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Rice Marketing Survey Nexus on Selected Rice Markets in Bo and Freetown Cities

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Abstract

A market study was conducted to determine customer preferences in selected markets and the primary elements influencing the choice with the quality of rice which piqued considerable curiosity, given the state of the rice market. A cross-sectional research design was used where 80 marketers in two main market locations in Bo City and 120 in the Western area specifically Waterloo, Congo market, and Lumley markets. Fifty farmers in a parallel survey were also selected using the same approach in Tormabum, Bum Chiefdom in Bonthe District, to estimate their annual rice harvest in the study area. Data collection was carried out by 4 enumerators through separate on-site interviews using separate structured, pre-coded questionnaires from respondents. The data entry template was designed in the KoboCollect tool, cleaned, and exported into IBM SPSS version 21 and Microsoft Excel 2010 for analysis, and results are presented in tables. The key finding of the study shows that consumers preferred imported rice for its availability at all times. The study therefore recommended engagement with the diverse groups of farming actors to assess the impact of imported rice on local rice and understanding the structure of the rice value chain for increased local rice production and productivity.

Keywords: Imported Rice; Local Rice; Market Survey; Marketers; Preferences

Abbreviations:

MAFS: The Ministry of Agriculture, Forestry and Food Security; CARD: Coalition for African Rice Development; SSS: Senior Secondary School; VSLAs: Village Savings and Loans Associations; SLRRVDP: Sierra Leone Regional Rice Value Chain Development Project; ADB: African Development Bank.; JSS: Junior Secondary School.

Introduction

Rice is a very important commodity to most Sierra Leoneans as a staple food crop and a rural livelihood concern. It covers approximately 40% of Sierra Leone's 435,000 ha of cultivated land and annual production averages approximately 200,000t [1]. It is the single largest component of household food spending, accounting for over 20% of total spending in the average home. Despite the country's enormous arable land area and active farmer participation, not all citizens have enough access to the commodity [2]. While home production is significant for rural households in the study areas, the majority of the imported rice consumed approximately (95.5%) is sold on the local markets in Sierra Leone. This covers almost all rice consumed in both Bo and Freetown city markets. Most households in the local rice production areas do not

produce enough rice to meet their demands throughout the year, with the most severe shortages happening in the "lean" months of June, July, and August. The Ministry of Agriculture, Forestry and Food Security (MAFS) reported that local rice production was 700,000 tonnes in 2018 compared to the national need of 1.6 million tonnes [3]. The $11 million Agribusiness and Rice Value Chain Support Project was approved by the African Development Bank (ADB) in July 2019 to promote the growth of agribusiness in the nation with an emphasis on rice. Sierra Leone should not have been spending over $200 million yearly on rice imports since the country's climatic conditions are generally favourable for rice production [4].

Regardless of poverty status, over 75% of rural homes in Sierra Leone produced rice, making up more than half of all households in the country [5]. Even though there was no significant geographical diversity in the study area, only 44% of rice-growing households harvested between 11-20 bushels whilst more than half the producers (56%) milled their crop. The results are in sharp contrast to Nkuba J, et al. [6] in Tanzania which found out that most of the farmers sold unprocessed rice, i.e., paddy. Regarding rice sales volume, the western area markets are undoubtedly the highest compared to the Bo City markets owing to the large population densities in both areas. Food costs in Sierra Leone have risen significantly since January 2008, threatening the livelihoods of the majority of the population [7]. Low-income urban and peri-urban households rely heavily on the markets to meet their food needs, making them the most vulnerable to recent food price increases. Smallholder farmers experiencing food deficits are disproportionately affected by rising staple food prices, leading to severe food insecurity.

