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Vietnam in the international rice market

a review and evaluation of domestic and foreign rice policies

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Publication date:
2002

Document version
Publisher's PDF, also known as Version of record

Citation for published version (APA):
Nielsen, C. P. (2002). *Vietnam in the international rice market: a review and evaluation of domestic and foreign rice policies*. Fødevareøkonomisk Institut. FOI Rapport No. 132

Download date: 14. okt.. 2026

Fødevareøkonomisk Institut

Rapport 132

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A Review and Evaluation of Domestic and Foreign Rice Policies

Chantal Pohl Nielsen

København 2002

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Preface

In a world characterized by increasing interdependence and integration, developing countries face a number of challenges, not least in relation to improving their capacity to participate effectively in international trade. These tendencies place pressure on governments to reform domestic and trade-related policies in order to create an environment in which economic agents may respond efficiently to these changes. Given the key importance of agricultural production in most developing countries and the continued need for improving food security, there is a particular interest in evaluating how the agricultural sectors in the developing countries might respond to these changing national and international economic and policy conditions. This is the underlying theme of a Ph.D. project undertaken by Research Analyst Chantal Pohl Nielsen, of which the policy description and evaluation documented in this report is an integrated part. The project is entitled *Supply-Side Issues in Developing Country Agriculture: Constraints and Opportunities* and financial support hereof from the Danish Council for Development Research (Rådet for Ulandsforskning, RUF) is gratefully acknowledged. This Ph.D. project benefits from close affiliation with the research project *WTO Negotiations and Changes in National Agricultural and Trade Policies: Consequences for Developing Countries*. This project is primarily financed by the Royal Danish Ministry of Foreign Affairs, DANIDA.

The overall goal of the Ph.D. project is to analyze selected issues related to the agricultural supply response in developing countries, where Vietnam is the country case study. From being a chronic net rice importer in the 1980s, Vietnam has transformed itself into the world's second largest exporter of rice after Thailand in the late 1990s. This remarkable achievement has been brought about by economic policy reforms initiated in 1986 enabling market forces to play a greater role in the disposition of economic resources. Vietnam's future performance on world rice markets depends on the continuation of domestic policy reforms, including increased participation of the private sector in market transactions, particularly foreign trade. However, it is equally clear that continued success of Vietnam's rice exports depends crucially on increased market access and the disciplining of other countries' use of trade-distorting domestic support policies. Hence this report analyzes the policy context in which Vietnam's future rice export potential must be seen.

The author would like to thank Søren Elkjær Frandsen, Finn Tarp, and Christian Bjørnskov for comments on an earlier draft.

Ole P. Kristensen

1. Introduction

As part of the *doi moi* (renovation) policy reform program initiated in 1986 the Government of Vietnam began to allow markets to play a greater role in the allocation of economic resources. Within agriculture this entailed a decentralization of production responsibilities from collectives to individual farm households. These reforms have helped transform Vietnam from a chronic rice importer in the 1980s to the world's second largest rice exporter after Thailand in 1997 – a position it has since retained with the exception of 1998.

This success of breaking into world markets has created a new trade-off for Vietnam's policymakers between ensuring sufficient supplies of rice at affordable prices to domestic consumers on the one hand and generating foreign exchange from rice exports on the other. Until very recently the Government has regulated rice exports through a national export quota, access to which has been enjoyed exclusively by a handful of state-owned trading enterprises.

Vietnam is a member of the Association of South East Asian Nations (ASEAN) and has therefore committed itself to lowering tariffs and dismantling non-tariff barriers over a specified period of time. The country has also applied for membership of the World Trade Organization (WTO). A step in the direction of liberalizing its own trade policy regime has recently been taken in the case of rice: the export quota has been lifted as of May 1, 2001. Yet the Government will continue to nominate state-owned food companies to deal with Vietnam's key rice export markets and hence there is still a far way to go in terms of increasing private sector participation in rice exports.

Rice producers and exporters in Vietnam do not only face barriers in terms of domestic restrictions and distortions, but self-sufficiency policies in most rice-producing countries introduce significant barriers to international rice trade. There is a wide array of import protection, domestic support and export promotion policies affecting world rice trade including extremely high tariffs, variable levies, import quotas, temporary import bans, production support measures, and export subsidies. This is the context into which Vietnam is introducing its rice exports, and a clear understanding of which barriers and distortions (domestically and abroad) are the most restrictive and in what way, is necessary in order to assess the constraints and opportunities facing Vietnam's future rice exports. Hence the objective of this report is to get a handle on Vietnam's rice policies as well as the policies of other major rice traders as they impact on international rice trade. An evaluation of the current rice policies of both

Vietnam's competitors and its buyers will help identify which reforms and liberalization efforts are most needed in the context of e.g. the WTO agriculture negotiations seen from a Vietnamese perspective.

The report is structured as follows. The next chapter provides a brief overview of global rice production and usage. Chapter 3 then describes the structure and trends in international rice trade, including the export patterns of Vietnam and its main competitors. A review of Vietnam's rice policy starts off Chapter 4, which then continues by describing the policies of its major competitors and partners. Those not particularly interested in a detailed decription of the individual countries' rice policies can skip this chapter since the main features are subsequently summarized in Chapter 5. This chapter provides an evaluation of the current rice policies, including a discussion of their viability in the context of the multilateral agricultural trade negotiations. Conclusions are drawn and prospects from a Vietnamese perspective are laid out in the final Chapter 6.

2. Global rice production and usage

Rice is of overwhelming importance to the developing countries, particularly those in Asia. In the year 2000 more than 95% of world rice production and consumption took place in developing countries; 90% was produced and consumed in Asia (FAOSTAT 2001). By far the largest producers of rice are China and India (Table 2.1). Other large rice producers in Asia are Indonesia, Bangladesh, Vietnam, Thailand, Myanmar, the Philippines and Japan. The largest non-Asian rice producers are Brazil and the United States. The European Union also produces rice – in Italy, Greece, Portugal and France – but this amounts to just 0.3% of world production.

Table 2.1. Global rice production in 2000, thousand metric tons

China	190,168	Japan	11,863	Nigeria	3,277	South Korea	1,690
India	134,150	Brazil	11,168	Sri Lanka	2,767	Peru	1,665
Indonesia	51,000	USA	8,669	Iran	2,348	Ecuador	1,520
Bangladesh	35,821	S. Korea	7,067	Madagascar	2,300	Australia	1,400
Vietnam	32,554	Pakistan	7,000	Laos	2,155	Rest world	14,790
Thailand	23,403	Egypt	5,997	Colombia	2,100	WORLD	598,852
Myanmar	20,000	Nepal	4,030	Malaysia	2,037		
Philippines	12,415	Cambodia	3,762	EU	1,736		

Note: Production in this table is expressed on a paddy (rough) basis.
Source: FAOSTAT (2001)

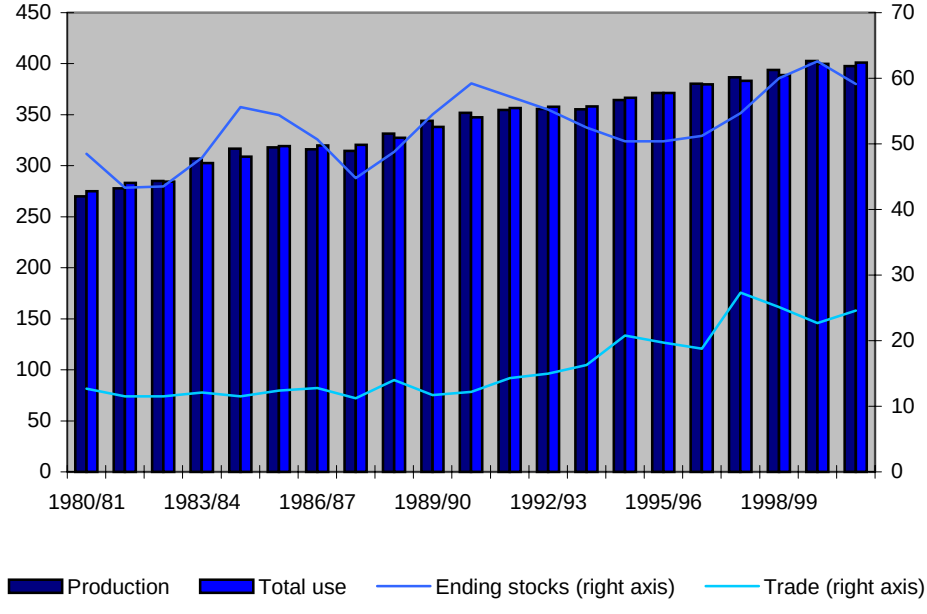
Over the past two decades production and consumption of rice have on average increased by 2% annually. Measured in terms of milled equivalents[1], production reached slightly more than 400 million metric tons[2] in the year 1999/00 and is expected to have fallen slightly in the production year 2000/01 (Figure 2.1). Production varies substantially from year to year: an increase of 7.7% was observed in 1983/84, for example, and a decline of -1.2% is expected in 2000/01. As shall be discussed in more detail in the next chapter, only a relatively limited amount of rice is traded internationally. Consequently, the year-to-year fluctuations in traded quantities are even more dramatic: a 16% increase was noted in 1984/85, for example, against a decline of almost -12% in 1987/88. On average rice trade has grown by 1.3% over the past twenty years. The fluctuations in production are reflected in the size of the ending stocks, which in 2000/01 are predicted to have reached 59 million tons, amounting to around 15% of total use.

[1] Note that production reported in Table 1, by contrast, is on a paddy (rough) basis. The conversion factor is typically around 2/3.

[2] Unless otherwise stated 'tons' in this paper refer to metric tons.

Rice is almost exclusively used for human consumption. According to FAOSTAT (2001) only 3% of total production is used for animal feed. In Asia rice is by far the main cereal consumed. FAOSTAT approximations of annual per capita rice supplies show variations (1999 data) from 211 kg/capita in Myanmar and 170 kg/capita in Vietnam to 90 kg/capita in China. This compares with just 4 kg/capita in a country like Denmark.

Figure 2.1. World rice production, utilization, ending stocks and trade (mill. tons)



Note: Production, utilization and ending stocks are expressed on a milled basis. The data for 1999/00 are preliminary and those for 2000/01 are forecasts as of November 2000.
Source: ERS (2001)

Box 2.1. Facts about rice

Rice is a highly adaptable plant that can be grown both in dry upland soils, in irrigated fields, and along flooded riverbeds. Rice is most often grown in flooded fields known as paddies where the roots are kept under water. In most countries small corners of the paddy fields are set-aside as nurseries for sowing rice seeds, which are left for about 30 days before being planted into the field. The life cycle of the rice plant is between 100 and 210 days where after the grains must be separated from the straw, through a process known as threshing. The harvested rice contains from 15% to 25% moisture and must be dried to obtain a moisture level of 12-14% to avoid spoilage. The rice is then milled through a process that first removes the hull, thereby producing brown rice. White rice then results from further milling that removes the bran layer. Since most consumers prefer white rice, the grain is then polished and occasionally glazed with glucose and talc. One hundred kilograms of paddy (rough) rice produce 20kg of husk and 80kg of brown, dehusked rice. The milling process delivers approximately 68kg of milled rice and 12kg of bran and other by-products. Of the 68kg milled rice some 55kg are whole grains and the remaining 13kg are broken grains. (Roche 1992)

3. International rice trade

The international market for rice is often characterized as a thin and volatile residual market with elements of instability and uncertainty that distinguish it from world markets for wheat and maize (Latham 1998, Barker et al. 1985). The world rice market is thin in the sense that the amount of rice traded internationally is small relative to total production. Over the period 1961-99 the average trade-in-production shares have been 18.2% for wheat, 13.7% for maize and only 4.6% for rice (FAOSTAT 2001). This small trade share implies that fluctuations in production have magnified effects on traded volumes.

Figure 3.1 nevertheless shows that the share of rice being traded internationally has been increasing over the past five years with a record high in 1998, a year characterized by strong import demand. The extent to which this trend continues will of course depend on many factors. As for all other cereals weather is a major source of year-to-year fluctuations in production and hence supply, particularly in regions where rice fields are rain-fed rather than irrigated.[3] Improved provision of irrigation and new technologies – accompanied by the acquisition of appropriate management skills – may therefore contribute to greater stability in yields in the longer term.

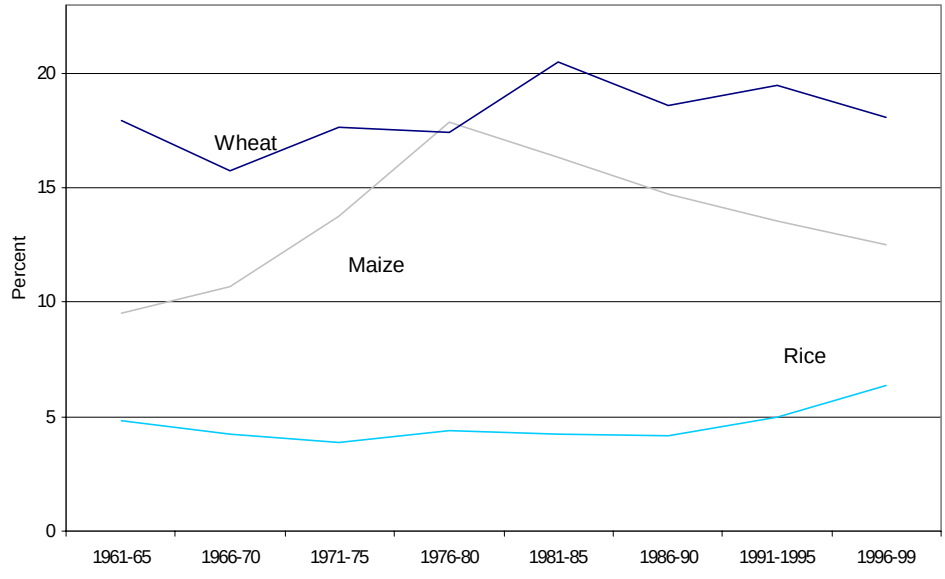
Yet government rice policies clearly contribute to the thinness and instability of the global rice market. As shall be discussed in more detail in Chapter 4, governments in many countries exercise strong control over imported and exported quantities of rice in their efforts to achieve rice self-sufficiency and domestic price stability. Combined with the inevitable variations in harvest performance, this tight control of exports and imports means that both the level and sources of demand and supply of rice are rather unpredictable.

Thinness in itself is not necessarily a problem if sellers and buyers are the same each year. Yet the international rice market is extremely volatile in that sellers and buyers enter the market at a given point in time depending on the performance of their own domestic crop. A poor harvest in a particular year may pull an exporter out of the market and even force a country to resort to imports. Similarly, a good harvest may

[3] According to Latham (1998) more than 75% of the world's rice is now grown on irrigated fields. It was the combination of improved irrigation, heavy use of fertilizers, and modern rice varieties that allowed for the substantial improvements in yields experienced between the mid-1960s and the late 1970s, a period which has become known – not without controversy – as the Green Revolution.

leave a country with an exportable surplus (Latham 1998). Fluctuations in the participants' shares of the market imply that there are very few fixed trade channels, and this in turn means that search and transaction costs are high.

Figure 3.1. Traded volumes as a percentage of world production, 1961-99



Notes: (a) Traded volumes are measured here as exported volumes in metric tons. (b) Rice exports are converted from milled to paddy equivalents in order to make the correct comparison with production, which is measured in metric tons of paddy rice.
Source: FAOSTAT (2001).

Six large exporters

Rice exports are concentrated in the hands of just a few large exporting nations. The six largest rice exporters in 1999 were Thailand, Vietnam, China, the USA, India and Pakistan (in volume terms and in that order). Exporting 7 million tons in 1999, Thailand is by far the leading rice exporter, accounting for almost 30% of total world exports (26 million metric tons, according to FAOSTAT 2001). Vietnam ranked second that year, exporting more than 4 million tons, and thereby accounting for 18% of total exports. The United States, China and India each accounted for 10-11% of world exports, and Pakistan settled on 7%. These six exporters have delivered between 73%

and 85% of total export volumes over the past 20 years, averaging around 80% in the 1990s.

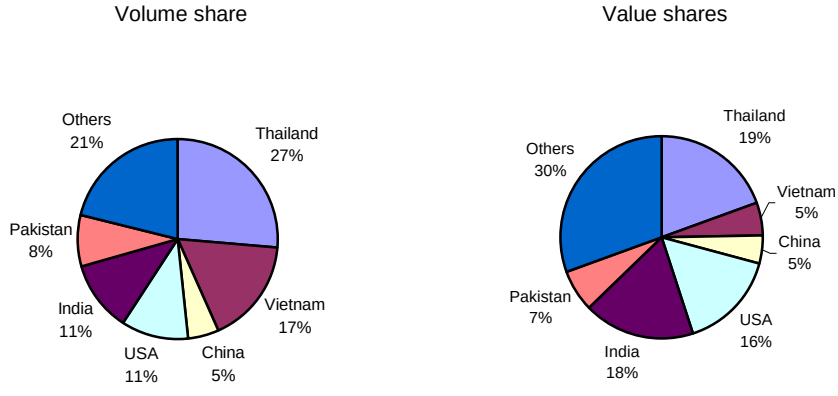
As discussed above, participation in international rice trade is not stable in the sense that producers and exporters of rice are also major consumers of rice, and hence there is a clear tendency to ensure that domestic needs are fulfilled before exporting a possible surplus. Therefore, with the exception of Thailand that has kept its lead for many years, the relative ranking of these countries changes each year. Furthermore, only Thailand, the United States and Pakistan have consistently ranked among the top-six rice exporters over the past two decades. Vietnam, China and India have not always been a part of this group (giving way to Italy, Myanmar, Japan and Australia at various points in time). In particular, Vietnam was a net importer of rice in the 1980s and has only seriously regained its position as a net exporter of rice since 1989, three years after the commencement of the *doi moi* economic reform program (see Chapter 4). In 1986 Vietnam's rice exports accounted for just 1% of total world exports against 17-18% ten years later.

The rapid intake of Vietnam on world markets over the past few years measured in terms of quantities is somewhat deceiving, however. Although Vietnam secured itself an impressive second place in world exports in the years 1996, 1997 and 1999 and a close fourth in 1998, the value shares show a completely different picture. Figure 3 compares the shares that the top six-exporters accounted for in 1997 measured in terms of export *volume* and export *value*. [4] Vietnam's exports made up 17% of total exports measured in volumes, but only a meager 5% in value terms. This is a clear indication that Vietnam is primarily serving lower value export markets.

[4] The year 1997 is chosen because it is the latest year where values from the GTAP database are available *and* where Vietnam ranked second in world exports. Although FAOSTAT also contains data for rice export values by country, the GTAP values are used to describe the overall structure in value terms. FAOSTAT data are generally collected directly from national authorities (statistics offices, etc) in the individual countries whereas the GTAP trade data are based on UNCTAD's COMTRADE database. (The COMTRADE database contains detailed import and export statistics for more than 100 countries dating back to 1962.) Where bilateral trade flows are not reported at all (or are erroneous) the GTAP database compilation process makes use of partner country reportings (see Dimaranan and McDougall 2001). Unfortunately, there are rather large differences between the aggregate trade values by country reported by the two sources. The FAOSTAT database provides aggregate trade data for rice in both quantities and values, but only in quantities for bilateral data (with substantial shares of unidentified bilateral flows). The GTAP database provides only value-based data, but does so for all bilateral flows using a specific reconciliation method.

This observation seems to hold when observing export value and volume shares over the past decade. Table 3.1 shows the development in the shares of these six countries' exports in total rice exports over the period 1990-99. The upper half of the table shows the percentage shares in volume terms, while the lower half of the table shows the shares in value terms. Measured in terms of value generated from world trade in rice, Vietnam accounted for just 5-7% of world trade in the years 1996-98, compared with 13-17% in quantity terms during the same period. With a few exceptions, lower value shares are also generally observed for China throughout this period. The United States, however, seems to be serving high-quality markets with its share of world exports in value terms clearly exceeding its share in volume terms. Pakistan and to a lesser extent Thailand also seem to be fairly successful in capturing at least some high-value market shares. The story for India seems to be more complex with very large variations from year to year.

Figure 3.2. Shares of world rice exports in 1997 measured in volumes and values



Note: Total volume: 21 million metric tons. Total value: USD 5,831 million.
Source: Trade quantities from FAOSTAT (2001). Trade values from GTAP version 5, Dimanaran and McDougall (2001).

Table 3.1. Exporters: Percentage shares of world rice exports, 1990-99

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Quantity shares										
China	3.3	6.2	6.4	8.9	9.1	1.0	1.8	4.8	13.2	10.8
India	4.0	5.2	3.6	4.6	5.0	21.8	12.3	11.4	17.2	9.9
Pakistan	6.0	9.2	9.4	6.1	5.5	8.2	7.9	8.4	6.8	6.9
Thailand	32.2	32.9	32.0	29.6	27.0	27.5	26.8	26.5	22.7	26.3
USA	19.8	17.1	13.4	15.9	15.7	13.7	13.0	10.9	10.8	10.3
Vietnam	13.0	7.9	12.1	10.2	11.0	8.8	17.2	17.0	12.8	17.7
Others	21.7	21.6	23.0	24.6	26.8	18.8	21.1	21.1	16.4	18.1
World	100	100	100	100	100	100	100	100	100	100
Mill. MT	**12.5**	**13.2**	**16.1**	**16.8**	**18.0**	**22.5**	**20.4**	**21.0**	**28.8**	**26.0**
Value shares										
China	2.3	1.3	4.2	8.9	2.7	4.4	2.3	4.6	11.3	na
India	4.7	7.6	9.3	9.2	11.6	19.8	8.6	17.9	19.1	na
Pakistan*	5.5	9.5	8.1	6.5	4.7	6.4	9.3	6.6	2.0	na
Thailand	29.4	25.8	30.6	28.9	27.6	27.1	23.2	19.5	25.1	na
USA	24.3	19.5	15.1	16.5	17.9	14.8	20.4	15.7	14.7	na
Vietnam	3.7	3.4	3.6	3.0	5.4	3.8	5.8	5.2	7.0	na
Others	30.0	32.8	29.1	27.1	30.2	23.8	30.4	30.5	20.7	na
World	100	100	100	100	100	100	100	100	100	na
Mill. $	**4,483**	**3,320**	**4,457**	**4,606**	**5,346**	**6,996**	**5,388**	**5,831**	**8,172**	**na**

* Pakistan is part of an aggregate in the GTAP database that includes Bhutan, Maldives and Nepal. The values of Pakistan's exports have been extracted by using FAOSTAT value shares for this group of countries.

Source: Trade quantities from FAOSTAT (2001). Trade values from GTAP version 5 (2001).

The explanation behind the observation that the United States, Pakistan and Thailand seem able to capture large shares of the *value* of world rice trade is a reflection of several issues. These countries have a much longer experience in international rice trade than e.g. Vietnam, and have therefore built up a reputation of stable and good quality supplies. Recurring issues in the description of the challenges facing Vietnamese rice exports are precisely unreliable supplies and (a reputation of) low quality. Clearly these are issues of which Vietnamese officials are well aware and efforts are being made to improve the quality of rice destined for exports. Given that around 20% of Vietnamese rice production is now sold in foreign markets (Table 3.2.) and that rice exports in recent years have been the second or third largest generator of foreign exchange to the country, increasing the value of rice exports must definitely be a clear priority.

Table 3.2. Exports as a percent of domestic production, 1980-1999

	1980 - 85	1986 - 90	1991	1992	1993	1994	1995	1996	1997	1998	1999
China	1.0	0.7	0.7	0.9	1.3	1.3	0.2	0.3	0.8	2.8	2.1
India	0.8	0.6	0.9	0.8	1.0	1.1	6.4	3.1	2.9	5.8	2.9
Pakistan	31.4	32.7	37.0	48.3	25.7	28.4	46.5	37.0	40.6	42.0	34.6
Thailand	29.8	39.1	32.9	40.1	41.9	35.6	43.2	37.5	36.2	43.9	44.9
USA	54.0	53.7	46.1	40.1	54.2	46.1	59.0	52.7	43.6	58.5	44.8
Vietnam	0.4	5.8	7.7	13.3	11.1	12.4	11.7	19.5	19.7	19.2	22.2

Note: Measured in quantities
Source: FAOSTAT (2001)

A few large and many small importers

Rice trade is much more dispersed on the import side than on the export side. In 1999 thirty-five countries made up 80% of total imports, whereas just six countries made up 80% of the export side. In 1999 the largest single importers were by far Indonesia and Bangladesh. For both countries, import demand in a given year depends on the outcome of the domestic rice crop as is clear by the large variation over the years (Table 3.3). For Indonesia imports in the latter half of the 1990s have been particularly volatile, demanding less than 2% of global rice imports in 1997 to almost 20% in 1999. Indonesia is expected to continue to be a major importer of rice due to rising national consumption and limited scope for increasing yields in combination with less area being devoted to rice production. The population pressure in Bangladesh will render this country a major rice importer in the foreseeable future too.

Two other significant importers in Asia are the Philippines and Malaysia. The Philippines lack resources to expand rice growing areas and to develop or even maintain infrastructure. Moreover, yields are growing only very slowly and doing so from a low level by Asian developing country standards, and the population is growing rapidly. Hence the Philippines will be a regular rice importer in the foreseeable future as well. Malaysia is an exceptionally stable importer purchasing about 2-3% of world rice trade each year.

Apart from the emergency hike in imports in 1994 (see e.g. Hayami and Godo 1997) Japan has only imported moderate amounts of rice as a direct consequence of the self-sufficiency route followed in its rice policy. The same applies to the Republic of Korea. As will be discussed below, both countries have committed themselves to opening their markets to a minimum quantity of rice imports through the Uruguay Round Agreement on Agriculture as of 1 January 1995. Judging by these data alone it does

seem that the commitments have had an impact in the sense that both countries have increased their shares of world imports after 1995. Yet Japan and South Korea both have extremely strong preferences for japonica varieties, and so the opening of these markets will, ceteris paribus, only have an impact on countries able to supply these particular varieties (see Box 3.1). The US competes with Australia and China, and to a lesser extent Italy and Egypt, for access to these medium grain japonica markets. Japan and South Korea do, however, also use long grain rice for various food processing purposes and a portion of this supply is open to other potential suppliers, mainly Thailand.

The Middle East region is traditionally the world's strongest market for high-quality rice, primarily parboiled, premium long grain, and basmati varieties. Main importers in the Middle East count Iran, Iraq and Saudi Arabia, which together imported 7% of world imports in 1999. Turkey is another Middle East importer of rice. After Japan it is the second largest importer of japonica rice being supplied by the US, Egypt, Australia and the EU.

The Sub-Saharan African region is a major importer of rice, accounting for 16% of total imports in 1999. Declining world market prices have enabled this region to increase it imports of rice (both on market terms and in terms of food aid). The main importers are Nigeria, Senegal and Côte d'Ivoire with relatively stable shares of world imports. Most of this demand is for low-quality rice. South Africa does not produce its own rice and imports primarily parboiled rice from India, Thailand and the US.

The Latin American and Caribbean nations accounted for more than 10% of total imports in 1999, with the bulk of it going to Brazil. Latin America is a primarily an indica market. Except for the Caribbean, this region is primarily a rough rice market for the US. In South America most rice trade takes place within the region, with Argentina and Uruguay as the main suppliers of milled rice. Regional trade preferences and locational advantages foster this intra-regional trade pattern.

Box 3.1. International rice trade is segmented by type, quality, degree of milling

The international market for rice is segmented by type and quality. Soil and climate conditions determine which types are economically viable in a given region. According to Siamwalla and Haykin (1983) there are (albeit perhaps limited) possibilities of substitution in production. In terms of consumption, Childs and Burdett (2000) argue that there is only very little substitution due to strong preferences for specific types and qualities, and so world rice prices tend to be more volatile than other grain prices.

There are four types of rice that are traded internationally: ***indica***, ***japonica***, ***aromatic***, and ***glutinous*** rice. Indica rice accounts for 80% of world rice trade. These grains are long and slender, and remain separated when cooked. Indica rice is grown in tropical and sub-tropical climates. Japonica rice accounts for 10% of world trade and is grown in temperate climates. These grains are short and round, and tend to become slightly sticky when cooked. Aromatic, or fragrant, rices account for just under 10% of the world market and are primarily jasmine rice from Thailand and basmati rice from India and Pakistan. The remainder is glutinous rice (also known as sweet rice) grown mainly in Southeast Asia. Both the aromatic and the glutinous rices sell at a premium to indica and japonica.

The main exporters of indica rice are Thailand, Vietnam, China, the United States and Pakistan. Other exporters include Argentina, Uruguay, Guyana, Burma and Surinam. The primary exporters of japonica rice are Australia, Egypt, China, the European Union and the United States. As mentioned above Thailand, India and Pakistan export the aromatic rices. The US also has a small amount of aromatic rice exports. Thailand is the main exporter of glutinous rice. A very small amount of Californian glutinous rice is exported to Japan.

Rice is traded in three primary forms: fully ***milled***, ***brown*** and ***paddy*** (See Box 2.1). A higher price is usually obtained the higher degree of milling and the lower ***percent of broken kernels***.

Milled rice accounts for almost all internationally traded rice. There are moderate amounts of trade in brown rice and only very little trade in paddy (rough) rice. In fact, the United States is the only major exporter of rice in its rough form. According to Childs and Burdett (2000) Argentina and Uruguay supply some rough rice within the Latin American region, and Australia has begun exporting small amounts of rough rice to Turkey.

Rice may also be ***parboiled***, a process by which the rough rice is subjected to steam pressure making it hard and therefore less likely to break during milling. Parboiled rice typically sells at a premium to non-parboiled rice. The main exporters of parboiled rice are Thailand, the United States and India. The main importers are Western Europe, the Middle East and South Africa.

