



EFFECTS OF TRIMING PROJECT ON THE LIVELIHOOD STATUS OF RICE FARMERS IN AUYO LOCAL GOVERNMENT AREA OF JIGAWA STATE, NIGERIA

Isah, A., Habeebullahi, A. A., Bashir, G. M. and Garba, A.

Department of Agricultural Extension and Rural Development,
Federal University Dutse, Jigawa State, Nigeria.

Corresponding Author's Email: isahaliyu667@gmail.com, **GSM:** +2348140205983

ABSTRACT

This study examines the effects of the TRIMING Project on the livelihood status of rice farmers in Auyo Local Government Area (LGA), Jigawa State, Nigeria. The research aimed to describe the socioeconomic characteristics of the respondents and assess the project's impact on their livelihood. Multi stage sampling method was adopted to select the data from 372 respondents through the use of questionnaire. Based on the findings, the mean age of respondents was 44 years, this indicate that the farming population are in middle aged. The mean Household size is 11, these findings reflecting extended family system I the study area. The findings also show that majority of respondents were married. The average farming experience was 19 years, this indicate that the farmers have a good experience in farming system, this would help them in adopting innovations. Result from the students t-test indicate theirs a significant difference in farmers income before and after implementation of TRIMMING project in the study area. TRIMMING have achieved its target through provision of irrigation schemes to Farmers in Auyo LGA Jigawa state.

Keywords: TRIMMING, Livelihood, Status, Rice, Farmers, Irrigation.

INTRODUCTION

Livelihood is the means through which [people sustain and meet their basic needs of living. This includes access to land, water, education, markets, and services, as well as social and financial (FAO2025). The basic components of livelihood are; assets which include human, capital, natural and financial resources used by the farmers to build their livelihood. The second component is capabilities which are the skills, knowledge and abilities used by the farmers to achieve livelihood goals. The next important component includes activities that farmers take to secure their livelihoods which include; farming, fishing, trading and other income generating activities. Another component is vulnerability context which refers to the external environment where farmers operate, which includes factors such as shocks (natural disasters), trends (population growth) and seasonality (changes in prices or employment opportunities) that can affect livelihoods. Livelihood strategies are the diverse portfolio of activities that people engage in to achieve their livelihood goals, such as diversification of income sources or migration for work. Sustainability is the ability of a a livelihood to withstand and maintain its [productivity for long time. The World Bank plan to support the Government of Nigeria to accelerate the development of irrigation through improving efficiency of existing irrigation schemes, expanding areas under irrigation and improving the safety of dams in selected basins under a global project referred to as the National Irrigation and Water Resources Management Project (NIWRMP) JARDA 2024. The project has been changed over time to reflect the primary focus by transforming irrigation such that the project is now referred to as Transforming Irrigation Management in Nigeria (TRIMING). Also, the pest management plan prepares and complement other safeguard instruments for project of this nature and as well present a comprehensive plan for pest management and overview of requirements for institutional and capacity building/strengthen for the proposed TRIMING project. (TRIMING 2023)

METHODOLOGY

The study was conducted in Hadejia Valley Irrigation Scheme, Auyo LGA of Jigawa state. Auyo is a LGA of Jigawa State, Nigeria. Its headquarters are in the town of Auyo. The climate of the study area is characterized by relatively wide and rapid changes of temperature and humidity. Humidity at times could rise up to 100 percent in an area considered characteristically dry. The mean daily



minimum and maximum temperatures are 15.1⁰ and 33.1⁰ C, respectively. The Auyokawa language, now extinct, was formerly spoken in Auyo. It has ten (10) political wards which includes Auyo, Auyokayi, Ayama, Ayan, Gatafa, Gamafoi, Gamsarka, Kafur, Tsidir, and Unik. The population of Auyo Local Government Area (LGA) in Jigawa State, Nigeria, was approximately 252,283 according to the 2025 census.

Two Stages sampling procedure was adopted. First stage, six irrigation sectors across Hadejia Valley Irrigation scheme in Auyo local Government will be selected. In the second stage, respondents were purposely selected from the total population of farmers using Roasoft formula which give the total respondents of 372 as the sample size.

