

## CHAPTER III

### GLUTINOUS RICE PRODUCTION SYSTEMS IN THE MEKONG DELTA

This chapter will provide a general background about the glutinous rice production in the study site. First of all, the general description of Mekong Delta was presented, then, three provinces were selected which will be described. Then it analyzes the glutinous rice production system such as glutinous rice areas, growing season and economic efficiency. Next, the marketing activities of farmers were presented, and lastly, some related policies.

#### 3.1 General description of Mekong Delta

The Mekong River, also known as “Song Cuu Long” the Vietnamese name or River of the Nine Dragons has its origin in the highlands of Tibet, China. It serves as a boarder between China and Myanmar and Myanmar and Lao P.D.R. at the beginning and boards Lao P.D.R. and Thailand at the middle. The river flows through Cambodia before it ends in a delta in the southern Vietnam. Finally, it empties into the South China Sea after about 4,500 kilometers in travel distance. In Phnom Penh, Cambodia, the Mekong splits into two main branches, the more southern heading Hau Giang and the northern Tien Giang. In the latter, it splits once again about 200 km downstream into several branches entering the study area and forming the main part of a network of constant and temporary river arms, canals and creeks.

The Mekong delta of Vietnam possesses enormous economic potential in terms of its highly productive land, good infrastructure and relatively flat topography. Intensification of agricultural activities in the delta is taking place at a great pace leading to the rapid change in the land use/land cover types. Some industrial developments are also apparent. Uncertainties on the environmental factors such as flooding and tidal inundation exerts greater pressure in providing accurate and timely

information necessary for effective land use planning. The population density in the Mekong Delta is highest compared to other regions of the country. The population growth rate is 2.5%. Considering these, there is an urgent need to access and monitor the land use/land cover types of the area for economic development and environmental monitoring.

Mekong Delta, located in the southern tip of Vietnam, covers an area of 39,000 square kilometers. It is a new delta believed to be formed 6000 years ago. The delta is one of the best rice growing regions of the world and also the biggest rice growing areas of Vietnam. The region accounts for 45% of the total rice production of the country. Almost all arable land is under intensive cultivation in the northern part of the country whereas only 67% of the arable land is under cultivation in the Mekong Delta. In the delta, every year 1 to 1.2 million hectares are submerged for 2-4 months due to the flooding. At present rice is being grown on 2 million hectares and it is possible to reclaim an additional 400,000 hectare. Some 40% of the total area is alkaline and 700,000 hectare is effected by salinity (UNCED, 1992). However, in recent years, pressure on the remaining land has been intense and through artificial reclamation and irrigation, rice growing areas are increasing. Moreover, a few years ago only a single crop was possible mainly due to flooding, drought and salinity but now as much as three crops a year are being practiced. Recently high yielding rice varieties have been introduced by the Vietnamese authority which made it possible to yield higher production per unit area.

The main landform types in the study area include sand dunes, alluvial plains, fluvial-marine plains and denudation slopes. Dominant soil types are sandy, alluvial, degraded grey, saline, acid sulphate and feralitic. The main part of the study area is strongly influenced by changes of the water level mainly because of its low elevation. Annual extremes are connected with the typical tropical climate with an approximate average temperature of 27<sup>0</sup> C. There are two seasons, the dry season from November to April and the rainy season from May to October.

## 3.2 General description of study site

### 3.2.1 Long An province

Long An province is located in the Cuu Long (Mekong) Delta, bordering Tay Ninh province and Cambodia to the north (137.7km of border with Cambodia), Ho Chi Minh City to the east, Tien Giang province to the south, and Dong Thap province to the west. With a total area of 4,491sq.km, Long An is home to about 1.42 million residents with nearly 9,200 people being of working age (a 2005 statistic). Long An province is linked economically, culturally and socially with all the other localities in the Mekong Delta and is a gateway to other provinces in the delta. In addition to existing national highways 1A and 50, the Government has plans to build more roads that will pass through Long An province such as roads N1 and N2, expressways, and the Ho Chi Minh City belt-road. The Government also plans to upgrade national highways 1A and 50. There are provincial roads that lead to Ho Chi Minh City such as roads 823, 824, and 825. In addition to these, road 8, which runs through a village in Long An province, and belt-roads 3 and 4 are well-used for goods transportation. Two rivers, the Vam Co Dong and Vam Co Tay, run through Long An province and empty into the East Sea.

