

IMPACT OF GREEN RIVER PROJECT IN SOCIO-ECONOMIC DEVELOPMENT OF RURAL LIVES IN RIVERS STATE, NIGERIA

NLERUM, F.E.

*Department of Agricultural and Applied Economics/Extension,
Rivers State University of Science and Technology, P.M.B 5080,
Port Harcourt, Nigeria. E-mail:frankezi@yahoo.com.*

ABSTRACT

The study determined the impact of Green River Project on socio-economic development of rural lives in Rivers State, Nigeria. Copies of the questionnaire were used in eliciting data from 90 randomly selected beneficiaries. The impact measuring model and the Wilcoxon signed-rank test were used for data analyses. Results indicated that of the 25 development indicators studied, the Project made a higher impact on 18 indicators on beneficiaries, while low impact was recorded on 7 indicators. Impact of socio-economic indicators achieved within the Project did not differ significantly with those achieved before participating in the Project. Sustained effort of the Project is recommended to improve on the magnitude of the values of higher impact achieved by the Project.

Keywords: Impact, Green River Project, development, rural lives.

INTRODUCTION

Impact evaluation measures changes in the well-being of individuals, households, communities or firms that can be attributed to a particular Project (Baker, 2000). The above author stated further that impact evaluation is needful because it helps to provide baseline evidence of effectiveness of an intervention, helps in building the knowledge base of what works in development, assists to justify programme spending and helps to assess the causal link between an intervention and an outcome of interest. This impact study was carried out on Green River Project (GRP).

The Green River Project is an agricultural extension and rural development initiative of the Nigerian Agip Oil Company Limited. According to the Agricultural and Rural Management Institute (ARMTI, 1992) and GRP (2007), the GRP came to existence in 1987 when the Federal Government of Nigeria called on multinational oil producing companies in the country to work hard towards developing the agricultural

production base of their host communities which was fast deteriorating as a result of the increasing activities of oil companies (Nnodim and Isife, 2004). The activities of Green River Project are expected to culminate into effects that would result into socio-economic development of rural lives in its host communities.

Development is a multi-dimensional process involving the reorganization and reorientation of the economic and social system of a people (Inyanga, 2007). Although opinions may vary as to what constitutes development, in which ever way it is looked at, indices that point to development are those that link it to the delivery of inherent social and economic services to the society. Indices of social and economic development expected to be derived by the beneficiaries of GRP as examined by this study were those that revolve around improvement in household equipment, mobility, shelter, savings and investments, expansion in farm production, etc.

Onwurah, *et al.*, (2006) observed that the increase in the number of beneficiaries of Green River Project's extension activities is not in doubt, but what is in doubt is increase in the socio-economic capabilities of the beneficiaries. It is on the basis of the above observation that this study was set out to address the research problem of what are the socio-economic development indicators achieved by beneficiaries as a result of the intervention of this Project? Given this research problem, the objective of the study was to determine the socio-economic development indicators achieved by beneficiaries of GRP before and within participation in this agricultural extension project. The hypothesis derived from the study objective was that, there is no significant difference between the achievement of socio-economic development indicators of beneficiaries before and during the period of participation in the Project.

METHODOLOGY

This study was carried out in the Rivers State of Nigeria. The State is one of the 36 States of Nigeria. It is located in the South-South geopolitical zone of the country. Rivers State is bounded in the south by the Atlantic Ocean, in the north by Imo, Anambra and Abia States, in the east by Akwa Ibom State and in the west by Bayelsa and Delta States (Orubo, 2004). The population of the State according to the 2006 census is 5,185,400 people (The Guardian, 2007). It is one of the Niger Delta States along with eight others. The people of the State practise agriculture in form of crop farming, fishing and livestock keeping as their indigenous occupation.

The questionnaire was the instrument used for data collection. Copies of the questionnaire were distributed to 90 randomly selected respondents which were made up of beneficiaries of the Project. These respondents were drawn from three randomly selected communities which were within the operational area of the Project in the State. The communities are, Obrikom, Omoku and Mgbede. Thirty (30) respondents

were randomly drawn from each of the three communities to give the total sample size of 90 respondents. The list of communities and beneficiaries obtained from the Project's field office in Obrikom was used for sampling.

