

Consumer preferences for rice in Liberia: Some preliminary results

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Introduction

Rice is the dominant staple in the diets of Liberians. Annual per capita consumption is estimated at 108 kg, of which approximately 44% is imported rice [1]. This translates into an annual import bill of roughly US\$200 million. The country is working towards realizing its potential to become self-sufficient by 2030, and critical to this effort is the country’s strategy to invest in the production of high-quality seed [2]. This necessitates prior knowledge of consumer preferences for rice quality attributes, which would enable the country’s breeding program and seed systems to produce and distribute consumer-preferred varieties. To date, there’s no sufficient empirical evidence on the quality traits that Liberian consumers would like to see characterize their rice. Some evidence points to a preference for round-grain rice because its stickiness is good for making porridge [3]. But since rice is mostly consumed in grain form and prepared in multiple ways, more evidence is needed on consumers’ valuation of the whole range of its intrinsic and extrinsic attributes. Further, rice is increasingly becoming important in addressing micronutrient deficiency through biofortification. However, consumption of biofortified crops remains generally low. This study investigates consumer preference for rice quality attributes among Liberian consumers and seeks to understand their perception and valuation of biofortified rice.

Method

Data and descriptive summary

Data were obtained from a survey, in July 2024, of 543 randomly selected rice consuming households (that do not undertake rice cultivation) in the four counties of Bong, Lofa, Nimba and Margibi (Table1). Face-to-face interviews were conducted using a structured questionnaire programmed in CPro.

