COMPETITIVENESS OF THE RICE INDUSTRY IN SURINAME AND IMPLICATIONS UNDER THE EMERGING TRADE

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INTRODUCTION

Rice was introduced in the Caribbean during slavery. The type of rice that was used was the so-called upland rice. After abolition of slavery our brothers and sisters who came from India and Indonesia took with them types which were suitable for cultivation under wet conditions. Between 1910 and 1940 cultivation took place in a traditional way. Farmers were producing on a subsistence level. Land preparation was practised through the use of animal traction, rice was transplanted and there was no use of chemicals and fertilizers. Labor input was through members of farm households and from neighboring farms. Around 1940 the mechanization process started and gradually replaced animal traction. Since 1955 broadcasting of seed became a common practice. The use of tractors, combine harvesters excavators and even aerial application of chemicals and fertilizer became common practices on the farmers. The farms were producing for the markets abroad. The industries of the Caribbean rice producing countries are now highly mechanized. This process of high level mechanization definitely incorporated the rice industry into capital and labor markets.

Suriname's agricultural sector is an important contributor to domestic economic activity, on average accounting for 9 per cent of GDP and employing an estimated 15 per cent of the labor force. The most important agricultural activity is the production of rice. However, Suriname's agricultural sector is one of the most diverse in CARICOM with a wide range of root crops, tree crops, fruits and vegetables produced. Production performance has varied considerably among the different activities. Livestock products expanded in the 1980s and experienced declines in the early 1990s. In contrast, rice, cassava, plantains and cocoa

experienced declines in the 1980s and high growth rates in the early 1990s.

The agricultural sector accounts for about 20 per cent of export earnings with rice, shrimp, bananas and lumber being the main earners. There was a general decline in agricultural exports during the 1980s, with seven of the ten years recording a negative growth rate. The 1990s have been an improvement with an agricultural export growth rate of 1.4 per cent over the period 1990 to 1995. Suriname's rice and banana exports go primarily to the European market under preferential access, while its shrimp and fish products go mainly to the USA and Japan.

1. THE MACRO-ECONOMIC SITUATION

Suriname experienced an unusual period of political and economic instability in the 1980's and early 1990's. As a result the agricultural sector suffered from particularly unfavourable macro-economic conditions. Due to an over-valued exchange rate, foreign exchange rationing and rapid inflation, with the resulting development of a parallel market and an increase in smuggling, producer confidence in the management of the economy led to decreased private investment. Both its macro-economic policy and its transportation infra-structure has resulted in a relatively isolated position of Suriname from the international community. However, with the country's rich resources and a bold strategy of opening the economy to the region and the world, together with improvements in transportation, this isolation can be reversed. Membership in CARICOM and the WTO has brought certain obligations. This should lead to policies that encourage trade by removing regulations that inhibit both imports and exports. Beyond the tariff reductions instituted under the auspices of CARICOM, few other reforms have been undertaken. Suriname's situation is similar to that of many other late reformers in CARICOM and the inconsistencies between the policies introduced during its import substitution era and those necessary for sustained export oriented growth are numerous and need to be addressed. Elimination of the remaining structural constraints to exports, such as unnecessary administrative procedures, will continue to be urgent unfinished business in the country's reform agenda. Changes in the macro and trade policy regimes should be introduced with the intention of increasing partnerships with foreign investment. Most agricultural support services continue to be the responsibility of the weakened public sector. Institutional reforms, aimed at privatizing many of these services, should be considered as a component of the ongoing reforms in other sectors of the economy.

2. THE INTERNATIONAL RICE MARKET

The world production of paddy is close to 600 million tonnes and about 4 to 5 per cent enters the world trade. The bulk of rice production, consumption and trade is concentrated in Asian countries, particularly China, India, Indonesia, Bangladesh, Vietnam, Thailand, the Philippines and the Islamic Republic of Iran. Although global rice output was at all time high in 1997, there was a significant production decline in several major importing countries such as Indonesia, the Philippines and Brazil, due to weather problems associated with El Niño. Adverse weather conditions during planting and harvesting in several countries in South America had a negative impact on the Region's 1998 paddy crop season. Brazil, the largest producer and consumer, fell back to 8.5. million tonnes, being its lowest production in 8 years.

