EFFECT OF NATIONAL SPECIAL PROGRAMME FOR FOOD SECURITY ON CASSAVA OUTPUT AMONG RURAL FARMERS IN CROSS RIVER STATE, NIGERIA

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ABSTRACT: *This study was carried out to analyse the effect of National Special Programme for Food Security (NSPFS) on cassava output in among rural farmers in Cross River State, Nigeria. The specific objectives were to ascertain the socioeconomic characteristics of the respondents determine the effect of the programme on cassava output and identify the problems encountered by the beneficiaries. Data for the study were collected through structured questionnaire from the three agricultural zones in the state using multi-stage random sampling technique for the selection of beneficiaries and non-beneficiaries. A total of 203 respondents were used for the study. The tools used for data analyses included frequencies, percentages, means and paired t-test. The result indicated that most of the respondents were females and married. Most of them were between the ages of 31-40 years and had household size of 6-10 persons. Majority had secondary education and had annual income of less than N100, 000(one hundred thousand) naira. The   paired t-test result indicated that the mean annual output of beneficiaries was higher and significantly different from that of the non-beneficiaries at 95% confidence level and late release of loan and inputs was rank first among other problems encountered by the beneficiaries. The study therefore recommended that NSPFS project site should be expanded to other communities across the state. Loan and other inputs from the NSPFS should be released early enough to the beneficiaries to effectively improve their productivity and enhance food security in the State.*

KEYWORDS*: NSPFS, cassava, output, rural farmers, Cross River*

INTRODUCTION

Agriculture is an important sector in the economic development and food security in many countries including Nigeria. It supplies the food needs and raw materials for agro -allied industries and most times through cassava production creates job opportunities and income for the rural dwellers; thus act as a tool for improving the living standard of the people (Food and Agricultural Organization, (FAO) 2001). However, despite the effort made by Nigerian farmers to increase food production, their productivity is still very low. Factors contributing to agricultural growth according to Igbal, Ahmad and Abbas (2003) include increased used of agricultural inputs (seeds, fertilizers, pesticides etc), technological change (result of research and development effort) and technical efficiency (affected by flow of information, better infrastructure, availability of funds and farmers managerial expertise). Akobundu (2002), opined that poor cultural practice, poor soil fertility, lack of access to improved crop varieties, pest and disease and poverty are major factors affecting output negatively.

Attainment of food security in any country is usually an insurance against hunger and poverty both of which impede economic development. This is why all developed and some developing

countries make considerable efforts to increase their food production capacity especially for those crops that have comparative production advantage in order to reduce hunger and poverty. Cassava (*manihot esculenta)* is widely cultivated in Nigeria where it plays vital role in the food security of the rural economy because of its capacity to yield under marginal soil condition and its tolerant of drought (Ezedinma *et al* 2006). Bamidele, Babatunde and Rasheed (2008), affirmed that cassava's comparative production advantage over other staple crops in Nigeria serves to encourage its cultivation even by the resource poor farmers.

The principal strategy of Nigerian government is to promote agricultural development programmes aimed at increasing food production particularly in the rural areas in order to improve food self-sufficiency while generating income through processing and marketing of surplus products to reduce poverty. The National Special Programme for Food Security (NSPFS) is one of such programmes aimed at reducing food insecurity.NSPFS came as a result of Nigeria participating in the World Food Summit of November 1996. As one of the Low Income Food Deficit Countries (LIFDCS), she requested for assistance under the United Nations' (UN) Food and Agricultural Organisations' (FAO) Special Programme on Food Security (SPFS). A tripartite participatory review of beneficiary communities was held in Nigeria which resulted to a pilot phase of the Special Programme on Food Security (SPFS) being conducted in Kano state in 1998 (Appraisal Report, 2006). In 2000, following the successful completion of the pilot phase in Kano, the SPFS was further up- scaled over a five year period nationwide National Special Programme on Food Security (NSPFS) covering the thirty six (36) states with 109 sites(communities) across the country with a total programme cost of USD 45.2 million (Dauda and Ajayi, 2009). The mandate of NSPFS is to assist farmers in increasing output and productivity and consequently income on sustainable basis, strengthen the effectiveness of research and extension services in bridging technology and new farming practices developed by research institute. The targeted crops and livestock are cassava, rice, cocoyam, yam, leafy vegetables, poultry, and sheep, goats and swine production (Appraisal Report, 2006 and Dimelu, Igbokwe and Obieri, 2009). According to Oyedele and Akintola (2012), the main strategy of NSPFS is to empower small farming communities with provision of soft loan, agricultural inputs and technical support services to achieving NSPFS objectives of increasing farmers output and income on a sustainable basis. According to the authors the participatory farmers are formed into groups for ease of co-ordination and management of credits and inputs received on behalf of farmers.

