

## MARKETING ARRANGEMENTS WITHIN THE RICE INDUSTRY IN GUYANA

Winston C. Smith

(CARICOM Secretariat, Georgetown, Guyana, S.A.)

### *A Short History of the Rice Industry*

The production of rice in Guyana started on a rather modest scale sometime during the middle of the Eighteenth century. The industry owes its origin to our slave and indentured forefathers who operated under primitive and sometimes dehumanising conditions in order to feed themselves. Over time, however, the rice industry developed to become the second most important agricultural enterprise in the country, the first being sugar.

Like in other parts of the Caribbean, plantation agriculture involving sugar, dominated the agricultural sector of Guyana. The demands of the plantation system imposed severe constraints on the development of other agricultural enterprise and indeed the plantation owners demonstrated open hostility towards any activity which sought to compete with sugar and banana. However, the intense desire of, and continuous struggle by the slaves and indentured labourers for freedom, inspired the growth and development of the rice industry in Guyana.

During the early stages, rice production was mainly one of subsistence farming with the participants utilising what little knowledge and experience they gained from the plantation environment in the production of food for their families. Under such a production system, one would normally expect to find small and scattered farms.

Some of the main varieties of paddy planted during this early period include Demerara Creole,

Suthra Dhan, D110 and BG79. Today, the rice industry utilises such varieties as Starbonnet, Rustic, Champion and Variety 'N' which are not only more resistant to pests and diseases, but are also higher yielding. Data on acreage under production - as well as yield per acre over the period 1950-82 are shown in Table 1. Although Berbice is the leading rice producing area in Guyana, both Essequibo and Demerara account for a fairly substantial portion of production.

Very sharp differences characterise plantation agriculture and domestic food crop production. The plantation system, for example, occupied the best lands, in terms of fertility, location and infrastructure; faced a labour supply situation in which it could be prejudicially selective; had access to unlimited capital and sold its outputs to guaranteed overseas markets. On the other hand, traditional food crop production was forced to occupy relatively inferior lands, on the periphery of the estates, utilised family labour and encountered a serious problem of capital rationing. Traditional agriculture also supplied an unstable local market through a highly inefficient marketing system.

The rice industry in Guyana can truly be described as indigenous. From its inception, right up to today, Guyanese own and control all aspects of rice production. Regrettably, however, in addition to the number of physical problems such as poor drainage and irrigation, inadequate facilities, and pests and diseases, which affected the industry during its

TABLE 1: Paddy Production and Yield per acre in Guyana, 1950-82

Year	Acreage Harvested	Paddy Production (1/tons)	Yield/acre (bags)
1950	103,016	102,902	16
1951	116,872	112,929	15.5
1952	137,515	123,522	14.5
1953	132,100	137,154	16
1954	149,308	147,594	16
1955	137,025	129,409	15.1
1956	135,559	130,733	15.4
1957	135,985	106,723	12.4
1958	160,500	161,900	16
1959	197,480	173,118	15.4
1960	220,207	199,552	14.7
1961	261,249	222,374	13.6
1962	245,973	223,338	14.5
1963	201,145	169,481	13.4
1964	272,933	275,807	16
1965	331,231	328,444	11.3
1966	305,395	250,410	13
1967	253,499	184,614	11.6
1968	312,955	218,309	11.2
1969	279,303	170,549	9.8
1970	294,382	218,901	11.9
1971	233,542	181,527	12.6
1972	196,272	144,776	11.8
1973	229,268	149,916	10.5
1974	261,180	251,782	15.4
1975	287,861	292,334	16.2
1976	297,546	170,151	12.1
1977	337,322	382,544	17.5
1978	283,672	393,294	17.1
1979	222,893	236,692	17.6
1980	239,100	277,326	18.7
1981	219,962	271,517	19.7
1982	235,344	297,808	20.2

Source: Guyana Rice Board, Jan. 1984.

early stages, these have been compounded by problems of management. The serious nature of many of the problems today has resulted partly from the phenomenal growth which has taken place in the industry during the last two decades. While current efforts are being made to address the management problem, many of the others still exist and may continue to persist a while longer in the light of the serious economic situation imposing constraints on importation of fertilisers, chemicals, spares and other inputs for the industry.

Among the major problems facing rice production in Guyana are:

1. drainage and irrigation
2. inadequacy of land preparation and harvesting equipment

3. inadequate storage and milling facilities
4. unfavourable weather
5. pests and disease
6. management.

#### Drainage and Irrigation

Water resource management is a crucial element in all agricultural activities including rice production. Poor drainage and irrigation in the rice industry is the result of both inadequate and inappropriate physical facilities as it is a problem of poor water management. Farmers, as well as the Drainage and Irrigation Board have failed to keep clean the existing canals, thereby impeding the free movement of water. In addition, farmers have not only neglected their feeder drains, but have also failed to make maximum use of scheduled time runs of water.

