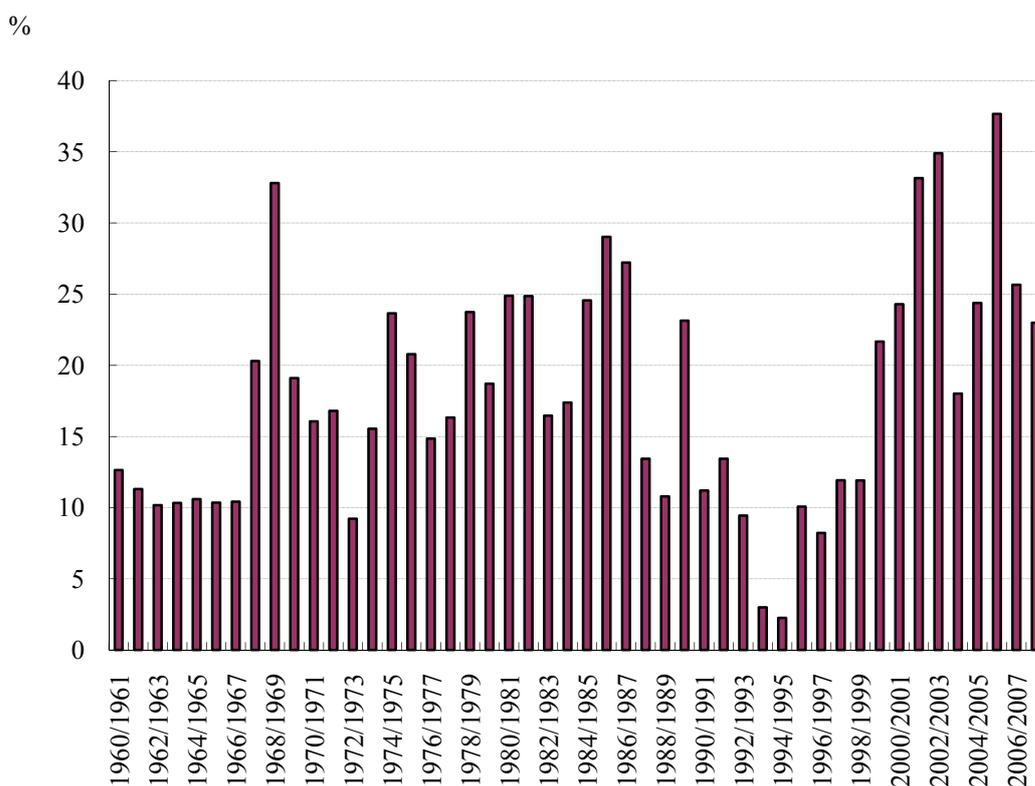
As mentioned before, the paddy pledging scheme had been the main component of programs for supporting farm prices since the 1990s. The scheme was implemented in the following manner. A farmer pledges his/her paddy in a warehouse of his own, a farmers' organization, or a rice mill in the same province. The government assigns the Bank of Agriculture and Agricultural Cooperatives (BAAC), a state enterprise for accommodating finance in the rural sector, to lend the farmer money equivalent to the value of the pledged rice. The value is calculated at a price predetermined by the government. Rice mills are allowed to accept rice volume to a maximum of 50 times the daily milling capacity. The mills are required to have

facilities for drying and stocking paddy. Milled rice is sent to warehouses arranged by the government.¹⁸ The farmer can choose within three to four months, whether to forfeit or redeem the pawn. In the former case, the farmer keeps the lent money as the payment of the paddy. This means that the scheme guarantees that farmers sell their paddy at the governmentally fixed price. In the latter case, the farmer must pay interest at 3 percent per annum.

The volume of pledged paddy was not significant until the 1990s, in most years, less than 5 percent of total production (Table 4-2). However, the share reached more than 10 percent, sometimes 20 percent, after 2000. It had become a meaningful program for many farmers.

