



Comparative assessment of the impact of national fadama development project - 11 on beneficiaries' welfare in Nigeria

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ABSTRACT

An important social impact assessment of an intervention is the extent to which the project/intervention has impacted positively on the welfare of the beneficiaries. To this end, a comparative assessment of the impact of National Fadama Development Project (NFDP) - 11 on the beneficiaries and non – beneficiaries was conducted. Two local governments (one each from benefiting and non – benefiting) state was selected into the study. Internationally acceptable measures (age for weight, age for height of children (girls) of 0 - 3 years) were collected from the benefiting and non – benefiting farmers. Questionnaires were administered on 100 purposively selected fadama famers from each of the local government to elicit information on their NFDP – II benefits and fadama practices. Average weights and heights of the sampled children and their respective standard deviations were: 13.56 ± 3.45(kg); 78.9 ± 0.99(cm) and 9.93 ± 2.54(kg); 61.6 ± 1.31(cm) for the benefiting and non – benefiting farmers. Statistical analysis of the data indicated that there are significant differences in the heights and the weights of the children of benefiting and non – benefiting farmers. When sampled data were compared with the modeled data from FAO, 2006, the results indicated that there is no significant difference in the weights and heights of all the children. The increased income and improved standard of living of the benefiting fadama farmers could be attributed NFDP - 11 interventions. While the findings of this study should be applied with caution, it has however provided the scientific basis for the continuation of the programme in the benefiting areas and the initiation of the programme in the non – benefiting areas.

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Introduction

Generally, farmers in Nigeria were observed to be idle during dry seasons.⁶ Attempt at boosting their productivity at this period of the year led to the development of National Fadama Development Project (NFDP – 1). First National Fadama Development Project (NFDP - 1) funded by the World Bank and federal government of Nigeria became effective on February 23rd 1993 and closed on March 31st 1999.^{8, 9} By design and implementation of NFDP - 1, it only took care of the fadama crop farmers at the expense of other fadama resource users and this resulted in a lot of resource based conflicts in the benefiting areas of the country.⁹

Attempts at finding solutions to the problems⁷ resulted in the request by the federal government of Nigeria from the World Bank to finance National Fadama Development Project -11 (NFDP-11). NFDP - 11 was designed to run from January, 2004 to December, 2009. The main objective of NFDP-II is to sustainably increase the incomes of the fadama users through expansion of farm and non-farm activities with high value added output.

The World Bank assisted NFDP-11 covered twelve states including the federal capital territory (FCT), Adamawa, Bauchi, Gombe, Imo, Kaduna, Kebbi, Lagos, Niger, Ogun, Oyo and Taraba While a loan from African Development Bank (ADB) covered the programme in six states such as Kogi, Katsina,

Jigawa, Plateau, Kwara and Borno making a total of eighteen benefiting states in all.

Considering the design, investment and the robustness of the project, NFDP1 and NFDP 11 are major interventions in Nigerian wetland agriculture capable of transforming and improving the standard of living of the beneficiaries.^{10, 13} This research, however, propose to examine the socio-economic impact of NFDP-11 on the beneficiaries with the aim of giving scientific information about the importance of the project on the lives of the beneficiaries.

Literature Review

Smallholder agriculture is the dominant occupation of rural Nigerians which is characterized by rain-fed farming, low capital, land and labor investments and productivities and returns. Nigeria has a potential comparative advantage in the production of a variety of fresh vegetables during the dry season, livestock and fisheries products throughout the year. This is because, the country, is endowed with underground and surface water reserves, rich pastures and favorable agro-ecological conditions and alluvial deposit called fadama.

What is Fadama?

Fadama is an the Hausa name for irrigable land, flood plains and low lying areas underlined by shallow aquifers found along Nigeria's river system.

