



**TOWARDS ENHANCING AGRICULTURAL TRANSFORMATION
AGENDA SUPPORT PROGRAMME (ATASP-II) ON INCOME OF
RICE PROCESSORS VALUE ADDITION FOR SUSTAINABLE
LIVELIHOOD IN AGRICULTURAL ZONE 1 NIGER STATE,
NIGERIA.**

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ABSTRACT

The study was on Agricultural Transformation Agenda Support Programme (Atasp-II) on Income of Rice Processors Value Addition for Sustainable Livelihood in Agricultural Zone 1 Niger state, Nigeria. Multi-stage sampling technique was used to select 113 Rice processors. Data were collected using structured questionnaire and interview scheduled; and analyzed using descriptive statistics (percentage and frequency), Livelihoods status index and multiple regression Model. The result of Demographic characteristics revealed that age (75.5%) and (25.5%) of the respondents had age of 21-30 years and 31-40 years respectively. The mean age of the respondents was 30 years, the result of marital status also indicated that 67.1% of the respondents were married while 28.9% and 4% were single and widowed respectively. That 60.0% of the respondents had between 6-10 persons while 40 % had 11-15 person while 3% <6 persons. The mean household size of the respondents was 10.5 persons, 63.2% of the respondents had one forms of formal education and the other, 36.8% of the respondents had non-formal education. Also more than half (70.0%) of the respondents had monthly income between ₦45,000-₦55,000 while 30.% had income of between ₦60,000 – ₦65,000. The mean monthly

income of the respondents was ₦62,500.00, indicating that majority of the rice processors in the study area had monthly income that is above recommended minimum wage in Nigeria, 75.1% of the respondents had moderate livelihood while 20.6% had low livelihood. Also, only (4.3%) of the respondents had high livelihood. The result of Multiple regression shows The coefficient (67286.64) of training on rice processing was positively significant at 10% level of probability, implying that access to training is expected to influence rice processors income positive. Also, the coefficient of cost of modern equipment (-.6492417) was negatively significant at 10% level of probability, implying that reduction in cost of constructing modern equipment is expected to increase rice processors income. More so, the coefficient of cost of rehabilitation of rice mill (7121.319) was negative significant at 1% level of probability, implying that reduction in the cost of rehabilitation of rice mill is expected to increase income of processors. However, processors should be assisted by government and other donor agencies in order to reduce cost.

Keywords: *Income, Livelihoods, Rice Processors, Transformation, Agenda, Programme.*

BACKGROUND OF THE STUDY

Rice (*Oryza sativa*) is the most important food crop for half of human race (United State Agency for International Development (USAID) 2020). It is the world's most consumed cereal after wheat which shapes the lives of millions of people; more than half of the world's population depends on rice for 80% of the daily calories ingested. The world rice production is 691.6 million metric tons of paddy per year with global rice production increasingly considerable, since the sixties (FAOSTAT, 2020). More than 90 percent of the world rice production takes place in developed countries, mostly in Asia with China and India being the two largest producers, while Latin America and Africa produce 3.8 and 2.8 percent respectively (FAOSTAT, 2020). There are three different types of rice: japonica, javanica, and indica. Japonica rice varieties are high yielding and tend to be resistant to disease. Javanica types of rice fall between japonica and indica varieties in terms of yield, use, and hardiness. Although quite hardy, indica yield less than japonica types and are most often grown in the tropics, because cultivation is so widespread, development of four distinct

types of ecosystems has occurred. They are commonly referred to as irrigated, rainfed lowland, upland, and flood-prone agroecological zones. Irrigated ecosystems are the primary type found in East Asia. Irrigated ecosystems provide 75% of global rice production. Irrigated rice is grown in banded (embanked), paddy fields. Rainfed lowland ecosystems only sustain one crop per growing season and fields are flooded as much as 19.7 cm (50 cm) during part of the season (USAID, 2020). In value chain system, farmers are linked to consumers' needs working closely with suppliers and processors to produce specific goods to meet consumers demand. Similarly, through the flows of information and products, consumers are linked with needs of the farmers. Under this approach, and through continuous innovations, the return to farmers can be increased and livelihoods enhanced. It is against this background that the Value Chain Development Programme was initiated by Federal Government of Nigeria and International Fund for Agricultural Development to address the constraints along rice value chain through an inclusive strategy of strengthening the capability of actors along the chain including producers, processors, marketers as well as public and private institutions, service providers and access to market (Akpokodje *et al.*, 2011).

