



Thesis

By

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OWEI

**THE DEPARTMENT OF
GEOGRAPHY
UNIVERSITY OF PORT
HARCOURT
PORT HARCOURT,
RIVERS STATE**

**Planning for Rural Development in
Nigeria: a Case Study of the Impact
of Three Rural Development
Programmes in the Rivers State**

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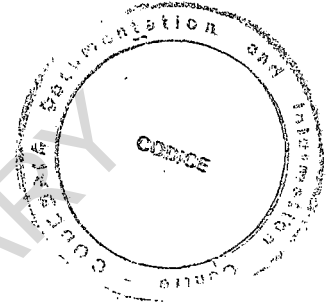
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PLANNING FOR RURAL DEVELOPMENT IN NIGERIA:
A CASE STUDY OF
THE IMPACT OF THREE RURAL DEVELOPMENT PROGRAMMES
IN THE RIVERS STATE

BY

OPUENEBO BINYA OWEI

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CERTIFICATION

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PLANNING FOR RURAL DEVELOPMENT
IN NIGERIA: A CASE STUDY OF THE
IMPACT OF THREE RURAL DEVELOPMENT
PROGRAMMES IN THE RIVERS STATE

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THE BOARD OF EXAMINERS DECLARES AS FOLLOWS:
THAT THIS IS THE ORIGINAL WORK OF THE
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PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
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DEDICATION

This Thesis is dedicated to the memory of my father, Deacon David Dabere Tom George for laying the sound foundation of my educational endeavours.

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Ultimate gratitude must go to the Lord Jesus for indeed, it is not of him that willeth, nor of him that runneth, but of God that sheweth mercy" (Romans 9.16).

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ABSTRACT

Rural development problems have become the most enduring ones in Nigeria's development planning experience. The Rivers State which is an integral part of the country suffers same. To date both the federal and state governments have initiated and implemented several programmes aimed at improving the socio-economic conditions of rural people. Such programmes have ranged from single-sector agricultural programmes to more integrated attempts in recent years. Also, the scale of rural development programmes have become more grandiose and more expensive.

However, the fact remains that rural areas are still bedevilled by poverty and low productivity. A number of arguments have been made to account for this situation. One of the most critical of these has been the failure of programmes in achieving their objectives. Explanations for this trend range from management problems including poor implementation and funding, to the politics of the rural development planning process. More needs to be done however, in order to decipher the inter-relationships between factors influencing programme planning and implementation; and between key actors involved in the different agencies. This study is a contribution in this direction.

Based on the evaluation of three priority rural development programmes: the DFRRRI feeder roads; the agricultural extension programme and the School-to-Land programme, the study attempted to measure the direct social and economic impacts of rural communities in the Rivers State. For each programme, a set of indicators of change and measures of such indicators were derived. A set of three criteria - income, productivity and social and economic welfare - formed the basis of impact assessment. These criteria were derived from programme objectives. The study covered a total of twenty-two villages and towns in five local government areas of the State and covered the period from 1985 to 1992. Data collection techniques utilized both person-to-person questionnaire administration and interview schedules at agency and community levels.

Data analysis using inferential and descriptive statistics showed that the income situation in study villages had not improved. In many cases it had actually worsened. Productivity on the other hand had generally increased but this increase was not attributed to the intervention of the programmes. Social and economic welfare has also not improved. Distributional impact showed instances of discrimination against women and poorer rural people.

In the case of the extension programme, very few have benefited from the services, either in form of advice or inputs. The School-to-Land programme has succeeded largely in antagonizing local people and the impact of the feeder roads programme has been watered down by unusable condition for most of the year.

When the impact of the programmes were examined in the broader context of their specific programme environments, analysis showed conflicts, lack of co-ordination, deliberate interventions and poor planning. Other factors were implementation problems including mismanagement, the absence of monitoring and evaluation procedures and absence of public participation. The study also emphasized the complexity of the programme environment particularly its influence on programme design and implementation procedures. In each case study several actors exist who by their intervention influenced the scale of programmes, funding and other elements of design, thereby contributing to the observed dichotomy between the objectives the programmes were initiated to achieve and what the actual impact from their implementation had been on the intended beneficiaries.

TABLE OF CONTENTS

Identification	i
Approval	ii
Dedication	iii
Acknowledgement	iv-v
Abstract	vi
Table of Contents	ix
List of Tables	xiv
List of Figures	xix
Appendices	xxi
CHAPTERS	
1. Introduction	1-27
1.1 Statement of the Problem	1
1.2 Research Objectives	8
1.3 Statements of Hypotheses	8
1.4 Brief Statement on Study Area	10
1.5 Scope of the Study	14
1.6 Relevance of Study	15
1.7 Limitations of the Study	16
1.8 Rural Development Planning in the Rivers State: a Summary	18
2. Methodology	28-52
2.0 Introduction	28
2.1 Impact Assessment	29
2.1.1 Specification of Programme Objectives	29
2.2 Measures and Indicators	31

2.2.1	Measurement and Indicators for DFRI Feeder Roads Programme	36
2.2.2	Sampling Procedure For DFRI Feeder Roads	36
2.2.3	Sampling Procedure for Agricultural Extension Programme	43
2.2.4	Measurement and Indicators for School-to-Land Programme	44
2.2.5	Sampling Procedure for School-to-Land Programme	48
2.3	Instrumentation and Data Collection	48
2.4	Data Analysis	50
3.	Review of Relevant Research and Theoretical Considerations	53-102
3.1	Introduction	
3.2	Basic Issues In Rural Development and Planning in Nigeria	53
3.2.1	Resource Allocation and Urban Bias	54
3.2.2	Management of Rural Development Programmes and Policy Implementation	56
3.2.3	Rural Development Programmes Impact	60
3.3	Relevant Theory	67
3.3.1	The Meaning of Development	67
3.3.2	Development as Economic Growth: The Lewisian Rational	68
3.3.3	Industrial Led Development: The Myth of the Trickle-Down and Rural Poverty	69
3.3.4	Development as Modernization: The Rostowian Model	70
3.3.5	Development as a Process of Transformation	72

3.4	The Concept of Rural Development	74
3.5	The Objectives of Rural Development Planning	79
3.5.1	The Objective of Growth	80
3.5.2	The Objective of Self-Reliance	84
3.5.3	The Objective of Community Participation	87
3.5.4	Summary	89
3.6	Analytical Framework	90
4.	Socio-Economic Impact Analysis of the Feeder Roads Programme of the Directorate of Food, Roads and Rural Infrastructure	103-161
4.1	Programme Description	103
4.1.1	Historical Background	103
4.1.2	Feeder Roads Programme Coverage	104
4.2	Impact Analysis of Directorate of Foods, Roads and Rural Infrastructure Feeder Programme	104
4.2.1	Characteristics of Respondents	105
4.2.2	Impact of DFRRRI Feeder Roads on Rural Incomes	109
4.2.3	Impact of the DFRRRI Feeder Roads Programme On Rural Productivity	118
4.2.3.1	Agricultural and Other Production	118
4.2.3.2	Change in Patterns of Accessibility for Production and Sale of Goods	122
4.2.4	Impact of Feeder Road On Social and Economic Welfare	137
4.3	Assessment of the impact of the DFRRRI Feeder Roads In Relation to the Planning Environment	145
4.3.1	The Controllable Environment of DFRRRI	146
4.3.2	The Influenceable Environment of DFRRRI	150

4.3.3 The Appreciated Environment of the DFRRI Feeder Road Programme	154
4.4 Chapter Summary	156
5. Socio-Economic Impact of the Rivers State Agricultural Development Programme (RISADEP) Extension Service	162-221
5.1 Programme Description	162
5.1.1 Historical Background	162
5.1.2 Programme Coverage	163
5.2 Impact Analysis of Agricultural Extension Programme	163
5.2.1 Characteristics of Respondents	164
5.2.2 Impact of the Agricultural Extension Programme On Rural Incomes	167
5.2.2.1 Comparative Analysis of Agricultural Incomes from 1987 to 1991/92	168
5.2.2.2 Impact of Agricultural Extension Programme on Expansion of Productive Capacity	172
5.2.3 Impact of Agricultural Extension Programme On Productivity	179
5.2.3.1 Reaching the Target Groups	179
5.2.3.2 Increase in Initiative and Independence	201
5.2.4 Impact of Agricultural Extension Programme On Social and Economic Welfare	202
5.3 Assessment of the Socio-Economic Impact of the Agricultural Extension Service In Relation to the Rural Development Planning Environment	205
5.3.1 The Controlled Environment	205
5.3.2 The Influenceable Environment	214
5.3.3 The Appreciated Environment	216

5.4 Summary of Findings on the Agricultural Extension Programme	217
6. Socio-Economic Impact of the School-to-Land Programme	222-257
6.1 Programme Description	222
6.1.1 Historical Background	222
6.1.2 Programme Coverage	224
6.2 Socio-Economic Impact of School-to-Land Programme	225
6.2.1 Characteristics of Respondents	225
6.2.2 Impact of School-to-Land Programme On Income	227
6.2.3 The Impact of School-to-Land Programme Social and Economic Welfare	230
6.3 The Planning Environment of the School-to-Land Programme	234
6.3.1 The Controlled Environment	234
6.3.2 The Influenceable Environment of the School-to-Land Programme	247
6.3.3 The Appreciated Environment of the School-to-Land Programme	253
6.4 Summary of Findings on School-to-Land Programme	254
7 Conclusion	258-282
7.1 Summary of Major Findings of the Study	258
7.2 Implications for of the Study for Further Research	264
7.3 Recommendations	273

List of Tables		
Table	Title	Page
1.1	Average Monthly Household Rural Income	4
1.2	Rural Unemployment 1984-1992	5
1.3	National Agriculture Rural Development Programmes	6
1.4	Summary of R/D Programmes of the R/S from 1970 to Date	23
1.5	Implementation Ratio for R/D Projects of the R/S Government	24
2.1	Impact Assessment Criteria for DFRRRI Feeder Roads	34
2.2	Sampling Frame for DFRRRI Phase I Feeder Roads Programme in R/S and Settlement Stratification	35
2.3	Population Size Distribution of Study Villages	36
2.4	Impact Assessment Criteria for Agricultural Extension Programme	41
2.5	RISADEP Agriculture Extension Programme Circle Operational Bases	42
2.6	Impact Assessment Criteria for School-to-Land Programme	46
2.7	Sampling Frame for School-to-Land Programme Impact Assessment	46
4.1	Age of Respondents	105
4.2	Length of Stay In Locality	106
4.3	Educational Status	107
4.4	Occupational Status	108
4.5	Participation in Local Organizations	109
4.6	Average Annual Income in 1987	110
4.7	Average Annual Income in 1991/92	110

4.8	Cross Tabulation of Income for 1987 1987 and 1991/92	112
4.9	Reasons for Differential Income Between 1987 and 1991/92	113
4.10	Cross-Tabulation of Annual 1987 Incomes and No increase in size Land Holding after DFRRRI Road Programme	114
4.11	Cross Tabulation of Annual 1987 Income and increase in Size of Land Holding After DFRRRI Road Programme	144
4.12	Land Prices (Per Hectare in Pre- and Post- Programme Periods	116
4.13	Reasons for Increase In Cost of Land Between 1987 and 1991/92	117
4.14	Usual Output of Farm Produce Harvested Weekly Throughout the Year (Vegetables and Cassava)	118
4.15	Usual Output of Farm Produce Harvested Weekly for a Maximum of Three Months: Fruits (Basket) Maize (Basket) Plantain (Bunch)	119
4.16	Usual Output of Farm Product Harvested Once a Year (Yam)	119
4.17	Relationship of DFRRRI Road and Farm Output	121
4.18	Present Access to Farm	122
4.19	Cross-Tabulation of Mode of Transportation Used to Farm/Fishing Before and After DFRRRI Road	124
4.20	Cross-Tabulation of Mode of Goods Transportation Before and After Construction of DFRRRI Road	125
4.21	Cross-Tabulations of Markets for Goods Before and After Construction of DFRRRI Road	126

4.22	Quantity of Vegetables Maize, Cassava, and Plantain Transported to Market	127
4.23	Quantity of Yams Transported to Market	128
4.24	Transporters Length of Service Along the Road	129
4.25	Increase In volume of Goods Transported Over the Period	129
4.26	Change in Weekly Trips	130
4.27	Cause of Change In Trip Frequency	130
4.28	Travel Distance from House to Farm	131
4.29	Travel Time from House to Farm	131
4.30	Cross-Tabulation of Distance to Farm Prior to the DFERRI Road and the Travel Time to Farm After the Programme	132
4.31	Cross-Tabulation of Distance and Time to Farm Following the DFERRI Road	133
4.32	Distance to Market Before and After DFERRI Road	134
4.33	Size of Farms	139
4.34	Cross-Tabulations of Size of Farm and Increase In Income	139
4.35	Cross-Tabulation of Members of Local Organizations Benefiting from DFERRI Road According to Locality	141
4.36	Type of Impact of Road On Organization	142
4.37	The Rural Development Environment of the DFERRI Roads Programme	143
4.38	Financial Statement Balance Sheet of DFERRI Rivers State Capital Account as at March 1988	145
4.39	Household Contribution to Road Programme	153

4.40	Amount of Cash Contribution By Household to Road Programme	154
5.1	Sex of Respondents	164
5.2	Age of Respondents	164
5.3	Educational Status of Respondents	165
5.4	Occupation of Respondents	166
5.5	Length of Stay in the Locality	166
5.6	Length of Occupational Practice	166
5.7	Average Monthly Agricultural Incomes 1987, 1990 and 1991/92	170
5.8	Cross-Tabulation of 1987 and 1990 Monthly Income	170
5.9	Cross-Tabulation of 1987 and 1991/92 Monthly Income	171
5.10	Farm Size	173
5.11	Size of Operations	173
5.12	Increase In Size of Operations	174
5.13	Cross-Tabulations of Increase In size of Operations Attributed to Extension Services With Frequency of agent Visit and Type of Input Received	177
5.14	Cross-Tabulations of Increase In Size of Operations Not Attributed to Extension Services with Frequency of Agent Visit and Type of Input Received	177
5.15	Employment of Labour from 1987 to 1991/92	178
5.16	Factors Influencing Numbers of Persons Employed Between 1987 and 1991/92	178
5.17	Receipt of Extension Services	180
5.18	Frequency of Extension Agent Visit	181

5.19	Cross-Tabulation of Receipt of Extension Service and Type of Input Received	182
5.20	Cross-Tabulation of Frequency of Extension Visit and Type of Input Received	182
5.21	Cross-Tabulation of Sex of Respondent and Type of Input Received	182
5.22	Cross-Tabulation of Educational Status of Respondents and Type of Service Received	183
5.23	ANOVA Table for Testing the Significance of the Set of Regression Co-efficients for the Receipt of Extension Service	190
5.24	ANOVA for Testing the Significance of the Set of Regression Co-efficients for the Frequency of Extension Agent Visits to Farmers and Fishermen	191
5.25	ANOVA Table for Testing the Significance of the Set of Regression Co-efficients for the Type of Input Received by Farmers and Fishermen	192
5.26	Cost of Services Received	194
5.27	ANOVA Table for Testing Significance of the Set of Regression Co-efficient for the Cost of Extension Services Received	195
5.28	Rating of Village Extension Service	202
5.29	Cross-Tabulation of Farm Size and Possession of Household Assets	204
5.30	Cross-Tabulation of Farm Size and Size of Operation	204
5.31	The Rural Development Planning Environment for Agricultural Extension Services Programme	208
5.32	RISADEP Farm Visits by Extension Agents (1988-1991)	210

5.33	RISADEP Contact Farmers Visit (1989-1991)	210
5.34	Funding Status of RISADEP 1988-1991	213
6.1	School-to-Land Farm Hectarage (as at 1987)	224
6.2	Age/Sex of Respondents	225
6.3	Marital Status of Respondents	226
6.4	Educational Status of Respondents	226
6.5	Comparison of Recruitment and Farmers Still on the Programme	226
6.6	Initial Source of Finance for Young Farmers	228
6.7	Willingness of School-to-Land Participants to Continue in Farming	232
6.8	Distance from Home to School-to-Land to Farm	232
6.9	Mode of Transport to Farm	232
6.10	Time Taken to Travel from Home to Farm	233
6.11	Amount Spent Annually on Clearing Weeding and Planting	234
6.12	Use of Labour on Farm	234
6.13	Programme Benefit	235
6.14	The Planning Environment of the School-to-Land Programme	235
6.15	Summary of Cost Estimates of Implementation of the First Phase of the School-to-Land Programme	242
6.16	Trained Young Farmers Initial List of Approved Loan Applications	245

6.17	Internally Generated Revenue of the School-to-Land Programme 1985 to 1992	247
6.18	Medium of Information on School-to-Land Programme by Communities	249
6.19	Programme Benefit to Communities	250
6.20	Disagreement with Programme in Communities	250
6.21	Contribution of Local Communities to School-to-Land	253

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FIGURES

Figure	Title	Page
1	Study Area	11
2	LGA Structure of River State	12
3	Rivers State Natural Land Units	13
4	Villages Covered In DFRRRI Feeder Roads Programme	
5	Population Size Distribution Map	40
6	Villages Covered By Extension Services Programme	45
7	School-to-Land Farms	47
8	Project Organization and Environment in Rural Development	92
9	An Organizations Relations to its Environment	93
10	Cross-Section of DFRRRI Feeder Road	149
11	Least Square Regression Line graph	197
12	Scatter diagram plotting cost of inputs (dependent variable) and Frequency of Extension agent visit (independent variable)	198
13	Scatter diagram plotting cost of inputs (dependent variable) and the number of persons employed in 1991/92	198
14	Scatter diagram plotting cost of inputs (dependent variable) and size of operations (independent variable)	199
15	Scatter diagram plotting cost of inputs (dependent variable) and average monthly income of respondents in 1991/92	199
16	Scatter diagram plotting cost of inputs (dependent variable) and participation in extension field demonstrations (independent variable)	200

17	Scatter diagram plotting cost of inputs (dependent variable) and farm size (independent variable)	200
18	Extension Agent Ratio to Farm Families/Contact Farmers	209

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APPENDICES

Appendix	Title	Page
I	Questionnaire on Impact of DFRRRI Rural Feeder Road	283
II	Questionnaire on Impact of Agricultural Extension Programme	291
III	Questionnaire on Impact of School-to-Land Programme on Local Communities	294
IV	Questionnaire on Impact of School-to-Land Programme on Participants	297
V	Interview Schedule for Case Studies	300
VI	Interview Schedules for Special Local Groups/Chiefs and Elders	303
VII	Total Length of Phase 1 DFRRRI Feeder Roads	304
VIII	Correlation Matrix for DFRRRI Feeder Roads	305
IX	Cross-Tabulation of Agricultural Extension Programme Respondents Sex and Type of Input Received	308
X	Cross-Tabulation of Agricultural Extension Programme Respondents Income 1987-1991/92	309
XI	Cross-Tabulation of Agricultural Extension Programme Respondents Receipt of Services, Sex and Educational	315
XII	Multiple Regression Analysis Using Receipt of Extension Service as Dependent Variable	326
XIII	Multiple Regression Analysis Using Frequency of Agent Visit as Dependent Variable	328
XIV	Multiple Regression Analysis Using the Type of Input Received as Dependent Variable	330
XV	Multiple Regression Analysis Using Cost of Input as Dependent Variable	332
XVI	Agricultural Extension Services Correlation Matrix	334
XVII	Letter from School-to-Land Participants	336

CHAPTER 1

1. Introduction

1.1 Statement of the Problem

The process of rural development is one that has been given some priority by governments at all levels - Federal, State and Local - in Nigeria especially from the early 1970s when increased public revenue from crude oil enabled the government to increase public spending substantially. Until the seventies, efforts at rural development planning focused on the agricultural sector, particularly cash crops. The aim was to generate surpluses for export in order to support investment in infrastructural development and financing manufacturing industries most of which were concentrated in urban areas. The consequence was the neglect of the bulk of rural productive activities and people.

With the emergence of petroleum export as the nation's chief source of revenue, the exportation of even these cash crops declined. This trend was accompanied by rising rates of food and agricultural raw materials importation. F.A.O. and U.N records estimated that between 1970 and 1985, Nigeria spent ₦12,625m on food importation. Agriculture remains the main employer of rural labour, engaging 43.6% of adults over the age of fifteen years nationwide; (NISH, 1984) and for the Rivers State, 105,000 farming families and 26% of the estimated State's total population are fishermen (RISADEP, 1988).

When this picture is set against that of an "oil boom" (Pinto, 1987), for most of the seventies, one can agree with Mabogunje when he argues that "economic growth has not brought about any significant structural changes in production organisation and technology in the rural areas. It is this phenomenon of a backward and declining rural economy in a situation of rapidly rising national product that constitutes the crux of the development crisis in Nigeria", (Mabogunje, 1981: 296). This argument has been sustained by others (Berry, 1982). Salau suggests that during the period of the oil boom the real income of low-income groups declined generally but that "the rural dwellers have borne disproportionately, the brunt of these sufferings" (Salau, 1986: 323).

Within the oil producing areas of the country, particularly the Rivers State which produces about 50% of the nation's oil export, the exploration activities are causing environmental pollution with the attendant loss of farmland (Badru, 1984). More significantly oil production units constitute enclave economies within the rural landscape and cannot therefore justifiably be regarded as part of rural economic production.

From about 1983, the oil boom period in Nigeria could be regarded as over. Rural areas across the nation have little to show for the period. Many rural areas are

still highly inaccessible and lack all kinds of utilities and services; rural people are generally poor with low per capita incomes and productivity has been stagnant. The national integrated survey of household report of 1985 showed per capital monthly rural income was only about 14.365 naira (Table 1.1). Specific village level studies over time from different parts of the country conclude that poverty is pervasive (Collier, 1985; Atte, 1983). There is also substantial unemployment (See Table 1.2).

In spite of the above picture, much concern has been expressed, over the years, for rural areas and this concern has been accompanied by specific interventions. From the early 1970s, the Federal Government adopted the idea of area-based rural development with emphasis on agricultural development. The programme line up includes the erstwhile River Basin and Rural development Authorities, now River Basin Development Authorities, the Agricultural Development Programmes (ADPs). In more recent times, attempts have imbibed a broader horizon and aimed at integrated rural development. Examples are the programmes of the Directorate of Food, Road and Rural Infrastructure (DFRRI) and the Better Life for Rural Women (See Table 1.3). In spite of rhetoric, the goal of rural development remain elusive. In 1986, at the end of a national seminar the conclusion was that, "no matter

Table 1.1: Average Monthly Household Income (Rural 1982) in Naira

States	Household Income	Average Household Size	Per Capital Income
Anambra	17.91	5.820	3.077
Bauchi	11.05	5.955	1.856
Bendel	116.95	5.392	21.689
Benue	102.19	6.693	15.268
Borno	59.13	4.735	12.488
Cross River	103.78	5.315	19.526
Gongola	55.22	5.659	9.758
Imo	40.36	4.586	8.801
Kaduna	130.63	6.928	18.855
Kano	105.18	5.911	17.556
Kwara	77.33	3.933	19.662
Lagos	145.97	3.972	36.749
Niger	81.52	5.545	14.702
Ogun	89.06	3.750	23.749
Ondo	131.79	4.434	29.723
Oyo	140.64	4.756	30.734
Plateau	80.17	6.432	12.464
Rivers	139.11	6.490	21.435
Sokoto	77.83	5.315	14.643
All Nigeria	79.21	5.514	14.365

Source: National Integrated Survey of Households 1982-83 Report (\$1 USA = .671 Naira)

Table 1.2: Rural Unemployment (by States) 1984-1992

State	Dec. 1984	Dec. 1985	Average 1986	Average 1987	June 1992
All Nigeria	4.4	5.2	4.8	4.7	3.0
Anambra/Enugu	5.6	10.9	6.7	4.4	3.3
Bauchi	3.3	0.8	3.7	1.5	1.3
Bendel (Edo/Delta)*	14.6	7.2	8.8	7.6	2.4
Benue	1.2	3.3	1.9	3.4	3.8
Borno/Yobe*	-	4.3	2.0	Negligible	7.2
Cross River	14.7	15.6	8.5	6.4	1.3
Gongola (Adamawa/ Taraba)*	-	2.7	2.3	5.3	2.8
Imo/Abia*	11.6	16.4	15.8	11.0	5.9
Kaduna	0.9	1.3	1.5	1.9	Less than 0.1%
Kano/Jigawa*	2.2	3.1	1.4	0.8	0.7
Kwara/Kogi*	1.3	7.7	4.6	2.2	2.8
Lagos	6.4	2.7	3.5	3.2	0.6
Niger	0.8	0.7	1.5	5.7	0.9
Ogun	2.6	1.1	2.1	1.2	1.7
Ondo	-	8.6	5.5	5.3	1.2
Oyo/Oshun*	-	0.3	3.3	3.4	2.7
Plateau	5.1	3.1	7.1	5.6	0.8
Rivers	8.7	7.2	12.6	13.1	6.7
Sokoto/Kebbi*	0.6	2.1	0.7	2.6	Less than 0.1%

Source: National Integrated Survey of Household Labour Force Survey (Various Years), Federal Office of Statistics, Lagos

Note: (a) June 1992 figures for Abuja (9.0), Akwa Ibom (8.2), Katsina (less than 01.%)

(b) *Figures for June 1992 only

Table 1.3: National Agriculture and Rural Development Programmes

S/No.	Year	Programme	Objective
1	1972	National Accelerated Food Production Programme (NAFPP)	Increase farmers' income and introduce modern technology
2	1973	River Basin Development Authorities	Direct production production of food crops, irrigation agriculture
3	1975	Agricultural Development Projects (ADPs)	Integrated Rural Development
4	1976-1979	Operation Feed the Nation (OFN)	Mass Mobilization for Food Production
5	1980-1983	Green Revolution	Meet the needs of the small farmer at local level
6	1986	Directorate of Food, Roads and Rural Infrastructure	Integrated Rural Development
7	1987	Better Life for Rural Women	Mobilising rural women for self-reliant development
8	1973 to date	Various credit schemes	Cater for the capital resource needs of farmers and agro-industries

the definitions given to rural development, it is one area in Nigeria's developmental efforts that manifests a catalogue of failures and questions the ability of Nigerians to manage their own affairs" (Umeh, 1986: 26). This was the basis for the establishment of DFRRRI in October that year. However, assessments of the achievements of these more recent attempts show mixed outputs but remain negative (Nwankwo, 1987; Tukura, 1987; Akpan, 1992). The critical issues remain the inability to achieve the key objectives of increasing productivity and improving the socio-economic conditions of the rural people and the failure of concrete achievements to match resources expended.

In concluding this statement of the research problems therefore, one can summarize the main points as follows:

1. that much of what has so far been done in the context of Nigeria's rural development planning efforts have not been relevant on grounds of developmental objectives;
2. that rural development programmes have in the main failed to improve the living conditions of the rural poor;
3. that what exists as evidence of the planning effort is not commensurate with the level of concern expressed or the resources said to have been committed.

1.2 Research Objectives

The major objectives of this study are as follows:

1. to assess the socio-economic impact of three rural development programmes - the DFRRRI feeder roads programme; the ADP extension services programme and, the School-to-Land programme - particularly their distributional impacts within the communities in which they are located, specifically across income groups and gender lines;
2. to determine the incidence of a dichotomous relationship between what the programmes as planned entailed and what exist as evidence of the planning efforts, and
3. to define the interrelationship in each case between (1) and (2) above, within the wider context of the environment for rural development planning in the Rivers State.

1.3 Statements of Hypotheses

Statements of hypotheses are based on programme objectives.

Feeder Roads Programme

- (a) The construction of DFRRRI feeder roads in parts of the Rivers State have not led to any increase in rural socio-economic activity either in terms of increased output or increase in local organizational activity.
- (b) The DFRRRI feeder roads have not improved access to farms and markets for rural dwellers.

- (c) The DFRRI feeder roads have not led to positive change in the social and economic welfare of small farmers and other low income people especially women in the localities that they serve.

Extension Services Programme

- (a) The training and visitation system of the extension programme of RISADEP favours rich, better educated farmers/fishermen and therefore by-passes the small holders.
- (b) The training and visitation system of the extension programme of RISADEP favours male farmers/fishermen and therefore by-passes female farmers/fisher women.
- (c) Extension services programme planning of RISADEP occurs without the involvement of the recipients; therefore measures targeted at them, do not reach them.

School-to-Land Programme

- (a) Young school leavers recruited into the School-to-Land programme have not continued in farming and therefore, the programme has not led to the creation of a younger generation of farmers in the Rivers State.
- (b) The establishment of School-to-Land farms has not led to an increase in agricultural productivity in the communities in which they are located.

1.4 Brief Statement on Study Area

The Rivers State was carved out of the former Eastern region of Nigeria by the Federal Government in May 1967. In 1991, the State was administratively carved into twenty-four local government areas (see Figure 2). Geographically it lies between latitude $4^{\circ}17'$ and $5^{\circ}45'$ north of the equator and longitude $5^{\circ}22'$ and $7^{\circ}35'$ east of meridian. The estimated total area of the State is $19,420 \text{ km}^2$ (2.1% of Nigeria's area). Eighty percent (80%) of this area lies within the delta of the River Niger and the remaining 20% is part of the coastal plain lying within the catchment of the Imo River and associated tributaries, as can be seen in Fig. 3. Of the estimated total land area, $7,603.70 \text{ km}^2$ is cultivable land while $11,816 \text{ km}^2$ is covered by water (RISADEP, 1989; FACU, 1983).