The Impact of the Scheme on Production and Export

The paddy pledging scheme is one of the factors that has effected the change in farm management of rice cultivation. As we have seen in the case of Suphan Buri, farmers increased input because they could expect a certain level of paddy price under this scheme. The yield has been increasing and paddy has been planted three times rather than twice in a year. These two changes have brought the rapid increase of rice production volume.



Source: United States of America, Department of Agriculture homepage(www.usda.gov/psdonline/).

Figure 4-9 Ratio of Stock to Domestic Consumption Volume at the Year End (%)

¹⁸ Based on the explanation for rainy season crop of 2006/07 posted on the homepage of the Department of Internal Trade (www.dit.go.th).

Rice millers welcomed the scheme, too. They received fees for milling pledged paddy, which meant that accepting more paddies gives them more income. Since the capital for paying farmers was provided by the BAAC, the millers could save their capital for other purposes, such as enlarging the scale of production. They had an incentive to develop their facilities since the government allocated the amount of paddy according to the rice-milling capacity and the facilities for drying and stocking. During the period from 2003 to 2007, the number of participating rice mills fluctuated between 400 and 800. Compared with the membership of the Thai Rice Mills Association, which was around 800 in 2009,¹⁹ it can be said that a considerable number of mills joined this program.

Since the pledged rice was stored as the stock of the government, the volume of stock in Thailand apparently increased after the expansion of this program. As shown in Figure 4-9, the stock started to decrease when the compulsory delivery scheme ended at the end of the 1980s, but turned upward again in the late 1990s. The figure indicates that the government had a stock of rice equivalent to 20 to 30 percent of yearly domestic consumption. This helped the government to refrain from controlling export volume even in the situation of early 2008.

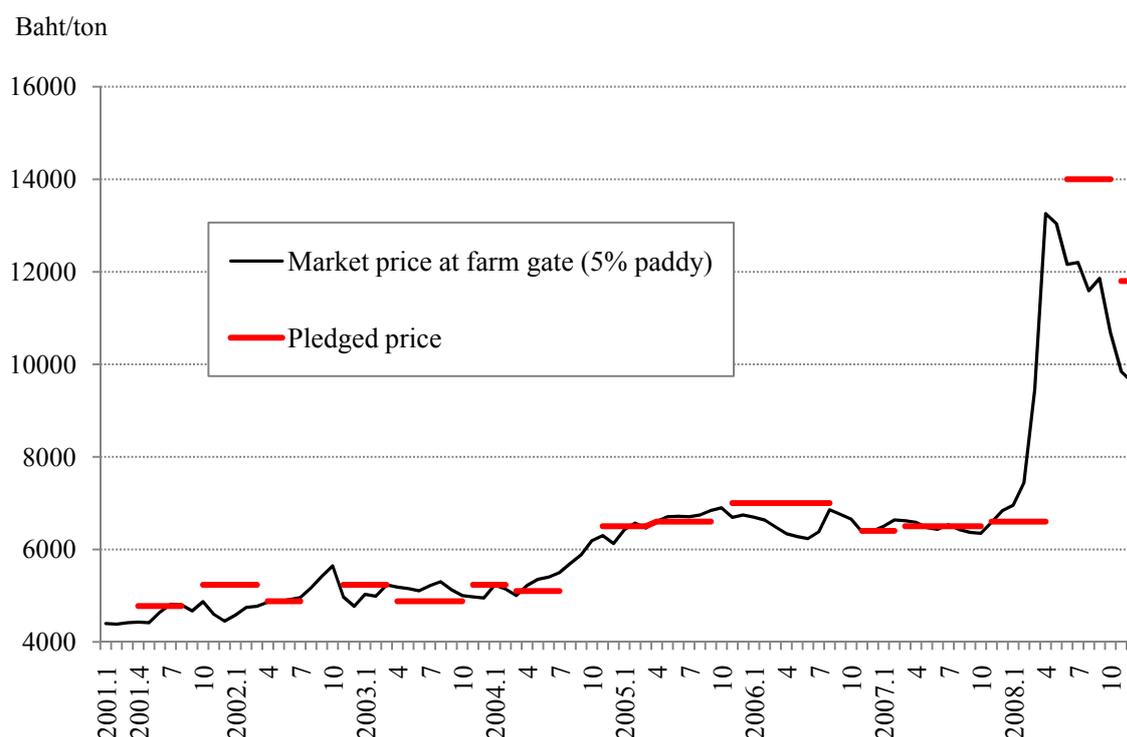
However, the government had to discharge the stock, too. Usually, the government invited exporters for a public tender. This gave an opportunity for some new exporters to increase their export volume rapidly. The exporters, such as President Agri Trading, Asia Golden Rice, and Phonlap, appeared in the list of the top ten exporters in the late 1990s. They were still very small exporters or had not yet been founded in the 1980s. Their success can be partly attributed to the aggressive bidding in the stock tender by the government (*Prachachat Thurakit* 2001; Phusadee 2005; *Than Setthakit* 2008). The government had to save the storage cost and, moreover, secure storage space to accept new pledged rice in the coming season, with the result that the highest bid was often considerably lower than market price.²⁰ This scheme gave a subsidy not only to farmers but also to bid-winning exporters since the government sold rice at a lower-than-market price.

