

IMPACT OF COCOYAM VALUE ADDED TECHNOLOGIES ON THE INCOME OF RURAL WOMEN IN OHAFIA AGRICULTURAL ZONE, ABIA STATE

¹Kanu, R.I., ¹Ekedo, T.O., ¹Chijioke, U., ¹Ben-Chukwu, M.A., ¹Okoye, B.C. and ²Kanu, S.C

¹National Root Crops Research Institute, Umudike, ksundayoliwe1@gmail.com

²Michael Okpara University of Agriculture, Umudike

Abstract

The study assessed the impact of cocoyam value addition technologies on the incomes and general living standards of rural women in Ohafia agricultural zone of Abia State, Nigeria. A well-structured questionnaire was used to collect data from one hundred and twenty women beneficiaries of cocoyam value addition training in the study area. Simple random sampling was used to select 120 women beneficiaries of cocoyam training programme. Simple descriptive statistics such as mean, percentages and frequency) and student Z-test were used to analyze the data. Result showed that there is a significant impact of the training programme on the general living condition of the rural women after the training. The mean income of the respondents before the training programme was ₦10,000.33 and after the training programme the mean income of the respondents increased to ₦23,000.33 implying a significant effect of the training programme on the income of the respondents/beneficiaries. Based on the findings, government should increase the fund allocation to the National Root Crops Research Institute, Umudike for expansion of the Cocoyam Value Addition Manpower Training Programme. This will not only help to increase food production and sustainability, but it will also help to boost agriculture in the country in particular and the world globally.

Keywords: Cocoyam, value addition, training and technologies

Introduction

Nigeria is the world's largest producer of cocoyam (NARP, 1994). The average production figure for Nigeria is 5,068,000 metric tonnes which account for about 37% of total world output of cocoyam (NRCRI, 2010). Cocoyam (*xanthosoma* and *colocasia* spp) is an important staple crop cultivated in the southern part of Nigeria (Nwachukwu, 2010) Being an important food security crop in Nigeria, it is variously grown by resource poor farmers, mostly women who intercrop cocoyam with yam, maize, plantain, banana, vegetables and rice (Nwachukwu et al,2005). *Colocasia esculenta* otherwise known as taro is more popular than *xanthosoma sagittifolium*, otherwise known as tannia. Cocoyam is not only used as source of food for man, industrially, cocoyam is used for production of alcohol, medicines, flour, starch and feed for livestock (Nwachukwu, 2003)..

Despite the economic importance of cocoyam, its potentials have not only been overlooked but also under exploited. In order to enhance the production and consumption of cocoyam in Nigeria, the National Root Crop Research Institute (NRCRI) Umudike, Abia State, Nigeria developed nine cocoyam cultivars. They include: NX5001, NX5002, NX5003, NX5004, NCE002, NCE 003, NCE 004, NCE 005, and NCE 006 (Okoye, 2009).. Enhancing the production and consumption of cocoyam will help fight food insecurity in the country. There is worsening food insecurity, even with massive food importation as evidenced by rising food import bill (Okoye,, 2009). The National Root Crops Research Institute, Umudike has had several trainings on cocoyam value addition to enhance the production and consumption of cocoyam in Abia State.

Cocoyam can be processed into several forms such as flour for soup thickening is a common practice in the food systems of South-Eastern households. Presently, the flour is finding its way into the supermarkets in beautiful packages as an emerging globalized food (FAO, 2006).. It can also be consumed as chips prepared by deep fat frying like the popular potato chips. Cocoyam chips are so much delighted by children and youths as school snacks & take away. Similarly, several confectionaries such as biscuits, chin-chin, flakes and balls have been produced from flours of cocoyam through various value addition technologies developed by NRCRI Umudike, (Ukpabi, 2008). Nigeria. by so doing, the consumption of cocoyam has been diversified and increased while new market frontiers are being opened. This paper therefore seeks to take a critical look at the effect of cocoyam value addition techniques on the livelihood activities of rural women in Ohafia Agricultural zone, Abia State, Nigeria.