Data from the field were computer analyzed with the Statistical Package for Social Science (SPSS) version 15 and excel 2007 models. The impact evaluation measuring model which was cited by Nwachukwu (2008) was used in the analysis of the study objective. The model states that the impact (O_1) of a Project is determined by the score on measurement after intervention (E_2) minus the score on measurement before intervention (E_1). Mathematically, the model is presented as: $O_1 = E_2 - E_1 \dots 1$, where O_1 = impact, E_2 = score of indicators achieved within the period of participation in the Project and E_1 = score of the same indicators achieved before participation in the Project.

The analyses were done for five years before participation and five years after joining the Project. As a decision rule, positive outcomes from the above analyses were read off as higher impact and means that more of the variables were achieved within the Project. Negative outcomes on the other hand were read off as low impact and means that more of the variables were achieved before participating.

Impact for farm size, wet cassava root and maize grains per beneficiary were estimated with the use of football field, the farmers' full bags and head pans respectively and converted into hectares or tonnes as the case may be per planting season as follows:

- i) **Farm Size:** Two football fields were approximated to be equal to one hectare. The total football fields achieved by all respondents were then converted into hectares by dividing the sum by two. The outcome was then divided by the total number of respondents to obtain the mean farm size achieved per respondent.
- ii) **Wet Cassava Root:** A farmer's full bag of wet cassava root weighed 100

kilogramme (0.1 tonne) as observed in the field survey. This weight was used to multiply the total number of bags produced by all respondents and divided by the total number of respondents to obtain the mean per person.

- iii) **Maize Grains:** From the field survey, a full head pan of dried grain weighed 10 kilogramme (0.01 tonnes). This weight was used in multiplying the total number of head pans produced by all respondents and dividing by the total respondents to obtain the mean achievement per person.

The hypothesis of the study was tested with the Wilcoxon signed-rank test. The model used is presented as:

$$Z = \frac{\frac{T - n(n+1)}{4}}{\frac{\sqrt{n(n+1)(2n+1)}}{24}} \dots 2$$

Where:

- T = Absolute sum of negative rank of difference for indicators before and within Project participation.
- n = Number of observations.
- Z = Wilcoxon test value (impact).

RESULTS AND DISCUSSION

Household Equipment Achieved: Table 1 showed that the Project made low impact (-39) and (-3) respectively in the purchase of radio and television among the respondents. Higher impacts were however achieved in the acquisition of video machine (13); set of upholstery chairs (10) and mobile telephone (28).

Mobility Purchased: The impact of the Project on respondents in the purchase of bicycle and motor cycle were low (-24) and (-7) respectively. Higher impacts were made in the purchase of canoe (30), engine boat (2) and any-four wheeled vehicle (2). This finding on .

Table 1: Impact of the Project on Socio-economic Development Indicators of Beneficiaries

S/No	Socio-economic Indicators	Achievement		
		Before GRP (1997-2002)	Within GRP (2003-2008)	Impact
		(E ₁)	(E ₂)	(O ₁)
1.	Household Equipment Purchased (item count)			
	▪ Radio	60	21	-39
	▪ Television	34	31	-3
	▪ Video machine	24	37	13
	▪ Set of upholstery chairs	24	34	10
	▪ Mobil telephone	17	45	28
2.	Mobility Purchased (item count)			
	▪ Bicycle	35	11	-24
	▪ Motor cycle	24	17	-7
	▪ Canoe	10	40	30
	▪ Engine boat	9	11	2
	▪ Any four-wheeled vehicle	7	9	2
3.	Shelter Built			
	▪ Mud/thatch house	11	7	-4
	▪ Mud/zinc house	11	7	-4
	▪ Block/zinc house	24	11	-13
	▪ Gathering materials for block/zinc house	22	32	10

Table 1 Contd.

S/No	Socio-economic Indicators	Achievement		
		Before GRP	Within GRP	Impact
		(1997-2002)	(2003-2008)	
		(E ₁)	(E ₂)	(O ₁)
4.	Savings and Investments			
	▪ Opened Bank Account	22	35	13
	▪ Opened Fixed Deposit Account	10	17	7
	▪ Purchased Shares	2	14	12
	▪ Participate in Contribution (<i>Ntu</i>)	4	19	15
	▪ Purchased Land	6	23	17
5.	Mean Farm Size Per Farmer (count in hectares)	0.70	2.41	1.72
6.	Mean Sheep/Goat Size per farmer (herd count)	2.72	15.67	12.94
7.	Mean Fishpond Number per Farmer (count)	0.29	2.01	1.72
8.	Mean membership in social group (count)	0.17	2.67	2.50
9.	Mean Annual yield of wet cassava root per farmer (tones/season)	2.33	8.46	6.12
10.	Mean Annual yield of maize grain per farmer (tones/season)	0.27	1.19	0.92

Source: Field Survey, 2009

any-four wheeled vehicle disagreed with the study of Gbadegesin, (2002) where adoption of improved technologies led to 0% in the purchase of cars. Positive impact on engine boat and any-four wheeled vehicle implies that the Project is assisting the respondents to obtain faster means of rural transportation for the marketing of their farm products and purchase of farm inputs.

