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The Emerging International Rice Market

- A Case of Diversification, Consumer Preferences and Protection

Sara Forssell

Supervisor:

Yves Bourdet

Abstract

This study evaluate the emerging international rice market by looking at supply and demand, price formation and development, and the extensive protection provided for rice on both national, bilateral and multilateral levels. The findings of this study are that rice is seen as a political good in many Asian countries due to its big impact on economy, society and political stability. Rice production is highly diversified and there are strong consumer preferences and a low degree of substitutability in both production and consumption. Further, even though rice trade has increased since the implementation of the Uruguay Round Agreement on Agriculture, trade in rice is still very limited. Heavy protection and intervention still prevail and result in depressed prices on the world rice market. The thinness of trade results in fluctuating prices which causes instability and is harmful to countries dependent on the international rice market.

List of Abbreviations

AEZ	Agroecological Zones
AFTA	ASEAN Free Trade Area
AMS	Aggregate Measure of Support
ASEAN	Association of Southeast Asian Nations
BULOG	Bureau of Logistics (Indonesia)
CAP	Common Agricultural Policy
CEPT	Common Effective Preferential Tariffs
CMO	Common Market Organization
CVD	Countervailing Duties
DES	Dietary Energy Supply
EAGGF	European Agricultural Guidance and Guarantee Fund
FAO	Food and Agriculture Organisation of the United Nations
FCI	Food Corporation of India
GATT	General Agreement of Tariffs and Trade
HS	Harmonized System Codes
IMF	International Monetary Fund
IRC	International Rice Commission
IRRI	International Rice Research Institute
LAC	Latin America and the Caribbean
LDC	Least Developed Countries
MARD	Ministry of Agriculture and Rural Development (Vietnam)
MFN	Most Favoured Nation
MOFCOM	Ministry of Commerce (China)
MSP	Minimum Support Price
NFA	National Food Authority (Philippines)
NTM	Non-Tariff Measure
PFC	Production Flexibility Contracts
PSS	Price Support Scheme
SPSF	Special Programme on Food Security
STE	State Trading Enterprise
TPDS	Targeted Public Distribution System
TRQ	Tariff Rate Quota

UNCTAD United Nations Conference on Trade and Development
UNGA United Nations General Assembly
USDA United States Department of Agriculture
WTO World Trade Organization

Table of Content	page
List of Tables	7
List of Figures	7
1. Introduction	8
1.1 Purpose	9
1.2 Method	9
1.3 Delimitation	10
1.4 Disposition	10
2. The Rice Economy	11
2.1 Rice Types and Qualities	11
2.1.1 Rice Varieties	11
2.1.2 Quality, Processing and Milling	12
2.2 Rice Ecologies, Climate Zones and Ways of Production	13
2.2.1 Rice Ecologies	13
2.2.2 Climate Zones	15
2.2.3 Ways of Production	16
2.2.3.1 Family Farms	16
2.2.3.2 Commercialized Farms	17
3. The Emerging International Market – Supply	18
3.1 Revealed Comparative Advantage on the Rice Market	24
3.2 Sources of Comparative Advantage in Rice Production	26
4. Demand	29
5. Price Development and Formation	33
5.1 Conclusions	36
6. Regional Agreements and Country Policies Affecting Rice Production and Trade	38
6.1 Regional Integration and Rice – The Association of Southeast Asian Nations (ASEAN)	39
6.1.1 AFTA	39
6.2 China	40
6.3 India	41
6.4 Indonesia	42
6.5 Bangladesh	43

6.6 Thailand	44
6.7 Vietnam	45
6.8. Philippines	46
6.9. Nigeria	46
6.10. The U.S	47
6.11. EU	48
6.12. Conclusions	49
7. Multilateral Liberalization and the International Rice Market	52
7.1 GATT: Agreement on Agriculture	52
7.1.1 Agreement on Agriculture	52
7.1.2 Agreement on Sanitary and Phytosanitary Measures	54
7.1.3 Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries	55
7.1.4 The “Rice Clause”	55
7.2 Conclusions	56
8. Summary and Concluding Remarks	58
8.1 Summary	58
8.2 Concluding Remarks	59
References	61

List of Tables	page
Table 1: Total world production, consumption, exports and imports 2003-2007	18
Table 2: The twelve largest rice producing countries in the world	22
Table 3: The twelve largest rice exporting countries in the world	22
Table 4: Revealed comparative advantage in production	25
Table 5: Highest yield and irrigation	26
Table 6: Yield and irrigation for countries with large production and/or RCA	27
Table 7: The twelve largest rice consuming countries in the world	30
Table 8: The twelve largest rice importing countries in the world	31
Table 9: Indonesia's rice imports and exports 2003-2006	42
Table 10: EU Guarantee expenditure 2004-2006	49
Table 11: Summary of interventions	50

List of Figures

Figure 1: Comparison of world paddy rice production and Asian production	19
Figure 2: Asia's share of world rice production 1961-2005	20
Figure 3: Paddy rice production in the rest of the world 1961-2005	21
Figure 4: Countries with largest farming area	28
Figure 5: Rice imports by region 2003-2007	31
Figure 6: World market prices 1987-2005	34
Figure 7: The export price of Thai 5 % broken 1961-2005	34

1. Introduction

“Rice-growing areas are among the world’s most enduring, environmentally sound, and productive agroecosystems, and increased rice production in recent decades has had a significant impact on poverty reduction”.¹

The characteristics of rice as a product and of its market, makes it an interesting good to study. It is the longest continuously grown cereal crop in the world and is according to the International Rice Research Institute (IRRI) considered: “one of the most important developments in history”.²

Almost three billion people worldwide are dependent on rice for their calorie intake, and farming and milling provides employment to many people in the world. In Asia and the Pacific alone, rice production is employing about 300 million people.³ Rice has a meaning beyond just food supply and employment in Asia, namely it is also seen as a political good due to its massive influence on social, economic and political stability. According to IRRI economist Mahabub Hossain, “The first signs of civil unrest can often be traced back to rising rice prices”.⁴

Due to the importance of rice, year 2004 was declared the International Year of Rice by the United Nations General Assembly (UNGA) in 2002 with the aim of once again turning the attention of the world on rice as an instrument of food security and poverty reduction.⁵

The international rice production is characterized by a high degree of diversification. There are thousands of varieties of rice, several degrees of processing and milling, and a large amount of rice products. Each type of rice can be of many different qualities and therefore classified and priced differently.

The consumption of rice is characterized by strong preferences and a low degree of substitution. Different countries, and in some cases areas within countries, only consume specific types of rice.

¹ IRRI, Medium Term Plan 2008-2010 p. 22

² IRRI, Basic Facts About Rice row 23-24

³ FAO, 21st Session of the International Rice Commission (2006) p. 18

⁴ Cantrell (1999) p. 1

⁵ FAO, 21st Session of the IRC (2006) p. 1

The international trade in rice is slowly increasing but remains very limited in relative terms. Only seven percent of total consumption is traded on the world market. Rice trade, production and consumption are subject to interventions and heavy protection; multilateral, bilateral and national, and attempts to liberalize the rice sector have not been very successful so far. Protection hinders trade, lead to inefficient resource allocation and depresses world prices. Due to the thinness of trade, prices on rice are highly fluctuating. This creates uncertainty for many rice-dependent countries worldwide.

1.1 Purpose

Since rice is such an important good, the purpose of this study is to explain the reasons behind the thinness of trade in rice and the consequences. This will be done by looking at the characteristics of the rice economy and analyze the emerging international market. Countries advantages in production will be evaluated and the effect of agreements and protection on the rice will be analyzed.

1.2 Method

A description of the structure and the characteristics of the rice economy will be presented with the purpose of showing the high diversification of production and the low substitutability in consumption. The emerging rice market is analysed through trade statistics, and data on production and consumption. The data is mostly collected from IRRI and USDA. Balassas' method of revealed comparative advantages will be used to help evaluate the international specialization, together with several other indicators. To show the fluctuations in prices, time-series data for different types of rice will be presented. To be able to illustrate the large amounts of protection that the rice sector is enjoying and to highlight the complications for trade, both national, bilateral and multilateral agreements and policies concerning rice will be analyzed using data from mostly WTO and ASEAN. Information and data used in this study are mostly collected from independent organizations such as the WTO, UN and IRRI, due to that many countries view rice as a critical good which makes it a sensitive issue. Other sources such as USDA have been used due to its updated data base and regular monitoring of the development on the rice market etc.

1.3 Delimitation

Since Asia is the major supplier of rice and represent most of the demand, Asia will be the main focus of this paper. Other regions and countries will be included when relevant. Further, the major rice producing countries are engaged in several free trade agreements but only the AFTA agreement will be evaluated. Due to lack of data, generalizations will be done. Through out this paper, rice will refer to all types of rice if not further specified.

1.4 Disposition

The study is organized as follows; Section 2 describes the characteristics of the rice economy. This will be followed by an analysis of the supply side of the emerging international rice market in section 3. After analyzing supply, demand will be analyzed in section 4. Section 5 is devoted to an overlook of the price formation and development and an analysis of the reasons behind/and consequences of price fluctuations. Section 6 goes through the AFTA agreements and selected country policies that affects production and trade, followed by section 7 that present multilateral agreements and its implications for rice trade and liberalization. Section 8 summarizes the findings and the conclusions of this study.

2. The rice economy

The history of domesticated rice i.e. rice cultivated by humans (the opposite of wild rice), has long been debated. Rice has its origin in South and Southeast Asia; eastern India, Myanmar, Thailand, Laos, northern Vietnam and southern China. In Southeast Asia, the earliest credible evidence of rice domestication has been found in Korat, Thailand, and is dated to be at least 6000 years old.⁶ In the middle and lower part of the Yangzi River Valley in China there are findings of rice-usage by humans that dates back to 11000-12000 B.C, but there is no consensus whether these findings represent domesticated and cultivated rice, if it is wild rice that has been cultivated or even just brought from the wild.⁷

The purpose of this section is to show the diversification in rice production. First, there will be a description of the characteristics of rice starting with rice types and qualities. This will be followed by an overview of the different climate zones and ecologies in which rice is grown. Last, different categories of rice farms and their effect on rice production will be described.

2.1 Rice types and qualities

The international rice trade has a high degree of diversification due to the large amount of different rice varieties and rice products on the market. The different types of rice can be of different qualities, degrees of processing and milling.

2.1.1 Rice Varieties

The rice-plant is a type of grass whose grain is what we call rice. The rice takes between 90 to 200 days to mature and there exist about 120 000 different types of rice, both cultivated and wild varieties. In the International Rice gene bank at the International Rice Research Institute (IRRI) there are more than 100,000 rice accessions stored.⁸ Differences between species are based on characteristics such as biotic factors; productivity, resistance to disease and insects, and so called non-biotic

⁶ IRRI, Basic Facts About Rice

⁷ Sweeney, McCouch (2007) p. 953

⁸ IRRI, April 2002 Press Release

factors, toleration of cold and drought etc. and many other variables.⁹ Cultivated rice includes two main species; *Oryza sativa* which is grown in Asia and the African *Oryza glaberrima*. The two most common cultivars are *O. sativa indica* which originated in India and *O. sativa japonica* which has its origin in the eastern part of Asia.¹⁰ Rice can be divided into different groups depending on its characteristics and is usually classified after the shape of the grain and its kernel form.¹¹ Rice is divided into long-, medium- and short-grain varieties, where long-grain rice is usually longer than 6.2 millimetres¹² or about three times as long as it is wide. Medium-grain rice is approximately 2.1 to 2.9 times as long as it is wide. And last, the category short-grain rice is less than twice as long as it is wide.¹³

Rice can be divided into different sub-groups such as aromatic rice which includes types of rice with strong tastes such as jasmine and basmati, which are both long-grain and non-glutinous. Another group is glutinous rice, also called sticky rice, which contains a high degree of starch and of which there are both long- and short-grain varieties.¹⁴

Different varieties of rice are grown in different areas and are also consumed in different parts of the world. *O. sativa japonica* is grown in example Japan, Italy and Spain and is also the type of rice strictly preferred in Japan. Jasmine rice is only grown in Thailand and is the preferred type of rice consumed there.¹⁵ This consumption pattern is seen in many places, especially in Asian countries.

