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Impact Assessment of National Programme For Food Security (NPFS) On Farmers' Production In Oyo State

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Abstract
National Programme for Food Security (NPFS) focuses on a variety of interventions for the enhancement and diversification of agricultural production, agro-processing, market development, rural finance; extension activities as well as the development and upgrading of infrastructural facilities such as roads and portable water supply. This study examined the impact of National Programme for Food Security (NPFS) on farmers' production in Oyo State, Nigeria. Multi-stage sampling method was used to select 149 respondents in the selected three local government areas of the study. Chi-square, Pearson Product Moment Correlation and t-test were used in analyzing the data. Results showed that majority (63.8%) of the respondent were male, the mean age was 47 years, 64.4 % had primary education, 96.6 % were married and 91.9 % were farmers. Availability of NPFS elements was rated high by majority (71.1%) while access to the elements was rated low among majority (65.1%). Difficulty in marketing of produce was identified as constraint among majority (96.0%). Age ($r = -0.083$, $P < 0.05$), household size ($r = 0.375$, $P < 0.05$), educational status ($r = 0.391$, $P < 0.05$), availability of NPFS elements to respondents ($r = 0.700$, $p<0.05$) and change in crop production were significantly related. There was a significant difference in change in production of crops ($t=14.784$, $p<0.05$) and livestock ($t= -15.342$, $p<0.05$) before and after NPFS. In conclusion, positive changes in production were observed after respondents' participation in NPFS. Therefore, the development agencies/institutions involved in food security should be sincere and improve upon their efforts.

***Key Words**: Impact, National programme, Food Security, Production*

Introduction

With a population of over 140 million (NBS, 2006), on a land area of 924,000 square kilometers, Nigeria has great potential for development in terms of human and material resources. The land itself is the primary source of production and income, and agricultural production involves the majority of household members, whether as land owners, cultivators, tenant farmers, share-croppers or agricultural labourers (Murphy, 1993). Over the past 20 years, Nigeria has witnessed a decline in growth in the agriculture sector with its share of the GDP declining from over 60 percent in the pre-

oil period to about 30percent in 2005 and 35.4% in 2011 (NBS, 2011). Growth in the sector is slow and has resulted in rising food imports and falling levels of national food self-sufficiency and increasing rural poverty (ADF, 2006). In an effort to reverse these trends, the Federal Government of Nigeria (FGN) renewed its commitment to promoting growth in the agricultural sector and prepared the National Economic Empowerment and Development Strategy (NEEDS). The policy objectives of NEEDS are complemented by those contained in the New Agricultural Policy (NAP) and the Rural Development Policy, which further emphasize growth and development of all aspects of agriculture, and increased investment in rural areas. The country now faces the challenges of translating the agricultural growth objectives of NEEDS into feasible and well co-ordinated interventions that will raise farm-level productivity, diversify production, strengthen rural market networks, stimulate the emergence of profitable value-adding agro-industries, and link producers and processor to domestic, regional and international markets (ADF, 2006). In a move to achieving these objectives, the FGN with assistance from FAO implemented the Special Programme for Food Security (SPFS) as a pilot programme in Kano State in 2002, with the objective of identifying; adapting, testing and promoting intervention packages that promote growth in the agriculture sector. The SPFS was further up-scaled into a five-year nationwide National Programme for Food Security (NPFS) between 2002 and 2006, covering the 36 states of the country (3 pilot sites per state, i.e. 109 sites), with a total programme cost USD 45.2million, entirely funded from national sources (FGN, 2007). The Federal Government Nigeria started the expansion phase of the NPFS (2007-2012) that entails the introduction of 218 new sites nationwide or six additional sites in each of the 36 States.

