Socio-Economic Impact of Upland Rice Production on Rural Livelihoods – The Case of Three Nigerian States

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Introduction

Rice has traditionally been an important and basic food commodity for certain populations in West Africa. In Nigeria, of all staple crops rice has grown in importance as a component of Nigerian diets. Since the mid-80s Nigerian consumption has increased tremendously at almost 11% per annum, which is a greater increase than in any other West African country. However, only 3% is the result of population growth. The rest can be explained by a substitution of coarse grains like sorghum and millet (Akpokodje et al. 2001). To meet consumers` demand farmers are encouraged to produce amounts surplus to their own needs. As mainly resource poor farmers grow the crop integrating a large range of other agricultural activities, upland rice production can be regarded as new source of income generation, contributing to poverty alleviation. Upland rice is produced in bush-fallow systems with slash and burn practices. The use of external inputs such as mineral fertilizer is not common. Since the crop is subject to climatic conditions the results are more uncertain than those of irrigated rice. Yields are generally fairly low and average from 1.1 t/ha up to 1.5 t/ha, depending on the location. Out of this situation arises the question about the importance of upland rice production for subsistence oriented resource poor households.

Methodology

The relevance of upland rice production for households is outlined by using rural livelihood analysis tools. This approach is based upon the idea, that the asset status of rural poor people is directly linked with the options they possess and the strategies they adopt to generate an income level, which is required for survival. The livelihood concept is designed to offer a more pronounced picture of the dynamic and complex survival strategies in a rural environment. Diversification is seen as a fundamental characteristic as people do many different things to survive. The main reason for this phenomenon is spreading the risks and, simultaneously, increasing the options for alternatives (Ellis 2000).

The framework places emphasis on the assets and gives a review of what people have or have access to. Another focus in on activity portfolios which are made possible by the interaction of assets and opportunities. The composition of the household income is a suitable and direct measurable outcome to provide information about income generating activities. Households are classified according to a typology of livelihood strategies to show the relevance of rice in view of specialization or diversification tendencies.

The analysis refers to three regions which are situated in the south-west (Ogun State), middle belt (Kogi State) and south east (Ebonyi State) of Nigeria.

Results

A key asset of rural households is their own labor and their educational attainment. The average household in the survey areas had between 8 and 11 members. Another feature is the age and educational attainment of household heads. In Ogun state the household heads are considerably older and have a lower education level. The average area under cultivation varies between 4 and 5.5 ha. The total farm size is on average 4.2 ha in Ogun State, 4 ha in Kogi State and 5.5 ha in Ebonyi State. For a comparison of the asset status land, only land owned was taken into consideration. On average Ogun households own 2.7 ha of land, Kogi households 3.8 ha and Ebonyi State 4.5 ha of land. The occurrence of tsetse flies imposes a restriction on the keeping of livestock. Major livestock are goats, sheep and chicken.

The use of radial graphs is a suitable method for evaluating the comparative asset status of the survey farmers. In Figure 1 the shape of the central area indicates the comparative level of five asset categories in the key sites. These are relative levels of the household size, education level of the household head, land owned, goats/sheep owned and productive implements owned in the form of small tools. The radial graph reveals that there are a small number of significant differences in the asset profiles of the households in Kogi and Ebonyi State with the exception of the livestock asset. Households in Ogun State have a relatively lower asset profile, which is accompanied by a lower educational attainment, land ownership and livestock owned.
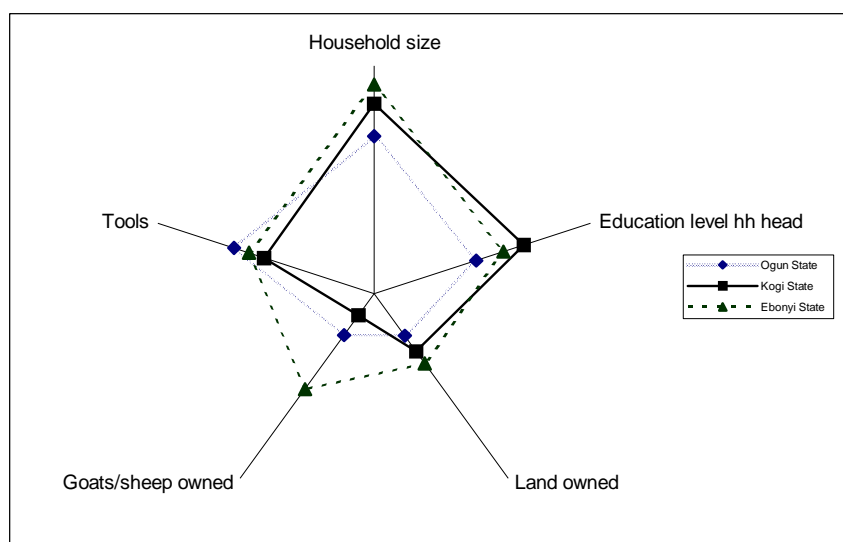

Figure 1: Selected household assets, by state

Income portfolios provide a good and concise indication of livelihood strategies. Table 2 contains the overall income portfolios of participating farmers for each state. [1] In every state, income from farming activities, especially from crops, is by far the most important activity. An interesting feature is the considerably high contribution of rice which accounts for one-third of the cash income (see Tables 1-2).