Nigeria with the assistance of the World Bank initiated the First National Fadama Development Project (NFDP – 1). NFDP

– 1 run from 1993 through 1999 to promote simple and low-cost improved irrigation technology. The wide spread adoption of the technologies enabled farmers to increase production, by more than 300%. The Second National Fadama Development Project is one of the major instruments for achieving overall development of the agricultural sector in Nigeria. The project, which was declared disbursement effective on May 27, 2004, is funded by the World Bank and the African Development Bank to the tune of US\$100 million and US \$30 million respectively. NFDP- 11 had the following allocations to the components:⁹

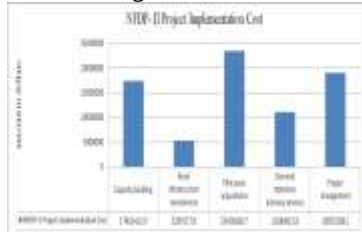


Figure 1: showing the NFDP-II implementation costs

The design of NFDP-11 draw heavily from the following key lessons learnt from the NFDP- 1 in the following ways:

- provision of substantial support to increase capacity of Fadama Community Associations (FCAs) such that Fadama Users Groups (FUGs) will be encouraged to undertake participatory and demand driven local development plans (LDPs) thereby improving cooperation and reducing conflicts among stakeholders in a rural communities:¹
- supporting produce preservation and storage technology thereby removing loss due to production and market gluts.
- development of local technology to support rural nonfarm enterprises through cold storage, packaging and processing activities.
- improve mechanisms for conflict resolutions
- support the provision of market(ing) infrastructures.
- emphasize stakeholders participation^{2,9}
- bring women into active production and supporting contribution that can be made by women.
- support improved natural resources management by making good environmental practice as important condition for preparation and implementation of local development plans (LDPs). The support to be given by NFDP- 11 will be in the form of:

Capacity Building: The NFDP- 11 is designed to support measures to train FCAs, and their FUGs ways of accessing advisory services, finance and skills to implement subprojects.

Leadership Development: NFDP -11 assisted the rural folks to organize meaningful associations and election of their executive committees, adopt rules and regulations governing their functions in a democratic way.

Rural - Infrastructure Investment: The NFDP-11 helped to create economic infrastructures and develop economic potentials of the fadama communities by investing on economic infrastructures.¹¹ These rural infrastructural investments include, construction of small scale agro –processing, rural road rehabilitation, market renovation, cold rooms, livestock pens, boreholes, water reticulation drainage system, outboard engines for fisheries production, pelleting machines, fishing nets and honey collection equipment.

Development Of Wealthy Communities: The project (NFDP-11) achieved this by making procurements in the community and by making use of the skilled/semi skilled workers recruited from the community for its project needs.

WORKINGS OF NFDP - 11

The Project Coordinating Unit (PCU); State Agricultural Development Programme (SADP) and Local Fadama Development Council (LFDC) on behalf of the federal, state and local governments respectively are responsible for the day-day coordination of the project at the federal, state and local government levels. These bodies, at all the levels will:

- serve as over sight body
- assess progress of implementation
- review and approve work plans and budgets
- execute, recruit and train facilitators and other stakeholders
- review and access financial projects and subprojects plans

Fadama Users Groups (Fugs): are economic interest groups of 10 - 40 households who on their own accord constitute an organ that engage in investment subprojects for the benefits of their members. Findings indicated that by 2007 mid – term review of the project, 11,968 FUGs and 217,210 membered FUGs have been formed cutting across gender lines thus reducing resource based conflicts and thus fostering bonding social capital within rural communities⁸.

Fadama Community Associations (Fcas): are apex organizations of FUGs consisting of 10 - 25 FUGs with legal status, bank account and an elected management committee which prepare subprojects proposals through participatory demand driven local development plans for investment funding.⁹ Oredipe, 2008 found that by the mid - term review of the project in 2007, 1,470 FCAs have been formed in all the participating local governments all over the federation.

Local Development Plans (Ldps): LDPs are sets of screened, feasible and sustainable subproject activities, participatory put together by members of different FUGs under the guidance of facilitators. The LDPs are now taken to the FCA and LFDC for scrutiny¹². It was reported that 1,312 Local Development Plans (LDPs) have so far been approved⁷. By the mid-term review of the project in 2007, report showed that 10,611 sub projects have been implemented including 1,918 rural infrastructure investment activities and 5,549 pilot asset acquisition support activities¹¹.

