

Embargo on Foreign Rice Importation and its Implications on Quality Improvement of Local Rice in Cross River State, Nigeria

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Abstract

This study analyzed the embargo on foreign rice importation and its implications on quality improvement of local rice. I examined the likelihood for local rice quality to improve following land border closure on imported rice, assessed the level of rice quality improvement, and examined dimensions of which local rice quality has improved in Cross River State.

The study was conducted in Calabar, Cross River State and the study population was rice producers from three Rice Associations and stratified random sampling was used to draw a sample size of the 365 producers. It utilized a survey research design that was guided by import substitution industrialization theory. Questionnaire and in-depth interview (IDI) were used in collecting data; qualitative data was analyzed using content analysis, while quantitative data were analyzed using frequency, simply percentages and incidence pattern analysis. Embargo on foreign rice importation has helped to improve the quality of local rice, following Government interventions in the area of skills development for producers, as well as deploying new rice production technologies. Again, rice quality improvement level was moderate (75%), showing that recent local rice quality was not inferior like same local rice in the past years before border closure policy. More so, the use of certified seeds and seedlings of improved rice varieties during cultivation, the use of modern processing techniques and equipment, have helped to improve the local rice quality in the area of good taste, stone, reduction, dirt particles and odour freeness. The Government should further intervene by establishing rice processing outfits in some rice producing communities that lack processing equipment so as to further improve the quality of local rice.

Keywords: Rice, Importation, Quality improvement, Embargo, Border closure.

Introduction

Rice is a staple food massively consumed by people across different socio-economic statuses in Nigeria. Recent reports by PWC (2018), shows that Nigeria is one of the major producers of rice but consumes about 6.4m tons annually, compared to its annual local rice production rate of 3.7 million metric tons per annum. This deficit coupled with consumers' high preference for foreign rice, has made the nation to constantly import foreign rice into the country. In fact, foreign rice importation has been ongoing in the nation for many decades; and is seen as a normal phenomenon. Certainly, most of the foreign rice were imported into the nation directly from the producing countries such as Thailand, India, Indonesia, and China. However, due to government's regular restrictions measures, such as high import tariff, the importers resorted to importing foreign rice through land borders of West African neighbouring countries such as Benin Republic border, Niger border, Cameroun border, and Chad border thereby making smuggling to become the order of business. (Okonkwo, 2021; Otu, Eja, Eko, & Josephat, 2011; Osonwa, Eja & Josephat, 2015). As a matter

of fact, most of foreign rice smuggling activities were organized through Benin republic border in particular. Usually, Benin Republic imports the highest metric tons of rice from Thailand and equally sells directly to Nigeria. For instance, Okonkwo, et al, (2021) reported that a total of 24,992 metric tons of rice were imported through land borders in 2006, while goods including rice worth \$5bn are smuggled into Nigeria yearly through Benin Republic alone.

In the past, the government had initiated policies to curb the excessive import and smuggling from neighbouring borders. For instance, there was a ban on the importation of agricultural produce especially rice from Benin Republic in 2004 and from all its neighbouring countries in 2006. (National Bureau of Statistics reports, 2018). These measures were meant to reduce dependence on imported rice, boost domestic rice production, and improve rice quality which would encourage consumption of local rice. Nevertheless, foreign rice continually infiltrated the nation through the same neighbouring land borders, thus, making local rice production sub-sector moribund following low consumers' patronage. It was this situation that compelled the President Buhari led Federal Government of Nigeria to implement all 'Land Border Closure Policy' on August, 2019, which totally put embargo on foreign rice importation into Nigeria. The strategy is to promote import substitution with a motive to expand and boost the local rice industry in order to achieve self-sufficiency especially in rice production.