The study utilized primary data collection method: The data was collected by interview schedule using questionnaires with the selected rice farmers as well as relevant literature on the TRIMING Project and agricultural development in Nigeria. Descriptive statistics (mean, median, mode, and standard deviation) was used to analyze objective I, III, and IV. Students P-test and Wilcoxon W used analyze objective II.

Student's t-test

$$t = \frac{d}{Sd/\sqrt{n}}$$

Where d= mean of the paired differences
Sd= standard deviation of the paired differences
n= number of pairs

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Rice Farmers

Table 1 shows the socioeconomic characteristics of the rice farmers in the study area. The mean age of respondents was 44 years, indicating that the farming population is predominantly middle-aged. This suggests that younger respondents are less involved in farming activities, which may be attributed to rural urban migration. These findings support Adekeye et al. (2025), in their study efficiency of wheat production based on out grower support model among farming household in Jigawa state who find out that the majority of wheat farmers in Kano and Jigawa States are young to middle-aged, with a mean age of 39.36 years, reflecting an active agricultural workforce

The mean farming experience was 19 years, indicating that the respondents were highly experienced farmers. This suggests that most of the respondents spent a significant portion of their lives in farming, contributing to their knowledge and skills in traditional practices. This supports the study by Adekeye et al. (2025), who stated that the average farming experience is 18.39 years, with a wide range of experience levels. The implication is that high level of experience highlights the importance of combining traditional knowledge with modern agricultural practices. Moreover, farmers with high level of experience are more likely to adopt new innovation. The average farm size is 1.2 hectares this implies that most of the respondents were smallholder farmers. This directly reflect the dominance of subsistence farming in the study area. This finding reflects with Adekeye et al. (2025), who find that the farmers operate on farms smaller than one hectare. The gender distribution shows a large proportion of men carried out farming than women. However, FAO (2018) stated that 60% of agricultural activities in Africa are carried out by women.



Table 1: Socioeconomic Characteristics of Rice Farmers

1	Variables	Frequency	Percentage	Mean	Min	Max
Gender	Male	321	86.3			
	Female	51	13.7			
Age (years)	≤20	1	0.3			
	21 – 30	69	18.5			
	31 – 40	87	23.4			
	41-50	118	31.7	44	19	72
	51-60	70	18.8			
	≥61	27	7.3			
	≤5	99	26.6			
House Hold size	6-10	88	23.7			
	11-15	93	25.0	11	1	38
	16-20	42	11.3			
	≥21	50	13.4			
Marital status	Single	31	8.3			
	Married	337	90.6			
	Widow	4	1.1			
Education	Non formal	111	29.8			
	Primary	107	28.8			
	Secondary	110	29.6			
	Tertiary	44	11.8			
Years of Experience	≤5	38	10.2			
	6-10	65	17.5			
	11-15	60	16.1	19	1	63
	16-20	60	16.1			
	≥21	149	40.1			
	≤1	281	75.5			
Farm size	1.1-2	64	17.2			
	2.1-3	23	6.2	1.2	0.4	4
	3.1-4	4	11			

Source: Field survey, 2024

Respondents Income before and after TRIMING Project

The Table 2 presents statistical analyses comparing "Income Before" and "Income After" using two different approaches, **Student t-test** and the **Wilcoxon Signed-Rank Test**. Both tests aim to determine whether there is a significant difference between the two conditions income before the TRIMING project and income after the TRIMING. The **student t-test results with t-value (-24.9)** are extremely large in magnitude, indicating a strong deviation from the null hypothesis (no difference in income). A **p-value ($p < 0.001$)** confirms the difference is statistically significant at a very high level. The **Wilcoxon (W-statistic)** is the rank sum of the signed differences between paired observations. The **p-value ($p < 0.001$)** confirms that the difference is highly statistically significant. The **mean difference (-500,000)** and **standard error (21,086)** corroborate the magnitude and precision of the difference observed in the t-test.