Over the past five years, Long An has considerably improved both the quality and the yield in agriculture and animal husbandry. From 2001-2005, agricultural production rose an average of 4.9 percent a year, fishery 20.1 percent, and forestry 6.2 percent. The growth of the entire agricultural sector of Long An province is projected to be seven percent yearly from 2006-2010. The production value of the sector is expected to exceed VND7.31 trillion by 2010 with agriculture increasing 77 percent, forestry four percent, and fishery 19 percent. Under the province's plan for industrial development until 2010, Long An will be trying to expand agricultural production, food and drink processing, and the production of textiles, garments, footwear, mechanical products, metal products, chemicals, plastics, rubber, and construction materials.

### 3.2.2. Tien Giang province

The average growth rate is expected to be 8-9% in period 2006-2010, and 9% in period 2001-2010. GDP per head will be US\$976 (recent price), an increase of 2.65% compared to that of 2000 in which the value of each economic sector increased in each period rapidly pushing up socio development investment to focus on investment in improving competitiveness capability, and effectiveness of the economy; a step by step process completing its infrastructure. The investment rate in GDP will be up to 34-35% in 2010. This will extend, and improve the effectiveness of foreign affairs economy, creating conditions for promoting export, and drawing capital, and technology from outside. The export turnover is predicted to obtain US\$ 300 million in 2010. The export value per head would be US\$150 in 2010. There is active investing for the creation of a new source of income for the local budget. With quality managing, and organizing of the province's budget; in 2010, the reception rate of local budget is expected to be over 8%, if practices of thrift spending, and increasing reasonable incomings for development investment are performed.

Tien Giang province has planned and developed projects on farming high quality rice varieties. So far, the province has developed a total area of high quality rice per crop, of over 180,000 hectares per year. This consists of the Go Cong area, an area within the flood prevention dykes in the western districts. The area is used for farming fragrant and sticky rice varieties, successfully meeting the demand of local consumers and for exporting. According to the provincial Department of Agriculture and Rural Development, each year the province's high quality rice growing area produces 600,000 tones of specialty rice, 140,000 tones of fragrant rice with the varieties of OM 3536, MTL 250, VD 20 and Jasmine 85, and 100,000 tones of sticky rice. The growing of high quality rice varieties has helped increase the local farmers' incomes by between 25 and 30 percent.

### 3.2.3 An Giang province

An Giang Province is located to the west of the Mekong Delta between the Tien and Hau rivers and shares a 100km border with Cambodia in the northwest. It also shares a border with Dong Thap Province in the east, Cantho City in the southeast, and Kien Giang Province in the southwest. An Giang has two main types of topography: midland areas and low mountains. The low mountains are Bay Nui (Seven Mountains) in Tinh Bien and Tri Ton districts. Vinh Te canal runs along the province's border in the west, which connects from Chau Doc to Ha Tien. Regarding the climate, An Giang is divided into two seasons: the rainy (from May to November), and the dry (from December to April next year). The annual average temperature varies around 27°C. The highest temperature is 35°C - 37°C from April to May and the lowest one is 20°C - 21°C from December to January next year. The annual rainfall is 1,400 - 1,500mm. An Giang is the main province in rice output.

Over the past five years, the gross domestic product (GDP) of An Giang province has increased 9.1 percent annually, 2.25 times that during 1995-2000. The province's economy has been restructured to increase services and reduce agriculture. In 2005, agriculture, forestry and fishery account for an estimated 37.6 percent, industry and construction 12.1 percent, and services 50.3 percent. The average per capita income is estimated at VND8.53 million, 85 percent higher than back in the year 2000.

From now to 2010, the province's GDP is projected to grow 12 percent a year. By 2010, agriculture, forestry and fishery are expected to make up 24.36 percent of the provincial economy, construction 15.36 percent, and services 60.28 percent. Per-capita income is projected to reach VND17.3 million, and export revenue to total US\$700 million by 2010. The province is trying to obtain investment capital from both domestic and foreign sources. An Giang is improving its investment environment to make it more attractive to investors.