It must also be noted that the ending stocks have been more than 12 per cent of world production, representing about 3 times the world demand for rice traded. It is highly unlikely to expect any significant long term increases in prices and countries with large stock balances could easily respond to changes in demand or increases in prices.

From the total rice produced, only 4 per cent is produced in the Latin American and Caribbean region. The Caribbean, with a population of just over 31 million people, produces about 1.3 million tonnes of rice annually. The Caribbean consumption is approximately 1 million tonnes annually and consequently, the Caribbean should have no problems with marketing their rice. However, imports into the Region have forced the few exporting countries to seek markets outside the Region.

3. COMPETITIVENESS

Increasing the competitiveness is perhaps the highest priority on the regional CARICOM and national agricultural agenda[1]. It is important to consider the state of competitiveness, the constraints to competitiveness and strategies for increasing the competitiveness of agriculture. The urgency has been increased by the push in a post-WTO international economic order for a much greater degree of trade. It is widely recognized that being competitive is a dynamic concept that involves both technical production of a commodity and distribution strategies with targeted market characteristics, before concluding an assessment of competitive advantage.

In the long run, firms producing and marketing products succeed if they possess sustainable competitive

[1]FAO/IICA, Assessment of the Impact and Policy Implications of Trade Liberalization on the Agricultural Sector of CARICOM Countries, 1998.

advantage. Porter[2] identifies two basic types of competitive advantage-lower cost and differentiation. Lower cost is the ability of a firm to design, produce and market a comparable buyer value (products) more efficiently (lower cost) than its competitors. Differentiation is the ability to provide unique and superior buyer value (products) to the buyer in terms of product quality, special features or after-sale service and as a result commands a premium price.

Higher operational productivity than that of competitors is the fundamental underpinning of both types of competitive advantage. It is unusual that the firm will have the competitive advantage for the product in both respects. However, it is important that firms, while being relatively more committed to one, pursue both types of competitive advantage

In the context of globalization and its implications for the changing role of the state Porter identified five factors influencing competitiveness. These are:

- *Product market factors:* addresses market access, marketing infrastructure and product characteristics.
- *Input market factors:* addresses sources of raw materials and intermediate inputs, human resources, technology, and credit.
- *Infrastructure and support industries factors:* addresses transportation and marketing linkages, information systems, education and entrepreneurial training systems.
- *Industry structure factors:* addresses the competitive structure of the industry, firm size and concentration, ownership structure,
- *Government factors:* addresses the general policy and regulatory environment, government support agencies and organizations, agricultural sectoral policies and programs.

It is important to recognize the dynamic aspect of all of the above factors, both internal and external, and the fact that changes in their conditions and innovations can very quickly shift. Competitive advantage may lie in the area of new technologies, new or shifting buyer needs, the emergence of a new industry segment, shifting input cost or availability and changes in government regulations. If firms within nations and regions are to establish and maintain a competitive advantage it is critical that the important role of the government be recognized.

The cost-based measure of relative competitiveness across commodities within countries used here, is referred to as a domestic resource cost (DRC) coefficient. The DRC coefficients compare the opportunity cost of domestic production to the value added it generates. They are an empirical measure of the relative efficiency of domestic production in generating or

[2]Porter, Michael E. The Competitive Advantage of Nations, The Free Press, 1990.

saving foreign exchange. If the DRC value in the production of a commodity is less than the foreign exchange rate, the product holds a competitive advantage. If it is an export product the country gains foreign exchange by exporting it.

DRC = domestic resources and non-traded inputs valued at opportunity costs or shadow prices (net foreign exchange earned or saved by producing the good domestically).

Studies for Suriname[3] and for Guyana[4] address cost competitiveness with respect to rice production in these countries. These studies generated individual cost of production assessments and, where the data is available, also DRC coefficients.

Analyses of competitive advantage in the context of cost competitiveness and differentiation always need to be considered very carefully because of the complexity of measurement and interpretation involved, especially considering differences in products similarly classified (varietal differences), the different market niches that a product may target (health, ethnic), the classification and interpretation of cost data across countries and the inherent perceived characteristics associated with particular products. In the final analysis, it is specific firms producing a particular quality product sold in a market with unique characteristics that has the competitive advantage.

