

ANALYSIS OF THE CAUSES OF CAMEROON'S PERMANENT DEPENDENCE ON RICE IMPORTS

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Abstract

This study, which aims to analyze the causes of Cameroon's permanent dependence on rice imports, is inspired by the observation that the expense linked to rice imports has a very negative influence on the Cameroonian trade balance; however, the country produces rice which is mainly exported to certain neighboring countries. To carry out this study, the objectives were set to analyze the marketing channels of Cameroonian rice, and to identify the factors that favors rice consumption. The target populations are traders and consumers of rice in Cameroon. The regions covered are those of the Far North, North, and Center, which produce most of the rice in Cameroon. To collect data in the field, questionnaires and interview guides were developed. As for the traders, an interview guide was used to collect information, after carrying out a categorization. For this purpose, local wholesalers of paddy rice, foreign wholesalers of paddy rice, foreign wholesalers of processed rice, retailers of markets close to production areas, local wholesalers of processed rice, wholesale retailers, supermarkets, and shops were identified. At the consumer level, populations residing in production areas, populations in metropolises close to production areas, and populations in metropolises far from production areas were identified. The data collected was analyzed using software such as SPSS and Excel spreadsheet. The tables and figures made it possible to clearly present the results, and thus facilitate their interpretation. It therefore appears that wholesalers of paddy rice who sell it directly to foreign buyers, making a gross margin for an 80 kg bag which varies between 2,000 and 3,000 FCFA, while those who process before reselling on the local market make barely a margin of 500 FCFA. In addition to this observation, we observe that wholesalers of processed rice who sell their products in metropolises far from the production basins have a gross margin which is completely double that observed in the metropolises close to the production basins; which is justified by the presence of intermediaries, and the transport costs necessary to ensure the transition of rice from production areas to consumption centers. The results show that 43.2% of Cameroonians consume on average 1 kg of rice per day; but unfortunately, most are not aware of the existence of locally produced rice, and even those who are aware of it cannot easily find it on the market. In the metropolises of the southern zone of Cameroon, for example, we have around 50% of the population who are not aware of the fact that there is rice produced in Cameroon, 30% of the population who are informed but never had the opportunity to consume it. In view of all these parameters, Cameroonian rice is oriented primarily towards neighboring countries which are closer to the production basins, while the country continues to import rice from outside to satisfy the needs of its populations.

Key words: rice, marketing circuit, consumption, import, export, Cameroon

INTRODUCTION

Food crops is the basis of nutrition and the survival of populations [1]. Among the food crops produced in Cameroon, cereal products occupy a special place. According to [10], cereal products constitute the staple food of a large part of the Cameroonian population, even in regions where these products are traditionally little consumed compared to roots and tubers. Rice therefore represents one of these cereal crops which has become established over time in the eating habits of

African populations in general and Cameroonians in particular [10]. According to MINADER (2009) [8], rice is a guarantor of food security, its strategic importance largely explains the large number of interventions by public authorities in this sector, which explains that this agricultural market is characterized by a large number of distortions, aid, barriers and subsidies. We unfortunately see that, to satisfy its rice needs, Cameroon is obliged to import, while most of its production, already very insufficient, is sold abroad. Cameroon, unable to satisfy the rice

needs of its population, turns to imports, which contributes to accentuating the imbalance in its trade balance. This situation is all the more serious because it is not a particularity of Cameroon, but of all African countries. Macauley and Tabo (2015) [5] affirm this by clarifying that although local rice production increased rapidly after the 2007-2008 food crisis, a key problem facing the rice sector in Africa in general is that local production has never matched demand. The continent therefore continues to depend on imports to meet the growing demand for rice. According to MINEPAT (2020) [9], the value of rice imports increased from 96.7 billion FCFA in 2010 to 212.5 billion FCFA in 2013 [9]. Over the period 2014-2018, the value of imports however increased serrated around an average of 159 billion FCFA. In 2005, imports amounted to 433,000 tons, or 84% of national demand. In 2013, imports exceeded 600,000 tons [10]. The country has a strong dependence on the outside world for this food; According to the national rice development strategy document in Cameroon, national demand is almost essentially covered by imports [12].

According to MINEPAT (2020) [8], this demand increased from nearly 726,000 tons in 2014 to nearly 783,000 tons in 2018. The average annual growth between these two years was therefore around 2%. The increase in demand for rice is explained by several factors such as population growth and especially galloping urbanization which moves people away from rural areas where food crops are produced, and forces them to look for crops that are easy to maintain, to transport and cook. The rice sector is one for which the country is highly dependent on international markets, while paradoxically the domestic production potential is considerable. According to Achancho (2013) [1], Cameroon displays relative food self-sufficiency but imports more than 75% of the rice consumed, despite significant production potential. In particular, there are favorable natural conditions which are still little exploited. Indeed, rice cultivation can be done in almost all natural regions of Cameroon (MINADER, 2009) [8]. But this production has so far been

concentrated in production basins which are mainly located near border areas, which favors the export of this product, which is already unable to satisfy national needs.

[7] therefore estimates that only 30% of production is consumed in Cameroon, the rest (70%) is sold in neighboring countries, mainly Nigeria. As for Mamadou (2013) [6], rice produced both under rainfed and irrigated conditions is almost 75% exported to Nigeria. The trends in the results of these two authors are approximately the same, although there is a slight gap.