### 3.3 Glutinous rice production systems in the study site

#### 3.3.1 Glutinous rice production areas

In the MD there are some main areas of cultivation of GR such as Phu Tan district, An Giang province; Cho Gao and Cai Be district, Tien Giang province and Chau Thanh and Thu Thua district, Long An province. These are areas specializing in GR cultivation in MD. The traders, dryers and millers are only involved in the GR business (not business in the non-glutinous rice) and the technology of the dryers and millers only used for GR. Some of farmers plant non-glutinous rice for their personal consumption. The total cultivated areas at the study site decreased from 2004 -2006 because of the transfer of crop structure from growing glutinous rice or non-glutinous rice to fruit trees. But the total production continued to increase because of an increase in yield (table 3.1 and figure 3.1).

Table 3.1: Cultivated area and total production of glutinous rice in study site

Study site	2004		2005		2006	
	Cultivated area (ha)	Total production (ton)	Cultivated area (ha)	Total production (ton)	Cultivated area (ha)	Total production (ton)
CT	25,680	125,832	25,120	130,620	24,670	135,685
CG	15,360	78,336	15,267	83,969	14,158	82,116
PT	32,059	185,942	29,935	185,597	28,774	187,031

Source: Statistics department of district, 2006

Note: Cultivated area: total area that farmer planted two or three crops per year.

Total production = cultivated area X average GR yield

CT: Chau Thanh district; CG: Cho Gao district and PT: Phu Tan district.

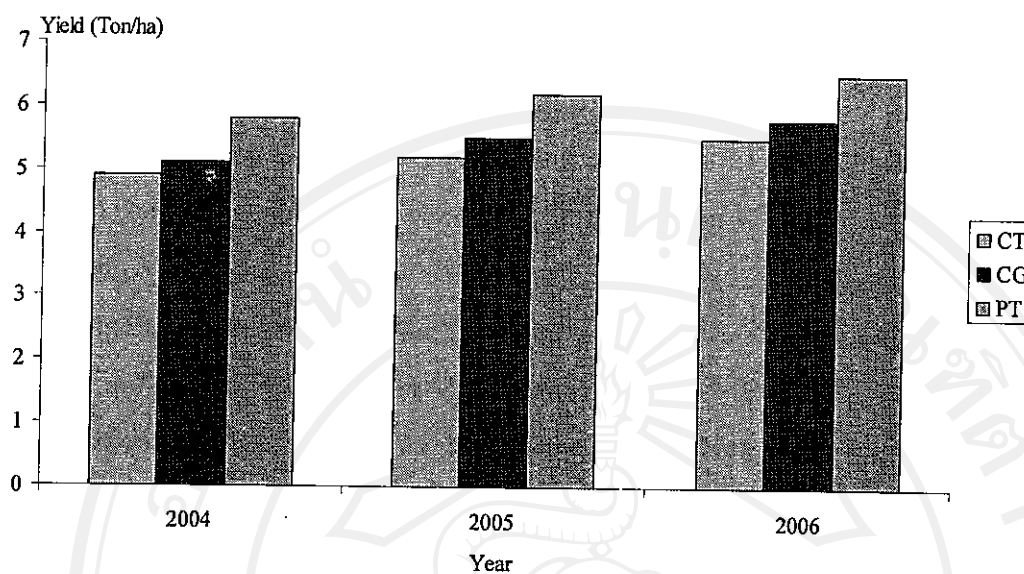


Figure 3.1: Glutinous rice yield of study site (from 2004-2006)

Source: Statistics department of district, 2006

CT: Chau Thanh district; CG: Cho Gao district and PT: Phu Tan district.