The dynamics of rice supply and preference in Bo and Freetown markets are influenced by a multitude of factors, including the quality, palatability (for some varieties), availability, and marketing strategies of local rice compared to imported rice. Local rice production has seen initiatives aimed at increasing its market share, with efforts to enhance the production and availability of local rice, as well as to boost consumer demand across regions. Despite these efforts, consumer preferences are often swayed by the perceived quality of rice, which includes attributes such as cleanliness, grain size, aroma, and absence of stones and impurities. Moreover, the preference for imported rice tends to be higher at the marketing level compared to households, suggesting that the convenience and presentation of rice at salespoints can significantly influence consumer choices. This is compounded by the challenges local rice processors face in meeting consumer expectations, which range from the sensory qualities of the rice to its grading, packaging, branding, and marketing.

The majority of Sierra Leoneans live in rice-producing homes. In Sierra Leone, 51.6% of families produced rice, with impoverished households accounting for 66.7%. Only a tiny minority of households (5.7% of rural poor and 3.9% overall) farmed other crops without growing rice. Rice is grown by around 75% of rural households, regardless of poverty status [8]. According to Sierra Leone Integrated Household Survey [9], 96.2% of all households consumed rice throughout the recall period. Rice was consumed nearly equally by rural and urban households, as well as poor and non-poor households. Rice consumption was lowest in the poorest and wealthiest quantiles of the distribution, at 94.0 and 94.5%, respectively, with all other quantiles exceeding 97%. Purchased rice accounted for 84.2% of the total rice value consumed nationwide. Almost all of the rice in urban areas is bought, with Freetown accounting for 100% of the total; and other urban areas accounting for 94.4%. Also, 76.1% of rice is bought in rural regions. Koinadugu and Kailahun had the lowest percentages of purchased rice - 35.6% and 68.5%, respectively, of the total value. The share exceeded 75% in every other district. In comparison to the second and third quantiles, the poorest quantiles consumed a comparatively higher percentage of rice locally produced at home while spending less overall [10].

Sierra Leone has historically low rice yields, with an average of 1.36 tonnes per hectare from 1960 to 2016 [10]. Low yields are caused by a variety of issues, including poor seed quality, insufficient input use, particularly the appropriate machinery, fertilisers, and other agrochemicals, inadequate extension services delivery, and poor crop management. Since the end of the civil war in 2002, yields have increased slightly due to the introduction of high-yielding varieties like the New Rice for Africa (NERICA) [11].

The debate over the advantages of imported rice versus locally produced rice is multifaceted. Imported rice, often from countries with advanced agricultural technologies and subsidies for their farmers, can be less expensive due to economies of scale and more efficient production methods [11]. This affordability can make it a preferred choice for consumers, especially in urban areas where price sensitivity is high. Additionally, imported rice may offer a consistent quality and variety that appeals to diverse consumer preferences. On the other hand, locally produced rice supports the domestic economy and is fresher, which can translate to better taste (palatability) and nutritional value. However, challenges such as inadequate infrastructure, limited access to modern farming techniques, and the impact of climate change can affect the competitiveness of local rice production. To balance consumer and producer welfare, policies that moderate tariffs on imported rice combined with structural improvements in local rice

productivity are suggested. Moreover, efforts to increase the competitiveness of local rice, such as through the Coalition for African Rice Development Second phase (CARD2) programme aiming to double rice production in Sub-Saharan Africa by 2030, are crucial. The situation is dynamic, and continuous updates and policy adjustments are necessary to ensure the sustainable development of the rice sector in Sierra Leone.

Materials and Method

The study adopted a cross-sectional research design wherein data collectors collected data from many respondents at a single given time. The study was a confirmatory test to ascertain the market survey on the preferences for either imported or local rice by consumers in selected markets; with respondents drawn from both Bo and Freetown markets. These two cities were selected to represent the best-case scenarios of the urban and provincial markets situations, respectively. A convenient sampling technique was used to select markets followed by the marketers/traders as respondents. The same sampling approach was used to select 80 marketers/marketers in two main market locations in Bo City and 120 in the Western area (Western Rural, Central, and Urban) with Waterloo, Congo market, and Lumley markets; respectively, totaling 200 marketers/marketers. Additionally, 50 farmers were also selected using the same approach in Tormabum, Bum Chiefdom in Bonthe District, to establish and estimate the annual quantum of rice produced by smallholder farmers in that area of the country.