Financial Burden of the Government

The paddy pledging scheme benefited farmers, millers, and exporters, while the cost of the scheme was shouldered by the government. The government had to compensate for the back spread between the purchasing and selling prices of rice. Figure 4-10 compares the market price of 5 percent paddy and the pledged price. It shows the latter was considerably higher than the former, especially when there were some political events in which the government needed to attract the support of the rural population, such as the period when the newly-formed Thaksin Shinawatra Administration had to demonstrate its populist policy in 2001 and 2002, and when the Thaksin Administration was shaken by anti-government movements among the urban middle class in early 2006 and 2008. The government might have had a chance to gain if the market price had risen from the level of the purchasing price. Actually, however, the chance was slim because the government had purchased rice at an inflated price. In October, 2006, the Finance Minister disclosed that the deficit of the scheme during the 2004-2006 seasons was 18 billion baht (Phusadee & Chatrudee 2006), which is

¹⁹ Based on the information in the homepage of the Thai Rice Mills Association (www.thairicemillers.com) and an interview at the Association on April 29, 2009.

²⁰ For example, the highest bid was US\$183 per ton for 5 percent white rice in August, 2005 when the market price was US\$287 (Phusadee 2005).



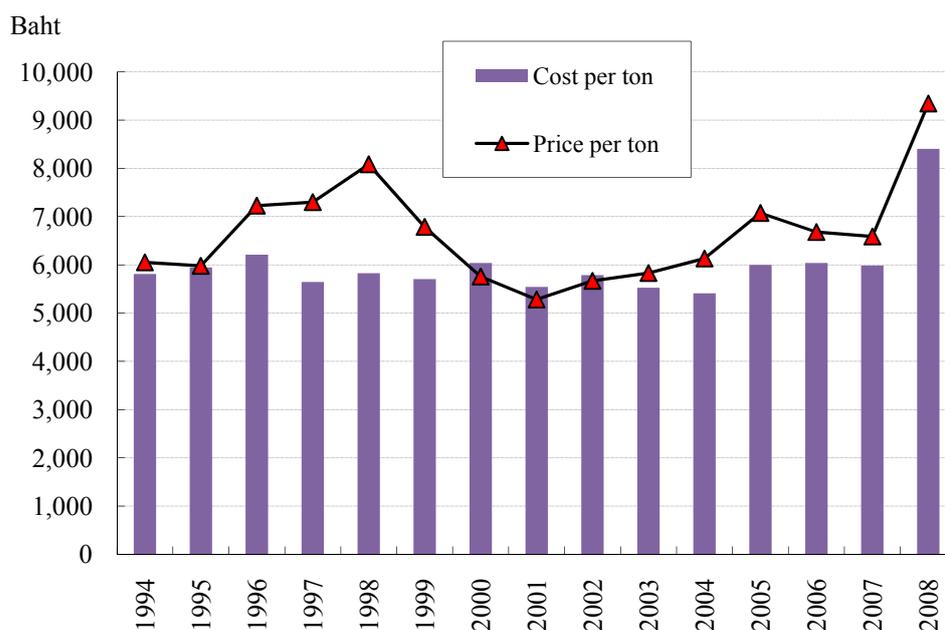
Source: Office of Agricultural Economics homepage and Internal Trade Department homepage.