Guyana and Suriname are the only net rice exporters of the CARICOM, although Belize has been exporting some rice in recent years and is seeking to be a regular exporter. With regard to rice exports, it can be stated that over the last 20 years Guyana has been more successful than Suriname. Between 1980 and 1999 Suriname exported, in total, 1,746,502 mt of rice, while Guyana was able to export 2,293,060 mt of rice, mainly to the EU and Caribbean markets.

The total acreage of irrigated rice land in Suriname is 54,000 hectares while in Guyana the acreage is approximately 110,000 hectares of land. The size of rice farms for both Suriname and Guyana varies from less than six hectares to over 1,000 hectares, with more than 60 per cent of the farms being below six hectares. The privately-owned mills located through the Atlantic Coast of the two countries undertake processing of paddy into rice. The smaller mills produce rice mainly for domestic consumption while the larger mills concentrate mainly on exports. In Guyana the rice industry is dominated by the private sector while in Suriname the government is partly involved in the sector through a few integrated rice farms. In general the industries in these

[3]InterAmerican Development Bank, Boye, Greta/ Ramautarsing, Winston. Revitalizing Agriculture in Suriname, 1997.

[4]Cramer, Gail, Rice Pricing at Farm, Mill and Export Levels in Guyana, 1998.

two Caricom states operate free of subsidies and are based on sustainable concepts of development and principally consists of small and medium sized privately owned farms and mills.

However, numerous constraints limit productivity increases, which would be critical for achieving long run competitiveness. Among the most important of these are improved roads for machinery access, improved seeds adapted to the local growing environment and increased competition in input markets in order to reduce prices faced by producers. However, the large-scale commercial operators are certainly competitive in the EU market and very possibly in the CARICOM market.

Table 1. Rice Cost Competitiveness

	Guyana Large-scale	Guyana Small-scale	Suriname Large-scale
Paddy Rice Yield (MT/Acre)	1.76	1.32	1.6
Total Variable Paddy Rice Cost (US$/Acre)	166.74	195.21	294
Production Cost (US$/MT Paddy rice)	94.74	147.89	183.75
Production Cost of Paddy Rice (US$/lb.)	0.05	0.07	0.09
Production Cost/Milled Rice (US$/MT FOB)	268.00	338.00	284.00
World Market Price (US$/MT)	246.00	246.00	246.00
EU/Market Price(US$/MT)	340.00	340.00	340.00
CARICOM Market price (US$/MT)	262.00	262.00	262.00
DRC Coefficient (EU Market)	0.61	0.75	0.66
DRC Coefficient (World Market)	1.24	2.63	1.62
DRC Coefficient (CARICOM Market)	1.06	2.05	1.30

Source: FAO/IICA (1998)

3.1 Cost of Production

The cost of production is determined by internal and external factors. The macro-economic conditions have not favoured the increase of production efficiencies. The high inefficiency rate that exists in the rice chain, comprising the field production, processing, transportation and sales, has to be addressed in order to qualify for regular and sustainable exports.

The cost price per bag of 79 kg wet paddy (20 per cent moisture) is around US$9 and these costs seem to be lower than the costs for the same quantity and quality of paddy produced in the USA and in the EU. Estimation of farm gate

prices according to the top- bottom method will not result into reasonable prices for the farmers, since the export prices are so low. Area harvested, paddy yields, costs of transportation and milling costs, and of course, paddy and rice quality are important issues in the framework of problem solving.

Caribbean rice exporters are not in a position to effectively compete with larger suppliers on the international market due to a lack of:

- proper maintenance of drainage and irrigation schemes
- running relevant extension and training programs
- research and development on harvest technology and waste management
- market surveys and marketing information systems

In the context of internal factors, reference should be made to the fact that the majority of required machines, equipment, fertilizers, chemicals, materials for packaging and oil are being imported. Apart from the imported inflation for these products they put pressure on the foreign exchange reserve of the Caribbean rice exporting countries. The recent high prices for imported oil increased the overall production cost tremendously and this increase is not compensated for by higher export prices. It should also be mentioned that the playing fields are not equal for the players, taking into account the subsidies extended to EU and US rice farmers.