The importance of the European Union as a rice importer has declined rather substantially over the period 1980-99. From averaging 12.8% of total rice imports in 1980-85 (not shown in table), the EU has only purchased 3.9% of world rice supplies during the period 1995-99. This increased self-sufficiency is in part explained by the EU rice policy, for which a proposal for reform has been set forth (See Chapter 4.4.4). The EU mainly imports indica rice from Thailand and the US, and premium basmati rice from India and Pakistan. The main importers among the transition countries (the former Soviet Union) are Russia, Uzbekistan and Turkmenistan.

Table 3.3. Importers: Percentage shares of world rice imports, 1990-1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Indonesia	0.4	1.3	3.9	0.2	3.6	14.6	10.0	1.8	8.0	18.2
Bangladesh	3.1	0.1	0.1	0.1	0.4	4.6	4.8	1.0	4.8	8.5
Philippines	4.8	0.0	0.0	1.3	0.0	1.2	4.0	3.8	10.2	3.2
Malaysia	2.7	3.1	2.8	2.4	1.9	2.0	2.7	3.3	2.8	2.3
Japan	0.1	0.1	0.1	0.7	14.3	0.1	2.1	3.0	2.1	2.5
Sth. Korea	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.3	0.6
Rst. of Asia	8.5	9.2	10.2	8.8	8.2	14.3	10.6	9.3	7.2	6.0
Nigeria	1.8	2.3	2.2	2.2	2.0	1.4	1.6	3.7	2.5	2.6
Senegal	3.2	3.1	2.4	2.4	2.0	2.0	2.6	2.1	2.4	2.4
Ct. d'Ivoire	2.5	2.4	2.2	2.4	1.4	1.9	1.5	2.5	1.9	2.2
Rst. of SSA	14.3	15.8	15.2	14.2	13.8	10.0	8.3	10.4	10.0	8.4
Brazil	3.4	7.4	3.7	4.4	5.6	4.0	3.7	4.3	5.5	3.8
Rst. LAm.Car.	8.7	9.0	10.1	11.1	10.8	8.2	9.8	10.3	9.1	6.8
Iran	5.1	4.9	6.0	7.2	2.7	7.5	5.3	3.4	2.7	3.3
Iraq	3.1	2.3	2.9	4.1	1.1	1.0	1.0	3.6	2.7	3.0
Sau. Arabia	2.3	2.0	3.1	3.6	2.4	2.4	3.3	3.7	3.3	1.1
EU*	6.6	5.8	5.0	5.0	6.3	3.7	4.3	4.8	3.6	3.3
Trans.mrkts	4.6	4.7	6.5	5.1	2.6	2.6	4.6	5.0	3.6	4.5
Rest of world	24.7	26.5	23.4	25.0	20.9	18.4	19.4	23.8	17.4	17.3
World	100	100	100	100	100	100	100	100	100	100

Note: Imports are measured in quantities.
* For *all* years presented here this includes the fifteen countries that since 1/1/95 have constituted the European Union, i.e. including Greece, Spain, Portugal, Austria, Finland and Sweden.
Source: FAOSTAT (2001)

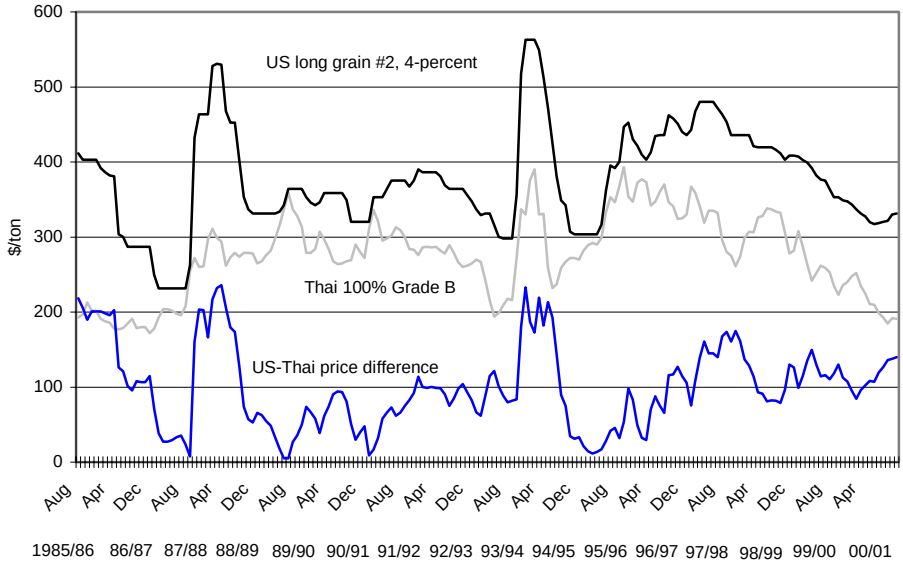
International rice prices

As mentioned earlier the international rice market is known for its volatility. With only about 5% of production entering world markets, production shortfalls in just a few major exporting or importing countries will have substantial effects on world rice prices.

As is evident from Figure 3.3, world rice prices – using Thai 100 percent Grade B and US long grain #2, 4 percent as indicators – are very volatile with month-to-month swings of between +/- 25% for both Thai and US rice prices (not counting the US price hikes in October 1987 and November 1993). Furthermore, the figure reveals that world rice prices have been declining steadily since 1997.

Over the period depicted in the figure (1985/86-2000/01) the average Thai price was $276/ton, whilst the US price was $376/ton, i.e. an average difference of $100/ton. Yet as the figure makes evident, this average difference conceals very large fluctuations over the years.

Figure 3.3. World rice prices 1985/86-2000/01

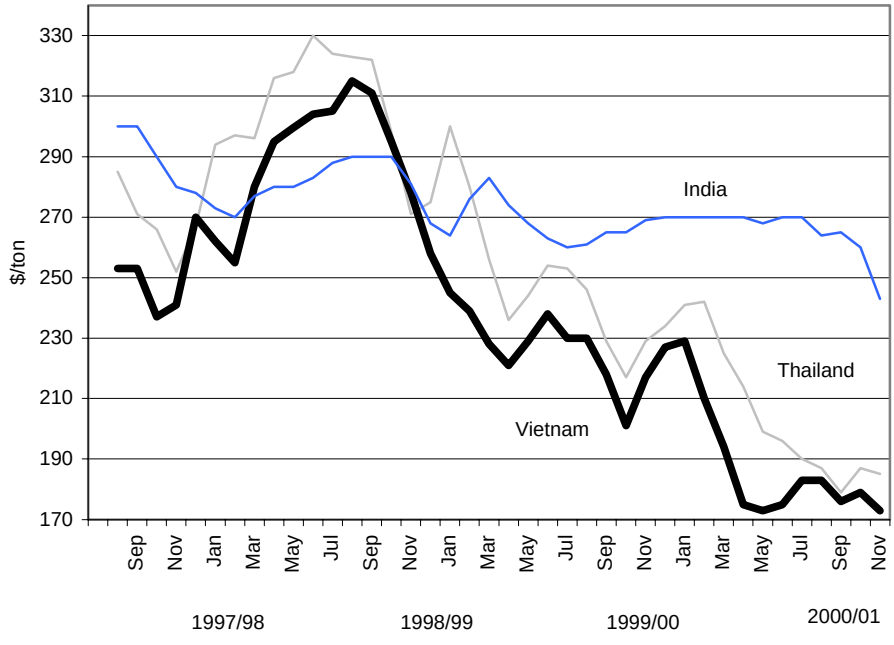


Note: Monthly averages of weekly f.o.b. quotes. Thai prices are obtained from the US Embassy in Bangkok. US prices are observations at milling centers in Houston, Texas and obtained from the Agricultural Marketing Service, ERS.
Source: ERS (2001a).

Figure 3.4 compares prices for 5 percent broken rice in the other major exporting countries. These data also reveal a downward trend in prices towards the end of the 1990s for Vietnam, Thailand and Pakistan (albeit data availability is scanty for the latter). The price of Indian rice remains well above the other prices and does not show evidence of following the general trend. The Vietnamese price is somewhat lower than the comparable Thai price: an average difference of $20/ton over the depicted period. In other words, Vietnamese rice was sold at an 8% discount to Thai rice over this period. The Indian price, on the other hand, averaged $18/ton higher than the Thai price. Although there are only observations for ten of the months for Pakistan, it may be noted that the average price is $24/ton lower than the Thai price and $3/ton lower than the Vietnamese price. Hence there seems to be evidence that Thailand competes with the US on high-quality markets, where it accepts a price discount,

while it competes with Vietnam in lower-quality markets, where it captures a price premium.

Figure 3.4. Comparing prices of 5 % broken rice in selected countries, 1997/98-2000/01



Note: Monthly averages of weekly f.o.b. quotes. Thai prices are obtained from the US Embassy in Bangkok. Other prices are weekly f.o.b. prices quoted in the Creed Rice Market Report, Creed Rice Co., Inc., Houston, Texas.
Source: ERS (2001a).

Bilateral trade flows

The year-to-year variation in participants in international rice trade on the import side shown in Table 3.3 is of course evident at the bilateral level as well. Table 3.4 shows how the importance of individual export markets shifts just over a five-year period (1995-99) for Vietnam. The export structure of the other five exporters are shown in Table 3.7 for 1999 with the individual country table for the period 1995-99 contained in the Appendix Tables A.1 – A.5. The export structures shown in these tables are on a volume basis.

Vietnam

Within the region Vietnam's major export markets are Indonesia, Malaysia and the Philippines. Sales to Iraq, Iran and Cuba are also important to Vietnamese rice exports. Iraq is a demander of high-quality long grain rice and Vietnam is the main supplier to this country. Prior to the US-imposed sanctions in 1990, Iraq was a major market for US long grain milled rice. Cuba is a demander of low-quality long grain rice, and here Vietnam and China are the main suppliers. The US imposed restrictions on trade with Cuba in 1962, before which Cuba was a major market for US milled rice. Former political ties to Eastern Europe are also evident in the structure of Vietnamese exports (Table 3.4).

Table 3.4. Vietnam's top ten export markets, 1995-1999

	1995		1996		1997		1998		1999	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Indonesia	39.4	Iran	18.9	Philippines	16.3	Indonesia	55.3	Iraq	30.1
2	Cuba	15.4	Philippines	18.5	Iraq	15.5	Philippines	18.3	Cuba	12.9
3	Malaysia	11.4	Cuba	12.8	Indonesia	11.8	Iraq	11.1	Malaysia	9.5
4	Philippines	8.1	Iraq	9.8	Cuba	7.5	Malaysia	4.2	Tanzania	8.6
5	Iraq	7.0	Peru	6.5	Malaysia	6.8	Iran	2.5	Iran	7.4
6	Peru	3.1	Indonesia	5.9	Kenya	6.2	Poland	1.6	Singapore	5.6
7	Algeria	2.0	Senegal	5.9	Togo	5.9	Kenya	1.5	Yemen	4.1
8	Togo	1.9	Côte d'Ivoire	5.2	Iran	5.7	Sth Korea	1.1	Poland	3.6
9	Tanzania	1.9	Malaysia	4.8	Sth Korea	3.0	Algeria	0.8	Latvia	2.6
10	Gabon	1.5	Guinea	2.3	Tanzania	2.7	Cuba	0.8	Algeria	2.3
	Others	8.2	Others	9.5	Others	18.6	Others	3.0	Others	13.3
		100%		100%		100%		100%		100%
Thou. tons		1,587		2,898		3,267		3,421		4,521

Note: Exports are measured on a quantity basis. Not all bilateral export flows in the FAOSTAT database are identified to specific destinations. The total amounts of rice exports (measure in metric tons) reported here include unspecified exports, whereas the percentage shares are calculated out of total *specified* trade. Note that China is one of the unidentified partners in this data set.

Source: FAOSTAT (2001)

Vietnam exports primarily indica rice, mainly of intermediate and low quality. As documented above Vietnam typically sells its intermediate and low-quality indica rice at a significant price discount relative to Thai counterparts. Part of the explanation behind this observation is that Vietnam entered the international rice market at a time of low world prices. Hence part of its emergence has been contingent on keeping prices competitively low, particularly in low-income markets. Even when beginning to export to higher-income markets, Vietnam has had to temper price premiums. Finally, there is the issue of low quality, which despite improved milling facilities, has

been compounded by the lack of standardization systems, limited rice seed control, and insufficient drying and storage facilities.

The quality of Vietnamese rice exports has increased markedly since it reentered the world market in 1989. As shown in Table 3.5 88% of Vietnam's rice exports in 1989 consisted of 35% or more brokens. This share has been brought down to 12% in 1997.

Table 3.5. Vietnamese rice export quality, 1989, 1992 and 1996

Quality grade % broken	1989	1990	1991	1992	1993	1994	1995	1996	1997	
					Percent of total					
< 5 %	0.3	3.3	7.5	19.0	25.6	44.8	30.5	28.9		
10 %	1.5	13.0	27.6	21.3	26.0	24.4	24.6	16.7	43.6	
15 %	3.0	5.9	4.9	11.0	13.2	4.1	12.0	6.4		
20 %	2.3	2.0	5.6	4.3	8.2	9.2	10.7	6.1	44.4	
25 %	4.9	20.2	25.9	13.3	11.1	7.4	18.1	33.4		
35 %	82.8	46.5	21.5	25.4	12.3	6.8	3.6	5.2		
> 45 %	5.2	9.0	7.0	5.4	3.4	1.9	0.5	3.3	12.0	
Total	100	100	100	100	100	100	100	100	100	

Source: Goletti and Rich (1998) for 1989-96 data. MARD (2000) for 1997 data.

Table 3.6 shows the composition of Vietnams' rice exports for the first six months of 2001 by destination and quality. These data reveal, for example, that Indonesia and Malaysia import all the different qualities supplied by Vietnam, whereas Iraq, Japan and the EU countries are exclusively high-quality markets. The Philippines is exclusively a purchaser of low-quality Vietnamese rice.

Thailand

The most important export markets for Thai rice within the region are Indonesia and Malaysia. In Africa Thai rice is sold mainly to Nigeria, Senegal and South Africa. In the Middle East Iran is a major purchaser of Thai rice (Table 3.7). Thailand competes with the United States in certain high-quality markets such as the European Union, the Middle East and South Africa. In intermediate and low-quality markets Thailand competes with Vietnam, India, Pakistan and Myanmar. Most of Thailand's exports are of the indica variety but there is also a smaller amount of aromatic jasmine rice, where the United States is a main market. Thailand has strongly increased exports to South Africa over the past ten years. This has had the effect of pushing the United States out of this specific market. From having supplied 80-90% of South Africa's

Table 3.6. Vietnam's rice exports, first half of 2001, by destinations and quality*, '000 tons

Destinations	Percentage brokens					Gluti-nous	Par-boiled	Un-known	Total
	5%	10%	15%	25%	100%				
Asia	**111.3**	**168.7**	**115.5**	**434.5**	**1.5**	**5.4**	**0**	**2.0**	**838.9**
Indonesia	29.0	34.0	70.5	53.2	1.5	5.4	0	2.0	196.6
Iraq	18.1	118.6	0	0	0	0	0	0	136.7
Philippines	1.6	0	15.0	344.2	0	0	0	0	360.9
Malaysia	42.4	9.6	13.9	19.3	0	0	0	0	85.2
Japan	5.9	5.0	0	0	0	0	0	0	10.9
East Timor	0	0	0	2.0	0	0	0	0	2.0
Palau	2.2	0	3.0	2.8	0	0	0	0	8.0
Singapore	6.9	1.5	13.0	13.0	0	0	0	0	34.5
Middle East	4.4	0	0	0	0	0	0	0	4.4
Africa	**149.0**	**59.2**	**122.2**	**140.1**	**87.4**	**0**	**4.7**	**0**	**562.6**
Africa	146.4	51.0	112.2	140.1	87.4	0	0	0	537.0
Tanzania	0	8.2	7.5	0	0	0	0	0	15.6
Yemen	2.6	0	2.6	0	0	0	0	0	10.0
Europe	**30.5**	**73.6**	**20.0**	**1.0**	**0.3**	**0**	**0**	**0.0**	**125.5**
EU	10.3	29.8	7.0	0	0.3	0	0	0	47.4
Russia	15.4	14.5	3.0	1.0	0	0	0	0.0	33.9
Poland	4.8	29.3	10.0	0	0	0	0	0	44.1
AUSTRALIA	**5.9**	**0**	**0**	**0**	**0**	**0**	**0**	**1.5**	**7.4**
LATIN AMERICA	**0**	**25.0**	**0**	**72.6**	**0**	**0**	**0**	**0**	**97.6**
Cuba	0	25.0	0	72.6	0	0	0	0	97.6
Unknown	5.7	0	0	30.5	0	0	0	167.5	203.7
Total	**302.5**	**326.6**	**257.7**	**678.7**	**89.2**	**5.4**	**4.7**	**171.0**	**1.835.8**

* Quality is often measured in terms of the percentage of broken kernels. Gultinous rice sells at a price premium due to its specialty characteristic, while parboiled rice sells at a price premium due to better milling characteristics. See Box 3.1.

Source: FAS (2001a).

rice imports in the 1960s and 1970s, the US market share has dropped to 14% in 1999. South Africa transships small amounts of rice to neighboring countries (Childs and Burdett 2000). Iran is a consistent purchaser of high-quality long grain rice and Thailand is a major supplier. The US exporters have been prevented from supplying this market due to US-imposed sanctions in 1995.

Table 3.7. Top 10 export markets for the main rice exporters, excl. Vietnam, 1999

	THAILAND		CHINA		USA		INDIA		PAKISTAN	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Indonesia	18.0	Indonesia	28.9	Mexico	14.1	Bangladesh	37.9	U. Arab Em	15.4
2	Nigeria	11.0	Cot. d'Ivoire	16.6	EU	12.6	Saudi Arabia	20.5	Bangladsh	11.9
3	Iran	10.4	Cuba	8.9	Japan	11.6	Russ. Fed	7.3	Indonesia	11.5
4	Senegal	5.9	Philippines	7.1	Haiti	7.4	Sth Africa	6.5	Sri Lanka	7.1
5	Sth Africa	5.2	Russia	6.3	Canada	6.2	Nigeria	4.9	Afghanstn	7.0
6	Malaysia	5.1	Malaysia	4.9	Indonesia	5.9	EU	3.0	Sau. Arabia	5.6
7	Singapore	4.6	Iraq	4.0	Turkey	5.1	U. Arab Em	2.8	EU	4.8
8	USA	3.9	Guinea	3.9	Saudi Arab	4.1	Sri Lanka	2.6	Oman	4.6
9	Iraq	3.5	S. Korea	3.4	Russia	3.5	Kuwait	2.1	Sth Africa	3.9
10	Togo	3.4	Libya	3.3	Nicaragua	2.9	Yemen	1.5	Malaysia	2.7
	Others	29.1	Others	12.7	Others	26.5	Others	11.1	Others	25.5
		100 %		100 %		100 %		100 %		100 %
Thou. tons		6,249		2,544		2,936		2,571		1,914

Note: Not all bilateral export flows in the FAOSTAT database are identified to specific destinations. The total amounts of rice exports (measure in metric tons) reported here include unspecified exports, whereas the percentage shares are calculated out of total *specified* trade. Note that China is one of the unidentified partners in this data set.
Source: FAOSTAT (2001).

China

Several years with bumper rice crops coupled with declining per capita consumption of rice (partly being substituted by wheat) have enabled China to expand exports, particularly in the late-1990s. Currently China has abundant supplies of rice enabling increased exports and leading to large stock accumulation. By evaluating the trade structure over the past few years China seems to be a major competitor of Vietnam. Within the region China exports mainly to Indonesia, the Philippines and Malaysia just like Vietnam (Table 3.7.). China also exports to politically sensitive countries such as Cuba and Iraq. The country's communist history is also evident in the rice export pattern. In contrast with Vietnam, however, China has managed to gain access to the Japanese market after the URAA minimum access requirements were enforced in 1995. Although a clear net exporter, China does import some rice. This is particularly fragrant rice from Thailand bought by high-income urban consumers.

USA

Virtually all rice produced in the United States is grown in six states: Arkansas, California, Louisiana, Mississippi, Missouri and Texas. The United States was the leading

exporter of rice in most years from the late 1960s through 1980. The US then took the position of the world's second largest exporter after Thailand until 1997 where after Vietnam has made its presence clear.

The United States is an exporter of high-quality rice to numerous markets around the world. Compared to the major Asian exporters US rice is, however, uncompetitive in some markets due to higher production costs. US milled rice exports have declined since the mid-1990s as a result of strong competition from Asian exporters. The US faces strongest competition from low-cost Asian exporters in the Middle East region and in South African. These countries are large importers of high-quality (long grain) milled rice. Eighty percent of US rice exports are southern long grain indica varieties where Latin America, the EU, Saudi Arabia, Canada and South Africa are the largest purchasers. Smaller quantities of japonica rice (grown mainly in California) are also exported, mainly to Japan, Turkey and Jordan.

The US exports rice in all three forms: paddy, brown and milled. In fact, from constituting less than 10% of exports up until 1993/94, paddy rice exports have made up almost 30% of US rice exports since 1997/98 (ERS 2001a). Facing increasing competition on brown and milled rice markets, the paddy segment is the only one that has exhibited sustained growth over the past years. Indeed, as mentioned earlier the US is the only major exporter of paddy rice and sells mainly to Mexico and Central America (e.g. Costa Rice, Nicaragua, Honduras, El Salvador and Guatemala).[5] When harvests are poor, such as during the 1997/98 El Nino crop damage, or when supplies

[5] Mexico and the Central American countries have since the 1980s liberalized their rice markets and reduced government support of rice production. A long-term reduction in rice production in these countries is taking place, so there is a substantial excess milling capacity. The US has been quick to expand paddy rice exports to these markets in response to lower tariffs for rough than brown or milled rice in combination with increasing demand for rice. Around 90% of US rice exports to Mexico is paddy rice. Furthermore, as a result of the North American Free Trade Agreement (NAFTA) concluded in 1994, tariffs on all rice imports into Mexico from the US will be removed over a ten-year period. Both Mexico and the Central American countries impose very strict phytosanitary restrictions on Asian rice. Since the early 1990s this has in practice meant a complete halt of Asian rice exports to Mexico.

from Argentina and Uruguay are weak, the US also supplies paddy rice to the Brazilian market. Brazil mainly imports rice from Argentina and Uruguay.[6]

The European Union is the largest market for US brown rice (purchasing nearly 60% in 1999/2000, Childs and Burdett 2000). This rice is shipped to northern Europe (primarily the Netherlands and the United Kingdom) where it is fully milled. Most of this rice is then re-exported primarily to other EU countries but also outside the EU. The main reason that the bulk of US rice exports to the EU is brown rice is that import duties for brown rice are substantially lower than for fully milled rice. Over the past years the US has been facing increased competition on the EU market from Asian exporters, especially Thailand and India. These two countries primarily ship aromatic rice to the EU. Moreover, increased production of indica rice in Spain and Italy has limited import demand for this variety in the EU.

As a direct consequence of Japan's commitment to open its rice market to foreign supplies, the US has increased its exports to this market substantially since 1995. Japan is the largest market for US medium and short grain milled rice. The US has typically supplied half of Japan's total minimum access purchases, although it has recently lost shares to Australia and China (see Chapter 4). The markets of Iran and Iraq – and to a lesser extent Cuba, which is currently a low-quality importer – are potential markets for US rice although it is uncertain for political reasons whether this potential can be realized.[7] Iran and Iraq are high-quality markets, but potential US exports would face stiff price competition from Thailand and Vietnam, which have much lower prices for comparable grades of rice.

[6] Brazil, Argentina, Uruguay and Paraguay are all members of the regional trading block MERCOSUR where rice trade takes place free of duty. The El Nino was also the reason why the US could export to Ecuador and Colombia (Andean countries) in 1998. Usually, regional trade agreements provide Venezuela with import preferences within the Andean region.

[7] US rice exporters have been restricted by politically determined restrictions that have not allowed them to export to Iran (since 1995), Iraq (since 1990) and Cuba (since 1962). In October 2000 President Clinton signed legislation eliminating unilateral embargoes on food and medicine exports to Cuba, Iran, Libya, Sudan and North Korea, becoming effective 120 days after signing. This legislation permits private or government supported sales to these countries (although there are additional restrictions on sales to Cuba, e.g. no US financing) if it is for humanitarian needs or in the interest of the US. In the case of Iraq, the United National Security Council established a program in 1995 to allow the Government of Iraq to sell a limited amount of oil for food and medicine. Up till now the US has only once (in July 2000) used this Oil-for-Food program to sell rice to Iraq (Childs and Burdett 2000).

India

India has emerged as a major exporter of rice in the mid-1990s typically ranking fourth in world exports. India exports both low-quality milled rice to developing countries such as Bangladesh and premium-priced high-quality basmati rice to higher-income countries. Basmati rice markets for India are the Middle East, the EU and the United States. The major markets for non-basmati rice are Russia, South Africa, Sub-Saharan Africa and the Middle East. India has competed fiercely with the US suppliers in Saudi Arabia, a country that does not produce any rice. From having supplied nearly 2/3 of Saudi Arabia's rice imports in 1982, the US share was reduced to 16% in 1999 (Childs and Burdett 2000). Most of Indian exports to Saudi Arabia are basmati and some parboiled rice. Due to internal pricing policies, India's rice is currently uncompetitive on most indica markets. Moreover, India has problems relating to quality and reliability much like Vietnam does.

Pakistan

Rice from Pakistan is mainly sold to the United Arab Emirates, Iran and Bangladesh although exports to Indonesia are also substantial in some years. Like India, Pakistan exports both high-quality basmati rice to high-income markets as well as low-quality rice to developing countries, mainly in Africa, where it competes with Thailand, Vietnam and China. According to the ERS (2001a) about one-third of Pakistan's rice production is basmati.

Other exporters

Australia produces and exports mainly high-quality japonica rice and has gained access to about 16% of the Japanese market through the URAA requirements. Papua New Guinea and countries in the Middle East are other major export markets. Egypt has been able to increase its exports (almost entirely japonica) due to large production expansions. In South America Argentina and Uruguay are the largest exporters selling mainly to the Brazilian market through MERCOSUR arrangements.

Myanmar was the largest rice exporter before World War II and ranked first or second until the mid-1960s. Exports are beginning to pick up, but remain of very low quality, mainly 25% brokens, due in part to antiquated marketing and milling facilities. Disrupted by war and political unrest since the 1970s, Cambodia also began to export rice again in the mid-1990s, when the political situation stabilized.

Although the EU is a net importer of rice, the Union does export some rice outside the region. This is japonica rice sold to countries in the eastern Mediterranean. Small amounts of rice are also exported as food aid to Sub-Saharan Africa, North Korea and the former Soviet Union. Japan is also a net importer of rice, but has in fact exported rice each year since 1998, mainly as food aid to Asian countries (North Korea and Indonesia), as a result of declining domestic consumption and large excess supplies. As shall be discussed below, extremely high producer prices are a major reason for these large supplies and consequently large stocks.

4. Review of rice policies

Despite the general move towards freer trade, the rice policy regimes around the world remain some of the most protective. More often than not the sector is controlled by direct government intervention in domestic marketing and foreign trade, and protected by high tariffs and numerous non-tariff barriers.

Rice is the staple food in many Asian countries and the importance of this crop to food security and economic performance is evident. Throughout history the availability of sufficient rice supplies has enabled economic development whereas the failure of a rice crop has led to famine and political instability. As a consequence virtually all rice-producing developing countries pursue policies aimed at promoting self-sufficiency as an ultimate security against the thin and unstable international markets. The objectives of rice policies around the world vary across countries, of course, depending in part on their net trade status, but generally they include at least some of the following:

- Adequate supplies at low and stable prices for consumers
- Promotion of producer incentives to increase domestic supplies
- Reduced dependency on foreign supplies by increasing self-sufficiency
- Generation or saving of foreign exchange
- Generation or saving of government revenue
- Adequate farm income
- Interregional equity
- Adequate nutrition

Some of these objectives conflict with one another and the emphasis placed on each of the individual goals will change over time depending on the prevailing production and overall economic conditions. The most obvious and classic policy conflict is that of securing farmers adequate incomes whilst ensuring low prices to consumers.[8]

The primary goals of self-sufficiency and stable domestic prices are most often sought achieved through direct market intervention and wide-scale public distribution systems. In Asia there is a tradition of state trading enterprises having strong controls over domestic marketing of rice as well as being given exclusive rights to import and

[8] Naturally, farmer incentives need not be boosted through higher support prices, but can be strengthened through lower input costs, technology innovations, and expansions and improvements of infrastructure. Such initiatives, of course, use rather than generate government revenue.

export rice. Foreign trade is typically controlled directly through quotas.[9] By using quantitative restrictions rather than tariffs, a separation of domestic prices from world market prices is achieved.[10] Seen from the individual country perspective, the strategy of independence from the world market could be argued as being rational given its current thinness, instability and unpredictability. Therefore, it cannot be expected that governments will change their policies – by making import and export volumes more responsive to world prices – as long as the international rice market retains these characteristics. The consequence is, however, that these isolationist policies simply add to the (price) instability of world rice markets.

The unreliability of the international market has furthermore induced many governments to rely on their own stockpiling as a supplement to import and export controls. According to Siamwalla and Haykin (1983) there has been a tendency for governments to overstock in years of excess production rather than export the surplus. Governments have generally found this to be an easier and less risky option compared with reliance on the world market. To the extent that world rice markets did function efficiently this would not be a rational decision.