The 1991 census estimated the population of the State at 3,983,858 persons. With an estimated rural population of about 66.26%; this brings the total population of rural Rivers to over 2.5 million persons. Average family size in rural Rivers is estimated at 7 persons. Population density for the State as a whole is estimated at 155 persons per km^2 ranging from the lower delta area with 50 persons per km^2 to at least 1,500 persons per km^2 in Port Harcourt. Rural population

FOURTEEN L. G. A. ADMINISTRATIVE MAP OF RIVERS STATE

FIG 1

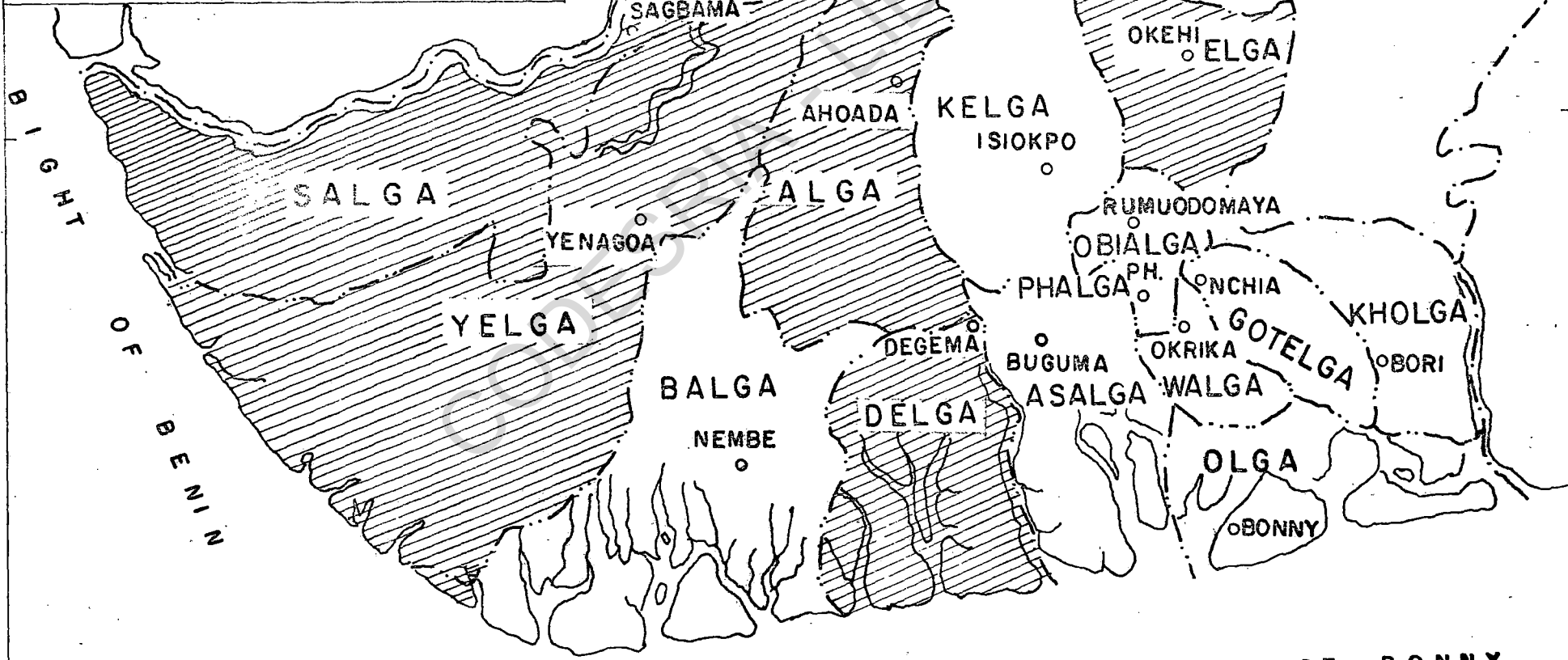
Km 20 0 20 40 60 80 Km

State Boundary

L.G.A. "

L.G.A. HQ

Rivers



BIGHT OF BENIN

BIGHT OF BONNY

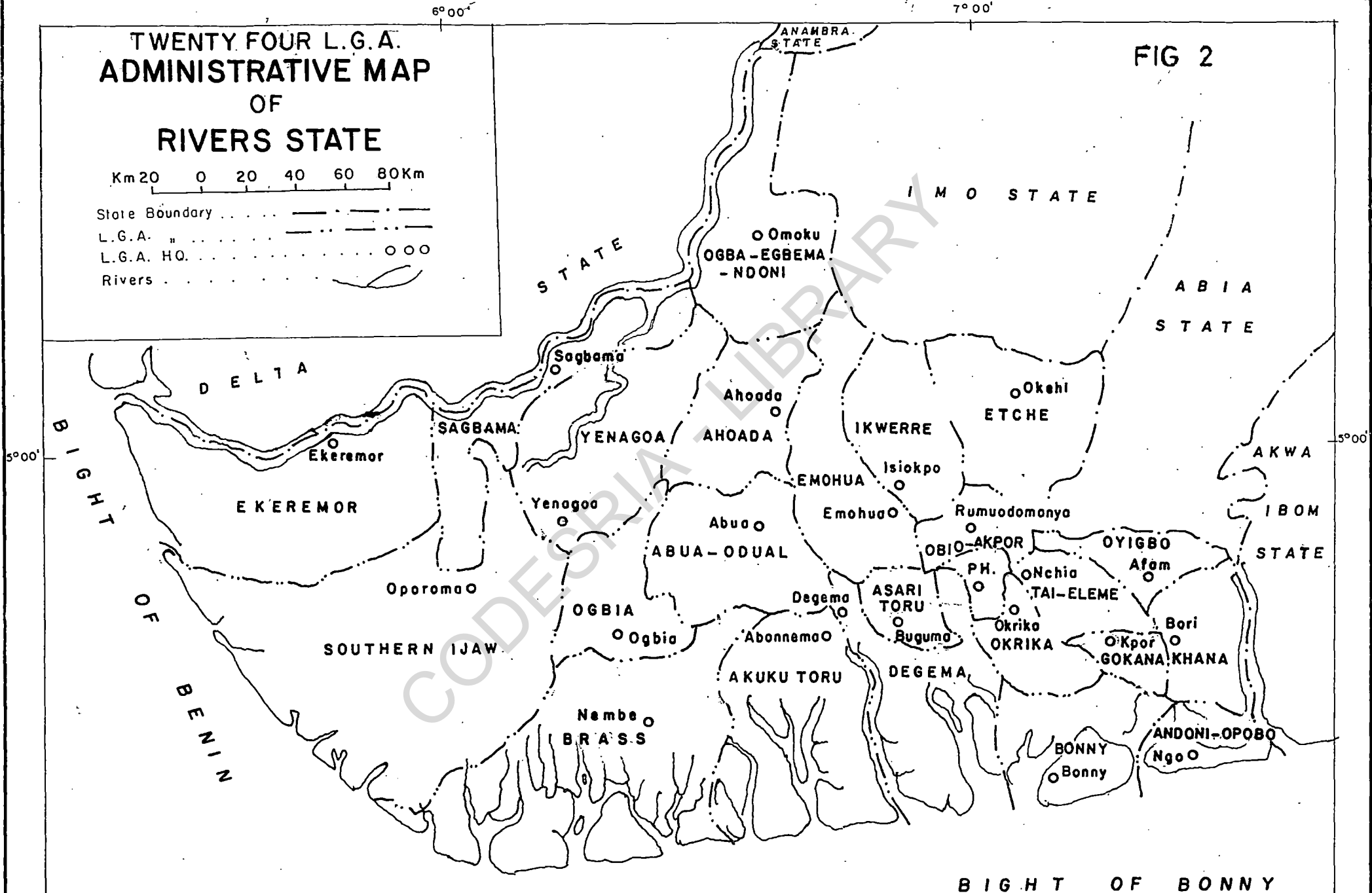
STUDY AREA

TWENTY FOUR L.G.A.
ADMINISTRATIVE MAP
 OF
RIVERS STATE

Km 20 0 20 40 60 80Km

State Boundary
 L.G.A. "
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 Rivers

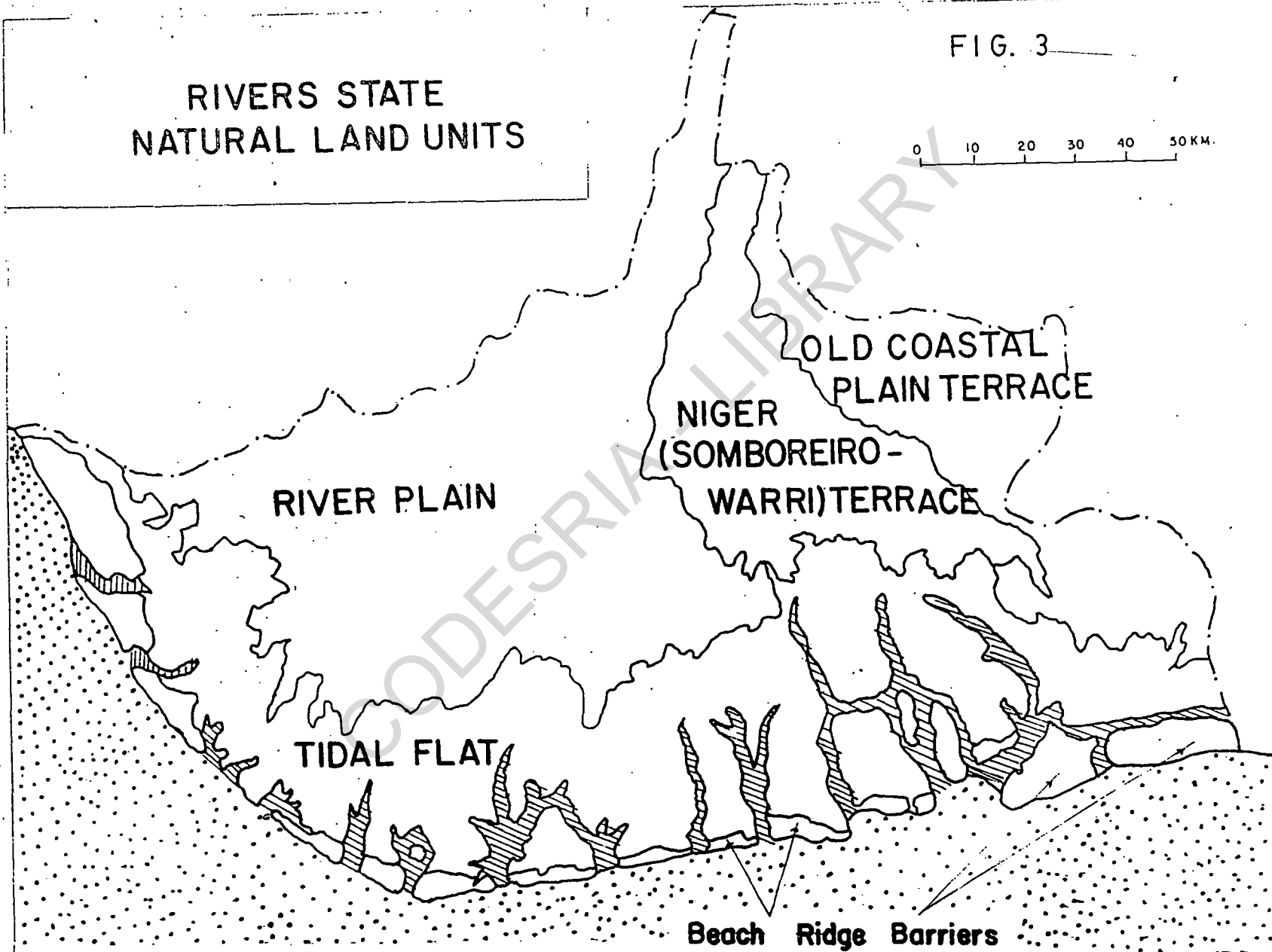
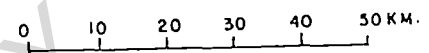
FIG 2



BIGHT OF BONNY

RIVERS STATE NATURAL LAND UNITS

FIG. 3



Source: Federal Agricultural Co-ordinating Unit (1983)

densities generally vary from 60 to 257 persons per km² reaching 780 persons per km² in the immediate south-west of Port Harcourt (FACU, 1983).

The rural economy is largely based on agriculture consisting of subsistence and traditional farming and artisanal fishing. Perennial tree crops are un-important. The main food crops produced in the upland areas of the State are cassava, maize, yam, cocoyam, vegetables and cocoyam. Farm incomes are generally low and holdings are small. Assessments by a firm of management consultants, Coopers and Lybrand for the Federal department of Rural Development estimate that in 1981 cultivated area per farm family in the State ranged from an average of 0.65 ha to 1.2 ha, but many farm families were reported as having less than 0.5 ha each under cultivation.

1.5 Scope of the Study

This research centres on the Rivers State of Nigeria. Specifically it covers five out of the fourteen local government areas existing at the time the study was initiated and constitute the geographic unit on which much of necessary official documentation, is organized, namely: Yenagoa, Etche, Ahoada, Degema and Sagbama local government areas (see fig.1). Under the newly created 24 local government area structure, the study area would cover 10 LGAs. Also the study assesses the direct socio-economic impact of three selected programmes,

namely: the Phase I Feeder Roads Programme of DFRRRI in the State; the ADPs Agricultural Extension Programme and the School-to-Land Programme. As noted in each case, the study covers the programme as delivered by one agency. This has enabled us to delimit the time frame under consideration to the period from 1985 to 1992. Thus even where more than one agency are involved in the delivery of a particular programme, the output of the others (apart from those stated earlier) are not analysed in the impact assessment. It is only in the discussion of the rural development planning environment that their roles and interrelationships are examined in so far as this borders on our results.

1.6 Relevance of Study

Rural areas constitute the most important sector of the Nigerian economy. Yet rural development has remained the most enduring problem in the nation's developmental efforts. The problem does not arise from want of trying. From the first era of "official" development planning, marked by the 1946-56 colonial plan of Development and Welfare, aspects of rural development planning have been part of the national development planning effort. The 1962-1968 and the 1970-1974 Development Plans however had no clearly defined rural component either in the area of specific policy objectives or in the form of a properly articulated strategy for rural development. Since then,

the experience has been a multiplicity of interventions at national and state levels. This trend has tended to conceal the fact that there is no properly articulated strategy for rural development in Nigeria in general or the Rivers State in particular. Programmes have not been rooted in coherent policy frameworks. Thus implementation of successive programmes have been punctuated by discontinuities (Adewumi, 1988). Significantly, the rationale for much of the interventions has also been questioned (Forrest, 1986). Even the choice of priorities in terms of actual levels of funding for specific programmes has also been questioned (Bienen, 1985). The real crisis however remain the failure of programmes to meet their stated objectives. In looking at this crisis, the emphasis has been either on the policy framework or in the implementation process without setting the analysis in the context of the rural development environment. The net effect is that we do not have a comprehensive picture of the underlying factors. This study it is expected will provide such a holistic picture. The relevant interrelationships between the issues will emerge thus providing us new insights into the problem.

1.7 Limitations

The main limitations in this study came in form of financial and time constraints; and the inadequacy of

available data. Often, data from official sources was not in the form that could be easily used. For instance, within the time frame of the study, 1985 to 1992, local government boundaries have changed twice involving the break up of previous units, sometimes into two or three new units. Also sometimes data is outdated, or simply not available. To handle the problem of data, rather robust questionnaires became necessary.

In addition to the above is the unwillingness of public officials to even release what data was available. Covert attempts to circumvent this problem sometimes led to conflicting data with little opportunity for the researcher to confirm its accuracy.

Another important limitation is the level of illiteracy among the rural population and the need for interpretation. In spite of the fact that members of the community were involved whenever possible, there is no doubt that the level of probing which direct communication could have reached was reduced.

On the School-to-Land Programme a major limitation arose from the difficulty of actually locating participants on the farms. It necessitated several visits followed by a decision to curtail the number of respondents.

1.8 Rural Development Planning in the Rivers State:

A Summary

Successive administrations in the State both civil and military have given some attention to rural development. Like in other parts of Nigeria, initial efforts focused on agricultural development supplemented by community development. From 1968 to 1969, Rural Development was a division in the then Ministry of Trade, Economic Planning and Industry. From 1970 to 1972 Rural Development formed part of the then Ministry of Economic Development and Reconstruction. The key programme at this time was the "food for work" under which homesteads were built in places designated as "war disaster areas". The 1972/73 financial year was declared "Rural Development Year" and the sum of one million pounds sterling provided for financing various programmes. It was not until 1978 that a Ministry of Rural Development and Co-operatives was created. Today no specific Ministry of Rural Development exists and the number of agencies involved are many.

No clearly defined policies for rural development existed in the Rivers State neither were there properly articulated strategies. What we had were projects that came within sectoral allocations of Ministries particularly those of Agriculture, Works and Transport, and Local Government and Community Development. In 1976, the State government in a published handbook titled

"Rural Development", focused on rural development within the context of community development. Thus it appeared that during the early to mid seventies, community development became synonymous with rural development. Certain features of the approach however appear to have been carried over at least in conception to more recent initiatives. For instance, the handbook stated that the policy of the Government of Rivers State on Rural (Community) Development aimed at achieving the following objectives:

- To improve the economy of the local community;
- To raise the income standard of every villager;
- To create employment opportunities and thereby minimise migration from the rural areas to the towns;
- To improve the physical surroundings of the rural communities;
- To build up confidence in the ability of the villagers' to help themselves thus making them less reliant on government resources (RSG, 1976, p.5)

Village or town; Divisional and State Planning Committees were established to prepare and implement a rural development plan. These Planning Committees were, according to Mr Nwinee, Chief Community Development Officer of the State, started by Federal policy and are the antecedents of the current Community Development

Committees concept. There is no known production of any rural development plan in the State. However a catalogue of projects were stated as having been executed. Thereafter, no concerted efforts were made except attempts at decentralizing the State administrative machinery to an increasing number of local government bodies. The exercise was carried to a profound extent during the 1980 to 1984 period when the policy of decentralization led to the creation of 50 local government units from the then existing 10 Local Government Areas. With this policy came the establishment of many local level committees set up to cater for the functions of main line Ministries in their respective localities. The concept was aimed at promoting the meeting of basic needs such as hospitals, schools, electricity and water supply to all fifty units. The system was poorly executed and led to the abandonment of many projects as government was unable to meet its commitments in terms of funding and technical support.

The next identified comprehensive approach was the Accelerated Integrated Rural development Programme (RAIRDEP) as a joint programme of the government and people. RAIRDEP was funded by all agencies of development including the people who paid development levies. Although the concept was launched in December, 1986 with

a lot of promise it did not outlive the regime that initiated it.

In terms of the actual programmes (see Table 1.4) there has been a move from single sector programmes such as those for agriculture and industries to multi-sectoral or integrated ones as exemplified by the erstwhile Rivers State Accelerated Integrated Rural Development Programme (RAIRDEP) comprising several projects. Table 1.4 provides a catalogue of rural development programmes of the Rivers State Government from 1970 to date. Like programmes initiated at Federal level, these programmes have also suffered from duplications and discontinuities. Not being part of a rural development plan the programmes have been subjected to shifts in priorities from one administration to another. The incidence has contributed to poor implementation and consequently poor programme performance. Available data for the period 1975-1980 and 1981-1987, show very low programme implementation ratios (see Table 1.5).

The discontinuities particularly in the level of funding is very clear. Another remarkable feature is that some projects are clearly abandoned and this implies that the investment hitherto made on them represent waste of scarce financial resources. A remarkable feature of the State's approach to rural development planning has been its ambitious nature particularly on such programmes as the rural industrialization and new towns development

programmes. Between 1979 and 1984, the State government embarked on the construction of seven new towns as part of a strategy of regional-rural development planning.

Owing to the scale of the programme, the project could not be implemented and today, the large areas of land devoted to the project serve as graduate farming schemes or School-to-Land farms. This implementation experience has threatened other programmes such as industrial estates development programme in all local government headquarters and killed the provision of basic needs programme.

Presently, the State still does not have a properly articulated strategy for rural development. The State is by and large a participant in the federally initiated programmes such as the Agricultural Development Project (RISADEP); the Directorate of Food, Roads and Rural Infrastructure and the River Basin Development Authority (RBDA).

Table 1.4 : Summary of Rural Development Programmes of the Rivers State from 1970 to Date

PERIOD	TYPE OF PROGRAMME	OBJECTIVES
1970 to date	Sectoral Programmes	
1975 - 1979	(i) Rural Industrialization (ii) Rural Community Development	Promotion of small-scale industries Promotion of self-help and other community-based public works
1980 - 1984	(i) Regional Rural Development Programmes (ii) Basic Needs Programme	Development of new towns in the rural areas of the State Provision of basic rural utilities, infrastructures and services
1985 - Date	School-to-Land Programme	Rural youth employment scheme to counter rural to urban drift
1986 - 1988	Rivers State Accelerated Integrated Rural Development Programme (RAIRDEP)	Co-ordination of rural development agency functions

Table 1.5: Implementation Ratio for Rural Development Projects of the Rivers State Government

Ratio	1975 - 80		1981 - 87	
	No. of Projects	%	No. of Projects	%
Zero	14	18.9	21	20.4
0.00 - 0.30	24	32.4	40	38.8
0.31 - 0.60	15	20.3	17	16.5
0.61 - 0.90	7	9.5	9	8.7
0.91 - 1.20	4	5.4	9	8.7
1.21 - 1.50	3	4.1	5	4.9
1.51 - 1.80	1	1.4	-	-
1.81 - 2.10	3	4.1	1	1
2.11 - 2.40	1	1.4	-	-
2.51 - 2.80	-	-	-	-
2.81 - 3.10	-	-	-	-
Over 3.10	2	2.7	1	1
	74	100	103	100

Source: Calculated from:

Progress Reports 1975-80 Third Development Plan
1981-85 Fourth Development Plan and the 1985-1987
Approved Budgetary Programmes, Ministry of Economic
Development and Planning, Port Harcourt

Note:

The use of implementation ratio as an indication of plan performance involves the comparison of actual expenditures at the end of the plan period with the initial allocations having been adjusted for inflation. It is actually a "spending test" (Killick & Kinyua, 1980). Programme expenditures calculated on a yearly basis for the entire plan period provided an estimation of the level and continuity of funding and therefore of the priority accorded specific programmes, and the stability of programmes over time. This approach has been applied as a measure of implementation of regional economic policy (Bartels and Van Dujn, 1984). Proposed expenditures are taken as indication of the intentions of policy makers and actual expenditures as a measure of the effort made to realise these intentions. The basic weakness in the use of the test is its failure to take into consideration the quality and content of expenditure items.

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CHAPTER 2

METHODOLOGY

2.0 Introduction

The study employs a two-stage framework of analysis. The first stage is a detailed assessment of the direct impact of three rural development programmes on their surrounding communities. These are as follows:

- (a) the Directorate of Food, Roads and Rural Infrastructure's feeder roads programme.
- (b) the Rivers State Agricultural Development Programme's (RISADEP) agricultural extension services programme; and
- (c) the Rivers State School-to-Land Programme.

All three programmes have been selected because of the priority given to them at one time or the other; their continuous implementation over a period of at least five consecutive years in the immediate past and the considerable sums of public funds that have been devoted to their programmes design and implementation. Another factor influencing the choice of programme is the critical nature to their objectives in terms of the overall objectives of rural economic growth and social welfare.

The second stage of analysis covers the examination of the programmes impact against the background of the programme planning environment.

2.1 Impact Assessment

The attempt here is to provide a programme-by-programme assessment of the direct socio-economic impact on the communities in which such programmes are located. The direct impact is the effect of the programme on the places and people it is aimed at in terms of programme objectives. The analysis covers the level of the individual or household and the community.

Impact assessment has five activity areas and each of these will be applied in each case study.

- (i) Specification of Programme Objectives
- (ii) Establishment of baseline conditions
- (iii) Derivation of measures and indicators of change
- (iv) Data collection
- (v) Data Analysis

2.1.1 Specification of Programme Objectives

This is the starting point of the impact assessment. Programme objectives are the tangible results that programmes set out to achieve. For each programme that make up our case study the specific objectives have been derived from policy statements in official documents as stated below.

Feeder Roads

- (a) To enhance social mobility
- (b) To enhance economic activity (Koinyan, 1986: 4)

Agricultural Extension Services

- (a) To disseminate relevant technical messages to the small-scale farmers and fishermen and provide feedback to management and research.
- (b) To motivate small holder farmers/fisherman and through that bring about significant increase in food production and income (RISADEP, 1988: 7)

School-to-Land Programme

- (a) To train young secondary school leavers in agriculture, livestock and poultry farming and place them on land acquired in all local government council areas of the State so that the young school leavers can forge careers in agriculture, livestock, or poultry farming or mixed farming as the case may be; and
- (b) train young secondary school leavers in fishing techniques and provide them with fishing equipment and other inputs to enable the young school leavers forge careers in fishing" (School-to-Land Authority Edict 1985 Section 2 (1))

- (c) To create a foundation for accelerated socio-economic development of the rural areas through increased production of staple food items.

(School-to-Land. Updated Policy Paper, 1987)

The nature of impact is assessed strictly against the stated objectives of each programme case study. This is the only way to ensure objectivity. Therefore hypotheses are subsequently formulated on the basis of the above objectives, also on a case-by-case basis.

2.2 Measures and Indicators

The assessment of programme impact involves the measurement of changes in relative terms over a period of time as a consequence of the specific project intervention. Four specific issues are raised as follows:

- (a) Whether there has been significant changes in the social and economic conditions of the target groups as a result of the intervention;
- (b) the direction, whether positive or negative of such change;
- (c) the extent of the change and
- (d) causal relationships as to why the change is as observed.

These questions imply a comparison of the pre-project situation to the post-project one. The pre-project

situation thus constitutes the baseline condition. It is for this reason that the period covered by the assessment is specific. To help in generating relevant variables for the measurement of change, indicators, are used. According to the United Nations Administrative Committee on Co-ordination (UN ACC) special Task Force on Rural Development, indicators are "specific (explicit) and objectively verifiable measures of changes or results brought about by an activity" (UN, ACC 1984: 37).

In this study, we are limiting attention to direct programme impacts, that is to the results actually produced at both individual and community levels. Also, the assessment is limited to the period comprising the period immediately prior to the execution of the programme to the December 1991 to December 1992 year when field survey actually took place. Within this period, the Phase 1 of the DFRRRI feeder roads programme had been completed and inspected by the Presidential Monitoring Team. So some form of assessment already exists on that programme. Also, the RISADEP extension services programme which is an on-going one has completed its first phase of execution (1988 - 1991) and had some internal organizational assessment. The School-to-Land programme is the oldest of our case studies. It has undergone several revisions in policy objectives and administrative changes sufficiently to indicate that internal organizational monitoring has taken place.

In all three cases therefore, some official documentation as to the actual achievements, mostly in physical terms, of the programmes exist. Three broad groups of impact criteria in line with objectives are used. These are:

- (i) income
- (ii) Productivity; and
- (iii) social and economic welfare

For purpose of clarity each case study will now be taken separately on the remaining steps of the impact assessment procedure, the first being the derivation of programme objectives concluded in Section 2.1 above.

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Table 2.1: Impact Assessment Criteria for DFFRI Feeder Roads

Criterion	Indicator	Measure
Income	1. Net increase in beneficiary income in the years following completion of the road	In come in 1987 compared with income 1991/92
	2. Increase in size of farm holding and other units of production	Farm size of beneficiaries in pre- and post-project periods
	3. Net increase in land prices attributed to project intervention	Naira value per unit area of land in 1987 as compared with 1991/92
Productivity	1. Net income in agricultural and other production following completion of the road	1. Volume of agricultural output 2. Diversification of employment
	2. Improved access to farms/fishing grounds	Reduction in travel time and distance. Change of mode of transport from non-vehicular to vehicular
	3. Expansion of marketing opportunities	Increased sale at urban markets
Social and Economic Welfare	Income Distribution	Increase in size of land holding in post project period on the basis of income groups and gender
	Improvement in living conditions	Percentage of small farmers (less than 2 Ha) reporting net increase in income and productivity

(Continued on next page)

Table 2.1 (Continued)

Criterion	Indicator	Measure
	Promotion of local organizational activities	Participation in local organizations

Source: Adapted from Bovil (1978)

Table 2.2: Sampling Frame for DFFRI Phase I Feeder Road Programme in the Rivers State and Settlement Stratification

S/No.	Village/Town	1991 Population	Local Government Area
1	Ula-Ehuda	1128	ALGA
2	Ammigboko	2852	ALGA
3	Ubeta	2652	ALGA
4	Ndoni	4104	ALGA
5	Anioze	268	ALGA
6	Ase Azaga	687	ALGA
7	Egbada	1865	ALGA
8	Erema	6068	ALGA
9	Odiemerenyi	2211	ALGA
10	Ihubogko	2237	ALGA
11	Abarikpo	2715	ALGA
12	Ubio	1496	ALGA
13	Ubarama	2147	ALGA
14	Agada I	3446	ALGA
15	Ogbokuma	1680	ALGA
16	Umuokom	1422	ETCHE
17	Akwa	4279	ETCHE
18	Odagwa	7336	ETCHE
19	Okoroagu	2811	ETCHE
20	Eberi-Omuma	5272	ETCHE
21	Obibi	5264	ETCHE
22	Odufor	2690	ETCHE
23	Akpoku	793	ETCHE
24	Umuogo	8073	ETCHE
25	Okumbiri	2339	SALGA
26	Eriama	1381	SALGA
27	Bulou-Orua	3433	SALGA
28	Tom Orua	898	SALGA
29	Sagbama	4793	SALGA
30	Tungbo	5653	SALGA

(Continued on next page)

Table 2.2 (Continued)

S/No.	Village/Town	1991 Population	Local Government Area
31	Agbere	7038	SALGA
32	Asamabiri	1577	SALGA
33	Elemebiri	2817	SALGA
34	Azikoro	2372	YELGA
35	Agbura	2076	YELGA
36	Okaka	1261	YELGA
37	Sqalli	1598	YELGA
38	Biseni	16833	YELGA
39	Okodia-Zarama	4896	YELGA
TOTAL	39 Villages	131,499	4 LGAs

Source: Rivers State Ministry of Finance and Planning
Population Projects Projections.

Table 2.3: Population Size Distribution of Study Villages

Stratification of Settlement	No. of Settlements
Less than 1,000 people	5
1,000 - 2,500	14
2,501 - 4,000	8
4,001 - 5,500	6
5,501 - 7,000	2
7,001 - 8,500	3
Above 8,500	1
TOTAL	39

Source: Compiled from Table 2.2

2.2.1 Measurement and Indicators for DFFRI Feeder Roads Programme

This is purely a physical infrastructural programme. Its target group is the entire rural community.

2.2.2 Sampling Procedure for DFFRI Feeder Roads

A two stage sampling framework was applied. The first is the selection of communities to be covered by the field survey and secondly is the selection of individual respondents in each of the communities. The feeder roads programme is a state wide one, and are built by a number of agencies including local governments.

An inventory of all such feeder roads existing at the end of 1991 with the responsible agencies was compiled by the Rivers State Agricultural Development Programme. This inventory formed our sampling frame. An initial decision was made to limit the field survey to 4 Local Government Areas, 2 each in upland and riverine parts of the State. On this basis, the sampling frame is as given in Table 2.2. The roads are all supposedly constructed by DFRRRI between 1987 and 1988 giving a life-span of three to four years.

(i) **Sample of the villages:**

Two local government areas in each of the broad ecological zones of the State - Sagbama and Yenagoa Local Government Areas in the riverine area; Ahoada and Etche Local Government Areas in the upland area (See Figure 4) were chosen. The Local Government Areas were chosen on the basis of total length of DFRRRI roads and number of communities served. Communities covered in a 30% sample survey are 12. Three villages were selected per local government area spread out to ensure that each settlement size range indicated in Table 2.3 is represented in our sample (See Fig. 5)

(ii) **Sample of Respondents:**

It was decided to interview a total of thirty persons per settlement bringing the total number of respondents in

the sample to 360. All respondents were chosen from the age group of 20 years and above.

This is very important as the respondents were used as the "reflexive control" group such that they were old enough to give information on a pre-intervention period. Women who constitute 51% of the rural population from age 20 year and above, according to estimates of the rural population structure of the State, were proportionately represented in the sample. Out of every 30 respondents in each community, 16 are women and 14 are men. Thus, of the 360 respondents there are 192 women and 168 men.

Also in a total of five villages, it was possible to interview a random sample of goods transporters. Total of such operators interviewed was forty-two.

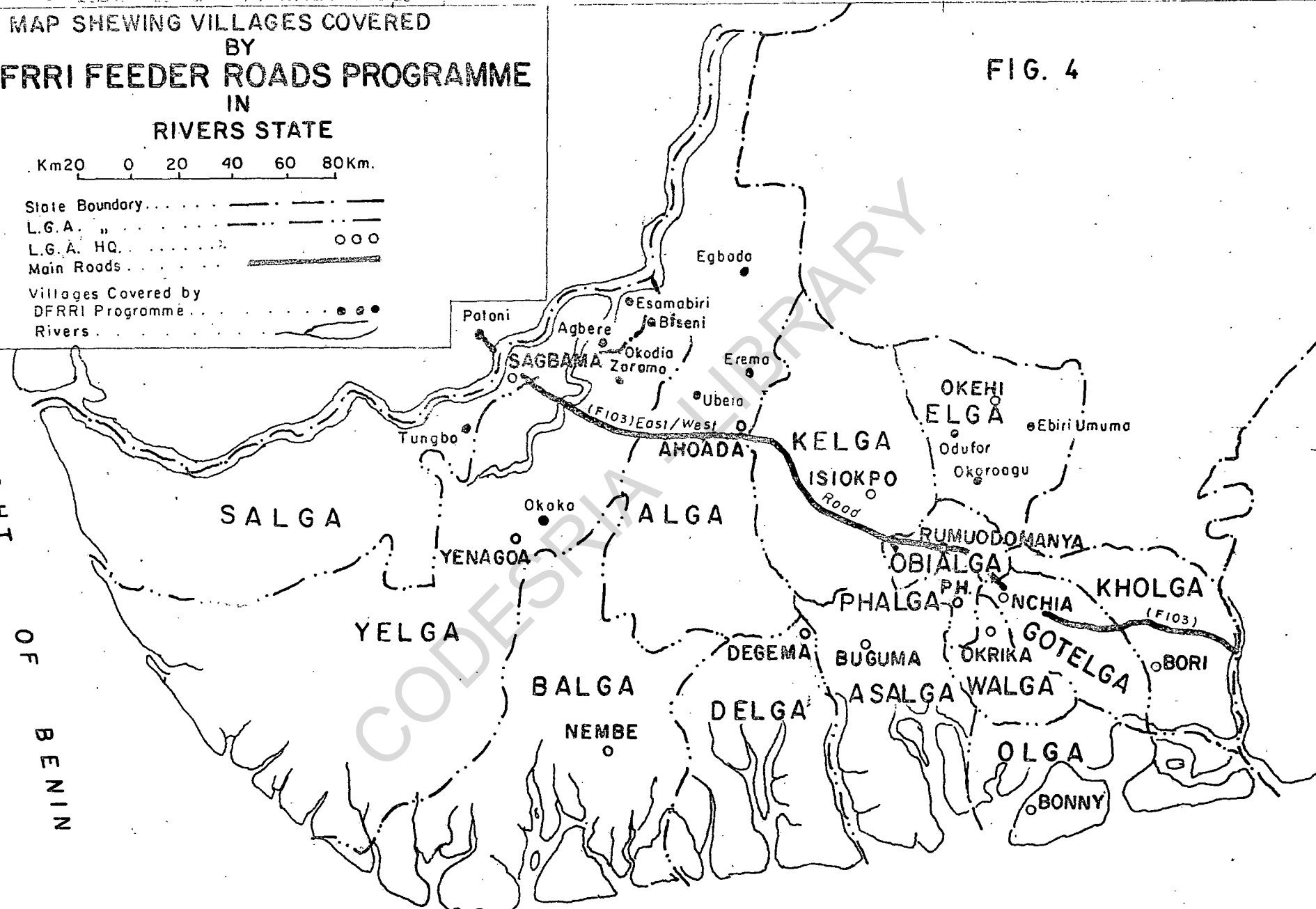
MAP SHEWING VILLAGES COVERED BY DFRR FEEDER ROADS PROGRAMME IN RIVERS STATE

FIG. 4

Km 20 0 20 40 60 80 Km.

- State Boundary
- L.G.A.
- L.G.A. HQ.
- Main Roads
- Villages Covered by DFRR Programme
- Rivers

BIGHT OF BENIN



BIGHT OF BONNY

POPULATION SIZE DISTRIBUTION MAP OF FEEDER ROADS PROG. VILLAGES

FIG. 5

Km 20 0 20 40 60 80 Km

State Boundary
 L.G.A. "
 L.G.A. HQ. ○ ○ ○
 Village Names ○ ○ ○
 Rivers

KEY
 ○ — 1000 Persons
 Represent. One Dot.