Data collection was carried out by 4 trained data collectors through separate on-site interviews using separate structured, pre-coded questionnaires. The instrument on the farmers focused on the main source of labour, the land area cultivated, access to finance, the number of hectares cultivated, number of bushels harvested and marketed by rice farmers or producers. A separate questionnaire was also designed for marketers/marketers, and the instrument covered issues such as respondents' information, rice marketing, consumers' preferences for imported rice, and "costs and returns" analysis for the main product (milled rice). The survey was conducted between 13th - 15th May 2024, in the study areas already highlighted; with each interview lasting approximately 20 minutes per respondent. The data entry template was designed in the KoboCollect tool for all questionnaires. The data collected was cleaned and exported into Statistical Packages for Social Sciences (IBM SPSS version 21) and Microsoft Excel 2010 for analysis, and results are presented in sub-sections and tables below.

Results and Discussions

Socio-Demographic Characteristics of Rice Farmers

The socio-demographic characteristics of selected rice farmers in the study areas are presented in Table 1. The results on the gender of the respondents revealed that there are more males in rice farming than females in the study areas. Males constitute 88% and females constitute 12% for rice farmers. This could be because rice farming is more labour-intensive. Therefore, women are not able to meet the needed efforts to cultivate the crop adequately.

The majority of the rice farmers (60%) are between the ages of 31 to 40 years and these are the most productive period of their lives. Whereas 36% of the respondents were above 40 years old. This suggests that rice farming in Sierra Leone has attracted both young and old generations. Similar findings by Kamanda PJ, et al. [12] revealed that more than half of the sampled farmers (62.0%) in the study areas in Sierra Leone were within the economically active age bracket of 36-55 years.

The majority of the rice farmers (86%) are married, while 8% and 6% were either separated/divorced or widowed, respectively; indicating that people who undertake agricultural activities are married. This may be due to the emotional, psychological, and physical support they get from their spouses, a scenario that socioculturally signifies societal responsibility, respect, and diligence. The frequency distribution of education showed that 70% had no formal education, 18% had primary education, 8% had Junior Secondary School (JSS 1-3) education, and 4% had koranic education. This indicates that most rice farmers in the study area have low levels of education (mainly at the primary and junior secondary) and that may hinder their understanding and application of improved rice farming technologies. The regular size of the household was 6-10 persons and males dominated (96%), while 4% was represented by females. This indicates that most households were endowed with enough hands (or family labour) to assist with farming operations and off-farm income activities. All (100%) of the rice farmers interviewed were engaged in farming as their main income-generating activity.

Variables		Socio-economic characteristics	
Gender		**Frequency**	**Percentage (%)**
Male		44	88
Female		6	12
	Total	50	100
Age at (last birthday)			
18-30		2	4
31-40		30	60
41-50		18	36
	Total	50	100
Marital status			
Widow/widower		3	6
Married		43	86
Separated/Divorced		4	8
	Total	50	100
Educational Level			
No formal		35	70
Koranic		2	4
Primary		9	18
Junior Secondary School (JSS)		4	8
	Total	50	100
Head of household			
Yes		48	96
No		2	4
	Total	50	100
Household size			
1-5		8	16
6-10		22	44
11-15		15	30
16-20		5	10
	Total	50	100
Main occupation			
Farming		50	100

Source: Field Data, 2024.

Table 1: Distribution of Gender, Age, Marital and Educational Status, Household Head, and Size of Farmers.

