

ASSESSING THE IMPORTANCE OF RICE AS FOOD AND INCOME SECURITY CROP IN PUTI-PUTI SUB COUNTY, PALLISA DISTRICT, UGANDA

ABSTRACT

Aims: This study was conducted to assess the importance of rice to household food and income security.

Study design: This was a cross sectional survey

Place and Duration of Study: The study was conducted in Puti-Puti sub county, Pallisa district, eastern Uganda during the period June-July 2011.

Methodology: Multi-stage random sampling technique was used to identify the target location and the respondents. Semi-structured questionnaires and interview guides were used to collect information from 50 respondents comprising (40 farmers, 4 political and 6 technical staff) on the importance of rice to household food and income security.

Results: The findings showed that rice is an important food staple and source of cash income in the sub county contributing 34 % and 36 % of the food and income source, respectively. Nearly 50% of the respondents earned at least UGX 400,000/ per annum from sale of rice of which 32% is spend on household needs. The other reasons for growing rice included easy storage, pests and disease tolerance among others. The findings also showed that the major types of rice grown were mainly paddy as opposed to the upland. However, the majority (76%) of the rice growers owned between 0-5-1 acres only. Similarly, lack of capital, pests and diseases infestation and use of poor varieties were the other constraints in rice growing.

Conclusion: Overall, rice contributed 12% of the household returns after sweetpotato and groundnuts, respectively. Therefore, this study has concluded that rice is an important household food and income security crop in the sub county. However, to improve the popularity of rice as an household food and income security, there is need for better varieties that are high yielding, early maturing, tasty, pest and disease resistant as well as easy to grow and market.

Keywords: Cash, food, importance, income, rice, security

1. INTRODUCTION

Rice (*Oryza sativa* L.) is an important cereal staple food for a large part of the world population in terms of the area cultivated and amount consumed. Globally, more than 90 and 60 % of the global rice is grown and consumed in Asia and south east Asia, respectively.

27 Rice is produced on about 10% of all crop land (144 million hectares) in over 110 countries
28 ranking second to wheat in areas harvested. Recent, production statistics within the east
29 African region showed that Tanzania has attained self-sufficiency in rice production while in
30 Uganda area under rice cultivation has grown tremendously as a result of government efforts
31 to diversify the economy (NARO, 2010).Traditionally, rice has the potential to improve
32 nutrition, boost food security, foster rural development and support sustainable land use in
33 Africa. Accordingly, rice has grown to become an important food staple and source of cash
34 income for the majority of the farming communities in Uganda. Rice is also becoming
35 increasingly popular in Africa, the Americas, and elsewhere. In fact, the growing importance
36 of rice as a food staple and cash crop is due to the extensive urbanisation and decline in
37 production of millet and other major sources of carbohydrate staples in Uganda (Ochola *et*
38 *al.* 1997). According to (3) Bigirwa *et al.* (2005), rice is now considered among the food
39 security crops in Uganda for alleviating poverty among the rural poor. Currently, Uganda
40 produces 350,000MT against the demand of 450,000MT per annum (NARO, 2012). Yet,
41 FAO projections indicate that, the number of people depending on rice worldwide is
42 expected to reach 3.5 billion in 2025. Consequently, the importance of rice in food security
43 and socioeconomic stability is self-evident.

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45 Although, in Uganda rice growing dates as far back as 1904, serious rice production gained
46 prominence among the farming communities in the early 1990s. At that time, efforts to build
47 up a strong food reserve was not so much successful as most crops grown were for
48 subsistence rather than commercial purposes. According to UBOS (2004), one of the most
49 preferred and considered crops that are likely to boost household food and income security
50 is rice. Consequently, rice as a food security crop relates to the measures in place to ensure
51 continuous supply to meets the demands as at the required time, scope, quantity and quality
52 as desired by the population (World Bank, 2001). This is because, all activities involved in
53 the rice value addition have a potential to create wealth for all including farmers,
54 transporters, millers, traders and the economy. Although, until 1950, rice growing was not
55 popular in Pallisa district, the growing population in the district and the need for more food to
56 supplement other staple crops especially finger millet, sorghum, sweet potatoes and maize
57 has boosted rice growing as a common economic activity in the district (Kisamba, 2001).
58 However, information on the importance of rice as a food security and household incomes in
59 Puti-Puti sub-county is not documented. Therefore, the objective of this study was to assess
60 the importance of rice as a food and cash crop in the Puti-Puti sub-county, Pallisa district
61 eastern Uganda.