Methodology

The study was carried out in three Communities (Ozuiem, Alayi and Ugwu-eke) in Ohafia Agricultural Zone. Ohafia agricultural zone is located in the northern part of Abia State. It is made up of five blocks namely: Arochukwu, Bende, Isuikwuato, Uzuakoli and Umunneochi. These Communities in Ohafia zone were chosen for this study because they have vast and fertile land for cocoyam production. Politically, it is referred to as Abia North Senatorial zone. The zone shares a common boundary with Enugu and Ebonyi States in the north, Akwa Ibom and Cross River States in the east, Anambra and Imo States in the West and Umuahia Agricultural zone in the south. The three Communities (Ozuiem, Alayi and Ugwu-eke) were purposively selected because they are the major cocoyam producing areas in the Zone under study. From the ADP Extension Agent supervising each of the selected blocks, the list of trained women cocoyam farmers was obtained. Forty (40) women cocoyam value addition trainees were randomly selected from each Community making a total of 120 respondents for the study. Primary data were used for analyses. A well-structured questionnaire was used to collect data from 120 respondents in the study area. Both descriptive and inferential statistics were used for data collection in the study.

Results and Discussion

General Living Standards of the beneficiaries

Health Service Provider

From Table 1 below, it was observed that the majority of the respondents (46% as against 32%) received medical treatments from the Clinic/Hospital/Health Centre, followed by healing through prayers by their Churches which recorded 16% as against 7% before the training. There was drastic percentage reduction in patronizing itinerant drug sellers from 17% to 4%, and consulting the traditional healers by the trainees from 18% to 5%, to attend to their health needs. Hence there was positive change observed between the trainee's health service provider before and after the NRCRI Extension Staff cocoyam value addition training programme.

As an important measure of standard of living, source of drinking water was assessed. About 25% of the trainees get drinking water from tap water before the training, while the number increased to 31% after the training. Also, there was an increase in the number of the respondents who use bore-hole from 34% to 42%. The use of well and stream/spring water was drastically reduced. There is obviously marked difference between the trainees' source of drinking water both before and after the training.

Table 1: Distribution of Respondents According to their General Living Standard

Variables	Trainee (Before Intervention)		Trainee (After Intervention)	
	Frequency	Percentage (n = 120)	Frequency	Percentage
Type of housing				
Single Detached Room	28	23.00	36	31.00
Room and Parlor	20	17.00	26	21.00
Flat with water closet	35	29.00	42	35.00*
Flat without water closet	37	31.00	16	13.00*
Type of Building Material				
Mud with thatched roof	33	27.00	20	16.00
Mud with zinc roof	50	42.00	24	19.00*
Block with thatched roof	10	8.00	8	7.00
Block with zinc roof	27	23.00	68	56.00*
Toilet Facilities				
Water cistern	41	35.00	46	38.00*
Pit Toilet	32	26.00	38	31.00*
Bucket Type	18	15.00	16	14.00
Bare ground/Bush	29	24.00	20	17.00
Source of Drinking water				
Tap water	30	25.00	40	31.00*
Bore hole	40	34.00	50	42.00*
Well	47	39.00	24	20.00
Stream/spring	3	2.00	6	5.00
Health Service provider				
Clinic/ Hospital/ Health Centre	40	32.00	54	46.00*
Patent medicine dealer/chemist shop	30	26.00	33	28.00
Traditional healers	22	18.00	6	5.00*
Church	8	7.00	18	16.00*
Itinerant Drug sellers	20	17.00	5	4.00*
Source of Lighting				
Electricity	42	35.00	50	42.00*
Kerosene Lamp	50	42.00	20	17.00
Candle	10	8.00	10	8.00
Oil Lamp	18	15.00	40	33.00*

Source: Field Survey (2012)

Type of Housing

From Table 1, it was observed that before the intervention, 23% of the respondents lived in single detached room, 31% of them lived in room and parlor, 17% lived in flat with water closet and 21% of them lived in flat without water closet while after the intervention, it was observed that 28% of the respondents lived in single detached room, 35% of them lived in room and parlor, 13% lived in flat with water closet and 32% lived in flat without water closet. It is glaring that there was a clear distinction between the trainee's general standard of living in terms of housing before the intervention and the type of house they were occupying after the intervention. The simple reason being that the intervention has been well entrenched as to influence the type of house they would want to live in.

