

An Investigation on Level of Utilization of Local and Improved Practices by Rice Value Chain Actors in Benue and Nasarawa States, Nigeria

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Abstract: The study was carried out to investigate the level of utilization of local and improved rice practices by value chain actors in Benue and Nasarawa states, Nigeria. The population for the study comprised all the rice value chain actors in Benue and Nasarawa States. The specific objectives of the study were to: investigate the local practices of rice value chain actors; and investigate the level of use of improved practices by rice value chain actors in the study area. It was evident from the study that the pooled percentage for the two states (Benue and Nasarawa) was 22.5% for those who utilized traditional hoes while those who utilized cutlasses in the two states have pooled value of 21.2% and those who utilized winnowing baskets with a pooled value of 19.3% for the two states respectively. The level of utilization of improved practices by rice value chain actors in the two states for marketers, producers and processors have mean pooled value of 2.36, 2.21 and 2.14 respectively. Based on the study, it was concluded that the major local practices of rice value chain actors in the two states are still at crude level and the level of awareness of the rice value chain actors on improved practices is high. It was therefore recommended that, government should make available improved practices which are more less labour intensive but rather with higher performance at affordable price to the rice value chain actors; enough capacity building should be enforced to train intensively more rice value chain actors, and more awareness should be created by government capacity building agents among rice value chain actors on their operation to maximize their performance.

Keywords: Investigation; value chain; utilization

I. Introduction

Rice production in Nigeria is dominated by weak and inefficient production capacity based on poor modern facilities used by rice value chain actors at production level, processing and marketing levels respectively (Nasiru, 2014). The poor modern facilities to improve rice quality along the value chain limit quantity of production, quantity of processed rice and ease of marketing and distribution of the commodity (Abo, 2012). Ukwungu and Abo (2013) observed that rice value chain actors at production level engaged in the utilization of local practices and equipment such as hoes, cutlass, local seed varieties, birds scalers, manual weeding, manual harvesting using local knives and sickles, processing practices such as winnowing using winnowing baskets, parboiling using steel drums, use of fabricated milling machines and sometimes pound by using pestle and mortal as crude ways of processing. They further noted that marketing of such products is always poorly achieved because such are poorly packaged; branded; labelled and categorized for marketing purposes. Okpara (2013) also emphasized that distribution of rice products at marketing level is always faced with serious hurdles due to poor transportation system as a result of poor feeder roads, poor vehicular availability to move or transport products to markets as well as high cost of transporting products from one point to another.

Bidemi and Clement (2017) stressed that the slow paced production, processing, marketing and distribution of rice along the rice value chain by actors could only be enhanced by enforcing capacity building of rice value chain actors through effective awareness creation on improved practices and vigorous training by extension agents and other relevant agencies. There is no doubt as clearly stated by Mutimba (2010) that utilization of good practices, awareness creation on improved practices, capacity building of rice value chain actors through effective training with regards to production, processing, marketing and distribution of rice is important. Those value chain activities do not only ameliorate rice value chain actors' poverty but tremendously ensure food security of the country at large.

Objectives of the Study

The broad objective of the study was to investigate the level of utilization of local practices by rice value chain actors in Benue and Nasarawa States, Nigeria. The specific objectives of the study were to:

- I. identify the local practices of rice value chain actors; and
- II. investigate the level of use of local practices by rice value chain actors in the study area.
- III. identify the value chain actors and their level of utilization of improved rice practices.

II. Methodology

The study was carried out in Benue and Nasarawa States, Nigeria. The states are located in the North Central agro-ecological zone of Nigeria, Benue State lies between longitude 7^o47” and 10^o East and Latitudes 6^o25” and 8^o North of the equator. The population of the state is 4,219,244 with land mass of 33,958 sq km (BNARDA, 2005). The inhabitants of the state are predominantly farmers with low income depending mostly on rainfed agricultural practices.

On the other hand, Nasarawa State lies between Longitude 7^o10” to 9^o20” East and Latitude 8^o to 10^o North of the Equator. The state has a population of 1,863,275 people and land mass of 27,86201 square kilometers (NPC, 2006). Nasarawa State has three agricultural zones which are; central zone, western zone; and southern zones respectively (NAERLS and NPAFS, 2010).

Four multi-stage sampling procedure, purposive, simple random and stratified sampling techniques were used to achieve the objective of the study. In the first stage, two zones in Benue and Nasarawa States were selected using purposive sampling technique to predominant activities of value chain activities in these areas. In the second stage, five blocks were randomly selected from each of the functional blocks from the zones in the two states making a total number of twenty blocks using simple randomized sampling technique. In the third stage, two cells were selected from each of the twenty blocks by simple randomized sampling technique to arrive at a total of forty cells.