In the table 3.1 and figure 3.1 show that the cultivated areas in Chau Thanh district, Long An province decreased from 25,680ha (in year 2004) to 24,670ha (in year 2006) but the total glutinous rice production increased from 125,832 tons to 135,685 tons. In the Cho Gao district, Tien Giang province with GR cultivated areas also reduced from 15,360 ha to 14,158 ha but total production grew from 78,336 tons to 82,116 tons, average GR yield increased from 4.9 tons per ha to 5.8 tons per ha. Especially, in Phu Tan district, An Giang province which has the biggest cultivated areas GR in the Mekong Delta also had a decreasing trend from 32,059 ha (in year 2004) to 28,774 ha (in year 2006) and the total GR production increased from 185,942 tons (2004) to 187,031 tons (2006). The Phu Tan district had the highest GR yield in this study area since these areas have good growing conditions because of the land and weather.

### 3.3.2 The description of glutinous rice growing season

In the Southern, there are two seasons; the wet season and dry season. Usually, the wet season is from April to November. In the wet season, the monsoon gradually begins in April, and increases in May and is heavy from June to October. The rainfall levels are relatively high, but diminish in September and finish in October. The dry season is from November to March. Depending on the weather conditions and the ecosystem in the Mekong Delta growers may have two or three rice crops, but in the study site, there were three glutinous rice crops, these were a Winter – Spring crop, Summer – Autumn crop, and Autumn – Winter crop (figure 3.2).