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[1] There are different key sites in one state. Income portfolios were calculated across villages.

Table 1: Average cash income and rice cash income

	Ogun State	Kogi State	Ebonyi State
Household cash income[Naira]	62,230	73,816	115,511
Average rice cash income [Naira]	20,878	29,083	35,808

Note: exchange rate at time of survey in 2002 was 124 Naira = US$1.00

It seems to be that rice cultivation is of particular importance for the income portfolio. In some key sites the particular value can be explained in the following way. Within the rainy season rice is the first crop harvested and the first cash received in order to pay school fees and other things (personal communication Iboro farmer, Ogun State). Other crops are predominantly cassava, yam and maize. Ogun households rely mainly on farming activities. In Kogi and Ogun sites the reliance on farming is lower and averages out at 76% and 71% as off-farm activities gain in importance.

Table 2: Mean household cash income portfolios, by state (proportion of net total cash income)

Income source	Ogun (n=42)	Kogi (n=46)	Ebonyi (n=57)
Crops	0.87	0.72	0.56
of which rice	0.33	0.39	0.31
Livestock	0.04	0.04	0.15
Total Farm	0.91	0.76	0.71
Non farm employment	0.03	0.05	0.16
Self-employment	0.06	0.19	0.13
Total non-farm	0.09	0.24	0.29

This is another important fact as household incomes are higher with such activities. The implication for this is that participating in off-farm business activities is a critical component to become better-off in rural areas. An exemplification is Ebonyi State where households are characterized by a combination of farming and off-farm activities resulting in higher cash incomes (see Table 1).

In another step households were classified whether or not they obtained more than two-thirds (type 66) of their cash income from a single activity (Ellis 2000). The results are presented in the following table.

Table 3: Type 66 distribution of households in %, by state

Strategy	States		
	Ogun	Kogi	Ebonyi
Principally crops [%]	82.5	62.2	38.8
Crop/livestock [%]	2.5	2.2	9
Principally non-farm [%]	2.4	8.9	19.8
Mixed [%]	2.4	13.4	1.8
Crop/non-farm [%]	15	13.3	30.6
Total [%]	100	100	100
Principally rice [%]	2.5	17.8	5.4

The table shows the distribution type and strengthens the interpretation of the cash income portfolios. Ogun State households are primarily specialized in crop production. Combinations or especially off-farm activities are of little importance. Kogi households are more diversified than expected after the results of the cash income portfolio. Around one-third of the families do not receive income from a single source. A peculiarity is the share of rice specialization which amounts to almost 18%. Ebonyi State shows the most diversified livelihood typologies. Less than 50% of the households are specialized in agricultural activities. Diversified crop non-farm activities account for 30%, while off-farm specialization adds up to 20%. Figure 2 confirms the characteristics of Table 3 insofar as there are significant differences between the household strategies.
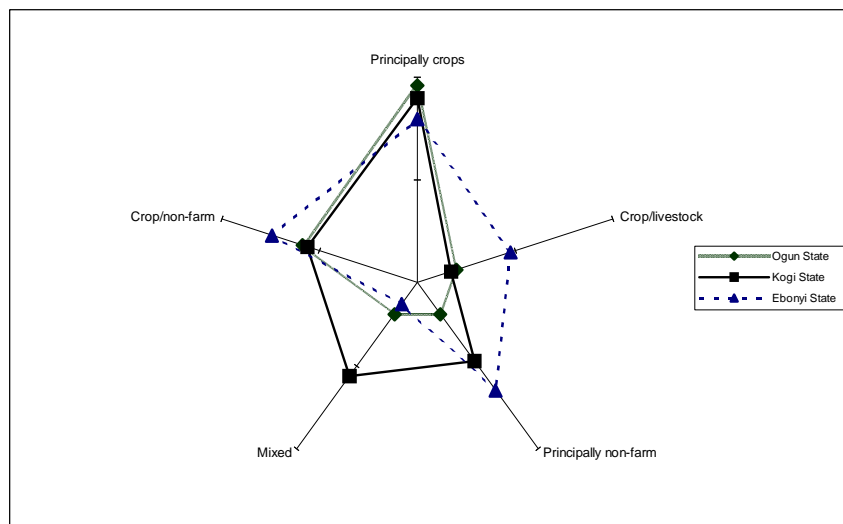

Figure 2: Livelihood Strategies: "Type 66" distribution of households, by state

In comparison with Table 1 incomes are higher from diversified activities and especially the participation in off-farm business.

Conclusions

Results indicate that the resource endowment and diversification level vary along a south east gradient. Rice producing households are primarily smallholders with limited assets. The acreages of upland rice are around 1-1.3 ha which make up 25% up to 49% of the cultivated farmlands. The specialization level in view of livelihood typologies is low and only worth mentioning in the middle belt. Upland rice is, first and foremost, a cash-crop and accounts for approximately one-third of the cash income in each state. Consequently, rice cultivation is of particular importance for the income portfolio. With increasing diversification and in view of off-farm business, cash incomes are higher. This might implicate that better-off households have the ability to utilize farm or particularly non-farm sources of cash income to purchase inputs like mineral fertilizer and improved varieties.

References

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