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63 2. METHODOLOGY

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65 The study was a cross sectional survey conducted in Puti-Puti sub-county, Pallisa district,
66 eastern Uganda. Pallisa district has an undulating landscape with bimodal rainfall. The
67 minimum and maximum temperatures ranged from 18-20°C– 28-32°C, respectively. The
68 soils are relatively fertile despite the monoculture types of cultivation being practiced (
69 NARO, 2002). Both quantitative and qualitative approaches were used to solicit information
70 from the respondents comprising the farmers, key informants/opinion leaders and
71 agricultural extension workers. Multi-stage random sampling technique was used to identify
72 and select the location and the respondents. Four parishes were selected based on the size
73 and the intensity of rice production. From each parish, 5 villages were surveyed from which
74 eight farmers were randomly selected from the local council registers of each village. Semi-
75 structured questionnaires and interview guides were used to collect information on the
76 importance of rice as a food and cash crop, types of varieties grown, uses of rice, reasons
77 for and against growing rice as well as well the contribution of rice to household expenditure
78 from the respondents. In total, 50 respondents consisting of 40 farmers, 4 key
79 informants/local leaders and 6 agricultural extension workers were interviewed. All data
80 collected were coded, edited and entered on excel spreadsheet and analysed using
81 descriptive statistics of SPSS computer package.

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83 3. RESULTS AND DISCUSSION

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85 3.1 RESULTS

86 The importance of rice growing to household food and income security is presented in
87 Tables 1 and 2. A number of crops were grown for both food and sale. However, groundnuts
88 and sweetpotatoes were the most dominant food crops in the sub-county contributing 29%
89 and 25% of the household income, respectively. Similarly, a number of crops were grown for
90 sale in the sub-county. For instance, coffee and rice contributed 42% and 26% of the
91 household income, respectively. However, the major traditional cash crops such as cotton
92 and tobacco were of less significance in the sub-county but rice featured more prominently
93 as both food and cash crop contributing 12 and 26% of the household income, respectively.
94 In both cases, rice output was higher than those of the other crops in the sub-county (Tables
95 1 and 2). However, rice was grown mainly as a subsistent rather than commercial crop
96 (Figure 1). In fact, close to 80% of the respondents grew rice on very small acreage
97 averaging between 0.5-1 acre compared to 3 acres and above (Table 3). Overall, the
98 average productivity of rice was between 100-200 metric tonnes per season although higher
99 harvest was obtained from the first season than the second season (Figure 1). Rice growing

in Puti-Puti sub-county was categorized into two namely, paddy and upland (Figure 2). The most common lowland and upland varieties grown was Suppa and NERICAs, respectively (data not shown).

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Table 1: Household returns from sales of food crops grown in Puti-Puti sub-county, Pallisa district 2010/2011

Crop	Estimate output (metric tonnes)	Average annual household income (UGX)*	Percentage of output sold
Sweetpotatoes	4.3	500,000	25%
Finger millet	2.5	100,000	5%
Groundnuts	4.7	700,000	29%
Simsim	0.5	125,000	10%
Rice	40	300,000	12%
Matooke	1.8	200,000	7%