Source of Labour, Experience, Ownership of the Land, Type of Variety Cultivated, and Access to Finance

Distribution of rice farmers according to the source of labour showed that household plus hired labour (82%) are the main source of labour for rice farmers in the study area (Table 2). The least labour size category was found among respondents with household labour (18%) alone. This development implies that farmers in the study area might have the advantage of family and hired labour in rendering necessary support to finish farm work; and that it is obvious that the reliance on household/family labour alone cannot provide the required labour needed for household rice farming endeavours. The respondents in the study area had 6-10 years of experience in rice farming. This finding is similar to that of Hashim I, et al. [13] who discovered in Tanzania that although most of the farmers who were interviewed had worked in the rice industry for three to ten years, there was no difference in their experiences. The majority (84%) of rice farmers had traditional land ownership through inheritance and the rest (16%) used rented, purchased, donated/gifted, or borrowed land from other farmers.

The adoption of improved rice farming technologies is important for increasing the productivity of smallholder agriculture. About 80% of rice farmers planted improved and local rice varieties, and the rest (20%) used only local (recycled) seeds. Most farmers use recycled seeds because it is readily available and cheaper than improved rice seeds. The majority (94%) of the rice farmers in the study area had no access to credit facilities, while the rest (6%) had access to credit obtained from friends, relatives (i.e. informal sector), and financial institutions in the district (i.e. formal sector). This indicates that access to formal credit in particular by rural households is almost out of reach. The rice farmers used the credit obtained for agricultural and non-agricultural purposes. This means that farmers use credit to engage in non-farm activities, which are likely to have higher returns than their agricultural production.

Variables	Frequency	Percentage (%)
The main source of labour		
Household	9	18
Household + Hired	41	82
Total	50	100
Experience in rice production (Years)		
1-5	2	4
6-10	23	46
11-15	22	44
16-20	3	6
Total	50	100
Ownership of the land		
Yes	42	84
No	8	10
Total	50	100
Type of variety cultivated		
Both (local+improved)	40	80
Local variety only	10	20
Total	50	100
Access to finance or any formal credit facility		
Yes	3	6
No	47	94
Total	50	100

Source: Field Data, 2024.

Table 2: Distribution of Farmers According to the Source of Labour, Experience, Ownership of the Land, Type of Variety Cultivated, and Access to Finance.

Quantity of Bushels Harvested and Bags Milled

The distribution of farmers according to the number of bushels revealed that the highest quantity of bushels harvested by farmers ranges from 11-20 bushels (44%), and was closely followed by 1-10 bushels (36%), while the number of bushels above 30 recorded 8% of the respondents (Table 3). Furthermore, the maximum quantity of bags milled ranges from 6-10 bags (56%), followed by 1-5 bags (20%) in the study area. This indicates that most farmers faced low rice productivity since their actual yields were below the potential yield of 3 tonnes per hectare which is attainable from improved rice varieties.

Similar studies in Sierra Leone have shown that small-scale farmers produce only enough rice for domestic consumption, leaving little for the market [14]. According to the Minister of MAFS, Dr. Henry Musa Kpaka, 50kg bag of milled local rice costs no more than New Leones (NLE) 1,200, equating to approximately NLE 19,200 per hectare in revenue. However, the expected cost of producing one hectare of rice in the 2024 planting season is approximately NLE 16,000, which includes only mechanical land preparation,

seeds, fertilisers, and agrochemicals. Even after deducting milling, transportation, and additional labour expenditures, the cost of producing one hectare of rice provides little margin for the farmer. Large-scale producers have a greater likelihood of success because economies of scale allow them to produce at a lower cost per hectare of rice produced, or the marginal cost. It will be possible to increase the margins in rice production by halving post-harvest loss and doubling rice yields, from, say, 1.9 to 4 metric tonnes per hectare [15].

Number of Bushels	Frequency	Percentage (%)
1-10	18	36
11-20	22	44
21-30	6	12
Above 30	4	8
Total	50	100
Distribution of respondents according to the number of bags milled		
1-5	10	20
6-10	28	56
11-15	8	16
16-20	2	4
Above 20	2	4
Total	50	100

Source: Field Data, 2024

Table 3: Distribution of Respondents on the Amount of Bushels Harvested and Bags Milled.