2.1.2 Qualities, processing and milling

Rice that is harvested in the field and sold without further processing is called paddy or rough rice and has both the husk and the bran layers left. If the husk is removed, it is called brown rice. Rice that has had both the husk and the bran layer removed is called white rice or milled rice.¹⁶

After the rice has been milled, there are different measures of quality and countries have different standards. The most common measure of quality is the

⁹ UNCTAD, Rice Quality

¹⁰ UNCTAD, Characteristics

¹¹ USDA, Rice Quality Categories

¹² Wailes (2005) p. 178

¹³ USDA, Rice Quality Categories

¹⁴ IRRI, Frequently Asked Questions

¹⁵ IRRI, Frequently Asked Questions

¹⁶ Wailes (2005) p. 178

percent of broken kernels, but it also depends on chalkiness, seeds (such as heat-damaged and paddy kernels), colour and milling.¹⁷ Depending on these variables, rice is classified as different quality types. High-quality rice is usually categorized as rice with less than ten percent broken kernels, medium-quality rice has 15-20 percent broken kernels and low-quality rice has 20 percent and up.¹⁸

Different kinds of processing also occur. There is parboiled rice, also called converted or pre-fluffed rice, which is steamed under pressure before milling so that all the nutrients from the bran layer are forced into the rice grain.¹⁹

2.2 Rice ecologies, climate zones and ways of production

Rice is grown on all continents (except Antarctica) and in 114 countries worldwide.²⁰ Different varieties have acclimatized to grow in different areas and climate zones. There are also rice types adapted to grow under certain types of conditions especially dependent on certain water and land resources. Further, different production methods are only compatible with certain types of rice.²¹

2.2.1 Rice ecologies

Rice is a very flexible plant and different types can be grown in many highly different environments. Rice grows in four different types of ecologies; irrigated, upland, rainfed lowland and flood-prone areas. The most common ecology and also the highest yielding one, with yields from three to nine tons per hectare, is irrigated rice fields.²² Irrigated areas are characterized by flat, enclosed fields that have a secure water supply and control for usually more than one crop per year. Irrigated rice is grown on 81 million hectares and make up about 55 percent of the total rice area in the world and produces about 67 percent of all rice.²³ Asia is the main producer of irrigated rice and cultivates an area of 74 million hectares which is about 90 percent of the total world rice area. In Latin America and the Caribbean (LAC) 60 percent of

¹⁷ USDA, Standards for Milled Rice

¹⁸ UNCTAD, Rice Quality

¹⁹ IRRI, Frequently Asked Questions

²⁰ IRRI, Basic Facts About Rice

²¹ Pingali, Hossain and Gerpacio (1997) p. 13

²² IRRI, Basic Facts About Rice

²³ IRRI, Basic Facts About Rice

the production comes from irrigated areas²⁴ whilst in USA, EU and Australia all rice farming areas are irrigated.²⁵

Upland rice is grown on flat to steep fields with very diverse farming systems. Most of the upland farmers are very poor and grow traditional rice varieties without the use of chemical fertilizers etc. Upland rice is grown on 19 million hectares of which 10.5 million, 60 percent, is in Asia.²⁶ In Latin America 3.7 million hectares are grown and in Africa, where upland farms are the most common rice ecology,²⁷ about 2.8 million hectares are cultivated.²⁸ Rice grown in upland areas has very low yield and are usually subject to problems such as soil erosion and degradation. Lately, upland areas with rice cultivation in Asia have been declining.²⁹

Rainfed lowland rice is grown on flat to sloping, enclosed fields. The areas are subject to noncontinuous flooding of different depths and durations. Rainfed rice is grown on about 39 million hectares and make up 25 percent of the total rice area and stands for 17 percent of total production. Most of the rainfed lowland areas are situated in South and Southeast Asia.³⁰ Rice farms in rainfed lowland areas usually belong to very poor people that have small family farms.³¹

Flood prone areas are characterized by uncontrollable flooding. Total flood prone rice area is about 11.4 million hectares of which 10 million, 88 percent, are grown in South and Southeast Asia around the deltas of Mekong, Irrawaddy and Ganges. Even though most of the flood prone areas in the world are found in South and Southeast Asia, but they only make up about 3.2 percent of the total Asian rice production.³² Rice in flood prone areas is grown on flat, sloping or low fields which are subject to long and deep flooding during crop growth. There are three types of flood prone areas; deepwater, floating and tidal wetlands. They can endure flooding of depths between 50-400 centimetres and tidal wetland rice can even survive shorter periods of saltwater flooding.³³

²⁴ FAO, 21st Session of the IRC 2006, p. 16

²⁵ IRRI, World Rice Statistics

²⁶ IRRI, Basic facts About Rice

²⁷ FAO, 21st Session of the IRC 2006, p. 17

²⁸ IRRI, Program Report for 1998

²⁹ Pingali, Hossain and Gerpaci (1997) p. 16

³⁰ Pingali, Hossain and Gerpacio (1997) p. 15

³¹ IRRI, Basic Facts About Rice

³² Pingali, Hossain and Gerpacio (1997) p. 16

³³ IRRI, Basic Facts About Rice

2.2.2 Climate zones

Rice can be grown in diverse environments, from cold and temperate areas in Europe, US and Nepal to hot areas in Australia and in the deserts of Egypt.³⁴ Different climates provide different prospects for growing rice. Factors such as temperature, humidity, solar radiation and rainfall will all have an impact on the growth. Even though rice can grow in such diverse environments, it grows much better in warm and wet areas.³⁵ The Food and Agriculture Organisation of the United Nations (FAO) have developed the concept agroecological zones (AEZs) which is a classification and a program that takes into account all aspects of land resources such as soil, climate, landform and water supplies etc. The program was created to help planning rational land-use and to see what areas are best suited for different crops.³⁶ In Asia, there are seven dominant agroecological zones:³⁷

AEZ 1: Warm arid and semi-arid tropics (central/southern India)

AEZ 2: Warm subhumid tropics (west coast and eastern India, Thailand, Myanmar)

AEZ 3: Warm humid tropics (Bangladesh, Cambodia, Philippines, Malaysia, Indonesia)

AEZ 5: Warm arid and semi-arid subtropics with summer rainfall (north western India)

AEZ 6: Warm subhumid subtropics with summer rainfall (Nepal, northeast India, central eastern China)

AEZ 7: Warm-cool humid subtropics with summer rainfall (east coast China)

AEZ 8: Cool subtropics with summer rainfall (Japan, northern China)

The differences in the importance of rice as a crop and in the average rice yield between the different AEZs are large. In warm subhumid and humid tropics (AEZ 2 and 3) and warm-cool humid subtropics (AEZ 7), rice is the most important foodcrop. According to IRRI, the subhumid tropics have a potential in production of foodgrain per hectare that is almost six times higher than the semi-arid tropics.³⁸

³⁴ IRRI, Frequently Asked Questions

³⁵ UNCTAD, Characteristics

³⁶ FAO, GEAZ Frequent Answered Questions

³⁷ Pingali, Hossain and Gerpacio (1997) p. 17

³⁸ Pingali, Hossain and Gerpacio (1997) pp. 18-19

Rice can also grow in cooler areas such as in Japan, Europe and the former USSR. These areas are classified as cooler subtropics and temperate areas and are best suited for medium and short grain rice varieties.³⁹

The AEZs in Asia and other places are not static. They are changing due to global changes in the climate. Due to increasing temperatures, rice production in temperate areas might benefit but it will have severe effect on the rice production in the other agroecological zones in which the majority of rice is grown. According to IRRI, changing temperatures and climate zones will require more rice research to improve the rice ability to manage and survive in changing environments.⁴⁰

2.2.3 Ways of production

Production of rice can be divided into two groups. The first group which makes up the larger part of rice production are small farms usually run by a family which mainly produce for their own needs. The other group consists of the large commercialized farms which produce rice for the markets.

2.2.3.1 Family farms

Most farms in Asia as well as in Africa are small family farms. The smallest farms have an average size of less than half a hectare and are found in China, Indonesian Java and in the Red River delta in Vietnam. Farms with an average area less than one hectare are found mostly in Bangladesh, eastern India and in the Mekong Delta in Vietnam. In Java, Sulawesi and Sumatra in Indonesia, average size is about one hectare.⁴¹ Farms with the size of one to two hectares are the normal size in most other parts of Asia, except Thailand, Myanmar, Cambodia and the state of Punjab, India. In those areas, the average sizes of the farms are more than two hectares.⁴² According to the International Rice Commission (IRC), the sizes of the farms in Asia and the Pacific are decreasing. The reasons for this are multiple; leasing, inheritance, sale and redistribution by the states.⁴³

The small sizes of the family farms results in small surpluses after satisfying family needs. Therefore only limited amounts reach the market. Depending on natural

³⁹ IRRI, Basic Facts About Rice

⁴⁰ IRRI, Medium Term Plan 2008-2010

⁴¹ WTO, Indonesia: Trade Policy by Sector, p. 69

⁴² Hossain (2004) pp. 2-3

⁴³ FAO, 21st Session of the IRC 2006, p. 18

conditions such as flooding and droughts etc, surpluses and shortages vary between different regions, harvests and years. These fluctuations create large variations in the amount of rice available on the market and variations in both domestic and international prices.⁴⁴

2.2.3.2 Commercialized farms

In contrast to the family farms, the commercialized farms produce rice with the goal of profit maximization. It leads to a greater specialization and market oriented production. Commercialized farms are mostly found in Eastern Asia, Australia, United States, Southern Europe and some areas of South America. These types of farms are predominantly using high yielding irrigated areas for their rice production. Commercialized farming is income oriented and therefore its production is also more responsive to the market.⁴⁵

⁴⁴Hossain, (2004) p. 3

⁴⁵ Pingali, Hossain and Gerpacio (1997), pp. 160-161

3. The emerging international market – Supply

Rice is produced in more than 100 countries and consumed worldwide. It is one of the most important food grains in the world. Hence, one would think that there is a large international trade in rice but this is not the case. Only seven percent of total production is exported to the world market. Compared with other goods, this is very low. Of the total consumption of wheat 18 percent is traded. The figures for corn and soybeans are 12 and 35 percent respectively.⁴⁶ Table 1 shows the development of rice production, consumption and trade between the years 2003-2007. The reason why consumption is higher than production is that some countries have stocks of rice, which they have decreased in recent years due to high demand and high prices.

Table 1: A comparison of the total world production, consumption, imports and exports of milled rice measured in thousand tons.

	2003/04	2004/05	2005/06	2006/07	2007/08
World Total Production	391510	400432	417551	417649	420480
World Total Consumption	412985	408090	415450	418854	423933
World Total Exports	27184	29009	28888	28915	29847
World Total Imports	27184	29009	28888	28915	29847

Source: USDA⁴⁷

The most important development in rice history in more recent time is the Green Revolution. The Green Revolution in Asia started in 1966 when IRRI introduced a new rice variety called IR8. This new rice was developed for irrigated areas and favourable rainfed lowlands⁴⁸ and was the first modern rice variety with a very high yield. After the introduction it spread rapidly and new varieties were developed with the IR8 as origin⁴⁹. Rice production grew fast and in just three decades, rice output in Asia almost doubled. Of this increase, 70 percent was due to the new rice varieties and more intensive farming while 30 percent of the increase was

⁴⁶ Wailes (2005) p. 1

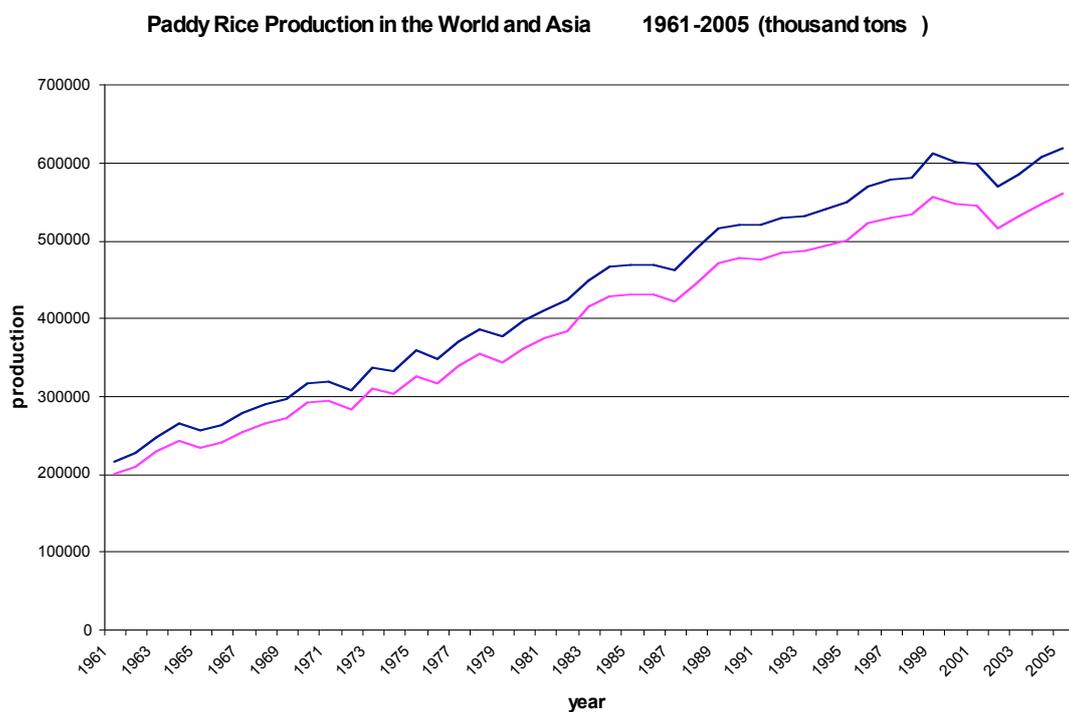
⁴⁷ USDA, World Rice Trade

⁴⁸ Pingali, Hossain and Gerpacio (1997) p. 13

⁴⁹ IRRI October 2004 Press Release

due to increased farming area. The rice production managed to grow faster than the population and many countries became self-sufficient⁵⁰.