Also, the mid – term review of the project in 2007, indicated that \$33million has been disbursed into subprojects, 126,000 permanent jobs has been created and over 2million fadama farmers have derived direct or indirect benefits from the project⁷.

Nutrition & Child Growth

World Health Organization (WHO, 2006) child growth standard confirms that children born everywhere in the world and given the optimum start in life have the potential to develop to the same age for height and weight.^{12, 5}. The (WHO 2006), new standards prove that the difference in children's growth to age five are more influenced by nutrition, feeding practices environment and health care than genetics or ethnicity.⁵ Findings equally indicated that there is a positive correlation between households income and feeding habits. This research project however seek to test whether growth in children in benefiting fadama farmers are significantly different from those children from non- benefiting fadama farmers as a way providing scientific basis for continuation of the project in the benefiting areas and initiation of the project in non-benefiting local government.

This study was conducted in two local governments areas in Nigeria in the year 2007 to first quarter of 2008 (one local government (Egbeda) Oyo state representing NFDP - 11 beneficiaries and (Irewole) in Osun state representing non –

beneficiary in NFD - 11. Egbeda local government is located at latitude $7^{\circ} 16' 36''$ N $3^{\circ} 59' 44''$ E it has an area of 191 km^2 and a population of 281,573 at the 2006 census while Irewole local government is located at latitudes $7^{\circ} 36' 45''$ N $4^{\circ} 18' 08''$ E with an area of 271 km^2 and a population of 143,599 as at the 2006 census.



Figure 2: Study areas

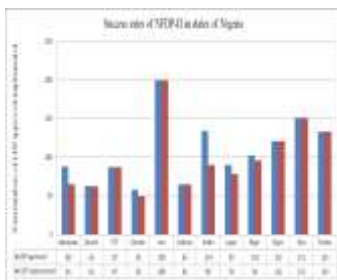


Figure 2: Showing the success rate at the SFDO level L

Research methods

Population

The target sub - population for this study are children (girls) between the ages of 0 - 3 years. Hundred children from each of Egbeda and Irewole local governments of Oyo and Osun states households were selected from Ako, Fatima, Sango and Sekere areas in Irewole local government and Ijoma and Church areas of Egbeda local government respectively. Their weights and heights were determined using a metre rule and weighing scale. Data collected (weights & heights) were subjected to descriptive statistical analysis.

Further data on the experience of the respondents on fadama farming, inputs used, species of vegetables cultivated, source of farm inputs (financial); pests ravaging the farm, income levels and expenditure patterns were equally collected from the two categories of the respondents

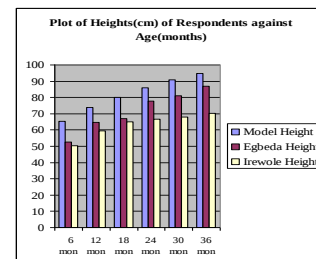
From the table above, The least fadama farmers in Egbeda are working on 1.2 acre and the highest of them are working on 3.4 acre But majority of them are only working on 2.0 acres Whereas in Irewole the least of the farmers are working on 0.8 acres while the highest of them are working on 3.4 acres but majority of them are working on 1.8 acres.

From the table above, some farmers in Egbeda are making \$200 per fadama season. While majority of them make \$550 and few of them make \$1,100. But in Irewole, some fadama farmers make \$110 and majority makes \$450 and also some of the make \$860. At every instance income realized in Egbeda is higher than that of Irewole. However, it was observed that majority of the fadama farmers are engaged in fadama farming as part time farming in the two local governments.

The pattern of expenditure per head/family in the two local governments are summarized above. The expenditure patterns are somehow similar with little differences. For example,

Irewole farmers spend at least \$40/head/family members whereas the highest amount spent per head in Irewole is \$100 and the majority spends \$60. Whereas in Egbeda is the minimum expenditure spent is \$30 while the average expenditure per family head is \$70 and the maximum being \$120 and are still having other sources of income.

Table 6 revealed what the households have been able to acquire in form of physical assets in the last three years. From the table 64.3% the households in Egbeda have been able to acquire radio in the last three years whereas only 35.7 % in Irewole are able to acquire radio. So also 69.2% of households in Egbeda have both TV and Video sets while only 30.8% have TV and Video set in Irewole. 60% of the respondents in Egbeda have been able to make furniture in the last three years while 40% are able to acquire furniture in Irewole.