The recent developments in rice policies have been affected by above-average harvests (record world production in 1999), faltering import demand (except for 1998), and declining world prices. Particularly in the developed countries focus has shifted toward supporting farmers' incomes. Governments have intervened by expanding rice procurement, lowering support prices, controlling production (e.g. moving land out of rice production), increasing direct income transfers, restricting imports, and/or encouraging exports. Despite these lower world market prices, the self-sufficiency policy focus in the developing countries, however, has not changed. Expansionary production policies are generally being maintained in both traditional rice importing and rice exporting developing countries (FAO 2001a). Hence the change in world rice policies over the past few years has only been partly consistent with the price developments in domestic and world markets.

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[9] See e.g. Latham (1998) for a history of export and import controls, which date back to the 1930s.

[10] This tendency of market isolation has been exacerbated by the country-specific pattern of technology adoption. The environmental and structural conditions in the traditional importing countries have been more receptive to the high-yielding varieties that were introduced in the late 1960s and 1970s and which require timely irrigation and chemical fertilizers. This has helped them in their drive for self-sufficiency and has lowered their need to import from world markets. Traditional exporters such as Thailand and China have typically relied on traditional methods that have made use of their naturally flooded river deltas that simplify planting, but where it is not easy to neither control water supply nor regulate fertilizer use. (Latham 1998).

4.1. Comparative overview

Before embarking on a description of the policies of Vietnam and the other major rice exporting and importing countries, this section aims at providing a preliminary comparative overview of the degrees of protection and support provided to the rice sectors of these countries. The methodological backdrop is the classification scheme for agricultural support and protection policies that underlies the well-known OECD Producer Support Estimate (PSE). The PSE is an indicator of the monetary value of implicit and explicit transfers from consumers and taxpayers to support agricultural producers arising from policy measures that support agriculture. The outset of the OECD classification is that the impact of a particular policy instrument on production, consumption and trade depends on the extent to which it is linked to a specific commodity or to an input used to produce that commodity (OECD 2001a). This leads to a ranking of policy measures according to their relative potential economic impact. In general, the more specific to a commodity a measure is, the greater the potential impact. Table 4.1 provides an overview of the different types of agricultural policies in descending order according to the degree of their potential distorting effects of production and trade.[11]

The PSE quantifies the implicit and explicit transfers from consumers and taxpayers to producers of the agricultural policies. There are a number of indicators based on the PSE measure and its subcomponents, which enable comparisons of degrees of protection and market orientation across countries. Table 4.2 contains a selection of such indicators of which the ones that are based directly on the PSE are only available for the OECD countries.

The *%PSE* shows the share of transfers to producers in the total value of gross farm receipts, i.e. the share of farm receipts that is due to policy. For rice producers in Japan and Korea, for example, 70-90% of farm receipts are directly due to policy measures. The share is between 10 and 30% for rice farmers in the US and in the EU.

As indicated in Table 4.1 direct Market Price Support (MPS) has the most distortive effects on production and trade. This component of the PSE includes a wide range of

[11] The PSE does not include the costs of general agricultural policies that are not received directly by individual farmers. Examples are research and development, investments aimed at improving infrastructure, government financed quality control of inputs, etc. These are included in the OECD's General Services Support Estimate (GSSE).

Table 4.1. Relative impacts of policy measures on production and trade

	Effect on **production and trade**	**Effect on consumption**	**Budget financed**	**Description**	**Examples of instruments**
Market Price Support (MPS)	√*	√	-	Support provided through policies that create a gap between domestic and border prices	Border measures on imports and exports, Public and on-farm stockholding, Food aid, Consumption subsidies, Export subsidies
Payments based on output	√	-	√	Increases producer price	Deficiency payments
Payments based on use of inputs	√	-	√	Reduces costs of inputs, subsidies on variable inputs have greater impact than subsidies on fixed inputs	Subsidies on fertilizer, feed, seeds, energy, water, transportation, and insurance; Interest concessions; Tax rebates
Payments based on area planted/ animal numbers	√	-	√	Requirements to produce specific crops / own animals	Hectare premiums; Headage payments
Payments based on historical entitlements	√	-	√	No requirements to producer specific crops / own animals	Payments based on past support, area, animal numbers, production or income
Payments based on input constraints	√	-	√	Constraints on inputs and/or farming practice	Reduction, replacement or withdrawal of inputs; Environmentally friendly production
Payments based on overall farming income	√	-	√	Triggered by predetermined farm income level	Income-dependent payments

* In the 2nd and 3rd columns a tick (√) indicates that there is an effect, while a dash (-) indicates that there is no direct effect. In the 4th column a tick indicates that the measure requires budgetary outlays, while a dash indicates that the measure does not operate through explicit budgetary outlays. The declining size of the ticks down the 2nd column indicates that the relative potential impact of the policy measures described on production and trade declines as the instruments become less commodity specific and less coupled to production.

policies and it can of course be difficult to single out the contribution of each instrument. The *share of MPS in PSE* nevertheless provides an indication of how prevalent this type of support is in a given country compared with other less distortionary forms of support. Table 4.2 reveals that Japan and Korea rely heavily on price support policies. The EU also relies to a large extent on market price support to its rice producers, but the share of MPS in PSE has declined over the most recent years. According to

the OECD estimates the US does not rely on market price support at all.[12] In other words, US domestic prices seem to be in line with world market prices.

Finally, the table contains estimates of the *Nominal Protection Coefficient*. For the OECD countries these estimates are taken directly from OECD sources and shown in Tables A.6-A-9 of the Appendix to this report. For non-OECD countries proxies have been calculated. The documentation hereof is also contained in the Appendix.

The first observation to be made is that the degree of protection provided to Japanese and Korean rice producers is far greater than the protection provided to producers in the US and the EU. Furthermore, the degree of protection has consistently increased in Japan, Korea and the United States over the period 1997-99. For the EU support has declined over the past years (see Chapter 4.4.4 below).

For the non-OECD countries the estimated coefficients indicate that rice producers are generally implicitly taxed rather than protected. The prices received by rice farmers in Vietnam, for example, are 14%-22% below the prices obtainable for exports. Chinese rice producers are taxed even more heavily. Another observation is that for several countries, particularly Indonesia, whether rice producers are taxed or subsidized varies other the years. As shall be seen below, these year-by-year changes in policy are typically responses to the domestic harvest situation and are a clear reflection of the rice self-sufficiency objective followed by most governments of Asian rice producing countries.

In the following chapters the rice policies of Vietnam (Chapter 4.2) and the other major rice exporting (4.3) and importing (4.4) countries will be described. In each case the overall objectives of the policy regime will be stated and the policy instruments will be described. The descriptions of the policy instruments follow the structure provided by the OECD PSE policy measure classification scheme as shown in Table 4.1 above.

[12] The estimates for the US rice sector should be interpreted with caution, however, because the reference price used is an implicit price derived by subtracting the average unit value of export subsidy (total value of export subsidies for the crop year divided by total exports) from the producer price. Hence implicit export subsidies through e.g. the provision of export credits and food aid are not taken into account. This can only be measured by comparing the "true" export price with the producer price.

Table 4.2. Selected indicators of market protection, market orientation and assistance to the rice sectors in OECD and non-OECD countries

	1997	1998	1999	2000[e]
%PSE[a]				
United States	10	15	26	-
Japan	78	84	88	-
Korea	79	71	80	-
European Union	20	18	29	-
Share of MPS in PSE[b]				
United States	0	0	0	-
Japan	87	89	89	-
Korea	96	96	97	-
European Union	98	68	59	-
Nominal Protection Coefficient[c]				
United States	-	1.01	1.28	1.43
Japan	-	5.81	7.19	8.17
Korea	-	3.40	4.15	6.25
European Union	-	1.18	0.99	0.89
Vietnam	0.78	0.78	0.86	-
Thailand	1.05	0.95	1.08	-
China	-	0.60	0.74	0.75
India	-	0.71	0.78	0.79
Pakistan	-	0.89	1.00	1.25
Indonesia	1.18	0.52	1.18	-

[a] The percentage PSE is calculated as follows: %PSE = PSE/(Q*Pp + PP)*100, where Q*Pp = Value of production at producer prices and PP = Payments to producers = PSE – Market Price Support.
[b] MPS = Market Price Support
[c] The Nominal Protection Coefficient is calculated as follows: NPCp = (Pp + PO/ton)/Pb, where Pp is the average price received by producers (at farm gate), PO/ton is payments based on output, and Pb is the border price (at farm gate). The data for the OECD countries are obtained directly from OECD (2001). The calculations behind the estimates for the non-OECD countries are described in the Appendix.
[e] Preliminary
Source: OECD PSE database 1999 Edition, OECD (2001) and own calculations. See Appendix for calculations of NPCp for non-OECD countries.

4.2. Rice policy in Vietnam

Policy objectives

Like many other developing countries, Vietnam faces the policy dilemma of seeking to achieve food security for its population whilst also raising foreign exchange earnings by encouraging the export of food and agricultural products. Rice is at the crux of this dilemma for Vietnam since it is both the dominant staple food (accounting for ¾ of the caloric intake of the average Vietnamese household) and the second or third largest foreign exchange earning sector of the country (accounting for more than 10% of the total value of exports and almost 40% of the value of agricultural exports in 1997, Que and Que 2000).

Policy instruments

Table 4.2 above showed that the nominal protection coefficient for Vietnam's rice sector has consistently been below unity over the past few years – a reflection of domestic prices being lower than world market prices. As shall be seen below many different border measures contribute to this negative market price support. Being a developing country there is not much budgetary scope for directly supporting rice producers in Vietnam, but there are other ways in which the Government seeks to influence rice production and trade (encouragement of production of specific types of rice, regulation of fertilizer imports, etc.).

Market Price Support: An export quota

The food security argument has weighed heavily in the balance of policy objectives mentioned above and therefore the Government of Vietnam has kept a tight control on the volume of rice exports ever since it re-entered the international rice market as an exporter in 1989. Yet the success of Vietnamese rice exports has given impetus to the foreign exchange earning objective and so as of May 1, 2001 the export quota, which has been the most direct instrument used to regulate rice exports, has been removed. Nevertheless, as shall be discussed below, the government still retains a substantial degree of control over rice exports.

Turning back time to the policy regime before May 1, 2001, the Government of Vietnam has controlled the volume of rice exports by setting an annual export quota. An export quota amounts to negative Market Price Support by implicitly taxing exports. The quota has been set each year by the Ministry of Agriculture and Rural Development, the State Planning Committee, and the Ministry of Trade based on estimates of domestic supply and utilization. The rice export quota has typically been allocated in two steps: an initial allocation valid up to September, followed by a second allocation after an evaluation of the domestic crop situation.

The rights to export rice under the national quota have been allocated to the two regional state-owned trading enterprises – VINAFOOD I (also known as the Northern Food Company) in Hanoi and VINAFOOD II (Southern Food Company) in Ho Chi Minh City – and to a number of provincial state-owned trading enterprises. VINAFOOD II has handled the majority of the Corporation's rice exports because the bulk of export rice is produced in this region (FAOSTAT 1995). Following reforms of the quota allocation process in 1996, however, the provincial SOEs have been given a substantially larger share of the national quota (Latham 1998).

The initial steps to liberalize the rice export regime in the sense of allowing private trading companies to participate in rice exports were taken in the years 1997 and 1998. Export quotas were offered to private traders on the basis of four criteria: previous experience in rice trade, ownership of milling facilities, capacity to export at least 5,000 tons per shipment, and proof of financial security (Goletti 1998). Although several private companies have since obtained access to export quotas, they accounted for just 4% of total rice exports in 1999 (Minot and Goletti 2000). Hence there still seem to be barriers to entry for private firms.[13] In terms of the allocation of quota rents, however, it is worth noting that although private firms have not until recently formally held export quotas, they have been and continue to do most of the actual trading by working as subcontractors to the quota holders, i.e. the state owned enterprises (CIE 1998). According to Goletti (1998) private traders purchase 96% of total market surplus from farmers.

Foreign rice firms have increasingly established their presence in the country, and their marketing expertise has according to Latham (1998) been crucial for re-establishing Vietnam's position as a major exporter. Vietnam's revised Trade Law of January 1, 1998 allows foreign traders to set up branches and engage in direct transactions, carry out trade deals and offer trade services. They have not yet been allowed to export rice themselves, but they act as agents for the provincial food companies.

By using a two-step allocation procedure for the annual rice export quota, the Government of Vietnam has secured itself a significant degree of "flexibility" to respond to the prevailing domestic crop situation. In 1997, for example, the initial quota was 2.0 million tons out of a total estimated quota for the whole year of 2.5 million tons. Above-average harvests enabled the quota to be raised with a final volume of 3.6 million tons being exported that year. The flexible quota has not always been used to increase exports, but also to restrict them. In 1998 the annual quota was set at 4.0 million tons, of which 3.6 was the initial allocation. Facing a drought situation, the Ministry of Trade and the provincial rice export steering committees were instructed to restrict exports thereby failing on contracts of delivery. The Government simply chose not to authorize the prices negotiated by exporters and buyers (CIE 1998). And a final example to muddy the picture: The allocation of an export quota of 4 million

[13] Increasing the participation of the private trading firms in rice exports is important because their costs are considerably lower than those of SOEs. According to Minot and Goletti (2000) the unit costs of SOEs in the two main rice-producing areas – the Mekong River Delta in the south and the Red River Delta in the north – are four to sixteen times the corresponding costs of private firms.

metric tons in the year 2000 assigned directly to rice exporters could not be fulfilled. Only 3.4 million tons ended up being exported (Oryza 2001).

A natural question is then whether this flexible setting of the export quota in reality has meant that the "quota" has been more a target than a binding quota? There are several indications, however, that the rice export quota has been binding. First of all, according to Minot and Goletti (2000) there has been intense political lobbying activity among SOEs (and private firms when they were permitted to request quotas) to receive export quota allocations. Second, there are strong indications that 0.5 million tons of rice were exported illegally to China in 1995 (official exports were registered at 2.0 million tons that year). Third, an investigation of the foreign-domestic price differential shows that the domestic price has been substantially below the border price during the period 1990-1995. As shown in Table 4.3, this amounts to an export tax equivalent of between 20% and 25% as a percentage of the border price.

Table 4.3. Export tax equivalent of Vietnam's export quota, 1990-95

Year	Exports	Domestic price (wholesale price, Mekong Delta)	Border price (f.o.b. export price)[a]	Export tax equivalent as a percentage of domestic price	Export tax equivalent as a percentage of border price
	Million metric tons	USD/metric ton		Percent	
1990	1.6	135	170	26.3	20.8
1991	1.0	164	226	38.2	27.6
1992	1.9	155	207	33.1	24.9
1993	1.7	159	203	28.1	21.9
1994	2.0	162	218	34.2	25.5
1995	2.0[b]	202	269	33.2	24.9
1996	3.0[c]	-	-	-	-
1997	3.6	-	-	-	-
1998	3.7	-	-	-	-
1999	4.6	-	-	-	-

[a] Although not explicitly stated in Minot and Goletti (2000), a previous study Goletti and Minot (1997) indicates that the border price given here is the export unit value.
[b] It is widely believed that 0.5 million tons were exported illegally to China this year.
[c] FAOSTAT reports 3.5 million tons for 1996.
Source: Price data for 1990-1995: Minot and Goletti (2000). Export data: GSO (1999).

The next question is whether the quota has become less binding after 1995 – a period characterized by frequent adjustments as described above. For the more recent years, 1995-1999, Minot and Goletti (2000) compare retail prices with the f.o.b. 25% broken price in lack of more appropriate data (Table 4.4). When comparing the data for 1995 in Tables 4.3 and 4.4, however, it is evident that there is a large margin between the wholesale price and the retail price, and that the average export quality is higher than

25% brokens. Hence this price comparison does not seem appropriate. Therefore, Table 4.4 presents calculations of an implicit wholesale price and an implicit unit export value based on an assumption that the relationship between wholesale and retail prices and the relationship between the price of 25% brokens and the average unit value of exports are constant in the period 1995-99. These calculations show that the quota has in fact amounted to an export tax equivalent of 23%-25% in the period 1995-98 followed by a dip to 15% in 1999 (Table 4.4). Hence, the available information provides no basis to conclude that the export quota has become less binding up until its removal.

Table 4.4. Comparison of domestic and export prices, 1995-1999

Year	Implicit wholesale price*	Retail price Mekong Delta	Unit export value*	Vietnam fob price 25% broken rice	Export tax equivalent as a % of border price*	Thailand fob price 25% broken rice
		----------	USD/metric ton	----------		
1995	202	250	269	252	24.9	300
1996	204	253	267	250	23.6	280
1997	183	227	235	229	22.1	254
1998	204	253	265	250	23.0	250
1999	183	226	215	205	14.9	215

* The implicit wholesale prices are calculated on the basis of the relationship between the 1995 wholesale price in Table 4.3 and the 1995 retail price in Table 4.4. Minot and Goletti (2000) provide evidence that the margin between retail and wholesale prices is 8-9% and regression analysis shows no detectable trend in this margin over the period 1986-95. Wholesale paddy prices are 4-5% above farm gate rice prices, and once again there is no trend in this price wedge. The paddy-rice margins reflect the costs and profits in the milling sector and are 73-75% over the period 1986-95 with no statistically significant trend. Finally, it may be noted that rice prices are 30% higher in the north than in the south regions of the country with no trend. The unit export value for 1995 is taken directly from Table 4.3. The value for 1996 is calculated based on the relationship between the 1995 border price in Table 4.3 and the 1995 price for 25% broken rice in Table 4.4. The average export prices are calculated for 1997-99 by using the rice export quality structure given in Table 3.5 and the price quotes provided by the USDA (2001). Hence they are "quality-adjusted". The export tax equivalent is calculated on this basis.

Source: Minot and Goletti (2000), and own calculations

The impact of a binding export quota depends on whether the country imposing the quota is "large" or "small" (see Box 4.1). Vietnam has ranked number two in world rice exports in volume terms in recent years, and some analysts such as Minot and Goletti (2000) have taken this to imply that the "large country" assumption is appropriate. With a market share of 17-18% in recent years it is clear that Vietnam is a significant player on the world rice market. Yet there are also indications that Vietnam's influence on the global price setting process may be somewhat less pronounced. It was seen earlier that Vietnam's share of world trade measured in value terms is somewhat lower than the share measured in volume terms. Furthermore, Vietnam has

entered the market as an exporter at a time when rice prices have been falling and has therefore found itself necessitated to sell its rice at a discount. Hence there does not seem to be evidence that the Vietnamese export quota has had a price raising effect on world markets.

Market Price Support: Export tax

Until 1998 the Vietnamese rice regime has also consisted of an export tax (IMF 1999). Just like the quota, the rice export tax has also been managed flexibly in the sense that it has not always been levied, particularly in times of low world market prices (FAOSTAT 1995). In 1997 export duties were 0% on rice with more than 25% brokens, and 1% on other rice qualities (CIE 1998). An export tax in addition to an export quota has the effect of shifting some of the rents from the quota holders to the government in the form of tax revenue.

Market Price Support: "Guidance" export prices

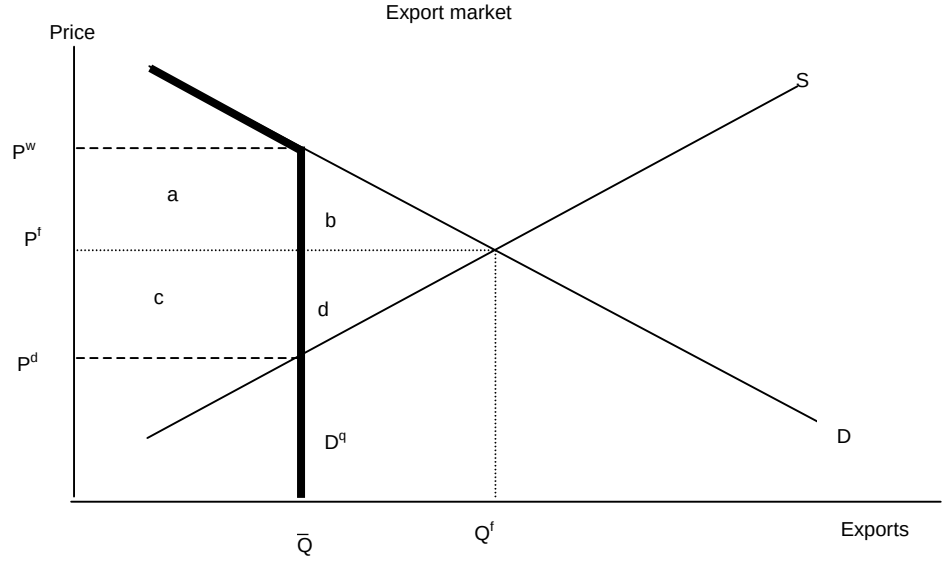
The export quota and tax instruments have been accompanied by the setting of "guidance" export prices. According to the latest Oryza (2001) reports, the Vietnam Food Association still sets floor prices for exports despite its efforts to liberalize the regime. According to the latest plan submitted for approval to the Ministry of Trade, Vietnamese rice exporters were told not to accept export contracts with prices less than 160, 155, 150, 140 USD/MT (f.o.b. HCMC) for 5%, 10%, 15% and 25% broken rice, respectively. The actual export price depends of course on a wide range of factors including world market conditions, quality, reputation of the exporter, efficiency of port facilities, bargaining skills, etc. In response to this reality the minimum export price has indeed had to be lowered in response to weak international prices, thereby rendering it less restrictive on export contracting.

Market Price Support: Import tariffs

As shall be discussed below, the Vietnamese Government encourages the production of high quality and specialty rice varieties. Vietnam currently imports limited amounts of high-quality rice varieties, mainly from Thailand, and by increasing import tariffs it hopes to reduce this inflow and to encourage farmers to expand production of such varieties. Just like the "flexible" management of export restrictions, import restrictions are also changed frequently. In April 2000 Vietnam raised its import levies from 10% to 20% for all types of rice except paddy, which remained duty free. Another rise to 30% was implemented in July 2000 and yet another to 40% as of November 1, 2001 (FAS 2001a).

Box 4.1. Quantitative export restraints

Some countries restrict exports of staple foods such as rice, maize and wheat for food security reasons. Irrespective of price developments on the world markets, exporters are restrained from supplying more than a fixed quantity. A binding export quota will change the demand curve seen from the perspective of domestic exporters. In the figure below the demand curve is D^q. The domestic price falls to the benefit of the consumers, but at a cost to producers. The net effect is a deadweight loss equal to b+d. The curves depicted are excess supply and demand curves of the foreign and domestic economies, respectively, and so the areas a, b, c, and d represent the combined consumer and producer surpluses in the market for the good (see e.g. Deardorff 1999). Agents with the right to export under the quotas gain what corresponds to the area c. If the country imposing the quota is "large" in the sense that it can affect world market prices by its policy, the world price will tend to rise. The area a shows the potential terms of trade gain. The net effect is uncertain, but a very large country could actually gain from imposing an export quota if demand for its exports is highly inelastic or if the implicit tax of the quota is rather small. The latter would be more likely if exports of the particular good in question constituted only a small share of domestic production and if domestic supply and demand are very elastic. In the small country case, there is no impact on the world market price, hence no terms of trade gain, and therefore the country stands only to lose. Just like a variable levy, the difference between an export quota and an export tax is evident as market conditions change. An export tax has a constant degree of negative protection while allowing the volume of exports to change. An export quota maintains a fixed export volume, but allows the degree of protection to vary according to domestic market conditions and the world price. Furthermore, an export tax generates explicit revenue to the government, whereas a quota generates rents that may be distributed in many different ways depending on who has access to the quota.



As a member of ASEAN Vietnam is committed to reducing tariffs on imports from other ASEAN countries to 0-5% by 2006 for a list of agricultural and industrial products included in the so-called Common Effective Preferential Tariff Scheme (CEPT). Non-tariff barriers relating to these goods are also to be eliminated, and customs, in-

vestment and standard regulations and procedures are to be harmonized (CIE 1998). To meet AFTA (ASEAN Free Trade Agreement) requirements, the Government of Vietnam has adopted a detailed annual road map for tariff reductions and the phasing out of quantitative restrictions vis-à-vis ASEAN countries between 2001 and 2006.

For 2001 only seed paddy is included in the CEPT commitments and it is included at a rate of 0%. The other kinds of paddy, husked, semi-milled and milled, and broken rice are excluded from the CEPT reduction schedule, included in either the sensitive list or the temporary exclusion list. Hence the increase of the rice tariff rate to 40% mentioned above is also valid on rice imports from other ASEAN members.

Table 4.5. Rice tariff rates applied by Vietnam as of November 1, 2001*

HS code	HS description	Special preferential rate	Preferential rate	Normal rate
1006	Rice			
1006.10	- Paddy			
1006.10.10	-- For sowing	0	0	0
1006.10.90	-- Other	40	40	60
1006.20.00	- Husked (brown rice)	40	40	60
1006.30.00	- Semi-milled or wholly milled rice, whether or not polished or glazed	40	40	60
1006.40.00	- Broken rice	40	40	60

- In 1999 Vietnam implemented a change in its import tariff structure. There is a three-tier tariff structure: a special preferential rate (applicable at this time to ASEAN countries through the CEPT scheme under the AFTA), a preferential rate (applicable to imports from countries with which Vietnam applies the MFN status, i.e. the EU, the US, Japan and most non-ASEAN Asian countries), and the normal rate (which is 50% higher than the preferential rate for other countries) Apoteker (2000).

Source: FAS (2001a, 2001b).

Market Price Support measures: Public stockholding

Apart from quantitative restrictions on exports and tariffs on imports, national food security is also sought achieved through procurement and storage programs. Stockholding programs enable the Government to regulate domestic prices. The VINAFOOD corporations are required to hold stocks, known as a circulation reserve, as a basis for market intervention and to cover food requirements due to seasonal variations. The financial means to purchase rice for the reserve are drawn from the operating capital of the SOEs, which in turn is part of the state budget. The corporations are permitted to manage the reserves as they see fit, but must also bear all costs and fi-

nancial responsibilities.[14] Due to poor storage facilities a substantial deterioration of quality occurs, and when these stocks are wound down through sales to domestic and foreign markets, lower prices are obtained.

Measures based on use of inputs

In a developed country a government may assist its farmers with direct support based on e.g. output or input use. In a developing country like Vietnam there is very little budgetary scope for direct support of producers. Furthermore, in the case of a staple food like rice, the overriding concern with domestic food security can in fact result in direct or indirect taxation of producers rather than support. This is because governments try to keep tight control of domestic supplies at the regional level and to limit exports of staple foods.

In Vietnam there are restrictions on internal rice trade, which in effect act like a tax on the use of transportation services in the rice sector. These restrictions are in place to ensure inter-regional equity in terms of security of rice supplies and to control illegal exports. The rice surplus region of the country is in the southern Mekong Delta whereas the rice deficit regions are in the north. Furthermore, the destination of most smuggled rice is China, which borders Vietnam to the north.

The restrictions are mainly bureaucratic rigidities in the form of fees, taxes, police checkpoints, permit requirements, but sometimes also explicit bans. These measures all act as a tax on internal rice trade because they increase costs of inter-regional trade. As late as in 1996 purchases by the northern rice-deficit regions from the south required the following: (1) a license from the Ministry of Agriculture and Rural Development, (2) registration with the Market Control Department, (3) purchase at a place determined by VINAFOOD II, (4) registration with local market control chapters in the south, (5) registration at ports of departure and arrival, and (6) registration with local market controls in the north (Minot and Goletti 2000).[15] Moreover, SOEs have been granted monopoly control over north-south rice trade in part because the

[14] Rice is also held in the national reserve fund - a strategic security entity - along with other 'essential' goods such as medicines, chemicals, metals, motor vehicles, and defence and communication equipment (CIE 1998).

[15] An analysis by Minot and Goletti (2000) shows that the restrictions on north-south internal trade are so great that if these are lifted, the implicit export tax associated with the export quota is reduced because internal south-north trade provides an unused sales potential. This is most probably a specific feature of the unique geographical segregation of the Vietnamese rice market rather than a general observation about complementarity of domestic and foreign policy liberalization.

profits earned by the SOEs are an important source of revenue for the central government.

Restrictions on domestic trade in rice were removed in 1997. Decision no. 140 on the "Management of Rice Export and Fertilizer Import in 1997" declared that "any organization or individual who is registered for food business activities is allowed to buy, process, transport, and carry out food business activities for the domestic consumption". Furthermore, "licenses and controls on domestic food transport are abolished, as are food taxes for wholesale activities among different regions, in order to create a unified and free flow of food dictated by the demand and supply of the market" (cited in Goletti 1998). Yet the requirements for obtaining a business certificate for private traders operating in the internal market are strict. They must have a minimum capital of USD 4.5 million and must have been trading for at least three years. Few companies can fulfill these criteria and so it is doubtful how real the liberalization of south-north trade has been (Latham 1998).

Measures based on use of inputs: restrictions on fertilizer trade

In addition to the explicit and implicit taxation of rice trade, the rice sector has also been taxed implicitly through the restrictions on fertilizer imports. Compared with other Southeast Asian countries, Vietnamese rice production is an intense user of inorganic fertilizers and domestic production supplies only 13% of total use, thereby making imported fertilizer critical (Goletti 1998).[16] The MARD and the Ministry of Trade, who have determined the quantity and types of fertilizer to be imported each year, have controlled fertilizer imports. In 1997 the quota was 2.527 million tons (GSO 1999). Quotas are allocated to the provinces based on expected provincial production. The provincial authorities then allocate the quotas to the enterprises under their management. Non-state enterprises have also been allowed to receive quota allocations subject to fulfillment of certain criteria. Just like the rice export quota, the fertilizer import quota has been adjusted following mid-year reviews of the local supply and demand conditions.