The increase in production continued until the beginning of the 2000s when the production experienced a slowdown. After a few years of diminishing output, rice production is increasing again. As can be seen in figure 5.2.2 (where the blue line represents the world and the pink Asia), the total rice production is increasing and so is the production in Asia. Asia has always been the largest rice producer and therefore the total production follows the development in Asia.



Source: IRRI⁵¹

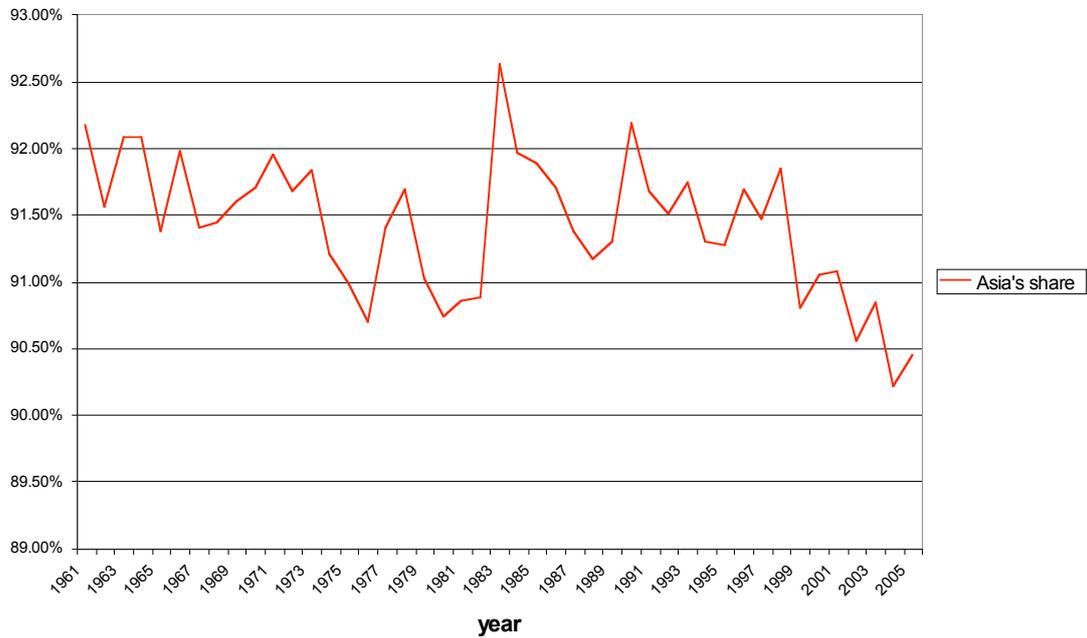
Figure 1: Comparison of paddy rice production in Asia and the total world production

There is a clear geographic concentration of rice production; most rice is produced in Asia. In 1983 Asia reached its highest share of total rice production with 92.63 percent of world output. Figure 2 below shows the development of Asia's share of total production measured in percentages. It can be seen that there has been some fluctuations but that the share has been somewhere between 91 and 92 percent on average until the past years when Asia's share has been decreasing.

⁵⁰ Pingali, Hossain and Gerpacio (1997) p. 12

⁵¹ IRRI, World Rice Statistics

Asia's share of world rice production

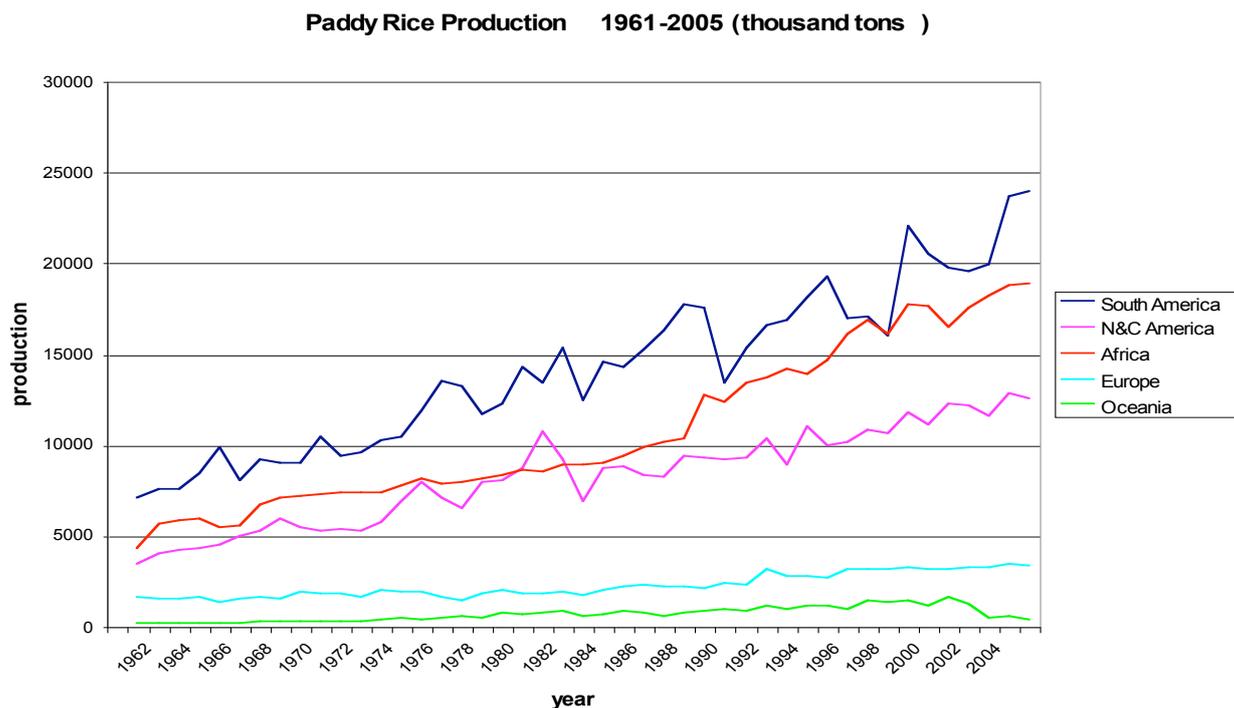


Source: IRRI⁵²

Figure 2: Asia's share of world rice production 1961-2005

Note that the scale of the y-axis is very large. Even though variations in share of production only span over a few percent, this represent large variations in quantities. Since the beginning of the 1990s, Asia has experienced a more or less declining trend in its total share of rice production due to increasing production in other parts of the world which can be seen in figure 3 below.

⁵² IRRI, World Rice Statistics



Source: IRRI⁵³

Figure 3: Paddy rice production in the rest of the world between 1961- 2005 (thousands tons).

Figure 3 shows the development of the rice production in other parts of the world other than Asia. A region in the world where rice production has increased is South America, who is the second largest rice producer in the world after Asia. Africa and North and Central America have also experienced increasing production.

Brazil is the largest rice producer in South America with over 50 percent of the production. Colombia and Peru are the second and third largest producers and have increased their production the most in percentages since the beginning of the 1960s. Africa has had a large increase in rice output and is now the third largest producer after surpassing North and Central America in the beginning of the 1980s. Egypt is the largest producer in Africa together with Nigeria, Madagascar and Côte d'Ivoire. Egypt has had the largest increase in output in absolute terms; Nigeria has had the largest production increase in relative terms. In Africa there are possibilities of increasing production even further due to the large land resources, as for instance

⁵³ IRRI, World Rice Statistics

large river deltas well suited for rice farming. USA is the largest producer of rice in North and Central America with about 80 percent of the production.⁵⁴

Table 2: The 12 largest rice producing countries in the world for the year 2005/2006 and the projections for 2007/2008.

Largest Rice Producers (Milled) 2005/2006				Largest Rice Producers (Milled) 2007/2008 (projected)			
1	China	126414	1	China	129500	30.8%	
2	India	91790	2	India	92000	21.9%	
3	Indonesia	34959	3	Indonesia	34000	8.1%	
4	Bangladesh	28758	4	Bangladesh	28500	6.8%	
5	Vietnam	22772	5	Vietnam	23261	5.5%	
6	Thailand	18200	6	Thailand	18400	4.4%	
7	Myanmar	10440	7	Myanmar	10660	2.5%	
8	Philippines	9820	8	Philippines	10010	2.4%	
9	Japan	8257	9	Brazil	7990	1.9%	
10	Brazil	7874	10	Japan	7943	1.9%	
11	US	7113	11	US	6329	1.5%	
12	Pakistan	5547	12	Pakistan	5300	1.3%	

Source: USDA⁵⁵

Table 2 shows the development in milled rice production, where production is measured in thousand metric tons and each countries percentage of total rice production. As can be seen, there has been almost no changes in the order between the countries during the two years, only changes in quantities. China and India produces together more than 50 percent of total production. The twelve largest producers represent 89 percent of total production. Brazil and the US are the only non-Asian countries among the largest producers.

An interesting fact about rice is that there is no clear connection between the largest producers and the largest suppliers to the world market. In table 3 below, the largest exporting countries are presented.

Table 3: 12 largest exporting countries of milled rice.

Largest Rice Exporters 2005/2006				Largest Rice Exporters 2007/2008 (projected)			
1	Thailand	7376		1	Thailand	9000	30.2%
2	Vietnam	4705		2	Vietnam	5000	16.8%
3	India	4537		3	India	3400	11.4%
4	Pakistan	3579		4	USA	3400	11.4%

⁵⁴ IRRI, World Rice Statistics

⁵⁵ FAS: World Rice Production, Consumption, and Stocks

5	USA	3307		5	Pakistan	3200	10.7%
6	China	1216		6	China	1600	5.4%
7	Egypt	958		7	Egypt	1100	3.7%
8	Uruguay	812		8	Uruguay	800	2.7%
9	Argentina	487		9	Argentina	500	1.7%
10	Cambodia	350		10	Cambodia	450	1.5%
11	Brazil	291		11	Japan	200	0.7%
12	Japan	200		12	Guyana	180	0.6%

Source: USDA⁵⁶

Compared with the amounts of rice that are being produced, the exported quantities are small; only seven percent of total production. Thailand is by far the largest exporter, exporting almost twice as much as the second largest exporter Vietnam. Together, they supply almost 50 percent of total world exports. The five largest exporting countries supply 80.5 percent of the rice to the world market. Both Thailand and Vietnam exports long grain rice which is the main type traded. Only very few countries produce medium and short grain rice varieties for export and they are high cost producers such as Egypt, the US, Japan and Australia. There are other areas, such as parts of China, that have the potential for medium grain production but there have not been enough economic incentives for production in these areas due to the low prices.⁵⁷ Of the total export, 75-80 percent is made up by the long grain *O. sativa indica*, 10-12 percent by medium and short grain *O. sativa japonica*, aromatic rice around 10 percent and the rest is made up by glutinous rice.⁵⁸

There are a very limited number of large exporters and there are large gaps between them. This shows that only a few countries have the capacity to produce enough surpluses to export large quantities. China for example, is the biggest producer of rice but only exports about one percent of its total production due to its massive domestic market. The same pattern can be seen in many Asian countries and this brings complications for the evaluation of advantages in production which is partially done by the measurement of revealed comparative advantages.

⁵⁶ FAS: World Rice Trade

⁵⁷ Wailes (2004) p. 3

⁵⁸ Braun, J. von, Soledad Bos, M (2005) p. 9

3.1 Revealed Comparative Advantage on the Rice Market

To see if a country has comparative advantages in the production of a good, a measurement called revealed comparative advantages (RCA) can be used. The method was developed by Balassa and looks like follows⁵⁹:

$$RCA_{ij} = \frac{(X_{ij} / X_{iw})}{(X_j / X_w)}$$

Where:

X = Export

i = good or sector of export

j = country

w = the world

The measurement reveals if the country has comparative advantage in the sector or a good by looking at the country's export in that good divided by the total world export of the good i.e. in this study countries relative share or total world rice exports. Then divide the result by the country's share of total world exports. If the final result has a value larger than one, the country has comparative advantage in the production and if the value is less than one, it has not. In the following calculations of RCA, rice export values from 2004⁶⁰ are being used together with total export values for 2006,⁶¹ due to lack of data for more recent years.

As table 4 below shows, only a few countries out of the 114 that produce rice has a comparative advantage in the production according to the method. Of the producing countries in the EU only Italy has a RCA in the production but for the EU as a whole, there is no RCA. As argued above, China has no RCA in production due to its small size of rice exports in comparison with its total production, but also due to its relatively large share of total world exports.