Figure 4-10 Market Price and Pledged Price of Paddy (monthly average)

equivalent to 1.3 percent of the total state budget or 25 percent of the budget for agriculture in 2006. In addition to compensation for this price gap, the government had to pay the cost of transportation and storage.

The Rice Pledging Scheme and Farm Economy

In spite of the heavy burden to the government coffers, this scheme continued for decades. As we saw in the case of Suphan Buri, farmers had been increasing their input, presuming that the pledging scheme would be there to guarantee the paddy price. Figure 4-11 shows the cost, price, and profit per unit area (*rai* or 0.16ha) of rainy season paddy from 1994 to 2008 in real terms (deflated by consumer price index). Even though the yield of rainy season crop was increasing during the same period as seen already, the cost did not show any downward tendency, and the profit went up and down according to the price fluctuation. Since paddy cultivation has become more and more capital intensive, farmers tend to call on the government to raise the guarantee price under the pledging scheme. Pushing the government may end with a higher guarantee price, since the price is decided through political consideration by the government. In May 2008, rice farmers engaged in collective action, such as blocking roads, even though the paddy price was still as high as twice that of a half year earlier. At that time, the oil price surged to push the prices of agricultural inputs up. For



Note: One rai is about 0.16ha.

Source: The database and homepage of Office of Agricultural Economics.

Figure 4-11 Cost and Profitability of Paddy Production (Rainy season rice, deflated by CPI based on 2007 price)

example, the fertilizer price jumped 50 percent from December 2007 to May 2008.²¹ Therefore, farmers were afraid that the price fall would force them to lose the opportunity of gain, or possibly even end up in debt. Meanwhile, in Bangkok, the middle class aggressively organized collective, anti-government actions. The government thus could never lose the support of the rural people. This was the backdrop against which the government set the pledging price at 14,000 baht, which was 2,000 baht higher than the exceptionally high market price of paddy in Thailand at that time.

Comparative poverty still remains a serious social problem in Thai society, as the income of a farm household on average is 40 percent that of the urban middle class.²² Moreover, the rural population has recognized that their votes matter in national politics after Thaksin Shinawatra implemented the populist policies in 2001. The present Democrat-led government abolished the rice pledging program, but introduced an income guarantee program instead. In this new program, farmers will receive a subsidy equivalent to the gap between the market price and the governmentally guaranteed price in case the former falls below the latter. The present government asserts that the new scheme is better in saving expenditure for milling, transporting, and stocking rice, and in leaving the price mechanism to work in the domestic rice market. In any event, the Thai government, whether it is pro- or anti-Thaksin, does not seem to want to discontinue supportive policies for farmers.

²¹ The price data of agricultural inputs retrieved May 30, 2009 from the homepage of the Office of Agricultural Economics (www.oae.go.th).

²² According to the Household and Socio-economic Survey (NSO 2008), the monthly expenditure of a farm operator's household was 29 percent of that of a professional, technical, and administrative worker's household, and 65 percent of that of a clerical, sales, and services worker's household in 2007.

Conclusion

Even though the surge in the export-rice price doubled the price to consumers within a half year, the government of Thailand did not take any measures to restrict rice export. The reasons were as follows. Firstly, a large volume of rice production prevented the government from feeling insecure in rice procurement for domestic consumption. At the time of the international price surge, the government had its rice stock equivalent to one-fifth of yearly domestic needs. Moreover, the dry season crop was soon to flow into the market. Secondly, consumers did not feel insecure about the rice supply since rice had never disappeared from retail stores, even when the price went up. The rice millers provide rice both to the export and domestic markets since there is no discrimination in price offered by the buyers of these two markets. Thirdly, the consumers could stay quiet since the price rise was not a serious threat to the economic stability of most consumers.