Socio-Economic Characteristics of Rice Marketers in Sierra Leone

The distribution of respondents by socio-economic characteristics of rice marketers studied in this research work includes gender, sex, age, marital and educational status, ownership, and variety sold (Table 4). The gender distribution of respondents showed that there were more male rice marketers (91.5%) in the study area than female rice marketers (8.5%). The predominance of males in the trade could be attributed to the fact that the trade requires huge capital outlay which could be accessed mostly by men. Another reason for male dominance could be attributed to the stress (such as time, traveling, hunger and starvation, strength, staying under the sun, deprivation, etc.) involved in carrying out marketing activities that many women may not be able to meet up with. Furthermore, the rigorous nature of market work associated with rice marketing makes females avoid the enterprise in favour of less rigorous aspects of the rice value chain. The result indicates that gender influences technical efficiency.

The results from Table 4 reveal the age of rice marketers in the study area in which 44.5% were within the range of 31-40 and 40.5% fell between 18-30 years. Respondents that fall between the age brackets of 41-50 and above 50 years constitute 9% and 6%, respectively. This means that the respondents are young and full of strength to carry out the marketing activities. This has implications also for the sustainability of rice marketing and respondents' vibrancy in sourcing (collecting) and having access to rice. This similarly implies that they are predominantly youths, and hence agile and economically productive.

A possible explanation for the dominance of married people in the trade implies that the rice trade is a source of livelihood for the marketers and their families. The result of the marital status of marketers of rice as indicated in Table 4 shows that most (66.5%) of the marketers were married in the study area. About 26.5% of the marketers were single and only 3.5% of the marketers were widowed and separated/divorced; respectively. This is because married people have to bring food to the house to feed their family. The distributions of educational level/attainment of respondents in the study area show that the majority (28%) of the respondents attained junior secondary school education, with 20% Senior Secondary School (SSS), and 18.5% primary, while 25.5% of the rice marketers attained non-formal educational status. This implies that most rice marketers in the study area can

read and write. This accounts for why they are been able to manage their finances since education enhances the capacity of individuals to understand, manage, and work with new ideas. Thus, education has a positive effect on the business acumen of entrepreneurs.

Variable	Socio-economic characteristics	
Gender	Frequency	Percentage
Male	17	91.5
Female	187	8.5
Total	200	100
Age at last birthday		
18-30	81	40.5
31-40	89	44.5
41-50	18	9
Above 50	12	6
Total	200	100
Marital status		
Widow/widower	7	3.5
Married	133	66.5
Separated/Divorced	7	3.5
Single	53	26.5
Total	200	100
Educational Level		
Non-formal	51	25.5
Koranic	6	3
Primary	37	18.5
Junior Secondary School (JSS)	56	28
College/Technical	5	2.5
University	5	2.5
Senior Secondary School (SSS)	40	20
Total	200	100
Ownership of the business		
Yes	171	85.5
No	29	14.5
Total	200	100
The main type of rice sold		
Imported off rice	1	0.5
Imported parboil	191	95.5
Local off rice	1	0.5
Local parboiled	7	3.5
Total	200	100

Source: Field Data, 2024.

Table 4: Distribution of Rice Marketers According to their Socioeconomic Characteristics.

The results presented in Table 4 also reveal that 85.5% were the owners of their businesses, while 14.5% were business assistants. This indicates that most of the rice marketers in the study area own their businesses and operate a sole proprietorship. Furthermore, the relationship of business assistants with business owners revealed that 62.1% were sons/daughters of the owners, relatives and husbands/wives were 34.5% and 3.4%; respectively. There were different types of rice sold by marketers in the study areas. The results in Table 4 further reveal that almost all (95.5%) of the rice marketers in the study areas were involved in selling imported rice, while only 3.5% of the marketers engaged in selling local parboiled rice.