*1 US \$= 2650 Uganda shillings

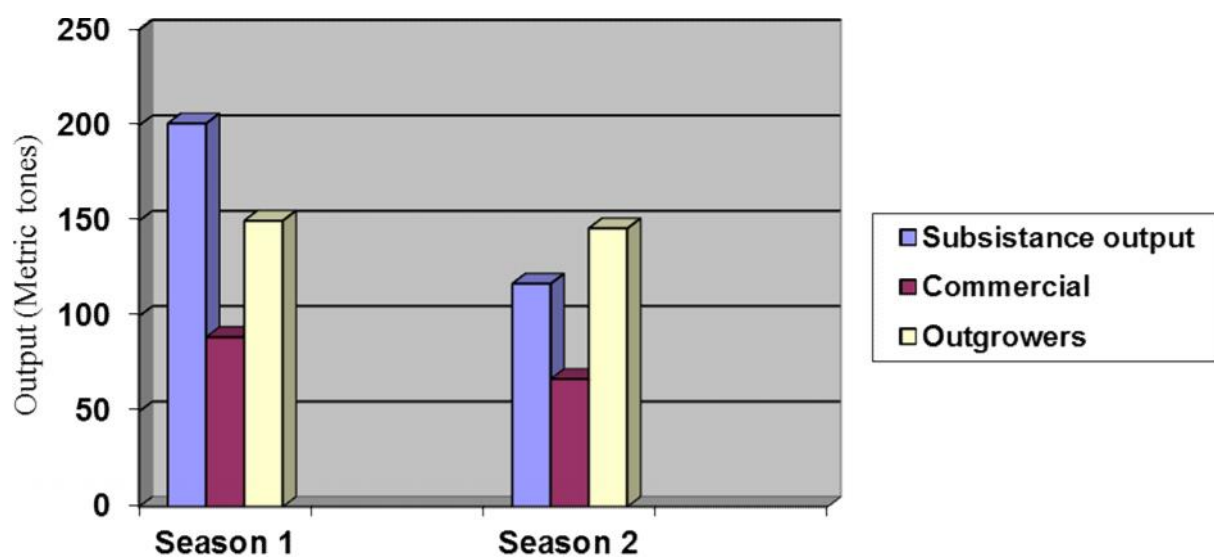
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Table 2: Household returns from cash crops grown in Puti-Puti sub-county, Pallisa district 2010/2011

Crop	Estimate output (metric tonnes)	Average annual household income (UGX)*	Percentage of output sold
Tobacco	0.3	190,000	9%
Coffee	9.5	500,000	42%
Cotton	0.2	120,000	7%
Tea	0.4	125,000	10%
Rice	110	400,000	26%

*1 US \$= 2650 Uganda shillings

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 114 Figure 1: Total household rice output per season in Puti-Puti Sub-county, Pallisa district,
 115 2010/2011

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120 Table 3: Acreage rice farmlands in Puti-Puti sub-county, Pallisa district 2010/2011

Area (Acres)	Frequency (%)
<0.5	08
0.5 -1	76
1- 3	12
>3	04
Total	100

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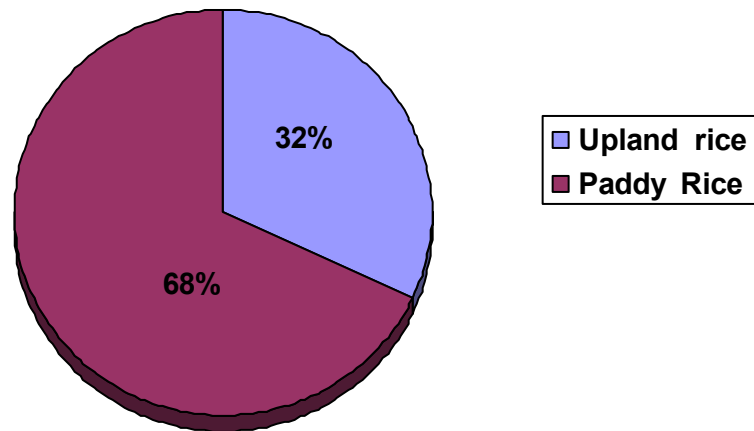


Figure 2: Category of rice grown in Puti-Puti sub-county, Pallisa district, 2010/2011

The income from the sale of rice ranged from UGX 400,000/= to UGX 1,200,000/=. However, the proportion of respondents earning between UGX 800,000/= to 1,200,000/= and above was less than 20% (Table 4). The money obtained from the sale of rice was used for a variety purposes including catering for household needs and starting up other businesses among other things (Table 5). Various reasons were advanced for growing rice including food and source of cash income. The other reasons for growing rice were availability of land and traditional crop. In general, 36% and 34% of the respondents grew rice for both cash and food, respectively (Table 6). Unfortunately, rice growing in Puti-Puti sub-county was constrained by a number of factors including limited capital, pests and diseases as well as poor varieties among others (Table 7).