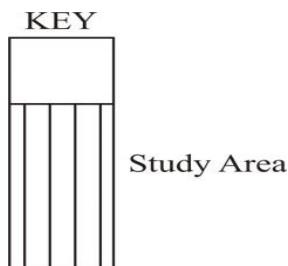
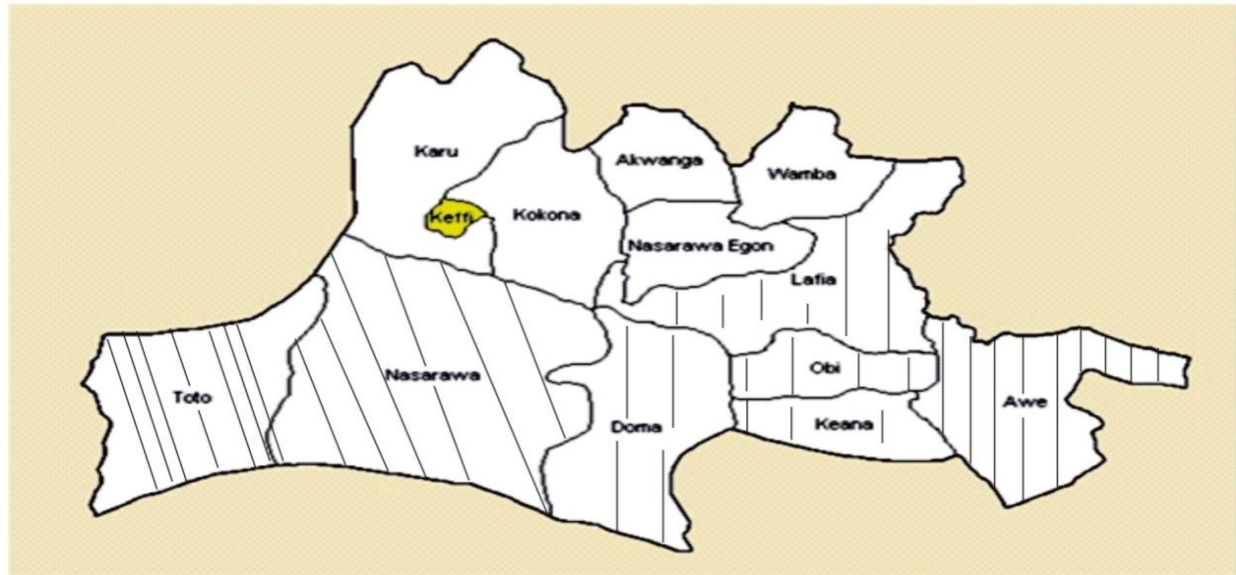
In the fourth stage, a list of rice value chain actors in each of the selected cells were stratified into: rice producers; input suppliers; processors, and marketers in the study areas using purposive sampling technique. This was achieved with the assistance of agricultural development project (ADP) staff to produce a sampling frame for the study. Furthermore, eight rice value chain actors made up of two each of; Producers, Input suppliers; processors; and marketers were selected from the functional cells to arrive at a total sample size of 320 respondents for the study.

Fig. 1: Map of Benue State



Source: http://www.mapofnigeria.com_2016

Fig. 1: Map of Nasarawa State



Source: http://www.mapofnigeria.com_2016

III. Results and Discussion

Local Practices of Rice Value Chain Actors in Benue and Nasarawa States

Table 1 presents results on local practices employed by respondents in the rice value chain for Benue and Nasarawa states. Local practices like planting of local seeds, use of traditional hoe, and use of cutlass, bird scare crow and manual weeding were local practices basically associated with producers in the chain. Planting of local seeds shows a pooled mean of 14.6% for the two states. This had a very low percentage indicating a significant shift from local seeds to the use of improved rice seeds.

Apart from planting of local seeds and use of cutlass which Nasarawa has an edge over Benue with 15.6% and 18.8% respectively as against 13.6% and 23.5%, Benue dominates in the use of all the local practices. The use of traditional hoe for cultivation also is on the lower ebb as only 22.5% of respondents engaged in the use of this implement suggesting a significant involvement in the use of local practices. The use of traditional implements in processes like land clearing, tillage and harrowing are gradually being replaced with advancement in technology as the use of herbicides and tractors are becoming more prevalent among producers. This finding agrees with Muntaka (2010) and Ukwungwu and Abo (2012) who reported that rice production in Nigeria is dominated by small holder farmers who practice subsistence farming with traditional and obsolete equipment, using traditional low yielding varieties with low market value.