This study therefore enhances Agricultural Transformation Agenda Support Programmes on income of Rice processors in value additions for sustainable livelihoods in Agricultural Zone 1 of Niger state, Nigeria. The objectives of this study are to:

- i. describe the socio economic characteristics of Rice processors value addition on ATAPs in the study area
- ii. determine the livelihood status of Rice processors under the ATAPs Programmes value addition in the study area, and
- iii. determine the effects of ATAPs Programmes on income of Rice processors value addition in the study area.

MATERIALS AND METHODS

Study Area

The study was undertaken in Agricultural Zone 1 in two Local Government Areas: Katcha and Lavun Local Government both in Niger State. Both has an area of 17,038 square kilometers (6,897 sq mi) and a projected population of 968,312 as at June 2021. (Niger State Bureau of Statistics 2021). About 75% of

its land area is good for arable crops production (Niger State Geographical Information System, 2021). It is located within Latitudes 7–9°N and Longitudes 5 – 8°E) and with a growth rate of 6.1%. Both Local Government experiences two distinct season dry and wet seasons with annual rainfall varying from 1,100mm in the Northern part to 1,600mm in the Southern parts. The average annual rainfall is about 1,400mm. The duration of the rainy season is approximately 180 days. The wet season usually begins in April/May to October, while the dry season starts from November to March. The maximum temperature of 30°C, average temperature of 23°C and minimum temperature of 25°C. The mean average temperature is around 32°C. Dry season commences in October (Niger State Geographical Information System, 2021). Most of the communities in the Local are predominantly agrarian. Cereals crops grown such as Guinea corn, Millets Tuber crops grown such as yam and cocoa yam, vegetables grown in both Local Governments are, Spinach, Pumpkin, bitter leaf and water leaf leave. Tree crops grown are mango, citrus, coconut, cashew, banana and pawpaw. Other non-agricultural activities engaged by the people include blacksmithing, leatherwork, mat and basket making and trading. Women on the other hand engaged in technical handicraft and trading.

Sampling Procedure and Sample Size

Multi-stage sampling technique was used for the study. The first stage involved random selection of Agricultural zones I in the State. At the second stage, involved purposive selection of two (2) Local Governments Katcha and Lavun due to the program dominant in these two Local Government mentioned above. At the third stage, three communities from each of the two Local Governments Areas (LGAs) were randomly selected. At the fourth stage, 15% of the farmers were randomly selected from the sampling frame of each communities of the selected Local Governments. In all, a total of 113 respondents were selected from Katcha and Lavun LGAs as the sample size for the study.

Table 1: Sample distribution of the respondents in two LGAs of study

LGAs	Communities	Sample frame	Sample size (15%)
Katcha	Badeggi	182	27.30
	Cheche	119	17.85
	Copa	126	18.90

Lavun	Batati	106	15.90
	Jipan	113	16.95
	Ruga	108	16.20
Total	6 communities	754	113

Sources: Field survey, 2021

Method of Data collection and Analytical Techniques

Primary data was used for the study, the data were collected by researchers and trained enumerators using structured questionnaire complimented with interview schedule. The data obtained from objective I was analyzed using descriptive statistics such as (frequency distribution, percentage mean) objective II was achieved using Livelihood Status Index (LSI) adopted from Mohammed et.al, (2019) in a research title effects of forests resources utilization on livelihoods of rural populace in Kogi and Niger state, Nigeria. The livelihood indicators that were considered for respondent include household assets, production assets and livestock assets which were measured in terms of numbers and monetary value (Naira). Therefore the livelihood status were categorized as $\leq 0.25 =$ Very low, $0.26 - 0.49 =$ Low, $0.50 - 0.75 =$ Moderate, and $> 0.80 =$ High livelihood. while, objective III was achieved using Multiple regression Model.