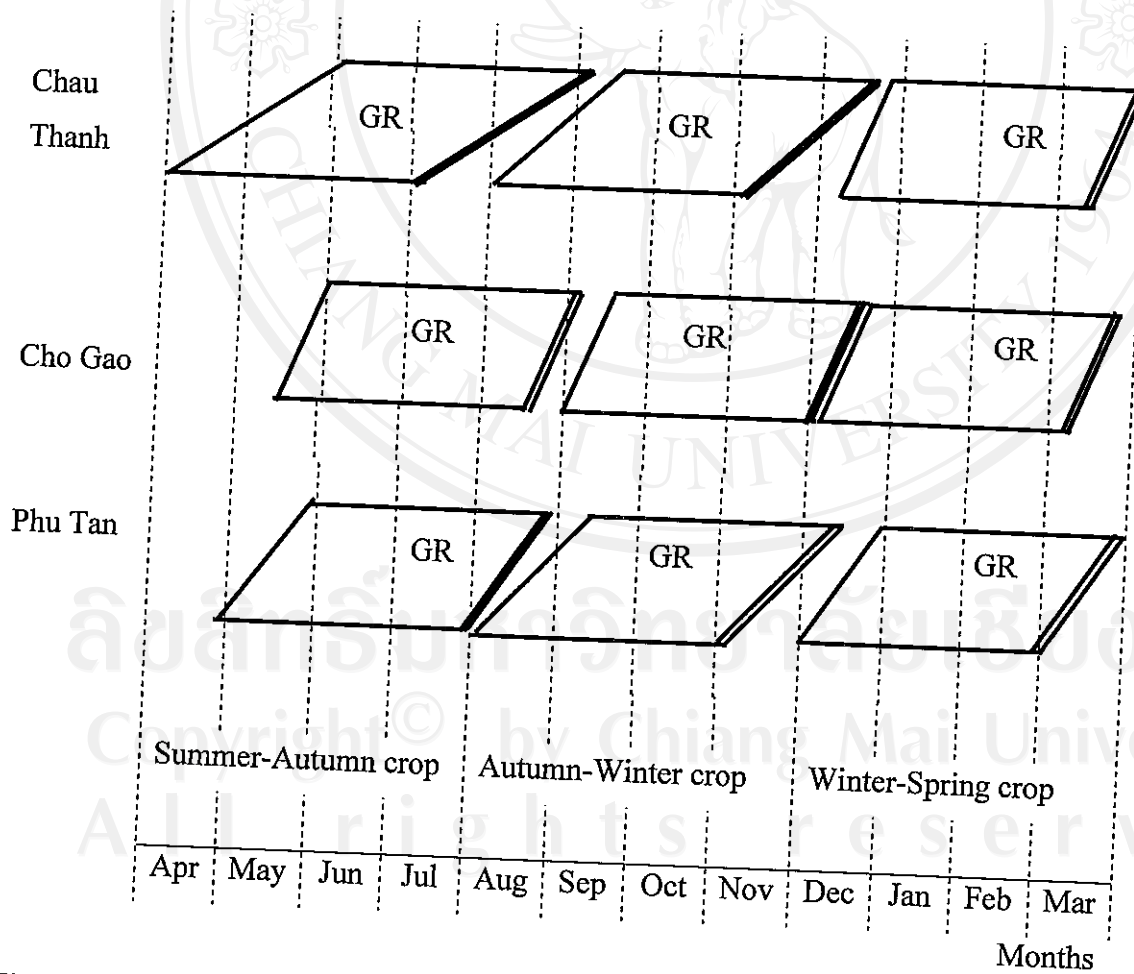


Figure 3.2: Glutinous rice growing seasons in the study areas



Figure 3.2 shows that in the Chau Thanh district, Long An province the Summer – Autumn crop began in April and finished in the end of May; they harvest from July to late August, depending on the rain. The farmers cannot concentrate in this crop. After this crop, they continue with the Autumn – Winter crop from August to mid September. The harvesting of this crop will finish from November to December. The Winter – Spring crop begins in December and is harvested in March. In the Cho Gao district, Tien Giang province, they begin the Summer – Autumn crop later than in Chau Thanh, starting in mid May, and finishing in August and September. The last crop (Winter – Spring crop) also finishes in March. The Phu Tan district, An Giang province begin the Summer – Autumn crop at the end of April and harvest in August. After this they continue with the Autumn – Winter crop from August to December and the Winter – Spring crop is from December to March.

### 3.3.3 Economic return of glutinous rice production

The economic return of glutinous rice production is higher than that of the non-glutinous rice with total revenue about from 13,691 thousand VND per ha to 14,274 thousand VND per ha (table 3.4)

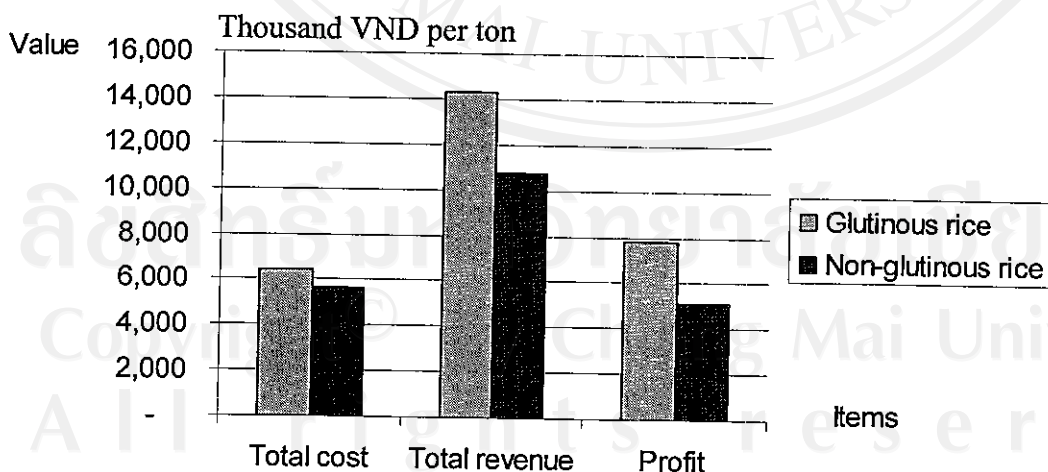


Figure 3.3: Compare economic return between glutinous and non-glutinous rice at Phu Tan district, An Giang in 2006.

Source: Survey, 2006

Table 3.2: Economics return of glutinous rice production at study sites in 2006

Items	Unit	CT	CG	PT
1. Yield	Kg/ha	5,348	5,839	6,126
2. Price sell	1,000 VND	2.560	2.412	2.632
3. Total revenue (3=1x2)	1,000 VND	13,691	14,084	14,274
4. Total cost	1,000 VND	6,527	6,713	6,435
5. Profit (5=3-4)	1,000 VND	7,164	7,371	7,839
6. Production cost per kg (6=4/1)	1,000 VND	1.220	1.150	1.050
7. Total revenue/total cost	Times	2.097	2.098	2.218
8. Profit/total cost	Times	1.097	1.098	1.218

Source: Survey, 2006

Note: - Calculate average three crop of year

- CT: Chau Thanh district; CG: Cho Gao district and PT: Phu Tan district.