The use of cutlass which most times come in during land clearing is greatly reduced (21.2%) with increased use of chemical (herbicides). Birds scarcer which were used majorly against birds which feed on rice while on the farm is traditional practice in use (very long time). This practice also diminished in usage as improved varieties are now available which are mostly early maturity and as such are harvested before the period of verification of these birds since most of the birds that feed on rice are migratory in nature. As earlier stated, there is an increase in the use of agro-chemicals among farmers and this has helped reduced some traditional practices like manual weeding (with 17.7% in the study area).

The use of winnowing baskets and wooden bars are local practices associated with rice processing, Table 1 shows 19.3% and 16.1% of respondents made use of winnowing baskets and wooden bars respectively. This implies that the respondents mostly were local farmers and still use these materials for rice processing. The use of modern and sophisticated machines available has replaced greatly the existence of these local practices; examples of machines include millers and de-stoners. Table 1 shows the use of storage rhombus which is marketing activity. Table 1 shows that only 14.9% of the total respondents for the two states still practice it. This is because marketers now store in ware houses because of increased quantities. Packaging which is also a marketing activity has greatly reduced the use of rhombus. Packaging gives identity and brand, it also increases competitiveness of rice brand and encourages the local adoption of standard weight and measures. This finding is consistent with Usman (2012) and Meron (2016) who similarly opined that packaged material is essential since it promotes the product. It gives more information to the consumers in decision making.

Table 1: Local Practices of Rice Value Chain Actors in Benue and Nasarawa States n = 320

Local practices	Nasarawa	Benue	Pooled
Planting of local seeds	24(15.6%)	22(13.6%)	46(14.6%)
Traditional hoe	33(21.4)	38(23.5)	71(22.5)
Use of cutlass	29(18.8)	28(23.5)	67(21.2)
Bird scarcer	16(10.4)	29(17.9)	45(14.2)
Manual weeding	24(15.6)	32(19.8)	56(17.7)
Winnowing baskets	23(14.9)	38(23.5)	61(19.3)
Wooden bar	12(7.8)	39(24.1)	51(16.1)
Storage rhombus	19(12.3)	28(17.3)	47(14.9)

Source: Field Survey, 2017.

Level of use of Improved Practices by Rice Value Chain Actors in Benue and Nasarawa States Nigeria

Table 2 presents results on the level of use of improved practices by rice value chain actors in both states (Benue and Nasarawa States). The table shows that producers in Nasarawa State had higher level of use of improved practices than the Benue State, this result was considered based on the cut off mean of $\bar{x} = 2.0$. This implies that Nasarawa rice value chain actors were more managerial in the use of improved practices than that Benue State rice value chain actor. This agrees with Kagbu *et al.* (2016); and FMARD (2012) all identified that inadequate and inappropriate technologies limit the use of improved rice production practices in Nasarawa state.

Similarly the processors in Nasarawa State had higher $X = 2.26$ as against Benue State processors who had below $X = 1.97$ (below cut off mean). The level of adoption of innovations (improved practices) had been linked to cultural beliefs, level of education, social status, government policies and to large extent individual differences. This result agrees with FAO (2006); and Ogunbiyi and Shingo (2013) which support that culture and recent history, long benefits of the technology to materialize, poor information are associated with low level of use of improved agricultural practices. Marketers in both states (Benue and Nasarawa) had high level of use of improved practices (2.43 and 2.2.6). Though Nasarawa state marketers had a mean slightly higher than their colleagues in Benue state. Although at the level of individual states, Benue state showed low level of use of improved production and processing practices, collectively (pooled) both states had high level of use of improved practices for all the rice value chain actors with mean scores of 2.21, 2.14 and 2.36 for producers, processors and marketers.

Table 2: Distribution of Respondents According to Level of use of improved Practices by Rice Value Chain Actors in Benue and Nasarawa States (Study Area) n = 320

Actor	Mean		
	Nasarawa	Benue	Polled
Producers	2.41*	1.89	2.21*
Input suppliers	2.61*	2.45*	2.58*
Processors	2.26*	1.97	2.14*
Marketers	2.43*	2.26*	2.36*

Source: Field Survey, 2017 $X = 2.0$

IV. Conclusion and Recommendations

Based on the study, it was concluded that, the rice value chain actors still operate obsolete local practices than improved practices which are counter-productive and energy consuming with very low output. The level of awareness of rice value chain actors on improved production, processing, marketing and distribution practices is very high in the study area. It was therefore, recommended that; government should make available improved practices which are more less labour intensive with higher performance at affordable prices for rice value chain actors to utilize for higher performance, more awareness on improved practices on rice value chain in terms of production, processing, marketing and distribution should be created among rice value chain actors by government agents such as extension agents. Capacity building through intensive training of rice value chain actors on improved practices of rice value chain activities should be vigorously carried out by the government agencies and other related organizations to enhance Performance of The Value Chain Actors Respectively.

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