BIGHT OF BENIN

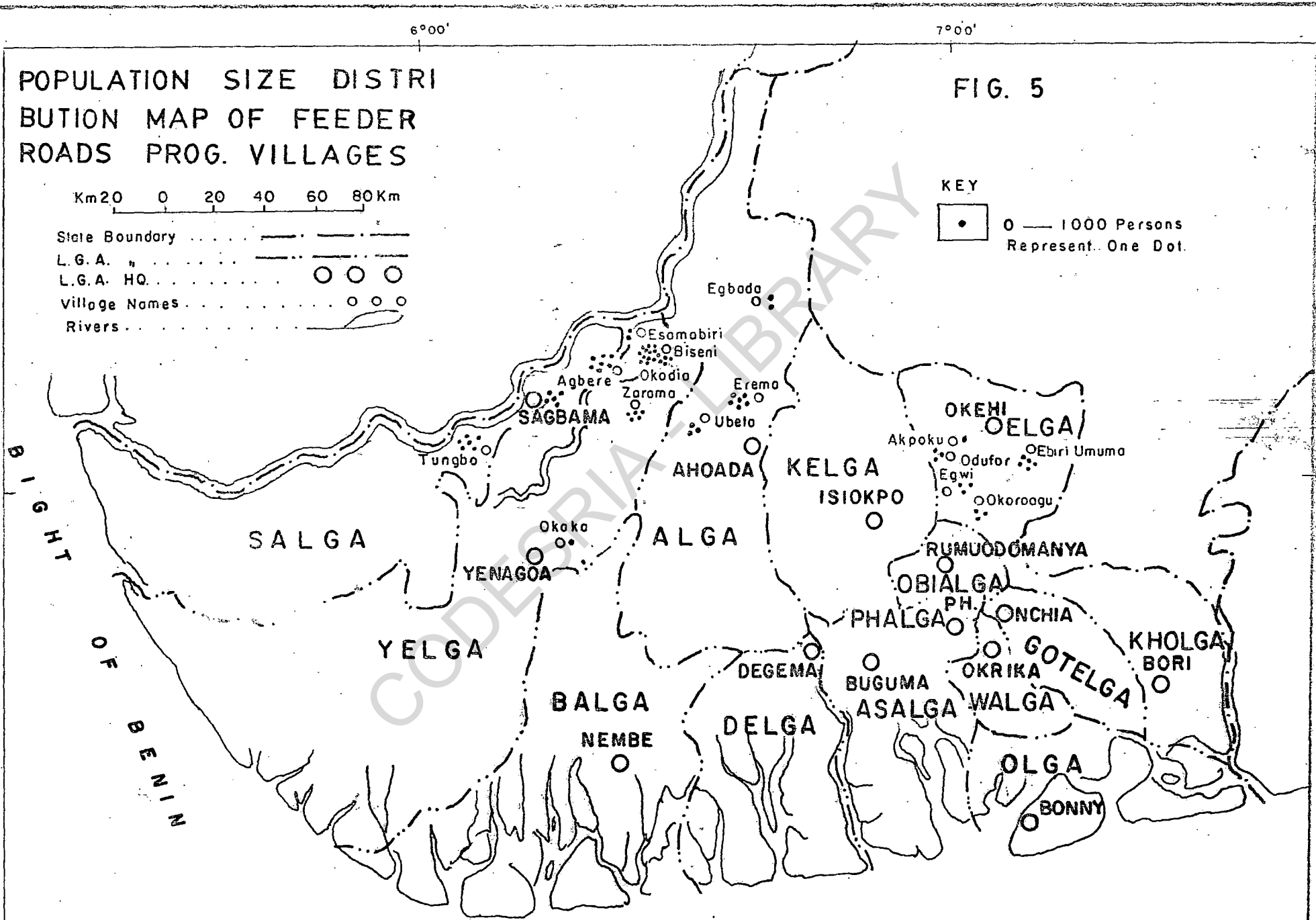


Table 2.4: Impact Assessment Criteria for Agricultural Extension Programme

Criterion	Indicator	Measure
Income	1. Expansion of capacity	Increase in size of operations; employment of labour, use of tools and other inputs
	2. Increase in income	(i) Purchase of household assets, purchase of inputs, loans granted
		(ii) Income in 1987, 1990 and 1991
Productivity	1. Reaching the target groups	Members of the target group reached by extension as a percentage of total group
	2. Increase in productivity	Levels of production yields in relation to land cropped and labour input
	3. Increase in initiative and independence opportunities	Number of target group who actively participate in field demonstrations, organize themselves in groups, request credit and other inputs, enquire about extension

(Continued on next page)

Table 2.4 (Continued)

Criterion	Indicator	Measure
Social and Economic Welfare	1. Income Distribution	(i) Increase in size of operations, employment of labour as a result of receipt of extension services on the basis of income groups and gender between 1987 and 1991
		(ii) Purchase of means of transport; labour saving equipment and consumer durables, ownership of houses, renovation of buildings

Source: Adapted from Albrecht *et al.* (1989) p. 238

Table 2.5: RISADEP Agricultural Extension Programme Circle Operational Bases Distribution

Local Government Area	Total No. of Blocks Within LGA	Total No. of Circles Within each LGA	Total No. of Circles Selected for Study	Total No. of Circle Operational Bases
Ikwerre	6	36	3	3
Etche	4	22	3	3
Sagbama	4	25	2	2
Yenagoa	4	26	3	3
TOTAL	18	107	11	11

2.2.3 Sampling Procedure for the Agricultural Extension Programme

For purposes of saving transportation costs, effective coverage and control of the research and comparison of effectiveness between programmes the same four local government areas covered in the first case study are the same for the second case study. Also as in the case of the roads programme, a two stage framework of sampling way adopted.

(i) Sample of Villages

The RISADEP has broken the state into two zones for its extension work. These are the Yenagoa zone for riverine areas and the Nchia zone for upland areas. Within Yenagoa zone are seven Local Government Areas. Each zone is then sub-divided into blocks and then circles. One extension agent is assigned to each circle and is based at the circle operational base. As at the time field work commenced a village listing exercise embarked upon has not been published by RISADEP, thus it was not possible to obtain the actual number of villages per circle. However, on the average, a circle covers about 8 to 10 villages.

The circle operational bases are therefore taken as the sampling frame for the field survey (See Table 2.5). The total number of circles are 107 giving us 107 circle

operational basis. A 10% sample gives 11 villages. spread across the 4 local Government Areas, the distribution is as shown in the table and Fig. 6.

(ii) Sample of Respondents

As in the case of the feeder roads, the respondents were used as the reflexive control group, therefore only those from age 20 years and qualified. Also, the 51%, 49% percentage distribution between female and male respondents was adhered to. Thus, of the total of 30 respondents interviewed in each of the eleven locations, 16 are women and 14 are men. Wherever the circle operational base, coincided with the same community in which a DFRRI road project had been previously evaluated, that base was taken. In the cases of Egwi, Umuechem, and Akpoku, all in Etche Local Government Area, this was not possible, and these settlements were selected on their own merit as circle operational basis.

2.2.4 Measurement and Indicators For School-to-Land Programme

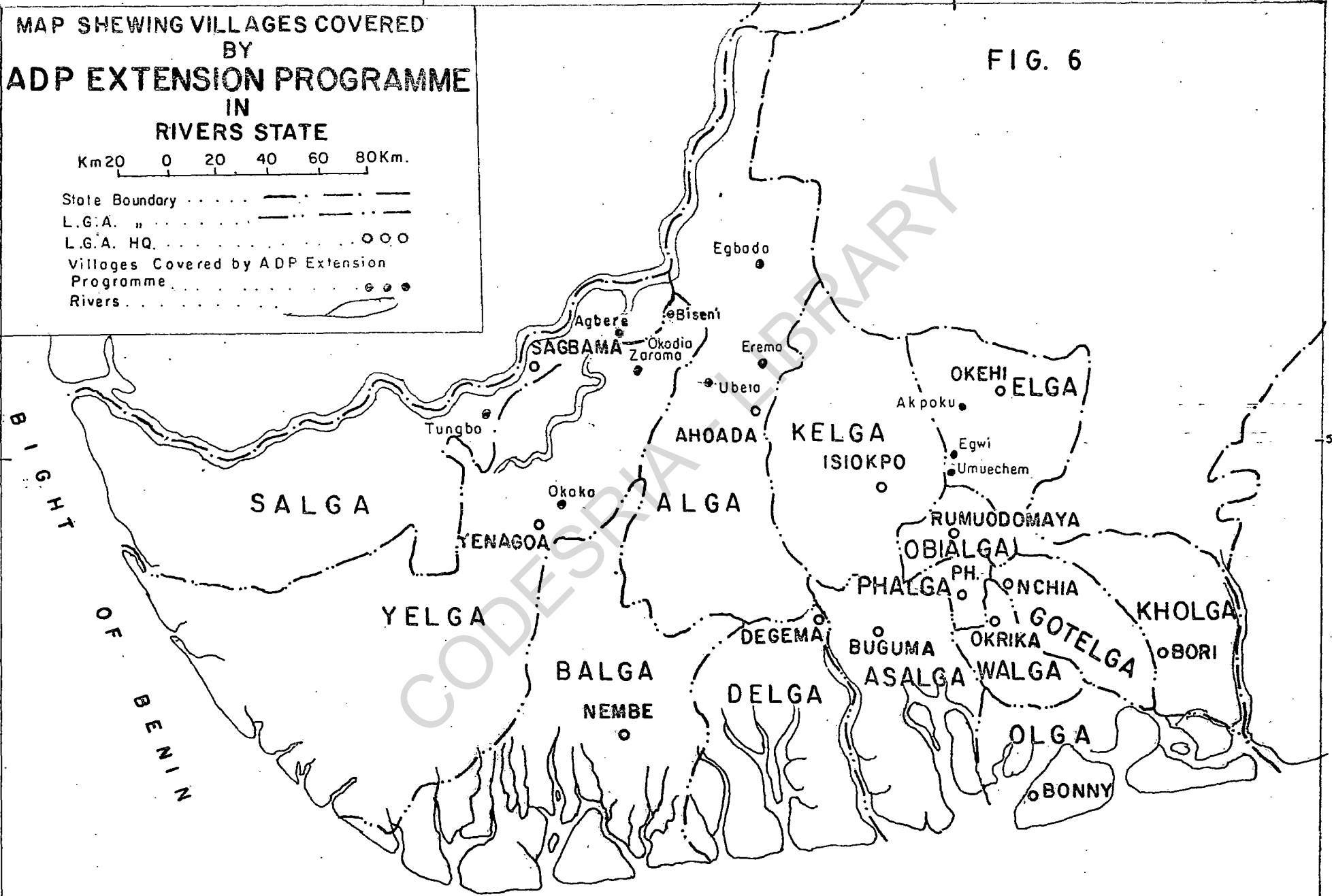
This is a rural youth employment programme geared towards productive job creation in agriculture.

MAP SHEWING VILLAGES COVERED BY ADP EXTENSION PROGRAMME IN RIVERS STATE

FIG. 6

Km 20 0 20 40 60 80Km.

- State Boundary
- L.G.A. "
- L.G.A. HQ.
- Villages Covered by ADP Extension Programme
- Rivers



BIGHT OF BONNY

Table 2.6: Impact Assessment Criteria for School-to-Land Programme

Criterion	Indicator	Measure
Income	(i) Improved employment opportunities for young school leavers	(i) Number of school leavers employed from 1987 to date as a proportion of total number of secondary school leavers registering for the programme
	(ii) Income (Naira)	(ii) Income of School-to-Land farms
Productivity	(i) Increase in food production	Yields on School-to-Land farms
Social and Economic Welfare	Creation of new generation of farmers	Number of school leavers who were employed as compared to those who have remained in the programme from 1987 to date

Table 2.7: Sampling Frame for School-to-Land Programme Impact Assessment

Location	Local Government Area	No. of Young Farmers
Sagbama	SALGA	27
Okordia *	YELGA	62
Bukuma *	DELGA	24
Ogbia	YELGA	26
Bunu-Tai	GOTELGA	92
Egbeke-Nwuba *	ELGA	81
Agbeta *	ALGA	40
Bori New Town	KHOLGA	59
Kpaa	KHOLGA	138
Total	9	549

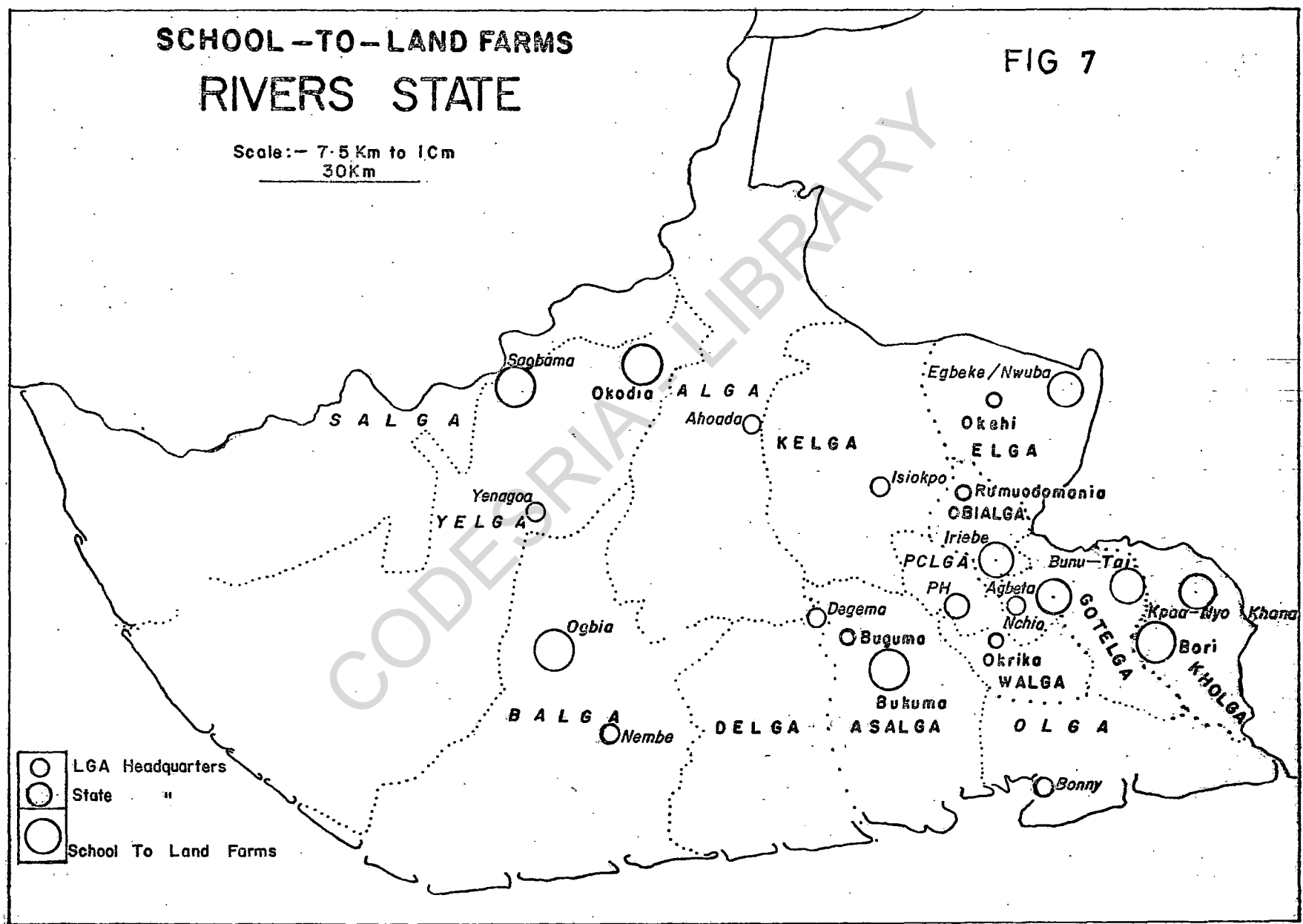
Note: The training farm at Iriebe is not included

* Farms covered in field survey

SCHOOL-TO-LAND FARMS RIVERS STATE

FIG 7

Scale:- 7.5 Km to 1Cm
30Km



2.2.5 Sampling Procedure For School-to-Land Programme

For the School-to-Land programme, a simple random sampling procedure was adopted as it was not possible to have the data on young farmers on the basis of gender. What was made available by the authority was the number of young farmers settled on the farms as at December 1991. This constituted our sampling frame (see Fig. 5). In keeping with our ecological zonation, four local government areas were selected for questionnaire administration. These were Yenagoa and Degema LGAs in the riverine zone and Etche and Ahoada in the upland zone. Finally, the farms in our sample include Bukuma, Okordia, Egbeke-Nwuba and Agbeta. A simple random sampling method was used to administer questionnaires. Out of the total of 207 young farmers said to be settled on the four farms in the sample, 90 representing 43.48% were actually identified during field survey and formed the sample population.

2.3 Instrumentation and Data Collection

There were two main sources of data for this research: Primary and Secondary.

(i) **Primary Sources: Questionnaires**

Primary source of data for this research include the administration of questionnaires, scheduled interviews and personal observations. The questionnaires for the feeder roads and the agricultural extension programmes are designed into three parts (see Appendices I and II).

The first part was designed to provide general information on the respondent - age, educational and occupational status. The second part dealt with local level organization participation and group reaction to the programme. The third part focused on the individual respondent's personal experience of the programme. Two questionnaires were designed for the School-to-Land programme. The first questionnaire (Appendix III) focused on the communities in which farms were located. The second questionnaire focused on participants in the farm project (Appendix IV).

Interviewing in principle appear to be simple but in practice is far from so. Problems of suspicion were usually encountered first particularly from female respondents. Then there was problem of outright refusal to provide information to attempts to evade the information particularly that on income.

Responses such as "cannot quite remember as it was a long time ago" were sometimes used as evasive techniques. Another problem was that of units of measurement used in estimating land size and volume of output. For instance, the local measurement of land in Sagbama and Yenagoa Local Government Areas were in "Fathoms" equivalent to 2 square yards of wrapper the people tied. Also a barn of yam measured 25 yams tied by rope length across a width of ten such strips which brings the estimate to 250 yams, per barn. In estimating

farm land the size of the primary School football field was used as a standardized measure since in planning practice one football field is estimated at approximately 1 hectare. Wherever possible local contacts either local School teachers or office workers and University students were used as interpreters and field assistants.

(ii) Primary Sources: Interview Schedules

Interview schedules were designed and used for data gathering from local groups, chiefs and persons considered principal actors in the planning and implementation of the three programmes at agency level (see Appendices V and VI).

(iii) Secondary sources:

Secondary sources of information include published materials, government records; annual report of agencies, daily newspapers and official publications of state and federal governments.

2.4 Data Analysis

Data analysis used both description and inferential statistics. The raw data were coded and processed through the SPSS + PC (Statistical package for social science + Personal computed procedure of cross-tabulations, product moment correlation; multiple regression analysis and a range of non-parametric test statistics. Forty eight variables were processed for the

feeder roads Impact Assessment Analysis out of the 61 questionnaire items administered. The other questionnaire items were subjected to manual computations. The Agricultural Extension services programme utilized a total of thirty-one categorical variables. Test statistics were tested for statistical significance at an alpha level of 0.01 level of criterion. The decision rule was to reject the null hypothesis if the computed test statistic was greater than the table value; and to accept the null hypothesis if the computed value to the test statistic was less than the table value. The descriptive and inferential analysis of each variable of the research questions and hypotheses is discussed in the individual programme case study chapters.

Money incomes were in the case of the Agricultural extension programme converted to 1985 base year using the rural consumer price indices as published by the Central Bank Statistical Bulletin thus making all such income values directly comparable.

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CHAPTER 3

REVIEW OF RELEVANT RESEARCH AND THEORETICAL CONSIDERATIONS

3.1 Introduction

This chapter is divided into three sections. In the first section, the discussion of relevant research draws on empirical studies in different parts of Nigeria, and other scholarly arguments that have sought to explain the underlying problems of rural development efforts. This section is thus an attempt to set the discussion within the context of broad themes. The second section of the chapter is an exposition of relevant theory with attempts to define rural development and discuss its objectives. The third and final section of this third chapter is an attempt to build an analytical framework that would form the context in which data is to be analysed and elaborated.

3.2 Basic Issues in Rural Development and Planning in Nigeria

Several studies from the early 1970s to date have sought either to highlight the living conditions of the rural population in Nigeria or to examine the achievement of various interventions in rural areas. The general theme of much of rural research have been to provide explanations for the failures to achieve stated objectives of rural development in Nigeria. In this attempt, studies have focused on three areas. These

include, resource allocation to rural areas; the process of planning and implementing rural development programmes; and the impact of these programmes.

3.2.1 Resource Allocation and Urban Bias

Quite a few studies have suggested that rural development problems in Nigeria derive from the way in which over the years government have neglected rural areas in terms of its public investment pattern. This has further been attributed to the development strategy of the country adopted at independence.

The earliest of these studies were by Diejomaoh and Aluko both in (1972). From his study of financial allocations in the first and second National Development Plans, 1962-68 and 1970-74 respectively; Diejomaoh concluded that less than 40% of total government expenditure was actually designed for the benefit of rural communities. More recently, Okowa (1987) has analysed the rural/urban dichotomous pattern of financial allocation, for the 1962 to 1980 period and argued that the pattern sustains the urban bias thesis in Nigeria's development planning. Specifically in the Rivers State the argument has been strengthened by findings on expenditure and personnel distribution in health care delivery (Krukrubo, 1987) and in water supply by Domkpe and Obinna (1987).

In a related vein, this pattern of allocation has been attributed to the industrialization strategy adopted as the main thrust of the nation's development effort since independence. The industrialization strategy had been one of import substitution in which raw materials, machinery and management were all imported (Odama Committee Report, 1984). The corollary of this situation was a pattern of industrialization that was not able to establish necessary sectoral linkages with the predominantly agricultural rural sector. In spite of the strength of such arguments, Nwaka (1988) presents a counter argument contending that a careful analysis of the Nigerian historical experience would show a romantic attachment to the rural areas and consequent anti-urbanism. "Nigeria has not been ideologically committed to rural development as say socialist China or Tanzania; but successive political leaders and regimes have cried wolf about rural decay and the 'pernicious effects' of urbanisation" (Nwaka, 1988: 4). Furthermore, he suggests and rightly so, that very little if any of the disappointing record of rural performance can be blamed on urban bias. This last idea is to some extent correct in as much as it points out basic weakness in the underlying assumptions of the urban bias thesis. One such weakness is the assumption that more resources

necessarily imply better programme performance in rural areas. Experience with more recent projects do not lend credence to this view. For instance, between 1979 and 1983 the Federal government spent 2.1 Billion naira on its River Basin Development Authorities (Okafor, 1985). Other more fundamental criticisms of the urban bias thesis are its failure to question the appropriateness of programme responses and its failure to address the issue of who actually benefits from whatever expenditure are incurred in the name of rural development.

3.2.2 Management of Rural Development Programmes and Policy Implementation

In an important review of rural development policies and programmes in Nigeria, Onibokun (1983) argued that the overriding objective has been to improve living conditions with the ultimate purpose of stemming rural-urban migration. Many of the programmes failed to achieve their objectives because of the following:

- (a) their elitist orientation and the non-participation of the people who should be the focus of such programmes;
- (b) the lack of commitment to the programmes and instability in institutional support;

- (c) inappropriate conceptualisation of the programmes especially the phenomenon of over-ambition and mismanagement, and
- (d) the fact that the programmes failed to benefit the people in the rural areas.

The conclusions reached by Onibokun are those borne out by several other studies. Okafor in his assessment of the performance of the River Basins in proffering solutions to Nigeria's food crisis identified key problem areas including, "the high technological and capital input characteristic of Nigeria's RBDAs, excessive centralization of operations, inadequate funding of the most important operations, and the attitudes and behaviour of management." (Okafor, 1985: 416). Other studies that confirm Onibokun's submissions are those of Bamisaye (1985) and Idachaba (1984) on the Operation Feed the Nation (OFN) policy implementation process. Whereas Bamisaye asserts that the objectives of the OFN were clear and it was, simply stated, to make Nigeria self-sufficient in food production, Idachaba contends that in as much as the country had no food policy, the OFN lacked a policy frame, was hurriedly conceived and badly executed. The programme was launched in April, 1976. It had three essential components. These were:- the distribution of inputs on highly subsidized basis; the

establishment of seed multiplication centres nationwide and the improvement of rural roads to facilitate transportation. In addition, a programme of mass mobilization was embarked upon to promote the OFN policy.

In order to implement the programme, the Federal government decided on a decentralized administrative structure. At the national level was the supreme body - the national council of OFN with a composition of four members including the Chairman who was the Chief of Staff, Supreme Military Headquarters. All the members were part of the Federal Executive Council. Their function was to evolve a national OFN policy and to coordinate the work of State Councils. Directly below this body was the national committee, with a membership of nine nominated professionals. The States were to carry out key aspects of the implementation. The States also had their State Councils on OFN made up of the military governor as Chairman and other political appointees; and a State Committee consisting of Professionals. This dual structure led to serious conflicts that impeded implementation.

In a critique of the programme, it was noted that:

"The OFN programme, like all mass mobilization and mass awareness programmes, had serious conceptual and operational problems, some fatal. The concept of turning 'all and sundry' into emergency farmers with access to heavily subsidized fertilizers and other inputs, to cultivate 'every available patch of land' was fundamentally faulty and enormously wasteful. As it turned out, the incremental output gains did not justify the cost. The programme illustrated vividly the divergence between intended and actual beneficiaries of public policies: while fertilizer and other input merchants and transporters gained enormously, food consumers gained little or nothing in the form of reduced foods the input of which were banned or severely restricted reaped colossal rents while consumers paid dearly for it." (Idachaba, 1984: 12).

Again according to Idachaba, elements of the food plan were picked haphazardly and executed without regard to the interrelatedness of programme components; especially the decision to implement elements that were considered easy which was the procurement and distribution of fertilizers while ignoring the more demanding components such as the construction of rural feeder roads targeted at about 26,000 km nationwide. In a similar vein, Bamisaye suggests that the campaign strategy was faulty as it failed to reach the farmer in rural areas, having been confined to radio and television media.

It is for reasons such as the above which ultimately lead to failures, that scholars have questioned the ultimate objectives of some rural development programmes

(Wallace, 1981; Oculi, 1984) and also queried whether in fact the problems lie in implementation per se. As carefully noted, "failures are too easily attributed to bad policy implementation. When failures are repeated we should enquire more deeply into assumptions underlying policies, and when successes are announced we should be cautious enough to ask for whom it was a success." (Williams, 1980: 148).

Another obvious management problem is that of programme discontinuities and abandonment with the attendant multiplicity of agencies presenting serious problems of control and co-ordination in implementation. The succession of one initiative by another does not necessarily allow for the previous experiences to inform and shape current programme ideas. The results are often the creation of additional bureaucratic institutions, all making demands on scarce financial and manpower resources.

3.2.3 Rural Development Programmes Impact

Clearly there has been no dearth of rural development programme initiatives at federal and regional or even local levels in Nigeria. What has been lacking is the positive impact of programmes particularly that of helping the small farmer and other low income rural people including the women. To highlight the key issues

that have been raised by several researchers, the following discussion will draw mainly on the experience with River Basin Development Authorities (RBDAs) and Agricultural Development Programmes.

River Basin Development Authorities (RBDAs) were established in Nigeria beginning from 1976 to boost local food production and stem the tide of escalating food importation. Over the years both its organization in terms of geographic scope and range of functions have undergone revisions but the essential objective of the programme remains food production. According to the Decree that set it up the functions of the authorities are as follows:

"(1) construct and maintain dams, dykes, wells, boreholes, irrigation and drainage channels; (2) develop irrigated schemes for the production of crops and livestock; (3) lease the irrigated land to farmers or recognised associations in the locality of the area concerned; (4) develop fisheries; (5) process crops and livestock; (6) resettle persons affected by their works and schemes; (7) develop land for mechanized cultivation of crops; including forestry; and (8) establish ranches for cattle and other species of livestock and process livestock products for consumption." (Okafor, 1985: 416).

A subsequent decree in 1987 removed the agricultural function of fisheries, forestry, crops and livestock resources development but by this time, the various RBDAs nationwide had been in the business of food production for about eleven years, a sufficiently long time for their impact in this direction to be assessed.

In their different assessments of RBDAs impact on food production Salau (1986) and Okafor (1985) unearth mainly negative effects that derive from a number of factors ranging from faulty programme designs, institutional weaknesses and poor management, to wrong conceptualization of the objectives of rural development. In the first instance, the programme concept was faulty as it was based on large scale introduction of mechanized, irrigation agriculture. The farming practices it sought to introduce were too capital intensive and technically complex for the small farmers to willingly imbibe. Large scale irrigation involved the appropriation of the small holdings of small peasants without adequate if any compensation being paid.

In other cases, the damming of rivers led to the loss of the fertile (fadama) traditionally farmed by river bed irrigation. The Bakalori dam led to the loss of the homes and farms of over 13,000 people and whereas only 25,000 Ha of land were irrigated, 24,000 ha of fertile land were

lost (Salau, 1986). It is even more devastating when land irrigated under the authorities schemes are subsequently allocated in ways that benefit absentee farmers and rich peasants and completely marginalizes the small farmer. This is apart from the unjustifiable patterns of expenditure in the cost of irrigation. Clearly the bulk of the money went to components such as cars, office buildings and houses that did not benefit those for whom the programme was initially designed.

Apart from the problem with land, the top-down planning process isolated the small farmer from the decision-making process. Farmers were expected to radically change their cropping patterns, even the crops that they grew and generally subjugate their own immediate interests and survival to the authorities' long term objectives. There was certainly an incongruity between the programme expectations and the reality of the small farmers socio-economic status. Many of the management's actions such as their dictating to farmers to grow wheat rather than their local staples; their refusal to allocate parcels of land to farmers because what they had requested was smaller than the size the authority had decided, can be regarded as infringements on the sensibilities of the small farmer. The totality of the impact was such that negated the basic objectives of

rural development which is to focus on the well-being of the small farmer. Many of the shortcomings in the operations of RBDAs seem to have been duplicated in Agricultural Development Programmes (ADPs). Initially established from 1975 with assistance from the World Bank at Funtua, Gusau, Gombe, Ayanabe and Lafia, the ADPs now cover all States in Nigeria. The Rivers State Agricultural Development Project (RISADEP) came on stream in 1988. ADPs represent the first major attempt at integrated rural development planning in Nigeria. The ADPs have four programme components as exemplified by RISADEP. These are Crop, livestock and fisheries development; rural infrastructure; input supply and distribution; agricultural credit and marketing and on farm small scale processing.

Although no major study has assessed the impact of the programmes of RISADEP in its four years of operation, a number of the older ADPs have been the subject of considerable investigation. A study of the Funtua Agricultural Development Project (FADP) By Mahmud (1980) showed that 133 or 0.2% large farmers alone controlled about 14.2% of the area's arable land, with 3 of them having an average of [531.37 Hectares] each. The composition of this group showed 19 of them were top civil servants; 10 were retired bureaucrats and army officers while the remaining 104 are business men and

rich peasants (cited in Nkom, 1981). It was also observed that apart from the unacceptably high cost of many of the programmes, the planning and implementation involved either the direct participation or mediation of a network of international funding agencies like the World Bank, Multinationals, local and national elites in and out of government (Oculi, 1984; Nzimiro, 1986). The failure of the FADP can be summed up in the reaction of one time Kaduna State governor, Balarabe Musa, who in 1980 rejected the N100 million World Bank loan which was to have formed part of the investment capital required for financing the state wide integrated rural development programme. In a well-publicised statement the governor explained that one of the terms of the loan required vesting the management of the programme in the hands of expatriate staff, a move he said could not augur well for the lives and destiny of millions of Nigerian peasants. The governor's criticism was in line with various comments on the FADP by the New Nigerian (a daily Newspaper, published in Kaduna) which had in two editorials published on the 16th and 17th of March, 1978, criticized the emphasis given by the project to the "progressive" and "large-scale" farmers by the FADP (cited in Nkom, 1981).

Adelakun (1986) in his own study of the Lafia ADP (cited in Alubo, 1987), summarized the impact as being beneficial in the areas of water supply and feeder roads construction in the project area. Generally the negative impact surpasses the two positive ones stated above. Adelakun attributes this to the class bias in-built into the project design. First the project is capital intensive and therefore inputs are highly commoditised. The poor farmers who are the most in need of credit facilities from the project to participate effectively in the project are also the ones who have no access to such credit because of their lack of collaterals.

Attempts at explaining the nature of the impact of rural development programmes have unearthed two related key areas of criticism. These are the inappropriate conceptualisation of the process of rural development by policy makers and the class character of the programmes (Alubo, 1987). Alubo explained that part of the wrong conception is the tendency on the part of policy makers to regard rural development strategies and programmes as being synonymous with agricultural programmes. This has led to capital intensive usually irrigation-based agricultural development programmes nationwide. Furthermore he argues, that in terms of their design and implementation, these programmes appear to have been

implicitly based on the modernization paradigm in which government agents are seen as the prime movers of development. This paternalism ends up leaving out the peasants. The implications are appropriately summed up by Hyden (1986).

Rural development is not only a social and material problem, but an intellectual one as well. To an extent that we are usually not ready to recognise, rural poverty and stagnation are the result of misperception and misinterpretation. These are not the failings of the rural people themselves ... The problem lies at precisely the other end of the social spectrum, with well-educated and well meaning advisers and functionaries who are meant to attend to rural poverty. (Hyden, 1986: 245)

3.3 Relevant Theory

3.3.1 The Meaning of Development

Our discussion of the relevant theory must start with the consideration of the concept of development itself since as Akinbode points out, "rural development ramifies throughout the economy and society" (Akinbode, 1991: 14). The word 'development' has been widely and variously used and interpreted. Our discussion of the meaning of development will follow the changing historical perspective of the development idea (Mabogunje, 1982).

3.3.2 Development as Economic Growth and the Lewisian Rationale

In the 1950s and 1960s, development was conceived as economic growth. Growth was measured in terms of gross national product (GNP). As long as sectoral growth rates led to increasing GNP, it was assumed that all was well as with an economy and with the people living in it. This notion of development was the basis of the general adoption of an industry-led development strategy. Nigeria like almost all other developing countries share this feature. The development strategy was pegged on the hope that such urban industrial processes would ultimately lead to the elimination of underdevelopment and rural poverty. The rationale on which this hope was built can be traced to the Lewisian model of development. Lewis has suggested that industrial growth would draw on (at least, at the initial stage) rural surplus labour. The rural sector was assumed to suffer from low productivity and that productivity was higher in the urban industrial sector. Profits generated by this higher productivity sector are reinvested, thereby sustaining the demand for rural surplus labour. The model assumes that a "turning point" is reached in the out-flow of labour from the lower wage rural agricultural sector when the loss of labour forces up wages in the rural sector. It is this

process through which the benefits of industrial expansion trickles down to the rural areas. In the actual experiences of most LDCs this has not occurred due to reasons elaborated in the subsequent subsection (3.3.3) of the discussion.

3.3.3 Industrial Led Development: The Myth of the Trickle-Down and Rural Poverty

The benefits of industrial growth are expected to trickle down to the rural sector through payments to labour. At the initial stages of industrialization, rural labour migrating to work in the urban industrial sector was to be paid a constant wage determined by the average consumption level on the rural population plus a nominal extra to cover the additional costs of moving and urban living. However, with increasing industrialization, the demand for rural labour would continue up to the point where labour does not want to migrate from rural to urban areas at the prevailing wage rate. Without necessarily going into details of it, this point is the Lewisian turning point, "that is from the point where the labour market becomes tight and the wages upwardly mobile, the benefits of industrial expansion begin to percolate through to the workers and the rural population through higher wage rates" (Saith, 1989:16).

The rural experiences of many LDCs show that this has not occurred. Rather the overall impact of the industry-led development strategy has been an urban-biased pattern of resource allocation and the neglect of the agricultural sector on which majority of the rural populace depend for livelihood. This "immiserizing" growth effect (Saith, 1989) is marked by greater inter-personal differentiation in incomes between the largely agricultural rural sector and the urban labour force. Focusing specifically on Nigeria's growth experience, Rauch (1984) has argued that productive forces within the Nigerian economy were developing in a way that did not allow for the vast majority of the people in either rural or urban locations to participate. Rauch attributes this to the accumulation process in peripheral capitalist economics.