#### Inadequacy of Land Preparation and Harvesting Equipment

About one decade ago, it was a popular view that the rice industry in Guyana was over-mechanised, reference being made directly to the number of tractors and combine harvesters available to the industry. In addition to the private ownership of much of this equipment, the government itself operated agricultural machinery hire pools from which farmers rented equipment as they needed. Today, mainly because of the lack of spare parts, the situation is the complete reverse. This problem does not only cause delays in land preparation thus resulting in late plantings for many farmers but also the shortage of combine harvesters often resulting in large acreage of cultivation remaining unrecaped.

#### Inadequate Storage and Milling Facilities

Inadequate storage has become a serious problem on the farm as well as at the factors. In the past, many farmers had watchhouses in which

they stored their paddy - at least temporarily - before taking it to the factories. Today, for a number of reasons, no such watchhouses exist and in the event of delays in transportation - which now frequently occur - the paddy is exposed to the elements thus causing deterioration in quality and sometimes complete spoilage. Additionally, the upright silos, most of which were constructed about 1965, as the main storage facilities at the factories, have proven to be technically inefficient, and therefore, add to the problem of inadequate facilities. As in the case of land preparation and harvesting equipment, many rice mills have become inoperative because of the lack of spares and adequate maintenance.

#### *Unfavourable Weather*

Of all the above problems, weather must be considered unique, as neither the farmer nor the government can directly influence its occurrence. It must be conceded that extensive periods of excessive rain on the one hand and long periods of dry weather on the other can have serious adverse effects on rice production. However, it is possible that the unfavourable effects of the weather can be minimised by the storage of excess rain water and its utilisation during drought periods.

#### *Pests and Disease*

The production of rice is plagued by a wide range of pests and diseases and the control of these pose serious challenges, not only for the farmers, but also for the professional agriculturalists working in this area of the industry. The attacks by pests and diseases do not only reduce yields, but also sometimes result in complete loss of crop. Since this can destabilise the income structure within the industry, they must be of grave concern to all operators within it. Some of the more common diseases in the industry are Blast and Brown Leaf Spot while the more destructive

pests are Leafminers and Paddy bugs. Although control methods are known to both farmers and professional agriculturalists, the unavailability of adequate and appropriate chemicals and equipment perhaps represent the greatest area of difficulty in the fight against pests and diseases. To the extent that Guyana continues to experience problems of foreign exchange, therefore, this area of weakness within the industry is likely to continue.

#### *Management*

Good management does not guarantee success, but without it, success is impossible. There is little doubt that the structure of the rice industry gives rise to a number of serious management problems. In the first place the industry is made up of a very large number of small farms which are widely scattered over the entire coastal plain and so severe management problems relating to the supply of inputs as well as the collection of outputs are encountered. Secondly, because the characteristics of the consumption market keep changing rapidly - one time the demand is for short grain rice, the other time it is for long grain; one time the demand is for white rice, the other time it is for brown rice, etc - management is incapable of keeping up with these changes because of the fixity of assets and the unavailability of funds to respond readily. Finally, for reasons which are not altogether clear, farmers seem not to have confidence in the Guyana Rice Board - the government institution set up to manage the industry - and, as a result, do not cooperate as they should in the management of the industry. These represent some of the areas which the Guyana Rice Board will have to address if the industry is to be better managed.

#### *An Overview of Agricultural Marketing*

Marketing is generally described as the sum total of all those activities involved in moving a commodity from

its point of production to its point of consumption. In the case of agricultural marketing, there is not complete agreement as to where production ends and marketing begins. It is often argued that agricultural marketing must start some time before a crop is reaped if post-harvest losses are to be minimised and marketing itself is to be efficient.

In any analysis of agricultural marketing within the Caribbean, it is useful to separate the arrangements for the plantation sub-sector from that of the indigenous food crop sub-sector. This is considered necessary because of the vast areas of difference in the two systems.

The marketing of output from the plantation system, i.e. sugar and bananas, can be considered relatively efficient although the efficiency level has deteriorated somewhat during the last few years. There are a number of reasons for this relatively higher level of efficiency within the plantation sub-sector. In the first place, the location of farms within the plantation system facilitates easy distribution of inputs and collection of outputs and provides ample opportunity to rationalise transportation systems. Secondly, all the requisite marketing infrastructure, e.g. packaging, transportation, storage, etc. are in place. Thirdly, until relatively recently, the plantation sub-sector sold all its production to guaranteed markets at fairly remunerative prices. Last but not least, the marketing activities are managed by individuals with the experience, competence and capacity to operate the system efficiently.