⁵⁹ De Benedictis and Tamberi (2001) p. 324

⁶⁰ From IRRI, World Rice Statistics

⁶¹ From WTO Statistical Database and CIA's World Fact Book

Table 4: Revealed comparative advantages in rice production.⁶²

	Country	RCA
1	Guyana	94.059
2	Uruguay	46.614
3	Pakistan	44.051
4	Vietnam	28.695
5	Thailand	23.473
6	Senegal	13.804
7	Egypt	10.586
8	India	10.256
9	Myanmar	7.214
10	Argentina	1.851
11	US	1.103
12	Italy	1.009
13	Spain	0.733
14	EU	0.668
15	China	0.295

Guyana has the largest RCA even though they are only the twelfth largest exporter. This depends on that their rice exports, even though small compared with other countries, constitutes a large share of their total exports and that their total exports only is a small fraction of the total world exports. Due to these reasons it is clear that RCA can not be used as the sole measure for comparative advantages in rice production. Therefore, other factors such as land and water resources, yields, etc. have to be taken into account as well.

Another problem with using the method of RCA as a measurement of comparative advantage in rice production is that the rice sector is subject to heavy protection and extensive interventions. This distorts the market and affects trade and has to be taken into account when evaluating the calculations of RCA. Interventions and support can make it possible for a country, with a comparative disadvantage in the production of a good, to produce and even export anyway. When calculating RCA from trade statistics, this has to be kept in mind.

⁶² Due to lack of data, calculations could not be done for all countries.

3.2 Sources of Comparative Advantage in Rice Production

Table 5: Highest yield and irrigation.

	Country	Yield	% Irrigated
1	Egypt	9.54	100
2	US	7.44	100
3	Greece	7.24	100
4	Spain	7.23	100
5	Peru	6.9	80
6	Australia	6.73	100
7	Japan	6.65	100
8	Uruguay	6.6	100
9	Rep. of Korea	6.57	86
10	Turkey	6.56	na
11	Italy	6.4	100
12	Argentina	6.34	na
13	China	6.26	93
14	EU	5.94	100
15	France	5.73	100

Data on yield for 2005 and irrigation last data available.⁶³

In table 5 the fifteen countries that exhibit the highest average yields are presented together with data over their share of irrigated area out of total rice farming area. There is a strong relationship between high yield and high percentage of irrigated land since this, due to water supply, renders several crops per year possible. Yield is also a result of fertilizer and pesticides use etc. which usually is not so effective in less developed countries. Notable is that most the countries are cooler subtropics and temperate areas, which has lower potential for rice growth, and that are suited for lower yielding medium and short grain rice varieties.

Further are developed countries with a high degree of mechanization in production well represented in table 5. The only Asian countries are Japan, Republic of Korea and China of which only China has any considerable export. From the above table, some of the possible reasons behind the RCA (except for protection) for Egypt, the US and Italy might be the high yield and that all their rice farming areas are irrigated.

⁶³ IRRI, World Rice statistics

Table 6: Countries with large production or RCA.

	Country	Yield	% Irrigated
1	India	3.01	50
2	Indonesia	4.57	54
3	Bangladesh	3.64	32
4	Vietnam	4.95	53
5	Thailand	2.65	20
6	Myanmar	3.91	30
7	Philippines	3.65	67
8	Brazil	3.34	19
9	Pakistan	2.94	100
10	Cambodia	1.95	16
11	Guyana	3.86	71
12	Senegal	2.9	43

In table 6 countries that have either a large production and/or a large RCA in production, are included. It can be seen that they neither have a high yield nor a large share of irrigated area except for Pakistan. Yet they are able to produce large quantities of rice and rice for export. If these countries could improve their yield to the same levels as the countries included in table 5, this

would result in a large increase in total production. Increasing the yield in countries like Thailand, who has one of the lowest yields in Asia, would mean significantly larger amounts of rice available for export to the world market. Increasing irrigation would be preferable in many Asian countries, because it would increase yield and production. Another important reason for increasing irrigation is that it would decrease rice productions dependence and sensitivity of weather conditions.⁶⁴

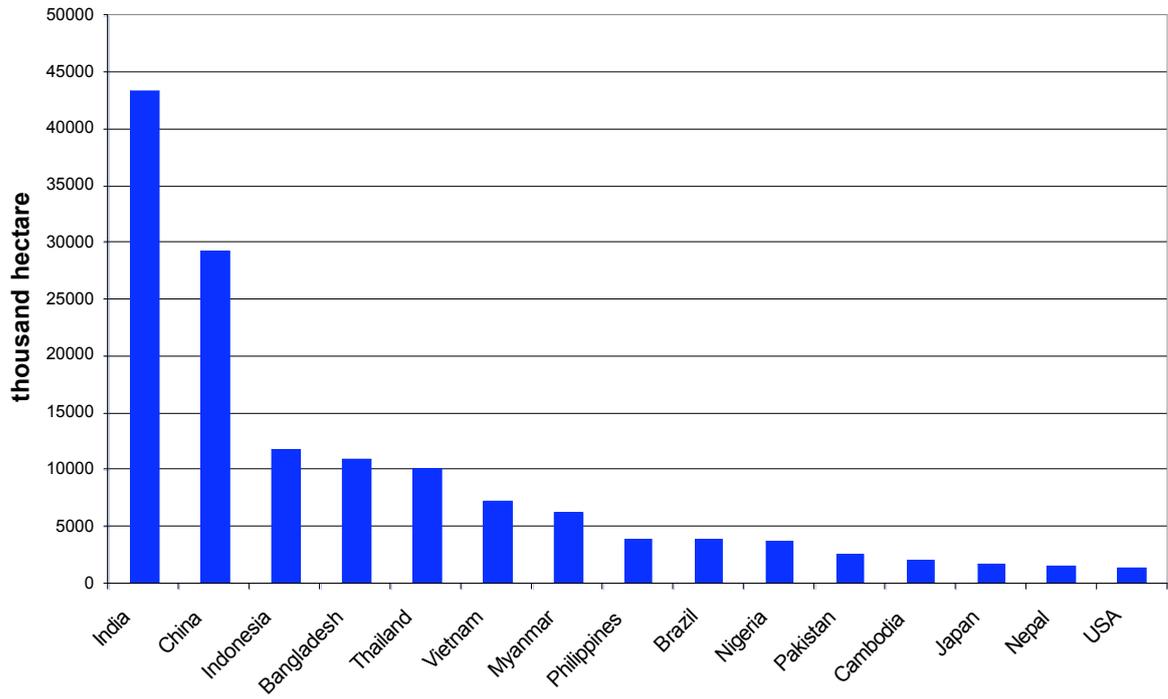
Table 6 shows that to explain comparative advantages for the low yielding countries, especially the Asian ones, other variables has to be taken into account. Preferable climate is already mentioned but another very important variable is total area devoted to rice production. According to IRRIs figures for 2005, total world area was 153 953 thousand hectares of which about 88 percent were located in Asia.⁶⁵ In figure 4 below, the countries with the largest rice farming areas are ranked. From this figure the conclusions can be made that one major reason behind the large production of rice in Asia are the large areas devoted to rice production.

Looking at figure 4 below, it is clear that compared with India, the US only devotes a small area to rice production. But from table 3 earlier, we could see that India and the US exports the same quantity of rice. This highlights that there are large differences in the production in many ways, between the two countries. Further it also shows that there are also differences in consumption.

⁶⁴Braun, J. von, Soledad Bos, M (2005) p. 11

⁶⁵IRRI, World Rice Statistics

Rice Production Area



Source: IRRI⁶⁶

Figure 4: Countries with the largest rice farming areas.

⁶⁶ IRRI, World Rice Statistics

4. Demand

Rice is one of the most important cereal crops in the world. More than half of the total world population uses rice as staple food and has rice as their main source of calories and proteins. The average intake of calories from rice is about 700 calories per day and person for almost three billion people world wide, of whom most live in developing countries and LDCs.⁶⁷ In Asia rice provides the major part of people's calorie intake, from 30 to 76 percent.⁶⁸

Rice is traditionally the main food grain in Asia but has also become very important in sub-Saharan Africa and in Latin America and the Caribbean (LAC). In LAC, rice has increased in importance and is now the staple crop that is the main source of calories, especially for the poor. In sub-Saharan Africa, the importance of rice has also increased sharply in recent years and rice has now become the base in the food intake for millions of people.⁶⁹ Of the world's population total dietary energy supply (DES), rice constitutes 20 percent. For developing countries rice constitutes 25 percent and for the developing countries in Asia, it constitutes 30 percent of the DES.⁷⁰

Due to the Green Revolution which resulted in increased production, increased rice consumption were made possible. The average per capita consumption of rice was 25 percent higher in 1993 compared to 1965.⁷¹

Rice is an inferior good which means that demand of rice decrease as incomes increase. This pattern can be seen in the high-income countries in East Asia such as Japan and Republic of Korea. Demand for rice is also decreasing in Southeast Asia, mostly in the urban areas. However, South Asian demand is still increasing as incomes are increasing and due to a large population growth.⁷² Other areas which are experiencing increasing demand for rice are Sub-Saharan Africa and Latin America and the Caribbean.

⁶⁷ FAO, Field Food Crops: Rice

⁶⁸ Cantrell (1999) p. 1

⁶⁹ FAO, 21st Session of the IRC (2006) p. 7

⁷⁰ FAO, 21st Session of the IRC(2006) pp. 14, 17

⁷¹ Pingali, Hossain and Gerpacio (1997) p. 12

⁷² Pingali, Hossain and Gerpacio (1997) p. 7

Table 7 shows the consumption of the largest rice consuming countries in the world, in thousands of tons. The largest consuming countries are almost the same as the largest producers except for a few countries. Notable exceptions are Brazil and Nigeria which are the only non-Asian countries.

Table 7: The consumption of rice (milled), for the 12 largest consuming countries in the world, for year 2005/2006 and projected consumption for 2007/2008.

Largest Rice Consumers 2005/2006			Largest Rice Consumers 2007/2008 (projected)			
1	China	128000	1	China	129100	30.5%
2	India	85088	2	India	88800	20.9%
3	Indonesia	35739	3	Indonesia	36150	8.5%
4	Bangladesh	29000	4	Bangladesh	29800	7%
5	Vietnam	18392	5	Vietnam	18717	4.4%
6	Philippines	10722	6	Philippines	12060	2.8%
7	Myanmar	10560	7	Myanmar	10700	2.5%
8	Thailand	9544	8	Thailand	9600	2.3%
9	Brazil	8974	9	Brazil	8900	2.1%
10	Japan	8250	10	Japan	8150	1.9%
11	Republic of Korea	4766	11	Republic of Korea	4749	1.1%
12	Nigeria	4350	12	Nigeria	4700	1.1%

Source: USDA⁷³

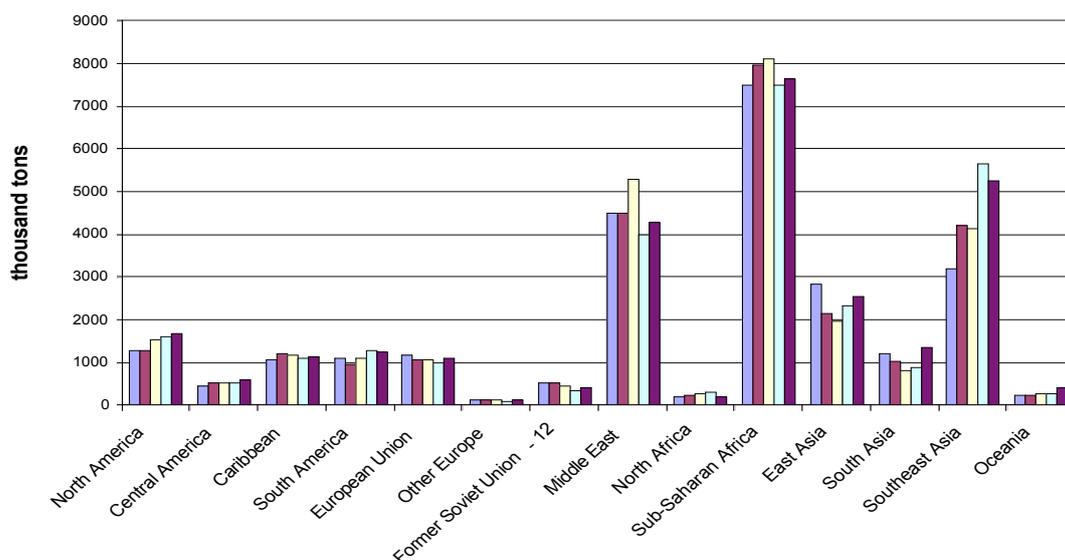
The Asian countries represent almost 90 percent of total consumption but only around 30 percent of the imports. Since most of the Asian countries are self-sufficient in rice production or are trying to achieve self-sufficiency, most of them can meet their demands with domestic production. (Exceptions are Indonesia and the Philippines which can be seen in table 8.) The largest rice importing region in the world is Sub-Saharan Africa, where rice consumption continues to increase faster than production⁷⁴. In Nigeria, rice demand has increased with around 10 percent annually since the 1970s.⁷⁵ Second largest importing region is the Middle East where Saudi Arabia, Iran and Iraq are large importers.