Consumers' Preferences For Imported Rice

Consumers' preferences for imported rice were investigated by marketers and these vary widely based on factors such as quality, price, and availability. For this study, nearly half (47%) of the respondents revealed that imported rice is available right throughout the year, followed by 20% for its high swelling ability, and comparative cheapness (18%); respectively. This implies that most consumers are now accustomed to the consumption of imported rice because of its easy access. Other studies have shown that factors like consumer knowledge, attitudes, and perceptions significantly influence their preferences for imported over local rice. In some regions, imported rice is preferred due to its cleanliness/quality, ready-to-cook nature, palatability/taste, fragrance, and perceived status symbol, while in others, local rice is favored for its lower price and taste. Understanding these preferences is crucial for stakeholders in the rice markets, from rice farmers to policymakers, to align production and marketing strategies with consumer demands. Additionally, since many households are populated, consumers prefer rice that swells to increase the quantity that feeds the increased number of household members. As a result, marketers too find it more profitable to market imported rice since their businesses are always sustained in an almost ready-made kind of job with relative ease, unlike the multiple challenges associated with the marketing of locally processed rice.

Preference	Frequency	Percentage
Less expensive	36	18
High swelling	40	20
Long grain rice	30	15
Year-round availability	94	47
Total	200	100

Source: Field Data, 2024

Table 5: Distribution of Consumers' Preferences for Imported Rice as Reported by Marketers.

Access to Organisations, Savings, and Experience

Table 6 depicts that most (57%) of the rice marketers were members of informal savings, and only 43% of them did not participate in any association. Almost the majority (97.4%) of the marketers were members of the "Osusu" contrary to Village Savings and Loans Associations (VSLAs) (2.6%). This result implies that most of the rice marketers in the study area did not enjoy the benefits accrued to the "Osusu" through a pooling of resources together for better expansion, efficiency, and effective management of resources and profit maximisation.

The marketing experience of respondents shows that 70.5% had 1-5 years of marketing experience, 23% had 6-10 years of experience, 3.5% had 11-15 years of experience, 2% had 16-20 years of experience and 1% of the marketers had above 20 and above years of marketing experience. This indicates that most of the rice marketers have the necessary experience and have been involved in the business for a long period which enables them to possess perfect information about rice marketing in the markets. The table revealed that 72% of the respondents have access to finance, while 28% do not have access to finance. Those that have access to finance may be as a result of their involvement in cooperative society; and can access finance from their respective cooperative societies. Those respondents that do not have access to finance might be a result of their non-involvement in cooperatives, hence the need for them to source funds from other sources; and they should be encouraged to form themselves into cooperative societies or groups to benefit from such organisations. In addition, those who are not members might be involved in other means such as daily contributions which may also help them to source funds when needed.

Variables	Frequency	Percentage (%)

Belonging to any farmer-based organisation		
Yes	38	19
No	162	81
Total	200	100
Experience in rice marketing (Years)		
1-5	141	70.5
6-10	46	23
11-15	7	3.5
16-20	4	2
Above 20	2	1
	200	100
Belongingness to informal saving		
Yes	114	57
No	86	43
Total	200	100
If yes, what type of informal saving		
"Osusu"	111	97.4
Village Savings and Loans Associations (VSLAs)	3	2.6
Total	113	100
Access to finance		
Yes	144	72
No	56	28
Total	200	100

Source: Field Data, 2024

Table 6: Distribution of Rice Marketers According to Belonging to Organisation, Experience, Belong to Informal Saving, if Yes, Type, and Access to Finance.

Source of Getting Rice, Means of Transportation, from whom you Purchase Rice, and Access to Finance

Market participants involve individuals, groups, and organisations that handle products at various levels (wholesale and retail) of the markets as the product passes from the producer to the final consumer. The distribution of sources of rice products is presented in Table 7. The results reveal that the daily market, community, "Lummur" and own production of rice in the study area constituted 60%, 38.5%, 1%, and 0.5%, respectively. This implies that the daily market dominated the source of rice products in the study area.