Ultimately, we see that Cameroon depends very heavily on the external market to satisfy its rice needs, yet it is already very insufficient local production is oriented towards export; However, according to Mendez (2011) [7], the rice market is characterized by the residual aspect of the supply. Considering the global statistics produced by the FAO, rice seems to have the primary purpose of contributing to the food security of the populations of countries that cultivate it [9]. This means that countries first produce for their own market before exporting a part of it, which varies depending on the country. Until the 1990s, the share of trade remained below 5%. According to [10], for a global production of white rice of 502.2 million tons, only 46.2 million tons, or 9.2%, were internationally traded, making the global rice market a surplus management.

This article therefore aims to understand why rice produced in Cameroon is exported to neighboring countries, while the country continues to depend on imports to meet its needs; which causes it to lose a lot of foreign currency, and exposes it to risks which may be due to the shortage of rice on the world market? to answer this question, it will be a question of analyzing the marketing circuits of Cameroonian rice, and of identifying the factors which favor the consumption of rice?

MATERIALS AND METHODS

To collect data in the field, questionnaires and interview guides were developed. The administration of these survey tools was direct, that is to say it was a question of going

to the field, physically meeting all the actors concerned in the different selected areas. As for the traders, an interview guide was used to collect information, after carrying out a categorization. It was administered to 8 local wholesalers of paddy rice, 15 retailers in markets near production areas, 7 local wholesalers of processed rice, 15 wholesalers-retailers in urban and peri-urban markets, 5 supermarkets, and 10 shops. At the consumer level, populations residing in production basins, populations in metropolises close to production basins, and populations in metropolises far from production basins were identified. For households residing in production areas, 150 households were surveyed in Yagoua which is the main production area in the country, 50 households in Mora, and 100 in Lagdo. For the populations of metropolises near the large production basins of the north, 100 questionnaires were administered to the populations of the city of Maroua. In the southern part of Cameroon, the city of Yaoundé was chosen to also administer 100 questionnaires, because it is the main drop-off point for cargoes coming from the north. The data collected was analyzed using software such as SPSS and Excel spreadsheet. The tables and figures made it possible to clearly present the results, and thus facilitate their interpretation.

RESULTS AND DISCUSSIONS

The results obtained within the framework of this study were grouped into two main parts, namely the marketing of rice produced in Cameroon, and the factors which promote the consumption of rice.

1.1. Rice marketing

To transit from production areas to various destinations across the national triangle and even outside the country, Cameroonian rice passes through several types of actors. This section is about understanding who they are, how they are organized, what their economic strengths are, and above all why they prefer to sell their products to foreign buyers. To this end, it will be a question of starting with the typology of traders, then the structuring of the

rice market, and finally estimating the gross margins.

1.1.1. Typology of traders

Several categories of actors are involved in the rice marketing circuits in Cameroon. Going from upstream to downstream, we record:

-Producers: After field production, producers must market their rice to get money. They sell it in the form of paddy, either to wholesalers who will take care of the processing and distribution at the national and international level, or they are responsible for marketing their already husked rice on local markets. They pay an amount to the artisanal hullers, which is determined based on the quantity of rice they have. After shelling, they set up at local markets where they sell their products in detail, directly to consumers.

-Processors-wholesalers of Paddy rice: These are natural or legal persons who have a rice processing unit, and who will purchase paddy rice from producers, to transform it before marketing it. They sell their products to wholesalers who will take care of distribution across the country, and even outside the country.

-Local wholesalers of paddy rice: These are natural or legal persons who do not have a processing unit, but buy paddy rice from producers, to then resell it to foreign paddy rice wholesalers, or else they will pay the necessary amount to the processing units for shelling before marketing it. They sell the processed product to wholesalers of processed rice, who will take care of distribution across the country and even outside the country, or directly to retailers who operate in markets near the production areas.

-Foreign wholesalers of paddy rice: They come from neighboring countries such as Nigeria and Chad. Although the governor of the Far North region signed a note about three years ago prohibiting the export of rice to these neighboring countries, it is clear that the phenomenon persists, although with less intensity. They buy rice directly from producers or from local paddy rice wholesalers.

-Foreign wholesalers of processed rice: Just like foreign wholesalers of paddy rice, they

come from Nigeria and Chad. They buy the rice already processed and packaged, from local paddy rice wholesalers, or from wholesale paddy rice processors. They cross borders to market it in their respective countries.

-Local wholesalers of processed rice: These are natural or legal persons who purchase already processed rice from local paddy rice wholesalers or paddy rice wholesale processors, and are responsible for transporting it to the main metropolises of the country. The rice is stored in large storage warehouses from where distribution will be carried out. They distribute their rice to processed rice wholesalers, Wholesaler-retailers of processed rice, supermarkets, and shops.

-Wholesaler-retailers of processed rice: Wholesaler-retailers of processed rice: these are natural persons who have small stores in urban or peri-urban markets, allowing them to store their goods in order to gradually sell them, either wholesale or retail.

-Retailers of market near production areas: They buy paddy rice from local paddy rice

wholesalers, or directly from producers; They will have it shelled and sell it in detail at the market with boxes and plates.