RESULTS AND DISCUSSIONS

Socio-economic Characteristics of Respondents

The socioeconomic characteristics of Rice processors under consideration include age, marital status, household size, educational level, and monthly income

Table 2, reported that age (75.5%) and (25.5%) of the respondents had age of 21-30 years and 31-40 years respectively. The mean age of the respondents was 30 years. This finding suggests that rice processors in the study area were still within their active and productive age to enhance their livelihood. This finding is in line with that Adegbemi and Sunday (2020) who reported that 40 years are the mean age for rural dwellers to be active in numerous farming activities in Northern parts of Nigeria.(Aisha, 2020). Also reported that majority of rice farmers in South west of Nigeria are of middle age and active in their respective occupations. Marital status Table 2 also indicated that 67.1% of the respondents were married while 28.9% and 4% were single and widowed respectively. This

implies that most of the respondents in the study area were married. Marriage involves some kind of responsibilities on the family whereby rice farmers are implored to engage in Agricultural programs in order to increase income generation for improving livelihoods and enhanced standard of living. This finding concurs with Baba *et al.* (2021) who reported that majority of rural households in Nigeria are married. Table 2 also showed that 60.0% of the respondents had between 6-10 persons while 40 % had 11-15 person while 3% <6 persons. The mean household size of the respondents was 10.0 persons, implying that rice farmers in the study area were of large household size. It is generally believed that large household size is an advantage in the farming households in terms of its effect on household labour force that will assist in sourcing for their livelihood. It equally agrees with earlier findings of Baba *et al.* (2021) who stated that a household size of 8 persons for small holder rice farmers in Rabba Local Government area of Sokoto State have positive effects to increase in income of diversify rice processing to improved their livelihoods. Table 2, also revealed that 60.2% of the respondents had one forms of formal education and the other. On the other hand, 40% of the respondents had non-formal education. This finding shows that more than half of the rice farmers in the study area had formal education and this may influence decision to apply different strategies that will improve their livelihood. This finding agrees with Yusrah *et al.* (2019) who reported that level of formal education among the rural dwellers in Nigeria influence their decision to apply positive strategies of involved in a programme to sources of income so as to improve their livelihoods. Table 2 showed that more than half (62.0%) of the respondents had monthly income between ₦60,000-₦65,000 while 28% had income of between ₦70,000 – ₦75,000. The mean monthly income of the respondents was ₦62500.00, indicating that majority of the respondents in the study area had monthly income that is above recommended minimum wage in Nigeria. This finding is in agreement with Mohammed *et.al*, (2019) who reported that increase in income of rural household had tendency of improving their livelihood.

Table 2: Distribution of respondents according to socio-economic characteristics (n=113)

<i>Variables</i>	Frequency	Percentage	Mean
<i>Age</i>			
<21	14	2.0	30
21 – 30	515	75.0	
31 – 40	235	23.0	

Marital status			
Married	472	67.1	
Single	268	28.9	
Widowed	28	4.0	
Household size			
< 6	17	3	10
6 – 10	444	60	
11 – 15	207	37	
Educational level			
Formal education	445	60.2	
Primary	369	35.8	
Secondary	21	3.0	
Tertiary	9	1.0	
Monthly income			
45,001 - 55,000	51	7.0	62500.00
60,001 - 65,000	413	62.0	
70,001 - 75,000	178	28	
> 60,000	17	3.0	