4. THE EUROPEAN MARKET

Suriname enjoys, as an ACP member state, preferential access to the EU market in the form of 50 per cent tariff reduction on the ACP quota of 125,000 tons of cargo rice and 20,000 tons of broken rice. Since 1991, Suriname has not utilized the ACP quota system, opting to send rice to the EU through the Dutch Antilles. Rice moving through this OCT route is processed from cargo rice into semi-milled white rice, that can enter the EU free of duties and quantitative restrictions. Rice shipped through this route has generally commanded higher prices than the prevailing world market price. Surinamese rice is considered to be of high quality, due to its long grain characteristics, flavour and cooking qualities. This quality differential provides some opportunities for product differentiation in the EU market, where Surinamese producers face competition from third countries including the USA and the countries of the Far East.

Surinamese rice producers and exporters have almost exclusively focused on the preferential EU market. Developments in this market resulted in a dramatic drop in prices. Basmati rice for example competes strongly with the ACP-rice on the EU market. Not only is this aromatic rice allowed duty free on

the EU market, the exporters from India provide an incentive of US$.25 per ton imported in the EU.

With reduced export transaction costs, upgraded infrastructure and a lower cost of production, including capital cost, Suriname, assisted by its possibilities of product differentiation, may then be able to sell rice profitably on the open market.

4.1 The Ceiling System

In 1991 the quota for ACP countries in the EU market had been fixed at 125,000 mton and 20,000 mton broken rice. At that point in time, membership in the EU consisted of 10 countries. In 1992 rice would be channeled via the OCT route, where limited quantities of rice, after being semi-milled in overseas countries and territories of the EU, could be shipped levy-free to Europe.

The EU changed the regulations with regard to the ACP levy after the GATT agreement became operational. Since July 1995 the system of fluctuating levies was replaced by a system of import duties, fixed at a maximum level. These maximum import duties were being adjusted yearly on the first of July. The CIF price plus the import duty is not to exceed the ceiling price. For the Indica type the ceiling price for husked rice is 1.8 x the intervention price for paddy and for white rice this is 2.63 x the intervention price for paddy. The intervention price for paddy is also subject to adjustment in September every year.

The maximum import duty for various rice types is being calculated once per two week on the basis of the market prices for Thai (Loonzain B) and USA No.2. The calculated import duty = ceiling price - market price. If the calculated import duty exceeds the maximum import duty fixed for that year, the maximum duty will apply. In other words, the calculated duty can never exceed the maximum duty. If prices increase or decrease with more than 10 ECU per mton within two weeks, the import duties will be adjusted.

4.2 Import Licenses and Transparency

In accordance with the regulation, rice mills may apply for a license when they meet the requirements and pay a deposit of 28 ECU per mton. If the sum of all applications exceed the tranche as set, the applicants will be granted a quantity as a result of a proportional percentage of their requested quantities. When importing rice into the EU, the mill has to pay the import duty in advance, especially when there is no accessibility to a custom-entrepot. It is allowed to return licenses, but if that is the case, the EU acts as if the rice was imported into the EU markets and subtracts the quantity from the total tranche. Licenses have been traded at US$70 per mton. By

grouping themselves and setting the targets, the larger mills, being part of the strong EU rice lobby, can outsmart the smaller mills who are more dependent on ACP rice and who cannot afford to mobilize capital and power in the same way the larger mills do.

The currently operated system of import license develops stagnation in the sales of ACP rice and gives protection to the rice produced and processed in the EU at the expense of ACP rice.

4.3 Decreased Quota and Lower Prices

In 1996, according to FAO, the opening of the rice market following the Agreement and the stronger growth in import demand relative to export supplies, were expected to boost world market prices. Prices were expected to increase by some 15 per cent over the base period (Rice Export Price Index; 1988-1990 = 100). Regardless of a number of factors affecting the outcome of this projection, it appears that benefits could be reaped from the Agreement in the longer term. These benefits would strongly depend on countries' individual response to their commitments to open up markets. The international market may continue to remain distorted, conditioned by the possibility of a greater use of export subsidies in some exporting countries and the application of high import tariffs in others. International rice prices from most origins showed an upward trend during 1998, sustained by a higher global import demand along with concerns about the availability of export supplies. Also Vietnam, the world's number two rice exporter, decided to control the pace of export shipments during 1998 with the aim of domestic food security.