3.3.4 Development as Modernization: The Rostowian Model

One of the consequences of the notion of development as economic growth was that it easily became equated with modernization and nation building. This perspective followed the proposition by Rostow of his stage theory of economic development. All LDC economies were expected to follow the experience of developed countries moving from the "traditional" to the modern economy in five transitory stages. The expectations of the Rostowian

model are historic and have not been borne out in reality. This is due to the dual-economy thesis that has been adequately expounded by the dependency school of thought. As summarized by Andre Gunder Frank (1970) that any adequate theory of development must learn from the past economic and social history of LDCs led to the present state of today's underdeveloped populations; particularly the experience of colonialism; and the economic and political relations between "metropolis" and its colonies within broader framework of an expanding internationalist capitalist system.

As a critique of the modernization thesis, Frank argues that underdevelopment is not original or traditional and that neither the past nor the present of the underdeveloped countries resemble in any important respect the past of the now-developed countries. Furthermore, he argued that the dichotomy in levels of development that exist today either at an international scale or an intra-national scale within a single economy are both products of a single historical process of capitalist development.

Another general criticism of the conceptualization of development as economic growth, or modernization is that development itself becomes an identifiable end-state. As rightly pointed out by Smith (1977),

"growth in its usual economic sense, simply means more of the same, or a different collection of goods valued more highly by the imperfect evaluation of market pricing or opportunity cost measured by scarce resources used up. Growth means a larger cake without much reference to its ingredients and with no reference to who gets how big a slice." (Smith, 1977: 207). It is also true that the processes of economic growth can become the processes by which social injustice become institutionalized and therefore perpetuated. Thus growth is concerned with quantitative changes per se. Development on the other hand would include qualitative changes addressing the more fundamental issue of the distribution of benefits arising from the quantitative increases.

3.3.5 Development as a Process of Transformation

Beginning from the 1970s, there is increasing consensus that development is a process.

Development is a process - a state of becoming. As such it involves change. However, development is not just the situation at the beginning nor at the end of change. It is instead the on-going evolutionary transformation that modifies what exists at the beginning to what exists at a latter point in time. (Hall, 1974; cited in Hoggart and Buller, 1987:25)

Most of the discussion in the literature have contended with what the process of transformation or change involves. Mabogunje (1977) has argued that the

transformation must involve a "painful and convulsive process of internal re-organization and adaptation", rather than the acquisition of gadgeteries and technologies from abroad. Transformation must remove those institutional and structural factors that hinder social change.

In the same vein, Hilhorst (1987) argues that long-term historical processes of societal change have resulted in socio-political and economic structures that imply unequal access, so that groups enjoy more material welfare and more influence than other groups. These inequalities he suggests are not due to inherent differences in human potential but due to restrictions on the realization of these potentials. "The societal process of shifting restrictions on the realization of human potential will be called development." (Hilhorst, 1987: 12). In elaboration, he proposes three dimensions of the process of shifting restrictions. To this end, Hilhorst suggests that development has an operational meaning; a relational meaning and a comparative meaning. In its operational dimension, it is the process by which a group or groups take specific actions to remove definite constraints. The relational meaning covers such changes in the relative position of one group to another in terms of society's prevailing social, economic and

political structures. However, constraints in society do not affect all groups uniformly. Herein comes the comparative meaning of development. It has to do with the differences between groups in relation to given constraints.

The Nigerian government has itself provided a definition of development. As contained in the Guidelines to the Fourth Development Plan, this was:

True development must mean the development of man - the unfolding and realization of his creative potential, enabling him to improve his material conditions of living through the use of resources available to him. It is a process by which man's personality is enhanced; and it is that enhanced personality - creative, organized and disciplined - which is the moving force behind the socio economic transformation of any society. It is clear that development does not start with goods and things; it starts with people, their re-orientation, organisation and discipline. (Ministry of National Planning, 1980, p. 20).

If the government's definition is viewed in the light of Hilhorst's elaboration, there is need to recognize that the realization of human potential cannot be achieved without the recognition at individual, group and societal levels that constraints exist and that there are many different contexts in which these can manifest.

3.4 The Concept of Rural Development

The initial adoption of development as an economic growth thesis and the consequent sectoral approach to

development planning in less developed countries (LDCs) emphasized the relative contribution and the role of each economic sector to the growth of the national economy. Rural development was equated with development of the agricultural sector. As mentioned earlier the "trickle-down" from industry to agriculture of the benefits of growth did not materialize. In line with the changing notion of development in the 1970s, the narrow sectoral conception of rural development as being synonymous with agricultural development was abandoned. Rural development became concerned with all aspects of rural land, society and economy in addition to agriculture. This new approach was more concerned with growth and equity objectives and because in LDCs most of the poor lived in rural areas, it led to the adoption of rural development as a distinct approach to the development of the economy as a whole.

Many of the definitions of rural development that were consequently proposed were attempts to synthesize the growth and equity objectives of development. What emerged as Dams (1982) identified, were three different applications of the term 'rural development'. It is sometimes used to "refer to the process of rural development"; at other times as "a strategy" and yet in other contexts to describe "planning activities" (Dams, 1982: 14).

The World Bank in its sector paper (1975), defined rural development as "a strategy designed to improve the economic and social life of a specific group of people: the rural poor. It involves extending the benefits of development to the poorest among those who seek livelihood in rural areas. The group includes small-scale farmers, tenants and the landless". Chambers (1983), criticized this definition on grounds that it excluded women and children as a special category of rural poor and failed to include the political dimension of more control by the poor of the benefits of development. What emerged from the World Bank's definition and variants of it like those of Chambers, is the shift in focus from growth as an end in itself to growth as a means to an end with emphasis on distribution, inequality and poverty; coupled with the identification of special groups considered especially vulnerable. With this shift also emerged different contextual positions with the result that rural development became a normative concept. Points of contention included the question of approach, who should be involved, what should be the proper role of government in relation to that of the people.

Heyer et al (1981) for instance, have questioned the view often held in official circles that rural development is 'planned change' which involves public

agencies operating from outside the rural areas. The results they argue have been the design of programmes that are usually instruments of coercion rather than development; often offering inputs and welfare service packages aimed at soliciting increased production. The same conclusion has been reached by others. Williams (1986) has argued that in view of the fact that, rural development is done for peasants, and often to them, but is not done by them, it would be "more useful to define rural development by its institutional forms. It is an activity of government, supported by aid agencies, carried out as projects" (Williams, 1986: 11).

In contrast to the above the spatial dimension of rural development; one that is more concerned with appropriate framework for rural development planning has been emphasized by regional planners. (Friedmann and Weaver, 1979; Rondinelli and Ruddle 1978; Misra 1981; among others). The trend of their argument has been, that increased production and productivity in rural areas, required the support of a network of service and market centres which ought to be provided by the urban areas.

In keeping with the conclusions reached in our discussion of the meaning of development, rural development is a process. As Hoggart and Buller (1987)

added, this process must involve for rural people increasing control over their circumstances. If our focus in rural development is on "man" and on his creative, productive and innovative potential, then the constraints which exist because of man's relationship to the physical and social environments must be removed. The concept of rural development must therefore be a dynamic process of change in which these structures are identified.

Structures could be social, as in the case where value systems keep individuals and groups subordinate to others. They could be political reflecting power relation in society that guarantees those who have access to it, rights and privileges from which participation by others is precluded. Structures could be economic, when access to productive resources is not possible or is denied. In fact structures can also be physical in cases where the fact of geographic location imposes constraints on productive activities. There is a cumulative linkage between these structural elements - in the sense that society is consistent in the way one aspect of its organization is related to others. Those who have political power are also those most likely to own considerable assets and ipso facto wield influence. The process of rural development is therefore one that

qualitatively and quantitatively transforms the individual and collective circumstances of the rural poor along the lines discussed above.

3.5 The Objectives of Rural Development Planning

The discussion so far, has been an attempt to advance the definition of rural development as a contextual issue. What emerges is that these definitions are mainly propositions on what rural development planning should aim to achieve. In this section, the approach adopted is to take the official government of Nigeria policy objectives for rural development and discuss these in the light of the literature.

The Federal Government's National Directorate of Food, Roads and Rural Infrastructure (DFRRI), has proposed the following objectives of rural development planning in the country:

(a) To improve the quality of life and standard of living of the majority of the rural people in the rural areas, for example:

- (1) By substantially improving the quality, value and nutritional balance of their food intake;
- (2) By raising the quality of rural housing as well as the general living and working environment in the rural areas;
- (3) By improving the health conditions of the rural peoples;

- (4) By creating greater opportunities for human development and employment particularly self employment and consequently enhancing rural income levels;
 - (5) By making it possible to have a progressively wider range and variety of goods and services to be produced and consumed by the rural people themselves as well as for exchange.
- (b) To use the enormous resources of the rural areas to lay a solid foundation for the security, socio-cultural, political and economic development activities of the rural areas to those of the Local Government Areas, the State and the Nation. (Koinyan, 1986: 1).

Further elaboration of the above aims emphasize three essential ingredients - growth; self-reliance and community participation. We shall discuss each of these in turn.

3.5.1 The Objective of Growth

Basically the statement of objectives is couched within a general strategy of basic needs with the improvement of health, housing and nutrition as necessary ingredients for the upliftment of rural quality of life. To support these improvements are those of employment and provision of goods and services. In section (b) however, the objective is one of promoting economic growth. Indeed,

this was clearly stated subsequently that "to achieve these objectives, there must be vastly increased and sustained rural productivity, growth and development. Indeed, a nation that does not embark on serious local production of a very large percentage of its requirements of goods and services by utilizing its own locally produced raw materials, indigenously developed/adopted technology and know-how as well as its own organizational skills, cannot lay claims to real growth and development. The place to start this transformation for greater productivity is in our rural areas, given their vast land and labour resources". (Koiyan, 1986).

Obviously, the emphasis here is on self-reliant growth. In fact this objective is fundamental to the realization of the current initiative on rural development planning in Nigeria. There are two problems associated with it however. One is that self-reliant growth as an objective for rural development cannot be realized without supporting policies that are operationalized simultaneously at regional and national levels especially in the area of choice in development strategies and implementation capabilities. Secondly, increased productivity and growth as objectives are necessary but not sufficient for the realization of rural development. It is important to clarify the ends which growth must serve.

The whole argument on growth has been based on the premise that increased output and productivity would lead to increased incomes and that generally economic expansion which this stimulates would lead to a 'trickle-down' effect in which the benefits of this growth would reach the poor. This argument has not been sustained by empirical evidence. What has emerged is a situation in which economic growth has contributed to increased differentiation in income levels with the rich 'capturing' increased proportions of the benefits of this growth. Collier, (1981) using results from fifty-three village level studies carried out in Nigeria with data covering the period between 1929 and 1979, showed that the real incomes of small-farmers were lower in the 1970's during the 'oil-boom' phenomena than in the period between 1928 and 1964. Also significant are the occurrence of leakages from rural economic growth to urban areas.

The other point of argument has been that structural conditions of inequality coupled with the concentration of political power in the hands of a minority, serve to ensure that the benefits of economic growth do not reach the poor. There is also enough evidence to support this view. The point remains however that increased productivity and economic growth are necessary for rural

development. What is required is for the process to be organized in ways that will benefit the poor. Certainly this calls for an examination of existing conditions of inequality in the area of access to factors of production. This is a specific point of relevance for the conception of rural development as presented in section 3.4.

Another issue that will need attention is the resource content of rural production. It is important to look at this from both the individual and community perspectives. At the individual level, a basic cause of low productivity is poverty. Polly Hill (1977) in her study of rural Hausaland in Northern Nigeria, argued that poverty was so pervasive that it was difficult to comprehend how some managed to break out. She argued that in spite of the abundance of fertile land, many men were "too poor to farm" adding that "poor men applied less manure to their farms and obtained lower yields per unit of effort; poor men had unremunerative types of non-farming occupation-poor men could seldom borrow money being considered bad risks" (Hill, 1977: 164). On the community level, the resource base from which productivity can be built has to be identified. Koinyan rightly suggests that there are few resource poor rural

areas in Nigeria. There is also evidence that low productivity is partly a result of the production process, and how individuals relate to this (Nwankwo, 1987).

3.5.2 The Objective of Self-Reliance

"The Directorate makes bold to say that any development strategy that cannot help people to transform their immediate environment to provide for themselves the quality and quantity of the goods and services they require to make their lives progressively more comfortable is severely flawed. It is the strong contention in the Directorate that every hamlet or village with a population and identifiable land, however small each of these may be, can effectively and efficiently turned into a veritable unit for the required production and development effort. What we shall then do is install the required organisational structure and thereafter through effective mobilization get our people to maximise their resources to their immediate advantage and that of the nation." (Koinyan, 1986: 2-3).

The concept of self-reliance as stated is one that gives primacy to the people their knowledge, skill and their ability to use these to manipulate their environment for their own betterment. It derives from the awareness, that for meaningful development, the initiative must come from within. This view has been emphasized by others. (Hyden, 1986; Williams, 1989). For too long they point out, rural development has been seen as programmed packages of inputs and services delivered to the rural people with instructions. The new policy objectives for rural development propose to create an

'enabling environment' (Hyden, 1986) such that local initiative can be fostered. Of all the stated objectives for rural development planning in Nigeria, those of self-reliance and participation are the essentially new ones. The concept of self-reliance must however go beyond people's mobilization and participation. It implies development from own resources; human and material.

There are three dimensions to the adoption of this objective. The first has to do with the pattern of interaction between institutions of government and the people. The old pattern where government agencies led and the people were expected to follow must of necessity change. Under the new initiative, the people are theoretically in control of the planning process—they set the goals, determine the priorities and essentially design their own programmes. Two issues that emerge but are not clarified in the official document are (1) what the role of public institutions would be in the present dispensation; and (2) how the planning that will be done by local communities fits into the existing procedure for rural development planning.

The second dimension which is perhaps the most important of the three, is the political aspect. As noted by Galtung (1980), local self-reliance cannot be

achieved without corresponding efforts at national self-reliance. Patterns of interaction between local-regional-national and international communities would have to be changed. New political attitudes that give decision-making at local level an appropriate place in national planning have to be developed. Priorities for planning will then be based on local level decisions rather than as conceived by policy makers. Self-reliance goes beyond organizing for the use of local resources: this is just the economic aspect. The politics of self-reliance comes from an adoption of a development philosophy that builds not only on local resources but on local initiative. If national development planning is done in ways that contradict the very basis for local self-reliance in terms of production systems, then the application of the concept to rural development planning is stillborn. This implies that the choice of policy options for national development planning must be done on the basis of local self-reliance.

The third dimension is that of the strategy which will facilitate this process of transformation. This is also a political problem in the sense that it requires a deliberate policy of developing and utilizing local technology and capabilities. The decision to adopt this approach and the commitment to stay with it will require political commitment at the national level.

3.5.3 The Objective of Community Participation

If we wish, therefore, for genuine growth and development in Nigeria, we must pay very great and meticulous attention to the organization of all of our communities, starting from the grassroots upward. To do this successfully, we must first of all identify and understand how our peoples in the various parts of the country have traditionally been organised for their socio-cultural, political and economic activities. This understanding coupled with the application of modern trends in organisational arrangements for productive should form the spring-board from which we can transform all our communities into virile, viable and conducive systems for mobilizing and directing all our national development and growth efforts. This is crucial because it is people who build nations. (Koinyan, 1986).

The Directorate of Foods, Roads and Rural Infrastructure (DFRRI) has proposed to achieve this particular objective through the active mechanism of decentralization and mobilization.

Decentralization is usually advocated to promote participation-by bringing decision making units nearer the people and thus providing them with a proper avenue for participation. Thus there are two processes-that of increasing decision making powers of administrative units lower down in the governmental hierarchy and that of involving the people in the actual process of decision making.

A related issue is whether participation necessarily increases the benefits to the disadvantaged. Evidence

from studies are inconclusive on the matter. Waddimba (1979), in an examination of evidence from several projects concludes that participation does not necessarily increase the benefits accruing to the poor from such projects and that existing social and economic inequalities often operate to the disadvantage of the poor. Neither does decentralization per se imply increased participation at local level. So much depends on the political processes that operate at local level. Perhaps more important than linking participation to a decentralized administrative framework, is the need for government at all levels to recognize that meaningful participation should constitute an integral part of the rural development planning process. Thus, the need for the people to be mobilized is necessary for this purpose and it is that aspect which needs more attention.

The fact that rural Nigeria is not a homogeneous social unit is one that is supported by several studies. In the case of gender, Pittin (1985) has demonstrated the case for rural Hausa women and how gender subordination affects relations in the work place. Gana (1985) based on his study of local government, showed how decision making within local councils was dominated by community elites (both those based in urban areas and those who live in the rural areas). Also, the traditional

rulership is not exempt from this pattern. Nzimiro (1986) has shown clearly how in fact traditional rulers and chiefs in coalition with local elites have been party to the exploitation of poor peasants especially in expropriating their land for multinational agriculture. These complicate the participatory process. The effective mobilization of people is a delicate process and must graduate from the arena of public rhetoric in order to be realized. Community participation in rural development could be exploitative especially given the inherent inequalities in society - with those who shout loudest and longest having the most say and diverting programmes to suit their specific interest.

3.5.4 Summary

The discussion in this section has attempted to highlight the relevance of the Nigerian government's objectives for rural development planning in the light of theoretical and empirical considerations. The main contention has been that whereas the objective are relevant, there are several areas in which what is proposed may not necessarily be appropriate or feasible. There are proposals that cannot be built on assumptions and would require greater clarity especially in terms of procedures and organization. In terms of adequacy, the argument is that the objectives as presently defined are not ends in themselves but means to an end. From discussions in section 3.4 the ultimate objective for rural development

is the structural transformation of rural life, that increases the control people have over their individual and collective circumstances in order to achieve their full potential as human beings. In order to achieve this in many areas of policy government has to be clear as to what its aims are.

The objectives that have been discussed, are the most recent in a line of official statements of commitment to various objectives of rural development planning. In spite of rhetoric; these objectives are yet to fully realized. It can be suggested that some of the missing ingredients have been in the areas of appropriate strategies and of implementation.

3.6 Analytical Framework

Our analytical framework for this study will utilize the concept of the rural development environment. Essentially the underlying rationale is that rural development activities are planned and executed within a societal and an institutional contexts. (Cloke, 1986). The institutional context of the rural development environment consists of the agencies, departments and offices and the principal officers who plan and execute the different programmes. The societal context of the rural development environment consist of the different interest groups who influence and contribute to decision-making.

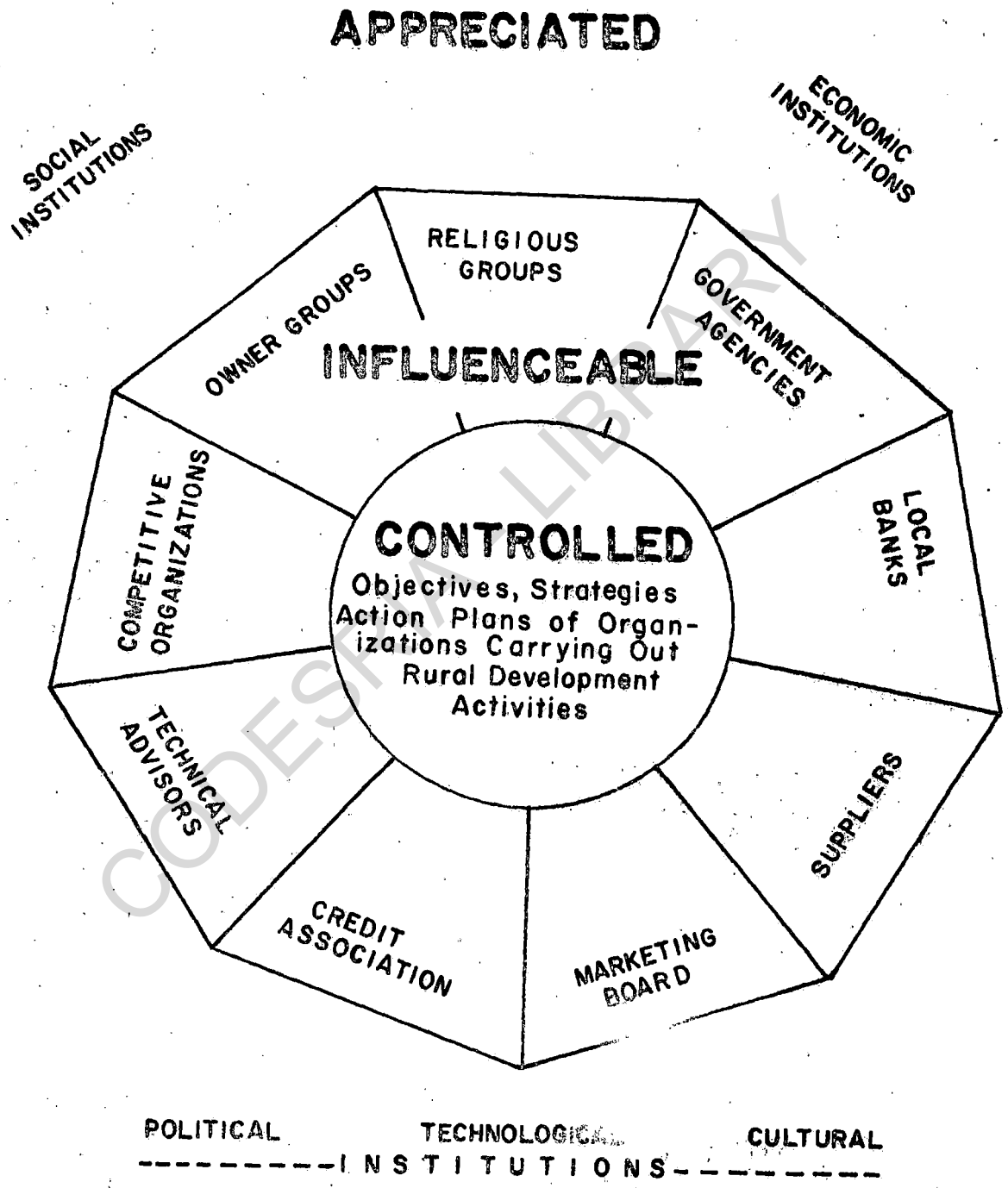
Smith, Lethem and Thoolen (1980) have brought the focus down to the specific rural development project, with concern for the environment in which the project is conceived and implemented. They argue that for effective performance of a rural development project, its design will follow from two things. These are:

- (a) identifying and understanding the environment in which the project will operate and;
- (b) clarifying the project objectives, identifying target groups and implementing agencies and sketching out for each of these groups, its purpose and contributions to the broader project objectives

Three levels of environment were identified for a rural development project. These are; the controlled environment; the influenceable environment; and the appreciated environment (Smith et al; 1980: 9). (see Figures 8 and 9). The agency or organization responsible for the project has to contend with all three levels of environment in order to achieve project objectives. The "controlled" environment consists of the baseline activities that produce the results intended including the selection of objectives, strategies and actions. It is over these actions that the agency or department responsible for the specific project has the most control. The "influenceable" environment consists

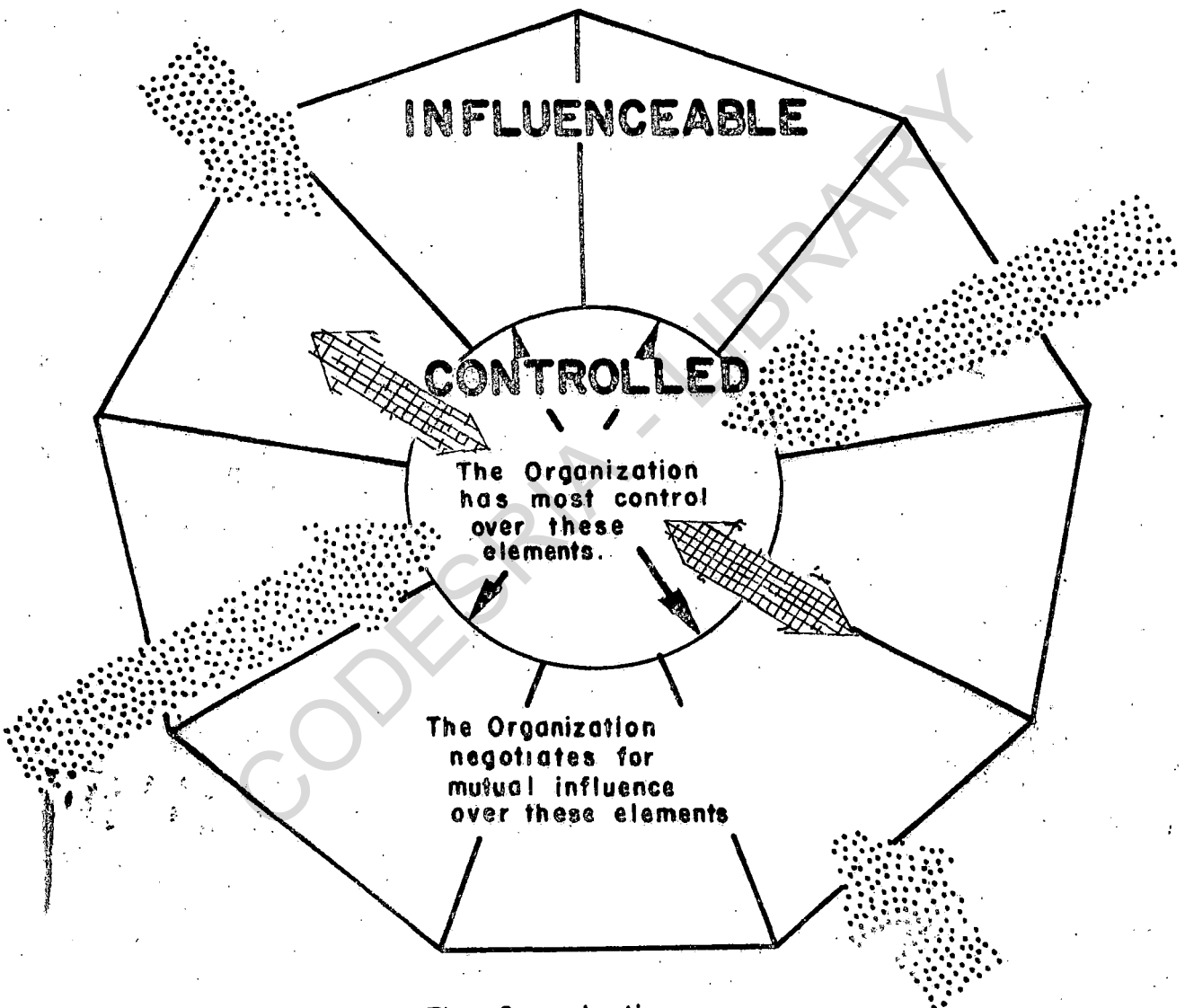
FIG. 8

PROJECT ORGANIZATION AND ENVIRONMENTS IN
RURAL DEVELOPMENT PROJECTS



Source: Smith, W. F. et al. (1980)

FIG. 9

AN ORGANIZATION'S RELATIONS TO ITS ENVIRONMENTS**APPRECIATED**

Source: Smith W. F. et al (1980)

of entities that are external to the programme's agency but whose activities influence the agency's performance. Such external entities have on going relationships with the programme's agency either as suppliers of inputs or consumers of output. Such entities can be other rural development agencies, individuals, co-operatives, financial houses, and technical advisers. The third level of the rural development environment is the "appreciated" environment. The elements that operate within the appreciated environment are beyond the control and influence of the rural development programme's management. However, actions within the appreciated environment affect directly or indirectly the programme's performance. A sample of examples of elements within the appreciated environment include land tenure systems; research and technological breakthroughs and limitations; price policies; centralized nature of administration; finance; budgeting and procurement procedures affecting inputs to projects; government hiring policy.

For any project, the relative importance of each environment differs. Smith et al further suggest that the rural development system covers three levels of administration - the national, intermediate or regional

and local levels. Therefore in conceptualizing the environments those three levels of administration must be recognized. Furthermore they argue that the concept of the rural development environment implies that the planning and implementation of a rural development project is essentially a political process.

"This way of looking at organizing as a political process is equally applicable to the beneficiary, and is helpful in evaluating the performance of a rural development programme. Development has taken place if the beneficiary achieves any one or combination of the following:

- (a) He has more control over activities that contribute to his purpose. (He has more equipment, a marketable surplus that allows him to take risks).
- (b) He has more influence over the external environment. (He can bargain for supplies, has influence on the price he gets for his goods or where and how he markets them, he can join forces with others to increase his influence).
- (c) He has more awareness of the external environment he cannot control or influence, and how it affects the achievement of his purpose. (He is informed about the legal, economic, technological factors relevant to his work and way of life).

If development is defined in this way it is clear that development itself has a political dimension. Through development the beneficiary increases his control and influence over, and his appreciation of, his environment (Smith, Lethem and Thoolen, 1980: 17).

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CHAPTER 4

SOCIO-ECONOMIC IMPACT ANALYSIS OF THE FEEDER ROADS PROGRAMME OF THE DIRECTORATE OF FOOD, ROADS AND RURAL INFRASTRUCTURE (DFRRI)

4.1. Programme Description

4.1.1 Historical Background

The general background of the feeder roads programme of DFRRI can be traced to the recommendations of the Idachaba led team of researchers who had carried out a nation-wide study for a "Food Production Plan for Nigeria" (Idachaba et al, 1984). A key recommendation was the necessity of constructing 25,840 kilometres of rural feeder roads during the 1981-85 plan period to support the National Food Production plan. The recommendation was ignored by the Federal government until 1986 when following another national seminar, rural feeder roads became a national priority. Section 5; Sub-section (c) of Decree No.4 of April, 1987 created DFRRI with one of its objectives stated thus:

To formulate and support a national rural feeder road network programme involving construction, rehabilitation, improvement and maintenance especially in relation to the nation's food self-sufficiency programme as well as general rural development.

Prior to the DFRRI initiative, the first established attempts by the Federal government to give attention to feeder roads as part of a broader rural development endeavour was through the initial mandate given to the

River Basin Development Authorities, as contained in Section 4, Sub-section (k,i) of Decree No. 87 of 1979. Albeit this function has now been restricted by Section 4, Sub-section (d) in Decree No. 35 of 1987. Also, the Agricultural Development Project (ADPs) nationwide have under the various decrees setting them up, a mandate for the construction of rural feeder roads.

4.1.2 Feeder Roads Programme Coverage

The programme covers the entire Rivers State. Directorate of Foods, Roads and Rural Infrastructure was expected to construct, re-construct and rehabilitate 850 km of rural feeder roads by June, 1987 under phase I of the programme. The sum of N7.10 million was allocated to it with an extra N1 million for the construction of culverts and ecological problems. According to the State DFRR1 it completed the construction and rehabilitation of 311.15 km of rural feeder roads under Phase I (See Appendix VII) of the programme.

4.2 Impact Analysis of Directorate of Foods, Roads, and Rural Infrastructure Feeder Roads Programme

The analysis of the programme impact is done at two levels, that of the community as a whole and on the level of individuals within it on the basis of their income levels and gender. This introduces the element of differential impact.

4.2.1 Characteristics of Respondents

Various characteristics of respondents were documented from questionnaire analysis. These include age, sex, educational status, occupation and migration status. The age of respondents was important in as far as it helped identify those who by virtue of their age come within the reflexive control group. In Table 4.1, the age structure of respondents is shown.

Table 4.1: Age of Respondents

Age	Sex of Respondents			
	Male	(%)	Female	(%)
20 - 29 years	32	(19.05)	24	(12.5)
30 - 39 years	56	(33.33)	64	(33.33)
40 - 49 years	40	(23.81)	61	(31.77)
50 - 59 years	36	(21.43)	35	(18.23)
Above 59 years	4	(2.38)	8	(4.17)
Total	168	(100)	192	(100)

For both sexes, 33.33% of respondents come within the 30-39 years age group; while 23.81% and 31.77% respectively are of the age group 40 -49 years. Those over 59 years of age are remarkably low averaging 2.38% for males and 4.17% for females.

Another characteristic of the respondents is their migration status. Respondents were asked to indicate the number of years in which they have lived in the locality. This information was necessary as our respondents are to serve as reflexive control group and therefore had to provide information on pre-programme or baseline

conditions. Table 4.2 shows that the majority of respondents 77.38% males and 67.19% females had lived in the local community for over 15 years. In fact our experience showed that respondents were either indigenes of the village or had worked there for several years or had been married into the village.

Table 4.2: Length of Stay In Locality

Years of Stay	Sex of Respondents			
	Male	(%)	Female	(%)
1 - 5 years	10	(5.95)	10	(5.21)
6 - 10 years	18	(10.71)	28	(14.58)
11 - 15 years	10	(5.95)	25	(13.02)
over 15 years	130	(77.38)	129	(67.19)
Total	168	(100)	192	(100)

Analysis of the educational status of our respondents Table 4.3, shows a largely illiterate female population comprising 57.81% of all female respondents. Interestingly 12 males and 3 females reported having had tertiary institution level education.

Table 4.3: Educational Status

Level of Education	Sex of Respondents			
	Male	(%)	Female	(%)
None	25	(14.88)	111	(57.81)
Primary School	66	(39.29)	43	(22.40)
Secondary/Commercial School	41	(24.40)	24	(12.50)
Teacher Training/ Vocational School	24	(14.29)	11	(5.73)
Polytechnic/ University	12	(7.14)	3	(1.56)
Total	168	(100)	192	(100)

In terms of occupational classifications, respondents are predominantly farmers. A breakdown of the data shows that 75% males and 80.73% of females depend entirely on farming for their source of livelihood. However only 2.38% of the males and 1.04% of females depend entirely on fishing. Interestingly more men and women 24 and 6 respectively combine fishing and farming. The other occupation more predominant among females is trading. Table 4.4 provides the detailed breakdown.

Table 4.4: Occupational Status

Occupation	Sex of Respondents			
	Male	(%)	Female	(%)
Farming	126	(75)	155	(80.73)
Fishing	4	(2.38)	2	(1.04)
Farming and Fishing	24	(14.29)	6	(3.13)
Trading	3	(1.79)	12	(6.25)
Farming and Trading	1	(0.60)	11	(5.73)
Artisan and Handicraft	6	(3.57)	3	(1.56)
Farming and Handicraft	-	-	2	(1.04)
Local Manufacturing	1	(0.60)	-	-
Farming & Local Manufacturing	-	-	1	(0.52)
Others (Civil Servant, etc)	3	(1.79)	-	-
Total	168	(100)	192	(100)

An important aspect of individual and community life on which data was collected was the participation of respondents in local organizational activities. 51.19% of male respondents and 52.08% of females respondent were actively involved in the activities of some local organization. In Table 4.5 the details are shown.