-Supermarkets: They are found in all major cities; they are supplied by local wholesalers of processed rice.

Shops: These are fixed points of sale which are located throughout the territory. But Cameroonian rice is mainly found in shops in big cities. They are supplied by local wholesalers.

1.1.2. Structure of the Cameroonian rice market

The rice market is structured from production to consumption. We begin below by presenting the flow of rice in the different markets of Cameroon, then the method of setting prices, the method of payment, the method of financing, the mode of communication, and finally the marketing circuits.

1.1.2.1. Flow of rice produced in Cameroon

Figure 1 below represents the structure of the markets through which rice produced in Cameroon passes.

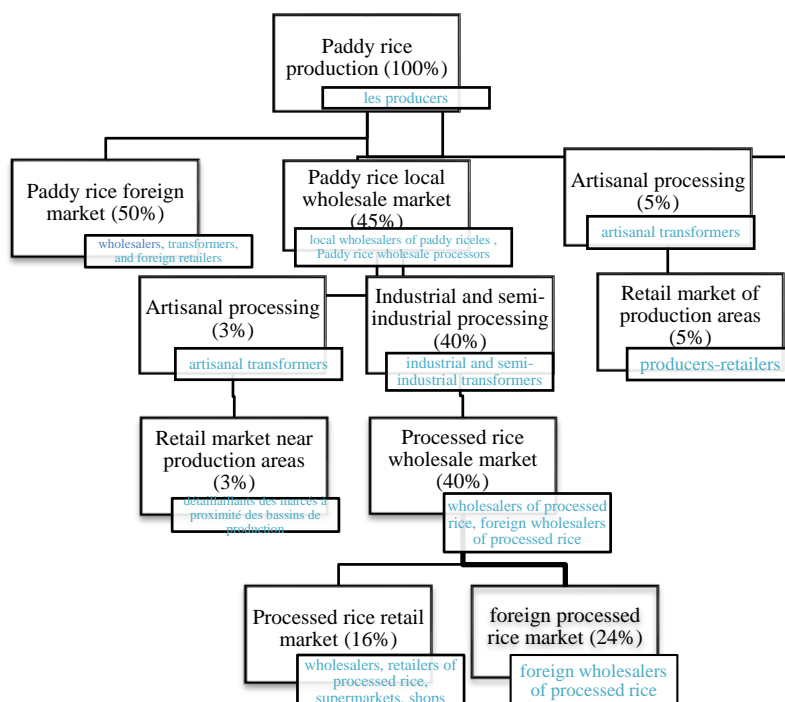


Fig. 2. Market flow of rice produced in Cameroon
 Source: Own conception.

The marketing of Cameroonian rice begins at the level of producers who can store it or deliver it directly after harvest. It can be sold to foreign buyers and sent to an external market, or go directly to artisanal processing to end up on the retail market in the production areas. It can also be delivered to the wholesale paddy rice market, to move on to artisanal processing and end up in retail markets near the production areas; or move to industrial or semi-industrial processing and then end up in the wholesale market for processed rice, and drop to the retail market throughout the country and even abroad. 50% of the rice produced in Cameroon is directly delivered by producers to foreign buyers, 45% is delivered to the local wholesale market, which also directs 2% of its rice to foreign buyers, for a total of 52% of paddy rice who goes to foreign countries; Only 5% are oriented towards artisanal processing. After hulling, 24% of the rice that was delivered to the wholesale market is directed towards foreign buyers; which makes a total of 76% of Cameroonian rice which is exported to neighboring countries.

1.1.1.1. Method of setting the price of rice

The price of rice varies depending on the market, it is generally an over-the-counter market. Indeed, depending on the period, the price of paddy rice varies depending on whether we are in a period of abundance or shortage; it is sold a little more expensive when foreign buyers are in the market. As for processed rice, its price is much more influenced by the geographic location of the market and the positioning of the brand on the market. Prices at this level tend to be approved according to range.

1.1.1.2. Payment method

Producers generally require cash payment, which creates a real problem for paddy wholesale processors, who do not have enough resources to purchase in cash the quantities of rice necessary to operate their machines at optimal capacity. In certain localities we find “warrantage”; it is a payment method where buyers pre-finance producers to enable them to respect the requirements of technical itineraries, and achieve their maximum yields. They therefore

collect the paddy rice from these producers in the long term, assess what it costs based on the prices on the market, deduct the amount corresponding to the pre-financing, and pay them the rest. For processed rice, the main method of payment is cash, although it sometimes happens that some traders develop a relationship of trust with their customers, which allows them to make the goods available to them on account.

1.1.1.3. Funding method

Essentially, the actors involved in the rice marketing circuit self-finance their activities. At the producer level, those who do not have the financial reserves necessary for direct financing of rice cultivation, sell part of the reserves of other products (beans, sorghum, etc.), to purchase production inputs; others who have the possibility resort to credit, which credit is granted to them by people who trust them enough to be sure that they will be reimbursed.

Some traders benefit from subsidies from the state and its partners; these subsidies are generally made in kind; this can be through the construction of storage stores, or the provision of means of transport.

