The Role of Irish Potato Farmers of the Women-in-Agriculture and Youth Empowerment (WAYE) Programme in Plateau State, Nigeria

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K E Y W O R D S

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A B S T R A C T

The study focused on the role of Irish potato farmers of the Women-in-Agriculture and -Youth Empowerment (WAYE) programme in Plateau State, Nigeria. A multi-stage sampling method was employed to select 256 respondents. Primary data were collected through the use of questionnaires and were subjected to both descriptive and inferential statistics. The mean farming experience was 10 and 16 years for participating and non-participating farmers while mean farm size for participating farmers and non-participating farmers was 1.4 and 0.5 ha. The result of the findings reveals that, (55%) and (47%) of the participating farmers and non-participating farmers had secondary school education, which constituted the largest number of educational qualification attained in the study area. Factors influencing the level of participation of Irish potato farmers in WAYE programme in Plateau State are, marital status (3.72, P<0.01), sex (2.25, P<0.05), years of Irish potatoes production (9.85, P<0.01), household size (10.92, P< 0.01), awareness of WAYE programme (4.93, P< 0.01), a unit increase in these factors will subsequently influence the level of participation of Irish potato farmers in WAYE programme. The mean crops output of WAYE programme participants (537,807.1kg) was significantly higher than non-participants (165,571.43kg). The difference in the mean crops output levels was largely attributed to participation in WAYE programme. The calculated Z-test value (14.74) for crops output and income (22.93) was significant at 1% probability level. It was therefore recommended that WAYE programme be extended to other farming communities in Plateau State, so as to accelerate the poverty alleviation among women farmers in the State

INTRODUCTION

Irish potato (*Solanum tubersun*) belongs to the solanaceae family, it is a native of western hemisphere and is believed to have originated somewhere between Mexico and Chile possibly in Andes highlands of Bolivia and Peru. It later spread to other places like England and Ireland where it is predominantly cultivated Irish potato was introduced into Nigeria in the later part of the 19th century and early 20th century by Europeans notably the Tin miners in the Jos Plateau (Mado, 2013). It has a high nutritive value and it is grown for food purposes as well as livestock feed. It is also used for industrial purposes (Okeowo, 1999; Burton, 2000. Irish potato is therefore an important crop not only as food crop, but also its social, economic and environmental relationships with the people who grow, sell and consume it (Alimba and Mgbada, 2003). The empowerment of women and youths that are involved in potato production in Plateau State is therefore crucial to poverty reduction. Women-in-Agriculture and Youth Empowerment (WAYE) programme aims at encouraging Irish potato production through participation of the target group as a strategy to combat rural poverty. Therefore, Women-In-Agriculture Programme (WIA) and Youth-In-Agriculture Programme (YIAP) were both initiated and implemented towards reducing poverty, improvement on the income and raising the level of living of rural dwellers to achieve the first goal of the MDGs (Sharma, 2004).

A number of studies have been carried out by different scholars (Shittu, 2012; Kotter and Petras, 2012; Mado, 2013; Shittu and Panan, 2014) to assess the Women-In-Agriculture and Youth Empowerment (WAYE) programme. Their focus, however, was on women and men and only few Local Government Areas were covered, thus limiting the scope on WAYE programme objectives. Similarly, Ifenkwe (2015), in his study on the impact of WAYE programme, concentrated his efforts more on reproductive health (HIV/AIDS

and rehabilitation) while the agricultural component and other aspects of the programme were greatly ignored. What is almost lacking in these studies, however, is any direct involvement of youth in the programme and assessment of role of the programme on the livelihood of the participating farmers. Therefore, their studies have left a knowledge gap on role of Women-In-Agriculture and Youth Empowerment programme objectives. Furthermore, these studies are empirically shallow in their analysis and left much to be desired as reliable sources of information to develop specific theories of programmes to alleviate rural poverty and improvement on the livelihood of the rural farmers. This has indeed created knowledge or information gap in the literature. It is based on this, that the study, therefore, intended to provide empirical analysis on women and youth that will be useful for re-assessment and re-orientation of the program's objectives and focus. And thus, the study would make an attempt to find solutions to the objective: The role of women-in-agriculture and youth empowerment (WAYE)program me among irish potato farmers in Plateau State.,the specific objectives are to: describes the socio-economic characteristics of Irish potato farmers in the study area; determine the factors influencing the Irish potato farmers' participation in the WAYE programme and examine the effect of Women-In-Agriculture and Youth Empowerment(WAYE) programme on crop output and income of farmers;