After the closure of border on imported rice, both federal and state government in collaboration with some donor Agricultural agencies had transformed the sub-sector by adopting certain interventionist strategies to boost local rice production especially in the aspects of training of producers, provision of farming and processing technologies, as well as modern equipment, (CBN, 2021; Osonwa, Eja, & Emeka, 2015; Ojong, Agba, Eteng, Maruf, Akintola, & Usung, 2021; Iji, Ojong, & Angioha, 2018; Ayuk, Owan, Ekok, & Odinka, 2012). In fact, this revolution in Rice production has continually transformed local rice production sub sector especially in the 18 States of the federation, including Cross River that are predominantly rice producers, thus creating certain improvements in local quality. However, the crucial issue of concern is the general consumers' doubt in quality of Nigerian local rice compared to foreign rice. Ideally, consumers prefer rice that possess superior quality with good taste, stone and debris free, clean and very easily to prepare. But after the closure of land border on imported rice, some consumers still perceived locally produced rice to be of inferior quality due to presence of stones and dust, broken grains, which makes it very difficult to prepare and consume. With this attitude, some people are still discouraged to patronize local rice while others are agitating to the Government to open the borders so that they could have access to foreign rice. This present agitation is putting pressure on the Government to reverse the border closure policy against rice importation.

Though many studies have analyzed the implications of the foreign rice's embargo on local rice, they only focused on quantity and demand aspect of locally produced rice. (Nwali, 2019). But attempts have scarcely been made to assess if the embargo has likely improved local rice quality. What then is the level of quality improvement, and, what are the dimensions of which rice quality improved? In view of the above, this study assessed embargo on importation of foreign rice and its implications on quality improvement of local rice in Cross River State. It is specifically intended to examine the likelihood for rice quality to improve after embargo on importation of local rice, assess the level of local rice quality improvement, investigate the dimensions for quality improvement and the aspects of which quality has improved in Cross River State, Nigeria.

Literature Review and Theoretical framework

Closure of land border on imported foreign rice has tremendously increased the quantity of local rice production, making Nigeria to be ranked the largest producer of rice in the black continent of Africa (PWC Report, 2018). Despite the increased production, the improvement of the local rice quality is uncertain. Indeed, a survey by Omobolaji, (2019) reveals that the quality of Nigerian local rice is poor because some processors do not have adequate processing technologies and equipment. Relatively, among the foreign rice often imported into Nigeria, Thailand rice, India rice is perceived to be of high quality, because of its immaculate appearance and cleanliness, high swelling capacity, perfect taste, strong grain texture, stones and specks freeness (Okonkwo, et al 2021; Edem, Agba, & Ojong, 2020). On the other hand, our local rice is totally noted for its lower quality. In this regard, a study prior to the land border closure by Oni and Olayemi (1973), indicated that Nigerian rice is of a lower quality when compared to foreign rice, because it usually contained debris and stones, often gumming with soured taste.

Furthermore, Oduntan (2019), asserts that the quality of local rice may either be determined or rated poor, average, or high based on rice taste, grain texture, dirt and stone content, colour and cleanness, swelling capacity and even ease of preparation. But some impediments against local rice quality improvement according to Omobolaji (2020) are lack of adequate processing and milling technologies, equipment such as poor parboiling system, obsolete milling machines, as well as constant preference for used of manual processing methods. On the contrary, Oyewale, (2019), Nwali, (2019) argued that there has been an undeniable improvement in quality of local rice since border closure. Nwali, (2019) specifically accepted that prior to embargo, local rice quality was poor, but as of recent there has been lot of tremendous improvement the quality compared to the quality of the same local rice decades ago. In line with this, Oyewale, (2019), affirms that the current quality of domestic rice can equally compete with the imported rice.

Since the embargo, both government and private business individuals have provided supports in rice production sub-sector. As reported by Adamgbe, et al (2019), both federal and some state governments have been creating significant strategies that boost local rice production with a motive to end imports, using incentives such as, subsidized loans for producers. For example, the 'Anchor Borrowing Programme' provides inputs in kind and cash to smallholder rice producers, tax rebate, free access to farm land, provision of certified seeds and improved seedlings, fertilizers, deployment of modern rice technologies at subsidized rate, as well as, provision of free land used for rice cultivation and processing. Another strategy is imposing higher tariff on imports. For instance, there is a 70% import tariff on rice import as at 2019 (CBN, 2021). Other strategies include private partnership and Agricultural Agency collaboration, (IFAD, 2019;), as well as provision of modern processing and milling equipment. Based on these, 'Import Substitution Industrialization theory' is relevant to the phenomenon under study.