⁷³ FAS: World Rice Production, Consumption, and Stocks

⁷⁴ FAO, 21st Session of the IRC (2006) p. 1

⁷⁵ Akande (2003) p. 1

Rice Imports by Region



Source: USDA⁷⁶

Figure 5: Rice Imports by region for the years 2003-2007

Table 8 shows the development of individual rice imports, measured in thousand tons. The table exhibit large fluctuations in imports. According to USDAs projections for 2007/2008 Indonesia will be the third largest importer in the world whilst for 2005/2006, Indonesia is not even among the 12 largest importers.

Table 8: The largest rice importing countries in the world 2005/2006 and projected for 2007/2008 (thousand metric tons).

Largest Rice Importers 2005/2006			Largest Rice Importers 2007/2008 (projected)		
1	Philippines	1791	1	Philippines	1900 6.4%
2	Nigeria	1600	2	Nigeria	1700 5.7%
3	Saudi Arabia	1448	3	Indonesia	1600 5.4%
4	Iraq	1306	4	Iraq	1100 3.7%
5	Iran	1251	5	EU-27	1100 3.7%
6	Senegal	1113	6	Saudi Arabia	1050 3.5%
7	EU-27	1083	7	South Africa	950 3.2%
8	South Africa	963	8	Iran	900 3%
9	Malaysia	886	9	Bangladesh	800 2.7%
10	Cote d'Ivoire	750	10	Brazil	800 2.7%
11	Brazil	691	11	Senegal	800 2.7%
12	Japan	681	12	Cote d'Ivoire	750 2.5%

Source: USDA⁷⁷

⁷⁶ FAS: World Rice Trade

Comparing the amounts of rice imports with the amounts produced and consumed, it is clear that only a small fraction of the total consumption of rice comes from imports. According to table 1 above, trade in rice for 2003 was only 6.5 percent of total consumption and had only increased slightly in 2007 when trade was seven percent of total consumption.

Comparing imports with exports, there is a clear difference. Imports are not at all concentrated to a few countries in the same way as export is. The largest importers only constitute around six percent of total imports.

⁷⁷ FAS: World Rice Trade

5. Price Formation and Development

Section 4 and 5 shows that trade in rice is very limited. The limited trade causes prices to fluctuate. These fluctuations are a result of that a very few number of countries supplies the whole market; prices will increase if one of them experiences production shortages and vice versa. Fluctuations also occur when major rice consuming countries faces production shortages and their demand for rice from the world market sharply increases.⁷⁸ In the past years, the prices on milled rice has been decreasing in real terms, negatively affecting the rice-producing countries.⁷⁹ Seen in a longer perspective, rice prices in real terms have been declining for the past 50 years. The reason behind this development has been the increased supply as a result of the Green Revolution. Compared with the average price 1950-1981, prices today are almost 80 percent lower today.⁸⁰

There are many different rice prices due to the large amount of rice types, different qualities and level of milling. Figure 6 shows the differences in the prices between long, medium, and short grain rice and the price for broken rice. Long grain rice is the type mostly traded due to larger demand and supply. Most of the largest rice exporters (Thailand, Vietnam and India etc.) are exporting long grain rice. It is the type that exhibits the largest price variations and the highest price. Traditional rice varieties are valued and priced higher than other varieties, due to perception of higher quality. Thailand mainly produces traditional varieties due to the opportunity of getting a higher market price, even though these varieties have lower yields.⁸¹ Prices on medium and short grain rice are very similar and show smaller fluctuations.

Vietnam entered into the rice export market in the end of the 1980s and in the mid-1990s they experienced a large increase in exports due to the rapid and large expansion of rice export quotas⁸². Since then, rice exports has continued to increase rapidly which could be the reason why there was a sharp downward trend in rice prices from 1996 until early 2000s. Since then, prices have again increased. This

⁷⁸ Wailes (2005) p. 177

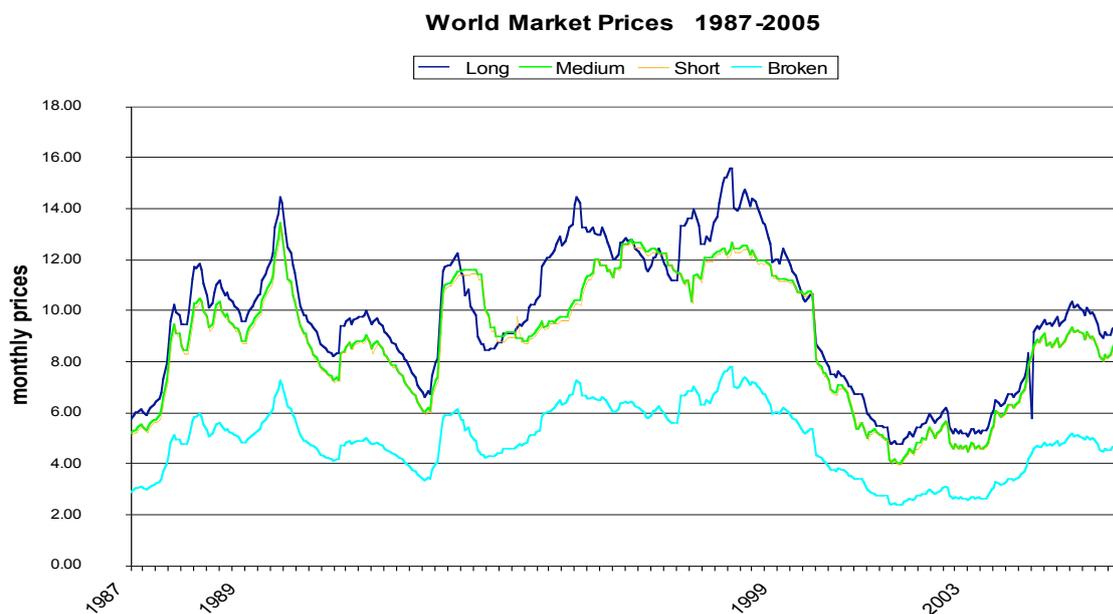
⁷⁹ FAO, 21st Session of the IRC (2006) p. 14

⁸⁰ Braun, J. von; Soledad Bos, M. (2005) p. 14

⁸¹ Braun, J. von; Soledad Bos, M. (2005) p. 9

⁸² Ryan (2002) p. 1

could be the result of the decrease in production in the early 2000s combined with continuing increasing demand of rice.



Source: USDA⁸³

Figure 6: World market prices in US\$/cwt.⁸⁴



The figure does not show monthly fluctuations.

Source: IRRI⁸⁵

Figure 7: Export price of Thai rice with 5 percent broken kernels measured in US\$ per metric ton FOB, 1961-2005.

⁸³ USDA, Rice Yearbook 2006

⁸⁴ Approximately 45.4 kilos

⁸⁵ IRRI, World Rice Statistics

Above, a longer series of export price of high quality Thai long grain rice is shown since Thailand is the leading exporter on the world market. Further, Thai rice varieties are the ones that receive the highest prices on the market.

Just as argued above, the figure shows large fluctuations in the price but it seems like the fluctuations has become smaller since the mid 1980s. According to calculations done by David Dawe, price fluctuations on average was 24 percent between the years 1965-1981, but between 1985-1998 only eleven percent⁸⁶. A possible reason for decreasing fluctuations could be the increased trade and the increase in the number of countries engaged in production, consumption and trade, according to von Braun and Soledad Bos.⁸⁷ Dawe further argues that price stabilization also is a result of more stable production.

Not only are there large fluctuations in the international rice prices but also in domestic prices. Due to lack of rice policy reforms in developing countries and LDCs,⁸⁸ there has been an increase in domestic price fluctuations in many countries. According to Eric J. Wailes, the coefficient of variation for the past 20 years has been 0.26 in Indonesia, 0.37 in China and 0.43 in India, calculated in real terms. These variations are larger than the fluctuations in the price of Thai rice exports that had a coefficient of 0.24 under the same period of time.⁸⁹ An important conclusion to be made from these variation coefficients is that the domestic interventions to stabilize prices in these countries are clearly not working very well.

Further consequences of the lack of rice policy reforms and the continued heavy protection for rice in all countries, is that it have a negative impact on prices. According to calculations done by Eric J. Wailes for FAO, protection in Japan, Republic of Korea and Taiwan are causing world export prices of medium and short grain rice to be half the price compared with what they would have been without the protection. Since the long grain rice market is less protected, prices on long grain rice are only calculated to be around 30 percent lower compared with prices under no protection. Main actors causing the long grain price to be lower are Indonesia and Bangladesh and this has a large impact on exporting countries such as Thailand, Vietnam, India and Pakistan.⁹⁰

⁸⁶ Dawe (2004)

⁸⁷ Braun, J. von, Soledad Bos, M (2005) p. 14

⁸⁸ More about this in the section 7

⁸⁹ Wailes (2004) p. 4

⁹⁰ Wailes (2004) p. 3

An additional factor negatively affecting the price formation on (high quality) long grain rice is the tariff escalation that can be observed in many countries, mainly the EU and Central and South America. Tariffs on milled rice are much higher than for paddy rice and brown rice. The tariff escalation is estimated to cause export prices for high quality long grain rice to be between 10-20 percent lower than in a situation of full liberalization of the rice market. The countries most injured by this tariff structure are Thailand, Vietnam and the US.⁹¹

5.1 Conclusions

The data in section 3, 4 and 5 reveals that there is very little trade in rice in comparison with total production and consumption. From 2003 to 2007 trade in rice, calculated as total imports divided by total consumption, increased with half a percentage to seven percent which implies that trade in rice is increasing hence very slowly. The limited trade shows that many of the large rice consuming countries are self-sufficient or almost self-sufficient in rice. Further, it reveals that not many countries manage to produce a large surplus of rice that can be sold on the world market. Since many of the big producers do not have a large export, RCA must be interpreted with care and complemented by other variables and measures that could indicate advantages in production. Here, yield, irrigation and total area devoted to rice farming have been used. When comparing yields between different countries, the interesting conclusion can be drawn that there is a large gap between yields. If the largest producing countries could increase their yields, so would also total production and exports. This would increase the supply on the world market. On the other hand, if countries like the Philippines, Nigeria and Indonesia could increase their yields, it could mean less demand for rice in forms of imports.

It is important to remember that the rice sector is one of the most protected markets in the world, and that this will affect the calculations of RCA. Countries that intervene and use protection might get a RCA more than 1 even though they without the protection etc. would have a disadvantage in production.

The market thinness causes the world price to fluctuate which have consequences for all countries that either depend on the world market for its rice consumption or that occasionally when facing production shortages or failure have to

⁹¹ Wailes (2004) p. 3

turn to the world market. Further, the fluctuations also have consequences for exporting countries that depend on the world market as a source of income. Since rice exports are concentrated to a very few countries, there are especially risks for fluctuations due to variations on the supply-side.

Due to that many countries are dependent on the international rice market, the price of rice will have large effect on the economies and for the incomes of many people. Large fluctuations in the price of rice will therefore harm the economy due to the insecurity caused by the instability. Further harming countries, are the fluctuations in domestic prices which follows the fluctuations on the world market. Even though extensive interventions are used by governments to stabilize prices, large fluctuations still occur on the domestic markets, indicating that the interventions are not very successful. An important finding is that fluctuations in prices, even though they are still large, has decreased since the mid-1980s due to a deepening of trade. A more stable production, larger quantities traded and more countries engaged in both exports and imports have resulted in less fluctuation. This finding could be emphasized in order to promote liberalization and convince countries about the gains from a more open trade.

The development and formation of prices of rice are negatively effected by the heavy protection and intervention in the market. Prices, especially for medium and short grain rice, are depressed due to the protectionist measurements implemented by importing countries. Escalating tariff structures also have a negative impact on world prices. Hence, two conclusions can be made from this. Liberalizing trade would lead to higher prices which would benefit surplus producing farmers and countries. On the other hand, importing countries and net-importing farmers would suffer.

6. Regional Agreements and Country Policies Affecting Rice Production and Trade

The agricultural sector is subject to heavy protection all over the world and rice production and trade are no exceptions. For most Asian countries rice is a vital good which is either a large or the main source of calories as well as employment for many millions of people. Because of the importance of rice, rice is considered a political good which is crucial in both social stability and economic development. Most South, Southeast and East Asian countries have self-sufficiency in rice production as a policy objective.⁹² The most common protection forms for rice importing countries are tariffs and TRQs, and in exporting countries, price support. According to Eric J. Wailes, the rice world weighted average tariff was 43.3 percent in 2000. Due to their TRQs and quotas, medium grain rice importers such as Japan, Republic of Korea and Taiwan, causes the markets for medium grain rice to be more distorted than for long grain rice. If looking at the world weighted average tariff separately for long and medium grain rice markets, the tariffs are 21 percent for the first one, respectively 217 percent for the latter.⁹³

The present chapter will first briefly describe the rules and policies concerning rice in the ASEAN Free Trade Area which include some of the largest rice economies in the world. This will be followed by a selection of important players on the international rice market and their policies concerning rice. Most of the data and information is gathered from the ASEAN homepage and WTO in an attempt to get an unbiased view since rice protection is a quite sensitive issue in many countries.