Figures 3a: showing the weights and heights of Model, Egbeda and Irewole respondents

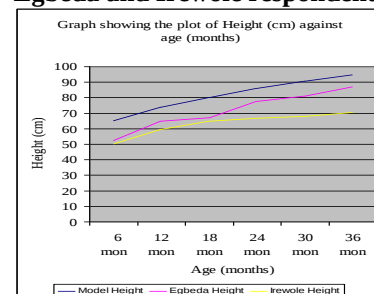
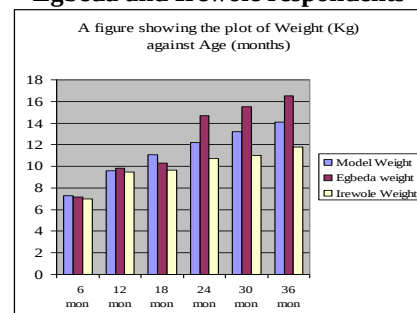


Figure 3b: showing the weights and heights of Model, Egbeda and Irewole respondents



Figures 3c: showing the weights and heights of Model, Egbeda and Irewole respondents

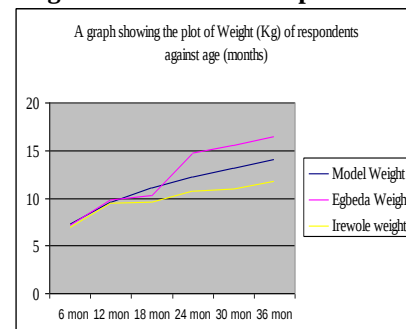


Figure 3d: showing the weights of Model, Egbeda and Irewole respondents.

Figures 3a, b, c & d show the graphical representation of the weights and heights of Modelled and respondents from Egbeda and Irewole local governments. The Model (weights and heights) data was obtained from WHO, 2006 while those of Egbeda and Irewole local governments were obtained from field survey of 2007. The data indicated that the highest growth (in heights) is recorded in modeled data than in the other two local governments at all instances and also the growth is higher at every instance in the respondents in Egbeda local government than in respondents from Irewole local government. With regards to weights, at age 6 – 12 months, the weight were nearly the same in the Model, Egbeda and Irewole but at age 18 - 36 months, the weights in the respondents from Egbeda local government is higher than in Model and respondents from Irewole local government while Model weight is higher than weights recorded for respondents in Irewole local governments. Statistical analysis of the result using the difference of two means (to compare weight and height of respondents in Egbeda and Irewole local governments) indicated that there is a significant difference in the heights and weights of the respondents in the study areas at 95% confidence level. Whereas, the two - way Analysis of Variance (ANOVA) to compare the Model, Egbeda and Irewole data indicated that there is no significant differences in the weights and heights of the respondents at 95% confidence level. This finding is in agreement with the WHO, 2006, who found that children who are given same start of life will have relatively same rate of growth irrespective of race or religion.

Summary, Conclusion & Recommendations

From the data collected and analyzed above, it is clear that there is a significant growth in children of benefiting (Egbeda) and in non-benefiting Irewole local government areas (when only the growth of children in the study areas are compared). Whereas there is no significant difference in the parameters considered (heights and weights) when the three populations (Modelled, Egbeda and Irewole data) are compared. This result is in agreement with the findings of WHO, 2006, who found that children that are between 0 – 36 months of age will have comparable/same rate of growth irrespective of race or religion.

This implied that the difference in growth rate between samples in Egbeda and Irewole data is only short term and can even out over time.

The robust design of the NFDP- 11 has informed the increased income and better standard of living amongst Egbeda Fadama farmers because of their

- better access to farm inputs and credits¹¹

- rural infrastructural development such as better roads and market infrastructures, bore holes, markets⁸ whereas there is no such intervention in Irewole local government.

However caution should be applied in application of the results of this finding because the research design (made use of questionnaires) relied on farmers memory in obtaining data and could be subjective because sometimes farmers underestimate their income for fear of taxation however, the study has provided scientific background for the continuation of the programme in existing areas and initiation of the programme in the new local governments in Nigeria.