Import substitution industrialization theory was propounded in the early 19th century. However, it was really popularized by Alexander Hamilton and Friedrich List in the 20th century. This theory advocates development economic policies, and strongly calls the attention of importing nations to proactively protect their domestic industries by reducing or ending foreign imports especially on food products such as rice. By doing this, the theory encourages importing countries to implement policies that would protect, strengthen, and boost primary industries such as the agriculture sector by applying different strategies such as investment supports, tariffs, import quotas, subsidized government loans, etcetera (Adamgbe, et al, 2020). Rather than totally relying on imported rice, import substitution industrialization theory is projected to make Nigeria and its local economies, self-sufficient in food production such as local rice.

Methodology

This study was carried out in Calabar, Cross River state. The state was purposively chosen because it warehouses six Local Government areas that are predominantly rice producers. A survey research design was adopted for the study. The design allows the researcher to survey a subunit of the population in order to obtain certain information about a phenomenon that concerns them (Akpabio, Angioha, Egwuonwu, Awusa, & Ndiyo, 2020; Ojong-Ejoh, Bassey & Angioha, 2021; Ukwayi, Eja. & Unwanede, 2012; Achu, Owan,

Uyang. & Francis, 2013; Nnam, Owan, Idike, Ibiom, Agboti, Kanu, & Okechukwu, 2020). The population of the study consisted of members of Rice Farmers Association of Nigeria (RIFAN), Cross River State Farmers’ Cooperatives Empowerment (CRS- FACE), and Rice Processors Association and Plantation Owners Forum of Nigeria (POFON). Sample size for the study was 365; this was obtained from the population using a ‘Z test’ formula at a confidence level of 95% (1.96) given room for 5% confidence error. Respondents were selected randomly from all the three Associations through stratified random sampling having divided the sample population into strata, while simple random sampling was finally used to draw respondents from each stratum. Data was collected through the use of questionnaire and in-depth interview (IDI) method. The questions consisted of both open and close ended questions. The questionnaire was divided into three sections, and each section was targeted at each objective of the study. The questionnaire was administered to respondents during their meeting day at venue of the meeting, and was retrieved the same day. In- depth interview was conducted with nine (9) senior officers of the associations who are well experienced on rice production activities. In-depth interview schedule was used as a guide during the interview, while hand-written reports were used in recording data with the help of two research assistants. The qualitative data were analyzed using content analysis, while the quantitative data were analyzed, using frequency, simply percentages and incidence pattern analysis.

Results

A. Demographic Characteristics of the Respondents

Table 1 shows the results of demographic characteristics of local rice producers. The first item indicated that 56% of the respondents were males, while only 44% were females. Amongst these producers, 29% were 41 to 50 years old, 26% were 51 to 60 years, while 25% were 21 to 30 years. But a small portion of 11% were youths between age 21 to 30 years, while very few- 9%, from 61 years and above were older people. Besides, a large 62% of producers were married, while 21% were unmarried, others such as widows or widowers were 11%, and divorcees were 6%. For educational qualification, 29% were mostly primary and secondary school certificate holders, followed by 27% who were higher diploma certificate or first-degree holders, as well as 25% who were national diploma or national certificate holders. More so, few 19% were either masters or doctorate degree holders. In terms of religious affiliation, majority 85% were Christians, while very few, 11% represented Muslims, and just 4% were indigenous worshipers.