⁹² Wailes (2005) p. 177

⁹³ Wailes (2004) p. 2

6.1 Regional Integration and Rice - The Association of Southeast Asian Nations (ASEAN)

ASEAN was established on the 8th of August in 1967 by Malaysia, Indonesia, Thailand, Philippines and Singapore. Brunei joined in 1984 and Vietnam in 1995, Cambodia and Laos in 1997 and Myanmar in 1999.⁹⁴

At the fourth ASEAN Summit in 1992, the ASEAN Free Trade Area (AFTA) was initiated. AFTA is an agreement on common effective preferential tariffs (CEPT) created to accelerate the liberalization of intra-ASEAN trade. It includes the elimination of import duties between the member countries on all products to achieve free trade by 2010 for the six original countries, and by 2015 for the other four members and for some special products by 2018.⁹⁵

6.1.1 AFTA

Article 1 of the AFTA agreement states the rules for elimination of import duties. In the article there are exemptions for products classified as sensitive or highly sensitive and these products are specified in Annex 1 and 2.

In Annex 1 the highly sensitive products are listed. Only Indonesia, Malaysia and the Philippines have included products on this list and they are all rice and rice products. Indonesia and Philippines have four types of rice included; paddy rice, brown rice, semi-milled or wholly milled rice whether or not polished or glazed, and broken rice. Malaysia has included the same types of products plus another eight types.⁹⁶

In Annex 2 the sensitive products are listed and it spans from seven products for Thailand up to 80 products for Laos. Laos, Myanmar and Vietnam have rice included on the list where the first two countries have almost all forms of rice and rice products included while Vietnam has only paddy, brown and other (not specified more than this).⁹⁷

However, not having included rice on the lists for sensitive and highly sensitive products does not imply free trade. Brunei and Thailand apply non-tariff measures (NTMs) on rice trade. Thailand restricts imports (not only from ASEAN

⁹⁴ About ASEAN

⁹⁵ ASEAN, CEPT Scheme

⁹⁶ AFTA Annex 1

⁹⁷ AFTA Annex 2

countries) by using tariff rate quotas (TRQ) under the implementation of the WTO rule of Phytosanitary measurements as well as to secure local farmers income. They also have quality restrictions that have to be met. Brunei uses quotas and non-automatic licensing under its act of price control. Indonesia and Malaysia both practise import control with the States as the only traders and measurements for stabilizing prices.⁹⁸

After looking at the products classified as sensitive and highly sensitive, it is clear that even though AFTA was created to accelerate the liberalization of intra-ASEAN trade, this do not concern the trade in rice and rice products. Out of ten member countries, only Brunei, Cambodia, Thailand and Singapore have not included rice as sensitive products. However, of theses four countries, Cambodia is self-sufficient and only exporting a small amount of rice, Singapore has no production and import all its rice but its population is small and therefore also its imports. Brunei has a very small production and import most of it rice needs but has also a very small population.⁹⁹ The only country who engages in a large scale rice trade is Thailand who is also the largest exporter of rice in the world.

6.2 China

China is the world's largest producer and consumer of rice and is also a large exporter. Therefore they play an important role in the global rice economy. The traditional goals of Chinas agricultural policy have been sufficient food supplies and stable prices.¹⁰⁰ In 1993, the domestic rice market was opened up to the Chinese consumers. The opening affected the production due to high demand for high-quality rice. In the late 1990s the Chinese government started a structural reform of the rice sector to encourage production of high-quality rice varieties instead of low- quality ones.¹⁰¹

The Chinese government use different kinds of policies whereof protection for necessary paddy fields are on of them. This means that the other activities than agricultural is prohibited on that specific field. Further, support to construction of rice production is available as well as favorable loans and subsidies. To encourage

⁹⁸ ASEAN, Non-Tariff Measurements Database

⁹⁹ Government of Brunei Darussalam

¹⁰⁰ WTO, China: Trade Policy by Sector, p. 161

¹⁰¹ Ninghui 2005, p. 531

production, a higher procurement price of high quality rice has been introduced.¹⁰² After China's accession into the WTO and until 2005, average MFN tariffs on agricultural products has declined with 7.8 percent and import quotas have been converted into tariff rate quotas.¹⁰³ China uses mostly ad valorem tariffs and the applied rates are very close to the bound ones, and the average tariffs for grain are higher than for other agricultural products. Rice is subject to TRQs to restrict imports to maintain farmer incomes and social stability. Rice quotas are allocated through the Ministry of Commerce (MOFCOM) and are governed by State Trading Enterprises (STEs). Rice exports are also governed by state trading and are subject to quotas to ensure sufficient domestic supply.¹⁰⁴

6.3 India

India is the world's second largest producer and consumer of rice, and the third largest exporter. Tariffs are India's main trade policy and average applied MFN tariffs for agricultural products were 41.6 percent, compared with 12.1 percent for non-agricultural products, in 2006/2007. India's goal is to reduce tariffs to the same levels as ASEAN in 2009.¹⁰⁵ The agricultural policies main goal has been food security and self-sufficiency, and the agricultural sector is subject to extensive intervention. Compared with other agricultural products, rice is the most important export commodity.¹⁰⁶

The Food Corporation of India (FCI) is responsible for implementing food policies and procuring and maintaining buffer stocks and they provide support prices for paddy rice. Rice has one of the highest import tariffs of all agricultural products, but the applied rates are at the same level as the bound rates. Further, rice is considered a sensitive commodity and all imports of rice are subject to state trading. Exports of sensitive products can be restricted due to food supply reasons.¹⁰⁷

Accompanying import and export measures, India also give several forms of direct support. These include subsidies for inputs, such as fertilizers, water for irrigation and electricity. There are also subsidies for pesticides and seeds, indirect

¹⁰² Ninghui 2005, pp. 531-532

¹⁰³ WTO, China: Trade Policy by Sector, p. 161

¹⁰⁴ WTO, China: Trade Policy by Sector, pp. 168-171

¹⁰⁵ WTO, India: Trade Policies and Practises by Measure p. 33

¹⁰⁶ WTO, India: Trade Policy by Sector, p. 101

¹⁰⁷ WTO, India: Trade Policy by Sector, pp. 106-107

subsidies through financial support and for infrastructure and price support. Under the Price Support Scheme (PSS), a minimum support price (MSP) is provided for paddy rice, so as to provide stable prices for consumers and protect farmers from market fluctuations. The MSP has been higher for rice than for other agricultural products. It is compulsory to sell fixed amounts of rice to the Central Governments that give it to the targeted public distribution system (TPDS) for distribution to the poorest people. 10 to 75 percent of the paddy rice bought by rice millers and dealers are procured by the Government.¹⁰⁸

6.4 Indonesia

Indonesia is the third largest producer and consumer of rice. In 2003 Indonesia was the largest rice importing country, importing 13.5 percent of the total world trade.¹⁰⁹ Even for 2007/2008 they are predicted to be a large importer of rice. These large fluctuations are partly due to low productivity and prices which causes farmers to switch to other crops,¹¹⁰ but also due to domestic intervention.

Table 9: Amount of rice export and import in tons for the years 2003-2006

Commodity	Export				Import			
	2003	2004	2005	2006	2003	2004	2005	2006
Rice	676	904	44,914	885,844	1,428,506	236,867	195,015	180,331

Figures for 2006 only until August.

Source: WTO¹¹¹

In Indonesia, rice has traditionally been seen as a trade commodity as well as a political commodity. Indonesia's agricultural and food security policy has always focused on rice due to its importance to the majority of the population. The main effort has been to stabilize prices and to increase production so that the country would be less dependent on imports.¹¹² Producer has received a floor price and consumers a ceiling price, and the prices have been protected by interventions and control over trade.¹¹³

¹⁰⁸ WTO, India: Trade Policy by Sector, pp. 108-112

¹⁰⁹ WTO, Indonesia: Trade Policy by Sector, p. 69

¹¹⁰ Oryza, Asia Pacific: Indonesian Market

¹¹¹ WTO, Indonesia: Trade Policy by Sector, p. 70

¹¹² Sidik, Mulyo (2004) pp. 2-3

¹¹³ WTO, Indonesia: Trade Policy by Sector, p. 73

After the Asian Crisis in 1997, Indonesia adopted a rescue package from the International Monetary Fund (IMF). A part of this was the commitment on food items which required zero tariffs for rice and all imports were controlled by the Indonesian Bureau of Logistics (BULOG). After BULOG's monopoly ceased, tariffs were raised. The specific tariff for rice was set to Rp 430 per kilo which was equivalent to a 30 percent ad valorem tax. In 2004, the Government introduced seasonal import restrictions of rice, only BULOG was allowed to import rice to refill stocks and the tariff was raised to Rp 450 per kilo.¹¹⁴ The restriction has led to higher prices on rice which has had a large negative impact on the poor rice farmers of which two thirds are net consumers of rice. In 2006, the price of domestically produced rice was 40 percent more expensive than the rice imports from Vietnam. The restriction has been extended several times and is almost permanent.¹¹⁵

BULOG work as a STE in the rice trade with the goal of stabilizing the price of rice and give support to domestic rice producers. This is done by managing the rice stocks, import and export, domestic procurement and distribution.¹¹⁶

Other interventions are that rice farmer's benefit from subsidized fertilizers, which are subject to price ceilings. They can also buy rice seeds at a subsidized price. For 2007 there were plans for direct subsidizes to the farmers. Furthermore, there are subsidized loans available for small-scale farmers and incentives are provided to the farmers by offering a procurement price that is set before the planting season.¹¹⁷

6.5 Bangladesh

Bangladesh is the fourth largest producer and consumer of rice. Rice is one of the most important imported agricultural products and according to USDA; Bangladesh is predicted to become on of the tenth largest importers of rice for the year 2007/2008.¹¹⁸ Achieving self-sufficiency, not only in rice but in all crops, is one of the goals of the National Agricultural Policy.¹¹⁹

The average applied MFN tariffs for agricultural products are much higher then for other goods. Rice is the most important crop, measured in volume, and rice

¹¹⁴ WTO, Indonesia: Trade Policy by Sector, p. 71

¹¹⁵ WTO, Indonesia; Trade Policy by Sector, pp. 67, 73

¹¹⁶ WTO, Indonesia: Trade Policy by Sector, p. 72

¹¹⁷ WTO, Indonesia: Trade policy by Sector, p. 74

¹¹⁸ FAS: World Rice Production, Consumption and Stocks; World Rice Trade

¹¹⁹ WTO, Bangladesh: Trade Policy by Sector, p. 94

producers receive help from the government with irrigation, fertilizers, mechanization, education, loans, marketing etc. Rice is provided as food aid with the goal of food security. Food-security related imports of rice were in 2004/2005 1.3 million tons of which 27,000 tons were food-aid and 72,000 were imported by the government. To meet domestic demand, private imports are allowed.¹²⁰ Between 1995 and 2004, price support for rice and wheat accounts for the total amount of product-specific AMS expenses but since 2001 the amount of support for rice has decreased. Rice producers and millers can sell their production to the Government which buys the rice to a fixed price. The price takes production costs, local and international market prices and farmers' profit margin into account.¹²¹

The WTO notes that Bangladesh has managed to increase its production of rice and other cereals in the past years due to:

“...significant policy shifts towards increased private sector involvement in input distribution, liberalization of equipment imports, deregulation, rationalization of subsidy allocations, and restructuring of agricultural research and extension linkages.” (Trade Policy by Sector, page 97¹²²)

6.6 Thailand

Thailand is the largest rice exporting country and the largest rice trader in the world but only accounts for a small share of the total production. Because of Thailand's large share of the rice trade, 34.4 percent (2004),¹²³ and 30.2 percent projected for 2007, Thailand has a big influence on the world market. In the section describing the rice policy of AFTA, Thailand's rice policy towards its member countries was described. But since they are a major exporter of rice to other regions and countries in the world as well, Thailand's rice policy towards the rest of the world is also of interest.