Table 4.5: Participation in Local Organizational activities

Participation	Sex of Respondents			
	Male	(%)	Female	(%)
Yes	86	(51.19)	100	(52.08)
No	82	(48.81)	92	(47.92)
Total	168	(100)	192	(100)

Most of these organizations are societies for married women; age grade societies and town development unions.

4.2.2 Impact of DFRRRI Feeder Roads on Rural Incomes

Impact of the feeder roads on rural incomes is measured by three key indicators. These as shown in Table 2.1 are:

(i) a net increase in incomes in the post-programme period compared to the pre-programme income;

(ii) increase in size of farm holdings and other units of production;

(iii) a net increase in land prices attributable to the programme intervention.

Data on the income of respondents was collected for 1987 and 1991/92 when the fieldwork was done. Summary of the data collected are presented as Tables 4.6 and 4.7 below.

There is need to be cautious in our interpretation of income data since the measurement of income is perhaps one variable most subject to incorrect reporting. Also, income measures are not easily directly comparable between different time periods due to the factor of inflation. These are reasons that make the use of other more direct measures of programme impact on income necessary for a more objective analysis. In spite of the

Table 4.6 Average Annual Income of Respondents in 1987

Income	Male		Female		Total	
	Frequency	(%)	Frequency	(%)	Frequency	%
₦100 - ₦299	15	(4.17)	26	(7.22)	41	(11.39)
₦300 - ₦499	18	(5.00)	31	(8.61)	49	(13.61)
₦500 - ₦799	22	(6.11)	28	(7.78)	50	(13.89)
₦800 - ₦999	38	(10.56)	28	(7.78)	66	(18.33)
₦1000+	70	(19.44)	75	(20.83)	145	(40.28)
Non-Response	5	(1.39)	4	(1.11)	9	(2.50)
Total	168	(46.47)	192	(53.33)	360	(100)

Table 4.7 Average Annual Income of Respondents in 1991/92

Income	Male		Female		Total	
	Frequency	(%)	Frequency	(%)	Frequency	%
₦100 - ₦299	5	(1.39)	20	(5.56)	25	(6.94)
₦300 - ₦499	10	(2.78)	11	(3.06)	21	(5.83)
₦500 - ₦799	20	(5.56)	32	(8.89)	52	(14.44)
₦800 - ₦999	26	(7.22)	25	(6.94)	51	(14.17)
₦1000+	102	(28.33)	100	(27.78)	202	(56.11)
Non-Response	5	(1.39)	4	(1.11)	9	(2.50)
Total	168	(46.47)	192	(53.33)	360	(100)

limitation, the use of income data as directly reported by respondents is still important. Income cuts across several other variables in the study such as productivity and is antecedent on them. Thus when such variables are analysed, we can also make some references to income albeit indirectly.

Comparative analysis of the income earned by respondents for 1987 and 1991/92 used cross-tabulations, the chi-square test of independence and correlation. In order to put the analysis in a proper context, we first re-state the relevant hypothesis and then draw sub hypotheses from it as different facets of the study are subsequently addressed.

The relevant hypothesis here is thus: "The DFRI feeder roads have not led to positive change in the social and economic welfare of small-scale farmers and other low income people especially women in the localities that they serve".

Sub-Hypothesis (i):

H_0 : There is no significant difference ($\alpha=0.01$) between the 1987 and 1991/92 annual incomes of rural people.

H_1 : There is a significant difference ($\alpha=0.01$)

Decision: Accept H_0 if the critical value is greater than calculated value. Reject H_0 if calculated value is greater than critical value.

Table 4.8: Cross-Tabulation of Income for 1987 and 1991/92

Income	Observed (1987)		Expected (1991/92)	
	Male	Female	Male	Female
₦100 - ₦299	15	26	5	20
₦300 - ₦499	18	31	10	11
₦500 - ₦799	22	28	20	32
₦800 - ₦999	38	28	26	25
₦1000+	70	75	102	100
Total	163	188	163	188

Note: All non-responses have been dropped from the analysis

$$x^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

$$df = (R-1)(C-1) = (5-1)(2-1) = 4$$

$$x^2 = 20 + 6.4 + 0.2 + 5.54 + 10.04 + 1.8 + 36.36 + 0.5 + 0.36 + 6.25 = 87.45$$

Tabulated x^2 value at 0.01 (df = 4) = 13.277

We thus reject H_0 and state that there is a significant difference in incomes; implying that over the years following the construction of the Directorate of Food, Roads and Rural Infrastructures feeder road, incomes have changed. However, we cannot immediately conclude that incomes are higher in 1991/92. A simple indication of the direction of change of income can be obtained from the correlation matrix. Correlation analysis gives an r value of 0.4647 with significance at the 0.001 level, indicating that the change has been positive. (See Correlation matrix in Appendix VIII).

Respondents gave various reasons to explain their income situation. These are presented in Table 4.9.

Table 4.9: Reasons for Differential Income Between 1987 and 1991/92

Reason	Response			
	Yes	(%)	No	(%)
Increase in output	66	(18.3)	270	(75.0)
Increase in volume of sales	79	(21.9)	257	(71.4)
Higher prices of goods	146	(40.6)	190	(52.8)
Diversification of employment	46	(12.8)	290	(80.6)
Increase in cost of land	256	(71.1)	104	(28.9)

The most important variable affecting respondents' income situation is the cost of land where 71.1% stated that this had affected their incomes. This appears to have been compensated for to some extent by the higher prices obtained from sale of the produce. What determines the net income of the farmer is not necessarily DFRRRI road construction but the level of economic activities in the local environment. Generally in Nigeria, the prices of agricultural products have gone up markedly. That 40.6% of respondents indicated increase in prices as being important in explaining their income differential between 1987 and 1991/92 is significant. Cross-sectional data presented in Tables 4.10 and 4.11 show the relationship between 1987 base incomes and increase or non-increase in the size of land-holding.

Table 4.10: Cross-Tabulation of Annual 1987 Incomes and No Increase in Size of Land Holding After DFRRI Road Programme

Income in 1987	Male (%)	Female (%)	Overall %
₦100 - ₦299	10 (2.78)	24 (6.67)	9.45
₦300 - ₦499	12 (3.33)	26 (7.22)	10.55
₦500 - ₦799	17 (4.72)	22 (6.11)	10.83
₦800 - ₦999	24 (6.67)	24 (6.67)	13.34
₦1,000 and above	45 (12.5)	59 (16.39)	28.89
Not Applicable/ Non-Response	3 (0.83)	1 (0.28)	1.11
Total	111 (30.83)	156 (43.33)	74.17

Table 4.11: Cross-Tabulation of Annual 1987 Incomes and increase in Size of Land Holding After DFRRI Road Programme

Income in 1987	Male (%)	Female (%)	Overall %
₦100 - 299	5 (1.39)	2 (0.55)	1.94
₦300 - 499	6 (1.67)	5 (1.99)	3.06
₦500 - 799	5 (1.39)	6 (1.67)	3.06
₦800 - 999	12 (3.33)	4 (1.11)	4.44
₦1,000 and above	21 (5.83)	15 (4.17)	10.00
Not Applicable/ Non-Response	8 (2.22)	4 (1.11)	3.33
Total	57 (15.83)	36 (10.00)	25.83

Analysed on the basis of income groups and gender, data would indicate that the lower the income, the less able the respondent's ability to increase size of land-holding more so if respondent is female. This brings us to the use of the increase in size of productive unit as a measure of programme impact on income. Only 25.83% of

respondents agreed that they have increased the size of their holding due to the construction of the road. 74.17% say they have not. While, the overall figures are important, the amount of increase in size of land holding is even more important.

The distribution of respondents who reported increases in size of land holdings was analysed. A total of 93 respondents or 25.83% claim to have increased the sizes of their land holdings due to the construction of the feeder roads in their villages. Of this figure 42 respondents representing 11.67% of total respondents had increases up to one-quarter between 1987 and 1991/92. Fourteen (14) respondents or 3.88% had increases up to one-third while 24 respondents or 6.67% recorded increases up to one-half. However 13 respondents actually doubled their land holdings. While comparing the figures of increases and non-increases in land holdings would suggest that the overall impact of the feeder roads on farm land sizes is small, it is important to note that a little over a quarter of total respondents reported this increase. This is significant. Increase in land prices is the most significant factor affecting income of respondents with over 70% of them attributing the change in their income levels between 1987 and 1991/92 to this factor.

Table 4.12: Land Prices (Per Hectare In Pre- and Post- Programme Periods)

Cost of Land per Hectare	1987	1991/92
Less than N120	59	35
N120 - N200	136	56
N201 - N280	17	88
N281 - N360	4	12
N361 - N440	2	8
N441 - N520	1	2
N521 - N600	60	64
Over N600	52	60
Not Applicable/Non-Response	29	29
Total	360	360

The distribution of land prices is however extreme with land either reported as very expensive or relatively cheaper. This extremity is due to the locational differences. Land in Sagbama and Yenagoa local government areas where relatively cheaper averaging not more than N280 per hectare as opposed to the situation in Etche and Ahoada local government areas. The increase in cost of land would appear to have a negative impact on rural incomes and productivity. This would be justifiable by the correlation between area of land cultivated and cost of land in 1987 ($r = - 0.2281$) which is significant at the .001 critical level. To the extent however that respondents have attributed this increase in land prices not to the DFRRRI road but to other reasons (See Table 4.13) the programme cannot be said to have a significant impact on land costs. When land is under development pressure its price will rise with or without an access road. It is the development pressure that

fuels land prices and necessitates road construction. Although in rural areas land may not be that scarce there is no doubt that there is some pressure to bring more land under cultivation.

Table 4.13: Reasons for Increase In Cost of Land Between 1987 and 1991/92

Reason	Response			
	Yes	(%)	No	(%)
Land Scarcity	177	(32.5)	243	(67.5)
Increase in Agricultural Production	86	(23.9)	274	(76.1)
General Increase in Cost of Living	86	(23.9)	274	(76.1)
Improved Access due to DFRR Road	68	(18.9)	292	(81.1)
Other Reasons	47	(13.1)	313	(86.9)

All the above factors except the fact of increasing land scarcity show significant correlations with the cost of land in 1991/92 as evidenced from the correlation matrix. It is important to highlight the correlation between cost of land in 1991/92 and increase in agricultural production ($r = -0.3314$ significant at 0.001 critical level); and the correlation between cost of land in 1991/92 and inflation ($r = .1641$ significant at 0.001 critical level). The relative unimportance of land scarcity is also expected.

4.2.3 Impact of the DFERRI Feeder Roads Programme on Rural Productivity

The measure of programme impact on rural productivity is indicated by (i) increase in agricultural and other production in the post programme period and (ii) improved access for productive activities. Increased productivity was measured in terms of the quantity of food crops including rice, yams, vegetables, cassava, corn and fruits; also in terms of rural employment diversification and improved access to farms, fishing grounds and markets.

4.2.3.1 Agricultural and Other Production

Data analysis on the production of various crops for the post and pre-DFERRI road periods are shown in Tables 4.14 to 4.18. Farm output was categorized into three: products harvested weekly all year round (vegetables and cassava); products harvested weekly for a maximum of three months in the year (fruits, maize and plantain); and products harvested once in the year (yam).

Table 4.14: Usual Output of Farm Produce Harvested Weekly Throughout the Year (Vegetables and Cassava)

Output	Vegetables (Stack)		Cassava (Basket)	
	No. of Respondents	%	No. of Respondents	%
1 stack/basket	44	12.22	23	6.39
2-5 stacks/baskets	54	15.0	85	23.61
6-9 stacks/baskets	30	8.33	54	15.00
10-13 stacks/baskets	19	5.28	58	16.11
Above 13 stacks/baskets	26	7.22	80	22.22
Not Applicable	184	51.11	57	15.83
Non-Response	3	0.83	3	0.83
Total	360	100	360	100

Table 4.15: Usual Output of Farm Produce Harvested Weekly for a Maximum of Three Months
Fruits (Basket) Maize (Basket) Plantain (Bunch)

Output	Fruits		Maize		Plantain	
	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%
1 basket/bunch	47	13.06	36	10.00	5	1.39
2-5 baskets/bunches	38	10.56	50	13.89	23	6.39
6-9 baskets/bunches	11	3.05	19	5.28	47	13.06
10-13 baskets/bunches	28	7.78	22	6.11	45	12.50
Above 13 baskets/bunches	29	8.06	31	8.61	153	42.50
Not Applicable	204	56.67	199	55.28	84	23.33
Non-Response	3	0.83	3	0.83	3	0.83
Total	360	100	360	100	360	100

Table 4.16: Usual Output of Farm Product Harvested Once a Year (Yam)

Output	Yam (Tubers)	
	No. of Respondents	Percentage
Less than 100 tubers	34	9.44
100 - 249 tubers	51	14.17
250 - 499 tubers	29	8.06
500 - 749 tubers	33	9.17
750 - 1,000 tubers	22	6.11
Over 1,000 tubers	25	6.94
Not Applicable	166	46.11
Total	360	100.00

At Okaka in the Yenagoa Local Government Area, there were six respondents who produced rice, a product hitherto not included in the questionnaire. They reported that the feeder road did not have any impact on their output. Analysis of the impact of the DFRRI roads on farm output based on the six other products show that 60 or 16.7% of respondents indicated that their output had

increased. This result is significant especially when compared to the earlier observation that about 25.8% had increased their farm holding due to the road. Within limits of the data set, we can conclude that between a quarter and one-sixth of the respondents recorded positive changes in their productive activities due to DFRRRI road. Analysis of the level of increase in output show that 30 respondents representing 8.3% had increased output in the post-DFRRRI period by a quarter and 17 respondents or 4.7% by a third. Also 4 respondents or 1.1% had increased output by one half while 9 actually increased output twice or more.

A product-moment correlation analysis of the data for the pre- and post-DFRRRI output levels show that apart from yams, output of the other products showed no significant difference with a coefficient $r = -.0246$. However yam output had a significant increase with a correlation coefficient of $r = .9759$, statistically significant at .001 alpha level. The finding may suggest that DFRRRI roads are more prominent in mainland areas of farmland where more yams are grown than in the largely riverine areas where plantain is more usually grown. In Table 4.17, we note that 60.6% of the respondents did not accept that the increase in their output was attributable to the road while 16.7% accepted. In fact, for a large number of respondents (79.3%), the road was either not regarded as a DFRRRI road or considered important to their

productive activities hence the refusal to respond to the question. This aspect of the analysis will be treated in more detail in Section 4.2.4.

Table 4.17: Relationship of DFERRI Road and Farm Output

	Yes (%)	No (%)	Not Applicable (%)	Total (%)
Increase in farm output due to DFERRI road	60 (16.7%)	18 (5%)	282 (79.3%)	360 (100%)
Increase in farm output not due to DFERRI road	218 (60.6%)	107 (29.7%)	35 (9.7%)	360 (100%)

Mr. K. B. Boro, the former Manager of the School-to-Land farm at Akumoni Zaranra argued that there are changes in farm output but this was not because of the DFERRI road project. Perhaps a more eloquent evidence of the limited significance of the feeder roads to farm output is the relatively small number of respondents who use the road as access to their farms (See Table 4.18).

Table 4.18: Present Access to Farm

Route	Male (%)	Female (%)	Total (%)
Bush-path	103 (61.31)	111 (57.81)	214 (59.44)
Existing Earth Road	8 (4.76)	16 (8.33)	24 (6.67)
New Earth Road (DFRRI or LGA)	14 (8.33)	11 (5.73)	25 (6.94)
Ashphalt Road	1 (0.59)	2 (1.04)	3 (0.83)
Oil Company Location Road	3 (1.79)	7 (3.65)	10 (2.78)
Other (River)	15 (8.93)	11 (5.73)	26 (7.22)
Bush Path and Existing Earth Road	9 (5.36)	6 (3.13)	15 (4.17)
Bush Path and New Earth Road	8 (4.76)	16 (8.33)	24 (6.67)
Bush Path and Oil Company Location Road	3 (1.79)	7 (3.65)	10 (2.78)
Bush Path and Asphalt Road	1 (0.59)	4 (2.08)	5 (1.39)
Not Applicable/Non-Response	3 (1.79)	1 (0.52)	4 (1.11)
Total	168 (100)	192 (100)	360 (100)

Only 25 out of a total of 360 respondents representing 6.94% used the DFRRI road as a farm access road. This helps to explain the very low level of positive response on the impact of the feeder road on farm productivity.

4.2.3.2 Change in Patterns of Accessibility for Production and Sale of Goods

The next analysis examined patterns of accessibility by looking at the time and physical distances to farms and markets; the quantity of output transported; and the mode of transport used. Under this section the second main hypothesis for this case study is tested. (See Section 1.3.1. This states that the DFRRI feeder roads have not improved access to farms and markets for rural dwellers.

The question of access to areas of production and the efficient disposal of farm produce is for the rural economy a fundamental one. This is also clearly understood by the policy makers who initiated the feeder

roads idea and have so expressed the programme objectives. Improved access definitely goes beyond overcoming the friction of physical distance to include the actual mode of transportation and the enlargement of economic opportunities. For the realisation of this objective, the ability of rural producers to sell their goods in urban markets rather than remain in their villages and depending on middlemen who are known to exploit them, is important. This is the aspect of economic mobility.

Data analysis examined whether or not there has been significant changes in time and physical distances to farm and markets in mode of transportation of goods; increase in the quantity transported and in the place of sale of such goods. Data analysis using cross-tabulations, chi-square tests and correlation analysis on all the above indicators show mixed results of the impact of the feeder roads. To test specifically for impact on each indicator of change, sub-hypothesis were formulated accordingly.

(1) Mode of Transportation to Farm/Fishing Grounds

Sub-hypothesis (i):

H_0 : There is no significant difference ($\alpha = 0.01$) in the mode of transportation used to farm and fishing grounds before and after the construction of the DFRRI road.

H_1 : There is a significant difference

Decision: Accept H_0 if critical value is greater than calculated value. Reject H_0 if calculated value is greater than critical value.

Table 4.19: Cross-Tabulation of Mode of Transportation Used to Farm/Fishing before and after the DFRRRI Road

Mode of Transport	Before Road (Observed)		After Road (Expected)	
	Male	Female	Male	Female
Foot	89	108	82	103
Bicycle or Motorcycle	21	29	30	42
Canoe	14	6	14	8
Foot plus Bicycle or Motorcycle	24	26	25	19
Foot plus Canoe	18	22	15	19
Total	166	191	166	191

Note: All non-response or not applicable responses are dropped from analysis

Applying χ^2 formula

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Calculated $\chi^2 = 0.59756 + 0.24272 + 2.7 + 4.02381 + 0 + 0.5 + 0.04 + 2.57895 + 0.6 + 0.47368 = 11.77$

$df = (5-1)(2-1) = 4$

Critical χ^2 value = 13.28

Conclusion: Accept H_0 at 0.01 significance level because value is less than critical value.

This result appears to confirm our earlier interpretation of the access to farms, that DFRRRI roads are not really farm access roads.

ii) Mode of Transportation of Produce

Sub-hypothesis (ii) H_0 : There is no significant difference ($\alpha = 0.01$) between the mode of transportation of goods before and after DFRRRI road construction.

H_1 : There is a significant difference

Decision: Accept H_0 if critical value is greater than calculated value. Reject H_0 if calculated value is greater than critical value.

Table 4.20: Cross Tabulation of Mode of Goods Transportation before and After the Construction of DFRI Road

Mode of Transportation	Before Road (Observed)		After Road (Expected)	
	Male	Female	Male	Female
Foot	46	75	45	82
Bicycle	18	23	17	9
Canoe	15	22	11	19
Motorcycle	11	7	11	13
Pickup Van/Lorry/Bus	10	8	12	9
Foot plus Bicycle	22	24	20	21
Foot plus Motorised Vehicle	27	21	34	30
Total	166	190	164	191

Using the χ^2 formula: $\chi^2 = \sum \frac{(O - E)^2}{E}$

$$\chi^2 = 0.022 + 0.598 + 0.059 + 21.78 + 1.455 + 0.474 + 0.333 + 0.111 + 0.2 + 0.429 + 0.643 + 0.5 + 1.441 + 2.7 = 33.605$$

$$df = (7-1)(2-1) = 6$$

Critical value = 16.81

Conclusion : Reject H_0 at 0.01 significance level because calculated value is greater than critical value.

The data present sufficient evidence to indicate that the proportion of respondents using various modes of transportation for their goods varied from the pre-programme period to the post-programme period.

In interpreting the data on the impact of DFRI feeder roads on expansion of market areas and improved modes of transportation, there is need to exercise caution. This is due to the existence of traditional trading linkages like that between Sagbama villages and

villages across the Bomadi River in Delta state. Over the years, the construction of the East - West road and other category B roads have served to strengthen such trading linkages. Thus the impact may not be due to DFRRI feeder roads per se as much as to a combination of the impact of the other roads mentioned together with the feeder roads.

(iii) Place of Sale of Goods

Sub-hypothesis (iii) H_0 : There is no significant difference ($\alpha = 0.01$) between the market for the sale of goods before and after the road.

H_1 : There is a significant difference.

Decision: Accept H_0 if critical value is greater than calculated value. Reject H_0 if calculated value is greater.

Table 4.21: Cross-Tabulation of Markets for Goods before and after the Construction of the DFRRI Road

Market	Before Road (Observed)		After Road (Expected)	
	Male	Female	Male	Female
Village Market	110	116	107	116
Urban Market	19	30	22	29
Road side	21	23	14	10
Village and Urban Markets	13	23	21	37
Total	163	192	164	192

Using the χ^2 formula: $\chi^2 = \sum \frac{(O - E)^2}{E}$

$$\chi^2 = 0.084 + 0 + 0.409 + 0.0345 + 3.5 + 16.9 + 3.048 + 5.297 = 29.273$$

$$df = (4-1)(2-1) = 3$$

Critical value = 11.34

Conclusion: Reject H_0 at 0.01 significance level because calculated value is greater than the critical value.

Table 4.22: Quantity of Vegetables, Maize, Cassava and Plantain Transported to Market

	Before DFRRRI Road			After DFRRRI Road		
	Frequency	%	Cumulative	Frequency	%	Cumulative
Not Applicable	11	3.06	3.06	12	3.33	3.33
1 stack, bunch, basket	6	1.67	4.73	3	0.83	4.16
2-5 stack, bunch, basket	87	24.17	28.9	84	23.33	27.49
6-9 stack, bunch, basket	88	24.44	53.34	90	25	52.49
10-13 stack, bunch, basket	124	34.44	87.78	125	34.72	87.21
Over 13 stack, bunch, basket	44	12.22	100	46	12.78	100
Total	360	100		360	100	

Table 4.23: Quantity of Yams Transported to Market

	Before DFRRRI Road			After DFRRRI Road		
	Frequency	%	Cumulative	Frequency	%	Cumulative
Under 100 tubers	40	11.11	11.11	39	10.83	10.83
100 - 249 tubers	42	11.67	22.78	45	12.5	23.33
250 - 499 tubers	51	14.17	36.95	53	14.72	38.05
500 - 749 tubers	29	8.06	45.01	23	6.39	44.44
750 - 1,000 tubers	13	3.61	48.62	14	3.89	48.33
Over 1,000 tubers	33	9.16	57.78	12	3.33	51.66
Not Applicable	141	39.17	96.95	163	45.28	96.94
Non-Response	11	3.06	100	11	3.06	100
Total	360	100		360	100	

TABLE 4.24: Transporters Length of Service along the Road

No. of Years	Frequency	%
Under 1 year	5	11.90
2 - 3 years	11	26.19
Over 3 years	26	61.90
Total	42	99.99

Table 4.25: Increase in Volume of Goods Transported over the Period

Increase	Frequency	%
Yes	30	71.43
No	12	28.57
Total	42	100.00

Table 4.26: Change in Weekly Trips

No. of Trips	Frequency			
	Previous	%	Present	%
1 -2 per week	10	(23.81)	10	(23.81)
3 - 4 per week	10	(23.81)	9	(21.43)
5 - 6 per week	18	(42.86)	20	(47.62)
Over 6 per week	4	(9.52)	3	(7.14)
Total	42	(100.00)	42	(100.00)

Table 4.27: Cause of Change in Trip Frequency

Reason	Frequency	%
Due to DFRRRI Road	17	40.48
Not Due to DFFRI Road	25	59.52
Total	42	100.00

Table 4.28: Travel Distance from Home to Farm

	Usual Distance			Distance Following DFERRI Road		
	Frequency	%	Cumulative	Frequency	%	Cumulative
Not Applicable	-	-	-	12	3.3	3.3
Under 1 km	57	15.8	15.8	37	10.3	13.6
1 - 3 km	179	49.7	65.6	145	40.3	53.9
4 - 6 km	85	23.6	89.2	85	23.6	77.5
7 - 9 km	18	5.0	94.2	19	5.3	82.8
10 km and above	21	5.8	100	62	17.2	100
Total	360	100		360	100	

Table 4.29: Travel Time from Home to Farm

	Usual Time			Time Following DFERRI Road		
	Frequency	%	Cumulative	Frequency	%	Cumulative
Not Applicable	-	-	-	12	3.3	3.3
Less than 15 Min	36	10	10	53	14.7	18
15 - 29 Min	10	2.8	12.8	60	16.7	34.7
30 - 44 Min	57	15.8	28.6	25	6.9	41.6
45 - 59 Min	23	6.4	35	37	10.3	51.9
I Hour and over	234	65	100	173	48.1	100
Total	360	100		360	100	

Table 4.30: Cross-Tabulation of Distance to Farm Prior to the DFRRRI Road and the Travel Time to Farm after the Programme

Usual Distance from Home to Farm	Travel Time to Farm						Row Total (%)
	Not Applicable	Less than 15 Minutes	15 - 29 Minutes	30 - 44 Minutes	45 - 59 Minutes	1 Hour and above	
Under 1 km	0	16	20	3	0	18	57 (15.8)
1 - 3 km	12	17	24	16	18	92	179 (49.7)
4- 6 km	0	17	9	3	11	45	85 (23.6)
7 - 9 km	0	3	2	1	3	9	18 (5.0)
10 km and above	0	0	5	2	5	9	21 (5.8)
Column Total (%)	12 (3.3)	53 (14.7)	60 (16.7)	25 (6.9)	37 (10.3)	173 (48.1)	360 (100)

Table 4.31: Cross Tabulation of Distance and Travel Time to Farm Following the DFRRRI Road

Distance to farm following DFRRRI Road	Travel Time to Farm						Row Total (%)
	Not Applicable	Less than 15 Minutes	15-29 Minutes	30-44 Minutes	45-59 Minutes	1 Hour and above	
Not Applicable	0	0	8	4	0	0	12 (3.3)
Under 1 km	0	5	11	3	0	18	37 (10.3)
1 - 3 km	12	15	10	12	15	81	145 (40.3)
4 - 6 km	0	9	13	3	14	46	85 (23.6)
7 - 9 km	0	2	3	1	3	10	19 (5.3)
10 km and above	0	22	15	2	5	18	62 (17.2)
Column Total (%)	12 (3.3)	53 (14.7)	60 (16.7)	25 (6.9)	37 (10.3)	173 (48.1)	360 (100)

Table 4.32: Distance to Market Before and After DFRRRI Road

Distance	Before DFRRRI Road		After DFRRRI Road	
	No.	%	No.	%
Under 1 km	42	11.67	48	13.33
1 - 3 km	109	30.28	109	30.28
4 - 6 km	105	29.17	99	27.50
7 - 9 km	57	15.83	58	16.11
10 km and above	41	11.39	37	10.28
Not Applicable	4	1.11	8	2.22
Non-Response	2	0.55	1	0.28
Total	360	100.00%	360	100.00%

(iv) Goods Transportation to Markets

The expansion of economic opportunities for rural producers must of necessity incorporate improvements in road networks that increase access particularly to urban markets and accompanied by increases in the volume of goods transported. Although the aspect of markets have been touched on earlier, the aspects of improved access as regarding goods transport have not. In this section, we look at the quantity of produce transport to markets before and after the construction of the feeder roads. Tables 4.22 and 4.23 details of the situation for cassava, fruits, Maize, Plantain, Vegetables and Yams respectively. Deduction from calculated percentages show that although there have been changes in the quantity of output transported to the markets, the changes are not significant. Tables 4.24 to 4.27 provide summaries of

data from goods transporters. 71 or 43% of transporters agreed that they had recorded an increase in the volume of goods transported from the various localities over the study period (See Table 4.25) even though the number of trips has not significantly changed within the same period. However only 40.48% of the transporters attributed the change in number of trips made to the DFRRRI road. This appears to corroborate the earlier evidence that output has increased, but not necessarily due to the DFRRRI road.

Moreover as noted in a study of rural Zimbabwe an increase in output and volume of sales does not necessarily imply that condition of living has improved for rural people (Jackson 1988). The study noted that deteriorating economic conditions can actually force farmers to sell out the bulk of what they produce with consequent hunger in rural communities. Without seeming to make a cross-country comparison the point has to be made that the rural economy is an integral part of the national economy and the prevailing inflation and high costs of living must have an impact on rural productive activities and rural life.

(v) Change in Travel Time and Physical Distance

Travel distance to the farm showed a small reduction in the under 1 Km and 1-3 km range. The 4-6 km range had no change and the over 10 km range had considerable (66.13%) rise in number of respondents. Travel time to the farm

also showed a reduction of frequencies in some categories and an increase in others (See Tables 4.28 and 4.29). However it is the cross-tabulations of travel time and distance that provide more fundamental interpretations. In the first instance, a correlation analysis of the relationship between distance to farm following the construction of the DFRRRI road and the travel time also following the DFRRRI road gave a coefficient of $r = -.0995$ that was not significant at either the .01 or the .001 critical levels. It does appear that within limits of the data set, travel time and distance following the DFRRRI road are not significant at either the .01 or the .001 critical levels. It does appear that within limits of the data set, travel time and distance following the DFRRRI road are not significantly related. The cross-tabulation show this also. For instance of the 145 respondents who travelled between 1-3 Km, 81 had to do so for over one hour. There would also appear a considerable over-estimation of the distance and time travelled by the respondents. In populations with considerable illiteracy this may not be unexpected. The results would support the view earlier expressed that DFRRRI roads are not really farm access roads. Thus the impact of DFRRRI roads on the reduction of travel time and distance to work for the majority of rural people is also not significant. This can further be interpreted as a negative impact on productive activities since rural people are still largely dependent on their labour power

(trekking) in their economic production. From Table 4.32 distance travelled to markets has not shown any significant change. There are traditional links in trading between villages and these may not necessarily change because of the existence of feeder road. What would change would be the ability of buyers particularly from urban centres within and outside the State to gain direct access to producers in the villages. Also respondents indicated that they sold their produce at different markets some of which are more easily accessible by canoe especially during the rainy season.

4.2.4 Impact of Feeder Road on Social and Economic Welfare

In the measure of impact of the DFRRRI roads on social and economic welfare we use three key indicators. These are income distribution, improvement in living conditions and the promotion of local organizational activities. Income distribution is fundamental to our estimation of rural development in general. As noted earlier, the direct assessment of income is subject to difficulties and in this instance, we make use of indirect measure, the increase or non-increase in size of land holding.

In terms of land holding of the rural producers of cassava, maize, fruits, vegetables, plantain and rice only 12 indicated an increase in size of holding and an increase in production due to the construction of the DFRRRI road. For yam production however, a total of 24

respondents indicated an increase in size of holding due to the DFRRRI road.

Generally however, more males reported an increase in size of land holding following the DFRRRI road construction (See Table 4.11). Only 10% of the female respondents as compared to 15.28% of male respondents indicated an increase in land holding. This may be due to the fact that males produce more yams. Looking at this increase over income levels, a total of 36 respondents (21 male and 15 female) had incomes of over ₦1,000 and 16 respondents (12 male and 4 female) had incomes of between ₦800 and ₦999 per annum bringing the results to 14.44% out of the 25.83% of respondents who recorded an increase in land holding. We can within limits of the data set therefore suggest that larger farmers are also those with relatively higher incomes and are able to increase their landholding.

(ii) Increase in Income and Productivity of Small Farmers

Small farmers are regarded as those reporting less than 2 Hectares as size of land holding. An examination of Table 5.33 below shows that farm sizes are generally small with 46.94% of respondents claiming to have less than 1 hectare of farm land and 30.56% having between 1 and 2 hectares.

Table 4.33: Size of Farms

Size	No. of Respondents	%
Less than 1 Ha	169	46.94
1 - 2 Ha	110	30.56
3 - 4 Ha	33	9.17
5 - 6 Ha	2	0.56
7 - 8 Ha	17	4.72
9 - 10 Ha	3	0.83
Over 10 Ha	7	1.94
Not Applicable	7	1.94
Non-Response	12	3.33
Total	360	100.00

Table 4.34: Cross-Tabulation of Size of Farm and Increase in Income

Size of Farm Land	Male	%	Female	%	Total	%
Less than 1 Ha	28	(7.78)	36	(10.00)	64	(17.78)
1 - 2 Ha	27	(7.50)	22	(6.11)	49	(13.61)
3 - 4 Ha	6	(1.67)	3	(0.83)	9	(2.50)
5 - 6 Ha	1	(0.28)	1	(0.28)	2	(0.56)
7 - 8 Ha	2	(0.56)	4	(1.11)	6	(1.67)
9 - 10 Ha	3	(0.83)	4	(1.11)	7	(1.94)
Over 10 Ha	1	(0.28)	4	(1.11)	5	(1.39)
Not Applicable	3	(0.83)	2	(0.56)	5	(1.39)
Non-Response	-	-	-	-	-	-
Total	71	(19.73)	76	(21.12)	147	(40.84)

Table 4.34 shows that proportionately large farmers had recorded increases. For instance out of a total of 7 farmers with farm sizes of over 10 hectares, 5 or 71.43% registered increases in incomes as compared to 64 out of 169 or 37.87% farmers who had farm sizes of between 7 hectares and 10 hectares recorded higher incomes as compared to 44.56% of farmers with farm size of between 1 Ha and 2 Ha. This result is not surprising as large farmers would definitely produce more and be able to

increase output with improvement in rural infrastructure. Also of note is the fact that proportionately more males (42.26%) males recorded increase in farm incomes than females (39.58%). This result is also expected. Women generally are poorer than male rural produces and their relative poverty is engineered by a number of social and economic structures of domination not least of which is the control of farm land by men.