The Government operates a Price Stabilization Fund to monitor prices on fertilizer. This acts as a variable levy because an import surcharge is invoked when international prices fall significantly below regulated maximum selling prices. When international prices rise, funds are disbursed to stabilize domestic prices (European Commis-

[16] According to the IMF (1999) joint-venture fertilizer plants are being opened to start domestic production of more advanced fertilizer types, but the import substitution idea is still lurking as import bans have been imposed for precisely these products.

sion 2001). Fertilizer price volatility in Vietnam has indeed been lower than in world markets – clearly the reason why this system has been established – but this stability has been achieved at the cost of domestic fertilizer prices being well above world market prices thereby representing a real tax on farmers (Table 4.6). Since quota holders earn rents, an active illegal market for fertilizer quotas has been established, and informal interviews reveal that the value of these quotas has been around USD 3-4 per ton (Goletti 1998).

Table 4.6. Comparison of fertilizer prices 1998*

Fertilizer type	Domestic price USD/kg	Import price USD/kg	Premium over import price, percent
Urea	2,100	1,566	34
DAP**	3,850	2,990	29
Kalium	2,150	1,723	25

*Although not entirely clear in the source it seems that the price data are for 1998.
**Diabasic Ammonium Phosphate
Source: CIE (1999).

Measures based on use of inputs: promotion of specialty rice

Vietnam's rice export profile consists mainly of low and medium quality rice, although the share of high-quality rice has been increasing rapidly. The Vietnamese government is keenly aware of the general need to improve the quality of its export rice as well as the prospects of obtaining price premiums on specialty rice varieties. Special zones have therefore been assigned to production for exports in an effort to enhance the quality of Vietnam's rice exports and to minimize transportation costs. These efforts act as an implicit subsidy on transportation. Other implicit subsidies include supporting the expansion of the rice drying, husking and storage capacity. Farmers are furthermore being encouraged to use pure high-quality seed from selected varieties including specialty rice such as Jasmine rice. Processors are encouraged to pay a higher price for paddy from these varieties and to ensure that the high quality is retained through the processing process. In principle, the high-quality rice will be identity preserved from the normal rice in expectation of capturing a higher export price.

Although it may be tempting to follow a strategy that focuses specifically on promoting the production of specialty rice for exports, competition from other countries such as Thailand, India and Pakistan, which have long-held traditions and experience in producing and exporting specialty rice, will be intense. Furthermore, as the Government of Vietnam is keenly aware, there is still a lot to be gained from a general qual-

ity lift in the rice sector (including better post harvest management) in order to sustain and develop market shares in countries that demand "regular" rice.

Measures based on input constraints: withdrawal of paddy land

As mentioned above, many governments are adjusting their rice policies in response to the current world market situation characterized by declining prices. In Vietnam the government is converting paddy fields into alternative uses (FAO 2001a). [17] The area of land under irrigated paddy has been targeted at 4.2 million hectares in 1999, a level which was cut further to 4.0 million hectares in 2000. Furthermore, a number of steps have been taken to provide paddy producers with preferential credit conditions, and credit subsidies are being provided to traders for purchasing and storing rice.

Recent policy developments

In principle at least, one of the most substantial changes in Vietnamese rice policy in recent years is the elimination of the export quota. To be effective as of May 1, 2001 the Prime Minister signed Decree No. 46/2001/QD-TTg on Vietnam's Export-Import Management Mechanism for 2001-2005. This decision declares the abolishment of both the rice export quota and the fertilizer import quota. Furthermore, the practice of directly nominating exporters and importers of these products has been removed. Hence all economic agents (state owned and non-state owned) holding a license to trade food or agricultural commodities can participate in rice exports. According to Oryza (2001) some SOEs are already beginning to express concerns that "too many rice exports will cause market disturbances". To this end the Deputy Trade minister has been quoted for saying that the SOEs will not face any serious challenges since many private trading companies will not be capable of exporting rice anyway. Moreover, the Government will still assign the Ministry of Trade to coordinate with Vietnam's Food Association in nominating state owned food companies to deal with the country's main rice markets such as Indonesia, the Philippines, Malaysia and Iraq. The signed contracts will then be allocated to the provinces based on their available rice supply (Oryza 2001). So although the quantity limitations have been lifted, this

[17] The land law passed in 1993 extended long-term land use rights to farming households. This included the rights to exchange, transfer, lease, inherit, and mortgage land thereby increasing farmer incentives to invest in land reclamation and land improvement. Yet Goletti (1998) mentions that there have been restrictions on the conversion of rice land to other activities, constraining the possibilities of developing a more diversified agriculture and the development of rural industries. Whether these restrictions have been relaxed since is not clear.

decision will not have a significant impact on increasing the participation of private trading companies in rice exports.

Along with the removal of the export quota, the Government of Vietnam simultaneously introduced an export subsidy, i.e. an explicit Market Price Support measure. Rice exporters will receive a subsidy of VND 180 (about USD 0.012) per export dollar (Oryza 2001).[18] Export subsidies are generally prohibited in the WTO context and those that were in place under the URAA negotiations were required to be reduced in both quantity and value terms. Developing countries were, nevertheless, given permission under certain conditions to use export subsidies to reduce the costs of marketing and transporting their exports. It is unclear whether these conditions are met by the new rice export subsidies in Vietnam, but a closer scrutiny in connection with its negotiations with the WTO on accession terms will determine whether or not they are compatible with WTO rules.

Another recent policy initiative that may well meet opposition by WTO members is an agreement that Vietnam has signed with Thailand. Under the deal each of the two countries is to contribute 100,000 tons of 25% broken rice to an international rice pool for sale at USD 152/ton. The intention is to keep the two partner countries from undercutting one another's prices on world markets. The judgment of the FAO (2001a), however, is that the amount and the number of countries involved are too small for it to have any impact. Nevertheless, China and India have expressed interest in the agreement although it is far from clear that such an agreement will be WTO compatible. At the domestic level this initiative will continue to contribute to domestic rice prices being below border prices.

Preliminary evaluation

The above description of the Vietnamese rice policy regime makes it clear that both export and import instruments are changed frequently. These adjustments have not been a reflection of a focused attempt to dismantle and simplify trade regimes, but rather an effort to 'fine-tune' instruments to balance demand and supply conditions and macro indicators such as the trade balance. Yet this type of 'fine-tuning' often adds implicit, but very real, costs to trade because of the resulting uncertainty. Unpredictability is a barrier in itself both to those trading with Vietnam as well as to domestic producers/exporters. Trade regimes that are managed as strongly as the rice regime

[18] Other products to benefit from this program are pork and suckling pigs (VND 900 and 280 per USD), canned fruit and vegetables (VND 500 and 400 per dollar) and coffee (VND 220) (Oryza 2001).

in Vietnam will inevitably also be subject to direct policy-induced price instability, because policies are based on judgments made about supply and demand. Shortages of fertilizer supply at various times witness these mistakes. The consequences are often dear in the form of sending confusing price signals and thereby making it difficult for agents in the economy to plan and invest.

The removal of the export quota and the introduction of the export subsidy is a clear indication that the Government of Vietnam is relying on sustaining rice exports as a means of earning foreign exchange. Sustainability of Vietnam's rice exports will of course depend on both demand and supply side factors. Vietnam has the advantages of favorable climate conditions and low costs of labor. On the disadvantage side Vietnam is still in the process of building up a reputation of a stable and reliable supplier and part of these problems is related to domestic structural constraints (e.g. port inefficiencies) but also to policy constraints (including the tendency to frequently 'fine-tune' the policy instruments). Vietnam also stands to gain from improving the overall quality of its export rice. Based on international experience and the experience of other food processing sectors in Vietnam, allowing the private sector to participate in rice exports should result in a better seeking out and exploitation of market niches for high-quality and specialty rices although this may not necessarily – on its own at least – be the "right" strategy for Vietnam, c.f. the discussion above. In any case and on efficiency grounds, the Government of Vietnam should nevertheless further liberalize – in real terms – the participation of private enterprises in rice trade.

4.3. Policies of other rice exporting countries

4.3.1. Thailand

Policy objectives

The overriding goals of Thai rice policy are to maintain stable paddy prices at reasonably high levels and at the same time to ensure the international competitiveness of Thai rice exports.

Policy instruments

Comparing the rice policy of Thailand with that of Vietnam clearly reflects the fact that Thailand is a country with a substantially longer and more well established experience in international rice trade. Moreover, the policy instruments used in Thai rice policy also reflect this county's higher level of income.

The rice policy program for 2000/01 consists of five elements (FAS 2000a):

(i) Rice procurement program: Funds are allocated to government agencies authorizing them to intervene in the marketing and procurement of both paddy and milled rice

(ii) Rice exports under Government-to-Government arrangements: This component includes exports under the Vietnam-Thailand "rice pool" agreement, and the encouragement of exporters to export good quality rice using the Thai logo.

(iii) Paddy mortgage scheme: A 1.5 million ton paddy mortgage scheme through which farmers can obtain a loan by mortgaging their crop plus a rice intervention program of up to 1 million tons.

(iv) A paddy mortgage scheme of 1 million tons for upcountry areas.

(v) Credit assistance: The Bank of Thailand provides packing credit to rice exporters and millers.

The value of the paddy mortgage scheme declined from USD 168.1 million in 1995 to USD 65.6 million in 1997, but has rebound to USD 118.7 million in 2001 in an effort to assist farmers as prices decline (FAO 2001a).

Market Price Support measures

As mentioned above, price stabilization is a key element of Thai rice policy and is sought achieved through the rice procurement program. The target paddy price supporting the farm-level price has been lifted over the past years and depends on the type and grade as shown in Table 4.7.

Table 4.7. Official target paddy prices in Thailand for 2000/01

Paddy type	Jasmine	100 %	5%	10%	15%	25%	Glut. long	Glut. short
Target price (Bht/ton)	6,840	5,560	5,460	5,260	5,160	4,960	6,200	5,900

Source: FAS (2000a)

In terms of border measures, the Government of Thailand has in the past used export quotas to control its rice exports and imposed an export surcharge known as the 'rice premium'. Taxing rice exports had the effect of an implicit consumer subsidy by keeping domestic prices low whilst at the same time generating revenue to the government. The quota system was abolished in 1986 and the export premium on low

quality rice was removed in acknowledgement that low prices were part of the game when competing with US rice exports.

Today Thai rice exporters are assisted through the provision of export credits on preferential terms, i.e. implicit export subsidies. In the year 2000 Baht 20,000 million (USD 487 million) were earmarked for this purpose through an Export Support Fund. Furthermore, due to the currently low world market prices, exporters have been requested to purchase and store 1 million tons of domestic rice at the prevailing market prices. In return, the Government has offered interest-free credit to back up the purchases and to cover storage costs – yet another implicit export subsidy (FAO 2001a).
In terms of import measures, the URAA required Thailand to lift its long-held ban against rice imports and to open its markets to an annual tariff rate quota, the commitments of which are shown in Table 4.8. Thailand manages its import quota as a global tariff quota and does not pre-selected which suppliers have access to it. Actual imports fall well below these levels (which are opportunities to import not requirements). Thailand's reports to the WTO show that imports were just 147 metric tons in 1998 and 907 metric tons in 1999. Most of these imports came from the US with small amounts also coming from Japan and China. Thailand imposes a specific tariff of Bhat 2.75/kg on imports. In addition hereto quota license holders are subject to a 30% tariff whilst non-quota importers are subject to a 54.4% tariff. The total amount of customs duty collected shall not exceed the amount of the customs duty that would be collected if the ad valorem rate alone had been applied (UNCTAD TRAINS database).

Table 4.8. Thailand's rice import quota commitments of the URAA*

Year	1995	1996	1997	1998	1999	2000	2001
Metric tons	237,863	239,185	240,506	241,828	243,149	244,471	245,792

* All rice types: paddy, cargo, milled and broken
Source: FAS (2001c).

Payments based on use of inputs
The Government of Thailand also supports it farmers through payments based on the use of inputs. In September 2000 the Government adopted a commodity insurance scheme allocating USD 24.3 million ready to compensate rice (and maize) producers for costs incurred in the case of natural disasters such as floods and drought. This acts as an indirect subsidy on insurance costs.

Other payments to farmers based on the use of inputs are the mortgage schemes mentioned above as components (iii) and (iv) of the rice policy program for 2000/01, and the credit assistance scheme noted as the final component (v).

General agricultural policies
At the more general level the Thai government adopted an Agricultural Development Plan in 1998 with the following objectives (FAO 1998):

- Establish integrated agricultural export zones to induce cost savings on activities related to processing, packaging, marketing and export services
- Enhance research and development to boost production and cut costs by using new technology, including biotechnology
- Secure higher product and processing quality
- Reduce the use of chemical fertilizers and promote alternative natural and organic methods of production
- Improve the management of land use and ownership

Payments related to these measures would not be counted in a PSE for the Thai rice sector since they are not paid out directly to rice farmers and hence do not introduce distortions relative to other agricultural sectors.

4.3.2. The United States

Policy objectives
The main objectives of the US rice policy are to support farmer income, and to sustain and promote US exports.

Policy instruments
Support to American rice farmers consists of direct income support and export promotion measures. Under the 1996 Farm Act, which expires in 2002, rice producers are supported by production flexibility contract payments, the marketing loan program, and subsidized crop and revenue insurance (Childs 2001). Furthermore, rice exporters benefit from trade promotion programs, food aid programs, export credit guarantees, and market loss assistance.

Market Price Support measures
Starting with the instruments that make up the Market Price Support component, there are a number of specific programs that directly and indirectly create a wedge between domestic and border prices. Food aid and export credit guarantees are two such pro-

grams that account for the lion's share of government assistance to rice exporters. Total exports under these programs in the fiscal year 2000 amounted to 626,000 tons, with credit guarantees accounting for 225,000 tons and food aid shipments accounting for 401,000 tons (Table 4.9). Put together these programs accounted for 19% of total rice exports in fiscal year 2000 and 25% in fiscal year 1999. In 1999 total program exports reached almost 777,000 tons consisting of 192,000 tons in credit guarantees and 584,000 tons in the Food for Peace program. These are the largest volumes of program exports since 1993 (ERS 2001a).

Commodities sold or donated through the food aid programs are supplied from the Commodity Credit Corporation (CCC) inventory (which is acquired under price support programs) or purchased from private stocks. Surplus commodities of the CCC may be disposed of through this program if they cannot be sold or otherwise disposed of without disruption of price support programs or at competitive world prices. Recipients of rice shipments under the food aid programs include countries such as the Philippines, Indonesia, North Korea, and Russia. The CCC also administers the export credit guarantee programs, which are used to finance US rice exports to buyers in countries where financing would not otherwise by available without CCC guarantees.

Table 4.9. US rice exports under food aid and export credit programs, 1996-2000

Year	Food aid shipments	CCC export credit guarantee programs	Total US rice exports	Program exports as a share of total exports
		--- 1,000 metric tons ---		Percent
1996	212	141	2,826	12.5
1997	218	80	2,560	11.6
1998	195	499	3,310	21.0
1999	584	192	3,076	25.2
2000*	401	225	3,299	19.0

* Based on program announcements as of October 2000
Source: ERS (2001a)

Finally, there are two foreign market assistance programs: the Market Access Program (MAP) and the Foreign Market Development Program (FMD) assist the maintenance and expansion of foreign markets for US agricultural products. Funds are drawn from the CCC to help cover costs of overseas marketing and promotion activities.

As was seen in Table 4.2 above the OECD PSE measure reports that the share of MPS in the PSE for the US rice sector is zero. It was also noted, however, that these estimates should be interpreted with caution because the reference price used is an implicit price derived by subtracting the average unit value of export subsidy (total value of export subsidies for the crop year divided by total exports) from the producer price. Hence implicit export subsidies through e.g. the provision of export credits and food aid are not taken into account. This can only be measured by comparing the "true" export price with the producer price. Furthermore, even if these implicit subsidies were included in the PSE measure, it must be kept in mind that it is not clear that they are compatible with the current WTO rules. Export subsidies are generally prohibited, and explicit subsidies that are in place are to be reduced according to specific schedules.

In the URAA domestic support to agriculture as measured by the aggregated measures of support (AMS) was to be reduced. The measures that were required reduced were the amber box measures larger than a given *de minimis* level. In the US case the reduction requirements were met without reducing support to the rice sector at all.[19] Moreover, since the URAA only dealt with explicit export subsidies, the US rice sector was not affected by the disciplining of the use of these instruments. The URAA also required a reduction of tariff rates. Tariffs on rice imports into the US were already quite low and were reduced by 36% in six equal annual steps. The reductions are as shown in Table 4.10, which also shows that both ad valorem and specific tariffs are applied. Imports from countries with GSP status are duty-free as are imports from Canada. As of October 1, 2001 Mexico still faces tariffs on its rice exports to the US although they are being phased out as part of the NAFTA agreement.

[19] Although rice support only makes up a very small part of the total US AMS, there is scope for discussing the classification of the various policy instruments in the "boxes" of the WTO. The commodity-specific crop and revenue insurance programs and the crop market loss assistance payments are classified as production-distorting amber box policies. The Conservation Reserve Program, on the other hand, is appropriately classified as green box. But perhaps more controversial are the Production Flexibility Contract payments that are also classified as green box measures since they are considered to be decoupled from current market prices and production, and because their total levels were predetermined by the 1996 Farm Act.

Table 4.10. U.S. tariff reduction commitments in the URAA, MFN rates

	1995	2000/01		1995	2000/01
Rice in husk	2.8 cents/kg	1.8 cents/kg (Mexico 0.5)	Rice, par-boiled	17.5%	11.2% (Mexico 0)
Bismuth rice, husked	1.3 cents/kg	0.83 cents/kg (Mexico 0.2)	Rice, milled/ semi-milled	2.2 cents/kg	1.4 cents/kg (Mexico 0.4)
Husked (brown) rice	3.3 cents/kg	2.1 cents/kg (Mexico 0.6)	Broken rice	0.69 cents/kg	0.44 cents/kg (Mexico 0.1)

Source: FAS (1994)

Payments based on output

US rice producers also receive assistance that directly affects production incentives. The Marketing Loan Program provides marketing loan gains (MLGs) and loan deficiency payments (LDPs) to farmers when the world prices fall below the loan rates pre-specified for the different types of rice. During the period 1995/96 through 1997/98 no payments were made under this program since world market prices were above the set loan rates. This changed in early 1999, however, and LDP rates have gone from about USD 1 per cwt (hundred weight) in August 1999 to USD 3.50 per cwt in May 2001. In 1997/98 the only direct payments made to rice farmers were the USD 448 million in Production Flexibility Contract (PFC) payments (see below). In 1999/2000 direct payments surpassed USD 1.3 billion consisting of USD 466 million in PFC payments, USD 465 in market loss assistance (MLA), and USD 393 million in MLGs and LDPs. This development of domestic support payments has been a direct consequence of the lower world market prices (Childs 2001).

Payments based on input constraints

Payments received by participants in the Production Flexibility Contract (PFC) program are not linked to current production or prices, but they are based on historical acreage. Farmers receiving these payments are required, however, to keep their land within agriculture (planting to any crop they desire except for fruits and vegetables) and they must follow conservation compliance obligations. The former requirement means that the payments are not entirely decoupled from production decisions. In 1999 PFC payments to rice farmers amounted to USD 483 million yielding a payment rate of USD 2.82 per cwt. Low world market prices triggered the provision of supplemental payments in the form of market loss assistance (MLA) payments. In both 1999 and 2000 MLA payments were of the same order of magnitude as the 1999 PFC payment rate.

Future policy profile

As mentioned above, the 1996 Farm Act expires in 2002 and hence its future profile is currently being debated. The discussions must be seen in relation to the fact that the world trading environment is one of low prices, increasing production costs (particularly fertilizer and fuel), and intense international competition. Hence many have advocated a continuation of the traditional support programs including an increase in the PFC payments. According to Wailes (2001) the US rice industry suggests that the loan rate is maintained at USD 6.50 per cwt (or at least aligned with other program crops) and that a crop-specific counter-cyclical income support payment be provided. Such payments would be triggered in response to the developments of some indicator variable such as farm income, aggregate price, gross revenue, gross revenue per acre, or production costs, relative to a base period or fixed target level of this variable (Wailes 2001). Implementing these suggestions would link payments to crop-specific market outcomes thereby classifying them as amber box policies in WTO notation, which would then have to be reduced according to a specific schedule. A small minority has suggested the adoption of voluntary supply control programs in return for higher marketing loan rates to manage surpluses. Others propose to increase humanitarian food aid donations and the establishment of a farm storage program for government-owned surplus stocks earmarked for food aid and renewable fuels (Childs 2001). All these suggestions, however, point in the direction of a reversal of the market-orientation of policies that was the key attribute of the 1996 Farm Act.

4.3.3. China

Policy objectives

The main goals of Chinese rice policy are to sustain high levels of self-sufficiency, to secure higher farmer incomes, to ensure price stability, and to increase quality. Following five decades of a policy focused on increasing rice production (through modern seed technologies, expansion of irrigated areas, increased use of chemicals and other modern inputs), China is now coping with a new problem: too much rice. And so price stability is of major concern to the Chinese government. Furthermore, as of the mid-1990s China's rice policy has focused on raising farmers' incomes whilst sustaining a high level of rice self-sufficiency.

Policy instruments

In China almost all the instruments used to achieve these goals may be classified as Market Price Support measures because they create a wedge between the domestic and border price. As was seen in Table 4.2 the net effect is a negative nominal protec-

tion coefficient, i.e. domestic rice prices received by rice farmers are lower than the price obtainable on world markets – a seemingly clear reflection of the self-sufficiency policy. Nonetheless, this gap seems to be narrowing.

Market Price Support measures

To achieve the goal of stable domestic food and feed grain markets the State Administration of Grain Reserve (SAGR) has been established to purchase and sell grains. The so-called Governors Grain Bag Responsibility System involves the provision of high procurement prices, and requirements of minimum levels of rice production and reserves to be met by provincial governments. This system represents a traditional approach to ensuring sufficient food supplies through quotas, targets, and input allocation (ERS 2001). The system has been reformed in 1998 as a result of the increasingly heavy financial burden of the accumulated stocks, the increasingly poor quality of the procured rice, and the declining market prices of rice. The so-called "Four Separation, One Perfection" reform was introduced, which relaxed the expansionary stance of the previous policy.

Since 1999 further changes have taken place. Procurement prices have been lowered and the practice of providing minimum price support to low quality rice has been abolished. Wholesale prices dropped by 20% during 1999 as a result of the reduced government procurement prices, the large national rice stocks and an above-average harvest (FAS 2001e).[20] Chinese rice policy is still focused on self-sufficiency, but it is also moving in the direction of increasing efficiency and improving quality (FAO 2001a). In the new schedule of procurement prices higher quality is rewarded by higher prices.

Private sector participation in domestic rice trade in China has been severely restricted. As late as in 1998 private traders were forbidden to purchase rice directly from farmers and were instructed to purchase from the state grain agencies. In fact, this policy change in 1998 reflected a strengthening of government intervention compared with previous efforts to give markets a greater role. This strong state control of domestic rice trade has since been relaxed in some provinces, partly in response to the aforementioned increase in public stocks and the associated financial burden hereof (FAO 2001a). The Central Government has selected six provinces in South China, which have rice production as their main grain production, to prepare for a complete opening of their grain markets. The central government has decided not to instruct the

[20] See FAS (2001d) for average wholesale market rice prices for 1998-2000.

state-owned grain companies to do any specific procurement task nor will it provide "protected prices" for any grain varieties. Farmers in these regions are already expressing interest in growing other more profitable crops and total rice area and production is expected to continue to decline (FAS 2001e).

Another means of providing Market Price Support is through border measures. The Chinese government has monopoly control over exports and imports of rice. The State Planning and Development Commission and the State Council decide the volumes to be imported and exported. The trade is administered by the Ministry of Foreign Trade and Economic Co-operation (MOFTEC) whilst the actual transactions are carried out by the state-owned enterprise China National Cereals, Oils and Foodstuffs Import and Export Company (known as COFCO or CEROILS) (FAO 2001a).

China's state trading enterprises are involved throughout the entire chain of marketing organizations at the central and provincial levels in both domestic and international marketing. The central and provincial governments determine the quantities of rice that must be purchased, and they set the purchase price for these procurement quotas. Grain bureaus may purchase above-quota grains at market or support prices. Grain bureaus are also responsible for distributing grains to the wholesale markets, feed mills, grain storage facilities, grain and food processors, as well as for partly supplying urban residents (ERS 1999). On the import side, MOFTEC orders COFCO to purchase pre-specified quantities and transfer them to the grain bureaus at Government Fixed Import Grain Transfer Prices (GFIGTPs). The Ministry of Finance subsidizes COFCO for any losses caused by a difference between import and transfer prices and pockets any gains from the differential. On the export side MOFTEC is responsible for selling the quantity of rice prescribed in the annual plan. The volumes to be exported are acquired by the provincial grain bureaus at the Government Fixed Export Grain Transfer Prices (GFEGTPs). The latter are the fixed procurement prices of the province in question plus a price premium to reflect quality and additional grain processing costs for meeting export standards and contract requirements. As with imports it is the SAGR that determines how the quotas are allocated to the provincial grain bureaus (ERS 1999).

Currently China imposes a quota on rice imports with out-of-quota duties of 114% (Table 4.11) but has committed itself to expanding this quota and to lowering the as-

sociated tariff rates when it joins the WTO.[21] China furthermore levies a value added tax on both imports and domestic products. However, trade contracts have indicated that the VAT is sometimes used to affect trade flows. Imports of certain products are exempted from the VAT in some years to secure lower costs to protected domestic producers. In other years it is increased – again to protect domestic producers. More importantly, grain-trading SOEs are not subject to VAT, whereas private traders handling domestic and imported grain are. All Chinese agricultural exports enjoy a VAT rebate of at least 5%. The rebate is higher for a few selected commodities such as cotton.

Table 4.11. China's rice tariffs as of January 1, 2000

HS code	HS description	In-quota duty (%)	Out-of-quota duty (%)	
			MFN	VAT*
1006.10.10	Paddy for seed	0	114	13
1006.10.90	Other paddy	1	114	13
1006.20.00	Husked (brown) rice	1	114	13
1006.30.00	Milled, semi-milled rice	1	114	13
1006.40.00	Broken rice	1	40	13

* The VAT is imposed on both imports and sales of domestically produced goods, i.e. in addition to the tariff.
Source: FAS (2000c).

Measures based on input constraints

As mentioned above the Governors Grain Bag Responsibility System was reformed in 1998 entailing the relaxation of the expansionary nature of the policy. One such step has involved the conversion of rice land into other uses: oilseeds, corn, vegetables, and other cash crops.

Future policy directions

The government's holding of large rice stocks, its strong controls over domestic marketing, and its tools for managing imports and exports means that the Chinese government is in a strong position to determine the size and direction of its foreign rice trade. China's concerns about maintaining a reputation of an international buyer and

[21] China is not a member of any preferential trade agreements, but does extend preferential tariff treatment to developing countries (FAS 2001d).

seller of rice suggests that this central role will not diminish quite yet and this is a source of potential concern to WTO members (Latham 1998).[22]

In connection with negotiations concerning its accession to the WTO China has agreed to establish a tariff rate quota of 2.6 million tons of rice in the first year of its membership, expanding to 5.3 million tons over a five-year implementation period (Table 4.12) (FAO 2000a). In percent of domestic consumption these commitments on rice imports are lower than for wheat (FAS 2001d). Imports within the quota would be levied a 1% ad valorem tariff. Imports above the quota would be levied an 80% tariff in the first year, gradually being lowered to 65% by the end of the implementation period. Half of the import quota would be reserved for short and medium grain rice, and the other half for long grain rice. In an effort to increase the participation of the private sector it has been agreed that private traders should be involved in 50% of the TRQ imports of the first type and 10% in the second type. In an effort to ensure maximum possible fill rates for TRQs once it enters the WTO, China has agreed to allow TRQs to be reallocated to other end-users, including non-state trading entities, if the enterprises that have originally received quotas are not able to fill them. The committed share of private entities in the rice import quota is meant to increase competition, although the precise licensing procedure and quota allocation process are basically unknown to traders (ERS 2001b).

Table 4.12. China's rice TRQ commitments, million metric tons

	Initial TRQ	End of 5-year implementation period TRQ	Private share	In-quota tariff	Out-of-quota tariff
Total	2.66	5.32		1%	80%
- Short & medium grain	1.33	2.66	50%		
- Long grain	1.33	2.66	10%		

Source: FAS (2001d) for quota commitments and ERS (2001b) for tariff commitments.

In addition to market access commitments, China has also agreed not to use export subsidies for agricultural products after it joins the WTO. This is a serious commit-

[22] In 1996 China surprised the international rice trading community by winning the tender for the South Korean minimum access obligation under the URAA. It also achieved more than 50% of the initial minimum access allowance for Japan that year well ahead of the US, which had the majority share of access to the Japanese market in 1995. And so there may be scope for China becoming a large-scale exporter as the past years have witnessed (Latham 1998).

ment since China has subsidized rice exports in the past, although recently prices have been so low that subsidies have not been necessary (FAS 2000c).

4.3.4. India

Policy objectives

Self-sufficiency and food price stability are of key importance to the Government of India. Food policy in India focuses on self-sufficiency in grains as a whole, with no particular emphasis placed on rice rather than wheat.

Policy instruments

The food policy goals are sought achieved through measures and mechanisms that may be classified as Market Price Support because they create a wedge between the domestic and border price. As was seen in Table 4.2 the net effect is a negative nominal protection coefficient, i.e. domestic rice prices received by rice farmers are lower than the price obtainable on world markets – a reflection of the self-sufficiency policy. As in the case of China, this gap also seems to be narrowing in India.