Food security has been defined severally with each definition incorporating multiple concepts. The World Bank (1996),defined food security as access by all people at all times to enough food for an active and healthy life while FAO (1996) submitted that food security exist when all people at all times have access to safe nutritious food to maintain a healthy and active life. The World Food Summit in 1996 described food security to exist when people have physical and economic access at all times to food in sufficient quantity and quality needed for their daily activities. Food security includes freedom from both famine and chronic malnutrition. Nevertheless, it is very much linked with increased agricultural production, management of natural resources, environmental protection and trade policies.

Since independence various administrations made efforts to achieve food security in the country. In the 60s Nigeria depended on money realized from agricultural production to provide infrastructure and run services until then collapse of the first republic, and the military takeover of government in 1966. At that time a lot of seedlings were taken to other countries. For example, palm fruits were exported to Malaysia. Nigeria also excels

in the production of Cocoa, rubber, groundnut and cotton. Subsequent administration saw the need to reverse the downward trend after the first republic. In the 70s the Government introduced the National Food Operation programme and the Nigerian Agriculture and Cooperative Bank was established to fund agriculture and assist farmers. This was followed by Operation Feed the Nation in 1976. However, virtually all the programmes and policies were good and fulfilling but they could not achieve their set objectives because of over dependence on crude oil which has become the major foreign exchange earner on which the economy depends. Therefore the study assessed the influence of National Programme for Food Security (NPFS) on farmer's activities towards achieving accessibility and availability of food production in Oyo State, Nigeria.

Methodology

The study area is Oyo state which is geographically located in the South West region of Nigeria between latitude $7^{o}02^{1}$N and $9^{o}10^{1}$N and longitude $2^{o}04^{1}$E and $4^{o}30^{1}$E. It is bounded in the South by Ogun state, in the north by Kwara State, in the West; it is partly bounded by Ogun State and partly by the Republic of Benin, while in the East by Osun State. The state is made up of thirty three (33) local government areas (LGAs).

The target population of the study consists of all registered farmers under Oyo state Agricultural Development Programme (OYSADEP) who are participating in National Programme for Food Security (NPFS) in the State. Multi-stage sampling method was used to select 150 respondents in the selected three local government areas of the study in which 149 responded (table 1). Data for the study were gathered through administration of structured questionnaire and interview schedule. Data were analysed using descriptive statistics, chi-square, PPMC and t-test at 5% level of significance.

Table 1: Summary of Sampling Procedure and Sample size

LGAs selected (1/3)	No. of groups	No of groups selected (1/3)	No. of farmers in group	No. of farmers selected (20%)	Total
Iddo	30	10	25	5	50
Oyo West	30	10	25	5	50
Iseyin	30	10	25	5	50

Results and Discussion

Personal Characteristics of Respondents

The age distribution of respondents as shown in Table 2 indicates that majority (48.3%) of the respondents are within the age of 45-51, while the least groups (8.1%), comprised

of respondents whose age range is between 52-58 and 59-65 while the mean age is 47 years. This implies that majority of the respondent (83.9%) are in their active age (31-51years) and therefore actively involved in National programme for Food Security. This finding is in line with the research findings of Akinbile (2007) that population within this age group is productive, energetic and constitutes active work force in any community engagement. Sex is an important factor to consider in farming activities. Out of all the respondents sampled, 63.8 % were male while 36.2% were female. Results revealed that there were more men in NPFS programme and confirm the usual domination of males in farm enterprise.

Considering the educational level of sampled respondents in the study area, it was revealed that 100 percent of the respondents acquired one form of formal education or the other. Majority (64.4%) of the respondents had primary education, 24.2% had secondary education and 11.4% had tertiary education. It can therefore be inferred that all the respondents are literate. The religious affiliation of the respondent is also presented in Table 2. Results reveal that 40.3% are Christians while 59.7% are Muslims. It implies that majority of the respondents involved in NPFS programme in the study area are Muslims. Fakoya (2000) pointed out that marriage in our society is highly cherished. This was further confirmed by the report of Ekong (2003) and Oladoja *et al*, (2008) who asserted that marriage confer some level of responsibility and commitment on individual who are married.