(iii) Promotion of Local Organization Activities

Increase in local organization activity is an important indicator of rural change. DFRRI has as one of its two policy objectives, the enhancement of social mobility. Drawing from our main hypothesis we can formulate sub-hypothesis thus:

Sub-hypothesis (iv)

H_1 : There is no significant difference ($\alpha = 0.01$) in local level organisational activities following the construction of DFRRI road.

H_0 : There is a significant difference ($\alpha = 0.01$).

Decision: Accept H_0 if critical value is greater than calculated value. Reject H_0 if calculated value is greater than critical value.

Table 4.35: Cross-Tabulation of Members of Local Organizations Benefitting From DFRRRI Road According to Locality

Benefit to Organization	LOCALITY										Total
	Observed					Expected					
	Ahoada	Etche	Sagbama	Yenagoa	Total	Ahoada	Etche	Sagbama	Yenagoa		
Yes	20	17	43	12	92	16.82	24.73	35.11	15.33	92	
No	14	33	28	19	94	17.18	25.27	35.89	15.67	94	
Total	34	50	71	31	186	34	50	71	31	186	

Note: All non-responses and not applicable responses have been dropped from the tabulation and analysis. Applying the χ^2 formula to the data we have:

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

$$= 0.601 + 2.416 + 1.773 + 0.723 + 0.589 + 2.365 + 1.731 + 0.708 + 10.906$$

$$df = (2-1) (4-1) = 3$$

$$\text{critical value} = 11.341$$

Conclusion: Accept H_0 at 0.01 significance level.

From the results of this analysis we can conclude that the feeder roads have not enhanced local organizational activities which could translate to a failure of the DFRRRI road to meet one of its two stated objectives. In continuation respondents were asked to specify the type of impact they felt that the roads had on their local organization.

Table 4.36: Type of Impact of Road on Organization

Impact	Male	%	Female	%	Total	%
Facilitates Evacuation of Food from Farms	19	(5.28)	3	(0.83)	22	(6.11)
Convenient During the Dry Season	11	(3.06)	11	(3.06)	22	(6.11)
Enhances Movement Within the Community	30	(8.33)	18	(5.00)	48	(13.33)
Worsens the Road	26	(7.22)	68	(18.89)	94	(26.11)
Not Applicable/ Non-Response	82	(22.78)	92	(25.56)	174	(48.33)

Table 4.37: The Rural Development Environment of the DFRRRI Roads Programme

Controllable Environment		Influenceable Environment		Appreciated Environment	
<u>ACTORS</u>	<u>FACTORS</u>	<u>ACTORS</u>	<u>FACTORS</u>	<u>ACTORS</u>	<u>FACTORS</u>
DIFRRI in National and State Levels	Implementation Guidelines	Other Agencies Involved in Rural Feeder Road Provision in the State (ADP, NDBA, Oil Companies)	Conflict and Co-ordination	The Presidency	Policy Making, Resource Allocation and Statutory Bnaking
Participating Agencies in the Feeder Road Programme (RAIRDEP, Ministry of Works, Local Govts, CDCs)	Co-ordination Organization and Technical support	Local Govts. in whose Areas of Jurisdiction Feede Roads are Located	Participation and Resource Sharing	Federal Ministry of Agriculture	Administrative Support
		Rural Communities Actually Served (Beneficiaries)	Participation		
		Interest Group Lobbying			

Adapted from: Dacanay (1986) page 41

From Table 4.36 it can be seen that 60 men and 32 women accept that the road has benefited organizations to which they belong. Table 4.36 shows that the impact of the road on local activities varies 5.28% of male respondents and 0.83% of female respondents accept that the road facilitates the evacuation of food from their farm. However 3.06% male respondents and 3.06% female respondents stated that the road could only be used during the dry season. This is not surprising. DFERRI roads are generally graded laterite roads hurriedly constructed. Thus in the prevailing climatic conditions of the state, the road can not last. It is important to note that 8.33% of male and 5% of female indicated that the roads enhanced movement within the community. This further confirms the fact that the DFERRI roads are not really farm access roads. Of note are the indications of dissatisfaction that the road works were not properly done and therefore only caused deterioration. 7.22% of male respondents and 18.89% of female felt the deterioration obliterated other positive impacts on their local level organizational activities. We can not reasonably claim that the DFERRI feeder roads have served to promote rural social activities.

Table 4.38: Financial Statement Balance Sheet of DFRRRI Rivers State Capital Account as at March 1st 1988

A. RECEIPTS

1. From Federal DFRRRI Lagos for Rural Feeder Roads Programme	₦8,143,600.00
2. From Rivers State Government as First Instalment for Consolidation of Roads under RAIRDEP, Jetties and Canals	₦3,100,000.00
TOTAL	 ₦11,243,600.00

B. EXPENDITURE

Details	Liability (₦)	Expenditure 1/3/88 (₦)	Remarks
Rural Feeder Raods	₦4,679,068.40	₦2,701,259.50	Federal DFRRRI Rivers State Govt. LGA and Community
Jetties and Canals	₦4,640,000.00	₦2,431,801.45	Federal DFRRRI and Rivers State Govt. LGA
Total	₦9,319,068.40	₦5,133,060.95	
C. Consolidation of Roads	₦11,869,541.57	₦4,531,593.66	RIARDEP Rivers State
Grand Total	₦21,188,609.97	₦9,664,654.61	

Source: PMT Report (1988)

4.3 Assessment of the Impact of the DFRRRI Feeder Roads in Relation to the Planning Environment

The approach here is to identify the key actors that operate within the specific level of planning environment and the factors that come into play. The importance of this approach is to highlight the underlying causes of programme performance. In Table 4.37 the component parts of the planning environment are presented schematically and this will guide discussion in this section.

4.3.1 The Controllable Environment of DFRI

The principal actors within the controllable environment of DFRI are the state and federal government agencies and officials whose direct function it is to implement all DFRI policies and programmes. For the phase 1 feeder roads programme which is being assessed, these agencies include the state Accelerated Rural Development Project (RAIRDEP) the Ministry of works, the Ministry of Local Government and the Community development committees. Within the Rivers State, RAIRDEP was established as the umbrella agency to co-ordinate all activities on rural development from different agencies. RAIRDEP was responsible for the construction of 163.5Km of DFRI rural feeder roads. This it then sub-contracted to local government councils, Ministry of Works and Private contractors. RAIRDEP was put under the direct supervision of a Commissioner in the Governor's office. The affairs of DFRI within the state are supposed to be managed by a policy council headed by the State DFRI director, local government and the local people through their community development committees. The CDCs are to assist in the determination and prioritisation of projects according to the felt needs of the communities.

The problems within the controllable environment that affected programme performance include co-ordination, funding and the determination of standard of

construction. One of the problems identified was the attempt by RAIIRDEP to use funds contributed from the State and Local Governments to build tarred feeder roads. Under the initial DFRRRI concept roads are laterite (See figure 10) with each road estimated to cost a maximum of ₦5,000 km in upland areas and in the riverine areas ₦6,000 per km). Whereas the total amount made available for the construction of 794.1 km of DFRRRI feeder roads by the Federal Government was ₦8.144m the estimated contract sum of the RAIIRDEP constructed feeder roads with the Ministry of Works and Transport for 97.5 km was ₦16,720,610.80. A conflict situation then occurred between the federal government's DFRRRI feeder roads concept and what the State Government felt was proper and more adequate for the Rivers State. The RAIIRDEP concept was thus a channel for achieving the State Government's objectives without antagonizing federal authorities. Where as the idea had the blessing of State level DFRRRI officials, the Presidential Monitoring Team was not impressed. In spite of the fact that the State was ready to spend its own resources (See Table 4.38) in addition to what was coming from the federal level, the federal government held sway.

This has affected programme performance as local communities are presently complaining about the condition of the feeder roads. Their complaint was confirmed by the

State DFERRI director when asked about the reaction of local communities to the programme, he said that they showed mostly lack of appreciation and complained that DFERRI roads spoilt existing roads, and also about the way roads were being picked and implemented. Furthermore he noted that politically the federal government felt it was alright to say it has added to the road network without consideration for whether or not those roads are accessible. The co-ordinating Director of DFERRI Rivers State explanations as cited in the PMT's report was:

"Without prejudice to the laid down specifications of feeder roads, the rates of construction of such roads, the method adopted in Rivers State took cognisance of the ecological problems existing in the State. He mentioned that the criteria set out by DFERRI in Lagos can not be strictly applied to the Rivers State.

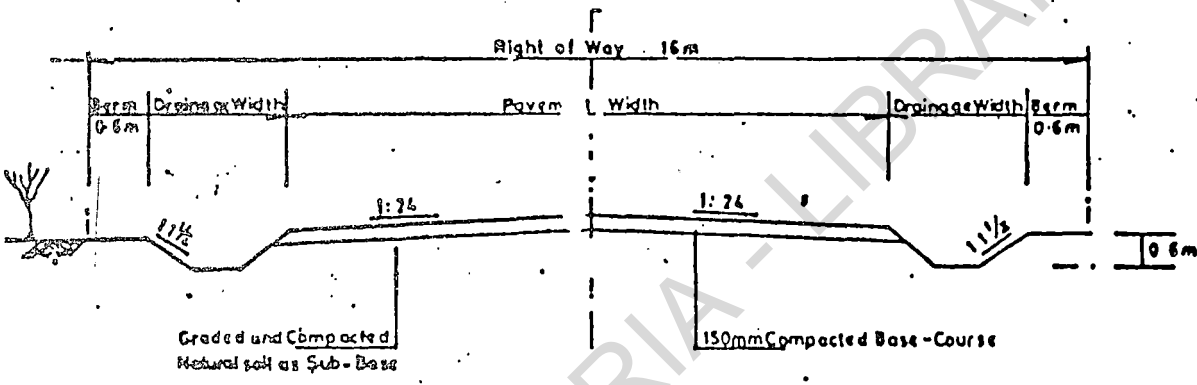
What ever he was implementing, he said, were the decisions of the State DFERRI Policy Council under the Chairmanship of the Military Governor, hence he is also the Director of Implementation".

(PMT 1988:5)

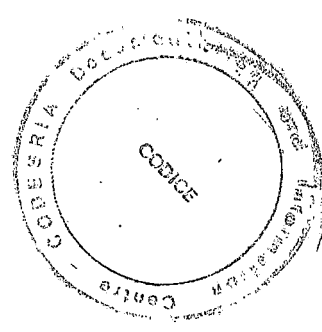
The Presidential Monitoring Team (PMT) was not satisfied with the superimposition of the RAIRDEP concept on the initial federal roads concept particularly as it claimed that this did not lead to a more cost-effective way of providing feeder roads. The DFERRI standard of feeder roads provision is as shown in fig. 10.

FIGURE 10

TYPICAL CROSS SECTION OF FEEDER ROADS.



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4.3.2 The Influenceable Environment of DFRI

The principal actors within this level of the environment are as shown in Table 4.37. They include other agencies mandated either by the instruments setting them up or by the demands of community relation to provide feeder roads in the State. The ADP is the most important of these. Under its mandate, the State ADP (RISADEP) is to provide feeder roads to enhance food production. The Niger Delta Basin Development Authority is to provide feeder roads to its project sites and oil companies, provide roads primarily to serve as access for their operational vehicles. According to RISADEP officials, the DFRI programme started before that of the ADP thus the responsibility of harmonising their activities with those of DFRI rests with RISADEP officials. Moreover, the ADP being World Bank assisted is expected to inventorize its proposed roads. Moreover as noted by a senior planner at RISADEP, even the World Bank would not tar feeder roads but its concept of the roads would differ from that of DFRI.

The Local Government Councils are the agencies expected to work directly with DFRI. At the start of the RIARDEP experiment, the State Government compulsorily deducted certain amounts of money due to local Government for the financing of DFRI projects. Yet, according to both the state DFRI director and the PMT; many Local

Government Chairmen complained about non-involvement in the planning and implementation of the projects. This sometime led to open conflict. The case made against DFERRI by the former Chairman of the Degema LGA was documented by the Guardian newspaper of January 13th, 1989. His case seem to be confirmed by the comment cited below.

"Some of the people interviewed in the course of inspection claimed ignorance of DFERRI, its programme and expectations of community involvement in the programmes. Some local government chairmen even claimed that they were not involved in the selection of DFERRI projects in their areas. On the other hand, the co-ordinating Director maintained that discussion on projects and performance were discussed with various chairmen and some community members from time to time." (PMT, 1988: 12)

The basic conflict emanated from control over resources that were jointly generated. Rather than use direct labour particularly from within the locality, DFERRI had contracted out the bulk of its feeder roads from Port Harcourt, thereby by-passing the Local Government Area Chairmen, The PMT notes thus.

"As we had mentioned somewhere else in the report, it was the intention of DFERRI that to employ the scarce financial resources much more productively, efficiently and effectively apart from ensuring physical and financial commitment of the state, local government and communities, direct labour aimed at cost-saving was to be adopted in most of the contracts. DFERRI in our conception can be described as a large task force co-ordinator. This being so we had hoped that Rivers State Government would pool machinery and expertise together like it has done in RIARDEP. On the contrary, we see massive use of contractors even in the simplest of feeder roads". (PMT, 1988: 20)

The rural people who are the targeted beneficiaries also had problems with the DFRRRI feeder roads concept. For instance, while the communities are prepared to admit the re-grading of their existing community roads by DFRRRI, they refused to accept the labelling of such roads as DFRRRI roads as appropriate. Village level interviews with interest groups and community leaders are very enlightening.

Chief Festus W. Jacob of Omuanwa village reports thus:

"There was an existing feeder road constructed by the village from Isiokpo junction complete with bridge. The women contributed money and food for the workers. Village first cleared the roads then called in a contractor to grade. The roads was not sufficiently motorable so we had to bring the government in. The community wrote to the Commissioner of Works in 1986 and also sent a delegation. He promised to look into it. He contacted DFRRRI. We were happy at start but now DFRRRI has abandoned the work. When DFRRRI came, we contributed labour for clearing and then gave them land from where to obtain laterite. When DFRRRI workers come, they rallied us around and talked to us. We showed them places to live".

Respondent No. 10 (women leader) at Agbere argued as follows:

"Do not call it DFRRRI road, it is community road. We know that government cannot do all for everybody but when we have started it, we expect government to come in and help. This has not happened. When the road was last launched we gave ₦1,200. Altogether though we have given over ₦5,000".

At Tungbo, a community leader noted that, the community maintains the DFRRRI roads through communal efforts while it has found out that the Local Government Area maintains a pay roll on the maintenance of the road without performing.

It is thus not surprising that some villagers refused to assess the impact of the roads once the name DFRRRI was attached to it. Yet by the terms of its mandate, DFRRRI was justified in labelling such roads. The community was to be fully involved especially in making its contributions in labour and materials (See Koinyan, 1986: 2-3). Also DFRRRI's mandate was not only to construct but also to rehabilitate existing roads although one wonders if as Mr. K. B. Boro of Akumau-Okordia argued, a 3 hour grading exercise ultimately qualifies as rehabilitation. In Tables 4.39 and 4.40 we provide details of the contributions made by communities to the DFRRRI feeder roads project.

Table 4.39: Household Contribution to Road Programme

Type of Contribution	Male	(%)	Female	(%)	Total	(%)
Land	39	(10.83)	25	(6.94)	64	(17.78)
Cash	9	(2.5)	29	(8.06)	38	(10.56)
Land plus Cash	1	(0.28)	6	(1.67)	7	(1.94)
Labour	43	(11.94)	40	(11.11)	83	(23.05)
Materials	8	(2.22)	5	(1.39)	13	(3.61)
Cash plus Labour	7	(1.94)	3	(0.83)	10	(2.78)
Labour plus Materials	3	(0.83)	2	(0.56)	5	(1.39)
Land Plus Labour	2	(0.56)	4	(1.11)	6	(1.67)
Not Applicable	56	(15.56)	78	(21.67)	134	(37.22)
Total	168		192		360	(100%)

Table 4.40: Amount of Cash Contribution by Household to Road Programme

Amount	Male	(%)	Female	(%)	Total	(%)
Less than ₦100	9	(2.5)	16	(4.44)	25	(6.94)
₦100 - ₦200	5	(1.39)	7	(1.94)	12	(3.33)
₦201 - ₦300	-	-	-	-	-	-
₦301 - ₦400	-	-	-	-	-	-
₦401 - ₦500	1	(0.28)	-	-	1	(0.28)
Over ₦ 500	2	(0.56)	15	(4.17)	17	(4.73)
Not Applicable	151	(41.94)	154	(42.78)	305	(84.72)
Total	168		192		360	(100%)

4.3.3 The Appreciated Environment of the DFRRI Feeder

Roads Programme

The principal actor in the appreciated environment of the feeder roads programme is the federal government which sets the policy guidelines, determines standards of provision of utilities and services, and also provides the bulk of the funding for DFRRI. In a realistic way, some of the problems that have been associated with the programme can be traced to the over-centralisation of planning and implementation decisions. The result has been the imposition of a package programme nation wide without consideration for local variations and the need to adapt the programme to meet such variations. The ability of the Rivers State to insist on this adaptation is strictly limited as it would not do any thing that can limit its access to federal funds. A Former Commissioner

for Community Development in the state. Dr John Harry, argued that it was not clear whether DFERRI was to serve as an implementing agency or a monitoring agency. He felt that DFERRI was not expected to implement. This reasoning appears to have support from the meaning of the term agent under the National DFERRI's "concept of operation". In its definition agent includes the existing nineteen state governments, and the Federal Capital Territory to be responsible for the construction and rehabilitation of the 30,000 km of roads expected nationwide.

More over the sheer scope of the programme leaves it open to errors that if a learning process were adopted, could have been identified earlier on and dealt with before the programme was expanded. Korten (1980) in his submissions for a learning process to rural development planning suggested a three-phase approach. The first phase entails learning to be efficient, the second phase, learning to adopt and finally, learning to expand. This is to enable programme planners to be informed about the workability of the specific interventions and to re-design projects as field tests progress based on dialogue with the people. For instance, the assumption by the National DFERRI office that rural communities will undertake the maintenance of improved feeder roads has not been successful in actual implementation and this may be linked to the limited extent of authentic community participation in rural roads planning and construction.

4.4 Chapter Summary

Direct and indirect measures of the impact of the DFRRI feeder roads include net increase in incomes between 1987 and 1991/92; increase in size of land holdings and output attributable to the roads. Using direct income measures, the results were inconclusive. Although statistical analysis showed a significant difference; the results are to be treated with caution for a number of reasons. One of such reasons is the fact that the incomes of respondents were not adjusted for inflation and therefore, not easily amenable to direct comparison. Also, income is perhaps one variable most subject to incorrect reporting. Moreover, in an estimation of factors most likely affecting respondents income situation; cost of land was most important; followed by higher prices of goods or more directly inflation. Both increase in size of land holding and output were not significantly attributable to the DFRRI road.

Impact of the feeder roads on productivity show change in patterns of accessibility. Although DFRRI roads were unimportant as farm access roads, there was a significant improvement in mode of transportation of produce and also in the expansion of the farm output from purely village to urban markets. Largely also increase in output was not attributed to the roads but to a number of

factors that indicate change in the level of economic activity in rural areas of the Rivers State.

Three measures of the impact of DFRRRI rural feeder roads included income distribution; distribution of increase in land holding and in output across gender and income levels; and the promotion of local organisations. Increase in incomes and land holdings were concentrated within larger farmers and males. Also, the feeder roads had not enhanced local organizational activities mainly because the roads were not usable during the rainy season which stretches up to nine months in the Rivers State.

Examination of the observed impact of the feeder roads against the background of the programme environment show some interesting facts. One of such is the difference between local communities and DFRRRI on what constitutes a DFRRRI feeder road. Whereas villagers are prepared to contribute time, cash and material to the construction of the feeder roads, they would not accept a re-grading of an existing community road as a DFRRRI road. They consider such claims by DFRRRI as insincere and react with anger when this is done. Another emerging fact is that whereas DFRRRI in Rivers State was initially able to improve on the quality of its construction with financial contributions from the State and local governments under RIARDEP; control of implementation by the federal government would not permit this. It does

appear therefore that the implementation targets set for DFRRI in the State were on national criteria rather than on locally identified needs. Another fact emerging is that feeder roads are being provided by a number of other agencies, but apart from being DFRRI policy council members for the State; there is no evidence of pooled resources or expertise in programme implementation because the apex organisations controlling the other agencies are different and also their own concept of feeder roads are different.

Other problems within the programme environment include the scale of the programme over 300 km of roads within the particular time frame of one year. It is clear that the target was determined by the federal DFRRI. The imposition of the federal government's concept of a feeder road; its standard for the road and its target set for the State arise from its control of the bulk of funds for rural development. The excessively political underpinnings of the programme also do not help as this pre-supposes uncertainty in programme continuity and funding in subsequent years. Excessive control by central government has in the case of DFRRI in Rivers State fueled conflict between the local people and DFRRI and within the agency between its state and federal levels; resulting in its curtailed impact. In the next chapter, the impact of a service delivery programme; namely the

agricultural extension services programme will be assessed on the same set of criteria - income, productivity and socio-economic welfare - to identify the patterns that will emerge.

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CHAPTER 5

SOCIO - ECONOMIC IMPACT OF THE RIVERS STATE AGRICULTURAL DEVELOPMENT PROGRAMME (RISADEP) EXTENSION SERVICE

5.1 Programme Description

5.1.1 Historical Background

The RISADEP extension programme was initiated with the establishment of the RISADEP itself in October 1988. Prior to this agricultural extension was a function performed by the State's Ministry of Agriculture. The principal officers in charge of the programme today are still part of this originally seconded core staff. The RISADEP extension service has a major innovation in world Bank assisted agricultural services in Nigeria in the sense that it bargained for and got approval to add fishing extension services on the grounds that the Rivers State had two fairly distinct ecological units upland and riverine; with the majority of rural production being farming in the upland and fishing in the riverine. The specific objectives of the extension services are as stated in Section 2.1.1.

RISADEP is part of the nation-wide ADPs established under the third phase of the World Bank's assisted agricultural development programme for the country. The programme has six developmental components. These are: crop development which includes extension; livestock development; fisheries development; rural infrastructure which has water supply and feeder roads; and commercial

services including input distribution, credit, marketing analysis is on the training and visitation component of the extension services and also the supply of inputs.

5.1.2 Programme Coverage

The programme covers the whole of Rivers State. A survey of primary producers in the state carried out in 1974/75 estimated that 54% of the rural households in the main farming areas are primarily engaged in agriculture. Fishing population was about 0.86 million or 26% of the State's total population. Estimating an average farming household size as 7 persons, the total number of person affected by the programme would be about 965,000. Statewide, the extension programme is organized into the Nchia zone and Yenagoa zone. Yenagoa zone has 138 circles. The Nchia zone has 144 circles. The circle has about 800 to 1,200 farm families with a single extension agent in charge. The programme has a life-cycle of 10 years going from 1988 to 1998 with the period 1988 to 1991 constituting phase 1.

5.2 Impact Analysis of Agricultural Extension Programme

The analysis of programme impact as in the case of the feeder roads is also done at the level of the community in general and that of the individual on the basis of income levels and gender. The ADP concept as practiced by RISADEP depends heavily for its success on the training and visitation system and the introduction of high yielding varieties of crops. Other sub-programmes are

designed to facilitate extension services. This has informed our emphasis on the extension services sub-programme of the ADP.

5.2.1 Characteristics of Respondents

Various facets of the social and economic characteristics of respondents were documented in the questionnaire and analysed. These include age, sex, educational status, occupation and migration status.

In Tables 5.1 and 5.2 the sex and age structures of respondents show that 45.9% are males and 54.1% are females. Most respondents are at the peak of their productive years, that is between 30 and 50 years of age which has 52.6% of respondents. However, the population is an aging one and respondents over 59 years of age constitute 24%.

Table 5.1: Sex of Respondents

Sex	Number of Respondents	%
Male	151	45.9
Female	178	54.1
Total	329	100.00%

Table 5.2: Age of Respondents

Age Group	Number of Respondents	Valid %	Cumulative %
20-29 years	1	0.3	0.3
30-39 years	106	32.2	32.5
40-49 years	66	20.1	52.6
50-59 years	77	23.4	76.0
59+ years	79	24.0	100.0
Total	329	100.0	

In terms of educational status, respondents are largely illiterate with 42.9% reporting no form of formal education and 23.4% having had primary school education. Details are as shown in Table 5.3.

Table 5.3: Educational Status of Respondents

Level of Education	No. of Respondents	Valid %	Cumulative %
None	141	42.9	42.9
Primary School Completed	77	23.4	66.3
Secondary/Commercial School Completed	99	30.1	96.4
Teacher Training/Vocational School Completed	1	0.3	96.7
Polytechnic/University	11	3.3	100.0
Total	329	100.0	100%

The occupational groupings reflect the fishing and farming target of the extension programme. The near absence of respondents who depend entirely on fishing is itself reflective of the ecological areas in which field survey was conducted. Although Sagbama and Yenagoa local government areas are largely riverine, they retain sufficiently large areas of cultivable land very suitable for plantain and sweet potatoes production. Moreover, the bulk of their fishing is pond fishing in contrast to the deep sea fishing characteristic of Brass, Degema and Bonny Local Government Area. The interesting aspect of the data is the over half (56.2%) of respondents who

combine fishing and farming. The occupational grouping would seem to justify the RISADEP's position on its introduction of fishing extension services.

Table 5.4: Occupation of Respondents

Occupation	No. of Respondents	%
Farming	143	43.5
Fishing	1	0.3
Farming plus fishing	185	56.2
Total	329	100.0

Respondents were asked to indicate both the period of time in which they have lived and worked in the community and the period of time they have been engaged in primary production. Details are as given in Tables 5.5 and 5.6 respectively. The idea was to ensure that

Table 5.5: Length of Stay in the Locality

Time	No. of Respondents	%
6 - 10 years	22	6.7
11 - 15 years	48	14.6
15+ years	259	78.7
Total	329	100.00

Table 5.6: Length of Occupational Practice

Time	No. of Respondents	%
1 - 5 years	55	16.7
6 - 10 years	47	14.3
11 - 15 years	32	9.7
15+ years	195	59.3
Total	329	100.0

respondents had sufficient knowledge about pre-programme conditions so that the performance of the programme can be properly assessed. From Table 5.5 it can be observed that 78.7% of respondent have lived in the community for over 15 years. They have lived there long enough to be sufficiently aware of the activities of agricultural extension agents.

5.2.2 Impact of the Agricultural Extension Programme on Rural Incomes

Although rural incomes are influenced by various factors, agricultural extension is crucial. Its intended focus on the small farmer makes it an instrument of rural development. According to Hoffman and Hoffman (1989), the focus of extension on the small farmer seeks to understand the situation such farmers find themselves and identifies the possibilities that exist for positive action in order to eliminate the factors causing poverty and through these help them gain access to better production and living conditions in the long term.

The assessment of the impact of the programme on incomes is done directly and indirectly. Directly, we have compared the real incomes (reported income adjusted for inflation) for 1987; 1990 and 1991/92. Indirectly, we have used indicators such as the expansion of production; employment of labour and use of inputs; the purchase of household assets; and the building of one's

own house. We recognize the limitations of indirect measures but it is hoped that collectively they can give a picture of how well the farmers and fishermen are doing in the last four years.

5.2.2.1 Comparative Analysis of Agricultural Incomes
from 1987 to 1991/92

Table 5.7 shows by way of descriptive statistics (percentages) the number of respondents who have earned specific levels of income across the years. Appendix X provide detailed statistical analysis and cross-tabulations of the changing pattern of incomes between 1987 and 1991/92 when field survey was done.

In 1987, 49.8% earned about ₦550 or less per month on the average while 43.5% had average monthly incomes of over ₦700. 6.7% reported no incomes either because they could not remember or were unwilling to. Comparatively in 1990 the proportion of respondents earning below ₦550 per month showed an increase to 69.9% while in 1991/92, there was a slight decrease in proportion to 43.8%. Incomes exceeding ₦700 per month showed a fall in both 1990 and 1991/92 to about 20.1% and 23.45 of total respondents respectively. We can conclude a gradual worsening of the income situation of rural people.

However descriptive and inferential statistical analysis based on Tables 5.8 and 5.9 give a more detailed

picture of income trends. In Tables 5.8 only one respondent whose income was "less than ₦100" in 1990 had earned an income of ₦100 - ₦250 in 1987. 97 respondents (29.48%) who had earned "between ₦251 and ₦400" in 1987 had a decrease in income to "₦100 - ₦250" per month. In 1991/92, this number had decreased to 44. 2 respondents who earned "between ₦251 - ₦400" had in 1990 actually decreased to "less than ₦100" in earnings. On the other hand, 22 respondents (6.69%) whose income was "₦401 - ₦550" in 1987 were in 1990 earning less with 11 earning "₦100 - ₦250" and 11 earning "₦251 - ₦400". Also, 22 respondents whose incomes were "between ₦251 - ₦400" per month were earning "between ₦100 and ₦250" in 1991/92. The chi-square statistical test of distribution of respondents who had increase or decrease of incomes between 1987 and 1990 to 1991/92 as discussed above for income categories of ₦550 or less per month was significant at the 0.01 level of confidence.

The computed chi-square values of 22.92273 (for 1987 income) and 26.400 (for 1990 income) controlling for 1991/92 incomes (up to ₦100 - ₦250) are greater than the tabulated values of 6.63 with degrees of freedom = 1. Out of the 66 (20.06%) respondents who in 1987 had incomes "between ₦701 - ₦850", 11 (3.34%) had in 1990 decreased to incomes "between ₦551 - ₦700" while 20 (6.08%) had a decrease to "between ₦401 - ₦550" and

Table 5.7: Average Monthly Agricultural Incomes 1987, 1990 and 1991/92

Income	1987	%	1990	%	1991/92	%
Less than ₦100	31	(9.4)	23	(7.0)	1	(0.3)
₦100 - ₦250	12	(3.6)	130	(39.5)	66	(20.1)
₦251 - ₦400	99	(30.1)	46	(14.0)	11	(3.3)
₦401 - ₦550	22	(6.7)	31	(9.4)	66	(20.1)
₦551 - ₦700	-	-	11	(3.3)	-	-
₦701 - ₦850	66	(20.1)	-	-	12	(3.6)
₦851 - ₦1000	12	(3.6)	44	(13.4)	21	(6.4)
Above ₦1000	65	(19.8)	22	(6.7)	44	(13.4)
No Response	22	(6.7)	22	(6.7)	108	(32.8)
Total	329	(100.0)	329	(100.0)	329	(100.0)

Table 5.8: Cross-Tabulation of 1987 and 1990 Average Monthly Income

Incomes in 1987	Incomes in 1990									
	Less than ₦100	₦100-₦250	₦251-₦400	₦401-₦550	₦551-₦700	₦701-₦850	₦851-₦1000	₦1,000+	Non Response	Total
Less than ₦100	20	11	-	-	-	-	-	-	-	31
₦100-₦250	1	11	-	-	-	-	-	-	-	12
₦251-₦400	2	97	-	-	-	-	-	-	-	99
₦401-₦550	-	11	11	-	-	-	-	-	-	22
₦551-₦700	-	-	-	-	-	-	-	-	-	-
₦701-₦850	-	-	35	20	11	-	-	-	-	66
₦851-₦1000	-	-	-	11	-	-	1	-	-	12
Above ₦1,000	-	-	-	-	-	-	45	22	-	65
Non-Response	-	-	-	-	-	-	-	-	22	22
Total	23	130	46	31	11	-	44	22	22	329

Table 5.9: Cross-Tabulation of 1987 and 1991/92 Average Monthly Income

Incomes in 1987	Incomes in 1991/92									
	Less than ₦100	₦100-₦250	₦251-₦400	₦401-₦550	₦551-₦700	₦701-₦850	₦851-₦1000	₦1,000+	Non Response	Total
Less than ₦100	-	-	-	-	-	11	-	-	20	31
₦100-₦250	1	-	-	-	-	-	-	-	11	12
₦251-₦400	-	44	-	-	-	-	-	-	55	99
₦401-₦550	-	22	-	-	-	-	-	-	-	22
₦551-₦700	-	-	-	-	-	-	-	-	-	-
₦701-₦850	-	-	11	55	-	-	-	-	-	66
₦851-₦1000	-	-	-	11	-	1	-	-	-	12
Above ₦1,000	-	-	-	-	-	-	21	44	-	65
Non-Response	-	-	-	-	-	-	-	-	22	22
Total	1	66	11	66	-	12	21	44	108	329

35 (10.64%) decreased to "between N251 - N400" average monthly incomes. Taking our 66 respondents across to 1991/92 period, we see from Table 5.9 that 11 (3.34%) had come to earn "between N251 - N400" and 55 (16.72%) to N401 - N550" still a decrease from 1987 levels.

One respondent who had monthly incomes of "between N851 - N1000" retained his income status during 1990 while 11 respondents had decreasing incomes to "N401 - N550" per month. A chi-square test of significance was calculated to be 14.90323. This is significant at the 0.10 level of confidence with a tabulated x^2 value of 9.21 at degrees of freedom = 2.

The sharp decreases registered for the lower income groups do not really occur at higher income levels. For instance we can observe further from Table 5.8 that of the 65 respondents who had incomes above N1000 per month 22 retained their income status while 43 had decreases to "between N851-N1,000". In 1991/92, 44 out of the 65 retained their 1987 income levels with 21 registering a decrease to "N851 - N1,000" per month (see Table 5.9).

5.2.2.2 Impact of Agricultural Extension Programme on Expansion of Productive Capacity

Generally respondents are small-scale producers. We have taken in 2.3.1 the maximum farm size of a

small-scale farmer to be 2 Hectares (Bovil, 1978). However Table 5.10 shows that by our measure 63.6% of all respondents are small-scale producers. Table 5.11 shows however that these productive units are largely fragmented with about 72.6% recording between three and six farms and, or fish ponds. It is interesting to note that 258 (78.42%) indicated they had increased their units of operations between 1987 and 1991/92. Out of these only 77 (23.40%) attributed the increase in size of operations to the receipt of extension services. In Tables 5.13 and 5.14, the details of these patterns are given of the frequency of extension agent visit and inputs received or not received.