Market Price Support measures

The price of rice is controlled through the administration of the Indian Public Distribution System (PDS). The Food Cooperation of India (FCI) acts for the Government by procuring domestic rice, which may in times of shortage be supplemented by imports. The Food Cooperation also stores and distributes rice domestically. Rice procurement purchases under the PDS takes the form of both paddy rice purchases directly from farmers at a given paddy procurement price and as milled rice purchases from millers and traders. The procurement price of the latter is the paddy procurement price plus a fee to cover milling, handling and transportation costs plus a small profit margin (Latham 1998).

A buffer stock is also part of the PDS, where buyers from this stock pay a fixed countrywide price depending on the current market price and an evaluation of the ability of the poor to pay. The government covers any losses incurred with these sales. Up to one third of marketed rice in India goes to various poverty alleviation programs managed by the PDS.

In spite of large rice inventories due to many years of bumper crops and falling exports, the Government of India has continued to raise paddy support prices (Table

4.13) and has had to intensify procurement purchases by the FCI and other government procurement agencies (FAO 2001a).

Table 4.13. Paddy support prices in India, per ton

	Nominal prices (rupees)			Real prices (CPI-deflated 1995/96=100)			Prices in USD		
	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01
Common	4400	4900	5100	3454	3590	3552	104	113	110
Grade A	4700	5200	5400	3690	3810	3769	111	120	116

Source: FAO (2001a)

The 1955 Essential Commodities Act gives the government the right to restrict the holding of cereals by the private sector and to restrict the movement of cereals across provinces in its efforts to ensure food security. So in years of food shortages zones are established between which food may not be freely traded. This is a typical food security policy instrument of Asian rice-producers, as has been seen in the case of e.g. Vietnam, enabling the government to purchase rice at low prices in surplus regions and then redistribute it to deficit regions. Attempts to limit the role of the FCI have been attempted in 1997 and again in 2001 with a view to increasing the participation of the private sector in the storage and handling of cereals (FAO 2001a).

As regards trade-related measures, private traders are permitted to engage in international trade subject to license (FAO 1998). The private sector is permitted to import low quality rice (more than 50% brokens) free of duty. Yet Indian rice is relatively highly priced compared with e.g. Pakistani rice and this has resulted in an acceleration of rice imports by private traders. According to FAS (2000d) the Government of India has indicated that it will not hesitate to impose restrictions if private rice imports surge as in the case of wheat.

India's previous quantitative restrictions on rice imports, sheltered under the GATT Balance-of-Payment provision, were removed during the URAA process of tariffication. As of April 1 2000 India actually increased its tariff from 0% to 80% for husked and broken rice and to 70% for milled and semi-milled rice after having succeeded in a renegotiation of its bound tariff with major trading partners (FAO 2001a).

Payments based on input use and general services to agriculture
Government policies in the 1990s have also included investments in irrigation and drainage improvement as well as the subsidization of fertilizer supplies.

Recent policy developments
India is currently facing the worst storage crisis ever (for both wheat and rice) and is desperately trying to alleviate the situation by subsidizing exports onto an already low-priced world market – a clear Market Price Support measure. [23] The Government of India has authorized the subsidization of exports of 3 million tons of rice, a figure that may increase as the situation later in the year is assessed. Both private traders and government parastatals are permitted to export. As yet another instrument used to regulate prices, a minimum export price has also been set, which is equal to the sales price applicable to the Below Poverty Line (BPL) clientele[24] (Rp. 5,650 = USD 121 per ton). Taking transportation and grain cleaning costs into account the FAS (2001e) estimates that the export price will be no lower than USD 135/mt f.o.b. for 25% brokens making exports very difficult. The FAS (2001e) asserts that the export price must be as low as USD 110 before exports are a realistic possibility. Hence this export support scheme seems to be a very expensive policy instrument that will only add to the budgetary burden the government is experiencing in relation to its large stocks.

4.3.5. Pakistan

Policy objectives
In contrast to most other countries in South and Southeast Asia, Pakistan grows rice as an export crop. Wheat is the staple grain in Pakistan, not rice. This means that rice self-sufficiency is not a major issue as it so clearly is in the other countries (Hang 1999). The Government of Pakistan does encourage rice production, however, and focuses on promoting exports of high-quality rice.

[23] The increasing costs of physical storage is the topic of a study by Jha and Srinivasan (1999) in which cost-effective alternatives to the current policy for ensuring food security are sought. They find that the option of variable levies on private external trade turns out to be the most inexpensive instrument, whereas the option of domestic buffer stocks the most costly.

[24] Rice is sold though the Public Distribution System (PDS) at different prices to three categories of consumers: the "above-poverty line" group, the "below-poverty line" group and the "poorest among the poor" (FAO 2001a).

Policy instruments

Comparing with the other major exporters the rice policy instruments chosen by the Government of Pakistan clearly reflect the difference in objectives. There is much less Market Price Support and much more general services support to agriculture.

Market Price Support measures

Minimum producer prices are announced each year, but according to FAO (2001a) they are more indicative prices than binding floor prices. Market prices well below target levels did end up forcing the government to purchase paddy through the Pakistan Agriculture and Storage Supply Corporation in 2000 – for the first time since 1995. The procurement was marginal (25,000 tons) since the government is reluctant to intervene directly in the market.

Rice is Pakistan's second leading source of export earnings and there is neither a subsidy nor a tax on rice exports, and exporters compete in the market for exportable supplies (FAS 2000f).[25] As was seen in Table 4.2 the domestic price of rice in Pakistan fluctuates around the world market price and in 1999 it was on a par with the prevailing world market price.

Pakistan imports only minor quantities of rice. The applied import tariff is 25%, the bound rate is 100% (AMAD database), and an additional sales tax of 15% applies to all rice (FAS 2000f).

Payments based on use of inputs

The Government encourages rice production through the provision of inputs such as fertilizers, seeds, irrigation, and technical assistance. The government is also very active when it comes to subsidizing credit, encouraging hybrid rice cultivation and promoting more efficient input use. Input subsidies have declined or been eliminated over the past few years as part of reforms initiated in consultation with the IMF. In fact most forms of government intervention in rice production and marketing were eliminated in Pakistan in the mid 1990s.

[25] This stands in sharp contrast with the Government's involvement in the wheat market. Bread is the staple food in Pakistan and therefore wheat is the strategic commodity. The government restricts inter-provincial wheat trade and uses local procurement and imports to secure sufficient wheat supplies to urban areas (FAS 2000f).

General services to agriculture
As mentioned above most of the support to rice producers in Pakistan takes a more indirect form. The government is e.g. very active when it comes to financing research and extension activities.

In terms of exports, the Government of Pakistan also adopts a more indirect approach to promoting sales on foreign markets. All Pakistani rice trade is performed by the private sector. The state-owned Rice Export Corporation was abolished several years ago and today's (state owned) Trading Corporation of Pakistan plays only a limited role in rice exports, primarily by promoting Government-to-Government export agreements through the private sector (FAS 2001g).

Exports have also been sought promoted through the establishment in 2000 of a quality review committee under the Trading Corporation of Pakistan to provide foreign buyers with quality guarantees for rice (particularly basmati) delivered from Pakistan. This was done in consultation with the Rice Exporters Association of Pakistan (REAP).

4.4. Policies of rice importing countries

4.4.1. Indonesia

Policy objectives
In the 1980s Indonesia pursued a self-sufficiency focused rice policy. This enabled the country to almost completely avoid importing rice and it even entered the world market as an exporter during this period. High costs of production rendered Indonesian rice uncompetitive in international markets, however, and so Indonesia once again engaged in large imports in 1989. Furthermore, rising national consumption, continuous area losses, and already-high yields have put an end to the period of rice self-sufficiency (Latham 1998). Indonesia's current food policy in general aims at achieving food security by increasing domestic food production, raising farmer incomes, and ensuring the availability of food at affordable prices.

Policy instruments
Food self-sufficiency in Indonesia is sought achieved by means of price support policies, price stabilization policies, and public investment policies. The four main instruments of Indonesian rice policy are: (1) a floor price to encourage rice production, (2) a ceiling price to ensure reasonable prices to consumers, (3) a sufficient wedge be-

tween these two prices to ensure traders and millers a reasonable profit margin, and (4) and border protection (Robinson et al. 1997). Hence the instruments of the Indonesian rice policy primarily fall in the category Market Price Support measures as they relate to domestic price controls and border measures on exports and imports to create and control the wedge between domestic and border prices.

Market Price Support measures

The National Logistics Agency, Badan Urusan Logistik (Bulog), has been authorized to implement the rice pricing policy to ensure price stability and food security through the maintenance of food stocks.[26] [27] The floor and ceiling prices are determined by Bulog, the Coordinating Ministry of Economics, the Ministry of Trade, and the Ministry of Agriculture. The margin between the floor and ceiling prices varies, but the average margin in the 1990's has been about 21% (Robinson et al. 1997). Bulog maintains this price band by procuring rice to keep the market price near the floor producer price and by releasing stocks to keep the retail market price at or below the ceiling consumer price.[28] According to Robinson et al. (1997) Bulog's domestic procurement of rice has never exceeded 10% of total rice production. Bulog's storage capacity is around 3.5 million tons and in recent years Bulog has maintained an annual average of 2 million tons of rice as operational, buffer and surplus stocks. The agency's releases in the 1990's have averaged around 8% of total available rice.

The years 1996-98 were characterized by heavy reliance on rice imports to meet domestic demands, and so Indonesia intensified its efforts to achieve self-sufficiency. This meant increased support prices and procurement of paddy rice by Bulog in 1998,

[26] In its notification to the WTO, Indonesia argues that the provision of exclusive rights to Bulog is the thinness of the international rice market and the need to maintain domestic stability in the context of international market instability (FAO 1998).

[27] Bulog's market interventions have not been limited to rice, but have also included maize, sugarcane, soybean, soybean meal, wheat, wheat flour, chicken, eggs, mungbean, garlic, and crude palmoil (Robinson et al. 1997).

[28] Robinson et al. (1997) model the Bulog intervention mechanism in a national computable general equilibrium model by specifying different regimes defined by inequalities in prices and buffer stocks. Bulog is assumed to support producer and consumer prices within a price band that is set exogenously. When the consumer price of rice reaches the exogenously set ceiling of the price band, Bulog intervenes by selling enough quantities of rice in the domestic market to satisfy the excess demand. The modeling is such that Bulog first sells rice from its stocks. When these hit a lower bound, Bulog starts importing rice from the world market. When the producer price reaches the floor price Bulog purchases rice from the domestic market to maintain the market price at this level. When stocks reach a maximum, exogenously given, level Bulog starts exporting rice. There is a complementary slackness relation between the producer price and consumer price inequalities and the Bulog stocking and de-stocking variables in the model.

1999 and 2000 (Table 4.14). In 1998 Indonesia initiated a market liberalization process under a structural adjustment agreement with the IMF. The intention was to reduce the role of Bulog in domestic food crop marketing[29] and in imports (c.f. below). As of 1999 the agency's authority to procure rice has been restricted to paddy, which is purchased through local logistic agencies known as Dolog. It does not procure milled rice from millers. Bulog still has the responsibility of stabilizing the domestic rice market through releases from its stocks. It also runs a Government subsidized rice distribution scheme to low-income households and the agency sells rise to the military and to civil servants as part of their salaries. In 1999 and 2000 releases from stocks have been estimated to be about 4.8 million tons – half as regular market operations and the other half under special distribution programs (FAO 2001a).

Table 4.14. Paddy support prices in Indonesia, per ton

Nominal prices (rupiah)			Real prices (CPI-deflated 1995/96=100)			Prices in USD		
1998/99	1999/00	2000/01				1998/99	1999/00	2000/01
1000	1400	1400	701	629	633	103	158	187

Source: FAO (2001a)

In terms of border measures that constitute Market Price Support, it may be mentioned that Bulog has had monopoly control over the country's external trade in rice. In principle, Bulog was disbanded in September 1999 in an effort to pave the way for a complete liberalization of the entire cereal sector – a process that had been initialized in 1998 by the liberalization of wheat trade. Bulog's rice import monopoly was relaxed and private traders were permitted to import rice in 1999. At first they were restricted to high quality rice of no more than 5% brokens and were charged a 25% import duty. The quality restriction was drawn back in January 2000 and a specific tariff of Rp. 430/kg (USD 58 per ton, amounting to an ad valorem tariff equivalent of about 30%) was levied on all imports – by both private traders and Bulog (FAO 2001a).

As part of its URAA commitments Indonesia agreed to allow a TRQ of 70,000 tons annually – actual imports have far exceeded this quota. Bulog has allocated import

[29] Just like in India, inter-provincial trade in rice has sometimes been restricted in Indonesia to ensure food security at the regional level.

quota rights on a global basis. Indonesia has agreed to bind the in-quota rate at 90% and the out-of-quota rate at 160% (AMAD database).

Despite these commitments of tariffication to the WTO, Indonesia also relies on import and export bans to control its rice trade flows. In July 1998, for example, it imposed a ban on the export of unhusked and milled rice to secure domestic supplies (FAO 1998). In the spring of 1999, a time with an unexpectedly large domestic rice harvest, the Government imposed a ban on all rice imports between March and May that year (FAO 1999).

Measures based on use of inputs

As in Vietnam, fertilizer policy is closely linked to rice policy in Indonesia. Although gradually being phased out, a fertilizer subsidy program sets the wholesale prices of urea, triple super phosphate (TSP) and ammonia. As of 1994 only urea is being subsidized in this manner.

Another input-based measure that has been removed is the provision of credits to Bulog on preferential terms. As part of the reforms in 1998-99 Bulog is now required to rely on banking credits at market rates.

General services to agriculture

Closely related to the rice policy, the Indonesian Government supports the development of irrigation infrastructure and maintenance, transportation facilities, research and development, and the dissemination of seeds and technologies for high-yielding varieties (Robinson et al. 1997).

Recent policy reforms

In November 2000 the Government of Indonesia announced plans for reforming the rice policy. The reform proposal under consideration is known as the "Controlled Free Market Mechanism" and consists of three parts: (a) a seasonal import ban: rice imports are to be banned apart from during the lean season (October to January each year), (b) during the import season the rice tariff is to change from the current fixed specific tariff of Rp. 430/kg ((USD 0.06/kg) to a variable levy based on world prices, the USD/Rp exchange rate and domestic supply, and (c) the domestic floor price is to be raised from Rp. 1400/kg to Rp. 1500/kg (FAS 2000j).

If implemented this policy reform proposal will entail a further distortion of the domestic rice market away from the international market signals and a strengthening of

the Market Price Support component of its rice policy regime. The expected outcome is a reduction of official imports but a continuation of illegal smuggling of imported rice.[30] Given that Bulog's role was strongly reduced as part of Indonesia's agreement with the IMF, this policy change may cause the Government difficulties.

4.4.2. Japan

Policy objectives

The Government of Japan is preoccupied with ensuring food security for its citizens and this is manifested in its formulation of a specific target for food self-sufficiency on a caloric basis. As stated in official documents, there is a desire in Japan - both politically and culturally - to protect and sustain agricultural production in general and rice cultivation in particular. The Government is also seeking to reverse the trends of a static to declining agriculture and an aging farm population. Although the most recent policy developments stress the promotion of the responsiveness of agricultural production to consumer demands, it is also stated that the government must take measures necessary to mitigate adverse effects of price changes (Bull and Roberts 2001).

Policy instruments

Assistance to the rice sector in Japan is provided primarily through price support backed up by supply controls, import restrictions and the use of administratively determined internal support prices. As is evident from the indicators in Table 4.2 Market Price Support accounts for up to 90% of the value of producer support provided to rice farmers in Japan.[31]

[30] It is estimated that as much as 80,000 tons/month are smuggled in the outer islands (FAS 2000j).

[31] The PSE initially declined after 1994, but increased again so that in 1999 the level was the same as the base in 1986-88 (Appendix Table A.7). This has happened despite the obligation to reduce total Aggregate Measure of Support (AMS) by 20% as part of the URAA. Japan did meet these obligations, and did so by shifting some of its support toward measures that were exempt from AMS reduction requirements, e.g. provision of government services (Bull and Roberts 2001). For this reason Bull and Roberts (2001) assert that the AMS measure used in the WTO negotiations is not representative of actual domestic support. In Japan the main component of the AMS is price support. In the AMS this is calculated as the difference between the internal administered support prices and a constant external reference price. The actual level of market distorting level of price support is more correctly given as the difference between actual internal prices and actual import prices at world market levels

Market Price Support measures

The Government of Japan intervenes strongly in the pricing and marketing of rice resulting in extremely high internal prices and substantial protection against foreign competition. Japanese consumers currently pay four to six times the world price for its rice, only part of which can be explained by higher quality.

The Japanese Food Agency controls the sales of rice in the Japanese market. The distribution system is split into three major categories: government-owned/government-marketed rice, voluntarily marketed rice, and rice outside the government channel (i.e. rice for farmers' own consumption and rice sold directly to wholesalers, retailers and consumers) (FAS 2000n). Voluntarily marketed rice accounts for about half of Japan's total demand for rice and the successful rice price at tenders held by the Voluntarily-Marketed Rice Distribution Corporations becomes a key indicator for both the wholesale and retail price of rice (Oryza 2001).

The official production purchase price is determined annually by the Ministry of Agriculture, Forestry and Fisheries (MAFF), the central Government, and the Rice Price Advisory Council – although the decision is often affected by the strong farming lobby. Table 4.15 shows the official price for domestically produced rice. In the 1990s, high support prices have strongly encouraged rice production while consumption has been declining because dietary patterns are changing. The price-induced excess production has been supplemented further by bumper harvests in the mid-1990s and the imports required under Japan's URAA commitments (c.f. below).

Table 4.15. Japanese Government resale price of domestically produced rice, yen/ton

1990	1995	1996	1997	1998	1999	2000
306,450	302,050	305,050	301,683	297,183	294,100	289,383

Source: FAO (2001)

At the border too the Food Agency controls rice trade to achieve its rice policy objectives and hence it has the status of a state trading enterprise. Prior to the Uruguay Round Agreement on Agriculture Japan banned rice imports on the basis of two arguments. First, dating back to Japan's accession to the GATT in 1955, the ban was justified under the Balance of Payments clause. Second, when the trade balance switched to a surplus in the 1960s it remained in place on food security and environ-

mental grounds.[32] During the URAA Japan made use of the Special Treatment Provision[33] to postpone the tariffication of its rice import policy regime.[34] Under the minimum market access commitment, Japan agreed to allow duty-free imports in 1995 of up to 4% of its average annual consumption in the base period 1986-88. This was then to be following by equal annual increments of 0.8% of base period consumption until reaching 8% in the final year 2000. The minimum market access requirements amounted to 379,000 tons in 1995, doubling to 758,000 in 2000. Even though the minimum access imports faced a zero tariff, the URAA permitted Japan to impose a mark-up of 292 yen/kg (USD 2.56/kg). Japan has had to control the size of its stocks in order to be able to fulfill the minimum market access requirement.

In the URAA Japan retained the right of opting for tariffication before the end of the implementation period – the agreement being that the annual increases in imports for years beyond the tariffication would be half the originally agreed (Bull and Roberts 2001). Japan took this opportunity on April 1, 1999, and so Japan's rice import regime now consists of a tariff rate quota.

In 1999 above-quota imports faced a specific tariff of 351.17 yen per kilo (USD 3,334 per ton) and 341 yen per kilo (USD 2,973 per ton) was levied in 2000. As mentioned above the tariffication deal entailed a reduction in the imported volumes. These are shown in Table 4.16. To date there have been virtually no over-quota rice imports into Japan and given the high tariff not much is expected.

[32] Rice cultivation is considered to be a defense against flooding as well as a water filtration system with cultural and aesthetic dimensions, i.e. multifunctionality considerations (FAO 1999). However, as mentioned in Bull and Roberts (2001) forests play a similar role, and 60% of Japan is in fact covered in forest. See Bull and Roberts (2001) for a discussion of the misperception of supporting paddy rice production in an effort to attain multifunctionality objectives, including environmental benefits, rural employment spillovers, and food security concerns.

[33] Special Treatment was allowed for commodities meeting the following conditions: (i) they are major staples in the diet, (ii) imports are less than 3% of domestic consumption in the base period, and (iii) no export subsidies have been provided. Three countries were allowed to apply the Special Treatment clause for rice under the URAA: Japan, the Republic of Korea and the Philippines (FAO 1995).

[34] See Hayami and Godo (1995) for a discussion of the political-economy background of this result. They argue that the tariffication option at the time threatened the vested interests that were protected by the monopoly control of rice marketing enjoyed by the Food Agency and agricultural cooperatives.

Table 4.16. Japan's Market Access Obligations for Rice

	Without tariffication		With tariffication	
	Volume (tons)	% of domestic consumption	Volume (tons)	% of domestic consumption
1999	682,000	7.2	644,000	6.8
2000	758,000	8.0	682,000	7.2

Source: FAS (2000n)

Controversy has furthermore surrounded the tariffication of the Japanese rice import regime. It seems to be yet another case of dirty tariffication. According to Bull and Roberts (2001) the tariff equivalent was calculated on the basis of the price gap between different qualities of domestic and imported rice, namely the Japanese internal price and prices for Thai broken rice. If the Japanese prices had been judged relative to a comparable quality of rice, such as US rice, the tariff equivalent would have been far lower.[35] Several countries, including Australia, the European Union, Uruguay and Argentina have criticized the tariffication method applied.[36]

In addition to the tariff rate quota system, special safeguards have been introduced into the Japanese rice import regime. Under the URAA special safeguards (price-triggered and quantity-triggered safeguards) allow an importer to increase the tariff rate corresponding to the decline in border price or the increase in the imported quantity.[37]

To manage Japan's import purchases under its URAA commitments, the MAFF holds Ordinary Minimum Access (OMA) tenders and Simultaneous Buy and Sell (SBS) tenders.[38] Four countries have gained access to the Japanese rice market: the United States, Thailand, Australia, and China (Table 4.17). Their shares have remained rela-

[35] See Hayami and Godo (1997) for a discussion on the difference between domestic and border prices in Japan.

[36] See Hayami and Godo (1997) for a partial equilibrium analysis of the consequences of tarrification and a strengthening of acreage control in the Japanese rice regime. These results are based on the assumption of 'clean' tariffication in which the initial tariff rate is set precisely equal to the domestic-border price difference.

[37] See Hayami and Godo (1997) for an illustration of the protective effect of the safeguard measures using an ad valorem tariff and a specific duty.

[38] Importers and wholesalers offer tenders simultaneously for the selling and buying prices for each variety of rice in the SBS system. The price offered by the wholesalers reflects market demand and the differences between the two offers reflect the market evaluation of the price differentials on imported rice (Bull and Roberts 2001).

tively stable over the period in the aggregate – the USA: 47.8%, Thailand: 23.4%, Australia: 17.0%, China: 10.0% - although the split between OMA and SBS purchases has varied. To expand the participation of other countries in Japan's rice import market, the MAFF announced in November 2000 that it would introduce an Experimental Trial Quota (ETQ) for imports as of January 2001. The ETQ will be treated as part of the OMA rice imports and will total 10,000 medium and long grain rice for processing use (FAS 2000r).

Table 4.17. Japan's Minimum Access Rice Tenders, 1995-2000

	U.S.	Thailand	Australia	China	Others	Total	Metric tons
	Percent of total						
1995							
Total	**47.4**	**23.3**	**21.3**	**7.9**	**0.1**	**100%**	**408,794**
of which SBS	53.4	2.3	18.1	22.3	3.8	100%	10,694
of which OMA	47.2	23.9	21.4	7.5	0.0	100%	398,100
1996							
Total	**46.2**	**27.5**	**17.4**	**8.6**	**0.3**	**100%**	**465,650**
of which SBS	64.2	1.6	5.3	23.2	5.5	100%	22,000
of which OMA	45.3	28.8	18.0	7.9	0.0	100%	443,650
1997							
Total	**50.1**	**24.8**	**15.7**	**8.1**	**1.4**	**100%**	**544,341**
of which SBS	62.9	1.7	5.7	25.2	4.6	100%	55,141
of which OMA	48.6	27.4	16.8	6.1	1.0	100%	489,200
1998							
Total	**47.7**	**21.4**	**16.1**	**11.4**	**3.4**	**100%**	**632,400**
of which SBS	30.4	4.4	12.1	51.6	1.4	100%	120,000
of which OMA	51.8	25.4	17.0	2.0	3.9	100%	512,400
1999							
Total	**47.9**	**21.7**	**16.0**	**11.7**	**2.6**	**100%**	**653,100**
of which SBS	30.7	3.1	12.2	52.2	1.9	100%	120,000
of which OMA	51.8	25.9	16.9	2.6	2.8	100%	533,100
2000							
Total	**47.7**	**21.5**	**15.6**	**12.7**	**2.4**	**100%**	**693,039**
of which SBS	38.6	4.1	11.9	44.4	1.0	100%	120,000
of which OMA	49.6	25.2	16.4	6.1	2.7	100%	573,039

Note: SBS stands for Simultaneous Buy and Sell tenders. OMA stands for Ordinary Minimum Access tenders.
Source: FAS (2001m)

In spite of the partial opening of the market to foreign suppliers through the URAA commitments, Japanese consumers still make retail purchases of domestic rather than foreign rice. There are several reasons for this. First, foreign rice is expensive relative to domestic rice and prices come close to the price of domestic premium rice. Second, the availability of foreign, SBS-purchased rice is still very limited (Oryza 2001). One of the apparent reasons for limiting the SBS system is that the government may no longer be able to ensure that rice imports meet the agreed quota levels if domestic

demand is weak. Hence there may be cast doubt on the effect that the market opening is having on lowering domestic prices and reducing market distortions in Japan.

There are also other indications that imported rice is not competing to the full extent with domestic rice on the Japanese market. Most imported rice is stored for twelve months before it is released for other purposes such as for animal feed and for food aid (c.f. below) (Bull and Roberts 2001). Just like the United States, Japan's rice policy regime has a rather large food aid component. The government covers the cost difference between the Japanese domestic rice price and the international market price for rice. In October 2000, for example, the Government of Japan decided to donate 500,000 tons to North Korea through the United Nations World Food Program (Oryza 2001). The rice to be given here is all government-owned domestic rice (FAS 2001m), but Japan has at other times used minimum access rice and rice purchased from international markets for its food aid program. In 1994, one year after agreeing to open its rice market through a minimum market access amount, Japan saw a record post-war harvest and so much of the imported rice, which was rather unsuited for the Japanese market, was kept in storage. Disposal of this stock was in terms of animal feed, input to food processing, and finally as food aid to Laos and Nepal. In the Japanese fiscal year 1998 1,000,000 tons were provided as food aid to Indonesia, consisting of 420,000 tons domestic rice, 280,000 tons minimum access rice, and 300,000 tons purchased from the international market. In the fiscal years 1999 150,000 tons of rice was provided as foods aid to 21 countries in Asia, Africa and Central America, although the composition of domestic vs. minimum access purchased rice is unknown (FAS 2000p).

Payments based on area planted and on input constraints

Instead of reducing production incentives by e.g. substantially lowering producer support prices (see Table 4.14), the Japanese government has tackled the problem by embarking on a land diversion program where land-based payments encourage farmers to divert rice land to other crops and activities (Bull and Roberts 2001). Farmer and government contributions fund the land diversion program jointly. It includes many alternatives: planting to other crops, diversion to multifunctional purposes (e.g. landscape conservation, conservation of paddy fields without cropping) and land improvements. Both set-aside areas and payments per hectare have been increasing since 1994 (Bull and Roberts 2001).

The land diversion program has expanded in recent years to reduce the large stocks held by the MAFF. For both the 1998/99 and the 1999/2000 seasons the program target to divert 960,000 hectares from rice to other crops (FAO 1999). According to the FAO (2001) the paddy area subject to diversification was increased in September 2000 to 1,063,000 hectares. Japan's total potential rice paddy land is estimated at 2,682,000 hectares, and so total production area will occupy only about 60% of total potential paddy land. Results of a study by Fujiki (2000) show that the rice acreage controls have a significant impact in terms of boosting domestic prices.

4.4.3. Republic of Korea

Policy objectives

The main objectives of the Korean rice policy are to support producer prices whilst at the same time to ensure that consumers face affordable prices for their staple food.

Policy instruments

The Korean rice policy regime is in many ways very similar to that of Japan. As shown in Table 4.2 the Market Price Support component is even stronger in Korea than in Japan, but the Nominal Protection Coefficient is somewhat lower, although still very high.

Market Price Support measures

Procurement at an administered price and import restrictions are the two main instruments used to support the domestic price.[39] The Korean government operates a dual price system for rice: a purchase price at which the government procures rice from producers, and a release or resale price at which it sells government stocks to the market. The purchase price is determined by factors such as production costs, urban-rural income disparities, the agricultural terms of trade, the expected supply and demand situation, expected inflation, and the government budget situation. The resulting price has consistently been far above the world prices, usually by a multiple of more than five (OECD 1999). To ensure low prices to consumers the release price has generally been lower than the purchase price. Both the purchase price and the procurement volume are determined in advance (Table 4.17). In 1994-95 the share of government procured rice was about 30%, after which it has declined rather steadily to 23% in 1996-97 and 17-18% in 1998-2000 (FAS 2001j).

[39] Government procurement has been used not only to influence the level of production (and thereby prices) but also the varieties.

Since the introduction of the New Agricultural Plan in 1993 most of the rice purchased by the government is now resold through a competitive bidding system under the National Agricultural Co-operatives Federation (NACF). This practice has resulted in a significant reduction of the price wedge between the government purchase price and the resale price. As Table 4.18 shows, the consumer has been paying for this change since the release price has increased substantially more than has the purchase price.