In the case of the marketing of food crop production, the operation is less efficient and in some areas can be described as absolutely poor and wasteful. Besides the fact that food crop farms are generally small and widely scattered thereby making the supply of inputs and the collection of output difficult, instability in

production and lack of information at both the farm and consumer levels are perhaps among the main causes for inefficiency in domestic food crop marketing. Additionally, basic infrastructure is inadequate/inappropriate thereby compounding the problem. Equally important is the lack of skilled personnel to operate the system.

The path along which a commodity passes in its movement from the producer to the consumer is known as its *marketing channel*. For some commodities this channel may be short and may have few stop points while for others it may be long and contain a large number of stops. Generally, though not necessarily so, a shorter channel with fewer stops is more efficient in terms of lower marketing costs and minimum post-harvest losses. In the case of agricultural marketing, these losses which may take the form of germination, quantitative, qualitative and nutritional, are of special importance as they can significantly reduce the volume and value of production finally getting on the plates of consumers and can account for millions of dollars worth of food waste. This is indeed a major problem in the Caribbean as indeed it is in many other parts of the world. As part of the global concern for food security, continuing efforts are being made to reduce the volume and value of these losses by improving the agriculture marketing system.

The marketing channel for a food commodity may, for convenience, be divided into three sections:

1. activities at the farm level
2. those between the farmer and wholesaler/retailer
3. activities at consumer level.

Each section is connected to the other by a network of transportation systems. Efforts aimed at improving marketing are, therefore, generally concerned with the activities within the three sections and also the transportation network linking them.

### *The Generalised Marketing System for Paddy/Rice*

In the very early days of the industry, farmers sold their production of paddy to private rice millers in the absence of government-owned or controlled facilities. In the main, the farmers themselves were responsible for transportation between the farm and the mills. After processing the paddy, the private millers sold the rice either locally or to overseas markets. It was in the conduct of these sales that the private rice millers are accused of utilising unfair practices particularly to overseas buyers. It was alleged that in their dealings with importers, the quality of rice actually shipped overseas was very poor and differed sharply from the samples used in the trade negotiations. On the home front, it was claimed that farmers were paid very low prices for their paddy but consumers were made to pay very high prices for rice. The adverse effects of such actions on the rice industry are obvious and steps to correct them were seen as necessary.

In 1950, the government established the Guyana Rice Marketing Board<sup>4</sup> and sought to influence the marketing of rice so that it could enhance improvements within the industry. The Act lists the following as the main functions of the Board:

1. to develop the rice industry in Guyana and to promote the expansion of the export trade in the said industry;
2. to exercise general supervision over the disposal of paddy produced in Guyana;
3. to control the manufacture, purchase, sale, distribution and export of all rice and all by-products of paddy manufactured in Guyana;
4. to carry on the business of rice and paddy merchants;
5. to engage in such other commercial, industrial and agricultural activities which the

Board deems necessary for the purpose of developing the rice industry.

The Guyana Rice Board shares with private millers the responsibility for purchasing farmers' paddy but retains monopoly power on the sale of all rice produced both by itself and the private miller. A simplified representation of the marketing arrangements for paddy/rice in Guyana is presented in Diagram 1.

From this diagram it can be seen that farmers sell their paddy to either a government or private mill for processing. Private millers, however, must sell all their rice to a government mill.

All the processed rice which is available goes through one of three channels. On the basis of estimated demand for rice within the respective production areas, quantities of the commodity are sold, on terms and conditions established by the Guyana Rice Board, through authorised wholesale and retail dealers to consumers within the respective local communities. Export sales are generally negotiated directly by the Guyana Rice Board and executed from its Georgetown head office. However, since the respective counties have the physical facilities for handling export sales, some quantities of rice for overseas markets are loaded at these facilities. Excess volumes of rice from the producing areas are forwarded to the Guyana Rice Marketing Board in Georgetown. The rice is sold on the local or overseas markets. Head office sales to the local market are directed mainly to the non-rice producing areas in Guyana and also to top up short falls which may occur from time to time within the producing areas.

Since the marketing arrangements in the three counties are similar and vary only in operational details, the analysis of the system focuses on the arrangements within one county - Demerara.

In terms of dividing the system into the three levels to which reference was made earlier, activities

of the farmers may be considered as Level 1, the operation of both the public and private milling facilities as Level 2 and the rest of the marketing channel as Level 3. Those three levels are analyzed separately.

#### *Production, Reaping and On-farm Storage - Level I*

Agricultural marketing, if it is to be efficient, must have a backward linkage into agriculture production. Indeed, the integration of production and marketing is considered an absolute necessity. This is so because of the level of influence production activities - particularly those like selection of varieties and times of harvesting - can have on the quality of the final commodity. It is, useful, therefore, for the marketer to function as the medium through which information can flow backward and forward between the farmer and the consumer.