Table 5.10: Farm Size

Size	Frequency	Valid %	Cumulative %
Less than 0.5 Ha	1	0.3	0.3
0.5 Ha - 0.9 Ha	65	19.8	20.1
1.0 Ha - 1.4 Ha	17	5.2	25.3
1.5 Ha - 1.9 Ha	126	38.3	63.6
2 Ha and above	120	36.5	100.0%
Total	329	100.0%	

Table 5.11: Size of Operations

Size	Frequency	%
1-2 Farms/Fish ponds	1	0.3
3-4 Farms/Fish ponds	75	22.8
5-6 Farms/Fish ponds	164	49.8
Over 6 Farms/Fish ponds	89	27.1
Total	329	100.0

Table 5.12: Increase in Size of Operations

Increase	Frequency	%
Yes	258	78.42
No	71	21.58
Total	329	100%

Of the 77 respondents who claim that they had expanded their size of operation because of extension services 22 (6.69%) had received only advice; 15 (4.56%) had received loans, 1 respondent had received both chemicals and equipment. 39 (11.85%) claimed they had not received any input direct from RISADEP extension agents. The ADP applies a contact farmer system where the agency selects a number of farmers to serve as information couriers in their communities. Thus it is not unlikely that relevant information had gotten to some farmers and fishermen through the contact people. A retired female school teacher at Agbere, in Sagbama Local Government Area informed me that while she had asked for and was not able to get fertilizer through the extension agent assigned to her community, she was later able to buy from some other farmers at the rate of 50k for a cigarette cup of fertilizer. Also, the data could indicate differences in the expectations made by the people of their extension agent and the agents understanding of what their roles entail.

At Egwi in Etche Local Government Area, the report was made that in 1990 the Agricultural extension agent came only once and distributed fertilizer to a particular co-operative society. However in 1991, a new agent only appeared once to introduce himself and was never seen or heard from again.

In Table 5.14, we examine the case of respondents who reported increases in size of operations but this was not due to RISADEP extension services. Of the 181 who indicated increases in operations 48 had loans and 132 had nothing. Some of these respondents attributed their increase to hard work.

Sub-Hypothesis (i) H_0 : There is no significant difference ($\alpha=0.01$) between the number of persons employed by farmers and fishermen between 1987 and 1990 and between 1987 and 1991/92
 H_1 : there is a significant difference.

Decision: Accept H_0 if critical value is greater than calculated value. Reject H_0 if calculated value is greater.

From Table 5.15, applying the X^2 formula:

$$(a) \text{ For } 1987 - 1990 \quad X^2 = 0.00187 + 0.01329 + 0.0755 + 0.00211 = 0.094$$

$$(b) \text{ For } 1987 - \frac{1991}{92} \quad X^2 = 0.01408 + 0.08931 + 0.0977 + 0.00211 = 0.2032$$

Critical X^2 with $df = 3$ at 0.01 confidence level = 11.341

Conclusion: Accept H_0 at 0.01 significance level.

Thus we can conclude that statistically there has been no significant change in level of labour employed. This conclusion will also lend support to the earlier

observation from field survey that much of the labour comes by using family members (See Tables 5.15 and 5.16).

Also of note is the fact that some oil Companies provide extension services as part of their community development efforts. A chi-square test of significant difference in the number of persons employed between 1987, 1990 and 1991/92 is statistically not significant with 0.094 for 1990 and 0.2032 for 1991/92. We can conclude that the number of persons employed between 1987 and 1991/92 is not markedly different from one year to the other.

Indirect measures of programme impact on income using such measures as loans granted and purchase of inputs and household assets indicate that impacts has not been marked. From Table 5.13, it can be observed that only 15 respondents representing 4.56% of total respondent indicate that they were granted loans and that this has contributed to the increase in their operations; and only 1 respondent had received chemicals and equipment. From Table 5.16, the use of labour saving devices as a contributory factor to the expansion of productions was attributed to by 11 (3.3%) respondents. The issue of household assets is treated in greater detail in section 5.2.4.

Table 5.13: Cross-Tabulation of Increase in Size of Operations Attributed to Extension Services with Frequency of Extension Agent Visit and Type of Input Received

Type of Input Received	Frequency of Extension Agent Visit						Row Total	%
	Once Every Two Weeks	Once in a Month	Once in 2-3 Months	Once in 6-9 Months	Once in a Year	Never		
Chemicals	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-
Advice	-	2	16	4	-	-	22	(6.69%)
Loans	-	-	15	-	-	-	15	(4.56%)
Nothing	-	-	37	-	2	-	39	(11.85%)
Chemical & Equipment	-	-	1	-	-	-	1	(0.3%)
Column Total	-	2	69	4	2	-	77	(23.40%)
%	-	(0.61%)	(20.97%)	(1.22%)	(0.61%)	-	(23.40%)	

Table 5.14: Cross-Tabulation of Increase in Size of Operations Not Attributed to Extension Services With Frequency of Extension Agent Visit and Type of Input Received

Type of Input Received	Frequency of Extension Agent Visit						Row Total	%
	Once Every Two Weeks	Once in a Month	Once in 2-3 Months	Once in 6-9 Months	Once in a Year	Never		
Chemicals	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-
Advice	-	-	-	-	-	-	-	-
Loans	-	9	-	2	4	34	49	14.89%
Nothing	-	-	2	4	12	114	132	40.12%
Column Total	-	9	2	6	16	148	181	55.01%
%	(0)	(0.61%)	(20.97%)	(1.22%)	(0.61%)	-	(23.40%)	

Table 5.15: Employment of Labour from 1987 to 1991/92

Number Employed	1987	%	1990	%	1991/92	%
None	66	(20.1)	69	(21.0)	59	(17.9)
1 - 5 Persons	113	(34.3)	82	(24.9)	87	(26.4)
6 - 10 Persons	66	(20.1)	91	(27.7)	96	(29.2)
Above 10 Persons	83	(25.2)	87	(26.4)	87	(26.4)
No Response	1	(0.3)	-	-	-	-
Total	329	(100.0%)	326	(100.0)	329	(100.0)

Table 5.16: Factors Influencing Number of Persons Employed Between 1987 and 1991/92

Reason	No. of Respondents	%
Use of Labour Saving Devices	11	3.3%
Use of More Family Labour	141	42.9%
Use of More Advanced Techniques	36	10.9%
Poor or Increased Turnover	54	16.4%
Others	87	26.4%
Total	329	100.0%

5.2.3. Impact of Agricultural Extension Programme on Productivity

Three indicators are used to assess the programme's impact on productivity. These as indicated in section 2.3.1 are:

- (i) Reaching the target groups
- (ii) Increase in productivity
- (iii) Increase in initiative and independence

We shall take each in turn.

5.2.3.1 Reaching the Target Groups

Perhaps of all indicators in this chapter this is about the most critical because extension has to do with direct contact with farmers and fisherman. Also in our environment where other means of information dissemination are hopelessly inadequate a face-to-face contact between agents and producers is not only critical but inevitable.

In Table 5.17 and 5.18, descriptive statistics show two measures of how effectively extension services have reached the target group. The first is the actual receipt or non-receipt of extension service. 194 (59%) of respondents have never received any form of extension service while 46 (14%) last received any service over two years ago. Interestingly 56 (17%) of respondents received some form of service in the last one year and 25 (7.6%) within the six months immediately preceding field

survey. Receipt of extension services is distinct from actual agent visit. From time to time inputs can be distributed to farmers and fisherman but this is not the same as the actual face-to-face contact with an agent which is the data presented in Table 5.18. In this case, 201 (61.1%) of respondents have never been contacted by an extension agent and only 1 respondent claims to have been visited every two weeks. As was the case of the previous table, 71 (21.6%) of respondents were contacted by an agent once in two to three months. Out of these 71, 39 reported that they received nothing from the agent, 16 received advice, 1 received chemicals and equipment and 15 got loans through the agent. (see Table 5.19 and 5.20). The next significant category are those who had contact with an agent once in a year. Of the 33 respondents in this category, 20 had received no inputs, 4 had obtained loans, 9 received advice. The two measures descriptively discussed above will be further analysed using cross tabs and inferential statistics in order to

Table 5.17: Receipt of Extension Services

Period	No. of Respondents	%
Never	194	59.0
Less than 6 months ago	25	7.6
6 months - 12 months ago	56	17.0
13 months - 18 months ago	8	2.4
19 months - 24 months ago	Nil	-
Over 24 months ago	46	14.0
Total	329	100.0%

provide a more detailed picture of how effective the programme has been.

Table 5.18: Frequency of Extension Agent Visit

Frequency	No. of Respondents	%
Never	201	61.1
Once every two weeks	1	0.3
Once every month	11	3.3
Once in two to three months	71	21.6
Once in six to nine months	12	3.6
Once in a year	33	10.0
Total	329	100.0%

(i) Sex of Respondents, Educational Level and The Receipt of Extension Services and Inputs

Our relevant hypotheses for this section are as follows:

(a) The training and visitation system of the extension programme of RISADEP favours rich, better educated farmers/fishermen and therefore by-passes the small holders.

(b) The training and visitation system of the extension programme of RISADEP favours male farmers/fishermen and therefore by-passes female farmers/fisher women.

Appendix XI provides detailed analysis of the relationship between gender, education, and receipt of extension services.

In Table 5.21, 123 females representing 37.39% of respondents received nothing by way of inputs from extension agents in comparison with 29.79 males. 34 respondents of both sexes received loans while 21 females and 18 males received advice. When these statistics are

Table 5.19: Cross-Tabulation of Receipt of Extension Service and Type of Input Received

Receipt of Extension Service	Input Received				Total
	Advice	Loans	Equipment & Chemicals	Nothing	
Never	6	39	0	149	194
Less than 6 months ago	4	4	1	16	25
6-12 months ago	8	20	0	28	56
13-18 months ago	0	0	0	8	8
19-24 months ago	0	0	0	0	0
Over 24 months ago	21	5	0	20	46
Total	39	68	1	221	329

Table 5.20: Cross-Tabulation of Frequency of Extension Visit and Type of Input Received

Frequency of Extension Visit	Input Received				Total
	Advice	Loans	Equipment & Chemicals	Nothing	
Every two weeks	0	0	1	0	1
Once every month	2	9	0	0	11
Once in two to three months	16	16	0	39	71
Once in six to nine months	6	2	0	4	12
Once in a year	9	4	0	20	33
Never	6	37	0	158	201
Total	39	68	1	221	329

Table 5.21: Cross-Tabulation of Sex of Respondent and Type of Input Received

Sex of Respondent	Input Received				Total
	Advice	Loans	Equipment & Chemicals	Nothing	
Male	18 (5.47)	34(10.33)	1 (0.30)	98 (29.79)	151
Female	21 (6.38)	34 (10.33)	0 (0)	123 (39.39)	178
Total	39	68	1	221	329

Table 5.22: Cross-Tabulation of Educational Status of Respondents and Type of Service Received

Educational Status	Type of Input (%)					Row Total	%
	Advice	Loans	Chemicals & Equipment	Nothing			
None	16 (4.86)	16 (4.86)	-	109 (33.13)		141	42.86%
Primary School Completed	12 (3.65)	16 (4.86)	-	49 (14.89)		77	23.40%
Secondary/Commercial School Completed	11(3.34)	29 (8.81)	-	59 (17.93)		99	30.09%
Teacher Training/ Vocational School	-	-	1 (1.3)	-		1	0.3%
Polytechnic/University	-	7 (2.13)	-	4 (1.22)		11	3.35%
Total	39	68	1	221		329	100.0%

spread across different levels of education, analysis showed that 83.3% of the female respondents who never received extension service but received input in the form of advice had no education as against 16.79% who were of primary school level. On the other hand only 4 male respondents who were of primary school educational level reported having received extension visits "less than 6 months ago" with an input in the form of advice. Four of the male respondents who reported having received extension service visits "6 to 12 months ago" with input as advice were of secondary or commercial school level. The four females who reported to have had the same type of extension visits and input had no education at all. A test of significance that the variables are independent using the chi-square statistic was rejected. The computed chi-square value of 9.54545 with $df = 2$ was statistically significant at .01 confidence level. Thus it was concluded that the sex and educational levels of the respondents were significantly related to the extension services and type of inputs they received.

A measure of the association of the variables in predicting receipt of extension service and type of input was accomplished through the lambda statistic as shown in Appendix XI. Of the two independent variables of sex and educational level of the respondents, the sex of the respondent (with lambda .60000) is the better criterion

in predicting the receipt of extension service and type of input received by the respondent. The Pearson correlation value of $r = -.58387$ indicates that illiterate female farmers are discriminated against in the distribution of extension services and input in the form of advice.

Further analysis considered the relationship between sex of the respondent, educational level, non-receipt of extension service visits and receipt of loans as inputs. Analysis shows that 12 male respondents never received any extension service visits but they obtained loans as an input. Of the 12 beneficiaries of loans 3 were uneducated, six were of primary school level, while 3 were of secondary or commercial school level. Surprisingly 27 female respondents reported no extension agent visits but obtained loan inputs. Out of these, 11 were uneducated, 10 had attended primary schools and 6 held secondary school certificates. A test of significance using the chi-square statistic was statistically non-significant. The chi-square of .94147 with $df = 2$ was statistically non significant at .05 level of criterion. Thus farmers who never received extension service but received loan input were not discriminated against on the basis of their gender or educational level. The findings suggest that the extension agents are rarely visiting the communities and that farmers can get

loans from other sources on their own merit irrespective of their sex or educational status. What may be of interest to the lender is the collateral which in rural areas is usually land.

The next analysis involved those who received extension service "less than 6 months ago" to between 6 and 12 months ago and equally received loans. Four female respondents fell into this category.

Comparatively 19 male respondents reported having received extension services "6 - 12 months ago" in addition to loans input. Of this number, 15 had completed secondary school while 4 were graduates of Polytechnics and Universities. There was only one female respondent who held Secondary/Commercial School certificate and had been contacted by an extension agent 6 - 12 months ago in addition to having obtained loans. Fisher's Exact test of probabilities of obtaining the observed results if the variables were independent was 1.000 indicating that the variables of sex and educational status were not related to the receipt of extension service in the frequency of "6 months - 12 months ago" in combination with receipt of loan input.

Further analysis showed that 48 male respondents neither received extension visits nor any type of inputs whatsoever. Of this group 8 were uneducated; 28 had primary school education and 12 had received

secondary/commercial school certificates. Similarly, 101 female respondents reported that they neither received extension visits nor any input. Eight-four of the group were uneducated, 13 had attended primary school and 4 had secondary school education. A test of statistical significance of the independence of the variables using chi-square statistic was statistically significant. Computed X^2 value of 61.15586 with $df = 2$ was significant at 0.01 confidence level. With a lambda value of .47917 and .35088 for sex and educational level respectively; it was concluded that the sex of the respondents was a better criterion in predicting non receipt of extension service and non-receipt of inputs. The findings suggest that comparatively female farmers/fishermen had less access to agricultural extension service than men.

The next analysis involved respondents who reported receiving extension services "less than 6 months ago" without any input as shown in Appendix XI. Four of the male respondents held primary school certificate while the other four held Secondary/Commercial School certificates. Comparatively none of the eight female respondents were educated. Thus, 100% reduction in error is obtained when sex of the respondent was used to predict receipt of extension services "less than 6 months ago" without any input. On the other hand, 4 primary school graduates and 20 secondary /commercial school

graduates all males reported having received extension services "6 months to 12 months ago" without any input as against 4 female graduates of secondary schools. The chi-square tests of significance between sex of the respondents and receipt of extension services of "6 months to 12 months ago" with no inputs was not significant at 0.05 level of confidence.

Further statistical analysis on the relationship between gender, education and receipt of extension services and inputs involved the category of respondents who reported receiving services "13 months to 18 months ago" with no input. The findings reveal 4 male secondary school graduates and 4 illiterate females reporting that they fell into this category. A test statistic using Fisher's exact test was significant at .05 level of confidence. With lambda values of 1.00000 for both sex and educational status it was concluded that each variable was an important factor in predicting receipt of extension services. The results further suggest that uneducated female respondents are likely to receive extension services infrequently without any inputs as shown in the Appendix with Pearson $r = - 1.0000$.

The Appendix further shows the distribution of respondents who reported having received extension visits "over 24 months ago" without any type of input. Within this category are 14 male farmers comprising 11

secondary/commercial school graduates and 1 polytechnic/University graduates as against 5 uneducated and 1 polytechnic school female respondents. A chi-square test of significance with $df = 2$ was statistically significant with the computed X^2 value of 16.42857. sex of the respondents was equally found to be a better predictor of extension visits in this category with a lambda value of .83333 > .55556.

Finally only 1 male respondent with teacher training education was found to have, received extension visits "less than 6 months ago" and had received a complete range of inputs in from of chemicals, equipment, loan and advice.

(ii) Reaching the Target Group: the use of Receipt of Extension Service as Indicator

Analysis in this and the next three sub-sections of this chapter applies the techniques of multiple regression and correlation analysis and analysis of variance. Using the receipt of extension service as the dependent variable, a multiple regression analysis was done with the remaining thirty variables as independent variables. The results of the analysis are as contained in Appendix XII.

Table 5.23 Analysis of Variance Table for Testing the Significance of the Set of Regression Co-efficients for the Receipt of Extension Service

Source	Degrees of Freedom (df)	Sums of Squares (SS)	Variance	F	
Regression	30	760.58443	25.35281	30.74548	r= 0.86937
Error	298	245.73168	0.82460		r ² = 0.75581
Total	328	1006.3161			

H₀: There is no significant relationship between the receipt of extension service and the set of independent variables.

H₁: There is a significant relationship using the F test, calculated F value is critical F value F 30/298 at 0.01 confidence level is 1.70.

Conclusion: We reject H₀ and state that there is a significant relationship. The co-efficient of determination r²=0.75581 leading to the conclusion that 75.581% of the variation in the receipt of extension service is explained by the combined influence of the other 30 independent variables. The specific contribution made to this variation by the individual variables is provided by the significant T values. With our decision criteria set at an alpha level of 0.05, any such value that is greater than 0.05 is not significant. Therefore, the significant variables include: The frequency of extension agent visit, educational status, occupation, participation in field demonstration and monthly income among others.

(iii) Reaching the Target Group: the Use of Frequency of Extension Agent Visit as Indicator

Result of the multiple regression analysis that predicted the variation in the frequency of extension agent visit are as presented in Appendix XIII.

Table 5.24 Analysis of Variance table for Testing the Significance of the Set of Regression Co-efficients for the Frequency of Extension Agent Visits to Farmers and Fishermen

Source	df	Sum of Squares	Variance	F	
Regression	30	540.04782	18.00159	74.87240	r=0.93961
Error	298	71.64823	0.24043		r ² =0.88287
Total	328	611.69605			

H₀: There is no significant relationship between the frequency of extension agent visit to farmers/fishermen and the set of independent variables as listed in Appendix XIII.

H₁: There is a significant relationship.

Calculated F value = 74.87240 Critical F 30/298 at 0.01 confidence level = 1.70 Conclusion: We reject H₀ and state that there is a significant relationship. With coefficient of determination at r² = .88287 we can summarize that 88.287% of the variation in the visits made by extension agents is explained by the set of regression coefficients. The significant independent

variables include: number of persons employed by the farmer/fishermen; education, the length of occupational practice, age, monthly income, participation in field demonstration and size of operations.

(iv) Reaching the Target Group: the Use of Type of Input Received as Indicator

Further analysis of the measure of impact of RISADEP's extension service to farmers and fishermen examined the distribution of inputs in form of equipment, chemicals, loans and advice. Regression analysis using the input received as dependent variable is presented in Appendix XIV.

Table 5.25 Analysis of Variance Table for Testing the Significance of the Set of Regression Co-efficients for the Type of Input Received by Farmers and Fishermen

Source	df	Sum of Squares	Variance	F	
Regression	30	82.86001	2.76200	10.52067	r=0.71719
Error	298	78.23422	0.26253		r ² =0.51436
Total	328	161.09423			

H₀: There is no significant relationship between the type of input received and the set of independent variables as listed in Appendix XIV

H_1 : There is a significant relationship.

Calculated F value = 10.52067 Critical F 30/298 at 0.01 confidence level = 1.70 Conclusion: We reject H_0 and state that there is a significant relationship. With coefficient of determination at .51436, we can summarize that 51.436% of the variation in the type of input received by farmers and fishermen is accounted for by the set of regression co-efficients.

This value is not surprising as we have earlier in 5.2.2.2 (i) established that loans and other inputs are obtained without the assistance of the extension agents. The significant factors influencing the input received include the number of persons employed, cost of the service received, monthly incomes, age and size of operations. Correlation analysis shows that type of input received is positively significantly correlated, with number employed, increase in size of operations, possession of household assets, participation in field demonstration, and the frequency of extension agent visit among others. Also significant is the fact that type of input received is negatively significantly correlated with age, with the time period within which extension service was last received and the monthly incomes for 1987 and 1990.

(v) Reaching the Target Group: Using the Cost of Extension Services Received as Indicator

The cost of extension services is a significant variable in as much as it determines the ability to and actual participation in the extension services programme. Table 5.26 shows the cost of services received. Only 24 (22.2%) respondent out of a total of 108 who received extension service had to pay for what they received. Results of the multiple regression analysis presented in Appendix XV analyses the variation in the cost of extension services received using the remaining thirty independent variables as predictors.

Table 5.26: Cost of Services Received

Amount	No. of Respondents	%
Nothing	305	92.7
Up to ₦150	12	3.6
₦151 - ₦350	11	3.3
₦351 - ₦550	Nil	0
₦551 - ₦750	1	0.3
Total	329	100.0%

Table 5.27 Analysis of Variance Table for Testing the Significance of the Set of Regression Co-efficient for the Cost of Extension Services Received

Source	df	Sum of Squares	Variance	F	
Regression	30	59.76058	1.99202	75.61717	r=0.94015
Error	298	7.85036	0.02634		r ² =0.88389
Total	328	67.61094			

H₀ : There is no significant relationship between the cost of extension services received and the set of independent variables.

H₁ : There is a significant relationship.

Calculated F value = 75.61717

Critical F_{30/298} at 0.01 confidence level = 1.70

Conclusion: We reject H₀ and state that there is a significant relationship between the cost of services received and the thirty independent variables listed in Appendix XV. The co-efficient of determination r² value leads to the conclusion that 88.389% of the variations in the cost of extension services is explained by the independent variables. The significance of the contribution made by specific independent variables can be deduced from their significant T values.

Further analysis on the cost of extension services received involved the plotting of scatter diagrams to

show the relationship between the cost of services as the dependent variable and the thirty other variables in our regression equation, as the independent variables. Fig 11 is the normal standardized plot showing the least square line of this relationship. However figures 12, to 17 are the scatter diagrams showing the specific relationship between the cost of inputs (variable 12) and

(i) the frequency of extension agent visit (variable 10);

(ii) the number of persons employed in 1991/92 (variable 17);

(iii) The size of operations (variable 19);

(iv) Average monthly income of respondents in 1991/92 (variable 24);

(v) Participation in extension field demonstrations (variable 27); and

(vi) farm size (variable 31)

Standardized Residual

Page 57

Expected

1.0

.5

.25

0

-.25

-.5

.75

1.0

Standardized Residual

Normal Probability (P-P) Plot

FIGURE 11

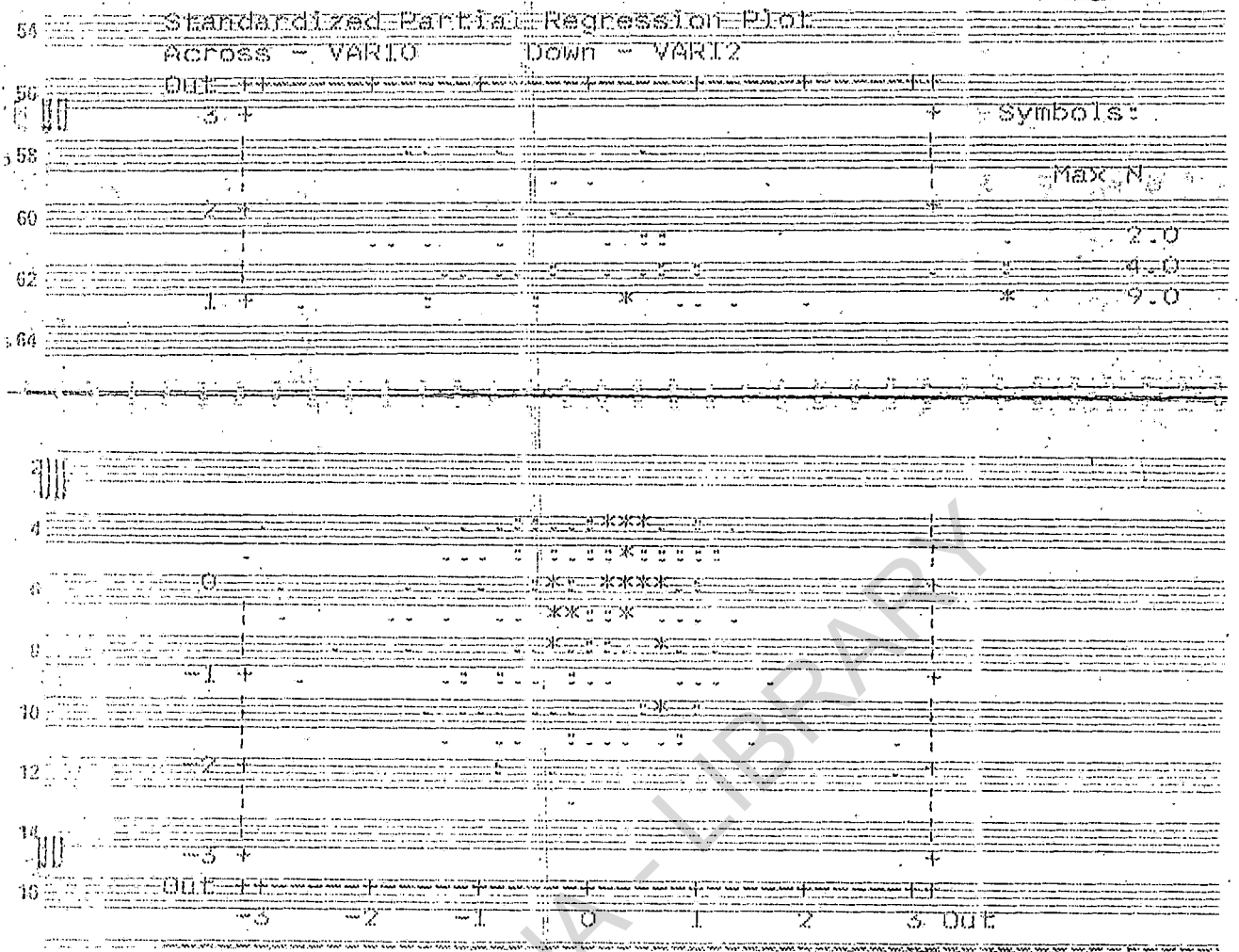
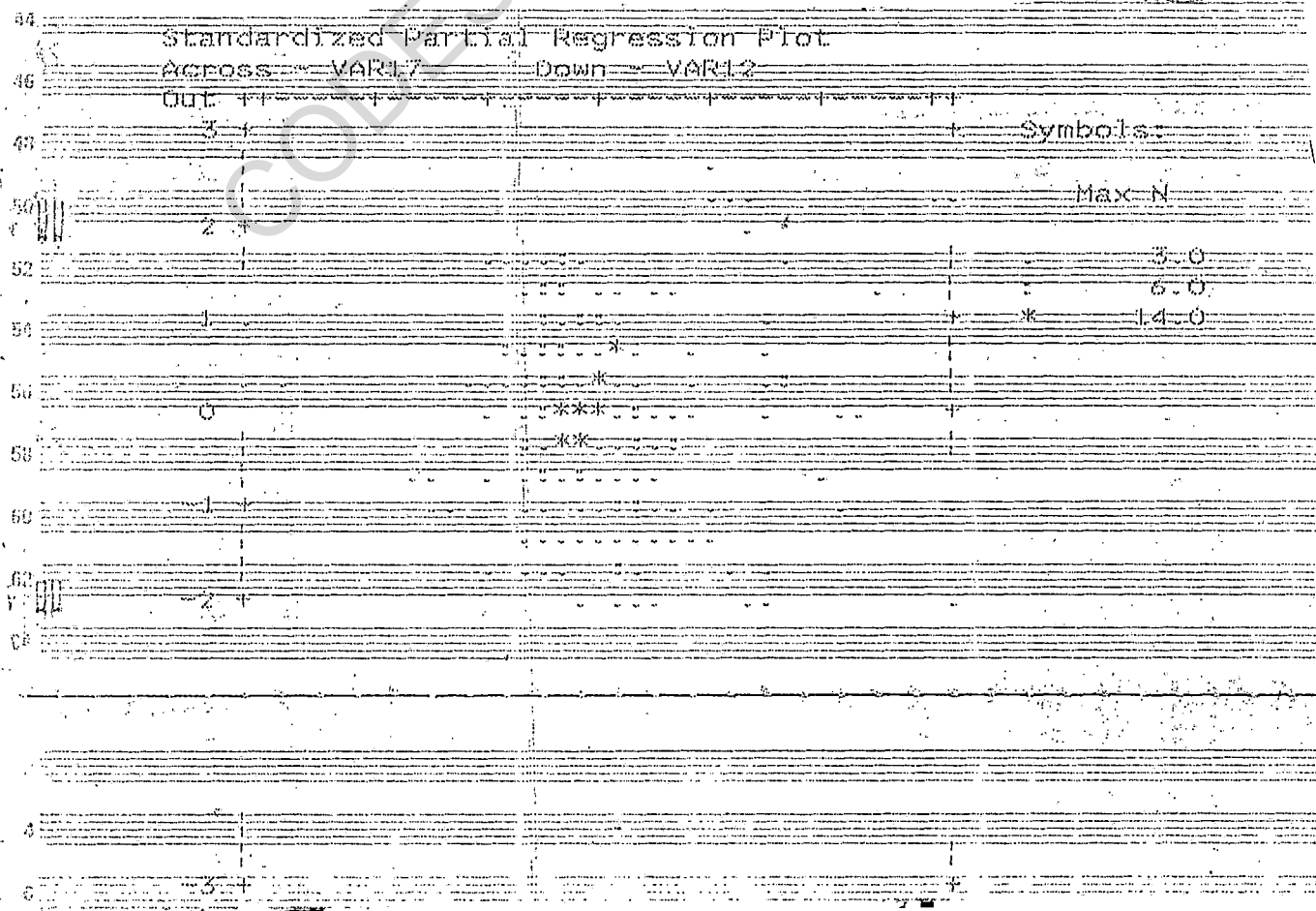


FIGURE 13: COST OF SERVICES/NO OF PERSONS EMPLOYED 1991/92



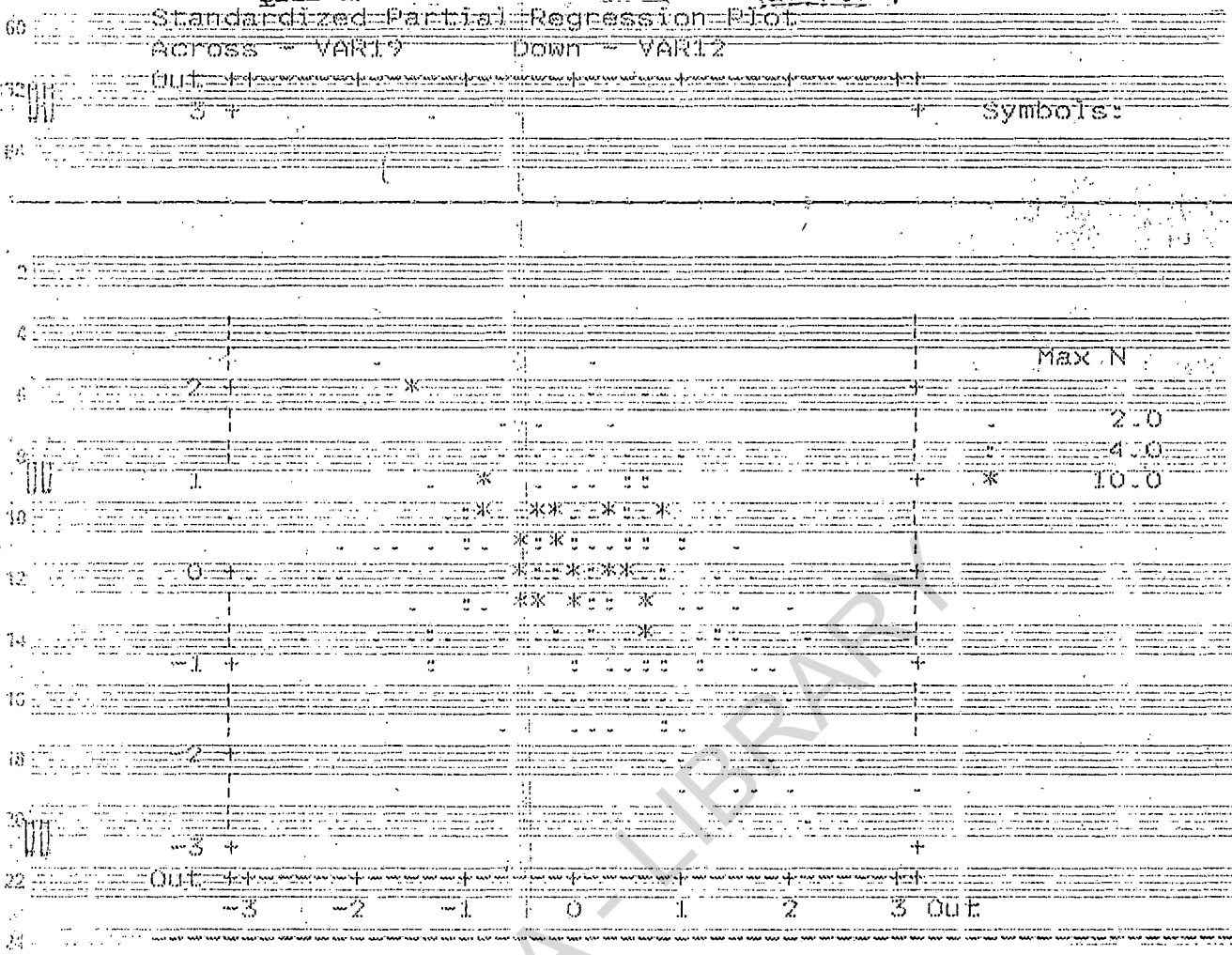
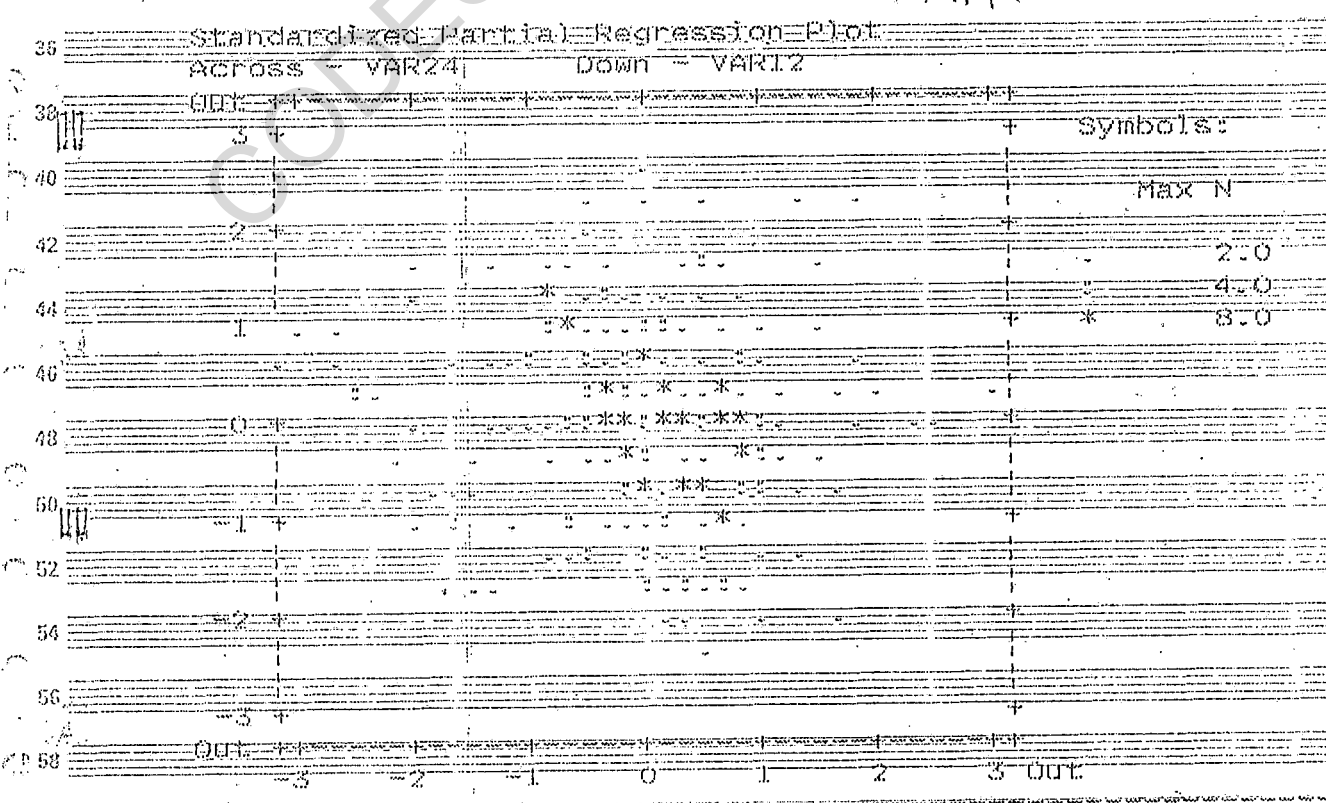