Table 3.4 we found that the average yield of the glutinous rice is high from 5.3 tons per ha (Chau Thanh district) to 6.1 tons per ha (Phu Tan district), so the yield of Phu Tan district is the highest of the study site. The total costs and the selling price are similar in these areas, so that, the total revenue of Phu Tan also is highest at about 14,274 thousand VND. The profit of GR production in Chau Thanh, Cho Gao and Phu Tan are 7,164; 7,371 and 7,839 thousand VND (equal to 446 USD; 459 USD and 488 USD)<sup>2</sup> respectively. The ratio between total revenue per total cost are from 2.097 times (Chau Thanh) to 2.218 times (Phu Tan). The profit per total cost ratio are 1.097, 1.098 and 1.218, respectively, this number means that the economics efficiency of the glutinous rice farmers is not so high.

<sup>2</sup> Exchange rate is 1 USD = 16,053 VND (Dec, 2006)

### 3.4 Marketing activities of glutinous rice farmers

In the study areas, the GR farmers only sell their product to three actors, who are the assemblers, dryers and millers, but the assemblers play an important role in the distribution channel with farmers with 57.6% of total paddy production of farmers (figure 3.3).

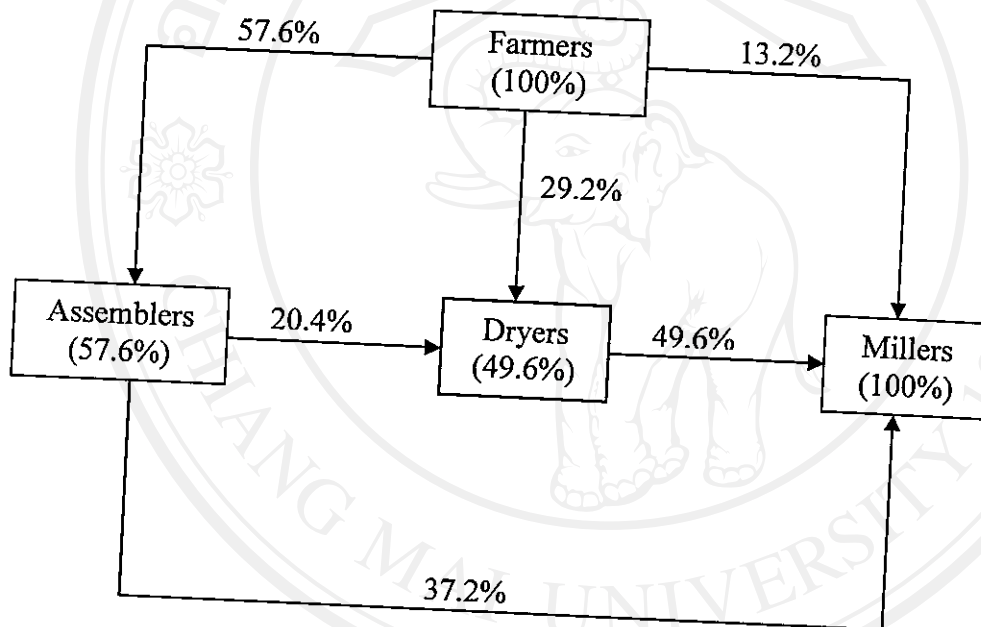


Figure 3.4: Distribution channel of glutinous paddy from farmers in study areas

Source: Survey, 2006

The assemblers collected the product and then sold glutinous paddy to dryers or millers, hence they earned some profit. In general, the assemblers were the local people, they were very well known by the farmers and also in the location area of fields; and they come and go without any restrictions, wherever and whenever, the farmers want to sell their product. The assemblers also have a long and good relationship with farmers. The farmers sold their products to dryers at about 29.2% and millers at about 13.2%, and these were the large farmers who have means of

transportation or have a good location (near canal or street). When they sold to the dryers or millers, the price was slightly higher than when sold to the assemblers.

In the study site, most farmers sold their products immediately after harvesting, some farmers have laborers and a drying ground and they dry the glutinous paddy, before selling to the millers (table 3.5).