In this study, 96.6% of the sampled respondents were married while 3.4% were single. It can therefore be inferred that majority of respondents involved in NPFS programme are responsible.

Household size play important role in determining family labour. Table 2 reveals that majority (80.5%) of the respondents had between 7-10 household sizes while the least (3.4%) had between 1-2 household sizes. This suggests the fact respondents may have more than a wife.

Farming experience ranges between 10-34years. Table 2 reveals that 3.4% had between 10-14years of experience, 4.0% had between 15-19years, 20.1% had between 20-24years, 52.3% had between 25-29years and 20.1% had 30-4years of experience. Majority (92.5%) of the respondents had years of experience of 20-34years implying that they have acquired much skill and knowledge to enhance their productivity and also been able to obtain maximum benefit from NPFS programme.

Availability of elements of national programme for food security

The availability and extent of availability of NPFS elements to the respondents are shown on Table 3. The results show that most of the NPFS elements are available to majority (100%) of the respondent in the study area. However, a few numbers of the elements such as improved animal breeds, farm gate market and government buying

agents are not available to the respondents. Based on the extent of availability of each of the NPFS elements, majority (96.0%) of the respondents indicated that improved seeds, pesticides, credit facilities from government and tractor machines are moderately available. Also, majority (96.0%) indicated that training on processing and small water scheme are readily available.

Table 2: Frequency and percentage distribution of respondents by personal characteristics

Variables	Frequency	Percentage (%)	Mean Value
Age			
31-37	05	3.4	
38-44	48	32.2	
45-51	72	48.2	47
52-58	12	8.1	
59-65	12	8.1	
Sex			
Male	95	63.8	
Female	54	36.2	
Level of education			
Non-formal education	0	0.0	
Primary education	96	64.4	
Secondary education	36	24.2	
Tertiary education	17	11.4	
Religion			
Christianity	60	40.3	
Islam	89	59.7	
Traditional	0	0.0	
Marital status			
Single	5	3.4	
Married	144	96.6	
Household size			
1-2	5	3.4	
5-6	24	16.1	7
7-8	90	60.4	
9-10	30	20.1	
Farming experience			
10-14	5	3.4	
15-19	6	4.0	25
20-24	30	20.1	
25-29	78	52.3	
30-34	30	20.1	

Source: Field survey (2013)

Accessibility of Elements of NPFS

Table 4 reveals the respondents' perception of the level of accessibility of NPFS elements. It shows that majority (65.1%) of the respondents indicated a generally low level of accessibility scores below the mean (16.3) while only 34.9% of respondents had high level of accessibility scores above the mean. Generally, it can be deduced from the finding that though the NPFS elements are highly available but not accessible to a larger number of the respondents. The bureaucratic process that characterizes government policies could have accounted for the low level of access to NPFS elements.

Table 3: Distribution of Respondents by Availability of Elements of National Programme for Food Security

Elements	Yes	Extent of availability			
		Not available	Readily available	Moderately available	Less available
Improved seeds	149(100)	0	0	143(96.0)	06(4.0)
Pesticides	149(100)	0	0	143(96.0)	06(4.0)
Improved animal breeds	0	0	0	0	0
Farm gate market	0	0	0	0	0
Middlemen	149(100)	0	146(98.0)	03(2.0)	0
Government buying agents	0	0	0	0	0
Training on production	149(100)	0	146(98.0)	0	03(2.0)
Training on processing	149(100)	0	143(96.0)	06(4.0)	0
Government owned processing centre	06(4.0)	143(96.0)	0	0	06(4.0)
Privately owned processing centre	143(96.0)	06(4.0)	114(76.5)	29(19.5)	0
Credit facilities from bank	149(100)	0	06(4.0)	137(91.9)	06(4.0)
Credit facilities from government	149(100)	0	0	143(96.0)	06(4.0)
Tractor machines	149(100)	0	0	143(96.0)	06(4.0)
Processing machines	149(100)	0	0	143(96.0)	06(4.0)
Direct water pumping	06(4.0)	143(96.0)	0	06(4.0)	0
Small water scheme	143(96.0)	06(4.0)	143(96.0)	0	0
Use of compost fertilizer	12(8.1)	137(91.9)	12(8.1)	0	0
Use of mineral fertilizer	143(96.0)	06(4.0)	0	131(87.9)	12(8.1)