Table 1: Distribution of Respondents based on Demographic Characteristic

S/n	Variable	Frequency	Percentage (%)
1	Sex		
	Male	204	56
	Female	161	44
2	Age		
	21-30	41	11.0
	31-40	90	25.0
	41-50	107	29.0
	51-60	95	26.0
	61 and above	32	9.00
3	Marital status		
	Married	226	62.0
	Single	78	21.0
	Divorced	20	6.00

	Widow/widower	41	11.0
4	Highest Level of Education		
	FSLC/SSC	108	29.0
	OND/NCE	90	25.0
	HND/B.Sc.	99	27.0
	MSc/Ph.D.	68	19.0
5	Religion		
	Christianity	312	85.0
	Islam	39	11.0
	Traditional	14	4.00

Field survey, 2021

B. Embargo on importation of foreign rice and underlying likelihood for Rice Quality improvement, and levels of quality improvement.

Table 2 shows the likelihood for local rice quality to improve as well as the level of quality improvement in Cross River State due to ban on foreign rice importation. Item one revealed majority of respondents 75% acquired better skills in rice production through trainings by Government and other agricultural agencies. Similarly, 71% affirmed that quality has improved since government had deployed modern technologies such as modern parboiling system in rice processing. This means that the border closure propelled government to support producers with new processing technologies. This buttresses IDI response that affirmed that;

‘During this border closure period, ‘CrossRice’ had deployed modern processing technologies like processing equipment, and Government has trained many of us to apply new techniques of rice cultivation, and modern parboiling system. This awareness is actually improving our rice quality in area taste, stone elimination, and grain strength’.
 IDI/RIFAN/2021

As per level of quality improvement of local rice, most of the respondents 61% acknowledged that rice quality level had improved to some extent, since the quality was no longer poorer as it used to be. While only 39% acknowledged the quality level as being lower probably because they used manual processing methods. Also, most of respondents 59% recognized that the level of quality improvement of local rice was not high compared to foreign rice with flawless qualities, while few 41% accepted the quality level was high. This implies that local rice quality was improving. But few respondents 25% affirmed the quality of rice improvement was not moderate but majority 75% accepted that the rice quality level was moderate and may increase further. These findings corroborate with IDI responses;

The quality improvement level is moderate because some of us still use manual processing techniques, that is why some of this rice still contains particles, and sometimes tiny stones. But big companies have good machines as such why their brand don’t have sand. If the govt still keep border closed, then in future our rice will continue to improve in quality like Thailand rice. IDI/RIFAN/2021

Table 2: Distribution of Respondents based on Foreign rice importation embargo and its underling likelihood for Local Rice Quality improvement, and levels of quality improvement

Item	Statements	SD	D	A	SA	RQIIP %
1	I have acquired better skills in rice production through government and Agric. Agencies since foreign rice importation embargo commenced in 2019.	5.00 (20)	20.0 (71)	38.0 (140)	37.0 (134)	75.0
2	Govt has deployed modern technologies in rice production and processing.	9.00 (33)	20.0 (75)	35.0 (126)	36.0 (131)	71.0
3	Quality improvement level is still low since some rice are processed manually	28.0 (103)	33.0 (120)	22.0 (80)	17.0 (62)	61.0
4	Local rice quality improvement level is high as it's progressing towards foreign grade.	29.0 (104)	30.0 (109)	19.0 (70)	22.0 (82)	59.0
5	Level of quality improvement is moderate, since particle contents are reduced.	14.0 (51)	11.0 (40)	36.0 (131)	39.0 (143)	75.0

Note: N-365 respondents, RQIIP%:Rice Quality Improvement Incidence Pattern Percentage, SD:Strongly Disagree, D: Disagree, A: Agree, SA: Strong Agree.