1.1.1.4. Mode of communication

The increasingly remarkable use of ICTs in rural areas now helps to facilitate communication between the different actors in the rice sector in Cameroon. Indeed, contrary to old practices which would have buyers arrive on the field and deal with the situation encountered, it is possible today to make phone calls, or exchange through social networks and agree on the quantities available and on the price before carrying out on the field with complete peace of mind.

Orders are therefore placed in advance and delivery dates are fixed; the buyer has the opportunity to better organize themselves before traveling. Producers have the opportunity to inform and attract potential buyers by making publications on pages created on social networks for this purpose.

They can be informed of price developments on the national and international market, through the internet which is becoming increasingly available in rural areas.

1.1.1.5. Marketing channels

Rice marketing channels go from producers to final consumers, via various intermediaries. There are very short ones which establish a direct link between the producer and the consumer, and long ones which integrate several intermediaries. Figure 2 below presents the different marketing circuits

through which rice produced in Cameroon passes. It shows that there are fourteen (14) circuits through which rice produced in Cameroon can pass. The shortest establishes direct contact between the producer and the consumer, and the longest integrate four (4) intermediaries.

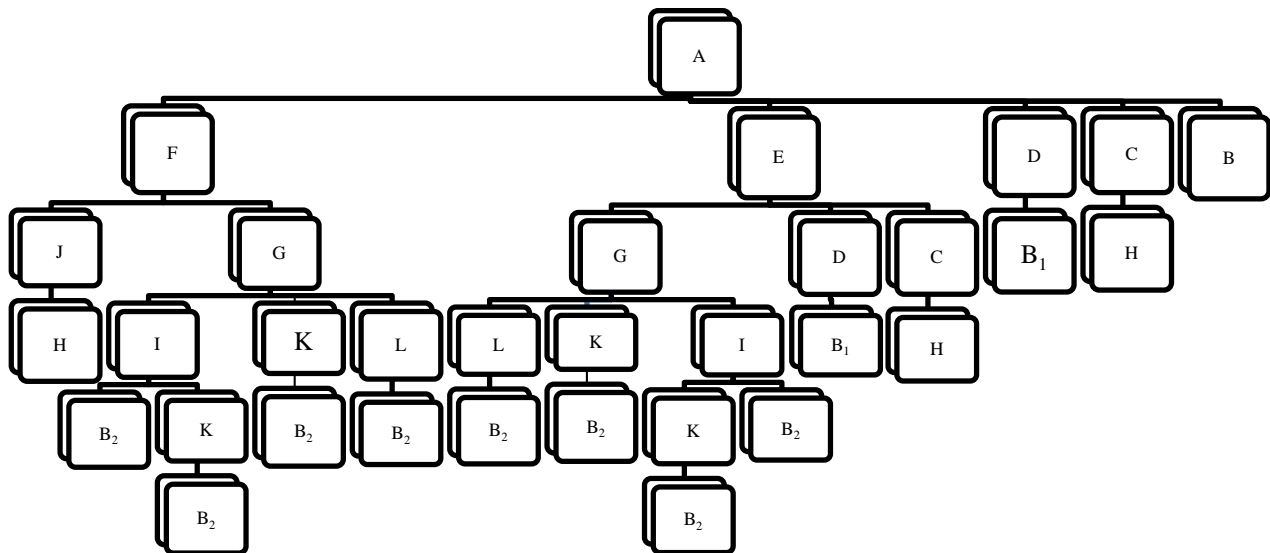


Fig. 3. Marketing circuit for rice produced in Cameroon
 Source: Own conception.

Legend: A = Producers; B = Consumers in production areas; C = Foreign paddy rice wholesalers; D = Retailers of market near production areas; E = Local paddy rice wholesalers; F = Paddy rice wholesale processors; G = Local processed rice wholesalers; H = Outdoor circuits; I = Processed rice wholesalers retailers; J = Foreign wholesalers of processed rice; K = Boutiques Shops; L = Supermarkets; B₁ = Consumers near production areas; B₂ = Urban and peri-urban consumers

1.1.2. Gross margins of rice traders

In this section, we are particularly interested in rice produced in the basins of the far north; it was not easy to go to the Ndop area which is the second largest production basin in Cameroon, due to the not very stable security situation. It is a question here of working with traders who ensure the transition of rice from producers to the final consumer. These include: local wholesalers of paddy rice, local wholesalers of processed rice, wholesale retailers of processed rice, retailers of markets near production areas, super markets, and shops.

-Local paddy rice wholesalers: They have added value which varies depending on the market. The average purchase price of a bag of paddy rice being estimated at 14,000 FCFA, the same bag is resold to foreign buyers at a price which varies between 17,000

FCFA and 19,000 FCFA. With a transport cost estimated on average at 1,000 FCFA, for the removal of bags from the production basins to the exchange sites, we record an added value which varies between 2,000 and 3,000 FCFA per bag of paddy sold. To have significant monthly income, these traders need to sell large quantities of rice, unfortunately this is a market that is not regular; hence their involvement in various other activities. It should nevertheless be noted that the latter have a very great advantage, because when these foreign buyers arrive on the market, they buy large quantities of rice and at a better price; which allows to make significant profits in a short time, and invest in other activities.