METHODOLOGY

This study was conducted in Plateau State, Nigeria. The State was created in 1976 from the defunct Benue-Plateau State. The name "Plateau State" was derived from the State's spectacular geographical landscape, with the high lands rising from 1,200 meters above sea level at the low lands to a peak of 1,829 meters above sea level. It is located in Nigeria's middle belt and lies between latitude $80.\,24^0\,N$ and longitudes $80.\,32^0\,E$ and $100.\,38^0\,E$ ofthe Greenwich Meridian. The State is situated in the tropical zone, with a higher altitude ranges from 12 meters, about 400 feet to a peak of 1829 meters above sea level (Plateau Agricultural Development Programme, 2000). Plateau State has a boundary with Bauchi State to the north-east and Kaduna State to the north-west. It is also bounded to the south-east and south-west by Taraba and Nasarawa States, respectively. The State has a landmass covering nearly 53,585 square kilometers with a population of 3,577, 669 people as per 2006 census (NPC, 2006).

A multi-stage sampling procedure was used to select participating farmers for the study. There are nine (9) Irish potatoes producing Local Government Area in Plateau State and they are given a priority consideration for the programme. In the first stage, all these nine Local Government Areas were used for the study. This was because of their high level of production of potatoes in State. In the second stage, two villages were randomly selected in each Local Government Area and this was based on the level of participation in the programme as well as in potato production. This gave a total of eighteen (18) villages. During a reconnaissance survey of the study area in 2016, the list of WAYE potato farmers in the chosen villages was compiled with the help of the programme coordinating officers in each LGA and the total number obtained was 711 farmers. Therefore, a total number of 256 Irish potato farmers were selected randomly using the random number table method.

Both primary data and secondary information was used for the study. The primary data were obtained by the use of well-structured questionnaire and administered to the participating farmers and non-participating farmers by the researcher and to be assisted by well-trained enumerators from the Plateau State Agricultural Development Project (PADPs). The secondary information was obtained as base-line information from WAYE head office and the coordinating liaison offices. Also, information from other related studies were used to support the discussion of results of the findings. Data were analyzed using both descriptive and inferential statistics. Descriptive statistics was used describe the socio-economic characteristics of participants in the programme and Inferential statistics was used to achieve and determine the factors influencing the Irish potato farmers' participation in the WAYE programme. Z-test) was used to assess the effect of Women-In-Agriculture and Youth Empowerment(WAYE) programme on crop output and income of farmers;)

RESULTS AND DISCUSSION

Socio-economic Characteristics of Participating and Non-Participating Farmers

The result in Table 1 shows that the mean age of the participating farmers was 38 years while that of the non-participating farmers was 43 years. This means that the participating farmers were younger in age than the non-participating farmers. This is in line with the major objective of WAYE programme to engage both young men and women in agricultural activities with the aim of improving the living conditions of households in the study area. Age has been found to be an important variable in agricultural productivity; hence both categories of the farmers were within the agricultural productive age range of 30-50 years quoted by Food and Agriculture Organization (FAO, 2000; 2008). About 65% and 60% of the participating farmers were married and single while (66%) and (17%) of the non-participating farmers were also married and single respectively. The significance of marital status on agricultural production can be best explained in terms of the supply of family labour (Adewale, 2005).