Thailand's applied average MFN tariffs for agricultural products are about 25 percent which is almost three times as high as for non-agricultural products. Its main objective for rice is price stability and supply which is guaranteed by controlling the

¹²⁰ WTO, Bangladesh: Trade Policy by Sector, p. 94

¹²¹ WTO, Bangladesh: Trade Policy by Sector, p. 96

¹²² WTO, Bangladesh: Trade Policy by Sector, p. 97

¹²³ WTO, Thailand: Trade Policy by Sector, p. 105

buffer stock. Imports of rice is subject to quality standards and sanitary and phytosanitary regulation. Rice farmers receive domestic support in forms of preferential loans provided by the Bank for Agriculture and Agricultural Cooperatives which is a state owned bank. The product-specific Aggregate Measure of Support (AMS) notified to the WTO for rice was in 2002-2004 16,878.56, 11,476.33 and 14,112.67 million bath respectively or as much as 90.2, 81.1 and 95.2 percent of total AMS.¹²⁴ There is a minimum price for rice but this is usually under the market price. According to information given to the WTO, the minimum price covers less than 20 percent of the production and less than five percent of the rice farmers.¹²⁵

6.7 Vietnam

According to USDAs projected figures for 2007/2008, Vietnam will be the fifth largest producer and consumer, and the second largest exporter of rice in the world supplying 9-17 percent of the total amount of the exports to the rice market. Since Vietnam has such a large share of the market, its rice policy will have effect on the international market.¹²⁶

Since Vietnam became a member of the WTO on the 11th of January 2007, there are no trade policy reviews written by WTO yet. Instead, to get independent information on Vietnam's trade policy only Vietnam's commitments on goods are to be found. In its commitments the bound tariff lines for rice are 40 percent for all types of rice except rice used as seeds which has zero tariff and rice flour which has a 20 percent bound tariff.¹²⁷

In 1986 Vietnam introduced an economic reform, Doi Moi, in which market forces were allowed to play to a much greater extent. This reform had a profound impact on the economy and the rice production. Policies with impact on the rice production were land reforms, infrastructure investments such as irrigation, and improvements of agricultural technology and input supports.¹²⁸ Starting in 1988, Vietnam's rice production increased enough to make export possible and since then, rice exports have followed an increasing trend.¹²⁹ In the mid-1990s there was a sharp

¹²⁴ WTO, Thailand: Trade Policy by Sector, p. 107

¹²⁵ WTO, Thailand: Trade Policy by Sector, p. 108

¹²⁶ International Food Policy Research Institute

¹²⁷ WTO, Vietnam's tariff schedule

¹²⁸ UNEP: The Rice Sector in Vietnam, p. 14

¹²⁹ UNEP: The Rice Sector in Vietnam, p. 5

increase in rice exports due to that the government expanded the rice export quota. Since then, annual rice export quotas are announced depending on the domestic production and consumption situations. In the case of production restraints, Ministries of Trade and of Agriculture and Rural Development (MARD), take control over exports.¹³⁰ Further, price support to farmers was introduced in mid-1990s.¹³¹

6.8 Philippines

The Philippines has moved from being almost self-sufficient in rice production in 2003 to be the world's largest rice importer in 2005/2006. According to data gathered by USDA, Philippines are also predicted to be the world's largest rice importer in 2007/2008. But there is still a substantial rice production, and rice constitutes a large percentage of total agricultural value.¹³²

The goal of the Philippines agricultural policy is self-sufficiency and the agricultural sector receives high protection. The goal is to maintain high prices to rice farmers and affordable prices to the consumers. There is a quantitative restriction on rice imports but rice is imported in much larger quantities than the minimum quota under the WTO. All imports of rice are controlled by the National Food Authority (NFA) and they also provide price support to the rice farmers. Further, rice is also subject to a 50 percent tariff. The nominal protection on rice has increased since the mid-1990s, from around 19 percent up to 71 percent in an attempt to protect the rice farmers from import competition.¹³³

The NFA buy paddy rice from farmers to a minimum support price and also engage in other interventionist practises and programmes such as encouraging farmers to sell their rice to NFA and giving subsidized rice to the poor.¹³⁴

6.9 Nigeria

Nigeria is not a traditional rice consuming country but has since the 1970s experienced a large increase in rice consumption. Nigeria has become the second largest importer of rice in the world and in 2001 rice and wheat constituted 40 percent

¹³⁰ Vietnamnet

¹³¹ Ryan (2002) pp. 12-13

¹³² WTO, Philippines: Trade Policy by Sector, p. 71

¹³³ WTO, Philippines: Trade Policy by Sector, pp. 73-76

¹³⁴ WTO, Philippines: Trade Policy by Sector, p. 76

of total food imports.¹³⁵ Its average applied MFN tariff has increased from 26.7 percent in 1998 to 41.4 percent.

Nigeria's economic policy focuses on food security and poverty reduction. Some of the goals are increase in agricultural growth and export, and decrease in imports of agricultural products.¹³⁶ Since rice has become a very important and strategic good, the government has used interventions the past decades.¹³⁷ Rice is one of the most protected commodities and is subject to a 100 percent tariff. Further, it is prohibited to export rice from Nigeria. The Federal Government has carried out several projects, Special programme on Food Security (SPFS), in rice farming and irrigation and drainage, both alone and together with organisations.¹³⁸ Under these programmes, there are going to be an establishment of 3700 hectares of rice farms. Further, about 200 tons of rice seeds are to be distributed. Other inputs such as fertilizers and machines will be distributed, and technical assistance from Japan will be provided to rice farmers.¹³⁹

6.10 US

The United States is amongst the twelve largest rice producers in the world and is one of the largest exporters. The average applied MFN tariffs for agricultural products were 9.7 percent in 2004 which was almost 250 percent higher than for non-agricultural products.¹⁴⁰ The US rice policy is based on helping the farmers. The 2002 Farm Act provides access to direct payments and counter-cyclical payments to the producers. The US has high specific support to the rice production.¹⁴¹ The counter-cyclical payments are provided to contract holders when the effective price is less than the target price. Marketing loan benefits are available when the reference price for a specific rice quality is higher than the world prices. There is price support through production flexibility contracts (PFC), which are settled between the producers and the government. Further, rice producers also have access to revenue insurance and subsidized crops¹⁴² as well as to emergency assistance and crop

¹³⁵ WTO, Nigeria: trade Policy by Sector, p. 57

¹³⁶ WTO, Nigeria: Trade Policy by Sector, pp. 54-55

¹³⁷ Akande (2003) p. 2

¹³⁸ WTO, Nigeria: Trade policy by Sector, p. 53

¹³⁹ WTO, Nigeria: Trade Policy by Sector, p. 57

¹⁴⁰ WTO, US: Trade Policy by Sector, p. 87

¹⁴¹ WTO, US: Trade Policy by Sector, p. 88

¹⁴² USDA, Rice Policy

insurance.¹⁴³ There are also trade policies and programs that affect the rice market by increasing rice uses through government-assisted trade promotion. The producers must keep the land in use and must comply with wetland and conservation provisions.¹⁴⁴

6.11 EU

The European Union (EU-27) was the seventh biggest importer of rice in 2005/06 and according to projections for 2007/2008 made by USDA, EU will be the fifth biggest importer. EU is also a producer and exporter of rice.¹⁴⁵

In the European Union, rice is grown mainly in Italy but also in France, Greece, Portugal, Spain, Hungary, Romania and Bulgaria. The first common organisation of the rice market (CMO) was originated in 1964. In 2003 the regulation was reformed with the reforms of the Common Agricultural Policy (CAP) and the goal was to address the imbalances on the internal rice market and to reduce the intervention price.¹⁴⁶ However, in 2005, CAP accounted for 45.5 percent of the total expenditure for the Community.¹⁴⁷

The goal of the EU common organisation of the rice market is to stabilize prices as well as to ensure farmers a fair level on income and at the same time establishing prices and arranging trade with third countries. This is done by intervening on the internal market by a fixed intervention price and by special support measures for EU products when they are traded on the international markets.¹⁴⁸

The CMO for rice covers ten different rice and rice products and provides direct and specific payments to farmers by a single payment per farm. Table 10 below, shows the expenditure by the European Agricultural Guidance and Guarantee Fund (EAGGF) spent on rice 2004-2006.¹⁴⁹

¹⁴³ WTO, US: Trade Policy by Sector, p. 88

¹⁴⁴ USDA, Rice Policy

¹⁴⁵ FAS: World Rice Trade

¹⁴⁶ EU, Markets for Agricultural Products: Rice

¹⁴⁷ WTO, European Communities: Trade Policy by Sector, p. 79

¹⁴⁸ EU, Markets for Agricultural Products: Rice

¹⁴⁹ WTO, European Communities: Trade Policy by Sector, p. 87

Table 10:	2004	2005	2006
Guarantee expenditure	Million €	Million €	Million €
Rice	180.1	469.0	294.4
of which refunds	22.4	18.0	12.0
of which intervention storage	47.6	21.0	14.0
of which aid	110.1	430.0	268.4

Source: WTO¹⁵⁰

Imports and exports are subject to licensing that are issued by the different member states. Import duties are different depending on what kind of rice that is to be imported; fixed duties that vary with the quantity (ex brown rice), 65 euro per ton (broken rice) and no duties at all (basmati rice). For rice, EU is practicing tariff escalation since the import duties on milled rice is more than twice the level of import duties for brown rice.¹⁵¹ To enable export, refunds are possible to cover the difference between the internal market price and the international market price.¹⁵²

6. 12 Conclusions

Rice is one of the most protected commodities in the world and it is clear that the countries included in this study uses many different types of interventions and protection for its rice production, and regulate the trade through different measures.

In many countries, especially the Asian, rice is a big or the main source of calories and in many areas also a large source of employment and income. The main goals of their agricultural policies concerning rice have been food security, self-sufficiency and stable prices for both farmers and consumers. This has been achieved in many of the Asian countries, but not all. Since rice is very important for producers and consumers, it has resulted in heavy intervention and protection on both supply- and demand-side in many countries.

Measures used by countries for achieving their goals are diverse but includes all types of distortions; tariffs, TRQs, production and export subsidies, price interventions, quotas etc. Of the countries included in this study, the following measures where the most common:

¹⁵⁰ WTO, European Communities: Trade Policy by Sector, p. 88

¹⁵¹ Wailes (2004) p. 3

¹⁵² EU, Markets for Agriculture Products: Rice

Table 11: Summary of interventions

Country	Tariffs	Quotas	Subsidies	Preferential loans	Price support /Interventions	State Trading
China	Yes	Yes EX	Yes	Yes	Yes	Yes
India	Yes	(Yes EX)	Yes	Yes	Yes	Yes
Indonesia	Yes	Yes IM/EX	Yes	Yes	Yes	Yes
Bangladesh	Yes		Yes	Yes	Yes	(Yes)
Thailand	Yes			Yes	(Yes)	
Vietnam	Yes	(Yes EX)	Yes		Yes	(Yes)
Philippines	Yes	(Yes IM)			Yes	Yes
Nigeria	Yes		Yes			
US	(Yes)		Yes	Yes	Yes	
EU	Yes		Yes		Yes	

Parenthesises are used when a country uses a protective measure or intervention but not to the same extent as the other countries. Blank denotes no or no data or information on that particular measure.

The natures of the interventions used by different countries are different depending on what position the countries have. There are differences between exporter and importer, developed county and developing/LDC etc. The US and the EU, who are rich countries, give more support to their farmers in forms of direct payments, whilst poorer countries such as Bangladesh and Indonesia uses subsidised inputs etc.

From the information on protection in this study, it seems like Thailand and Nigeria are the countries who employ the least intervention and protection. Since Thailand is the leading exporter, and receives some of the highest prices in the market, Thai rice farmers should be competitive enough without extensive interventions. Nigeria on the other hand, is dependent on its rice imports. By using a very high tariff, there is substantial protection for its domestic producers without interfering much more. China, India, Indonesia and Bangladesh are the countries employing most interventions. They have in common that they are all traditional major producing and consuming countries and therefore have to deal with pressure from both supply-side and demand-side actors. Since they have such large populations, it is crucial to them to have a domestic production of rice, even if it is not competitive. On the other hand are the populations relatively poor and dependent on cheap rice.

A very interesting finding in this section was that the AFTA agreement does not include rice for most of the member countries. It is the only good specified as a highly sensitive good, and one of few goods specified as sensitive. As a result, the AFTA agreement has not increased liberalization in rice trade. Since a substantial share of world exports and imports are traded within Southeast Asia, many opportunities for intra-industry trade are being missed. Further, bilateral liberalization within Southeast Asia maybe could have worked as a building block for further international liberalization in rice.

The heavy protection and large-scale intervention in the rice market creates many problems. First of all it results in inefficient resource allocation when countries that have no comparative advantage in rice production, produce anyway. One obvious example of this is the rice production in the EU which is both heavily subsidised and then subject to export subsidies. Another example is Indonesia, whose domestically produced rice was 40 percent more expensive than imports from Vietnam. A very serious consequence of the protection is that incentives for cost reductions and productivity increases are reduced due to lack of competition.

As seen in the previous section, the protection causes world prices in rice to be lower than what they would have been in a situation of free trade. This implies that instead of helping rice farmers to become competitive by subsidies and protection, the protection is actually making the chances for farmers to be competitive even worse.