-Processors-Wholesalers of paddy rice: Here we find individuals who buy paddy rice from producers, transform it before reselling it. Generally they work with semi-industrial

processors to whom they pay 1,000 FCFA per 80 kg bag of paddy, which will give a yield of 50%, which makes 40 kg. We thus obtain added value for an 80 kg bag, which looks like this:

$$\begin{aligned} \text{Wholesale processors of paddy rice} &= \\ &= (40 \times 400) - 14,000 - 1,000 - 500 = \\ &= 16,000 - 15,500 = 500 \text{ FCFA gross margin} \end{aligned}$$

-Local wholesalers of processed rice: There are two types of actors in this category; those who buy processed rice to resell it in the

metropolises of the northern part close to the production basins, and those who buy rice to resell it in the metropolises of the southern part of Cameroon. To carry out the analyses, the city of Maroua which is the main metropolis close to the largest production basins in the northern part was chosen, and Yaoundé which is the main point of origin for rice in the southern part. Table 1 presents in detail the gross margins of local wholesalers of rice processed and marketed in Maroua.

Table 1. Gross margin for the case of the city of Maroua

Grade	Ranges	Purchase price (FCFA)	Selling price (FCFA)	Unit price (FCFA)	Gross margin (FCFA)	Gross margin rate (%)
First grade	25 kg	12,000	13,500	540	1 500	11.11
	5 kg	3,200	3,500	700	300	8.57
	1 kg	700	750	750	50	6.66
Second grade	50 kg	17,500	19,000	380	1,500	7.89
	25 kg	9,500	10,500	420	1,000	9.52
	5 kg	2,500	2,700	540	200	7.4
Superior breaks	25 kg	9,000	9,500	380	500	5.26

Source: Own results.

Overall, we observe that the price of a kg of rice is cheaper when the packaging volume is large. On the other hand, for first grade rice, the gross margin rate is greater when the packaging is large. This observation can be explained by the fact that small containers sell out quickly and traders rely on the quantities sold to maximize their profit. At the level of second grade rice, the highest gross margin rate is observed on the 25 kg ranges which are more in demand by households, traders can afford to sell a little more expensive, already having the guarantee of the existence of the

market. As for the consumer, he would benefit from buying the larger ranges, where the price per kg is cheaper. It should be noted that lower breaks are mainly consumed locally in the production areas, which is why they are not found in the marketing channels. As for the upper breaks, we could find them on the market in the northern part, but not in the southern part.

Table 2 presents the gross margins of local wholesalers of processed rice, and marketed in the city of Yaoundé.

Table 2. Gross margin for the case of the city of Yaoundé

Grade	Ranges	Purchase price (FCFA)	Selling price (FCFA)	Unit price (FCFA)	Gross margin (FCFA)	Gross margin rate (%)
First grade	25 kg	12,000	15,000	600	3,000	20
	5 kg	3,200	3,800	700	600	15.78
	1 kg	700	800	800	100	12.5
Second grade	50 kg	17,500	20,000	400	2,500	12.5
	25 kg	9,500	11,500	460	2,000	17.39
	5 kg	2,500	3,200	640	700	21.87

Source: Own results.

We generally observe that the kg of rice produced locally is more expensive in the southern part of Cameroon, compared to the prices applied in the northern part, and also the gross margin rates have increased from simple to double; this difference is mainly due to the fairly high cost of transport and the added value due to the benefit of intermediaries. It nevertheless remains true that the larger the range is, the lower the price per kg is. If at the level of first grade rice we observe that the gross margin rate is more significant when the range is large, at the level of second grade rice we observe the opposite. This is explained by the fact that for first grade rice, the smallest ranges are the most requested by customers, while for second grade rice the largest ranges are the most requested.

-Wholesaler-retailers of processed rice: These are individuals who have small stores in urban or peri-urban markets allowing them to store their goods in order to gradually sell them, either wholesale or retail. They operate mainly in the southern part of the country. Most of these traders have abandoned the marketing of locally produced rice, because of its very slow flow. Those who continue this activity exclusively sell wholesale. Some have tried retailing in the past, but these are no longer found these days, they only sell imported rice in this form. In fact, these are traders who open bags of 25 or 50 kg of rice which they display in front of their stores and sell to customers who are served by the kg. Table 3 presents the gross margins of wholesalers for wholesale market.

Table 3. Gross margins of wholesaler-retailers for wholesale market

Grade	Ranges	Purchase price (FCFA)	Selling price (FCFA)	Unit price (FCFA)	Gross margin (FCFA)	Gross margin rate (%)
Second grade	50 kg	20,000	21,000	420	1,000	4.76
	25 kg	11,500	13,000	520	1,500	11.53
	5 kg	3,200	3,800	760	600	15.78

Source: Own results.

Traders in this category are not interested in marketing first grade rice, because while they are already facing the slow flow of locally produced rice overall, the flow of first grade rice is still much slower. This fairly expensive rice is more in demand by Cameroonians with higher incomes. Middle-class Cameroonians with very low incomes primarily buy second-class rice at affordable prices.

Supermarkets: These are the large shopping areas found in our big metropolises, they are frequented by Cameroonians with intermediate incomes, and much more by the more affluent. They are supplied with first grade products, including the 25 kg, 5 kg, and 1 kg ranges.