Shelter Built: The resources obtained from participating in this Project made lower impact on respondents in the building of mud-/thatch houses (-4), mud/zinc houses (-4) and block/zinc houses (-13). High impact (10) was achieved in the gathering of materials for construction of zinc/block houses. The implication of this high impact is that more respondents would construct modern houses of their own as they continue to adopt the agricultural technologies of the Project.

Savings and Investment Achieved: This project made higher impact on respondents in all the five variables studied under this heading as shown in Table 1. The variables are opened bank account (13), opened fixed deposit account (7), purchased shares (12), participation in contribution (15) and purchased land (17). This finding connotes that the financial status of these respondents are being enhanced as they adopt the agricultural technologies of the Project.

Farm Size Achieved: Findings indicated that the Project made a mean high impact of 1.72 hectares in farm sizes of its beneficiaries. Expansion in farm sizes cultivated usually would lead to improved farm yield and income at the end of the farming season.

Sheep and Goat Size Achieved: Higher mean impact of 12.94 animals per livestock farmer was achieved by the Project. This finding shows that the Project has made an improvement on the earlier findings of

Odeyinka and Okunada (2005) that 2-4 animals per farmer was the herd size of sheep and goat in rural villages of Nigeria.

Number of fishpond Achieved: Higher mean impacts of 1.72 fishponds were achieved per respondent. This means that the Project has assisted the respondents to expand their number of fishponds in the State.

Membership in Social Group Achieved: The results showed a higher impact achievement of 2.50 social groups by each beneficiary in the Project. This improvement may have occurred because of the Project's emphasis on formation of co-operative society by its members.

Yield of Wet Cassava Root Achieved: The result showed that there was a higher annual

impact of 6.12 tonnes output of wet cassava root by each beneficiary of the Project. This implied that, given the national farm gate price of wet cassava root at N19.97 per kilogramme (National Bureau of Statistics, 2006), each Project beneficiaries made an additional annual farm income of N122,216.40 better than their income before participating in the Project. This additional farm income was on the yield of cassava root alone.

Yield of Maize Grain: Findings have shown that a higher impact of 0.92 tonne per hectare per season was achieved by each beneficiary in the Project. With the farm gate price of dry maize grain as N20.14 per kilogramme (National Bureau of Statistics, 2006), it would mean that each of the beneficiaries are making an additional annual profit of N18,528.80 from maize grain alone.

Table 2: Summary of Wilcoxon Signed-Rank Test Showing Differences in Impact Before and within Project Participation

Subject	Ranks	N	Mean Rank	Sum of Ranks	Wilcoxon Test Statistics
Impact within minus (-) impact Before participation	Negative	7 ^a	16	112	
	Positive	18 ^b	16	283.5	
	Ties	0 ^c			
	Total	25			
Z (calculated)					-1.35
Z (tabulated)					0.41

Source: Field Survey, 2009. Alfa level = 0.05

N = Number of observation.

a = Achieved observations within Project is less than achieved observations before Project.

b = Achieved observations within Project is greater than achieved observations before Project.

c = Achieved observations within Project is equal to achieved observations before Project.

Results in Table 2 showed that the Z-calculated (-1.35) was less than Z-tabulated (0.41) at the alfa level of 0.05. Since this result was not significant, we accepted the null (Ho) and concluded that the socio-economic development indicators achieved

by beneficiaries within the Project did not differ significantly from their before Project participation achievement. This implied that, although the beneficiaries have experienced evidence of improved socio-economic lives within participation in the Project, the magnitude of this improvement was not high enough to bring about significant development in their socio-economic lives.

CONCLUSION

Results of the study have shown evidences of higher socio-economic development impact among beneficiaries within than before Project participation. Out of the 25 socio-economic variables studied,

18 had positive values which represented high impact, while the rest 7 had negative values which represented low impact. Result of test of hypothesis showed no significant difference between achievement of socio-economic development indicators before and within Project participation. A sustained effort of the Project is recommended to improve on its areas of low impact. As the impact before and within participation did not differ significantly, the project should be further sustained to raise its present magnitude of positive impact on the studied development indicators in the state.

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