C. Analysis of dimensions of Rice Quality Improvement and aspects of rice improved quality.

Table 3 shows some dimensions and certain aspects of which local rice quality improved. On the first item, most of the respondents 69% acknowledged certified seeds and improved seedlings that yield better quality, more vitamins, and nutritious rice were introduced and used in rice cultivation after border closure. Also, majority 71% believed the embargo had pushed some investors to establish newly improved rice mills and processing outfits which used modern milling technologies to process rice. Furthermore, majority 86% confirmed the embargo on foreign rice importation had compelled private individuals to introduced improved processing techniques like parboiling machines that improve rice varieties such as long grain. Moreover, only 32% accepted the rice contained stones while majority of the respondents 62% confirmed that the quality of local rice had improved since it is free from stones and dirt particles. Though few farmers (33%) believed local rice was still gummy and wetly, but the others (67%) declared that with the current improved rice varieties and existing sophisticated processing techniques utilized, quality has improved.

Again, most respondents (66%) acknowledge their skills and competence on rice production have been developed because of various workshops and trainings they attended. More so, very few 32% disagreed that local rice is no longer generating odour. In like manner, only 40% disagreed that some local rice was very easy to cook which indicated that majority accepted the rice is very easy to cook. Another aspect of which rice quality had improved is in the area of grain texture. Few people 36% still believed local rice grain was weak. This is probably, because they are still using manual method of processing rice. However, 64% who had constantly used local rice indicated that some rice grains were stronger now. Again, majority 63% accepted that some locally produced rice was fortified with vitamins and mineral contents just like foreign rice. Regarding the quality of the rice taste, only a few 25% accepted local rice was still tasteless, however, majority 75% confirmed that some brand of local rice have good taste just like foreign rice. The good taste is due to the

used of modern technologies which eventually enhance quality. All these corroborate with IDI’s affirmation that;

During cultivation, we select certified seeds and improved seedlings of rice varieties such as FAROs like SIPI (Faro 44), WITA4 (Faro 52), L-34 (Faro 61), TOX4004 (Faro 60)) etc. the good thing is that, all these varieties have short maturity yielding period of between 30 days to 130days maximum. They possess good quality, contain more vitamins, IDI/ CR- FACE/ 2021

This was further reported in another IDI that,

The way we now process paddy has really improved our rice quality. Today we are using modern threshing machines and husker that remove husk softly without breaking the grains. We used destoning machines that select the stone. still, we used polishing and rice coloursorter, we use modern parboiling dryer to dry paddy we adopt modern boiling system, moisture content meter, etc. which help to improve quality. IDI/POFON/2021

Table 3: Distribution of Respondents based on dimensionsfor Rice Quality improvement

S/n	Statements	SD	D	A	SA	RQIIP% and RROP
1	Since embargo on foreign rice,certified seeds and seedlings of improved rice varieties are adopted for cultivation.	10.0 (36)	21.0 (78)	36.0 (131)	33.0 (120)	^b 69.0 ^{3rd}
2	There has been an increase in new milling /processing outfits that apply modern milling equipment in the sector.	17.0 (64)	12.0 (42)	35.0 (129)	36.0 (130)	^a 71.0 ^{2nd}
3	The sector is now using modern processing techniques to process rice	8.00 (30)	6.0 (21)	54.0 (198)	32.0 (116)	^a 86.0 st
4	Local rice is still filled with stones and husk	29.0 (104)	33.0 (120)	23.0 (85)	15.0 (56)	^c 38.0 ^{6th}
5	The rice is still sticky and wetly as usual	37.0 (134)	30.0 (110)	14.0 (51)	19.0 (70)	^c 33.0 ^{9th}
6	Because of training, and workshop attended, am well knowledgeable and skillful on rice production process	28.0 (101)	38.0 (137)	16.0 (60)	18.0 (67)	^b 66.0 ^{8th}
7	Local rice still generates strong offensive odour, soured while boiling	33.0 (121)	35.0 (128)	15.0 (54)	17.0 (62)	^c 32.0 ^{10th}
8	The rice is now very easy to cook since it does not involve the rigors experience of sifting	22.0 (79)	18.0 (66)	33.0 (120)	27.0 (100)	^b 60.0 ^{5th}
9	The grain texture is still weak and usually result to breakages	30.0 (110)	34.0 (123)	20.0 (75)	16.0 (57)	^c 36.0 ^{7th}
10	Local rice is fortified with vitamins and minerals just like foreign Thailand rice	25.0 (91)	12.0 (45)	27.0 (99)	36.0 (130)	^b 63.0 ^{4th}
11	Local rice is still tasteless unlike foreign rice	41.0 (148)	34.0 (125)	14.0 (52)	11.0 (40)	^d 25.0 ^{11th}