NB: The values in parentheses are percentages. **Source**: Field survey (2013)

Table 4: Distribution of respondents by level of accessibility of NPFS elements

Scores	Frequency	Percentage	Score range	Minimum	Maximum	Mean
Low	97	65.1	13-16.2	13.0	19.0	16.3
High	52	34.9	16.4-19			

Source: Field survey (2013)

Constraints faced by respondents in NPFS

Table 5 shows the representation of the types and ranks of constraints faced by participants in NPFS. In order of severity, difficulty in marketing of produce was adjudged the first by majority (96.0%) of the respondents. This finding corroborates Daudu and Ajayi (2009) who found untimely release of fund and untimely supply of inputs as problem facing National Special Food Security Programme.

Table 5: Frequency, percentage and rank of constraints faced by respondents in NPFS

Constraints	YES	NO	Rank
Cost of registration	6(4.0)	143(96.0)	7th
Absence of facilitator from duty post	12(8.0)	137(92.0)	6th
Unstable government policies	143(96.0)	06(4.0)	4th
Leadership problem within the group	143(96.0)	06(4.0)	3rd
Irregular loan disbursement	137(92.0)	12(8.0)	2nd
Difficulty in marketing of produce	143(96.0)	06(4.0)	1st
Cost of labour	18(12.1)	131(87.9)	5th

Source: Field survey (2013) **NB**: The values in parentheses are percentages

Changes in Production

Table 6 shows that on a general scale, production of crops and livestock amongst the NPFS farmers increased after their participation in the programme. Using the mean scores of yield, participants in all the enterprises recorded increase in yield after participation in NPFS. Maize increased from mean score of 2.53tons before participation to 4.60 tons after participation in the programme. Cassava increased in yield from mean score of 39.86tons before participation to 62.0tons after participation in the programme. Yam increased from mean score of 1.31tons before participation to 2.41tons after participation in the programme. In the animal sector, the mean score of the number of sheep increased from 1.0 before participation to 4.0 after participation. Goat increased from mean score of 2.0 before participation to 4.0 after participation in the programme. Broiler and cockerel production increased from mean score of 1.0 before participation in the programme to 2.0. While Layers production increased from mean score of 1.0 before participation to 3.0 after participation in the programme.

Generally, there is a marked increase in production after respondents' participation in NPFS, especially in the crop sector. This indicated that NPFS has a positive impact on farmers' production in the study area. This is in line with the goals and objectives of

NPFS which includes improving household food security of the populace through increase in productivity and sustainable use of natural resources. Oruche *et al* (2012) also found that after participating in National Special Programme for Food Security (NSPFS) people were living more comfortable life as a result of increase in their level of productivity.

Table 6: Mean Distribution of respondents' change in production for various enterprises before and after their participation in NPFS

	Before NPFS (2007)				After NPFS (2012)			
Enterprise	N	Minimum	Maximum	Mean	N	Minimum	Maximum	mean
Crop								
Maize	149	0.60	7.00	2.53	149	1.00	10.00	4.60
Cassava	149	1.00	134.00	39.86	149	3.00	220.00	62.00
yam	113	0.00	10.00	1.31	113	0.00	20.00	2.41
Livestock								
Sheep	102	0.00	4.00	1.00	102	0.00	16.00	4.00
Goat	102	0.00	5.00	2.00	102	0.00	10.00	4.00
Broilers	05	0.00	26.00	1.00	05	0.00	55.00	2.00
Cockerels	05	0.00	29.00	1.00	05	0.00	64.00	2.00
Layers	05	0.00	43.00	1.00	05	0.00	86.00	3.00