Table 4. Gross margins of supermarkets

Grade	Ranges	Purchase price (FCFA)	Selling price (FCFA)	Unit price (FCFA)	Gross margin (FCFA)	Gross margin rate (%)
First grade	25 kg	15,000	16,000	640	1,000	6.25
	5 kg	3,800	4,200	840	400	9.52
	1 kg	800	900	900	100	11.11

Source: Own results.

We observe here that the smaller the ranges, the greater the gross margin rate. This is explained by the fact that, on the shelves of our supermarkets, the smallest ranges are the

most requested by customers, and traders can afford to maximize profit there.

Shops: In our metropolises, you can find first grade of local rice in certain shops.

The ranges sold are 1kg, and sometimes those of 5 kg.

Table 5. Gross margins of shopkeepers

Grade	Ranges	Purchase price (FCFA)	Selling price (FCFA)	Unit price (FCFA)	Gross margin (FCFA)	Gross margin rate (%)
First grade	5 kg	3,800	4,500	900	700	15.55
	1 kg	800	1,000	1,000	200	20

Source: Own results.

1.2. Factors that favor rice consumption

Rice produced in Cameroon is marketed through various channels. Whatever the circuit through which the rice transits, it ends its journey at the consumer level. These consumers adopt rice in their diet based on various criteria. In this section it is therefore a question of presenting how the consumption of rice takes place in households, the criteria which allow consumers to appreciate the rice they consume, and finally the reasons which push them to choose rice than other species.

1.2.1. Rice consumption in households

The analysis of rice consumption in households was carried out along two very important axes, which are: the frequency of rice consumption in households, and the

average ratio consumed per household in one day.

1.2.1.1. Frequencies of rice consumption in households

All the people met as part of this study suggest that rice is consumed in Cameroon by all citizens without distinction of social class. The analysis was done by grouping consumers into three (3) categories which are: consumers in the production areas of the northern zone, consumers in the metropolises close to the production areas, and consumers in the metropolises in the southern zone far from production areas. Table 6 Below shows the distribution of rice consumption frequencies according to the different categories of consumers.

Table 6. Frequencies of rice consumption in households

Area		1/7	2/7	3/7	4/7	5/7	6/7	7/7	Total
Production area	Workforce	0	45	39	39	39	39	99	300
	Rate (%)	0	15	13	13	13	13	33	100
Metropolises near production areas	Workforce	19	21	26	12	4	4	14	100
	Rate (%)	19	21	26	12	4	4	14	100
Metropolises far from production areas	Workforce	20	62	11	7				100
	Rate (%)	20	62	11	7				100

Source: Own results.

Observing the results summarized in the table above, it appears that the frequency of rice consumption is greater for populations residing in production area. We recorded 33% of interviewees who consume rice seven (7) days a week. These are peoples who have a fairly ancient rice culture, which became part of their eating habits a very long time ago. It should be noted that the most reluctant households consume rice for at least two times per week. When we move from production areas to nearby metropolises, we see that the rate of consumers who eat rice every day has fallen considerably; it goes from 33% to 14%. On the other hand, we

observe respectively 26%, 21%, and 19% of consumers who eat rice 3 times, 2 times, and 1 time per week. We therefore realize that, by leaving the production areas, consumers have a much more varied diet during the week, which implies the possibility of having a more balanced diet. When we go to the metropolises of the southern part of Cameroon, further away from the production areas, we observe that those who consume rice frequently eat it a maximum of 4 times a week. Most consumers in this category eat rice in their households twice a week; they represent 62% of consumers. We can conclude by stating that, the further away

from the production areas, the less frequency of rice consumption, and consequently the diet is more varied.

1.2.1.2. Average ratio of rice consumed per household in a day

At the end of the data collection, it appears that the average quantities of rice consumed per household in Cameroon vary from 0.5 kg to 6 kg per day. Table 7 summarizes the results obtained after data analysis.

Table 7. Variations in quantities of rice consumed on average per household per day

Quantities of rice eaten per day per household (kg)		0.5	1	1.5	2	3	4	5	6	Average/Totals
Production area	Workforce	7	138	28	106	7	7		7	300
	Rate (%)	2.33	46	9.33	35.33	2.33	2.33		2.33	
	Quantity	3.5	138	42	212	21	28		42	1.62 kg
Metropolises near production areas	Workforce	18	33	15	22	3	2	7		100
	Rate (%)	18	33	15	22	3	2	7		
	Quantity	9	33	22.5	44	9	8			1.25 kg
Metropolises far from production areas	Workforce	30	45	20	5					100
	Rate (%)	30	45	20	5					
	Quantity	15	45	30	10					1 kg
National level	Workforce	55	216	63	133	10	9	7	7	500
	Rate (%)	11	43.2	12.6	26.6	2	1.8	1.4	1.4	
	Quantity	27.5	216	94.5	266	30	36	35	42	1.49 kg

Source: Own results.