This, therefore, follows as a matter of logic that prices of rice in the study area would be relatively high because more daily marketing functions such as selling in small units, storing for relatively longer periods in rented stores, and bringing the products close to consumers thereby adding more utilities of possession, place and time. The cost of the various functions which eventually provide more utilities to the product is transmitted to the final consumer at higher prices.

Marketing has been linked with transportation. This is because the movement and distribution of commodities from one place to another involves the use of transportation means. From Table 7, the respondent's mode of transporting rice was reflected. A higher percentage of respondents in the urban markets (49 %) used head load, which is explained by the access to storage closer to the marketing point. The use of commercial motorbikes popularly called "Okada" for transporting rice by respondents was next to head load by respondents in the urban markets, with 35%, while public vehicles had a low percentage in the markets with 16%.

The result further revealed that 95% of the marketers' purchasing unit was from wholesalers followed by retailers, processors, and middlemen/agents, 2.5%, 1.5%, and 1%; respectively. This implies that the rice marketers bought their goods at a very high price from the main wholesaler which could also translate to higher profit. The breakdown of the distribution of respondents according to their selling point is reflected in Table 7 below. Only 20% of the respondents used daily market in the urban markets as a selling point. Another 80% of the respondents used community/open space as a selling point in the urban market. The indication of the above is that rice marketers in urban markets of the study area were organised. The urban market had better selling points with the majority using community/open space.

Variables	Frequency	Percentage (%)
Source of getting rice product		
Community	77	38.5
Daily market	120	60
"Lummur"	2	1
Own production	1	0.5
Total	200	100
Means of transportation		
Head load	98	49
Motorbike ("Okada")	70	35
Public vehicle	32	16
Total	200	100
From whom do you purchase rice products?		
Middlemen/agent	2	1
Processors	3	1.5
Retailers	5	2.5
Wholesaler	190	95
Total	200	100
Place of selling		
Community	21	80
Daily market	179	20
Total	200	100
Main types of customers		
Consumer	182	91
Retailer	17	8.5
Wholesaler	1	0.5
Total	200	100
The main source of information		
Media	5	2.5
Personal observation	33	16.5
Rice marketers	162	81
Total	200	100

Source: Field Data, 2024.

Table 7: Distribution of Rice Marketers According to the Source Of Getting Rice, Means of Transportation, from Whom you Purchase Rice, and Access to Finance.

Table 7 also reflects the type of customers the respondents mostly had. Three types of customers were identified which included wholesalers, retailers, and final consumers. The retailers included buyers who had to sell to final consumers and the wholesalers sold to retailers and consumers. The third category of customers constituted consumers who were 8.5% in the urban markets as shown in Table 7, this was followed by wholesalers (0.5%). The fact that most customers were final customers (91%) in the urban markets supported the fact the respondents in the urban markets were mostly retailers who sold in pieces to the consumers. Regarding the main source of information obtained by rice marketers in the study areas, the table reveals that most (81%) of the marketers got information mainly through their colleague rice marketers, followed by the rice marketers' observations (16.5%) and the media (2.5) being the least source of their marketing information.

Marketing Challenges

The constraints to rice marketing in the study area are presented in Table 8. The results revealed that the most important constraint faced by all the rice marketers (34%) was the low demand for local rice. Problems of price fluctuation (32%), high transportation cost (16%), high cost of rice (15%) and debtors (3%), were further revealed in Table 8; respectively. The above challenges differ from one who noted that the main issue facing the rice industry is the government's policy prohibiting the importing of rice, according to all rice marketers [16]. The possible solution to these constraints is the provision of agricultural credit, adequate to enable rice marketing personnel to expand their businesses. This means that the challenge involved in the marketing of rice is inadequate marketing of rice facilities.

Challenges	Frequency	Percentage (%)
Price fluctuation	64	32
High cost of rice	30	15
Debtors	6	3
Low demand for local rice	68	34
High transportation cost	32	16
Total	200	100

Source: Field Data, 2024

Table 8: Distribution of Respondents According to Major Constraints of the Rice Marketers.