In 1997 the rice purchase system was further reformed. The government now signs contracts with farmers at the time of sowing, paying them 40% of the pre-determined purchase price. At harvest time, the farmer is free to sell to either the private sector or to the government. If the farmer chooses the first option it must reimburse the advance payment at 7% interest (OECD 1999).

Table 4.18. Government program for rice purchases

Crop Year	Production	Purchase	Purchase price[a]	Release price[a]
	(1,000 metric tons)		Korean Won/kg	
1996	5,323	1,267	1,725	1,562
1997	5,449	1,224	1,725	1,650
1998	5,097	928	1,818	1,850
1999	5,263	876	1,911	1,963
2000	5,262	906	2,016	na
2001 [b]	5,400	828	2,076	na

a For #1 grade rice, b Projection
Source: FAS (2000k, 2001k)

The domestic price support measures are complemented by restrictions on foreign trade. Prior to the URAA imports were only permitted during periods of domestic shortage. Under the URAA Korea made use of the Special Treatment provision, just like Japan and the Philippines, and avoided the tariffication of its rice import regime. Instead it opened its markets marginally through minimum access commitments. Korea committed itself to importing rice quantities equivalent to 1% of domestic rice consumption in the base period 1988-90, starting in 1995 and rising to 4% of this base quantity in 2004. South Korea's minimum access amount is smaller than Japan's due to its developing country status. An ad valorem tariff of 5% is levied on minimum access rice imports (AMAD database). Just like Japan, the Government of Korea has the right to apply a mark-up on imports in addition to the in-quota tariff.

The Ministry of Agriculture and Forestry (MAF) acts as a state trading agency and administers the rice import quota (OECD 1999). Korea's importing strategy seems to be to meet the minimum requirements and to tender only for lower quality rice to avoid creating real competition for domestic rice, which is consumed directly by the Korean consumer (FAS 2000k). In the year 2000 Korea purchased 114,016 metric tons of brown rice, equivalent to the 102,614 metric tons of milled rice as required by its minimum market access commitments. This was done through five separate tenders. Two agencies purchased foreign rice. On behalf of the MAF, the Supply Administration of the Republic of Korea (SAROK) purchased 71,000 and the Agricultural and Fishery Marketing Cooperation purchased the remainder. The majority of this rice (four of the five tenders) was won by COFCO, the Chinese state trading enterprise, and was sold at very low prices. The fifth tender was won by Siam Rice of Thailand, and also sold at low prices. The interesting thing to note is that none of this imported rice is made directly available to Korean consumers, but rather the rice is resold by the MAF for industrial food processing purposes. In each of the five tenders in 2000 there were between three and five bidders with China's COFCO clearly underpricing the other bidders in all cases except one (FAS 2000k).

Payments based on area planted

Apart from encouraging increased rice production through increased support prices, the government has in recent years supported the conversion of idle land to paddy fields. The forecasts, however, envisage rice production giving way to more lucrative cash crops such as vegetables as the economy develops.

General services to the rice sector

The Ministry of Agriculture and Forestry (MAF) supports the rice sector in more general ways too. It supports e.g. the development of direct marketing channels for rice from farm to retail levels – the goal being to lower the cost to the consumer by reducing the commercial middleman component. The MAF development plans also include investing resources in the development of rice processing centers to provide drying, storage, milling, distributing and purchasing services for farmers (FAS 2000k).

Future policy developments

As a developing country signatory of the URAA Korea is committed to reducing its domestic support of agriculture. The Korean Aggregate Measure of Support must be reduced by 13.3% from the 1989-91 base level to 2004. Support to encourage agricultural and rural development such as investment is exempt from the AMS reduction requirements. In Korea the AMS is heavily dominated by rice (accounting for 90% of

the country's total AMS, OECD 1999). So although the AMS commitment does not apply to individual commodities, the Government of Korea has no choice but to adjust its rice support policies to meet commitments. The AMS for rice is calculated as the purchased quantity multiplied by the difference between the purchase price and a fixed world reference price (Table 4.19).

Table 4.19. Korean Rice Aggregate Measurement of Support (billion Won)

Year	Base AMS[a]	Current AMS[b]	Applied price[c] (1,000 won /MT)	External reference price[d] (1,000 Won/MT)	Eligible production[e] (1,000 MT)	Total market price support[f]
1993	2,109					
1995	2,034	2,016	1,650	183.9	1,375	2,075
1996	1,959	1,910	1,723	183.9	1,241	1,967
1997	1,885	1,884	1,723	183.9	1,224	1,937
1998	1,810	1,510	1,811	183.9	928	1,563
1999	1,735	1,503	1,900	183.9	876	1,552
2000	1,660	1,660	2,016	183.9	906	na
2001	1,585	na	2,097	183.9	828	na
2002	1,510	na	na	183.9	na	na
2003	1,435	na	na	183.9	na	na
2004	1,360	na	na	183.9	na	na

[a] Country schedule. [b] Actual AMS. 2000 data is a FAS/Seoul estimate. [c] Government purchase price. 2000 and 2001 are FAS/Seoul estimates. [d] The international market price in 1993 that the MAF uses for the AMS calculation. Note that the WTO URAA reference period for the AMS external reference price is 1986-1988. [e] Government procurement quantities. Government did not reach target qualities in 1998 and 1999 because farmers chose to retain stock for direct sales. 2001 is a FAS/Seoul projection. [f] Calculation of actual AMS for all agricultural commodities.
Source: FAS (2001j)

4.4.4. The European Union

Policy objectives

The EU rice policy is an integrated part of the Common Agricultural Policy (CAP) and hence the overall objectives hereof are coherent. The main objectives of the CAP are (European Commission (1999) as cited in Walter-Jørgensen and Jensen (2001)):

- to ensure the competitiveness of the EU agricultural sector, both on internal market and on export markets
- to contribute to sustaining the livelihood of farmers while promoting the economic development of the wider rural economy
- to promote ways of farming that contribute to the maintenance and enhancement of the rural environment and landscape.

Policy instruments

As was seen in Table 4.2 between 20% and 30% of the gross receipts earned by rice farmers in the EU are due to policy transfers – a level clearly below the corresponding indicators for Japan and Korea but of a similar magnitude as those for the US in the most recent years. The share of the most distorting policy instruments - the Market Price Support measures - is high, however, although it has been declining.

The current EU rice regime consists of four components: (i) an intervention storage system guaranteeing purchases at a predetermined intervention price, (ii) export restitutions enabling EU exporters to compete on world markets, (iii) import duties that are gradually being lowered in line with URAA commitments, and (iv) compensatory payments.

Rice is of course a minor crop in the EU, with budgetary outlays for the fiscal year 2000 estimated to have amounted to Euro 203 million. The main part consists of direct payments worth Euro 122 million, with intervention storage accounting for Euro 54 million, and export restitutions amounting to Euro 27 million (FAS 2000s).[40]

Market Price Support measures

One of the main Market Price Support mechanisms of the EU rice regime is the intervention system that guarantees purchases at a predetermined intervention price. As a direct result of the CAP reforms of 1992 and the URAA of 1994/95 the European Community amended its rice policy regime in 1996/97 to be effective from 1997/98 to 1999/2000. The changes entailed a 15% reduction of intervention prices implemented through annual cuts of 5% during the aforementioned period. The rice intervention price was thereby reduced from Euro 351.00 per ton in 1996/97 to Euro 333.45 per ton in 1997/98, Euro 315.90 per ton in 1998/99, and Euro 298.35 per ton in 1999/2000 (European Council 2000).

The EU also makes use of substantial border measures to provide Market Price Support to its rice farmers. During the Uruguay Round negotiations the EU tariffied all its rice import duties and a schedule for reducing them by 36% by 2000/01 was agreed upon (Table 4.20). These rates have not been applied, however, because rice became part of the US-EU Blair House Agreement. This agreement introduced a variable levy

[40] For the fiscal year 1998 (16/10/97-15/10/98) rice policy expenditures were ECU 166,052 million. Of this total 40.5 were hectare premiums given to Italy (22.8), Spain (11.7), Portugal (2.9), France (2.6) and Greece (0.6). Export restitutions amounted to ECU 49.6 million and storage costs amounted to ECU 62.2 million (European Commission 1998).

on husked and milled rice, which account for the bulk of rice imports into the EU. A specific formula was given for calculating the import levy, which relates directly to the difference between the intervention price and an external reference price. [41] If the calculations result in higher duties than the bound URAA duties, the latter apply. The variable levies prevent the duty-paid import price from exceeding the effective buying-in price by more than 80% for husked Indica rice, 88% for husked Japonica rice, 163% for milled Indica rice, and 167% for milled Japonica rice. Over the past three years the variable levies have declined since they have followed the reduction of the intervention price. Paddy rice and broken rice have been subject to fixed specific duties within bound rates. The actual duties have been well below the bound rates (FAS 2000s).

Table 4.20. Bound rice import tariff rates into the EU under URAA (Euro/ton)

	Base period (1986-88)	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01
Paddy	330	311	291	271	251	231	211
Husked	413	388	363	339	314	289	264
Milled	650	611	572	533	494	455	416
Broken	200	188	176	164	152	140	128

Source: FAS (2000s)

As the above indicates, the EU rice import regime has been constructed to protect EU rice millers. In 1996 the EU struck deals with the United States and Thailand on annual tariff rate quotas for 63,000 tons of milled rice, 20,000 tons of brown rice, and 1,000 tons of broken rice. The quotas are split by country of origin and applications for import licenses take place in quarterly tranches (Table 4.21). The EU notifications to the WTO show that the quotas are completely filled (or at least very close to being filled) each year except for broken rice.

[41] To determine the import prices of the different types of rice the following factors shall be used: the cif price at Rotterdam (in lack hereof the representative price on the Thai, US or other markets in that order of priority), the average cost of sea freight between the port of origin and one of the main ports in Holland. In absence of estimates of the latter, freight costs for cereals shall be used. If the price available is C&F (cost and freight), it should be increased by 0.75% (European Commission 1996).

Table 4.21. Allocation of EU rice import quotas by country of origin (tons)

	Semi/wholly milled rice	Husked rice	Broken rice
Quota	63,000	20,000	80,000*
- USA	38,721	7,642	7,281
- Thailand	21,455	1,812	41,600
- Australia	1,019	10,429	12,913
- Guyana	0	0	8,503
- Others	1,805	117	9,703
In-quota duty	0	ECU 88/ton	ECU 28/ton

* Note that subsequent notifications to the WTO report quotas of 1,000 tons of broken rice.
Source: European Commission (1998b)

The EU also has an inward processing scheme (IPR) through which products are imported duty-free, undergo processing in the EU, and are thereafter exported to third countries without export subsidies. In 1998/99 120,000 tons were imported and re-exported under this system (FAS 2000s).

The European Union provides preferential conditions and preferential access quotas to agricultural and food products from several developing countries, particularly the ACP countries. Around 40% of rice imports into the EU enter on preferential terms. A quota of 160,000 tons of husked rice is allocated to imports from the ACP and OCT countries, currently allocated as 125,000 tons from ACP countries and 35,000 from OCT countries (FAS 2000s). Imports from the ACP countries are charged 35% of the normal duty whereas the OCT countries face zero duties (EUR-Lex 2001). This makes imports from these origins particularly attractive to EU rice millers. The EU also provides concessional import terms for other countries. Lower import duties apply for a quota of up to 32,000 tons of rice from Egypt and a quota of up to 4,000 tons from Bangladesh. India and Pakistan, the main suppliers of basmati rice to the EU, enjoy a rebate of Euro 250/ton to the normal import duty, which at present levels amounts to an effective zero duty.[42]

[42] As mentioned earlier rice production in the European Union consists of japonica rice, which is consumed in the producing member states, Italy, Spain, Greece, France and Portugal. Consumption in the northern member states consists mainly of indica rice imported from the US, ACP/OCT (Overseas Countries and Territories) countries, Thailand, India and Pakistan. Fragrant rice varieties - jasmine rice imported from Thailand, and basmati rice from India and Pakistan - have also gained in popularity. Due to a surplus of japonica rice in the Union (in 1999/2000 accounting for two-thirds of total EU rice production), from 1988 to 1993 producers were encouraged to convert to indica varieties to satisfy the demand that consists of 55% indica. This has resulted in an increase from 27,000 ha indica production in 1988/89 to 120,000 ha in 1999/2000 (EUR-Lex 2001).

Rice exports are supported by export restitutions that are subject to annual reductions in both volume and value terms up to 2000/01. Most of EU rice exports are subsidized, with the subsidy closing the gap between EU domestic prices and the lower prevailing world market prices. Exports under food aid programs also benefit from subsidies set beforehand by the European Commission. Both subsidized exports and food aid shipments are to be notified to the WTO. The unsubsidized exports are those that are exported through IPR arrangements. Table 4.22 shows the status of the budgetary outlays to rice export restitutions in the EU and how they compare with the commitments (FAS 2000s). EU export data cover exports with and without subsidies as well as exports under special food aid programs. As the table reveals the quantity restrictions are binding – an indication of the necessity that the URAA included restrictions not only on the value of export subsidies but also the quantity of subsidized exports.

Table 4.22. EU rice export support: budget outlays and quantities: actual vs. commitments

	Budgetary outlays (million Euro)		Volume (thou. tons, milled rice equivalent)		Food aid (thou. tons,
MY Sep/Aug	Commitments	Actual outlays	Commitments	Actual volumes	wheat equiv.)
1995/96	54.6	30,3	163,0	88,6	91.8
1996/97	51.1	72,2	157,1	226,5	42.5
1997/98	47,5	32,6	151,2	155.1	110.2
1998/99	43,9	26.6	145.3	143.9	125.5
1999/2000	40,4	26.4	140,4	139.3	63.5
2000/01	36,8	not yet notified	133,4	not yet notified	not yet notified

Source: Export data for 1995/96, 1996/97, and 200/01: FAS (2000s). Food aid and export data for 1997/98, 1998/99, and 1999/2000: EU notifications to the WTO: G/AG/N/EEC/5 Rev.1, G/AG/N/EEC/11, G/AG/N/EEC/20 Rev.1, G/AG/N/EEC/23, and G/AG/N/EEC/32.

Payments based on area planted

Rice farmers have been compensated for the above-mentioned reduction of the intervention price (and the reduction of the import duties following the URAA commitments, c.f. above) since 1997/98 through so-called compensatory payments. Compensatory payments are paid out to rice farmers up to a national base area limit – the total base area in the EU is 433,123 hectares. The national base areas are as shown in Table 4.23. If these base areas are exceeded the compensatory payments are reduced proportionally for all producers as a penalty (European Council 1995).

Table 4.23. Compensatory payments (Euro/hectare)

	Base area (hectares)	997/98	1998/99	1999/2000 and after
Spain	104,973	111.44	222.89	334.33
France				
- Metropolitan	24,500	96.35	192.70	289.05
- French Guyana	5,500	131.80	263.60	395.40
Greece	24,891	131.27	262.55	393.82
Italy	239,259	106.00	212.00	318.01
Portugal	34,000	106.18	212.36	318.53

Source: European Council (1995)

Recent policy reform proposal

The intervention mechanism of the EU rice regime that supports the internal market price has lead to rapidly increasing intervention purchases over the recent years due to falling world market prices and hence a continued build-up of intervention stocks. In an attempt to control the structural market surpluses – to which the increased opening of the market to imports and the curbing of subsidized exports have contributed – the EU released a rice policy reform proposal in June 2000. The main content of this proposal is the removal of the intervention price and the mandatory intervention purchase system, and the inclusion of the rice sector into the arable crop system of the CAP (Table 4.24). The proposal has not been adopted yet because the major rice producing countries in the EU cannot agree to eliminate the intervention system (FAO 2001a, EUR-Lex 2001).

If the Commission's rice policy reform proposal is accepted, the mechanism of determining the duties on husked and milled rice imports will have to be revised because the current formula relies on the intervention price. One possibility is to resort to the URAA bound rates as is the case for paddy and broken rice. Such a change would have to be negotiated with the affected partners under Article XXVIII of the GATT, i.e. Modification of Schedules (FAO 2001a). If the URAA bound tariffs are to be used it is expected that the currently applied rates would increase from around 200 Euro/ton for husked rice to the bound rate of 264 Euro/ton. Furthermore, the Basmati duty abatements would no longer apply. In any case, such a change would remove an instrument that has served to discriminate between different types and qualities of rice thereby posing a strong distortionary effect on trade flows. Adopting fixed tariffs would greatly simplify the system. Including the rice sector into the arable crop program would increase EU budgetary expenditures on area payments by about 27 million Euro per year. On the other hand, the removal of the intervention price system

would entail cost savings of about 38 million Euro per year by abolishing public rice stocks (EUR-Lex 2001).

Table 4.24. Proposed change in the EU Rice Policy Regime

Current Rice Policy Regime	Commission Reform Proposal
PRODUCTION POLICY	
1999/2000 support intervention price: 298.35 Euro/ton for paddy rice.	Support intervention price to be abolished in 2001/02.
Mandatory intervention purchases.	Public intervention system to be abolished and replaced with aids to private storage.
Compensatory area payments: 52.65 Euro/ton multiplied by average regional yield (Spain, metropolitan France, Guiana, Greece, Italy, Portugal). On average in 1999/2000: 328.98 Euro/hectare within the base area.	Area payments to be raised to same level as for crops under the arable crop policy regime (63 Euro/ton for 2001/02). If rice is brought into arable crop system the national base areas would have to be increased to reflect same reference years as for arable crops, i.e. 1989,1990,1991.
No compulsory set-aside.	Rice is to be subject to compulsory set-aside. Using the 10% set-aside currently used for grains would lower production by approx. 150,000 tons of paddy, or 90,000 tons milled equivalent.
IMPORT REGIME	
Since 1995 imports of paddy rice and brokens have been subject to URAA bound rates (211 Euro/ton for paddy and 128 Euro/ton for brokens in 2000/01)	No change.
Rice was part of the US/EU Blair House accord. The duty-paid import price for *husked* Indica and husked Japonica must not exceed by more than 80% and 88%. respectively, the effective buying-in price for intervention for those qualities. For *milled* counterparts the difference may not exceed 163% and 167%, respectively.	In absence of the intervention price system this method cannot be applied. If the URAA bound tariffs are used instead it is expected that the currently applied rates would increase from around 200 Euro/ton for husked rice to the bound rate of 264 Euro/ton and Basmati abatements would no longer apply.
Basmati rice imports are subject to a rebate of Euro 250/ton to the normal import duty, which at present levels amounts to an effective zero duty.	URAA bound tariff for husked rice was 289 Euro/ton in 1999/00, substantially higher than the applied rate. Changes will probably require re-negotiation with the affected parties, mainly India and Pakistan.
EXPORT REGIME	
Subsidized exports subject to quantity and value ceilings.	No change.

Source: FAO (2001a, b) and EUR-Lex (2001)

Recent preferential trade agreements

In the meantime, the EU member states has taken a trade policy initiative that will have a direct impact on several of the EU's poorer rice trading partners. In February 2001 the 'Everything But Arms' initiative was endorsed. Through this initiative the EU will unilaterally remove all tariffs and quotas on all commodities, except weapons, from 49 Least Developed Countries. There are three exceptions, however, to this

initiative: rice, sugar, and bananas. Implementation of free market access for these products will take place in three progressive stages. In the case of rice duties are to be reduced by 20% annually from January 1, 2002 to full elimination as of January 1, 2006 (European Commission 2001).[43]

To compensate for the delayed liberalization of rice imports, the EU is offering market access through the creation of duty-free quotas for rice (and sugar), based initially on the 'best figures' for LDC exports during the 1990s plus 15%. These quotas will increase by 15% each year during the interim period. This solution is intended to improve trading opportunities for LDCs immediately, while giving time for EU farmers to adapt to the changes required in the Common Agricultural Policy as well as taking into account the limitations imposed by the EU budget. The Commission will monitor the imports of rice (and bananas and sugar) carefully and has pledged to apply safeguard measures (e.g. an additional import duty) if necessary to prevent damaging surges. In order to implement the initiative there will have to be monitoring to verify the respect for rules of origin (European Commission 2001). The EU duty-free rice import quotas under the EBA preferential access scheme are shown in Table 4.25.

Table 4.25. EU duty-free rice import quotas: EBA preferential access scheme (tons)

2001/02	2002/03	2003/04	2004/05	20051/06	2006/07	2007/08	2008/09
2,517	2,895	3,329	3,829	4,403	5,063	5,823	6,696

Source: FAO (2001a)

In terms of other regional trade agreements it may be mentioned that cereal trade (including rice) and other sensitive agricultural products were not part of the agreement to liberalize trade between the EU and South Africa signed in 2000 (Bjørnskov and Krivonos 2001). Moreover, in its deal with the Mercosur States, the European Union has agreed to postpone talks on tariffs until July 2001 (FAO 1999).

[43] Duties on sugar and bananas are to be eliminated in three stages beginning with a 20% reduction on July 1, 2006, 50% on July 1, 2007 and 80% on July 1, 2008. Duties will be completely eliminated as of July 1, 2009.

5. Evaluation of rice policies

The most prominent characteristics of the rice policies of the major exporting and importing countries are the extremely high degrees of protection provided to domestic producers and the wide array of complex policy instruments being used to achieve the stated policy objectives. This chapter evaluates the rice policies reviewed above in light of issues related to e.g. the adherence to URAA commitments, and points to reforms that will enable a better functioning of the international rice market. This evaluation intends to provide – particularly Vietnamese – stakeholders with an overview of which countries have the most distorting policies as they impact on international trade, and hence where pressure should be mounted in the upcoming multilateral agricultural trade negotiations to reform these policies. Yet the review also reveals that there are a number of domestic policies that ought to be reformed too so as to ensure efficient rice production and trade within these countries.

State trading enterprises

State trading enterprises (STEs) play a dominant role in most rice producing countries. Governments use STEs to achieve the goals of their rice policies by giving them the authority to intervene in the market and by having them administer the chosen policy instruments. As the policy review above reveals, the STEs involved in rice trade differ with respect to the extent to which they control foreign trade and their responsibilities for management of domestic production and distribution. The scope spans from monopoly control over imports and strong control over domestic marketing in Japan to the provision of export credit guarantees and management of food aid programs in the United States. Table 5.1 gives an impression of the range of functions of state trading enterprises.

Concerns are expressed that – given their control over foreign trade, domestic marketing, distribution and pricing – STEs have the ability to effectively foreclose domestic markets from foreign competition and to distort export competition (see e.g. Ingco and Ng 1998). It is argued that STEs (mis-)use their position to limit the degree of competition in domestic markets by controlling market access, to protect domestic producers at levels higher than those provided for by the bound tariffs levels, and to provide exporters with unfair competitive advantages in international markets – some of which are not very transparent, e.g. preferential access to credit, possibilities of engaging in long-term trade agreements with other governments, screening from bankruptcy concerns, etc. This non-transparent behavior makes it difficult to assess

whether and to what degree market access is being restricted and whether domestic producers and exporters are being supported by the presence of an STE per se.

Table 5.1. Range of STE activities based on notifications to the WTO

Activities related to domestic trade	Activities related to foreign trade
• purchase of all, or a significant percentage of, domestic production • intervention purchases and sales (based on pre-determined floor and ceiling prices) • involvement in support schemes for domestic production • administration of marketing arrangements • domestic distribution of national production (possible monopoly) • domestic distribution of imports (possible monopoly) • credit guarantees (or other assistance) for producers and processors • marketing activities (promotion activities for national consumption) • maintenance of emergency stocks (national defense preparedness or implementation of food security programmes) • granting of production licenses	• import operations (possible monopoly on imports) • export operations (possible monopoly on exports) • quality control of domestic production (for export) • storage, shipping, handling, processing, packaging, insuring (and other export-related support activities) • credit guarantees (or other assistance) for exporters • marketing activities (promotion activities for exports) • granting of import and export licenses • negotiation of long-term bilateral contracts for exports • implementation of quantitative restrictions (on imports/exports) • implementation of bilateral aid agreements

Source: FAO (1998) and WTO (1995).

Some argue that the benefits of "traditional" trade liberalization efforts such as tariff reductions, TRQ expansions and export subsidy restrictions may not fully materialize if the role of state trading enterprises is not curtailed (see e.g. Ingco and Ng 1998). Notwithstanding the distortionary effects of covert forms of support and protection provided to STEs, it is nevertheless important to distinguish between a given institutional arrangement and the policy instruments being used within this setup.[44] State trading enterprises are often merely administrators of government policies (OECD 2001b, Young and Abbott 1998). In China, for example, it is the central government that determines the national rice import requirements while the state trading enterprise

[44] Another point to keep in mind is that many agricultural markets are imperfectly competitive, and so the impact of an STE should be judged against this benchmark rather than against one of perfect competition. Karp and Perloff (1989) estimate the competitiveness of the rice export market and their results suggest that it is an oligopolistic market but that it is closer to being competitive than collusive. Furthermore, because state trading enterprises can be thought of as having a different objective function than e.g. a private monopolist, a seemingly monopolistic STE may behave in a relatively more competitive manner because it takes account of effects on consumer and/or producer welfare (OECD 2001).

COFCO carries out the actual transactions. Similar examples of this 'division of labor' exist in other rice trading countries. Moreover, it must be acknowledged that many trade distorting policy instruments would probably be in place irrespective of the presence or absence of a particular STE.

Several countries do take the issue of state trading up in their proposals for the next phase of WTO negotiations, however. This suggests that there are perceived problems with the way STEs are currently being regulated in the WTO (see Box 5.1).[45] A main concern is that the dominant roles played by STEs in agricultural trade, including rice

Box 5.1. The status of State Trading Enterprises in the WTO

The participation of state trading enterprises in agricultural trade is not a new phenomenon to the GATT/WTO system – it is well known in both developing and developed countries. The 1994 General Agreement on Tariffs and Trade (WTO 1994, p. 250) defines state trading enterprises as: "Governmental and non-governmental enterprises, including marketing boards, which have been granted exclusive or special rights or privileges, including statutory or constitutional powers, in the exercise of which they influence through their purchases or sales the level or direction of imports or exports."

The GATT acknowledges state trading enterprises as legitimate participants in international trade as both a market regulator and an economic agent, but the Agreement also contains guidelines concerning their behavior (Article XVII). In particular, state trading enterprises are subject to the general GATT principles of non-discrimination and most-favored nation treatment (Article I). Furthermore, STEs are supposed to act solely on the basis of "commercial considerations". Finally, STEs should not provide protection exceeding that provided by bound tariffs (Article II:4). In addition hereto, state trading enterprises are also explicitly mentioned in a number of other articles (see e.g. McCorriston and MacLaren 2001). State trading enterprises are of course subject to the disciplines contained in the Uruguay Round Agreement as they relate to market access, export subsidies and domestic support.

WTO members must notify to the organization the existence, objectives, methods of operation, and the volumes of trade under the control of STEs. The majority of the notifications relate to state trading enterprises engaged in agriculture and related sectors (McCorriston and MacLaren 2001). Apart from the European Union, all the major exporters and importers notify the use STEs to administer some parts of their agricultural trade. Due to a somewhat unclear definition of state trading enterprises there are still controversies as to whether or not the intervention agencies of the EU ought to be characterized as such since they manipulate markets but are not directly engaged in trade (Dixit and Josling, 1997).

trade, are enabling WTO member countries to circumvent their URAA commitments to improve market access, discipline domestic support and reduce export subsidies. The review of rice policies above does indeed indicate that commitments have in some cases been circumvented and that rules are being used in ways that are in con-

[45] Furthermore, since China, who has just joined the WTO, and several of the countries that have applied for membership (e.g. Vietnam, Russia and Taiwan) all use state trading enterprises to implement their agricultural policies and to manage agricultural exports and imports, there is a natural interest in this issue. State trading has indeed been a key issue in the negotiations leading to China's accession to the WTO.

flict with their original intent. In some cases circumventions have taken place as exceptions to the general agreement such as the permission given to Japan and Korea to postpone the tariffication of their rice import regime. Another example is the Blair House Agreement that allowed the European Union to use a variable levy on milled rice imports. In other cases the circumventions have certainly not been intended, which the problems of dirty tariffication and de facto variable levies witness.

Domestic support

In order to compare policy instruments across countries, Tables 5.2 and 5.3 provide an overview of domestic support and trade policy instruments, respectively, used in the rice policy regimes of the main importing and exporting countries reviewed above. The description of procurement programs with guaranteed prices and the like are described in the table with domestic support measures although they are of course closely linked to the trade policy measures in terms of providing producers with market price support.

Given the importance of the food security and price stability objectives, all governments (with the exception of Pakistan) intervene in the rice market to a greater or lesser extent to secure a price target of some sort – mainly to support producers but in some cases also to protect consumers (e.g. in Indonesia and Korea). To manage these procurement programs, governments typically hold stocks. In some countries these have become such a large budgetary burden that counter-measures are resorted to. In Japan, for example, land-based payments are used to encourage farmers to convert land to other uses. In the EU production exceeding the national base area limit triggers a penalty in the form of lower compensatory payments. The effect of acreage controls is to limit the long-run output and export levels, and to raise the value of land.[46]

Seen in relation to the total value of producer support provided to rice farmers, e.g. as measured by the Producer Support Estimate (PSE), the lion's share of this support

[46] In an applied general equilibrium model such controls must be modeled directly as a restriction on land use as an input. Acreage controls in combination with an output subsidy or price support will have the effect of increasing farmer income, but production increases will be limited by the explicit account-taking of restrictions on the use of land as an input. This combined effect amounts to both an upward shift as well as a movement along the supply curve.