Sources: Field survey, 2021

Livelihood status of respondents

Table 3 showed that 75.1% of the respondents had moderate livelihood while 20.6% had low livelihood. Also, only (4.3%) of the respondents had high livelihood. This finding agreed that majority of the respondents had moderate livelihood. Moderate and high livelihood among respondents in the study area is a strong indication of improved livelihood from Atasp-ii programme on income strategies in the study area. This finding contradicts with that of Ifeanyiobi and Mathews-Njoku (2018) who revealed that majorities of farmers in South East of Nigeria had high livelihood. The study now agreed Afeez *et al.* (2019) revealed that most of the rural women farmers in Oyo State, Nigeria, had moderate livelihood

Table 3: Distribution of the respondents based on their livelihood status (n=113)

Status	Frequency	Percentages
Very low	0	0.0

<i>Low</i>	41	20.6
<i>Moderate</i>	154	75.1
<i>High</i>	17	4.3
<i>Total</i>	113	100.0
<i>Mean Livelihood Index</i>	0.351	
<i>Minimum Livelihood Index</i>	0.273	
<i>Maximum Livelihood Index</i>	0.523	

Source: Field Survey, 2021

Note: Livelihood index is classified as ≤ 0.25 = very Low, $0.26 - 0.49$ = low Moderate, $0.50 - 0.75$ = moderate > 0.80 = High.

Effect of ATAPs-II programme on the Income of Rice Processors across Katcha and Lavun LGAs

The result of the regression model showing the effects of the ATAPs-ii programme on the income of rice processors in Katcha and Lavun LGAs of Niger State revealed that the coefficient of training on rice processing (67286.64) was positively significant at 10% level of probability, implying access to training is expected to increase their income. Also, the coefficient of cost of construction of modern equipment was negatively significant at 10% level of probability, implying that reduction in the cost of modern equipment is expected to increase rice processors income. The coefficient of cost of rehabilitation of rice mill was negative significant at 1% level of probability, implying that reduction in the cost of rehabilitation of rice mill is expected to increase income of processors.

Table 4: Effect of ATAPs programme on rice processors Niger state

<i>Variables</i>	Linear	Semi-log	Double log	Exponential
	Coefficient t-value	Coefficient t-value	Coefficient t-value	Coefficient t-value
<i>Training on rice processing</i>	67286.64 1.72*	105209 1.18	.0969001 0.67	.0667754 1.06
<i>Cost of construction of modern equipment</i>	-.6492417 -1.75*	-276202.5 -2.78***	-.3613935 -2.24**	-7.04e-07 -1.18

<i>Cost of rehabilitation of rice mill Constant</i>	7121.319 2.95** *	21943.59 0.20	-.0320944 -0.18	.0120922 3.11***
	111450.6 0.35	3557311 2.87***	16.99073 8.44** *	12.34814 24.10***
<i>F-value</i>	0.0000	0.0000	0.0000	0.0000
<i>R-square</i>	0.5217	0.5617	0.5157	0.5962
<i>Adjusted R-square</i>	0.4518	0.4981	0.5085	0.5241

Sources: Field survey, 2021

Conclusion and Recommendation

Based on the findings, it can be concluded that rice farmers in the study area were in their active and productive age and married. Also, majority of the respondents had large household. Most of the respondents had formal education, the monthly income gain of the respondents ranging from 45,000 to 55,000 naira per month which enable them to be more involved in ATAPs programme in the study area. More so, majority of the respondents had moderate livelihoods. The coefficient of training on rice processing was positively significant at 10% level of probability, implying access to training is expected to increase their income. Also, the coefficient of cost of construction of modern equipment was negatively significant at 10% level of probability, implying that reduction in the cost of modern equipment is expected to increase rice processors income. The coefficient of cost of rehabilitation of rice mill was negative significant at 1% level of probability, implying that reduction in the cost of rehabilitation of rice mill is expected to increase income of processors.

Recommendations

1. The finding showed a high literacy level among the value addition actor (Rice processors) in the study area. However, beneficiaries should be trained by ATAPs value addition staffs and government on the roles play by formal education in the study area
2. The coefficient cost of modern equipment had negative effect of rice processor income. However, processors should be assisted by government and other donor agencies in order to reduce cost.

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