Note: N-365 respondents, RQIIP% - Rice Quality Improvement Incidence Pattern Percentage, RROP- Relative Rank Order Positioning, SD -Strongly Disagree, D- Disagree, A - Agree, SA - Strong Agree

D. Incidence pattern analysis indicating central dimensions influencing Rice Quality improvement, and underlying implications

Table 4 adopted incidence pattern analysis to identify the central factors that contributed to rice quality improvement in Cross River State. Category ‘a’ ranging 70% – 100% indicated the used of modern technologies and equipment in rice production as key dimensions for local rice quality improvement. This was followed by category b, indicating 60%– 70% contributory influence for rice quality improvement on capacity building of farmers and processors, and the introduced new seeds and seedlings of improved varieties during cultivation. Category c indicated the outcome of rice quality improvement with 30- 50% acceptance for local rice. Another emerging outcome is indicated on category d, which revealed 20- 30% recognition for local rice nutritious content, vitamins and minerals endowments.

Table 4: Showing Incidence pattern percentage analysis of the central dimensions of rice quality improvements and underlying implications in Cross River State.

RQIP % category	RQIP% range	Rice Quality improvement Item frequency	Percentage composition	RQIP%-underlying implications
A	70 – 100	2	18.2	Applications of modern and improved milling and processing equipment and new technologies.
B	60 – 70	4	36.4	Capacity building/ training of producers and used certified seeds and improved seedlings of rice varieties during cultivation period.
C	40 – 50	4	36.4	Strong consumers’ positive preferences and usages
D	20 – 30	1	9.00	Nutritional enhancement for consumers
Total	100 %	11	100%	

Field Survey 2021

Discussion of the Findings

Certainly, Cross River State has totally embraced the Federal Government ‘Agricultural Transformation Agenda’ on rice production. Most of the rice producers in the State are married, comprised, theyouths, middleage, and the older people, who are predominantly into rice production occupation on full-time basis. As noticed from study, the sub sector does not discriminate based on educational qualification, having absorbed many people that cut across all levels of educational certificates, particularly the primary and secondary school holders, and ordinary national diploma holders who are ignored by some corporations. In fact, closure of border against foreign rice importation has helped to improve the quality of local rice in Cross River state. Clearly, the central force that led to quality improvement was the government’s intervention in developing producers’ skills on rice production through constant training, and provision of modern rice technologies. It is actually the application of these new skills and modern technologies in rice cultivation, processing, and milling process

that eventually resulted to improved rice quality. For instance, the existing ‘Rice Seedling Factory in the State’ has facilitated the used of new technologies of certified seeds, seedlings of improved rice varieties during cultivation, has helped to yield improved rice grain, more vitamins and nutritious rice. Also, the used of modern parboiling technologies e.g. parboiling dryer, moisture content detector, has helped to controlled paddy moisture thereby eliminating offensive odour, improved taste, and strong grain texture (Okonkwo, et al, 2021).

All these were possible due to the Government’s efforts in collaboration with some Agricultural Agencies such as, Food and Agriculture Organization (FAO), and International Fund for Agricultural Development (IFAD). As matter of fact, ‘CrossRice’ Agricultural Development Project promoted by the State Government, Rice Company Management Board and Central Bank of Nigeria, has really trained farmers, processors, and millers who regularly applied their skills and available technologies on rice production flow that in turn generated improved quality rice.