Table 5.2. Rice: domestic support instruments

	Minimum or guidance prices	Production-limiting measures (land use, output)	Procurement and storage programs	Direct support (compensatory payments, acreage support)	STE control of domestic trade
Exporters:					
Vietnam	Only indirectly ~ restrictions on exports and domestic trade	Paddy land being converted to other uses	SOEs must hold stocks for market intervention	No	Monopoly control of north-south trade →1997
Thailand	Target paddy price, depends on quality and type	No	Rice procurement scheme	No	No
United States	Pre-specified loan rate which triggers deficiency payments	Farmers receiving PFC payments must keep land in agriculture	SOE accumulates stocks ~ price support program and purchases from private stocks for food aid program	Payments based on historical acreage (PFC) and deficiency payments	No
China	Pre-specified procurement prices	Paddy land being converted to other uses	Government holds stocks	No	State grain agencies responsible for domestic marketing
India	Procurement prices for paddy and milled rice	No	Rice procurement program, buffer stock for concessional sales to the poor	No	Efforts to limit role of SOE in '97 and '01
Pakistan	No	No	No	No	No
Importers:					
Indonesia	Floor producer price, ceiling consumer price and "sufficient" wedge btwn them	No	Government stocks to manage procurement program	No	Efforts to limit role of SOE in '98 under agreement with IMF
Japan	Official production purchase price	Land diversion program	Government stocks as part of price support program	Land-based payments to encourage land diversion out of rice	Strong control over domestic rice trade
South Korea	Dual price system: purchase price and resale price	Conversion of idle land to paddy land	Government stocks as part of price support program	No	Most government purchased rice is resold ~ comp'tive bidding
European Union	Pre-determined intervention price	Compensatory payments only up to national base area limit	Intervention storage system	Compensatory payments	No

takes the form of market price support rather than direct payments. It is only the developed countries that can afford to provide producers with direct support payments. Developing country governments rely on procurement programs to support their farmers' incomes (and trade policy instruments to protect them from foreign competition, c.f. below).

The Uruguay Round Agreement on Agriculture required WTO members to reduce their Aggregate Measure of Support (AMS). This requirement was not product-specific and so there has been given a potentially large degree of flexibility as to which sectors were to be affected. In the case of rice, for example, the AMS reduction requirement has been met by the United States without reducing support to the rice sector at all. In Japan, the requirements have been met by shifting support into categories that are exempt from the general AMS reduction requirement, i.e. into the green and blue boxes. Yet producer support in Japan, as captured by the PSE measure, has actually increased. Therefore, although direct support of rice production is minimal seen in the broader context of agricultural support, there does seem to be scope for reevaluating the appropriateness of the AMS measure and the formulation of the reduction requirements.[47]

Trade policy instruments

Tariffs

Table 5.3 summarizes the trade policy instruments used in rice policy regimes around the world. Both tariffs and non-tariff barriers are used to protect domestic rice producers from foreign competition. Many different types of tariff are applied: ad valorem tariffs, specific tariffs, and combinations of the two. Variable levies are also being used. An exception to the general rule of tariffication in the URAA has e.g. permitted the European Union to use variable levies on imports of husked and milled rice.

The observation that rice imports are subject to a multitude of specific tariffs, combination tariffs, and variable levies (official and de facto) is important because these types of duty provide greater protection than simple ad valorem tariffs, as described in Box 5.2. Most importantly, they provide increasing protection when world market prices fall. Furthermore, because of this characteristic, the actual degree of protection

[47] In particular there seems to be a need to strengthen the rules concerning non-product specific domestic support. Furthermore, some support measures such as the so-called 'disaster payments' and the current counter-cyclical payments in the US are clearly production–linked, but not included in the amber box (Agra Europe 2001).

provided by specific and combination tariffs at a given point in time is not very transparent.

Table 5.3. Rice: trade policy instruments

	Tariffs	Non-tariff measures	Minimum or guidance prices	Export taxes or subsidies	STE control of external trade
Exporters:					
Vietnam	Ad valorem, frequently adjusted	Export quota → May '01	"Guidance" export price	Taxes → '98, subsidies in '01	Monopoly → '97 Private only 4% in '99
Thailand	Combination of ad valorem and specific tariffs	TRQ	No	Subsidized export credits	No
United States	Ad valorem and specific tariffs, preferential access for some countries	No	No	Export credit guarantees and food aid	STE administers export credit and food aid program
China	Ad valorem tariffs	TRQ as part of WTO accession agreement, fixed shares for private/state participation	Fixed export and import "transfer" prices	Exports enjoy VAT rebate	Monopoly control
India	Ad valorem tariff	No	Minimum export price	Export subsidies	Restrictions on private sector imports
Pakistan	Ad valorem tariff	No	No	No	No
Importers:					
Indonesia	Applied: specific tariff, Bound: ad valorem	TRQ, but relies on time-limited import and export bans	No	No	Monopoly control, relaxed in '99
Japan	Until '99: mark-up on imports > min. market access After '99: specific in- and out-of-quota tariffs	Until '99: Minimum market access After '99: TRQ Allocation based on tenders	Special safeguards in addition to TRQ introduced in '99	Food aid	Monopoly control
South Korea	Ad valorem tariff on min. access imports, mark-up on imports > min. market access	Minimum market access	No	No	Monopoly control
European Union	Variable levy on husked and milled rice, specific tariff on paddy rice	TRQs split by country of origin, preferential access quotas	No	Export restitutions, food aid	No

Even where ad valorem tariffs are used, they are sometimes adjusted so frequently in response to changing domestic and world market conditions that they work like de facto variable levies. In Vietnam, for example, the tariff has recently been increased in several steps in an effort to encourage farmers to produce specialty rice as a reaction to increasing imports hereof from e.g. Thailand. In Indonesia the government seems willing to raise tariffs at short notice to avoid import surges by the private sector.

This latter point relates directly to the concept of bound rates within the URAA. One common complaint is that the bound rates have been set so high that the reduction requirements have had no real impact. In the case of rice, however, it seems that a perhaps more important consequence is that tariff rates are being permitted to fluctuate significantly below the bound rate, thereby providing protection with effects similar to those of variable levies. Furthermore, the frequent adjustments generate uncertainty about the prevailing import regime thereby adding real costs to trade.

Box 5.2. Tariffs: Ad valorem tariffs, specific tariffs and variable levies

The ad valorem tariff is the only form of import duty that yields a constant percentage wedge between the world and domestic price. Yet many agricultural commodities are subject to non-ad valorem tariffs such as specific duties, variable levies, and combinations of ad valorem and specific tariffs. Non-ad valorem tariffs provide varying degrees of protection depending on the prevailing world price. Moreover, they are often less transparent, thereby concealing actual level of protection. Gibson et al. (2001) find that the world average of bound ad valorem tariffs on agricultural goods is 58%, while the average ad valorem equivalent of non-ad valorem tariffs is 123%.

Levying a *specific duty* of $\$T_i$ on import commodity *i*, the ad valorem tariff equivalent is $[(p_{it}^* + \overline{T_i}) - p_{it}^*] / p_{it}^* = \overline{T_i} / p_{it}^*$, where the world price p_{it}^* varies over time. When the world price falls, the specific duty as a percent of the world price – the ad valorem equivalent – increases. This mechanism is captured by an ad valorem equivalent function (Lloyd 1991): $f_i(\overline{T_i}, p_{it}^*) = \overline{T_i} / p_{it}^*$.

A *variable levy* is used if the aim is to have the duty-inclusive price reach a pre-specified target:

$T_i = p_i^{t\arg} - p_{it}^*$ if $p_{it}^* < p_i^{t\arg}$,

$T_i = 0$ otherwise.

The ad valorem equivalent function is:

$f_i(p_i^{t\arg}, p_{it}^*) = (p_i^{t\arg} - p_{it}^*) / p_{it}^* = p_i^{t\arg} / p_{it}^* - 1$ if $p_{it}^* < p_i^{t\arg}$,

$f_i(p_i^{t\arg}, p_{it}^*) = 0$ otherwise.

Another mechanism to insulate domestic prices from world price fluctuations is by imposing an additional duty if the price falls below a certain minimum. This is known as a *minimum price tariff*. In a simple form, both tariffs could be levied as ad valorem rates:

$f_i(t_i, p_i^{\min}, p_{it}^*) = t_i$ if $p_{it}^* \geq p_i^{\min}$,

$f_i(p_i^{t\arg}, p_{it}^*) = t_i + \tau_i$ if $p_{it}^* < p_i^{\min}$.

Non-tariff measures

International rice trade is also affected by non-tariff measures such as quantitative restrictions on imports and exports, seasonal bans, tariff rate quotas, and more or less explicit export support measures. With the aim of improving market access, the URAA introduced the tariff rate quota (TRQ) system as a half way solution between a preferred tariffs-only regime and the previous regimes characterized by import bans and quotas. In the case of rice, however, three exceptions to this rule were made: Japan, Korea and the Philippines were allowed to use a classic import quota (see Box 5.3) to determine their minimum market access level with no commitments whatsoever to import above this level.

The minimum market access commitments made by these three countries have generally been fulfilled, but it may be questioned which effect this has had on international rice trade. The number of countries winning the tenders for these imports has been limited. The United States accounts for half of Japan's total imports, while the other large suppliers are Thailand and Australia, and to a lesser extent China. Vietnam, India and Pakistan have not succeeded in gaining noteworthy access to the Japanese market. There are many possible explanations for this outcome. Due to the consumer preference structure, opening the rice markets of Japan and South Korea increases the demand for japonica rice varieties. Most exporters of japonica rice are developed country producers such as the US and Australia, although China is also a potential supplier. Vietnam, India and Pakistan are indica rice producers.

Notwithstanding this plausible explanation, concerns are being raised, however, about the way in which access to the Japanese and Korean markets is being regulated. Thailand's Export Promotion department, for example, has requested that Japan permits the free market forces to determine the quota allocation and allows importers to freely conduct promotional campaigns (BizAsia 2000). It is argued that the Japanese administration of the quota amounts to a protectionist measure against free market exporters. Another problem relates to the fact that governments and/or their STEs are free to choose which grades and standards of a product may be imported under the minimum market access arrangement and can therefore discriminate against products from certain countries and/or limit competition on the domestic market. Korea, for example, tenders only for low quality rice thereby severely limiting actual competition on the domestic market where demand is for high quality.

The extent to which these problems of quota administration relate to the fact that state trading enterprises are involved is not entirely clear. The URAA allowed significant

freedom of choice in this regard, which seen in retrospect may have generated unintended effects. In some countries such as Japan, Korea and Indonesia, quotas are allocated to STEs, which then determine the conditions of entry and sometimes also the marketing channels to be used. There are concerns that the allocation of import quotas takes place on political grounds rather than on a commercial basis.[48]

Perhaps more importantly, it seems that the STEs in e.g. Japan and Korea have helped cushion the impacts of the forced market openings by storing imported rice for long periods of time thereby rendering them suitable only for limited uses, by reselling imported rice to the food processing industries rather than directly to consumers, and by re-exporting some of the imported rice as food aid.

Reviewing the way in which the quota systems introduced in the URAA have been managed strongly suggests that there is a need for more precise rules so as to avoid the clearly unintentional effects mentioned above. An important component of such a reform should be to give private traders increased access to competing with state trading enterprises. One obvious change should be to eliminate the possibility of imposing mark-ups on imports in excess of the committed minimum access levels.

Efforts are being made to liberalize state trading in Asian rice markets, but the tendency is to relinquish monopoly powers and to move towards a greater degree of private sector participation rather than to completely abandon the principle of state involvement. Moreover, progress on this front is very slow, as the recent reforms of the Vietnamese rice trade regime witness.

Tariff Rate Quotas

The introduction of the tariff rate quota system in the URAA and its associated implementation issues have seemed to increase or at least continue the active participation of state trading enterprises in agricultural trade, however. Some countries have even established state trading enterprises with the explicit task of administering the TRQs.

[48] With respect to wheat trade, Young and Abbott (1998) find that countries in which STEs handle trade are somewhat less responsive to price differences between suppliers and therefore more likely to rigidly depend on historical shares of import sources as compared with countries where private firms seek the most economic source of supply.

Box 5.3. Import quotas

An import quota restricts the volume of imports irrespective of the prevailing market conditions, and so in an expanding market a quota will become increasingly restrictive. Unless the quotas are auctioned, an import quota does not generate revenue for the government. An import quota generates quota rent, however, which accrues to those agents – domestic or foreign – that have access to quotas.

From an economic point of view the preferred method of quota administration is an auction after which licenses may be sold freely on the market. An alternative is the direct allocation of the right to import fixed amounts of the good to importing firms free of charge. The government does not earn revenue, but the quota rents accrue to the importing firms. In practice, however, quotas are often allocated according to specific criteria (firm size, trading experience, relations to the government, etc.), which make it relevant for companies to engage in unproductive lobbying activities to gain access to these licenses.

The effect of a binding import quota can be analyzed in a framework similar to that used to illustrate the effects of an export quota in Box 4.1. The demand schedule for imports will have the same kinked form as the demand schedule seen from the exporter point of view in the case of an export quota. An import quota results in forced scarcity of imports, thereby raising the price of the commodity on the domestic market above the price that would prevail in the free trade situation.

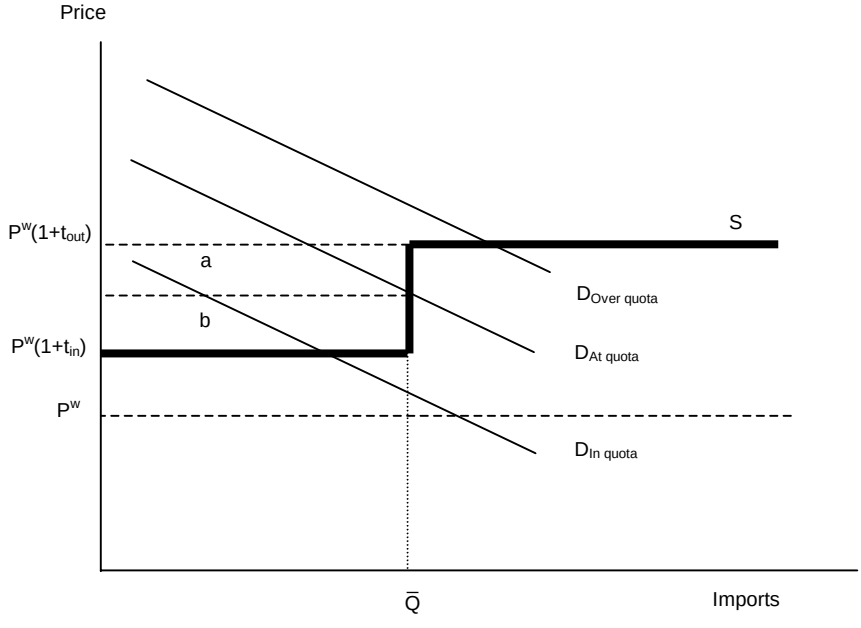
The TRQ system was meant to increase market access by allowing a certain quantity of imports enter the market subject to relatively low in-quota tariffs with additional imports being charged a somewhat higher over-quota tariff (Box 5.4 describes the system). A key concern relating to the functioning of the TRQs are low fill rates. In the case of rice, however, quotas are generally either completely or almost completely filled. One of the most contentious issues relating to the rice TRQs is quota administration. The TRQ system is plagued by precisely the same problems related to quota administration as the minimum market access arrangements discussed above. Yet there is another problem that has arisen with the introduction of the TRQ system.

Apart from the general issues related to the setting of tariff rates discussed above (high bound rates, dirty tariffication, etc.), the over-quota tariff rates have in many cases been set prohibitively high so that the resulting effect is that of an ordinary import quota. Japan, for example, switched to the TRQ system in 1999 but there have been no over-quota imports due to a prohibitively high over-quota tariff. Furthermore, the use of special safeguards in connection with the TRQ system is apparently being interpreted as an integral part of the market management systems (Bull and Roberts 2001).

Box 5.4. Tariff Rate Quotas

One of the major innovations of the Uruguay Round Agreement on Agriculture was the introduction of the tariff rate quotas (TRQs). The intention was to allow increased market access at lower tariffs. The principle of the TRQ system is that a certain quantity of imports is allowed to enter the import market at relatively low tariffs, known as the in-quota tariff. Imports in excess of this quota are charged a higher, over-quota tariff.

Three different possibilities arise, depending on whether or not the quota is binding. In the first case, net import demand is below the quota $\overline{Q}$. The in-quota tariff t_{in} is charged, and no quota rent arises. In the second case, net import demand is precisely large enough so that the quota becomes binding at $\overline{Q}$. A quota rent arises and is equal to the area b. In the third case, net import demand is in excess of the quota. The in-quota tariff is charged on the amount up until $\overline{Q}$, and the over-quota tariff t_{in} is charged on the imports in excess hereof. The quota rent increases to the area a+b.



Export subsidies

The Uruguay Round Agreement on Agriculture generally prohibits export subsidies and those that are in place are to be reduced. The rice policy review reveals that a number of countries do support exports, albeit in rather covert ways. Only India and

the European Union use explicit export subsidies.[49] Furthermore, Vietnam has just recently introduced export subsidies after having removed the rice export quota and the export tax. The EU provides what they term 'export restitutions', which are to be reduced in accordance with the URAA commitments. More worrisome, however, are the more covert ways in which exporters are being supported because the URAA does not cover such forms of assistance that may be equally as trade distorting as explicit export subsidies. The EU, for example, mentions in its negotiation proposals to the WTO that the provision of subsidized export credits, export credit guarantees, the tying of food aid to commercial exports as an outlet for surpluses, and the involvement of state trading enterprises can all have a distorting effect on export competition and should be restricted within the WTO agreements (WTO 2000b).

All the policy instruments mentioned in the EU proposal are in fact prevalent in the rice policy regimes surveyed here. The Thai government provides its rice exporters with subsidized credits, the Chinese government offers VAT rebates to its rice exporters, US rice exporters are given export credit guarantees, and rice is finally either donated or sold on concessional terms through food aid programs in the EU, the US and Japan.

Clearly, there is a need to discipline the use of implicit export subsidies in the WTO, including the assurance that food aid shipments are not misused as an integral part of adjustment mechanisms to dispose of excess production. More complex, however, will be to control the potential distortionary effect that exporting STEs might have on the world market. Implicit subsidization of exports in this respect may occur if STEs are able to price discriminate between the domestic and foreign markets. STEs may moreover be able to adjust the volume of exports according to the domestic production situation precisely because they are often given exclusive rights to conduct trade. Hence there is a need to reevaluate the current WTO rules concerning the conduct of state trading enterprises. Ingco and Ng (1998) suggest that financial assistance to STE exporters should be counted as explicit export subsidies under the WTO rules and thereby subject to reductions. Yet, as discussed at the outset of this chapter, it is not necessarily ownership per se that is important from a trade distortion point of view. More important are which policy instruments the STEs are set to administer and the scope within which they are permitted to use or misuse their connections to the gov-

[49] Not yet a member of the WTO, Vietnam does not have to abide by these rules. In the case of India, it is not clear whether these subsidies are WTO-compatible since developing countries are permitted under certain circumstances to use subsidies to reduce the costs of marketing and transporting exports.

ernment. A lot can be achieved by further disciplining the current use of domestic support measures and trade policy instruments such as tariffs and tariff rate quotas. This will in itself curtail at least part of the trade distorting power exercised by state trading enterprises in rice and other agricultural trade.

6. Discussion and prospects from a Vietnamese perspective

From being a chronic net rice importer in the 1980s, Vietnam has transformed itself into the world's second largest exporter of rice after Thailand in the late 1990s. This remarkable achievement has been supported by economic policy reforms initiated in 1986 enabling market forces to play a greater role in the disposition of economic resources. Vietnam's future performance on world rice markets depends on continued reform of domestic policies and liberalization of the trade regime. However, it is equally clear that continued success of Vietnam's rice exports depends crucially on increased market access and the disciplining of other countries' use of trade-distorting domestic support measures and export subsidies.

Vietnam is a country in transition and this is evident in the reforms pertaining to the rice sector. Many efforts are indeed being made to liberalize the rice policy regime, including the recent lifting of the export quota and the removal of the export tax. Clearly, these are very important steps in the right direction since there is evidence that the rice export quota has been a constraining factor, not least in the sense that it has blocked the transmission of price signals from the world market. Yet in some respects the reform process could be enhanced. This is particularly the case in relation to the continued dominant role of state trading enterprises and the very modest participation of private agents in rice trade.

Moreover, there is evidence that temptation to resort to trade distorting measures to achieve certain domestic policy goals is difficult to resist. Two examples are the recent introduction of rice export subsidies and the raising of the rice import tariffs. Introducing export subsidies may cause problems in relation to Vietnam's application for membership of the World Trade Organization. Moreover, subsidies of any sort strain government budgets and – as experience from the developed countries witnesses all too well – once in place, such support measures can be difficult to remove. Furthermore, rice export subsidies are probably not the most efficient use of scarce budgetary resources in the Vietnamese context. Measures to secure water supplies, provide irrigation services, and transfer new technologies to farmers may well be better uses of such resources in the rice sector.

Vietnamese rice trade policy (and its trade policy in general) is characterized by frequent changes. This has the effect of adding real costs to trade through the uncertainty this creates for domestic producers, exporters and foreign buyers. One of the most recent changes in relation to rice is the increase in rice import tariffs. One of the motivations for this change has been the desire to curb imports of specialty rice

vations for this change has been the desire to curb imports of specialty rice varieties so as to encourage domestic production hereof. The Vietnamese Government is very keen on improving the quality of its rice in general and on promoting the production of specialty rice that can be sold on niche markets in e.g. the European Union and the United States. Thailand, India and Pakistan have been highly successful in following such as strategy for their jasmine and basmati rice varieties. The idea is that this could be one way in which Vietnam could reduce the price discount it must currently accept on world markets. Yet one should always be cautious of "picking the winners" through the policy regime. It may be that – from an overall economic perspective – Vietnamese farmers and exporters should instead focus on high-value crops such as coffee, fruits and vegetables rather than specialty rice. Such an evaluation would of course need to be based on more detailed market analyses.

In any case, the Vietnamese Government is keenly aware that its agricultural development strategy must be broadly based and that diversification is one key to this solution. Furthermore, as economic development pulls resources out of rice (and other agricultural) production and the rice supply system changes from the current individual-family-based supply system to a more market-oriented retail-purchase system, the Government will have to deal with the food security concerns that might arise from these structural changes.

Hence it may be concluded that it is very important for Vietnam to continue reforms of its rice policy regime, and that these reforms must be seen in an economy-wide perspective. Yet as this review and evaluation has shown, Vietnam also has a strong interest in pressing for reform of other countries' rice policies since they have highly distorting effects on international rice trade. Forums in which these concerns may be addressed are the regional trade group ASEAN and the World Trade Organization. Not only is there a need to improve market access, but there is also a need for serious scrutiny of other countries' use of export subsidies and domestic support measures.

The key role of rice as a staple food in almost all rice producing countries causes these countries to isolate their domestic markets from the world market as they strive to achieve self-sufficiency. Using a combination of domestic support measures and trade policy instruments, one of the most important goals is to achieve domestic price stability. The problem is that these isolationist policies simply add to the inherent thinness, unpredictability and instability of the international rice markets. Only concerted dismantling of these trade-distorting policies will change the situation.

As the policy review has made clear, most rice producing countries use state trading enterprises as an integrated part of their rice policy regime. There is a general interest in a closer scrutiny of the use of state trading enterprises to control foreign trade since there are concerns that importing STEs effectively foreclose domestic markets from foreign competition, whilst exporting STEs distort export competition on world markets. Other more explicit distortions that affect trade are domestic support measures. Only the developed countries can afford to provide direct support to rice farmers at a significant level. Nevertheless, it is important that this support is reduced because it provides exporters with unfair price competitiveness and raises market prices in importing countries thereby placing foreign suppliers at a disadvantage.

In terms of trade policy instruments, rice importers use a mix of ad valorem and specific tariffs. The latter potentially provide higher degrees of protection, but perhaps more worrisome is the frequent change of tariff rates in a number of countries, just like in Vietnam. This adds to the uncertainty and unpredictability of the international rice market. Furthermore, several importing countries have – as part of the Uruguay Round Agreement on Agriculture – introduced Tariff Rate Quotas. This mechanism was meant to increase market access, but there are substantial problems related to the use of TRQs. First of all, over-quota tariffs are often prohibitively high. Secondly, the administration of TRQs seems to mean that only selected suppliers benefit from this preferential access. Finally, although only a few countries have explicit rice export subsidies in place, there are other more covert forms of support to exporters, particularly in the US. Such support measures deserve a closer examination in order to assess the extent to which some of them may be classified as export subsidies and hence disciplined under the WTO.

Simple conclusions cannot be drawn about the extent to which Vietnam's exports are currently being hindered by the rice policies of its trading partners. In terms of the Japanese and Korean rice markets, for example, there is no doubt that there are severe import restrictions in place – both explicitly and implicitly – and Vietnam would in principle have an interest in these being removed. Yet there is also a consumer preference dimension to international rice trade. Demand in these particular markets is primarily for japonica rice varieties whereas Vietnam is predominantly an indica producer. Hence it is not entirely clear to what extent a lifting of these import barriers would in fact boost Vietnam's export potential. Vietnamese farmers do seem both willing and able to change crop varieties, however, and hence there may be scope for gaining access to japonica markets in the future. Furthermore, Vietnam might be able

to strike deals with the EU and the US for preferential access to these – predominantly indica – markets as is being provided to several other developing countries.

Finally, it is also relevant to highlight a few policy developments that are expected to affect the future of the world rice market in general, and which Vietnamese policy-makers will need to take into account. First of all, there is evidence that the nature of state trading enterprises is changing. Due to various restructuring and reform processes, the role of these agencies in rice procurement, domestic marketing and international trade is weakening, giving way to increased private sector participation. It is not yet clear, however, whether this is improving access to national rice markets. Another very important issue is the accession of China to the WTO, and here the expectation is that the government will not deviate from its policy goal of high self-sufficiency given the very nature of the world rice market. A third policy development that will have an impact on the future rice market is the EU's "Everything But Arms" initiative. Rice is regarded as a sensitive commodity in this context and access to the EU rice market by the LDCs will not be fully opened until 2009. It is a clear expectation that the long period of transition will erode the potential gains to be made for these countries, particularly if the EU rice regime is reformed before this date. It may therefore be that the reform of the EU rice policy will have more of an impact on the world rice market than the EBA initiative. In this context it should be noted that Vietnam is not included in the list of LDCs. Fourth, China, India and Myanmar have shown interest in the rice pool agreement between Thailand and Vietnam, and so this may become an influential factor in the near future, although it is not clear whether it is compatible with WTO rules. Finally, the introduction of genetically modified rice varieties could also have an impact on the structure of trade and prices.

This report has highlighted a number of issues related to Vietnam's position in the international rice market that warrant further empirical research. It has identified the main rice policy instruments of both Vietnam and its major competitors and buyers, and has provided preliminary data that may form the basis for further empirical work. Given the overriding importance of the rice sector in the Vietnamese economy in terms of production, consumption, employment and income generation, an applied general equilibrium framework would be appropriate. To this end a thorough understanding of the way the different rice policy regimes function is necessary. Furthermore, the policy instruments must be quantified, and this may take the more partial-based measures such as those presented in this report as a point of departure.

Moreover, the importance of the other rice producing countries' policies for Vietnam's rice trade performance makes it appropriate to view future policy reforms in a global perspective. Relevant analyses would include an investigation of the impact of Vietnam's own policy liberalization efforts as well as trade and domestic policy reforms of other rice exporters, and the possible extension of market access by importers. As the ongoing debate about preferential trade agreements shows (see e.g. Panagariya 2000 and Srinivasan 1998), the merits of unilateral trade liberalization versus regional and multilateral trade liberalization are theoretically ambiguous, and hence an empirical evaluation must be resorted to.

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Appendix

Table A.1. Thailand's top ten rice export markets (on a quantity basis) 1995-1999

	1995		1996		1997		1998		1999	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Indonesia	20.3	Malaysia	11.4	Nigeria	12.5	Indonesia	29.5	Indonesia	18.0
2	Iran	10.1	Indonesia	11.3	Indonesia	11.0	Nigeria	8.8	Nigeria	11.0
3	Sth Africa	6.2	Iran	8.9	Malaysia	9.8	Iran	6.3	Iran	10.4
4	UAE	5.8	Nigeria	8.2	Iran	7.7	Malaysia	6.0	Senegal	5.9
5	Singapore	5.8	Singapore	7.1	Singapore	5.9	Sth Africa	5.0	Sth Africa	5.2
6	Malaysia	5.8	USA	5.0	Philippines	4.8	Singapore	4.3	Malaysia	5.1
7	USA	4.5	Sth Africa	4.5	USA	4.6	USA	3.8	Singapore	4.6
8	Benin	4.2	Philippines	3.9	EU	4.3	Togo	3.6	USA	3.9
9	Sth Korea	4.1	EU	3.7	Iraq	4.0	EU	3.5	Iraq	3.5
10	Senegal	3.4	Cuba	3.5	Sth Africa	4.0	Philippines	3.3	Togo	3.4
	Others	29.8	Others	32.5	Others	31.4	Others	25.8	Others	29.1
		100%		100%		100%		100%		100%
Thou. tons		4,444		4,345		4,691		5,879		6,249

Note: Not all bilateral export flows in the FAOSTAT database are identified to specific destinations. The total amounts of rice exports (measure in metric tons) reported here include unspecified exports, whereas the percentage shares are calculated out of total *specified* trade. Note that China is one of the unidentified partners in this data set.
Source: FAOSTAT (2001)

Table A.2. China's top ten rice export markets (on a quantity basis) 1995-1999

	1995		1996		1997		1998		1999	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Hong Kong	47.1	Libya	39.4	Philippines	21.1	Philippines	37.9	Indonesia	28.9
2	Indonesia	28.0	S. Korea	28.3	Iraq	14.2	Indonesia	37.6	Cte d'Ivoire	16.6
3	Russia	7.4	Mauritius	9.2	Côte d'Ivoire	11.5	Côte d'Ivoire	5.0	Cuba	8.9
4	S. Korea	5.2	Hong Kong	7.1	S. Korea	10.5	Cuba	4.0	Philippines	7.1
5	UAE	2.7	Russia	5.7	Cuba	8.3	Iraq	2.7	Russia	6.3
6	Macao	2.6	Kazakhstan	3.4	Libya	7.5	S. Korea	2.1	Malaysia	4.9
7	Japan	2.4	Uzbekistan	2.9	Kenya	3.1	Libya	1.7	Iraq	4.0
8	Mongolia	1.4	Japan	1.2	Ghana	3.0	Malaysia	1.7	Guinea	3.9
9	Qatar	0.9	Mongolia	0.9	Russia	2.8	Japan	1.3	S. Korea	3.4
10	Myanmar	0.7	Kyrgyzstan	0.7	Bulgaria	2.7	Tanzania	1.0	Libya	3.3
	Others	1.7	Others	1.3	Others	15.2	Others	5.0	Others	12.7
		100%		100%		100%		100%		100%
Thou. tons		45		159		872		3,627		2,544

Note: Same as for Table A.1.
Source: Obtained directly from the Basic Data Branch, Statistics Division, FAO, September 2001.