By scrupulously examining our table, we observe that, going from the rice production basins of the northern zone, passing through the metropolises of the said zone, to arrive at the metropolises of the southern zone, the average quantity of rice consumed per household in a day gradually decreases. We leave in the production basins with an average of 1.62 kg of rice consumed in one day per household, at an average of 1.25 kg in the northern metropolises, to drop to an average of 1 kg per day per household. in the metropolises of the southern part of Cameroon. This difference is due to the variation in household size. Thus, from the people interviewed, we record an average size of 9 people per household in our production areas, an average of 6 people per household in the metropolises of the northern zone, and an average of 5 people per household in the metropolises of the southern zone. We can further confirm this opinion by observing that in the metropolises of the southern zone, the largest households consume a maximum of 2 kg of rice in a day, and they only represent 5% of the sample. On the other hand, in the metropolises of the northern zone, we find

some who are capable of consuming up to 5 kg of rice in a day, and in the production areas which are rural areas we arrive at 6 kg of rice consumed in a single day, by a single household. Most households have an average consumption capacity of 1 kg of rice in a day, all areas combined; 43.2% of respondents belong to this category.

1.2.2. Rice Appreciation Criteria

Surveys carried out in metropolises near production areas revealed that 28% of these populations prefer to eat local rice, compared to 34% who prefer to eat imported rice; the remaining 38% have no particular preference. In the metropolises of the southern zone on the other hand, around 50% of respondents are not aware of the fact that there is rice produced in Cameroon, 30% are informed but have never had the opportunity to consume it, 12% say they consume it occasionally, and only 8% say they consume it regularly although they find it in certain sections of supermarkets. This situation further favors the sale of this product abroad, because some traders complain that the sale of Cameroonian rice on the local market is too slow, hence their preference for the marketing of imported

rice; which is more in demand and sells quickly.

1.2.2.1. Appreciation of rice on the market

Consumers take into account a certain number of criteria to choose rice on the market. These include color, texture, brand, origin, and price.

Color: We find rice with various colors on the Cameroonian market. Depending on the consumers, the assessments are different. Some consumers like yellow-colored parboiled rice because they find it to be more nutrient-rich because during the parboiling process, nutrients on the skin migrate to the seeds, making them richer in addition to giving them a yellowish color. Others like white rice because they find it easy to cook, because they no longer need to wash it and find that it swells a lot.

Texture: Rice is appreciated differently depending on its texture. This is how we have long grain rice which is the top of the range, then follows the 5% broken, 25% broken, upper broken and lower broken, which are chosen by consumers according to their income level. We also record the level of impurity which is a very important criterion for consumers who most often prefer clean rice which makes the cooking task easier.

The brand: Some consumers are more attached to the brand of rice because they were satisfied with it from the first tastings. There are some who say they prefer broli brand, while others prefer “mémécassé”, etc. this without worrying about the packaged variety or any other criterion.

Origin: There are consumers who like the idea of consuming locally, and are not willing to consume rice other than that produced locally. On the other hand, there are some who say they prefer Thai rice, others prefer Vietnamese, Pakistani rice, etc.

Price: Given the current economic situation, most of the people we meet, buy rice at the market no longer taking into account their organoleptic preferences, or any other assessment criteria, but rather according to their level of income. The price has therefore become a very important criterion in the choice of rice at the market.

1.2.2.2. Appreciation of rice after cooking

After making the choice on the market, consumers also have the opportunity to appreciate the quality of their rice after cooking. Those of the consumers met during our surveys listed a certain number of criteria which are: perfume, appearance, color, and taste.

Perfume : During and after the rice cooking process, the smell released can help determine the quality and type of rice. For example, we have so-called fragrant rice, which is a better quality rice. Not only does it give off a smell that is very appreciated by consumers, but it also has a very good flavor.

Appearance: Rice after cooking can have a granulated appearance which is the form most appreciated by consumers, or have a pasty and sticky appearance, which makes it difficult to serve although sometimes the taste can be appreciable.

Color: Just as we can appreciate rice in the market based on its color, we can also do so after cooking, because it does not change color after it is cooked.

Taste : This is the most important criterion in the appreciation of rice. Whatever the selection criteria taken into account when purchasing rice, the final objective is that it can have an appreciable taste.

1.2.3. Reasons for choosing rice

Rice is a food increasingly consumed and appreciated by households in Cameroon. Various reasons were put forward by the respondents to justify this interest in rice: firstly, it is a food very appreciated by children, it is always available on the market, it is cheaper compared to other products, and ultimately very easy to cook. Overall, consumers believe that eating rice regularly causes stomach upset and diarrhea. They also find that rice is digested quickly and you feel hungry again very quickly; it must therefore be alternated with other heavier meals.