Food is one of the basic needs of man in Maslow hierarchy of need. Government of Nigeria acknowledged this as such have attempted several agricultural programmes geared towards increasing food production. Some of such programmes include: Operation Feed the Nation (OFN) in 1976, Green Revolution (GR) in 1980, Directorate for Food, Roads and Rural Infrastructure (DFRRI) in 1986, National Agricultural Land Development Authority (NALDA) in 1992etc but none of the above mentioned programmes can be described as wholly successful. International Fund for Agricultural Development (IFAD) (2001), maintained that most of the programmes have been a striking failure because the poor are often regarded as passive beneficiaries. Adawo (2011) also opined that most of the programmes failed because it adopted a top-down approach and the opinions of the targeted beneficiaries were not sought. It is widely believed that the provision of credit, supply of inputs, extension services, and group formation through the intervention programme (NSPFS), farmers can increase output. Increase in food production could also be achieved by NSPFS as a result of the adoption of participatory extension system which empowers the farmers to choose from available opportunities, identify

needs according to priorities while the extension agents only act as facilitators. It is against this background that this study attempts to address the following objectives and hypothesis:

1.   Ascertain the socio-economic characteristics of the respondents in the study area.
2.   Determine the effect of NSPFS on cassava output in the study area
3.   Identify the problems encountered by the beneficiaries in the programme.

Hypothesis (H_0): there is no significant difference between the output of NSPFS beneficiaries and non-beneficiaries

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

This research is based on participatory development theory. Participatory development theory attempts to explain the involvement of people in making decision about implementation of process, programmes, and project that affect them. The crucial role of participation in enhancing the living condition of people became pronounced in the mid- 1980s when proponents of participatory development were opposed to top- down approach to development. This evolved from the idea that people led rather than expert led knowledge and innovation form the basis for development practices (Cornish and Dunn, 2009). Subedi (2008) viewed rural farmers' participation as the engagement of people in farming activities in order to promote their quality of life. Effect of participation in developmental programmes on agricultural production is usually observed in the output, income and farm size. It is generally believed that involvement of people in developmental programme such as NSPFS will increase their output as such serves as a springboard for the escape of poverty which is a form of development.

This theory is evidenced in the following studies, for instance in Ayoade (2010) study on assessment of women participation in National Special Programme for Food Security (NSPFS) in Oyo State revealed that 81.1% of the respondents before participating in the programme had output level of 100-499kg and after participation 58% had output level of 1000-1999kg. Chukelu (2009), study on effect of NSPFS on food production indicated that 93.06% of the respondents opined that the NPFS   caused output to increase slightly. The study by Oruche *et al* (2012) on Impact of the National Special Programme for Food Security on livestock farmers in Ideato South Local Government Area, Imo State, also reported a significant increase in the number of livestock and income of participants. Ayoade, Ogunwale and Adewale(2011) research on impact of the National Special Programme for Food Security on poverty alleviation among women in Oyo state also revealed that the programme had a positive effect on the output of the respondents. This shows that the programme so far had positive effect on output of participants in the various project sites established

METHODOLOGY

Study Area
This study was conducted in Cross River State of Nigeria. It lies between latitudes 4^028^1 and 6^055^1North of the equator and longitude 7^050^1 and 9^028^1 East of the Greenwich meridian. It occupies an area of about 23,000 square kilometers and shares common boundaries with the Republic of Cameroun in the East, Benue state in the north, Ebonyi and Abia states in the Southwest and the Atlantic Ocean in the South (CR-SEED 2005-2007). Administratively,

Cross River State is divided into three agricultural zones. In each of the zones there are three sites of NSPFS. Cross River State has 18 Local Government Areas. Farming is the main occupation of the people. The crops grown by farmers in the state include cassava, yam, plantain, maize, rice banana, melon, pumpkin, pepper, water leaf, cocoa, oil palm, rubber, orange etc.