Source: Field Survey, (2013)

Table 7 revealed that there is significant relationship between age of respondents and their change in crop production ($r = -0.083$, $P < 0.05$). The relationship is, however, negative implying that increase in age may lead to decrease in crop production. Household size and change in livestock ($r = 0.375$, $P < 0.05$) are significantly related. This implies that, as the household size increases, production also increase significantly. The higher the family labour available to a farmer, the lesser the cost incurred on labour and the higher the return. This finding corroborates the assertion of Adegeye (1993), that family labour is very important in the establishment and maintenance of crops. In this study, educational status of respondents and change in crop production ($r = 0.391$, $P < 0.05$) and change in livestock production ($r = 0.191$, $P < 0.019$) are significantly related. This result corroborates the finding of Abiona (2010) who found a similar significant relationship between educational status and change in fish production.

There is no significant relationship between availability of NPFS elements to the respondents and change in their production. Table 8 shows that there is significant

relationship between crop change (r = 0.7000, p<0.05) and availability of NPFS elements. This implies that availability of NPFS elements would determine the extent of change in production before and after the programme.

Table 7: PPMC analysis of Respondents' personal characteristics and change in production

Variables	r-value	p-value	Decision
Age vs:			
Crop change	-0.083	0.005	S
Livestock change	0.158	0.055	NS
Household size vs:			
Crop change	0.161	0.002	S
Livestock change	0.375	0.000	S
Farming experience vs:			
Crop change	0.040	0.626	NS
Livestock change	0.245	0.003	S
Educational status vs:			
Crop change	0.391	0.000	S
Livestock change	0.191	0.019	S

NB: NS-Not Significant, S-Significant **Source**: Field Survey, (2013)

Table 8: PPMC analysis of relationship between availability of NPFS elements to respondents and their change in production

Variable	r-value	p-value	Decision
Availability vs:			
Crop change	0.700	0.000	S
Livestock change	-0.091	0.269	NS

NB: NS-Not Significant, S-Significant **Source**: Field Survey, (2013)

There was no significant difference in change in production of respondents before and after NPFS.

Table 9 shows that there is a significant difference in change in production of crop before and after programme (t=14.784, p<0.05). Also, significant difference was recorded in livestock production (t= -15.342, p<0.05) before and after NPFS. It therefore implies that NPFS generally has a positive and significant impact on respondents' production in the study area. In a related study, Tijani and Thomas (2011) also found that introduction of intervention programme better the lots of the participants in terms of output when compared with what they use to obtain before the intervention

Table 9: Analysis of change in production of respondents before and after NPFS

Variable	Description	Mean	N	Df	Std Deviation	Std Error Mean	t-value	p-value	Decision
Crops	Before	43.6960	149	148	37.98714	3.11203			
	After	68.9906	149	148	52.71950	4.31895	-14.784	0.000	S
Livestock	Before	2.9396	149	148	2.86457	0.23468			
	After	8.4564	149	148	6.76885	0.55453	-15.342	0.000	S

NB: S-Significant, df- degree of freedom **Source**: Field survey, (2013)

Conclusions

Based on the empirical findings, the following conclusions were made; The age of most of the farmers was within the economic active age. Hence, age was found to be an important feature that significantly assists in determining change in production, particularly change in crop production. Evidence in the study shows that education played a prominent role in change in production of the respondents. That is, farmers with higher level of education were able to produce more compared to their counterparts with lower education. Availability of NPFS elements significantly contributed to change in production of the respondents, especially crop enterprise.

Difficulty in marketing of produce appeared to be the most severe constraint facing respondents among others. Positive changes in production were observed after respondents' participation in NPFS, even though the changes were not very high. This implies the programme had positive impact on respondents' production.

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