The result of the study shows, that (67%) and (33%) of the participating farmers were males and females while (77%) and (33%) of the non-participating farmers were males and females respectively. This agrees with the findings of Ayandiji and Adeniyi (2011) who reported that males have dominance potato production activities unlike their female's counterparts because agricultural activities are regarded as labour intensive. The result in Table 1 indicated that majority (63%) of the participating farmers cultivated between 1-1.5ha for Irish potato production while (75%) of non-participating farmers used less than 1ha.This mean farm size cultivated by both

categories of farmers was 1.4 ha and 0.5ha respectively. According to Adamu (2019) classification of farm size of 0.1 - 5.9 hectares as small farms implies in this study that all the farmers were small scale farmers. This may be due to the inheritance system of land ownership practices in the study area which results in land fragmentation among farmers, leading to small farm holdings. The implication of small farm size affects the quantities of Irish potato output produced which in turn affect both the income and food security status of the farmers. The result agrees with the finding of (Nwosu, 2007) who reported that majority (82%) of the farmers acquired the farmland through renting with farm sizes ranging from 0.5-4 hetares. Farming experience in Irish potato, the result in Table 1 indicated that, (67%) and (54%) of both the participating farmers and non-participating farmers had Irish potato farming experience between 1-10 years and 11-20years respectively. Abonge (2012) opined that farming experience is an important factor in determining both the productivity and the production level in farming.

The result in Table 1 reveals that (55%) and (47%) of the participating farmers and non-participating farmers had secondary school education, which constituted the largest number of educational qualification attained in the study area. Adewale(2005) had identified literacy among other factors as a variable that positively influenced the use of improved agricultural inputs by farmers. According to the distribution of respondents in Table 5.1. The result shows that majority (77%) and (73%) of the participating and non-participating farmers have a family size of 1-10 members respectively. This finding agrees with that of Ifenkwe (2012) reported that the average family size in Africa is between 8 and 9 people in a household. The implication of large number in a household can be a motivation to the adoption of innovations because members will provide the required family labour for Irish potato production. This will reduce the cost of production.

Table 1: Distribution of respondents according to age, marital status, Gender, farm size, farm experience, educational level and household size.

	Participating farmers		**Non – participating farmers**	
	Frequency	Percentage	Frequency	Percentage
Age(Yrs)				
20 – 30	17	6.64	8	3.13
31 – 40	173	67.57	96	37.50
41 – 50	56	21.88	118	46.09
51 – 60	8	3.13	23	8.98
61 – 70	2	0.78	11	4.30
Total	256	100	256	100
Mean	38		43	
Marital status				
Single	60	23.44	43	16.80
Married	166	64.84	169	67.58
Divorced	8	3.13	11	4.30
Widow	22	8.59	33	12.89
Total	256		256	100
Gender				
Male	171	66.80	196	76.56
Female	85	33.20	60	23.44
Total	256	100	256	100
Farm size(ha)				
Less than 1	36	14.06	192	75.2
1 – 1.5	162	63.28	35	13.68
1.6 – 2.5	47	18.36	21	8.20
2.6 – 3.5	8	3.13	7	2.73
3.6 and above	3	1.17	1	0.37
Total	256	100	256	100
Mean	1.4		0.5	
Farming exp(yrs)				
1 – 10	172	67.19	72	28.13
11 – 20	64	25.00	138	53.91
21 – 30	14	5.46	26	10.16
31 – 40	5	1.95	14	5.46
41 – 50	1	0.40	6	2.34
Total	256	100	256	100
Mean	10		16	
Educational level				
No education	10	3.91	6	2.34
Qur'anic/adult.	7	2.73	11	4.30
Primary	71	27.73	88	34.38
Secondary	141	55.08	120	46.88
Tertiary	27	10.55	31	12.10
Total	256	100	256	100
Household size				
1 – 10	198	77.34	187	73.05
11 – 20	55	21.48	64	25.00
21 – 30	3	1.18	5	1.95
Total	256	100	256	100
Mean	8		8	

Source: Field Survey, 2017

To examines the factors influencing level of participation in WAYE in Plateau State. The results in Table 5 indicate that, commutatively about 17.6% of the variation in level of participation is explained by the variable included in the model. It shows that marital status, years in Irish potatoes production, household size, awareness of WAYE were found to significantly influenced the level of participation at 1%, level of probability whereas only sex, is found significantly influence the level of participation at P<0.05. The implication of this finding is that, the level of participation increases by variation in marital status thus as farmers' marital status changes from single to married, the level of participation equally increases from 1 to 27.6%. It was also observed that as years in Irish potatoes production increase by 1unit, the level of participation increases by 34.7%. Thus more experience farmers tend to participate more than new in-experienced farmers. So also as household size increase by 1 person the level of participation increase by 78%. Nonetheless as level of awareness of the existence of WAYE programme increases by 1 the level of participation is equally increases by 30%. Based on these findings marital status, sex, years in irish potatoe production, household size, and awareness are the major factors influencing farmers' participation in WAYEP. Adamu (2021), factors influencing women farmers' participation in Development Exchange Centre (DEC) micro credit programme of Kaduna State, Nigeria; shows that level of education (1%), age (1%), house size (5%), credit (10%), farm experience (10%), extension (5%) and years of involvement in cooperative society (5%) were significantly related with level of participation in (DEC) micro credit programme.