Table 3.3: The selling time of farmers in the study areas

Items	Unit: %		
	Chau Thanh	Cho Gao	Phu Tan
Immediately after harvest	92.17	95.05	90.21
After dried			
< 1 week	5.46	3.10	7.75
> 1 week	2.37	1.85	2.04
Total	100	100	100

Source: Survey, 2006

Table 3.5 shows no different selling time among farmers in three districts, that in Chau Thanh, Cho Gao and Phu Tan district 92.17%; 95.05% and 90.21%, of farmers sold glutinous paddy immediately in the field, respectively. About 7.83% (Chau Thanh), 4.95% (Cho Gao) and 9.79% (Phu Tan) of the farmers dried the product before selling it. Normally, the farmers want to sell their products quickly because they want to have cash to reinvest for the next crop and repayment for the bank. The longest time of storage was four months, because the farmers want to store the rice expecting a higher price in the seasons when there was a lack of supply. Some richer farmers could store their product because they already had capital to run production for the next crop, and also did not need to repay the bank.

### **3.5 Government policies for rice production**

#### **3.5.1 Land policies**

During the *doi moi* period a series of policies and laws in the agricultural sector, especially concerning land use, were issued. The most important policies were the Land Law (1993) and its revised versions (1998, 2001), the new Land Law (2003) and Ordinances 64/CP (1993) and 02/CP (1994) of the government dealing with the regulation of agricultural and forestry land allocation. There were also other policies that were directly related to land issues as well as supportive policies indirectly related to land issues. Under the Land Law farmers were allocated land for long-term and stable use and were granted five rights of land use – the right of transfer, exchange, lease, inheritance and mortgage. The duration of land allocation was 20 years for land used for annual crops and aquaculture, and 50 years for land used for perennial crops. The allocation could be renewed at the end of the period if the holder still had a need for the land. The Land Law also put ceilings on the size of the land areas allocated to farm households. This limit on annual crop land was two ha in the northern and central provinces and three ha in the southern provinces. For perennial crop land the land limit was ten ha in communes with flat fields and 30 ha in midland or mountainous communes (Ministry of Agriculture and Rural Development 2000).

#### **3.5.2 Credit policies**

Vietnam is in the process of implementing reforms to the banking system and undertaking a gradual liberalisation of credit markets (World Bank 2003). However, small household farms in Vietnam, and the rural sector in general, are recognised as facing significant credit constraints (Duong & Izumida 2002; World Bank 1998). Historically, the credit market in Vietnam has been seriously distorted by government intervention including priority credit given to state-owned enterprises and various commodity production programs (World Bank 1998). Additionally, agricultural credit

policy in Vietnam is often used as an instrument of social welfare policy, targeting finance to poorer regions and households through the activities of the Vietnam Bank for Social Policy (previously known as the Vietnam Bank for the Poor). Commercial credit availability for farm households commenced in 1993. Decree 14/CP gave farm households access to credit, whereas previously loans had only been available to households through institutions. Following this reform, credit could be provided directly to households by commercial banks and financial organisations. The 1993 Land Law allocated Land Use Right (LUR) to households and also gave them the right to use these as collateral for bank loans.

### 3.5.3 The traders' policies

In early 1998, the quota was further raised to four million tons and private-sector participation in rice exports was allowed. In June 1998, the government curtailed further exports that year because there was concern that they were likely to exceed the announced annual quota. The government had in recent years announced the annual quotas in February–March and made provisions for modifying them in the light of emerging trends, if necessary, in September. This was to ensure that food security was not jeopardized. In 1998, the temporary correction occurred three months earlier in June, partly because of a drought in the north. Expectations were that, in spite of this intervention, exports for the year would still reach 3.8 million tons.

There is still no trade allowed in the export quotas, and the rice export tax is currently zero. However, the Ministry of Finance (MOF) reserves the right to impose export taxes depending on the demand and supply situation. The creation of a market monitoring function within the Ministry of Agriculture and Rural Development is consistent with the finding in the International Food Policy Research Institute (IFPRI) study that price discovery by market participants is rudimentary. IFPRI played an advisory role in the early stages of this innovation. Currently the system is tracing domestic, border, and international markets for some ten agricultural commodities, using national and international databases, intranet and internet.