This large surplus for export was the result of a widening gap between production and domestic consumption. Production has consistently increased for these five decades because of farm land expansion, until the 1970s, and yield increase which was brought about by the dissemination of high-yielding varieties and increasing inputs of farmers to their land. The consumption volume became stagnant and has even gone down since the 1980s because per capita consumption decreased in the 1970s and population growth slowed down. The downturn of per capita consumption may be the result of economic growth led by urban sector development.

Compared with the urban sector growth, the rural economy was left far behind. The government changed its agricultural policy from a consumer-oriented to a producer-oriented one in the 1980s. The government implemented some schemes which might enhance market prices or ensure farmers a better price than that offered in the local market. The rice pledging scheme was one of such schemes and became the main tool of rice price policies. In the last decade, the scheme stimulated farmers to produce more rice from their fields. They input more fertilizers and planted rice as often as they could since they recognized that paddy price could be pushed up by collectively pressing the government. The production growth of Thai rice since the 1990s is partly owed to the price subsidy programs.

Even though the subsidy scheme forced the government to shoulder a considerable fiscal burden, such subsidy was inevitable. The government is obliged to do so since farmers represent the poor of this society, while the politicians are willing to do so since farmers represent their constituency. The subsidy was also suitable to the past trend of the international market. The market has been expanding, and Thai rice could be sold anyway. The food crisis in 2008 was partly alleviated by Thailand's capacity in providing rice to the world market.

However, the good fortune of Thailand may disappear if the world market stops expanding or if new exporters emerge in the market. At that time, the high cost of rice production would be a serious problem determining the competitiveness of Thai rice. In this case, the government will be unable to support all rice growers. Thailand is now moving to the stage of a developed country, and its agriculture will need an adaptation in keeping with this new stage.

Reference

- Adisak Prombun. 2003. "Khong sang phrutikam lae phon kan damnoen ngan khong borisat song ok khao khong prathet thai," [Structure, behaviour, and performance of Thai rice exporters] MA Thesis, Bangkok: Chulalongkorn University.
- Ammar Siamwalla. 1975. "A History of Rice Policies in Thailand." *Food Research Institute Studies* 14, no. 3: 233-49.
- Ammar Siamwalla, and Suthad Setboonsarng. 1989. *Trade, Exchange Rate, and Agricultural Pricing Policies in Thailand*. Washington, D.C.: World Bank.
- Ammar Siamwalla, and Wirot Nanarong. 1990. *Pramuan khwam ru ruang khao*. [A compilation of knowledge about rice]. Bangkok: Thailand Development Research Institute.
- Chaiyong Chuchat. 1960. *Nayobai kan kaset wa duai kan wichro wathuprasong withi kan lae kan damnoen nayobai kaset khong prathet thai lae tang prathet*. [Targets, methods, and practices of agricultural policy of Thailand and foreign countries]. Bangkok: Prae Bhitthaya.
- Benchang Phut-anchali. 2000. *Wikhro matrakan khong kan rap chamnam khao khong prathet thai*. [An analysis of procedures in the rice pledging scheme of Thailand]. Bangkok: Thammasat University.
- Foreign Trade Department (FTD). 1990. *Sathiti lae khomun khao thai kiao kap kan phalit kan song ok kha thamniam rakha lae stok pi 2523-2532*. [Statistical data of production, export, levies, and stock of Thai rice]. Bangkok: FTD.
- Jerachone Sriswasdilek. 1973. "The Yield Performance and Economic Benefits of the High Yielding Rice Varieties in Don Chedi, Suphan Buri, Thailand," MA Thesis, Manila: College of Agriculture, University of the Philippines.
- National Statistical Office (NSO). 1979. *Report Socio-economic Survey 1975-76, Whole Kingdom*. Bangkok: NSO.
- _____. 1990. *Report of the 1988 Household Socio-economic Survey, Bangkok Metropolis, Nonthaburi, Pathum Thani and Samut Prakan*. Bangkok: NSO.
- _____. 2002. *The Population and Housing Census 2000, Whole Kingdom*. (CD-ROM). Bangkok: NSO.
- _____. 2004. *Report of the 2004 Household Socio-economic Survey, Whole Kingdom*. (CD-ROM). Bangkok: NSO.
- _____. 2005. *2003 Agricultural Census, Whole Kingdom*. (CD-ROM). Bangkok: NSO.
- _____. 2008. *The 2007 Household Socio-economic Survey, Whole Kingdom*. Bangkok: NSO.
- Phusadee Arumnas. 2005. "Rice Bid below Market Price." *Bangkok Post*. August 16.
- Phusadee Arumnas, and Chatrudee Theparat. 2006. "Rice Scheme Caused Debt and Stockpile: Government Should Compensate Farmers." *Bangkok Post*. October 27.
- Prachachat Thurakit. 1989. "Kho sadaeng khwam yindi kap kitti damnoenchanwanit na okat dai rap phra racha than parinya prachakusadi banditkittimasak." [Celebration for the honorary doctorate degree for management science of Kitti Damnoenchananit]. (supplement).
- _____. 2001. "Hua khai khao iran taek krachoeng: phonglap chae yun song khon diao."