Method of data collection and analysis
A multi-stage sampling technique was employed in the selection of respondents for the study. Three NSPFS sites (communities) and three non NSPFS sites (communities) were used for the study.
Stage 1: was the selection of one Local Government Area from each of the agricultural zone. These LGA include Yala, Abi and Akpabuyo
Stage 2: was the selection of one NSPFS sites from each of the selected LGA. These sites includeUgaga site (Yala LGA), Igbo Imabana site (Abi LGA) and Ikot Okon (Akpabuyo LGA)
Stage 3: One group (NSPFS cassava group) was purposively selected from other crops and livestock group.
Stage 4: Beneficiaries were proportionately selected from the selected group. Thirty seven (37), thirty six (36) and thirty eight (38) beneficiaries were proportionately selected from Ugaga, Igbo Imabana and Ikot Okon community respectively. Thus sample size for beneficiaries was 111
Stage 1- stage 2 as indicated above was also adopted in the selection of non NSPFS beneficiaries. In stage 3, there was no group as such non beneficiaries were randomly selected based on the number of beneficiaries selected.
Equally Thirty seven (37), thirty six (36) and thirty eight (38) beneficiaries were randomly selected from Ijegu, Itigidi and Idundu community respectively. Thus sample size for non-beneficiaries was 111.

A structured questionnaire was used to obtained information from two hundred and twenty two respondents (222) both beneficiaries and non-beneficiaries. However nineteen (19) questionnaires were found to be inconsistent with the objectives of the study, therefore two hundred and three (203) questionnaires were retained for the analysis. The data collected were analysed using frequency, percentages, and means Data on socio- economic characteristics were analysed using percentages and frequency distribution tables while data on effect of NSPFS on cassava output was analysed using paired t-test and problems encountered by beneficiaries was measured on a 4-point likert –scale (Strongly Agreed (SA), Agree (A), Disagree (D) and Strongly Disagree(SD) and analysed using means.

RESULTS AND DISCUSSION

Socio economics characteristics
Table 1: Distribution of respondents based on their socio characteristics of respondents

Characteristics	Beneficiaries		Non beneficiaries	
	Frequency	**Percentage**	**frequency**	**Percentage**
Sex				
Male	50	49.02	44	43.56
Female	52	50.98	57	56.44
Total	102	100	101	100
Age(years)				

<31	8	7.84	10	9.90
31-40	38	37.25	44	43.56
41-50	43	42.16	31	30.69
51-60	10	9.80	9	8.91
Above 60	3	2.94	7	6.93
Total	102	100	101	100
Marital status				
Single	14	13.73	17	16.83
Married	74	72.55	61	60.39
Divorced	8	7.84	16	15.84
Widowed	6	5.88	7	6.93
Total	102	100	101	100
Educational level				
Non formal	11	10.78	7	6.93
Primary	37	36.28	33	32.67
Secondary	47	46.08	53	52.48
Tertiary	7	6.86	8	7.92
Total	102	100	101	100
Income (Naira)/annum) in '000				
<100	59	57.84	68	67.33
100-200	32	31.37	25	24.75
Above 200	11	10.78	8	7.92
Total	102	100	101	100
Household size				
1-5	44	43.13	37	36.63
6-10	50	49.02	60	59.41
Above10	8	7.84	4	3.96
Total	102	100	101	100

Source: Field survey, 2014

Table 1 shows the distribution of respondents based on their socio- economic characteristics. From Table 1 the result shows that majority (50.98%, 56.44%) for beneficiaries and non-beneficiaries respectively were females. Most beneficiaries and non-beneficiaries were between the ages of 31-50 years indicating middle age. Most were married. Majority had only secondary education. This implies that, beneficiaries and non-beneficiaries were not highly educated. Majority (31.37%) of the beneficiaries had income of between N100,000- N200,000 per annum while only 24.75% of the non-beneficiaries had same income per annum. From the result it is obvious that, the income of beneficiaries were relatively higher than that of the non-beneficiaries. This shows that the NSPFS had a positive effect on the income of the beneficiaries. Most had family size of between 6- 10 persons. The reason for the large family size could be as a result of labour requirement for farming activities.

Cassava output

Table 2: Distribution respondents based on cassava output of beneficiaries and non-beneficiaries of NSPFS

Output(kg)	Beneficiaries		Non- beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Less than501	18	17.65	28	27.72
501-1000	45	44.12	41	40.59
1001-1500	21	20.59	19	18.81
1501-2000	11	10.78	8	7.92
2001-2500	4	3.92	5	4.95
Above 2500	3	2.94	NIL	0.00
Total	102	100	101	100

Source: Field survey, 2014

Table 2, shows the distribution of respondents based on cassava output. From Table 2, majority (64.71%) of the beneficiaries had output of between 501-1500 kg while most (59.4%) of the non-beneficiaries of NSPFS had output of 501-1500 kg . It is obvious from the table that the output of beneficiaries tend to be relatively higher than the output of non-beneficiaries. This implies a positive effect of NSPFS on output of beneficiaries. The increase in output could be as a result of the beneficiaries having access to credit and input. This agree with the study carried out by Ayoade (2010).