The findings are related with the objectives and reported outcomes of the TRIMMING Project. According to the world Bank. The project rehabilitated and expanded irrigation schemes, strengthened Water Users' Associations, and improved agricultural service delivery for over 140,000 farmers in northern Nigeria. These interventions were expected to translate into higher farm productivity and increased household income among participating farmers. (World Bank 2025). The present finding is also supported by the recent empirical study of Abdulwahab et al. (2025), who assessed the effect of the TRIMING Project on rice farmers in Kano River Irrigation Scheme. Using data from 270 beneficiaries and non-beneficiaries, the authors found that participation in the TRIMING Project significantly improved farmers' income, increased access to agricultural credit, and enhanced the adoption of modern farming technologies. They concluded that the project made a positive contribution



to the socioeconomic welfare of participating rice farmers, which agrees with the significant increase in income observed in the present study.

Similarly, the World Bank's implementation reports on the TRIMING Programme documented substantial livelihood improvements among participating farmers. The programme reported that rehabilitation of irrigation infrastructure and farmer training enabled beneficiaries to increase crop productivity, expand cultivated land, and earn higher incomes. For example, farmers in the Hadejia Valley Irrigation Scheme in Jigawa State reported marked increases in rice production after receiving improved irrigation facilities and agricultural support, while women beneficiaries indicated that increased farm income enabled them to invest in productive assets and improve household welfare. (World Bank 2025).

Table 2: Paired Sample t-Test and Wilcoxon Test on Income before and after the TRIMING project

Test	t / W	df	p	Mean Difference	SE Difference	Bayes Factor ₁₀
Student's t-test	-24.90	371	< .001	-525,403	21,086	3.69×10^{77}
Wilcoxon Signed-Rank Test	W = 670 ^a	—	< .001	-500,000	21,086	—

Source: Field survey 2024

Note: $H_a: \mu_{\text{Measure 1}} - \text{Measure 2} \neq 0$ ^a 15 pair(s) of values were ^a 15 pair(s) of value

CONCLUSION AND RECOMMENDATION

The research provided an insight about effects of TRIMMING on the livelihood status of Rice farmers in Auyo LGA Jigawa state the findings show that the TRIMMING Project significantly increase farmers socioeconomic condition of farmers in the study area.

The findings show a significant increase in farmers income after TRIMMING Project.

1. Government should keep eyes on proffer maintenance of such Project for sustainability.
2. Increase access to credit through Farmers cooperatives
3. Government should also increase funding for irrigation establishment and its maintenance
4. Farmers should form cooperatives to engage in commercial farming

REFERENCES

- Abdulwahab, F. S., Abdullahi, S., Alhasan, A., Aliyu, A. S., & Iliyasu, A. B. (2025). Effect of the TRIMING Project on the socioeconomic characteristics of rice farmers in three selected locations along Kano River. *Journal of Current Research and Studies*, 2(4): <https://doi.org/10.64321/jcr.v2i4.51>
- Adekeye, M. D., Muhammad-Lawal, A., Iyiola, O. A., & Owolabi, M. T. (2025). Efficiency of wheat production based on outgrower support model among farming households in Jigawa and Kano State, Nigeria. *Journal of Agricultural Economics and Development*, 8: 234-245.
- Food and Agriculture Organization of the United Nations (FAO). (2016). Livelihoods, food security and nutrition in the context of food systems. FAO. Retrieved from <http://www.livelihoods.org>
- Food and Agriculture Organization of the United Nations (FAO). (2016). Livelihoods, food security and nutrition in the context of food systems. FAO. Retrieved from <http://www.livelihoods.org>
- World Bank: Nigeria—World Bank Supports More Irrigation and Farm Services to Boost Food, Jobs, and Incomes in Northern Nigeria
- World Bank: A New Dawn for Women in Irrigated Farming TRIMING Educational Programme. (2023). Influence of Transforming Irrigation Management in Nigeria (TRIMING) educational programme on conflict resolution among farmers in North-West Nigeria. *Journal of Agricultural Policy and Conflict Studies*. 5(4): 34-45.