Types of Building Materials

Furthermore, 27% of the respondents lived in mud building with zinc roof while before the intervention while the percentage reduced to 16% after the intervention. While 23% of the respondents lived in block houses with zinc roof before the intervention and after the intervention the percentage increased to 56%.

Toilet facilities

The result showed that after the training, there was a reduction in the percentage of the trainees who defecated in the bushes from 24% to 17%. Those who used bucket type reduced from 15% to 14%. The reduction in the percentage of the users of bucket type and those who defecated in the bushes brought an increase in the percentage of the respondents who used pit toilets and water system from 26% to 31% and 35 % to 38% respectively. This indicated that there is an improvement and clear difference in the respondents' general living standard.

Source of Lighting

Majority (50% and 42%) of the trainees have electricity and kerosene lamps as their source of lighting after the intervention respectively. This implies that the intervention influenced the living standard of the trainees since the trainee's living standards registered a remarkable improvement.

Effect of the cocoyam training programme on the Income Level of Trainees before and after the Programme

In assessing the effect of the cocoyam value addition training programme on the income of the trainees before and after the training the paired z-test was used.

Table 2: Paired Samples Test on the effect of cocoyam value addition training programme on the Income of the beneficiaries before and after (n = 120)

Variables	Mean	Paired Mean	95% Confidence Interval of the Difference		t-test
			Lower	Upper	
Trainees' Income After the Intervention	23,000.33	13,000.33	9,761.01	16,951.63	9.339***
Trainees' Income Before the Intervention	10,000.00				

Source: Computed from Field Survey (2012)

From Table 2 above, the mean income of the trainees (After) was ₦23, 000.33 while the trainees income (Before) was ₦10,000.00 with a paired mean of ₦13, 000.33. This implies that the incomes of the trainees after the NRCRI Extension training on value addition are higher than their incomes before the training. Given that the variables were significant at 1% level of probability, it shows that there is a significant difference in the incomes of the respondents after the training programme. It could be inferred that the intervention impacted positively on the incomes of the trainees. This approach has been employed successfully by Ezeh (2004) and Nwachukwu (2009).

Conclusion

There mean income of the trainees after the training was ₦23,000.33 while the trainee's income before the training was ₦10,000.00, with a paired mean of ₦13,000.33. This implies that the incomes of the trainees after the NRCRI Extension Staff manpower training on value addition are higher than their incomes before the training. Given that the variables were significant at 1% level of probability, it shows that there is significant difference between their incomes. Finally, it could be inferred that the intervention impacted positively on the incomes of the trainees after their training.

References

- National Agricultural Research Project (NARP, 1994). "National agricultural research strategic plan for Nigeria. *Report On Central Zone, National Agricultural Research Project. Moore Plantation, Ibadan, Nigeria. Pp. 35 – 37.*
- National Root Crops Research Institute (NRCRI, 2010), Annual Report in Umudike pp.128 – 137.
- Nwachukwu, C. A. (2010). Adoption of organic agricultural technologies: implications for radio farmers agricultural extension programmes in Imo State, Nigeria. *A paper presented at the Scientific and Technical Information and Rural Development AALD XIIIth World Congress Montpellier, on 26th - 29th April. (2010), pp.52.*
- Nwachukwu, I. (2003). Agricultural Communication, Principles & Practice, SNAAP Press Ltd., 1 Snaap Drive, Independence Layout, Enugu. Pp. 5– 34.
- Nwachukwu, I. And Onuekwusi, G. C. (2005). *The Journal of Agricultural Extension & Rural Sociological Association of Nigeria. Pp. 54 - 60.*
- Food and Agricultural organization (FAO) (2006). Faostat, statistical division of the food and collections. Subset agriculture. Agricultural organization, HP//Faostat.Fao.org.
- Okoye, B.C. (2009). Adoption scale analysis of improved cocoyam production, processing and storage technologies across gender in Enugu.North Agricultural Zone of Enugu State, Nigeria - *Proceeding of the 43rd Annual Conference of the Agricultural Society of Nigeria at NUC Auditorium and RMRDC, Abuja,pp. 619 – 623.*
- Ukpabi, U.J. (2008). Cassava processing and utilization: A sensitization book; Rrolex Computers Company Ltd., Box 1661, Kaduna, Nigeria. pp. 7 – 13.