Table 3: T –test result of mean annual output of beneficiaries and non-beneficiaries of NSPFS

parameters	Beneficiaries	Non- beneficiaries
Mean output	1,394.97	844.64
Standard deviation	704.11	424.13
observation	102	101
df	101	100
t-cal	4.19**	

Source: result from the paired t-test analysis
** = significant at 95 percent confidence level

Table 3, shows the difference between the mean annual output for beneficiaries and non-beneficiaries of NSPFS cassava farmers as well as the calculated t-test statistics. The results shows that the mean annual output of cassava for beneficiaries was 1,394.97kg while for non-beneficiaries was 844.64 kg; it can be found that the mean annual output of beneficiaries was higher than that of the non-beneficiaries. The t-cal (4.192) was significant at 95% confidence level. This means that the null hypothesis is rejected because t-cal (4.19) > t-tab (2.60) indicates a significant difference between the mean output of beneficiaries and non-beneficiaries. The increase in output of beneficiaries may be due to access to credit and input from the NSPFS because credit according to Ekong (2003) is a very important factor that is needed to acquire or develop farm enterprise therefore its availability could determine the extent of production capacity.

Problems encountered by beneficiaries.
Table 4: Mean distribution of beneficiaries based on problems encountered

Problems encountered	Mean score	Standard deviation	Rank
Late release of inputs and loan	3.42	1.46	1
Poor condition of roads	3.15	1.29	2
Weak extension service	2.35	1.15	7
Outbreak of pest and disease	1.81	1.30	11
High cost of labour	2.84	1.19	4
Poor yield	2.62	1.14	5
Poor storage facility	3.08	1.32	3
Devastation of crops by animals	2.14	1.11	10
Extensive soil erosion	2.20	1.34	9
Limited access to land	2.23	1.14	8
Poor sales of produce	2.61	1.16	6

Source: field survey, 2014

Table 4, shows the distribution of respondents (beneficiaries) based on the problems encountered by participating in NSPFS. It was observed that late release of loan and inputs ranked first, poor condition of roads was second, poor storage facility third, the last on the list was outbreak of pest and disease, this shows that the most prevalent problem in the study area was late release of loan and input followed by poor condition of roads. This finding is closely related to Ayoade, Ogunwale and Adewale (2011) result which report that, late release of loan and inputs ranked first among others problems encountered by NSPFS farmers.

IMPLICATION TO RESEARCH AND PRACTICE

The main strategy of NSPFS is to empower small farming communities through the provision of soft loans, agricultural inputs and technical support services so as to increase the output and income of rural farmers on a sustainable basis. However NSPFS studies in many parts of Nigeria have not been able to indicate if there is a significant difference between the output of beneficiaries and non-beneficiaries of the programme. Unless there is a remarkable difference between the output of beneficiaries and non beneficiaries on a specific crop as well as the effect of the programme on the rural farmers of Cross River State, it will be difficult to know the relevance of the programme in the State. Furthermore in cross River State there is no published work on NSPFS.

Although studies have been carried out on NSPFS in many parts of Nigeria, for instance Ayoade (2010) carried out a study on the assessment of NSPFS in Oyo State using before and after participation, Chukelu (2009) research on the effect of NSPFS on general food production in Anambra State using likert scale to measure the effect of the programme, there has been no published work on the effect of NSPFS on cassava output among rural farmers in Cross River State of Nigeria. Therefore the reason for this research to highlight the effect of NSPFS on cassava output between beneficiaries and non beneficiaries among rural farmers in Cross River State.

CONCLUSION

The findings of this study shows that most, both beneficiaries and non-beneficiaries in the study area were females, married and had only secondary educational qualification. The study also indicates that the output of beneficiaries was higher than that of the non-beneficiaries and the major constraints faced by beneficiaries was late release of loan and inputs as it rank first among other problems faced by beneficiaries in the study area.
The study therefore recommends that NSPFS project site should be expanded to other communities across the State. Loan and other inputs from the NSPFS should be released early enough to the beneficiaries to effectively improve their productivity and enhance food security in the State.

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