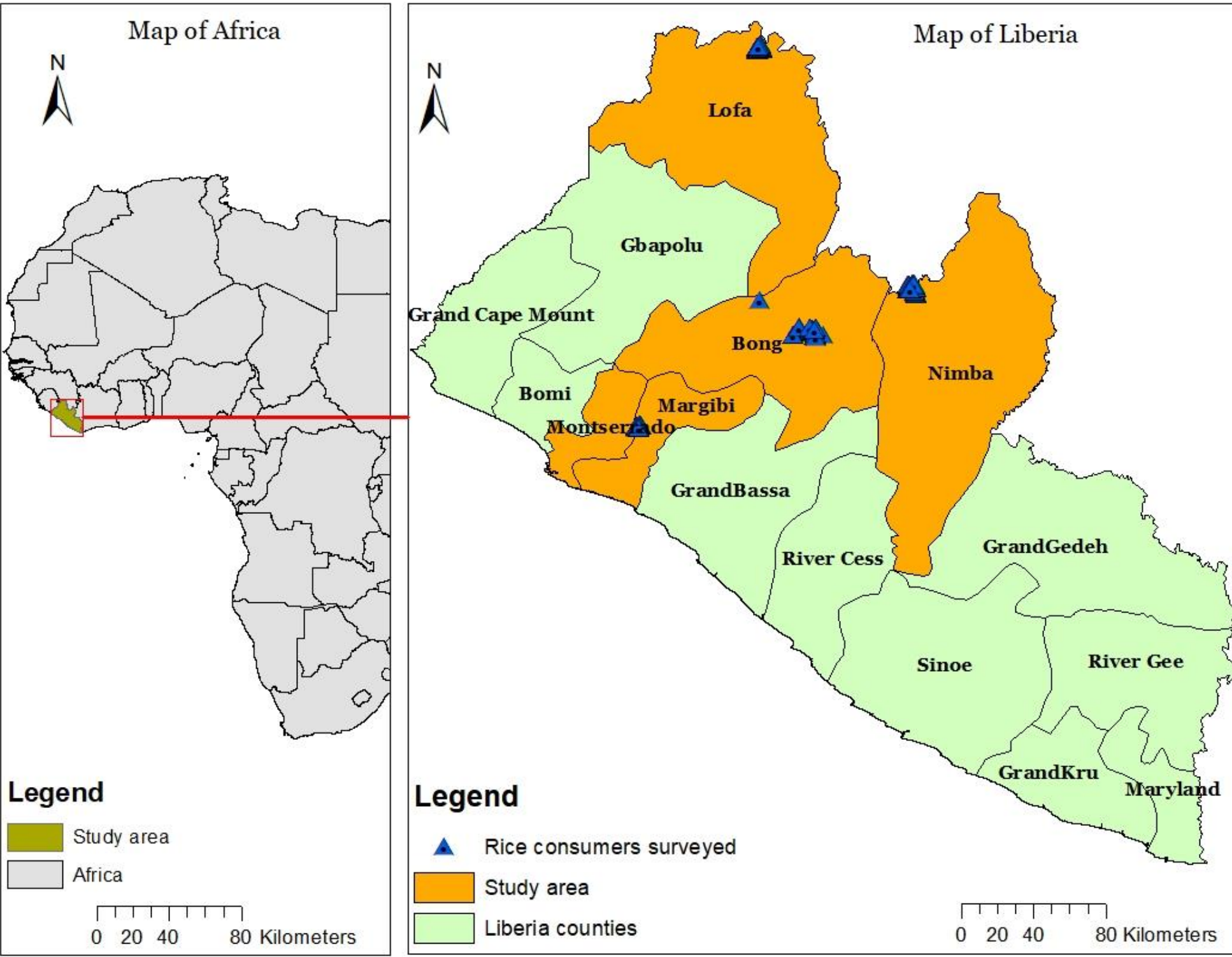


Fig 1. Rice consumer survey counties

Table 2. Descriptive summary of key household characteristics, N = 543

Variable	Mean	SD
Household size	5.11	2.01
Household monthly income (US\$)	252.46	186.04
Household monthly exp. on food (US\$)	118.10	125.04
Number of household’s regular rice suppliers	2.93	1.71
Household receives rice donations (1=Yes)	0.04	0.20
Can differentiate between local and imported rice (1=Yes)	0.99	0.12
Would increase rice consumption if income increases (1=Yes)	0.55	0.50
Would consume different rice type if income increases (1=Yes)	0.44	0.50

Other key characteristics likely to affect rice preferences:

- 89% of households eat rice everyday
- 44% of household heads have no formal education
- 51% of household heads are involved in marketing businesses as the main activity
- The average age of the household head is 42 years
- 57% of households purchase rice from retail shops only, 19% from wholesale shops only, and 9% from both retail and wholesale shops

Preliminary findings

- The most important quality characteristics are stickiness (as reported by 23% of respondents), slow digestibility (15%), hard grain (13%), fine grain (11%), swelling capacity (11%), non-sticky when cooked (7%) and doughy (7%).
- On price - quality tradeoff, most households (59%) consider good quality to be more important than price/affordability (41%).
- 54% of households consume both local and imported rice, while 46% consume only imported rice. A negligible proportion consumes only local rice.
- The most popular type of rice is parboiled imported rice (95%), followed by non-parboiled local rice (17%), and parboiled local rice (11%).
- The most important factors by which imported rice is recognized are price (40%), cleanliness (25%) and branding (23%).
- 59% of households prefer imported rice to local rice. Preference for imported over local rice is because of the former’s cleanliness (80%), superior taste (68%), greater swelling capacity (61%), aroma (53%), ease of cooking (53%), long grains (48%) and fine grains (41%).
- Nearly all households are unaware of biofortified crops including rice.
- Upon explaining what a biofortified crop is, 91% of households would buy it if available on the market. Households would pay on average US\$ 1.13/kg for milled biofortified rice (cf. current national average of US\$ 0.8/kg).

Conclusions and future research

- Rice varieties suitable for the Liberian market are those that become sticky when cooked (low amylose content), are slow to digest, have a firm texture when cooked, and have a high swelling capacity.
- For local rice to compete favorably with imported rice, cleanliness, aroma, taste, a relatively large length-to-width ratio, and parboiling are critical attributes to consider.
- There is potential for biofortified rice to become a widely consumed type of rice if introduced on the market. However, this would necessitate creating awareness among consumers about its potential benefits.
- More in-depth analyses are needed to estimate the shadow prices of the different quality attributes and to identify and characterize existing consumer segments.

References and acknowledgement

[1] Central Bank of Liberia. 2021. Annual Report. Available at: <https://cbl.org.lr/sites/default/files/documents/2021annualreport.pdf>

[2] Ministry of Agriculture. 2024. Proposed National Agriculture Development Plan 2024-2029: Rice Value Chain. Monrovia.

[3] Rutsaert, P., Demont, M., and Verbeke, W. 2013. Consumer Preferences for Rice in Africa. In *Realizing Africa’s Rice Promise* (pp. 294-302). Wallingford UK: CABI.

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