Table 5: Estimates Factors influencing farmers' level of participation in WAYE

Variables	Coefficients	Std.Err.	T-value	P>|t|
Livelihood index	0.2763	0.1769	1.56	0.119
Age	14.4942	0.9059	12.82	16.388
Marital status	0.6472***	0.1738	3.72***	0.000
Sex	1.1465**	0.5099	2.25**	0.025
Farm size	0.1742	0.3384	0.51	0.607
Years in iris potatoes production	0.3474***	0.0353	9.85***	0.000
Household Size	0.7805***	0.0715	10.92***	0.000
Credited amount	0.0000	0.0000	0.13	0.897
Profit	0.0000	0.0000	-1.59	0.112
Perception	-0.7914	0.7003	-1.13	0.259
Awareness of wayep	3.0301***	0.6150	4.93***	0.000
_cons	21.2049	3.5333	6***	0.000

Source: Field Survey, 2017 *** P< 0.01, ** P<0.05 and * P<0.10

Effect of Women-In-Agriculture and Youth Empowerment(WAYE) programme on crop output and income of farmers;

The results in Table 6 shows, the calculated Z-statistic was 14.7;and at 0.01 level of significant, the critical table value of Z was ±1.96. Since the calculated Z-value (14.7) is greater than the Z-critical or Z- tabulated value, it implied that there was significant difference in the mean crops output level of WAYE programme participants, and non-participants. Also the estimated mean crops output of participants was much higher than that of non-participants, (537,807.1kg) as against (165,571.43kg), as indicated in Table 3. Hence WAYE programme participants declared a higher level of output from their crops output than non-participants. Hence, the impressive difference in the farmers mean crops output levels were largely attributable to farmers' access to WAYE programme. The calculated Z-statistic value for income was 24.19 but at 0.01 level of significance, the critical or table value of Z is ±1.96. Since the calculated Z-value (24.19) was greater than Z-tabulated, it implied that there is significant difference in the mean income of WAYE programme participants and non-participants. Also the estimated mean income of beneficiaries (₦749,379.50) was discovered to be much higher than the estimated mean income of non-beneficiaries (₦234,222.20). Hence, the WAYE programme participants had higher mean income from their irish potato production than non- participants. Therefore, the findings confirmed that the impressive difference (₦515,154.30) in the mean income of WAYE programme participants from non-participants might largely be attributable to their access to WAYE programme.

Table 6: Examine effect of Women-In-Agriculture and Youth Empowerment(WAYE) programme on crop output and income of farmers;

Variable	Participants	Non- participants
Sample size	256	256
Output(t/ha)		
Mean of crops output	537,807.1kg	165,571.43kg
Standard error of crops output	18960.71	5773.787
Z-calculated	14.7	
Z-critical	1.96	
Income (₦)		
Mean of farm income(₦)	₦749,379.50	₦234,222.20
Standard error of farm income	17295.14	7773.23
Z-calculated	24.19	
Z-critical	1.96	

Source: Field Survey, 2020

CONCLUSION AND RECOMMENDATION

Based on the empirical evidence emanating from both descriptive and inferential statistics employed in the analysis of the role of Irish potato farmers of the Women-in-Agriculture and -Youth Empowerment (WAYE) programme in Plateau State, Nigeria. It has been observed that, loan provided to Irish potato farmers are of short duration with repayment period of less than one year. Majority of the farmers relied on waye programme and were able to obtain ₦876, 000 and above which they are required to repay between 6 to 12 months. WAYE programme is a tool that could be used to improve on the income and crop outputs of irish potato farmers and thus empowers them for a better living. It is therefore recommended that WAYE programme be extended to other farming communities

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