Increased production levels during 1999 and lower imports in some major Far East countries and Brazil, have resulted in a reduced import demand and weakening international rice prices. The devaluation of the Baht in Thailand, the world's leading rice exporter, added to the negative price trend. The process of declining rice prices occurred over the past years. The trend was non-uniform and had more consequences for some rice producing countries compared to others. Vietnam began to offer more competitive prices in order to capture a greater share on the market at the expense of Thailand. International reference prices are the Thai Loonzain 100% B (Table 2) and the USA No.2.

Table 2. Thailand Rice Prices: October 2000

	Bulk- Rotterdam US$/MT
TWR 100% B	248.00 C&F
Parb LZ 4-88%	255.00 C&F
Loonzain 100% B	225.00 C&F
A 1 Super	190.00 C&F
Fragrant WR 100%	550.00 C&F
Fragrant LZ Super	500.00 C&F
Fragrant LZ Supreme	520.00 C&F

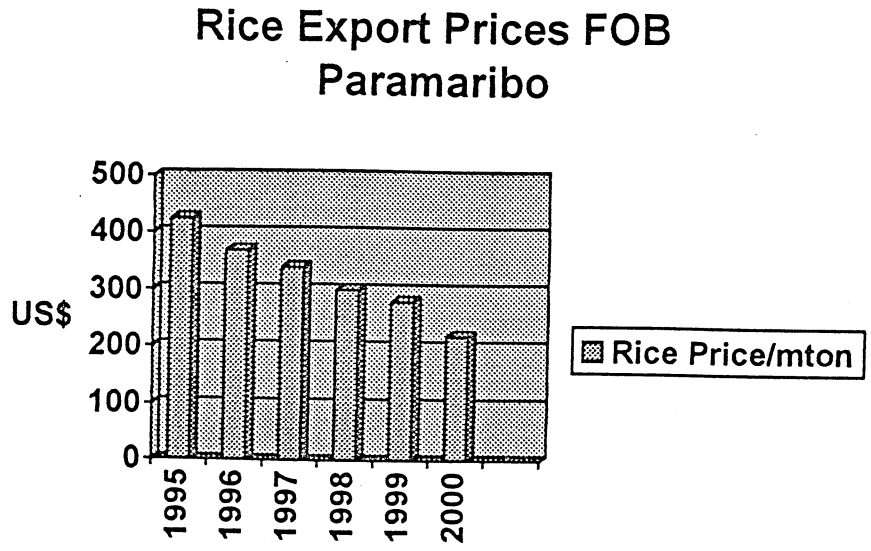
The implications for the Caribbean producers and exporters have been quite serious. The situation for Suriname and Guyana has not been a positive one. Since late 1997 the OCT route and the direct ACP route have been combined in one quota being 160,000 Mt. of cargo rice. (20,000 mton brokens not included). The Commission brought an end to rice trading via the OCT route. They argued that the exports of Guyana and Suriname that amounted to 362,000 mt in 1996, were exceeding projected levels significantly. Average export rice prices have continued to decline considerably from US$425 per mton FOB Paramaribo for husked rice during the 1993-1995 period to US$220 per mton in year 2000.

The farm gate price for a bag of paddy is currently around US$8, which is lower than the break-even figure in today's calculation of production costs of US$9. The consequences of these declining prices are already being felt.

Considering the critical nature of the current situation, it will be necessary to lobby Caribbean governments to protect the interest of regional rice producers.

4.4 Market Access for LDCs

The European Commission developed a plan to provide full access for the world's poorest countries. The EU signed an agreement in June 2000 in Cotonou with ACP countries, triggering a process that will ensure free access for essentially all products from all LDCs by 2005 at the latest. The Commission now proposes to go beyond previous Community commitments by proposing to grant unrestricted duty-free access to all products, except fire-arms. For three



products, bananas, sugar and rice, implementation will take effect in three progressive stages to be completed within three years. The impact on rice trade between EU and the ACP rice exporting countries Suriname and Guyana will be significant. There are 48 LDCs on the UN list, of which 39 are ACP countries. Myanmar (Burma), for instance, a non-ACP LDC now exporting 800,000 mton of rice per year to the Middle East and to Europe, is improving its export capacity. Suriname and Guyana generate approximately 300.000 mton rice exports per year and have a small share on the EU market. If Myanmar obtains duty-free access to the EU rice market, the competitiveness of current ACP rice exports will deteriorate further.