7. Multilateral liberalization and the international rice market

In the past multilateral trade negotiations, rice has been a big source of conflict. Many countries opposed to the opening of the rice markets due to possible negative effects on food security, environment and the livelihood of farmers. At the final stages of the Uruguay Round negotiations, a special clause therefore was added to the agreement of agriculture. The “rice clause” made it possible for countries to limit and postpone liberalization of the rice market. Yet, the attempts to liberalize have had considerable impact on trade.¹⁵³

7.1 GATT: Agreement on Agriculture

The Uruguay Round of GATT negotiations (1986-94) were concluded in December 1994 and went into effect on the first of January 1995. One of the news of this round was the reintegration of agriculture which had been excluded from earlier rounds.

The Agreement of Agriculture consists of four main parts; the Agreement on Sanitary and Phytosanitary Measures (food safety, animal and plant health regulations); one part concerning Least-Developed countries (LDCs); one concerning Net Food-Importing Developing countries; and the Agreement on Agriculture itself. This part is made up by the concessions and commitments which the Member countries have agreed upon, concerning market access, domestic support and export subsidies.¹⁵⁴

7.1.1 Agreement on Agriculture

The Agreement is an outline for how long-term reforms of the agricultural trade and policies should be undertaken so as to increase the market orientation and to secure “substantial progressive reductions in support and protection” (Summary of Agreement on Agriculture, row 98-99).¹⁵⁵ To improve certainty and stability for both importing and exporting countries, the rules concerning agricultural trade have been

¹⁵³ Wailes (2004) p. 2

¹⁵⁴ WTO, Legal Texts: Summary of Agreement of Agriculture

¹⁵⁵ WTO, Legal Texts: Summary of Agreement on Agriculture

strengthened. Further, the agreement also includes provisions that insist on the usage of less trade-distorting support policies and provisions that allow Members to take action in the case of problems with adjustment. It also allows for some implementation flexibility.¹⁵⁶

The aim of the part concerning market access is to convert non-tariff border measures (NTMs) into tariffs that provide the same level of protection. For the developed countries, the goal is to reduce tariffs with on average 36 percent under a period of six years, e.g. completed in 2000. For developing countries tariffs are to be reduced with an average of 24 percent completed in 2004, while LDCs are not required to reduce their tariffs. In the case of these converted NTMs, there are special safeguard provisions which can be used in case of large increase of imports or imports at prices under a certain level. The activator for the special safeguards depends on the current proportion of consumption made up by imports. Further, there is also a provision for the maintenance of current market access opportunities.¹⁵⁷

Since most of the countries engaged in rice production are developing countries or LDCs, they are not required to lower their tariffs and to open up their markets so much. Of the twelve largest rice producers, only Japan and the US are developed countries. In many countries there is a wide gap between bound and applied tariffs, so reductions in tariffs would have no or very little effect on trade.¹⁵⁸ Since the rice market has traditionally been heavily protected and many Asian countries have had the goal of being self-sufficient, there has only been very little trade. Most countries have had a very large consumption but no or almost no imports. This means that the countries have been able to use the special safeguard provisions since their current proportion of consumption made up by imports are so small. According to Eric J. Wailes, the special rules and longer implementation time for developing countries and LDCs, has not only resulted in very little or no changes in their rice policies but that the lack of policy reforms have also resulted in increased price fluctuations.¹⁵⁹

Provisions concerning domestic support measures that are so called green box policies; actionable policies with no or minimal impact on trade, are allowed and excluded from commitments on reductions. In the green box, measures concerning for

¹⁵⁶ WTO, Agreement on Agriculture

¹⁵⁷ WTO, Agreement on Agriculture

¹⁵⁸ FAO, Commodity Market Review 2005-2006

¹⁵⁹ Wailes (2004) p. 4

example research, environment, food security and special forms of decoupled income support to producers are placed. There are also other forms of support that in special cases can be accepted such as measures encouraging rural development etc. The total support that each country gives, the Total Aggregate Measurement of Support (total AMS), is counted as all the support that does not meet the requirements for exemption and is to be reduced with 20 percent for developed countries during the implementation period. For developing countries the percentage is only 13.3 percent and non for LDCs.¹⁶⁰ Again, there is the complication concerning rice production that most producing countries are not required to lower their AMS that much or not at all because they do not belong to the developed countries.

Mainly using the years 1986-1990 as the base period, developed countries have to reduce the value of export subsidies with 36 percent and the quantity with 21 percent under a six year period (finished in 2000). This reduction primarily concerns the direct export subsidies and as in the case of domestic support measures, the reductions for developing countries are lower (24 percent) and are to be accomplished under a ten year period. Developing countries are also subject to more preferential treatment in certain cases. LDCs do not have to reduce export subsidies.

The Agreement also includes peace provisions concerning things like countervailing duties (CVDs) and green box policies, and will be valid for nine years.¹⁶¹

The purpose of the Agreement on Agriculture was to open up the markets by decreasing support and protection. But since there are few developed countries among the large rice producing and consuming countries, obligatory reductions, if at all required, are only small. Countries like Japan, Republic of Korea and the Philippines are exempted from tariff reductions by using the clause for special treatment that will be presented below. Another country that is exempted from tariff reductions is Indonesia who negotiated a separate agreement concerning rice.¹⁶² Due to reasons like this, the agreement will only have limited effect on the rice trade.

7.1.2. Agreement on Sanitary and Phytosanitary Measures

¹⁶⁰ WTO, Agreement on Agriculture

¹⁶¹ WTO, Agreement on Agriculture

¹⁶² Pingali, Hossain and Gerpacio (1997) p. 149

As mentioned above, this agreement relate to measures that concern protection of human, animal and plant life and health. Countries can use measures as long as they do not discriminate between Members or use measures as disguised restrictions on international trade. Countries are not allowed to implement measures if protection is not based on scientific evidence. Further, sanitary and phytosanitary measures should be based on international standards so as to harmonise measures between countries. Members should take needs of developing countries and especially LDCs into account and LDCs can delay implementation of the agreement for five years.¹⁶³

As for the Agreement of Agriculture, there are special, less restrictive rules applying for most of the rice producers. As mentioned above, this agreement is being used by Thailand to restrict imports of rice.

7.1.3 Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries

This decision takes into account the possibility that LDCs and net food-importing developing countries may experience negative effects due to the increased liberalization of agriculture. Therefore this decision sees to the provisions of aid for agricultural development and for food etc. It also states the possibility of financial assistance.¹⁶⁴

7.1.4 The “rice clause”

At the end of the GATT negotiations in Uruguay Round, a special clause for certain commodities was adopted due to political considerations such as food security, environment and for concerns of the livelihood of farmers. This clause is commonly called the “rice clause” due to the importance of rice-importing countries in the negotiations. This clause is found in Annex 5: Special Treatment with Respect to Paragraph 2 of Article 4.¹⁶⁵ The clause enables countries to maintain NTBs on certain commodities, so called designated products, under specified conditions.¹⁶⁶

The special treatment applies to countries that import less than three percent of total consumption measured with 1986-1988 as base year. Other conditions are that

¹⁶³ WTO, Agreement on Sanitary and Phytosanitary Measures

¹⁶⁴ WTO, Legal Texts: Summary of Agreement on Agriculture

¹⁶⁵ Members shall not maintain, resort to, or revert to any measures of the kind which have been required to be converted into ordinary customs duties, except as otherwise provided for in Article 5 and Annex 5.

¹⁶⁶ FAO, Commodity Market Review 2005-2006

no export subsidies are provided. If effective production-restrictive measures are applied, special treatment can be employed. Special treatment can also be granted to products due to non-trade concerns such as food security and environmental protection. A minimum access opportunity of four percent from the first implementation year and then increased by 0.8 percent corresponding to domestic consumption per year has to be granted.

For developing countries, in which the designated product is the dominant staple food in the traditional diet, different rules apply. Minimum access is set to one percent with an increase of two percent per year during the first six years and then two percent with a four percent increase under the remains of the ten year implementation period. A further condition is that appropriate market access opportunities have been provided for in other products under the agreement.¹⁶⁷

The “rice clause” enables countries like Japan and the Republic of Korea to limit the opening of their rice markets.

7.2 Conclusions

Even though agriculture was reintegrated into the multilateral trade negotiations during the Uruguay Round, it had just a small effect on liberalization in rice trade. This was partly due to the rice clause that enabled major players on the rice market such as Japan, Philippines and Indonesia, to limit and postpone liberalization. They were granted special treatment for rice and therefore the Agreement of Agriculture only had a limited effect on the liberalization.

Another important factor that explains the lack of liberalization was that many of the important rice countries were developing countries or LDCs and was therefore exempted from commitments or only subject to limited commitments on tax reductions and reductions in domestic support, and subject to smaller minimum market access. Longer implementation periods were also allowed for developing countries and LDCs which even made the agreement less effective. The result of these special rules for developing countries and LDCs are that there has not been any pressure for liberalization and rice policies in those countries are still protectionist oriented.

¹⁶⁷ WTO, Legal Texts: Annex 5

Even though the rice is still one of the most protected products in the world and that liberalization has been very modest, the attempts to liberalize have still had a considerable impact on trade. Since the Uruguay Round, the rice trade has increased a lot from extremely low levels to about seven percent. This is still very low compared to other similar commodities but it is a large increase compared to pre-Uruguay levels.

The fact that the Uruguay Round Agreement on Agriculture have resulted in increased trade, even though liberalization was modest, show that multilateral negotiations have been successful. Since many countries have little interest or ability to liberalized their rice policies by themselves, and that the regional agreement of AFTA failed on including rice trade, further multilateral agreements are needed in order to liberalized trade in rice.

8. Summary and Concluding Remarks

8.1 Summary

There are several reasons for the thinness of trade on the international rice market. Presented in the order of the study; first of all, rice production is highly diversified. There are many varieties of rice, different qualities and other rice products which have a low degree of substitutability. Different types of rice are strictly preferred in specific areas, hence consumption and therefore also production, is specialized in and on different regions. Further, different varieties are adapted to grow under certain conditions and can not be grown in a different environment than it was developed for. This makes the possibilities of changing production after market demand more difficult.

Secondly, most rice is produced by family farms which produce for their own needs resulting in little surplus to be sold on the market. The small sizes of the farms hinders them from achieve economies of scale and from switching towards more market oriented production. High domestic markets require large quantities which leaves even smaller amounts to be traded on the international markets.

Since only a few countries, notably Thailand and Vietnam, supply a large share of the international market with rice, production developments in the individual countries will affect the international market and cause price fluctuations. Increased demand due to production failure in the large consuming countries also directly affects the prices. Therefore the thinness of trade in rice on the international market results in large price fluctuations.

In Asia, rice is considered to be a good that have much larger impact on the countries than for just food and employment. Rice is also said to have impact on the economic, political and social stability. Therefore policies concerning rice have been self-sufficiency, food security and price stability which have resulted in heavy protection and intervention in the market. This kind of behaviour is not only found in Asia but in all major players on the rice market. Fear of changes in price and supply of rice have also hindered liberalization of the trade in rice in regional agreements such as AFTA.

Adding to the lack of trade is the complicated situation of agricultural products in the world trade. Agricultural products and especially rice are considered as sensitive products and have a much higher overall protection than other products. So far, multilateral agreements have only had a limited impact on the liberalization of the rice trade. Reasons for this is partly due to that many rice producing countries are developing countries and LDCs, but also due to the special treatment of rice which can be seen in the “rice clause”. Yet, the modest attempts to liberalize rice trade have had quite a large impact. Trade in rice has increased and now constitutes seven percent of total consumption production. So far, it seems like multilateral agreements has been the only way to persuade the most protectionist countries to liberalize their rice policies.

The major distortions in the market have led to inefficient allocation of resources. The most obvious example is where high-cost producers such as EU, with help from large economic support, produce rice under less favourable conditions. This rice is later sold on the world market through export subsidies. Due to the protection and intervention, world prices of rice are kept down. This results in inefficient economic incentives for increased production in areas which have the right prospects for rice farming. Low prices on rice also increase the opportunity cost of rice farming and make it profitable to shift production towards other products. At the same time demand for rice is increasing, especially in poor countries. The low world market prices make it more difficult for producers to be competitive which calls for even more protection and support.

8.2 Concluding Remarks

There are a few things that are worth mentioning as they could have a profound impact on the international rice market. The first thing is a possible Green Revolution in Africa. New higher yielding and more resistant rice varieties suited for Africa has been developed, which has opened the possibility of a Green Revolution according to the International Rice Commission (IPC) and IRRI. This could significantly increase total rice production and import patterns. For more information visit www.irri.org.

Another event that could change the situation on the world market is the outcome of the multilateral negotiations of the Doha Round. Here there are two aspects to consider regarding a new agreement on agriculture; the treatment of

developing countries and LDCs and the continuation of the rice clause. If developing countries were to be subject to larger commitments on liberalization, this could have a large impact on the rice trade. If the rice clause would cease, this would also mean deeper commitments on rice liberalization for developed and developing countries. Studies about possible effects on the rice sector of the Doha Round can be found on www.fao.org.

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