Table 4: Annual estimated income from rice growing in Puti-Puti sub-county, Pallisa district, and 2010/2011

Annual income estimate (UGX)	Frequency (%)
<400,000	48
400,000- 800,000	36
800,000 – 1,200,000	10
>1,200,000	06
Total	100

*1 US=2650 Uganda shillings

145 Table 5: Household expenditure from rice income in Puti-Puti sub-county, Pallisa district,
146 2010/2011

Expenditure (uses) / items	Frequency (%)
Seeking other employment opportunities	10
Acquisition of more land	20
Buying household basic needs	32
Acquisition of other crop varieties	08
Startup of commercial ventures	30
Total	100

147 Table 6: Reasons for growing rice in Puti-Puti sub –county, Pallisa district 2010/2011.
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Reasons	Frequency (%)
Availability of land	20
Increase earnings	36
Is a traditional crop	10
Increase food for household	34
Total	100

149 Table 7: Constraints of rice growing to households in Puti-Puti sub-county, Pallisa district,
150 2010/2011
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Constraints	Frequency (%)
Shortage of land	08
Inadequate agriculture tools and equipment	14
Shortage of labour	06
Poor rice varieties	20
Limited capital	26
Pest and diseases	22
Limited market	04
Total	100

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153 3.2 Discussion

154 This study has shown that rice is both an important food security and cash crop to the
155 majority of the farming household in the sub county as well as the whole district. In fact, rice
156 does not only serve as food for home consumption but also as a source of cash income to
157 many households implying that a significant proportion of the respondents derived
158 livelihoods from rice. Earlier, UBOS (2004) forecasted the relevance of rice as a preferred
159 food and income security crop for Uganda. Besides, Kisamba (2001) noted that as cultural
160 and general agricultural practice, rice builds a strong contribution to food security and
161 income since it lasts long in store. In fact it can be stored as grain or with cereals in their
162 sheath which keeps them pest free for long period of storage. Furthermore, Elamin *et al.*
163 (2005) demonstrated that families in areas where rice growing is dominant tend to have a
164 stock of rice crop at almost every time of the year. This acts as a “buffer stock” for food
165 which keeps food available both in dry and wet spells of the year. Although, a relatively new
166 crop in Uganda, rice has grown to become an important food security and cash crop for the

majority of the farming communities in many parts of the country (Ochola *et al.*, 1997; Bigirwa *et al.*, 2005). However, the crop is predominantly grown by the subsistent farmers who lack adequate resources including land to undertaken commercial rice growing and better markets to sale at competitive prices. Elsewhere, it has also been shown that rice growing is predominantly undertaken by resource poor farmers who lacked the resources owned by the commercial farmers (Grist, 1965; Elamin *et al.*, 2005). In fact, the intensive nature of cultivation and high labour requirements may also account for the small acreages (Ochola *et al.*, 1997).

The low yield return from rice is probably attributed to the subsistence nature of cultivation practices in the sub-county. According to Sserunkuuma *et al.* (2004), although rice growing seems to be one of the dominant pro-household consumption and earning activity in most part of eastern Uganda, it is mainly grown as a subsistent rather than commercial crop. Elsewhere, it has also been observed that rice growing is more of resource poor-farmers preoccupation rather than commercial farmers (Grist, 1965; Ou, 1985). Besides, it has also been noted that rice growing in most parts of eastern Uganda are not market driven. Kisamba (2001), observed that despite the high returns on rice production in Puti-Puti sub-county, few farmers' produce reach and fetch income on the local and international market.

4. CONCLUSION

Although, a relatively new crop in the country, rice has grown to become an important food and cash crop for the majority of the farming communities in many parts of the country. In this study, rice does not only serve as food for home consumption but also as a source of cash income to many households. However, the lack of high yielding varieties coupled with poor production technologies including pests and disease infestations as well as bird damage makes rice growing a less profitable venture. Therefore, there is need for rice enhancing technologies to facilitate widespread adoption and diffusion of rice as a food and income security crop. There is also need to sensitise the different stakeholders in the rice value chain about the importance of rice and its by-products to avoid the negative effects of rice as a climate change promoter.

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COMPETING INTERESTS

NO COMPETING INTEREST

AUTHORS' CONTRIBUTIONS

Both authors contributed equally. The second author collected and analysed the data while the first author wrote the paper. Both authors read and approved the final manuscript.

CONSENT (WHERE EVER APPLICABLE)

NA

ETHICAL APPROVAL (WHERE EVER APPLICABLE)

NA

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DEFINITIONS, ACRONYMS, ABBREVIATIONS

Here is the Definitions section. This is an optional section.

257 **Term:** Definition for the term
258
259 **APPENDIX**