5. U.S. TRADE POLICIES

One of the concerns about the Caricom regional market is the impact of the US policies under the PL 480 program. Being a food aid program, the 20 per cent CET does not apply to these imports. In 1999 the US rice imports into Jamaica went up from 13,000 tonnes to over 34,000 tonnes, capturing about 45 per cent of the Jamaican market. In addition, in December 1999, the US approved the purchase of paddy, where previously only processed rice was involved. This enlarged the volume of rice that could be imported for the same amount of aid dollars. US rice exporters supported the "restoration of the former status of Jamaica as a sizable export market for US rice"[5]. Especially Guyana, after the sharp reduction of the OCT route, focused on the regional market, was hurt. Guyana had no other option but to request Jamaica to substitute (part of) the rice under the PL480 allocation for other commodities. The broader issue here is that the impact of food aid up till now focused only on the receiving economy but not much attention was given to the countries servicing these markets. Where food aid disrupts normal commercial supplies, particu-larly from developing countries, something is definitely wrong.

On June 20, 2000 the US decided to increase its support for US farmers to US$15.3 billion. Franz Fischler, European Commissioner for Agriculture, stated: "Providing supplementary support of over US$15 billion to US farmers, severely undermines the credibility of the frequent US statements on the need of a global reduction in agricultural support. In fact US direct support to agriculture has increased by about 700 per cent since 1996. By contrast, the EU decided on a second major agricultural policy reform in a decade, including a freeze on expenditure until 2006. The EU will carefully monitor developments and oppose any attempt by the US to

[5] http://www.homefarm.com/archives/1999/dfp/991206.htm

circumvent their WTO spending limit by misclassifying these financial payments."

While the US officially calls for elimination of export subsidies, on the issue of export credits, however, they propose to "conduct negotiations...in the OECD in fulfillment of Article 10.2 of the AoA, and apply discipline to all users." But the negotiations that have taken place up till now in the OECD have not been about the elimination of export credits, but rather on developing criteria for the development of various export financing programmes. For developing countries, this competition from developed country export credit schemes, both on the domestic and the export markets, is unacceptable. The US clearly shifted policies from export subsidies towards export credit schemes for agricultural exporters, mainly in terms of cash grants in addition to subsidized import credit. They are hereby circumventing the domestic support commitments by utilizing the green box, which is supposed to be non-trade distorting.

When cost of production concerns are incorporated into this competitiveness assessment, Suriname may, over the longer run, be limited to Caribbean and other markets close to the region. Our assessment suggests the ability to compete in the protected EU market and a definite potential in the CARICOM market. However, in both markets, improved product quality and lower transportation cost will be crucial to maintaining competitiveness. On the other hand, the CET may provide adequate protection against imports from the USA, but probably not against imports from Vietnam.

Guyana and Suriname, will have to increase the yields as well as improve the quality of the product to be competitive in both the domestic and international markets. There are issues of land tenure and water infrastructure (drainage and irrigation) that fall within the purview of the government, and are essential prerequisites for private investment to be profitable. At the same time, producers will have to bear some of the costs of construction and maintenance of infrastructure. User fees will be necessary to recover even a portion of cost. Here again, small producers may not be able to sustain the required quality standards for competitiveness and policy makers will then have to consider programs that channel their resources to other viable activities.

Rice will have to compete with extra-regional imports, as the CET declines in line with a more liberal trading regime. Both will require a gradual phasing out of protection, promoting competitive efficiency levels for rice in both Guyana and Suriname. While the region has the potential for self-sufficiency, the producing countries are already losing market shares to

Table 3. Rice Based Industrial Products

Food Products:	**Non-food Products:**
* broken rice (vinegar, alcoholic beverages)	* rice bran (rice oil for soaps)
* rice bran (animal feed, healthy foods, rice oil for soaps)	* rice hull (insulating material, absorbent, abrasive, animal bedding soil conditioner)
* rice flour (cereals, snack foods, baby food)	* rice husk (bulking agent
* rice starch	* rice straw (fuel, animal feed, bedding, hats)

extra-regional imports. The governments of both Guyana and Suriname have to work closely with the governments of consumer countries to help maintain their shares of the regional market.