Table A.3. USA's top ten rice export markets (on a quantity basis) 1995-1999

	1995		1996		1997		1998		1999	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Turkey	14.3	Mexico	16.1	Mexico	15.5	Brazil	15.9	Mexico	14.1
2	EU	10.2	EU	12.7	EU	12.0	Mexico	11.3	EU	12.6
3	Mexico	9.3	Japan	11.3	Japan	9.1	EU	9.4	Japan	11.6
4	Iran	8.5	Turkey	11.1	Haiti	7.0	Colombia	8.5	Haiti	7.4
5	Haiti	7.3	Canada	8.8	Canada	6.9	Japan	7.2	Canada	6.2
6	SauArabia	6.7	Haiti	8.8	Turkey	6.7	Haiti	5.2	Indonesia	5.9
7	Canada	5.8	South Africa	8.4	SauArabia	4.7	Canada	4.9	Turkey	5.1
8	Sth Africa	4.8	Sau. Arabia	7.6	Sth Africa	4.3	Peru	4.5	S.Arabia	4.1
9	Indonesia	4.1	Peru	5.1	Jordan	3.3	Turkey	4.3	Russia	3.5
10	Ct dIvoire	3.1	Costa Rica	3.9	Domin. Rp	2.7	Sau Arabia	4.1	Nicaragua	2.9
	Others	25.9	Others	6.2	Others	27.7	Others	24.5	Others	26.5
		100%		100%		100%		100%		100%
Thou. tons		3,077		2,617		2,504		3,721		2,936

Note: Same as for Table A.1.
Source: FAOSTAT (2001)

Table A.4. India's top ten rice export markets (on a quantity basis) 1995-1999

	1995		1996		1997		1998		1999	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Indonesia	25.3	Bangladesh	21.1	Saudi Arabia	23.1	Bangladesh	39.6	Bangladesh	37.9
2	SauArabia	23.0	Sau Arabia	14.9	Sth Africa	13.5	South Africa	13.5	Sau Arab	20.5
3	Kenya	14.4	South Africa	11.2	Sri Lanka	12.5	Sau Arabia	13.1	Russ. Fed	7.3
4	UAE	6.0	Indonesia	9.2	Russ. Fed	10.5	Côte dIvoire	4.4	Sth Africa	6.5
5	EU	5.2	Sri Lanka	6.2	EU	5.3	Somalia	3.0	Nigeria	4.9
6	Bangladsh	4.7	Kenya	6.0	USA	5.1	Russ. Fed	3.0	EU	3.0
7	Senegal	4.4	USA	5.3	Somalia	4.5	UAE	2.4	UAE	2.8
8	Kuwait	3.7	UAE	4.5	Senegal	4.1	Senegal	2.4	Sri Lanka	2.6
9	CôteIvoire	3.5	Iran	3.3	UAE	3.9	EU	2.0	Kuwait	2.1
10	Iran	2.6	Philippines	2.6	Kuwait	3.4	Nigeria	1.9	Yemen	1.5
	Others	7.9	Others	15.8	Others	14.5	Others	14.8	Others	11.1
		100%		100%		100%		100%		100%
Thou. tons		1,589		3,555		1,959		3,934		2,571

Note: Same as for Table A.1.
Source: FAOSTAT (2001)

Table A.5. Pakistan's top ten rice export markets (on a quantity basis) 1995-1999

	1995		1996		1997		1998		1999	
Rank	Country	% share	Country	% share	Country	% share	Country	% share	Country	% share
1	Iran	19.9	UAE	19.9	Kenya	17.4	Indonesia	21.1	UAE	15.4
2	UAE	14.4	Iran	12.5	UAE	12.1	Kenya	15.0	Bangladesh	11.9
3	Bangladsh	14.2	Sau Arabia	9.0	Sri Lanka	9.8	UAE	11.2	Indonesia	11.5
4	Indonesia	13.8	Kenya	8.0	Sth Africa	6.3	South Africa	7.3	Sri Lanka	7.1
5	SauArabia	6.2	Indonesia	7.6	Armenia	6.0	Oman	4.5	Afghanstn	7.0
6	Afghanistn	5.9	Philippines	5.7	Afghanistan	4.7	SauArabia	4.0	Sau Arabia	5.6
7	Oman	3.9	Oman	4.9	Sau Arabia	4.0	Sth Korea	3.8	EU	4.8
8	Senegal	2.4	Afghanistan	4.2	Indonesia	3.6	Afghanistan	3.3	Oman	4.6
9	Kenya	2.3	Sri Lanka	3.5	Oman	3.6	Bangladesh	3.2	Sth Africa	3.9
10	Peru	1.8	Bangladesh	2.9	Iran	3.0	Iran	3.0	Malaysia	2.7
	Others	15.1	Others	21.9	Others	29.5	Others	23.5	Others	25.5
		100%		100%		100%		100%		100 %
Thou. tons		1,611		1,654		1,973		1,983		1,914

Note: Same as for Table A.1.
Source: FAOSTAT (2001)

Table A.6. United States: Producer Support Estimate (PSE) for rice, million USD

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Market price support	A*	5.3	36.7	43.9	8.8	8.4	4.2	0	0	0	0
Output subsidies	B	214	112.1	301.1	246.2	150.8	11.6	5.8	6.4	26.7	106.6
	H	0	0	0	0	0	0	0	0	0	0
Input subsidies	E2	13.1	15.8	13.4	16.5	16.8	19.5	19.7	21.4	21.4	21.6
	E1	24	26.1	21.2	23.3	23	26.6	26	27.2	26.5	26.4
Land based payments	D	0	0	0	0	0	0	74	104.2	155.5	222.9
	C1	13.3	30.4	11.7	25.8	5.1	2.3	-1.1	4.6	25.9	11.2
	C2	562.7	458.3	613.6	569.3	557.8	471.5	0	0	0	0
	F1	0	0	0	0	0	0	0	0	0	0
	F2	17.1	21.6	17.8	21.9	21.4	24	25.2	25.2	26.2	24
	F3	2.4	3	2.4	2.8	2.9	2.5	1.6	1	0.4	0.3
	G	4.1	5.8	4.2	3.5	3.6	4.5	4.7	8.6	10.4	11.4
Capital payments	E3	5.7	5.4	3.3	4.3	3.9	3.9	4	3.6	5.1	3.9
Total PSE		861.7	715.2	1032.6	922.4	793.7	570.6	159.9	202.2	298.1	428.3
% PSE**		45	37	49	43	37	26	9	10	15	26
Share of MPS in PSE		0	0	0	0	0	0	0	0	0	0
Nom. Assist. Coeff. ***		1.8	1.6	2.0	1.7	1.6	1.4	1.1	1.1	1.2	1.4
Total direct payments (i.e. *excluding* market price support)		856.4	678.5	988.7	913.6	785.3	566.4	159.9	202.2	298.1	428.3
Value of production		1045.9	1208.3	1058.4	1245.7	1341.1	1590.9	1709.1	1775	1660.5	1217.4
Power of domestic support		1.819	1.562	1.934	1.733	1.586	1.356	1.094	1.114	1.180	1.352
% Output subsidies		25.0	16.5	30.5	26.9	19.2	2.0	3.6	3.2	9.0	24.9
% Input subsidies		4.3	6.2	3.5	4.4	5.1	8.1	28.6	24.0	16.1	11.2
% Land payments		70.0	76.5	65.7	68.2	75.2	89.1	65.3	71.0	73.3	63.0
% Capital payments		0.7	0.8	0.3	0.5	0.5	0.7	2.5	1.8	1.7	0.9

* The letters refer to the OECD nomenclature.

** The percentage PSE is calculated as follows: %PSE = PSE/(Q*Pp + PP)*100, where Q*Pp = Value of production at producer prices and PP = Payments to producers = PSE – Market Price Support.

*** The Nominal Assistance Coefficient is calculated as follows: NACp = {1/(100 - %PSE)}*100.

Source: OECD PSE database 1999 Edition and own calculations

Table A.7. Japan: Producer Support Equivalent (PSE) for rice, billion yen

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Market price support	A*	2235.3	2025	2368.2	1800.9	2649.9	2449.4	2399.8	1980.9	1982	2157.4
Output subsidies	B	145.2	141.2	135.5	135.9	94.3	118.5	80.2	126.4	97.4	117.7
	H	0	0	0	0	0	0	0	0	0	0
Input subsidies	E2	4.7	4.3	4.7	3.8	5.4	5.2	5.5	5	4.5	4.8
	E1	44.2	42.9	45.3	41.9	44.3	43	40.9	43	38.1	38.3
Land based payments	D	0	0	0	0	0	0	0	0	0	0
	C1	0	0	0	0	0	0	0	0	0	0
	C2	0	0	0	0	0	0	0	0	0	0
	F1	0	0	0	0	0	0	0	0	0	0
	F2	86.3	85.8	73	50.6	37.4	44.6	66.7	66.5	57.9	58.4
	F3	0	0	0	0	0	0	0	0	0	0
	G	0	0	0	0	0	0	0	0	0	0
Capital payments	E3	38.6	35.9	44.3	42.8	50.6	57.6	53.1	45.7	47.2	37.7
Total PSE		2554.3	2335.1	2671	2075.9	2881.9	2718.3	2646.2	2267.5	2227.1	2414.3
% PSE**		80	80	84	86	82	85	80	78	84	88
Share of MPS in PSE		88	87	89	87	92	90	91	87	89	89
Nom. Assist. Coeff ***		4.9	4.9	6.1	7.1	5.6	6.6	5.1	4.5	6.1	8.1
Total direct payments (i.e. *excl.* market price support)		319	310.1	302.8	275	232	268.9	246.4	286.6	245.1	256.9
Value of production		2887.2	2623.8	2888.5	2140.2	3273.2	2936.4	3047.3	2628.6	2415.7	2499.8
Power of domestic support		1.110	1.118	1.105	1.128	1.071	1.092	1.081	1.109	1.101	1.103
% Output subsidies		45.5	45.5	44.7	49.4	40.6	44.1	32.5	44.1	39.7	45.8
% Input subsidies		15.3	15.2	16.5	16.6	21.4	17.9	18.8	16.7	17.4	16.8
% Land payments		27.1	27.7	24.1	18.4	16.1	16.6	27.1	23.2	23.6	22.7
% Capital payments		12.1	11.6	14.6	15.6	21.8	21.4	21.6	15.9	19.3	14.7

* The letters refer to the OECD nomenclature.

** The percentage PSE is calculated as follows: %PSE = PSE/(Q*Pp + PP)*100, where Q*Pp = Value of production at producer prices and PP = Payments to producers = PSE – Market Price Support.

*** The Nominal Assistance Coefficient is calculated as follows: NACp = {1/(100 - %PSE)}*100.

Source: OECD PSE database 1999 Edition and own calculations

Table A.8. Korea: Producer Support Equivalent (PSE) for rice, billion won

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Market price support	A*	5618.2	5650.9	6040.2	5898.7	5776.9	6160.7	7208.9	7287.3	6302.5	7922.1
Output subsidies	B	0	0	0	0	0	0	0	0	0	0
	H	0	0	0	0	0	0	0	0	0	0
Input subsidies	E2	0	0	0	0	0	1.3	2	2.6	2.4	2.5
	E1	24.9	22.5	32.2	38.2	41.1	29.4	51	69.9	81	83
Land based payments	D	0	0	0	0	0	0	0	0	0	0
	C1	0	0	0	0	0	0	0	0	0	0
	C2	0	0	0	0	0	0	0	0	0	2.4
	F1	0	0	0	0	0	0	0	0	0	0
	F2	0	0	0	0	0	0	0	0	0	0
	F3	0	0	0	0	0	0	0	0	0	0
	G	78.1	75	88.3	64.1	74	50.1	55.6	43.8	42.9	39.8
Capital payments	E3	78	79.5	89.7	112.4	143.5	160	197.7	199.5	146.3	109.8
Total PSE		5799.2	5827.9	6250.4	6113.4	6035.5	6401.5	7515.2	7603.1	6575.1	8159.6
% PSE**		85	85	87	90	81	88	81	79	71	80
Share of MPS in PSE		97	97	97	96	96	96	96	96	96	97
Nom. Assist. Coeff ***		6.9	6.6	7.5	9.8	5.4	8.2	5.3	4.8	3.5	4.9
Total direct payments (i.e. *excl.* market price support)		181	177	210.2	214.7	258.6	240.8	306.3	315.8	272.6	237.5
Value of production		6606.4	6685.4	7004.6	6592.2	7147.6	7053.8	8970.3	9263.1	8924.2	10013
Power of domestic support		1.027	1.026	1.030	1.033	1.036	1.034	1.034	1.034	1.031	1.024
% Output subsidies		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Input subsidies		13.8	12.7	15.3	17.8	15.9	12.7	17.3	23.0	30.6	36.0
% Land payments		43.1	42.4	42.0	29.9	28.6	20.8	18.2	13.9	15.7	17.8
% Capital payments		43.1	44.9	42.7	52.4	55.5	66.4	64.5	63.2	53.7	46.2

* The letters refer to the OECD nomenclature.

** The percentage PSE is calculated as follows: %PSE = PSE/(Q*Pp + PP)*100, where Q*Pp = Value of production at producer prices and PP = Payments to producers = PSE – Market Price Support.

*** The Nominal Assistance Coefficient is calculated as follows: NACp = {1/(100 - %PSE)}*100.

Source: OECD PSE database 1999 Edition and own calculations

Table A.9. European Union: Producer Support Equivalent (PSE) for rice, mill. Euro

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Market price support	A*	328.9	321	347.7	364.6	394.6	308.7	98.2	164.8	96	125.9
Output subsidies	B	57	35.4	20.4	13.1	4	0	0	0	0	0
	H	1.2	1.9	4.1	4.2	4.4	0.6	1.4	1.1	2.6	2
Input subsidies	E2	2	2.5	2.5	2.4	2.1	2.4	2.3	2.4	2.3	2
	E1	0	0	0	0	0	0	0	0	0	0
Land based payments	D	0	0	0	0	0	0	0	0	0	0
	C1	0	0	0	0	0	1.2	0	0	2	1
	C2	0	0	0	0	0	0	0	0	38	83
	F1	0	0	0	0	0	0	0	0	0	0
	F2	0	0	0	0	0	0	0	0	0	0
	F3	0	0	0	0	0	0	0	0	0	0
	G	0	0	0	0	0	0	0	0	0	0
Capital payments	E3	0	0	0	0	0	0	0	0	0	0
Total PSE		389.1	360.8	374.7	384.3	405.1	312.9	101.9	168.3	140.9	213.9
% PSE**		52	49	54	56	55	44	17	20	18	29
Share of MPS in PSE		85	89	93	95	97	99	96	98	68	59
Nom. Assist. Coeff ***		2.1	2.0	2.2	2.3	2.2	1.8	1.2	1.3	1.2	1.4
Total direct payments (i.e. *excl.* market price support)		60.2	39.8	27	19.7	10.5	4.2	3.7	3.5	44.9	88
Value of production		693.4	689.2	666.9	666.2	726.7	711.2	587.5	829	725.1	641.1
Power of domestic support		1.087	1.058	1.040	1.030	1.014	1.006	1.006	1.004	1.062	1.137
% Output subsidies		96.7	93.7	90.7	87.8	80.0	14.3	37.8	31.4	5.8	2.3
% Input subsidies		3.3	6.3	9.3	12.2	20.0	57.1	62.2	68.6	5.1	2.3
% Land payments		0.0	0.0	0.0	0.0	0.0	28.6	0.0	0.0	89.1	95.5
% Capital payments		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* The letters refer to the OECD nomenclature.

** The percentage PSE is calculated as follows: %PSE = PSE/(Q*Pp + PP)*100, where Q*Pp = Value of production at producer prices and PP = Payments to producers = PSE – Market Price Support.

*** The Nominal Assistance Coefficient is calculated as follows: NACp = {1/(100 - %PSE)}*100.

Source: OECD PSE database 1999 Edition and own calculations

Estimating the Producer Nominal Protection Coefficient (NPCp) for non-OECD countries

The Producer Nominal Protection Coefficient (NPCp) measures the ratio between the average price received by farmers (at the farm gate), including any payments based on output (PO/ton), and the border price (at the farm gate). I.e. NPCp = (Pp + PO/ton)/Pb, where Pp is the average price received by producers (at farm gate), PO/ton is payments based on output, and Pb is the border price (at farm gate) (OECD 2001). In the non-OECD countries very little if any output-based support is provided to rice producers and so the NPCp's calculated are based on a comparison of producer and border prices.

Vietnam:

Producer price:

The implicit wholesale prices for the period 1997-99 are calculated on the basis of the relationship between the 1995 wholesale price in Table 4.3 and the 1995 retail price in Table 4.4. The conversion of these prices to the farm gate level proceeds in two steps. First of all the prices are converted to wholesale paddy prices by dividing by 1.75. This coefficient is based on information provided in Minot and Goletti (2000) about the margin between the wholesale rice and paddy price in the southern part of Vietnam. The data for the South are used because this is where the bulk of Vietnam's rice exports come from. (The corresponding coefficient for the North would be 1.73.) In order to convert the wholesale paddy price into farm gate paddy prices the conversion factor is 1.04, again using the data for the South. (The corresponding coefficient for the North would be 1.05) The conversion and the final farm gate paddy prices are shown in Table A.10.

Table A.10. Converting wholesale rice prices to farm gate paddy prices for Vietnam (USD/ton)

	Wholesale rice price	Wholesale paddy price	Farm gate paddy price
1997	183	105	101
1998	204	117	113
1999	183	105	101

Reference price:

The average export prices for 1997-99 are calculated by using the rice export quality structure for 1996 given in Table 3.5 and the price quotes provided by the USDA (2001). Hence the prices are adjusted to reflect the prevailing quality structure in a given year. The quality structure for 1996 is used because these are the latest available data at this level of detail. The prices used are given in Table A.11.

Table A.11. Export prices, f.o.b. for Vietnam (USD/ton)

	5% brokens	10% brokens	15% brokens	20% brokens*	25% brokens	>35% brokens
1997	251	243	235	229	224	216
1998	287	280	272	258	244	244
1999	227	222	216	210	205	201**

* No quotes are given for 20% brokens and so the average prices of 15% and 25% brokens are used.
** In lack of a quote this price is calculated based on the average ratio of 25%/35% brokens in 1997/98.
Note: The prices are calculated on a calendar basis.
Source: USDA (2001)

This calculation leads to a quality-adjusted average export price, which is then converted to the farm gate level using the same conversion factors as those used above. The result is shown in Table A.12.

Table A.12. Converting export prices to border prices at the farm gate level for Vietnam (USD/ton)

	Export rice price, f.o.b.	Export prices converted to paddy prices	Border prices measured at the farm gate level
1997	235	134	129
1998	265	151	145
1999	215	123	118

Comparing the average producer price, i.e. the paddy price at the farm gate with the border price measured at the farm gate reveals the following Producer Nominal Protection Coefficient for Vietnam as shown in Table A.13. The paddy producers in Vietnam are indeed being taxed by the prevailing policies (particularly the export quota, the export tax, and the dominant role of the State Trading Enterprises) as is evident by the fact that the coefficient is less than unity.

Table A.13. Producer Nominal Protection Coefficient for Vietnam

1997	1998	1999
0.78	0.78	0.86

Thailand:

Producer price:
Farm gate prices in Thailand are given as shown in the table below.

Table A.14. Farm gate paddy prices in Thailand (USD/ton)

	Farm gate paddy price Bht/ton	Exchange rate Bht/USD	Farm gate paddy price USD/ton
1997	5,472	31.18	176
1998	6,629	41.35	160
1999	5,579	37.88	147

Source: Farm gate paddy prices are from FAS (2001b). Exchange rates are from www.oanda.org.

Reference price:
The calendar year average Thai f.o.b. price for 5% brokens is used as the basis for calculating the reference price based on the USDA (2001) price series. Since the above producer prices are farm gate prices, the border price must be adjusted down to the farm gate level as well. In lack of information on margins and internal transportation costs these prices are adjusted by the same conversion factors as for Vietnam. In other words, the prices are first divided by 1.75 to convert what corresponds to wholesale rice to wholesale paddy prices. Then prices are divided by 1.04 to convert wholesale paddy prices to farm gate prices. The reference price is given as shown in the table below.

Table A.15. Reference price for Thailand (USD/ton)

	Thai average f.o.b. price for 5% brokens	Reference price
1997	304	167
1998	305	168
1999	248	136

Source: Own calculations based on price series from USDA (2001) and conversion factors explained in text.

Table A.16. Producer Nominal Protection Coefficient for Thailand		
1997	1998	1999
1.05	0.95	1.08

China:

Producer price:

Average wholesale market rice prices are available from FAS(2001c) for January 1998, January 1999 and January 2000. These prices are used as the basis of comparison with Chinese f.o.b. prices. The prices are provided for four different qualities. In lack of more specific data as to the quality composition of Chinese rice production, judging by China's export structure by destination (Section 3 and Appendix Table A.2) it is assumed that only 5% is of the Japonica variety. Hence a weighted average is calculated and converted to USD/ton.

Table A.17. Wholesale rice prices in China (USD/ton)

	Early Indica Grade 2	Late Indica Grade 2	Japonica Special	Japonica Standard	Weighted average	Exchange rate RMB/USD	Wholesale price
	RMB/ton				RMB/ton	USD/ton	
1998	1243	1329	2166	1806	1321	8.28	160
1999	1275	1246	2600	2354	1321	8.28	160
2000	1033	1050	2000	1895	1087	8.28	131

Source: Wholesale prices are from FAS (2001c). Exchange rates are from www.oanda.org

Given that the producer prices are available at the wholesale level rather than the farm gate level, and the fact that information about marketing margins and transportation costs are not readily available, these prices will be compared with a f.o.b. price since both prices are at a similar marketing level with the only difference being in terms of the internal transportation costs. As it is argued in OECD (2001) transportation costs exist both between the wholesale and the retail point of consumption as well as between the miller and the port of export, a crude assumption is that these costs offset one another.

Reference price:

Chinese export prices f.o.b. are not readily available. Given that Vietnamese and Chinese rice seem to be competitors on world markets it is chosen to use the Vietnamese f.o.b. prices calculated above as an approximation for Chinese f.o.b. prices (Table A.12, supplemented by an estimate of USD 174 for the year 2000). This yields the following estimates of the Producer Nominal Protection Coefficient for China.

Table A.18. Producer Nominal Protection Coefficient for China

1998	1999	2000
0.60	0.74	0.75

India:

Producer price:

The producer price for India must rely on available data on Government support prices for paddy. These are given on a marketing year basis and are for this purpose adjusted to reflect calendar year prices. The average of support prices for common paddy and grade A paddy are used.

Table A.19. Support prices for paddy in India

	Paddy (common)	Paddy (grade A)	Simple average	Exchange rate, INR/USD	Farm gate paddy price
		INR/ton			USD/ton
1998	4338	4638	4488	41.29	109
1999	4775	5075	4925	43.07	114
2000	5050	5350	5200	44.95	116

Source: Wholesale prices are from FAS (2001n). Exchange rates are from www.oanda.org.

Reference price:

To ensure comparability with e.g. the chosen reference price for Thailand, and in lack of information about the quality composition of Indian rice exports (by percentage of brokens which is how the f.o.b. price series are available), the reference price chosen is the Indian 5% brokens f.o.b. price as given in USDA (2001). These prices are provided in the table below on a calendar basis. Furthermore, in order to obtain a reference price that is comparable with the farm gate paddy price in the table above, the same conversion factors as used for Vietnam are also used for India.

Table A.20. Reference price for India USD/ton

	India average f.o.b. price for 5% brokens	Reference price
1998	281	154
1999	268	147
2000	265*	146

* Based on Jan-Nov 2000 data.
Source: Own calculations based on price series from USDA (2001) and conversion factors explained in text.

This yields the following estimates of the Producer Nominal Protection Coefficient for India.

Table A.21. Producer Nominal Protection Coefficient for India

1998	1999	2000
0.71	0.78	0.79

Pakistan:

Producer price:
Just like for India, the only readily available data are Government support prices for paddy. These are given on a marketing year basis and are for this purpose adjusted to reflect calendar year prices. A weighted average of support prices for IRRI paddy and Basmati paddy are used based on information about the share of paddy rice area dedicated to the premium Basmati varieties.

Table A.22. Paddy support prices for paddy in Pakistan

	Paddy (IRRI)	Paddy (Basmati)	Weighted average*	Exchange rate, PKR/USD	Farm gate paddy price
	PKR/ton				USD/ton
1998	4375**	8250	6390	48.73	131
1999	4583**	8667	6707	51.40	130
2000	5042	9479	7349	53.94	136

* Weighted according to the fact that 52% of rice area in 1999/2000 was dedicated to Basmati rice with the remainder assumed planted to IRRI and similar rice varieties (FAS 2000f).
** Based on 1998/99 support price.
Source: Paddy support prices are from FAO (2001a). Exchange rates are from www.oanda.org.

Reference price:

To ensure comparability with e.g. the chosen reference price for Thailand and India, and in lack of information about the quality composition of Pakistani rice exports (by percentage of brokens which is how the f.o.b. price series are available), the reference price chosen is the Pakistani 5% brokens f.o.b. price as given in USDA (2001). These prices are provided in the table below on a calendar basis. The data available for Pakistan are very scattered and have in some cases had to rely on estimated prices based on an average mark-up over 10% broken rice prices for a given marketing year. Finally, in order to obtain a reference price that is comparable with the farm gate paddy price in the table above, the same conversion factors as used for Vietnam are also used for Pakistan.

Table A.23. Reference price for Pakistan USD/ton

	Pakistan average f.o.b. price for 5% brokens	Reference price
1998	268	147
1999	237	130
2000	199*	109

* Based on Jan-Nov 2000 data.

Source: Own calculations based on price series from USDA (2001) and conversion factors explained in text.

This yields the following estimates of the Producer Nominal Protection Coefficient for Pakistan.

Table A.24. Producer Nominal Protection Coefficient for Pakistan

1998	1999	2000
0.89	1.00	1.25

Indonesia:

Producer price:

The producer prices for Indonesia are calculated as production-weighted annual averages of monthly reportings of prices for dried, unhusked rice (Cere IR-36) in West Java as reported by FAS (2001h). Half of the year's rice production takes place dur-

ing the months January-April, 30% during May-August and the remaining 20% during September-December.

Table A.25. Producer prices in Indonesia USD/ton

	Jan-Apr	May-Aug	Sep-Dec	Production weighted annual average
1997	214	223	154	207
1998	77	73	146	92
1999	150	178	176	169

Source: Own calculations based on monthly producer prices, monthly exchange rates and seasonal production values in FAS (2001h).

Reference price:

In lack of c.i.f. import prices for Indonesia, the calendar year average Thai f.o.b. price for 5% brokens is used as the basis for calculating the reference price based on the USDA (2001) price series. In order to take account of the transport costs from the Bangkok port to the Indonesian border these prices are multiplied by a factor 1.05. There is no available information on the precise size of this margin and hence this number is a "guestimate" based on the observation that for the calculations of reference prices for the PSE estimation, the average Thai f.o.b. price is increased by 1.10 in the Japanese case and the Chinese f.o.b. price by 1.03 in the Korean case (according to the documentation of the OECD 1999 PSE tables). Since the above producer prices must be interpreted as farm gate prices since this is unhusked rice, the border price must then be adjusted down to the farm gate level. In lack of information on margins and internal transportation costs these prices are then adjusted by the same conversion factors as for Vietnam. In other words, the prices are first divided by 1.75 to convert what corresponds to wholesale rice into wholesale paddy prices. Then prices are divided by 1.04 to convert wholesale paddy prices into farm gate prices. The reference price is given as shown in the table below.

Table A.26. Reference price for Indonesia USD/ton

	Thai average f.o.b. price for 5% brokens	Reference price
1997	304	175
1998	305	176
1999	248	143

Source: Own calculations based on price series from USDA (2001) and conversion factors explained in text.

Table A.27. Producer Nominal Protection Coefficient for Indonesia		
1997	1998	1999
1.18	0.52	1.18

The observation that the protection provided to Indonesian rice farmers in 1997 was turned to a tax in 1998 follows nicely the fact that the Indonesian Government imposed a ban on exports of unhusked and milled rice to secure domestic supplies in 1998 whereas in 1999, a time with an unexpectedly large domestic rice harvest, the Government imposed a ban on all rice imports between March and May that year, thereby yet again providing protection of its producers, c.f. section 4.3.1 of the main text.