Regrettably, the type of casual relationship existing among the farmer, the marketer, and the consumer does not allow for the identification, collection and dissemination of the type of data which will inform production and marketing systems and so make their activities more efficient. Although the need has been identified as crucial it is unfortunate that positive steps have not yet been taken to initiate its development. It is strongly believed that improvements in agricultural marketing in the Region will not be achieved unless or until an appropriate, adequate, and timely production/marketing information system is developed and made operational.

The production of good rice must begin with the planting of good seed paddy, although the latter does not guarantee the former. For the marketing system to deliver a commodity which fits the basic specifications of the consumer, the farmer must plant the required variety, e.g. long or short grain. Similarly, marketers must be able to

inform millers whether the market demands white or brown rice. These two examples provide guidelines as to the type of information which must be provided to the farmer or miller if they are to respond adequately to consumer demand.

The Guyana Rice Board, as the institution responsible for overall coordination within the rice industry in Guyana, should accept the inescapable challenge to develop and implement the needed information system within the industry. Details on the types of data to be collected and the forms in which they may be presented can be examined at a later stage. However, such a system must gather and disseminate information on all aspects of the industry. Additionally, it should not only give but also seek to obtain information at the regional and international levels of developments within the industry and particularly on areas which are of importance to Guyana, for example, varietal developments and market opportunities.

The land tenure systems have an important influence on rice production in Guyana. The systems vary from ordinary rental agreements to complicated share cropping arrangements. The intention is not to analyse these systems but to highlight their effects on the marketing of paddy.

The ownership of the land on which paddy is produced is an important variable determining some of the obligations of the rice farmer in selling his paddy. In order to understand and appreciate some of these obligations, it is useful to recognise that rice production is being done on both privately owned or rented land and on land leased from a government land settlement scheme. The farmers who operate on private lands are free to sell their paddy to any miller but those who utilise government land are compelled under the terms of their agreement to sell their paddy to a government mill. This condition was instituted, not

merely to ensure that the government mills obtain an adequate volume of paddy for processing but perhaps equally important, to ensure that land rentals and other cost of inputs supplied on credit, for example, fertiliser and chemicals, are efficiently collected. Farmers on government lands are not required to provide guarantees for inputs advanced to them. In the case of farmers who operate on private land obtaining inputs from the government, they are obligated to provide guarantees; and since they owe no rental to the government there is no need to compel them to sell their paddy to a government mill. It is in the interest of these private farmers to repay their loans if their guarantees are not to be forfeited.

The arrangements regarding the sale of paddy by farmers appear on the surface to be reasonable but in actual practice operate to the disadvantage of the farmer. For a number of reasons, payments to farmers for the sale of paddy to government mills are usually delayed for long periods and because of this, there is the constant temptation for them to sell all or part of their production to private millers whose payments are usually prompt. The main disadvantage in selling to private millers is that they pay significantly lower prices and make larger price deductions for higher moisture contents. While the government would pay \$33 for a 140 lb. bag of Grade 'A' paddy, a private rice miller would offer about \$25. Appendix I shows prices paid by the Guyana Rice Board to farmers for the various grades of paddy.

An examination of the prices at the farm level will reveal that there is very little differential for quality. In 1982, for example, the prices for the three top grades were \$33, \$31.50 and \$30. This price structure certainly does not have the stimulus to encourage farmers to upgrade their management and do produce Grade 'A' paddy. Indeed, if they are to be

encouraged to expand or even remain in the industry they must be given a fair price as well as one which will make them strive for excellence. Since pricing policies are of such crucial importance in agricultural production, it is absolutely necessary that these be very carefully determined and implemented.

Beside the very spatial nature of the rice industry, a large portion of production is done by small farmers. Expansion within the industry has tended to intensify the problems of reaping and on-farm storage. It is these aspects that this paper now seeks to explore. Except for relatively small and sporadic areas, recent industry expansion no longer permit the reaping of paddy by hand but rather dictate the use of combine harvesters. The activity of reaping is done by both private and government-owned combines. The shortage of harvesters coupled with the state of disrepair of a large portion of what should be available, cause long delays in completing this task with consequential problems for the industry. Delay in harvesting is directly correlated with losses due to shattering. This delay also affects the quality of both the paddy and rice. Additionally, late harvesting causes delays in planting in the succeeding season and the chain reaction finally results in a series of bottlenecks. To overcome this difficulty, additional equipment will have to be made available to the industry as hand reaping will not only be impractical but more costly.

A more recent but equally serious problem relating to harvesting is the shortage of bags. Recycling of bags has always been a feature of the rice industry and this method has proven to be adequate in the past. Normal wastage, however, coupled with limited foreign exchange to acquire new stocks for an expanding industry, impose severe strain on the system, resulting in long delays in harvesting with consequential adverse chain reactions throughout the