Major Rice Marketing Recommendations

Table 9 shows the distribution of the respondents on recommendations in rice marketing as follows: Forty-four percent of the respondents recommended that price communication can boost rice marketing in the study area. This was closely followed by access to credit facilities, people's engagement in farming, availability of local rice, and government regulation on price, all of which constituted 19%, 17%, 15%, and 5%; respectively.

Recommendation	Frequency	Percentage (%)
Access to credit facilities	38	19
Availability of local rice	30	15
Price communication	88	44
People to engage in farming	34	17
Government regulation on price	10	5
Total	200	100

Source: Field Data, 2024.

Table 9: Distribution of Respondents According to Major Recommendation.

Conclusions

The present study analysed the socio-economic factors affecting rice production among smallholder farmers in Sierra Leone. The results suggest that males constitute a higher percentage of rice farmers and attract both young and old generations. It also indicated that most rice farmers in the study area have low levels of education, and formal credit is almost out of reach, thus hindering their understanding and application of improved rice farming technologies. However, the majority of the rice farmers interviewed were engaged in farming as their main income-generating activity. In Sierra Leone, the preference for imported rice over locally produced rice has significant implications for the nation's agricultural sector and food security. Studies have shown that while local rice varieties have improved in competitiveness, they still face challenges in meeting the rapidly expanding demand. Farmers in Sierra Leone have expressed preferences for rice varieties with high yield potential, maturity period, pest and disease resistance, and seed longevity. These attributes are crucial for increasing production and ensuring a stable food supply. Yet, the market dynamics are complex, with imported rice often being preferred due to factors such as price, quality (cleanness/grade, palatability/taste, swelling), and availability. This preference impacts local farmers, whose livelihoods depend on their ability to sell local rice in a market that favors imported varieties. The situation is further complicated by the fact that only a small percentage of local rice production reaches the capital cities; especially Freetown and Bo, which are significant markets for the product.

Holistically, the rice market survey conducted in Bo and Freetown markets reveals significant insights into consumer and trader preferences, and their attitudes, perceptions, and behaviors within the arena of rice production and

productivity, and rice marketing in the study areas. The findings indicate a strong preference for imported rice over local varieties, with a notable majority of both consumers and marketers favouring the high swelling, long-grain rice due to its swelling power and consistent market availability. This trend suggests a challenge for local farmers to match the quality and appeal of imported varieties. Moreover, the survey highlights a desire for improved grain quality among both consumers and marketers, although this is not considered a high priority compared to other factors such as price and availability. The preference for imported rice is speculated to be influenced by household food choices and the broader socio-economic context of food production and consumption in Sierra Leone. These conclusions underscore the need for strategic interventions in the rice production sector to enhance the competitiveness of local rice and to address the underlying factors driving consumer preference for imported rice varieties.

Recommendations

To address these challenges, it is essential to understand the underlying reasons behind consumer preferences and to develop strategies that can enhance the appeal of local rice. This might include improving rice quality, ensuring consistent supply, and effective marketing strategies that highlight the benefits of supporting local rice produce. Additionally, understanding the distinct classes of farmers and their specific needs can aid in tailoring agricultural policies and interventions to boost local rice production and marketability. By doing so, Sierra Leone can take a step towards greater food self-sufficiency, national food security, and economic stability. Additionally, it is important to assess the impact of rice importation on local rice production and identify factors that can enhance the competitiveness of local rice. The insights from the surveys can inform strategies to improve rice grain quality and marketing practices, ultimately contributing to the goal of achieving self-sufficiency in rice production in Sierra Leone. Furthermore, understanding the structure of the rice value chain is crucial, as it can reveal discernments into the efficiency and competitiveness of the markets, which is vital for formulating policies that support the growth of the rice value chain sector.

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Conflicts of Interest

The authors declared that no conflict of interest exists.

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