6. AGRO-INDUSTRY PRODUCT OPPORTUNITIES

An interesting list of food- and non-food products that can be manufactured from rice are listed in Table 3:

Processed rice products include rice breakfast cereals, puffed rice, rice flour, beverages and noodles. The greatest opportunity may be puffed rice cakes that are becoming increasingly popular as a breakfast cereal. Production is simple and can be done at a small or large-scale plant, while investment requirements are relatively low.

Broken rice can be converted to rice flour and mixed with other flours to make bread. Rice flour can also be used as a thickening agent, such as sake in Japan. Rice-based beverages are also sold in health food stores as an alternative to milk and soy-bean based milk substitutes

The current price premium received does not seem to justify development of parboiling facilities in the short-run. However, such a facility would considerably enhance the long-run competitive position of the rice industry.

7. CONCLUSIONS

There is little evidence that the WTO reforms have led to increasing world market food prices, which was predicted at the time of the Uruguay Round. On the contrary, the developments in the last 3 years confirm the existing declining trend in agriculture commodity prices.

International trade liberalization and trade arrangements had a negative impact on the rice sector in Suriname, while the expected creative responses in terms of increased production and processing and innovative marketing efficiencies did not materialise.

Changes in the international rice market have dramatically decreased the

FOB rice price for the Suriname exporter, and subsequently, the price the farmer receives per bag. Moreover, the unit cost level went up as a consequence of increased prices for agricultural inputs, machines, equipment, fertilizers, chemicals, materials for packaging and oil.

US government supported competition, in particular the PL480 food aid programme, poses a threat to competitiveness of Surinamese rice to the regional CARICOM market.

Furthermore, a strategy is required towards increasing value-added production methods and product differentiation.

A comprehensive agriculture reform program for the rice industry must be developed, whereby the critical cost competitiveness items are identified and quantified. At least attention should be paid to:

- proper maintenance of drainage and irrigation schemes
- appropriate extension and training programs
- research and development on post-harvest technology and waste management.
- market surveys and marketing information systems.

The current price premium received does not seem to justify development of parboiling facilities in the short-run. However, such a facility would considerably enhance the long-run competitive position of the rice industry. An evaluation of factors currently influencing the competitiveness of rice in Suriname does not make a strong case for its future competitiveness. However, with stability at the macro-economic and sectoral level, restoring productivity levels could change this assessment.

Annex 1. Basic Data Surinamese Rice Industry; Period 1990 - 1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Acreage Planted	53,500	60,090	58,750	58,640	60,010	61,390	61,780	53,500	50,140	50,000
Cropping Intensity	0,90	1,07	1,22	1,02	0,97	1,25	1,18	1,20	0,96	0,93
Yield/ha.	n.a.	3,8	3,8	3,7	3,6	3,5	3,7	4,0	3,8	3,7
Production in 1000 mton	214	229,3	261,1	216,9	218	216	228,7	213,1	211	206
Export Volume Cargo (mton)	62,6	47	73,4	71,2	76,1	84,5	82,9	72,9	53,1	38,6
Export Volume In White Rice and Brokens in 1000 mton	3	3,1	3,4	1,7	4,3	3,2	3,7	14,1	8,9	11,9
Total Export Value	40,9	19,5	27,9	26,6	30,5	35,8	35,2	28,9	19,7	13,3

Annex 2. Resume - Winston Ramoutarsing

Ramautarsing, Winston R.D. was born on 17 June, 1956 in Paramaribo, Suriname. Winston has a Masters degree in Development Economics from the Agricultural University of Wageningen, The Netherlands. Main subjects were:

- Development Economics (Macro-, Agricultural Sector and Project Planning)
- Marketing and Marketing Research
- Cooperatives and Credit
- Industrial Management.

Since 1987 to date he is Lecturer at the Social-Economic Faculty of the Anton de Kom University of Suriname in: Physical Resource Economics, Project Evaluation and Development Economics and at the Technological Faculty in: Agricultural Economics. Since 1992 to date he is also Managing Director of PROPLAN Consultancy NV involved in consultancy and training activities in o.a. project identification, formulation-, management, monitoring and evaluation, marketing etc.