As per rice quality level, findings revealed that the quality improvement level for local rice is moderate. Oyewole, et al, (2019), in a survey has affirmed that the current embargo on foreign rice importation has improved rice quality, though such quality may not match with foreign rice premium quality. In truth, at ‘moderate level’, it means the quality of the present local rice in Cross River State is better than the same local rice existed in previous years. Though the improvement is not at the level of foreign rice quality, local rice quality is progressing as the sector is still undergoing transformation.

Interestingly, it is noticeable that some local rice brand partly contained dirt, this is actually due to categories of the producers and their processing capacity. As indicated in a report by Price Waterhouse Coopers – PWC (2018), 80% of rice production segment are made up of the small-scale producers, of which greater number of them were still using manual processing methods that tend to cause presence of stones, husk and extraneous materials. It is this kind of produce that propelled some consumers to still doubt local rice quality. Notwithstanding, the report totally affirmed that the remaining 20% who are large scale producers already have modern equipment that processed or milled clean rice with strong grains that are free from dirt and stones.

Government intervention through provision of modern rice equipment, as well as establishing milling outfits has helped to improve local rice quality. As indicated by Omobolaji, (2020), the application of adequate equipment in rice production, mostly processing, determined the state of local rice quality improvement. Actually, the central driving force that led to rice quality improvement in cross River State was the application of necessary rice equipment and its technologies such as, modern parboiling system that moderately boiled paddy for the shell to open without excessively absorbing water. By doing this, moisture content meter is often used to measure moisture content of the grain to guide against rice breakages, souring, and discoloring. And also, the used of modern drying electricity machines to dry the paddy has reduced moisture content.

Since milling of rice transforms the paddy into white rice that consumers eat, clearly the use of milling machines such as destoning machines has helped to pre-clean the rice and select stones or sand. This process improved rice quality by eliminating stones and dirt. The husker removes shell and other particles that eventually generate brown rice, polishing machines remove the brown bran to get the white surface, colour sorting machines further improved rice colour, cleanliness and appearance. Other machines such as bag closing machines that packaged the bag to avoid easy penetration of dirt, and digital weighing scales that determined appropriate measurement (in kg) per bag are very beneficial. In fact, the establishment of ‘Rice Milling Factory’ at Ogoja by Cross River State Government has helped to improve rice quality since some paddy are either processed directly in the plant by

the small - scale farmers or indirectly processed through CrossRice paddy off- takers who earlier evacuated paddy from small scale farmers.

Positively, the siting of milling plants as well as, provision and used of equipment have essentially helped to improve local rice quality by enriching rice taste, eliminating stones, odour, gummy possibility, enriching rice with mineral and vitamins nutrients, increasing rice grain strength with preferable sizes, improving swelling capacity, appearance, and ease of preparation by consumers

Conclusion and Recommendations

Embargo on importation of foreign rice through land border has led to improvement in the quality of the present Nigerian local rice. This has been possible following government interventions that supported the rice production sub- sector through capacity building for producers, as well as providing new rice production technologies and modern processing equipment. In addition, private business individual's investment through establishing modern rice processing outfits with modern technologies and equipment has helped to improve rice quality

But the level of quality improvement is moderate, since it is not as high like that of the foreign rice quality. Nevertheless, the local rice quality is better than the same local rice quality in the past years before border closure policy on August, 2019.

Clearly, the central dimensions that determined local rice quality improvement, are mostly Government Intervention strategies, and partly business individuals' investment in rice production sub-sector With these interventions, Nigerian local rice now maintains good colour with clean appearance, stones, sand and debris free, good taste, strong grain texture with long, medium or short size, enriched with vitamins and mineral nutrients, and free from offensive odour and gummy possibility. In fact, local rice is easily wash and cook without stress of sifting. The outcome of this improvement showed that some consumers in Cross River have currently restored their preference for local rice, having recognized local rice for possessing nutritional nutrients in term of vitamins and minerals.

Therefore, embargo on importation of foreign rice through land border should be sustained. Furthermore, the government should intervene by establishing rice processing and milling plants in rice producing areas to enable small - scale farmers process and mill their rice.

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