- [Collusion among rice exporters to Iran exposed: Phonlap disclosed the story behind one-company bidding]. June 18-20.
- _____. 2008. "Phu song ok kam ngoen sot yaeng su khao thua prathet. rakha talat lok thalu phan rian/tan." [Exporters rush to purchase rice all over the country with cash in hand. The international price surged to over 1000 dollars]. March 31 – April 2.
- Samnak ngan phatthana withayasat lae theknoloji haeng chat (SoWoThoCho). 2001. *Withayasat lae theknoloji kap khao thai*. [Science, technology, and Thai rice]. Bangkok: SoWoThoCho.
- Shigetomi, Shinichi. 1996. *Tai noson no kaihatsu to jumin soshiki*. [Rural development and local organizations in Thailand]. Tokyo: Institute of Developing Economies.
- Sukchai Suptrakun, et al. 1982. "Sarup kan damnoen nayobai kan kha lae kan saek saeng talat khao khong prathet nai raya 20 pi (tang tae pi 2505 thung 2525)" [Summary of trade and market intervention policies for 20 years (1962-1982)]. *Warasan setthakit kan phanit*. 12 (133).
- Supiya Chansena. 1991. "Nayobai khao khong rathaban thai rawang pho.so.2504-2529" [Rice policy of the Thai government between 1961 and 1986]. MA Thesis. Bangkok: Sinakharin Wirot Prasanmit University.
- Thai Rice Exporters Association (TREA). 2008. "Weekly markets reports." April 2-8. <http://www.riceexporters.or.th>.
- Than Setthakit*. 2008. "Yong' prap kha nai na kha khao: rap ngoen duan tong chai roi la 1.50." [Yong raised commission fee: In case of immediate payment, 1.5%]. May 11-14.
- Uti sapha (Upper House). 2010. "Kan sukka khong kan rap chamnam khao pluak na pi lae na prang nai pi kan phalit thi phan ma (rudu kan phalit pi 2543/44 thung pi 2550/01)." [Study on the paddy pledging program for the rainy and dry season rice from the 2000/01 to the 2007/08 crop year]. Bangkok: Uti sapha. <http://library2.parliament.go.th/giventake/sndoc.html>.
- Vivat Shotelersuk. 1979. *Kan tat sinchai nai kan pluk khao ko kho. khong chao na nai changwat Suphan Buri*. [Farmer decision making in HYV of rice adoption in Suphan Buri]. Bangkok: Chulalongkorn University.
- Wirat Saengthongkham. 1986. "Khwam ying yai 'Soon Hua Seng' yu thi 'khwam mai' khong ngan mai champen tong yoen yo." [The greatness of Soon Hua Seng is in the self assessment of its work, not in the assessment by others]. *Phu chat kan*. 35: 140-159.