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Table 1: showing project implementation cost of NFDP- II

ACTIVITIES	COST
Capacity building	\$ 17, 401, 413.90
Rural infrastructure investments	\$ 52, 855, 77.80
Pilot productive asset acquisitions	\$ 23, 436, 666.70
Demand responsive advisory services	\$ 11, 084, 015.80
Project management	\$ 19, 055, 208.10

Table 2: Showing the success rate of State Fadama Development Office under NFDP – 11

S/N	SFDO	LDP prepared	LDP approved	LDP implemented	% of LDP implemented	On going LDPs	% of ongoing LDP
1	Adamawa	108	88	65	73	23	26
2	Bauchi	86	63	62	98	1	2
3	FCT	92	87	87	100	-	-
4	Gombe	58	58	50	86	8	14
5	Imo	200	200	200	100	-	-
6	Kaduna	65	65	65	100	-	-
7	Kebbi	134	134	90	67	44	33
8	Lagos	90	90	78	87	12	13
9	Niger	235	102	96	94	6	6
10	Ogun	121	121	121	100	-	-
11	Oyo	153	151	151	100	-	-
12	Taraba	133	133	133	100	-	-

Source: NFDO, 2007

Table 3: Farm size in acre

Farm Size	Egbeda	Irewole
Lowest	1.2	0.8
Average	2.0	1.8
Highest	3.4	3.4

Source: Field survey, 2007 - 2008

Table 4: Income of the respondents/season

Income	Egbeda	Irewole
Lowest	\$200	\$110
Average	\$550	\$450
Highest	\$1100	\$860

Source: Field survey, 2007 - 2008

Table 5: Average expenditure in the sampled households/head/month

Expenditure	Egbeda	Irewole
Lowest	\$30	\$40
Average	\$70	\$60
Highest	\$120	\$100

Source: Field survey, 2007- 2008

Table 6: Assets acquired in the last three years

Assets	Egbeda	Irewole
Radio	64.3 %	35.7 %
TV & Video Set	69.2 %	30.8 %
Furniture	60.0 %	40 %

Source: Field survey, 2007- 2008

Table 7: Parameters (weights & heights) in the modeled & surveyed data

Age	Model		Egbeda		Irewole	
	Height(cm)	Weight(Kg)	Height(cm)	Weight(Kg)	Height(cm)	Weight(Kg)
6 month	65.20 ± 3.25	7.26 ± 1.04	52.50 ± 2.42	7.16 ± 0.82	50.30 ± 5.32	6.98 ± 0.46
12 month	73.80 ± 3.68	9.59 ± 1.30	64.80 ± 3.40	9.85 ± 0.67	59.50 ± 7.78	9.50 ± 0.71
18 month	80.20 ± 4.11	11.10 ± 1.47	67.00 ± 1.83	10.30 ± 0.58	65.00 ± 4.32	9.63 ± 0.48
24 month	85.90 ± 4.41	12.20 ± 1.70	77.70 ± 2.94	14.70 ± 0.82	66.80 ± 8.44	10.70 ± 0.98
30 month	90.80 ± 4.80	13.20 ± 1.91	81.00 ± 0.82	15.50 ± 0.58	68.00 ± 6.34	11.00 ± 0.84
36 month	94.70 ± 5.06	14.10 ± 2.16	87.00 ± 1.88	16.50 ± 0.55	70.40 ± 3.01	11.80 ± 1.92

Source: <http://www.cdc.gov/growthcharts> & field survey, 2007- 2008**Table 8: Result of Statistical Analysis Using Difference of Two Means**

Parameter	t tabulated	t calculated	degree of Freedom	decision
Weight	1.68	2.96	198	sig
Height	1.68	4.31	198	sig

Table 9: Result of Statistical Analysis Using Two Way Analysis Of Variance @ 95%

Parameters	F tabulated	F calculated	degree of freedom	decision
Weight	11.33; 10.61	2.21; 3.00	196	insig
Height	5.67; 10.61	2.21; 3.00	196	insig