Local rice produced in Cameroon is very appreciated by its consumers who find that it has a very good natural aroma and good flavor. Notwithstanding these qualities that Cameroonian rice presents, its consumers note a certain number of problems that they encounter with this rice: they find that Cameroonian rice is not often well cleaned, it

is sticky, when it is poorly cooked they become mushy, and it doesn't rise much. The transition of Cameroonian rice goes through fourteen different circuits to reach the final consumer. The shortest establish direct contact between the producer and the consumer, and the longest integrate four intermediaries. These differences depend on whether it is marketed in production areas, in metropolises close to production areas, in metropolises far from production areas, or abroad. The price per kg is therefore different between traders in the north and those in the south. This difference is accentuated by the fairly high cost of transport to transit from the north to the south. Based on the law of supply and demand, we will therefore understand that the demand for rice can gradually decline, as we move away from the production basins, due to the increase in price due to the cost of transport. Hine and Ellis (2001) [2] also state that, if the margin between the producer (farm) price and the consumer selling price is high, the effective demand transferred to the producer will be reduced. And the direct consequence of this situation is to promote, at the level of production basins, the export of Cameroonian rice to neighboring countries. This is how Mamadou (2013) [6] rightly confirms that rice produced as much under rainfed conditions as under irrigated conditions is nearly 75% exported to Nigeria. In addition to the cost of transport which favors the increase in the price of local rice, going from the production basins to the metropolises, we also note the fact that Cameroonians prefer imported rice, compared to local rice. This corroborates with the assertions of JICA (2017) [4], which stipulate that, regarding the quality of local rice, populations living in cities are generally wealthier and prefer imported rice because it is of better quality than local rice which contains many impurities. Field investigations also reveal that, notwithstanding the qualities that Cameroonian rice presents, its consumers note a certain number of problems that they encounter with this rice: they find that Cameroonian rice is not often well cleaned, it is sticky, when it is poorly cooked they become mushy, and it does not rise much. In

addition to these shortcomings noted by consumers, Jangolo (2016) [3] believes that, in the face of foreign competition, Cameroonian rice can hardly stand up, this is due to a total refusal to promote and recognize this commodity in the markets and supermarkets. From North to South and from East to West, Cameroonians opt for rice of Western and/or Asian origin. Surveys carried out in metropolises near production areas revealed that 28% of these populations prefer to eat local rice, compared to 34% who prefer to eat imported rice; the remaining 38% have no particular preference.

The program to support the development of agricultural sectors (PADFA) strives to bring all technical and technological innovations to milling, bleaching, parboiling and packaging operations under a label of origin in order to give a new start to the marketing and consumption of local rice. Despite these efforts, the situation remains unchanged, which may mean the existence of other reasons as stated by Ngo (2019) [11] who finds that local brands also suffer from a marketing and distribution deficit in the face of foreign brands, from Asian countries. In the same vein, our results show that most Cameroonians are not aware of the existence of locally produced rice, and even those who are aware of it do not easily find it on the market. In the metropolises of the southern zone of Cameroon, for example, we have around 50% of the population who are not aware of the fact that there is rice produced in Cameroon, 30% of the population who are informed but never had the opportunity to consume it. The study by Um II (2023) [13], carried out in the city of Yaoundé, presents an almost similar situation but even more accentuated, because according to its data, out of 380 people surveyed, 222 people do not know Cameroonian rice, or 58.42%. Which could suggest that there has been a slight advance in the popularization of this product, although very insignificant.

In addition, at the wholesale level of the paddy rice market, we record gross margins that are very favorable to those who direct their goods abroad. While local wholesalers who sell their rice abroad make a gross

margin which varies from 2,000 to 3,000 FCFA per bag of paddy, those who process and resell locally in bulk barely make a gross margin of 500 FCFA. Which naturally gives priority to exports, to the detriment of local consumption.

CONCLUSIONS

By way of conclusion, we can say that this study, which aimed to analyze the causes of Cameroon's permanent dependence on rice imports, is inspired by the observation that, despite all efforts made to boost the level of local rice production, more than half of the rice consumed in Cameroon comes from imports. This raises the question of why rice produced in Cameroon is exported to neighboring countries, while the country depends on imports to meet its needs; which causes it to lose a lot of foreign currency? The study therefore set itself the objectives of analyzing the marketing channel of Cameroonian rice, and identifying the factors that favor its consumption. The study took place in Cameroon, targeting rice traders and consumers. The Far North, Northern and Central regions, which produce most of the rice in Cameroon, were covered. To leave the production areas for the final consumer, the rice will pass through traders where several categories are identified which are: paddy rice wholesalers, foreign paddy rice wholesalers, processors-wholesalers of paddy rice, local wholesalers of processed rice, foreign wholesalers of processed rice, wholesalers in markets near production areas, wholesalers-retailers of processed rice, supermarkets, and shops. The results show that 43.2% of Cameroonians consume on average 1 kg of rice per day. But unfortunately, most are not aware of the existence of locally produced rice, and even those who are aware of it cannot easily find it on the market. In the metropolises of the southern zone of Cameroon, for example, we have around 50% of the population who are not aware of the fact that there is rice produced in Cameroon, 30% of the population who are informed about it. never had the opportunity to consume it.

Following the analysis of the results, **we can recommend as perspectives**, to get Cameroonians to consume more local rice, and stop exports, the implementation of the following strategies: Organize campaigns to popularize the local rice, with the aim of making as many Cameroonians as possible aware of the existence of local rice of which they seem to be unaware; encourage the expansion of rice cultivation in all ten regions of the country, in order to reduce transport costs from production areas to consumption areas; facilitate access to financing for actors involved in rice processing, which will make it possible to purchase enough paddy rice to operate their machines at their optimal level; intensify the fight against the porosity of Cameroonian borders, which is the source of illicit exports of Cameroonian rice to foreign countries; and improve the organoleptic qualities of local rice, which will lead consumers to have more interest in this product.

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