FIGURE 15: COST OF SERVICES/AVERAGE MONTHLY INCOME 1991/92



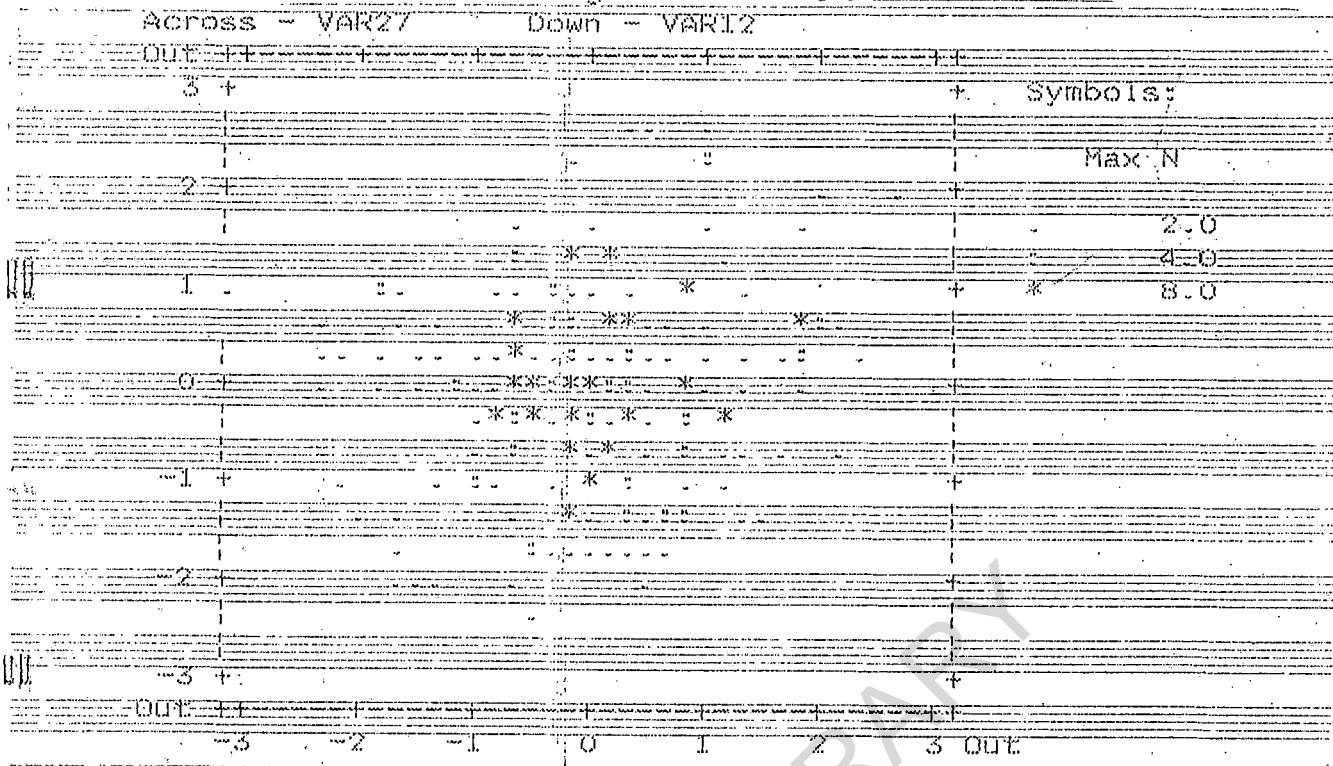
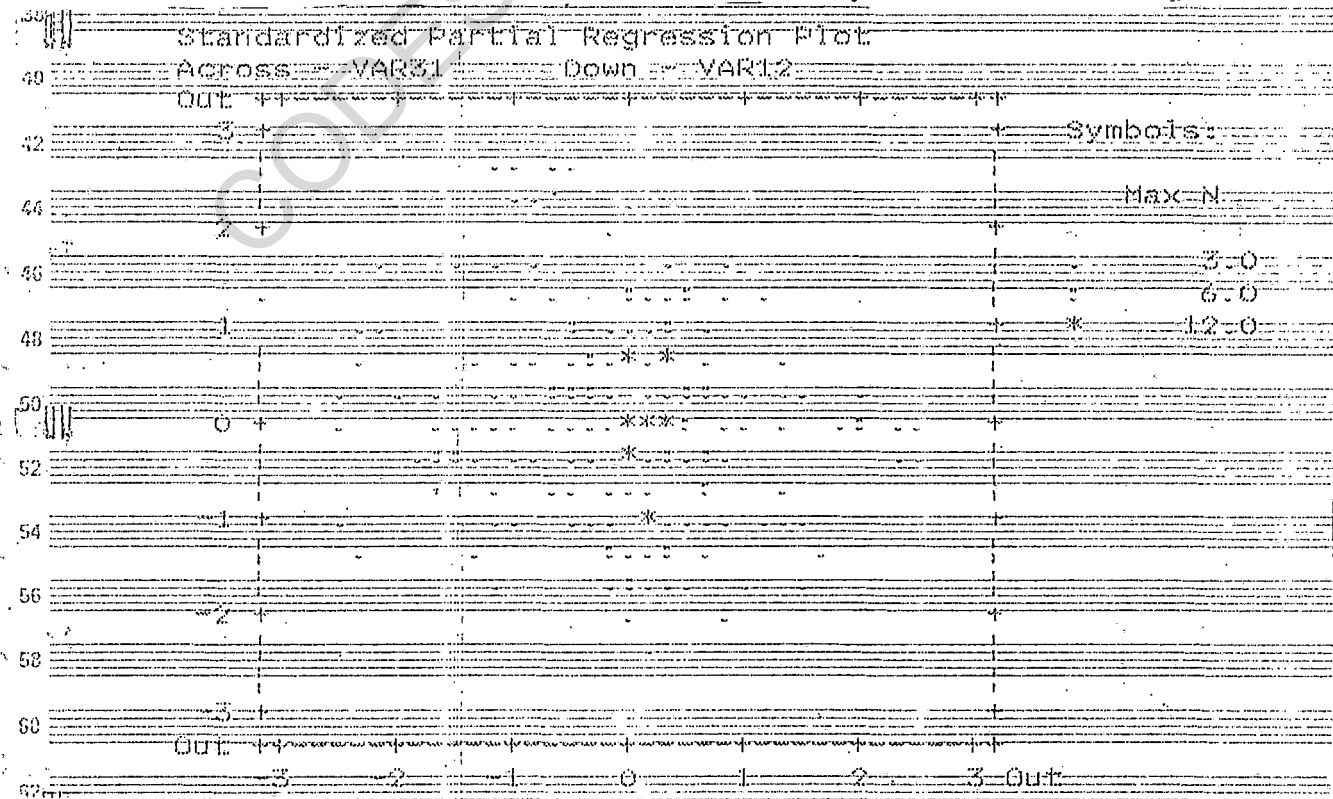


FIGURE 17: COST OF SERVICES/FARM SIZE



From the regression co-efficients in Appendix XV; we get an indication of the importance of each of these independent variables in predicting change in the cost of input received. In summary, the relationship between cost of services received and frequency of extension agent visit and participation in field demonstration are both positive whereas that between cost of services and numbers employed in 1991/92, size of operations; monthly income in 1991/92 and farm size are all negative.

Certainly, respondents who have not actually had contact with an extension agent can hardly receive any services. From experience the cost of inputs received from the extension agent is expected to have been subsidized. Thus, if a respondent has to buy from the open market, he/she has to buy at market price and will therefore buy less than may be required according to the dictates of income and size of operations. In the absence of necessary inputs, farmers and fishermen attempt to increase production by more hard work marked by use of more labour and working longer hours as indeed some indicated. It then becomes more difficult to expand production in view of input cost constraints.

5.2.3.2 Increase in Initiative and Independence

The number of respondents who actively participate in field demonstrations is remarkably small. Only 88 (26.7%) of respondents reported that they were

active in field demonstrations. Also 11 (3.3%) respondents indicated that they had at one time or the other during the period refused certain aspects of extension services. It is interesting to note that 11 respondents have had cause to make formal complaint about the extension services in their village. The actual rating of extension work generally shows poor performance.

Table 5.28 Rating of Village Extension Work

Rating	No. of Respondents	%
Good	68	20.7
Average	37	11.2
Poor	101	30.7
No idea	123	37.4
Total	329	100.0%

5.2.4 Impact of Agricultural Extension Programme on Social and Economic Welfare

The impact of the extension programme on social and economic welfare uses income distribution as the key indicator. The actual measures are however indirect using increases in size of operations, employment of labour and the distribution of household assets.

First, it has already been established in section 5.2.3.2 that female farmers and fisher women are discriminated against in the distribution of extension service particularly if they are illiterates. The differential impact of this distribution is evident in

the correlation analysis between income level from 1987 to 1990 and sex of respondent. Gender was significantly and negatively correlated with income for 1987 and 1990. The 1991/92 income levels are positively and significantly correlated with gender. Also using the possession of household assets as an indicator, the correlation analysis indicates a negative relationship between gender and the possession of household assets. This relationship with an r value of $-.2815$ is significant at the 0.001 level of confidence (see Appendix XVI).

Further analysis showed that gender was negatively correlated with farm size and size of operations, with a Pearson Correlation r value of $-.3017$ and $-.4070$ both being significant at 0.001 confidence level.

Analysis of differential impact continues with the cross-tabulations of possession of household assets and size of operations with farm size as shown in Table 5.29 and 5.30 respectively. Over half (52.31%) of the 65 respondents who had 0.5 to 0.9 Ha cultivated land had no household assets compared to 26.19% and 31.67% of respondents with farm holdings ranging from 1.5 to 1.9 Ha and over 2 Ha respectively. This is also in line with the 15.38% of respondents holding between 0.5 to 0.9 Ha of farm land who reported having more than one basic

household item compared to 69.84% and 43.33% of respondents holding between 1.5 to 1.9 Ha of farm land and of 2 Ha and above respectively.

Out of a total of 88 respondents who had more than 6 farms and/or fish ponds 68 or 77.27% are persons having land holdings exceeding 2 Ha. However 81 or 49.39% of respondents out of the 164 who reported having between four and six farms and/or fish ponds have land holdings of 1.5 Ha to 1.9 Ha.

Table 5.29: Cross-Tabulation of Farm Size and Possession of Household Assets

Farm Size	Household Assets							Total
	Means of Transport	Radio	Kerosene Stove	Foam Mattress & Bed	More than 1 Item	None	None Response	
Less than 0.5 Ha	0	0	0	0	0	1	0	1
0.5 Ha - 0.9 Ha	0	10	0	11	10	34	0	65
1.0 Ha - 1.4 Ha	1	1	0	2	9	4	0	17
1.5 Ha - 1.9 Ha	0	0	0	4	88	33	1	126
2 Ha - and above	0	0	3	27	52	38	0	120
Total	1	11	3	44	159	110	1	329

Table 5.30: Cross-Tabulation of Farm Size and Size of Operations

Farm Size	1-2 Farms/Fish Ponds	3-4 Farms/Fish Ponds	5-6 Farms/Fish Ponds	Above 6 Farms/Fish Ponds	Non Response	Total
Less than 0.5 Ha	-	-	1	-	-	1
0.5 Ha - 0.9 Ha	-	22	43	-	-	65
1.0 Ha - 1.4 Ha	1	2	8	6	-	17
1.5 Ha - 1.9 Ha	-	30	81	14	1	126
2 Ha - and above	-	21	31	68	-	120
Total	1	75	164	88	1	329

5.3 Assessment of the socio-economic Impact of the Agricultural Extension service in Relation to the Rural Development planning Environment

In Table 5.31 the main components of the environment relevant to the agricultural extension programme are presented.

5.3.1 The Controlled Environment

The principal actor here is the Rivers State Agricultural Development Programme (RISADEP) itself. This agency is managed as a semi-autonomous and self accounting unit within the Ministry of Agriculture and Natural Resources. The management of RISADEP comes under an ADP Executive Committee with the Governor of Rivers State as Chairman. Within the ADP, its heads of sub-programmes constitute a Programme Management Unit that is responsible for the development of annual work plans and budget which then go to the Executive Committee for approval. The Programme Management Unit is also responsible for the implementation of the work plan and the supervision of field activities. At the start of the project the principal officers were all seconded to the RISADEP from the Rivers State Ministry of Agriculture.

In 1988, a total of 13 extension staff with officers and extension agents were seconded. Indeed, the programme started with a conflict situation on which officers were to be seconded and at what level. The extension service

programme, hitherto a function of the state Ministry agriculture was wholly transferred to the ADP. Thus, there was a structural problem since Ministry staff brought to the new agency old work habits.

The extension services programme was planned in a typically hierarchical structure by FACU assisted by senior state Ministry of Agriculture staff, according to principles and format laid down by the World Bank. According to the programme design, There was to be established a 14 day training and visitation cycle. Extension Agents are expected to visit their 8 farmer groups within the fortnight. A Block extension agent is to spend two days on training and the remainder in the field. He is expected to visit two agents and their farmer groups each day, completing a full cycle each week. His visits are to be so co-ordinated that he sees each group of farmers within his Block over a period of a few months. The Area Extension officer is the link between field staff and majority of his time in the field.

It is clear that this elaborate structure is not functioning as expected. In the first instance, funding levels have not permitted the provision of adequate forms of mobility. Extension agents are given N70 per month for transportation which is very inadequate. A female extension agent in one of the riverine LGA informed me

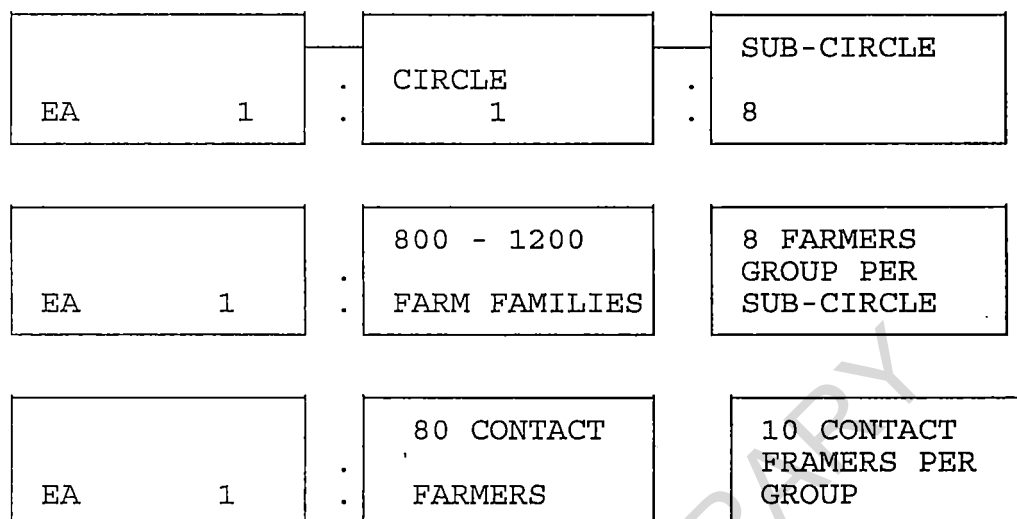
that she is only able to visit her fishermen with the assistance of the SPDC extension man who takes her around in his powered sea vehicle. Secondly, there is inadequate supervision. Headquarter staff hardly visit the field. Many extension agents are in other businesses or actually in institutions of higher learning and still drawing on their salaries without the knowledge of supervisory staff for long periods. In all the eleven communities covered in the field survey, extension agents were seen only at Agbere and Okaka. The Chief Extension Officer confirmed that he had problem recruiting and actually retaining agents especially females. This had led consistently to a shortfall between targets and actual achievements as indicated in Tables 5.32 and 5.33. In fact, in 1993 the number of contact farmers per EA is being reduced to about 50 because EAs have been unable to keep up the T and V systems stipulation of 80 contact farmers. Yet the contact farmer concept is the cornerstone of the T and V system (See figure 18).

Early in 1993, RISADEP received Escort motorcycles purchased by the World Bank. Apart from the fact that this brand of motorcycle is not usual in the Nigerian market and could therefore experience spare parts availability problems, sources within RISADEP informed me that they were unwilling to allocate motorcycles to female extension agents. It is ironic that while the agency is complaining about the difficulty of recruiting and keeping female extension staff, it is discriminating against those already in employment.

Table 5.31: The Rural Development Planning Environment for Agricultural Extension Services Programme

The Controlled Environment		The Influenceable Environment		The Appreciated Environment	
Actors	Factors	Actors	Factors	Actors	Factors
RISADEP Rivers State Govt. Federal Agricultural Co-ordinating Unit (FACU)	Implementation Financing Organisation and Technical Support	Other Agencies Involved in Agricultural Extension Services Provision in the State (Oil Companies, DFRRI)	Coordination	The Federal Government	Administrative Support
		Rural Communities Served	Participation	The World Bank	Resource Allocation Decisions Programme Policy Decisions Monitoring

Fig. 18: Extension Agent Ratio to Farm Families/Contact Farmers



Source : RISADEP, 1993

When an extension agent goes to a Community, he introduces himself to the Community leaders and asks to be shown the capable producers (farmers and fishermen) in the community. It is from this group that he selects his contact farmers. It is clear that this concept by -passes the small farmers and defeats the programme objective of helping the small producers. However, the contact farmer system is one that originates from the World Bank and since the World Bank is the chief provider of funds, ADP local staff must accept it. Funding for the ADP comes in the ratio of World Bank 75% through an agricultural sector loan channelled through the Federal Ministry of Agriculture, the Federal Government 15% and the Rivers State Government 10%. The World Bank has been known to

withhold funding on grounds of poor performance. The Rivers State Government has also been known to have been unable to meet its financial commitment to the ADP.

Table 5.32 Rivers ADP Farm Visits by Extension Agents (1988-1991)

Year	Target	Achievement	Implementation
1988	18,928	7,812	41.27%
1989	33,984	10,114	29.76%
1990	33,984	20,866	61.39%
1991	33,984	24,910	73.29%

Source : RISADEP, Feb. 1993

Table 5.33: Rivers ADP Contact Farmers Visit (1989-1991)

Year	Target	Achievement	Implementation
1989	5,840	5,800	99.32%
1990	14,160	8,845	62.46%
1991	12,672	11,851	93.52%

Source : RISADEP, Feb. 1993

The Federal Agricultural Co-ordinating Unit is responsible for the planning (monitoring and evaluation) of projects. It assists the state in an advisory capacity. According to the Chief Planning Officer of the ADP, RISADEP was set up by Decree at the Federal level and an Edict at the state level, Edict No.1 of 1988. According to this edict, the primary objectives of the programme are:

- (a) To increase food crop, livestock and fisheries production in Rivers State;

- (b) To increase food crop, tree crops, livestock and fisheries production of the small holder farmers and small-scale fishermen as the case may be, in Rivers State and to raise their incomes;
- (c) To help streamline the extension services and the inputs delivery systems;
- (d) To help improve the network of rural roads;
- (e) To make available safe portable water supply to the rural population; and
- (f) Generally to improve the quality of life in the rural areas of Rivers State.

(RISADEP Edict, 1988, Part 1 Section 2).

The relevant parts of the functions of the programme for our study come in part II Section 3; sub section (a), (b) and (d):

- (a) Reorganize and revitalize the agricultural and fisheries extension system in Rivers State and integrate extension workers training and farm visits and ensure a two-way communication between farmers, fishermen, extension workers and researchers;
- (b) Develop an effective farm and fishing input distribution system which operating through a network of farm and fishing service centres, will ensure that supplies of needed farm and fishing inputs are reliable and available to farmers and fishermen at right time and in close proximity to their farms and fishing ports;

(d) Develop a rigorous monitoring and evaluation system that will provide needed management information and ensure that errors in the programme are not perpetuated there or in other programmes.

It is clear that none of the above functions is being effectively done. At the start of the programme, the extension services were highly disorganized having been distributed between the state's Ministry of Agriculture, Local Government and agro-fisheries committees. Quite expectedly, the transfer of a unified service to RISADEP led to areas of conflict which had to be resolved by the commissioner and permanent secretary.

FACU had commissioned a study on the improvement of food production in Rivers State. The final report of this study was submitted in November 1981. This study had recommended that to implement a meaningful extension programme an extension worker to farmer ratio of 1:500. A key deficiency in this report is its failure to clearly identify by specific parameters who is a small-scale farmer or fishermen, or small holder as used in the report. This is a problem that affects the targeting of extension packages. As noted by Nwankwo (1987) rural development planners usually fail to take the extante rural social structure into account and this leads to increasing socio-economic differentiation of rural agricultural producers.

Table 5.34: Funding Status of RISADEP 1987 to 1991

Source	Actual Amount Released (₦ Thousands)					Budgeted Amount (₦ Thousands)				
	From Inception to 1987	1,988	1,989	1,990	1,991	From Inception to 1987	1,988	1,989	1,990	1,991
Federal Government	3,200	2,530	2,540	750	3,000	2,210	3,000	2,500	3,000	3,000
State Government	5,000	2,300	2,500	929.93	2,950	3,850	2,300	2,500	2,000	5,932
Non-Incremental Contribution (i.e. Staff Salaries Paid Only by the State Government)	2,682	2,130.97	1,849.12		2,900	1,269.37	3,114.63	2,489.81		5,981
IBRD [#]	# Reimbursement of Local Cost = ₦1,187,100			-6,999.89						
International Development Association (IDA) Draw-Down	Direct Off-Shore Cost = ₦7,329,900				(0.863 US \$M)	N/A	N/A	19,200	52,793.30	(5.652 US \$M)
Others	Nil	Nil		1,187.01		Nil	Nil	Nil	8,623.49	Nil

Source: RISADEP Annual Reports Various Years

5.3.2 The Influenceable Environment

The influenceable environment of the ADP extension programme in the Rivers State consists of the beneficiaries of the programme, other agencies responsible for the provision of the same services and the local authorities where projects are supposedly located. In the first instance, local government authorities are not involved in the ADP's extension programme. This may be due to the fact that the programme is not highly visible not being a physical infrastructure one. Also, the administration, of the programme is highly centralized in Port Harcourt. At Least, local governments could have been given some measure of monitoring so that they can report on erring zonal and area extension officers. The present, not infrequent occurrence, where field staff abandon their duty posts for long periods without the knowledge of the head office should have been minimized. Another problem is the maintenance of an effective training and visitation system. Once again the more visible nature of the former action lends it to more concern on the part of politicians. MAMSER also distributes inputs and seeks the assistance of the NDBDA and ADP on input distribution. DFRRI also had a seed multiplication programme. These are clearly the duties of the extension programme of RISADEP. The question is why these other federal bodies are involved in the first place.

As far as beneficiaries are concerned, it does appear like a fait accompli. Many do not even concern themselves with the programme judging by the very few who participate actively in field demonstrations and even make complaints on the extension worker. In fact it is argued by some extension staff that villagers would rather go for the loans than bother about new and improved techniques. In some cases the cultural practices do not augur well for the adoption of such new techniques. One such technique is mixed cropping. According to the Chief Extension Officer of the State, men take pride in yam production and therefore do not accept the idea of inter cropping with other crops. The contact farmer system has also not helped in the sense that it has created a feeling of isolation on those who do not belong to the contact farmer group. Also, villagers either did not understand the purpose of the extension agent's demonstration farm or the agents themselves do not use their farms accordingly. Villagers reported that the extension agent had the best farm in the village. Thus there exists an information gap which is precisely one of the functions the agent is expected to perform.

5.3.3 The Appreciated Environment

This environment of the extension services programme consists of two key actors, the federal Government and the World Bank as significant financial contributors to the programme and also policy makers (See Table 5.34); Already the role of FACU has been mentioned but it is important to state that FACU is an agency under the Federal Ministry of Agriculture and Natural Resources. In 1984, this Ministry drew up a National Policy on Agriculture. According to Mr. Egberipou, the Chief Planning Officer (Implementation) in Rivers State Ministry of Finance and Planning, the State's priorities do not usually go too outside the center's because it attracts some grants and loans. In an important respect therefore - funding-the real control for RISADEP's programme come from the World Bank. Control has been defined as "the ability of an actor to determine outcomes in a regularized (but not necessarily institutionalized) manner with a reasonable degree of certainty over matters of importance" (Biersteker,1987). This is what the World Bank does. Even before the programme took off properly, the WB insisted on some conditions being met which FACU asked the state to fulfil. First the state MANR is required to assign staff to the ADP to indicate its viability in terms of available local manpower, to

provide office accommodation and that the state government institution from which ADP is taking off should not perform parallel tasks.

The World Bank makes purchases on behalf of the RISADEP up front as part of its loan package; the most recent being the purchase of a new set of 4 WD vehicles and motor cycles for the agency. The World Bank approves the agency's work plan before releasing funds. Also, the World Bank is the originator of the contact farmer system. More significantly is the focus of attention on cassava when in some parts of the state yams, are the main crops grown particularly by male farmers. In parts of the Rivers State the attempt to introduce cassava is thus met with resistance. The critical question is the amount of say the farmers and fishermen have in the design and implementation of the extension programme. There is little evidence that they are being properly consulted.

5.4 Summary of Findings on the Agricultural Extension Programme

The picture that emerges from the assessment of the socio-economic impact of the agricultural extension programmes is one of very limited impact on rural people either in terms of raising incomes or productivity. It is also correct to suggest from the analysis that most respondents are continuing their productive activities without regard to the existence or non-existence of

RISADEP extension services, as is evident from the low number of respondents who have had actual contact with extension agents or received agricultural inputs.

Direct income effects which were measured for three years 1987, 1990 and 1991/92 show a worsening of the income situation of rural people particularly for the lower income groups. Whereas size of operations has also generally increased, most respondents have not attributed it to RiSADEP extension services. Also, increase in size of operations was reported largely by persons having land holdings exceeding 2 Ha. Using the receipt of inputs and frequency of agent visit as indicators of the extension services to target groups, the impact does not improve. Extension agents visits are very low with over 60% of respondents never having been visited during the period from 1987 to 1991/92. It is also clear that impact was more limited to males. It was shown that level of education, income and gender were the three critical factors determining the receipt of inputs and extension agent visit. Illiterate, poor women generally had less access to agents and to inputs.

An examination of the impact in relation to the rural development planning environment of RISADEP provides insight into the ineffectiveness of the extension programme. Within the controlled environment we observe an elaborate administrative structure and plan for

extension services covering the entire River State that exists mainly on paper.

For a number of reasons that were highlighted, extension agents are clearly not in the fields where they ought to be. Also inputs are not reaching farmers/fishermen adequately. Use of the contact farmer concept encourages the neglect of small-scale producers. Besides, monitoring and evaluation of the activities of extension agents is poor especially when one compares the divergence between targets achieved as reported by RISADEP with what respondents say.

Within the influenceable environment, the intended beneficiaries of the programme show reticence in the face of the programme's inadequacies. Although other agencies such as oil companies and DFRI are also involved in one form of extension service or another, there is no real conflict between them and RISADEP in the discharge of their duties. The real conflict arises in the area of differences in the interests of key head office personnel, field agents and rural people. It is obvious that the rural people are the worse off from this conflict.

The appreciated environment shows remarkable levels of control on RISADEP activities by the Federal Government and the World Bank through the funds that they make available. The final approval for the agency's work plan is done by the World Bank. Under this situation, it

is difficult for RISADEP to deviate from procedures and targets laid down by the World Bank. The World Bank had been known to withhold funds over a perceived deviation by RISADEP. The Rivers State government has also been unable to meet its commitment to the agency as and when due. It is interesting to note that the fate of rural producers at least in the specific area of extension services in Rivers State is determined by officials based in the Washington headquarters of the World Bank. In the next chapter, the impact of a rural development programme that was entirely conceived and implemented by the Rivers State Government for young school leavers would be evaluated using the same set of criteria comprising income, productivity and social and economic welfare.

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CHAPTER 6

SOCIO-ECONOMIC IMPACT OF THE SCHOOL-TO-LAND PROGRAMME

6.1 Programme Description

6.1.1 Historical Background

The School-to-Land programme was initiated in November 1984 by the Rivers State government under Governor Fidelis Oyakhilome. It was conceived as an agricultural employment scheme designed primarily to attract young secondary school leavers to agricultural production by providing intensive, on-the-job training in crops, fish and livestock farming and to promote increased food production. The basic philosophy of the programme is as stated in the School-to-Land Authority Edict Sec 2.- (1) are as follows:-

- (a) "to train young school leavers in agriculture, livestock and poultry farming and place them on land acquired in all local government council areas of the State so that the young school leavers can forgo careers in agriculture, livestock, or poultry farming or mixed farming as the case may be; and
- (b) to train young school leavers in fishing techniques and provide them with fishing equipment and other inputs to enable the young school leavers to forgo careers in fishing."

The initial strategy was to provide two years of training on the job and then have participants settled on between two hectares and five hectares of land. The

School-to-Land authority is to assist them in land preparation; in the provision of inputs and in providing a small monthly stipend initially sixty naira and later raised to ₦105 until they have their first harvest. The cost of land preparation, inputs and stipends will form part of a long term loan payable from the first harvest, The initial target was one farm in each of the then existing 10 local government areas in the state. The authority was only able to establish 10 farms in 8 LGAs. The young farmers were to be between 18 and 30 years of age. Initial costing of required vehicles and equipment was put at ₦4,768,110.00. Principal Officers for the programme were to be seconded from the Rivers State Ministry of Agriculture. At the close of the first registration exercise for the programme, 22,442 persons had registered. They were then lectured for a week. At the end of this briefing a little under 12,000 returned their completed forms. Following the selection interview the first batch of 1,660 young farmers were recruited and sent for training. The selection criteria used include interest; aptitude; background, ability to improvise, physical fitness and staying power. In addition, "while on the programme, participants will agree to abide by all rules and regulations that may from time to time be in force. They will be willing to undergo regular training organized and sponsored by the project aimed at improving

their skills. They must be willing to accept and implement advice and guidance from their supervisors. they must also agree to remain bona fide farmers and derive most of their income through farming and farm related activities." (RSG, 1985). The Blueprint provides further details of the land requirement and cost estimates for the programme.

6.1.2 School-to-Land Programme Coverage

The programme was designed to cover the then existing ten local government areas in the Rivers State. (See Table 6.1). However today, there are 10 farms in eight local government areas.

Table 6.1: School to Land Farms and Farm Hectarage (as at 1987)

Farm	Size of Farm (Ha)	Area Developed (Ha)
Sagbama	205	175
Akumoni-Okordia	350	214
Bukuma	500	086
Ogbia	300	200
Bunu-Tai	314.072	314
Egbeke-Nwuba	500	322
Iriebe	341.362	312
Agbeta	230.4	214
Kpaa	355.507	320
Bori New Town	260	152
Total	3,356.341	2,336 Ha

Source: School-to-Land Authority.

6.2 Socio-Economic Impact of the School-to-Land Programme

The social and economic impact of the programme is assessed on two levels. The first level is that of the individual young farmer and the second is on the level of the community in which the programme is located.

6.2.1 Characteristics of Respondents

School-to-Land participants are by the selection criteria between the ages of 18 years and 30 years. This is reflected in Table 6.2 where 50% of respondents are between 21 years and 25 years of age. Also remarkable is the number of single participants; compared to married participants. Over 74% of the participants are single (See Table 6.3). In terms of educational status, the requirement for participation was secondary school. However 5 female respondents who were participates had not quite completed their secondary school education as shown in Table 6.4 before being recruited into the programme

Table 6.2: Age/Sex of Respondents

Age Group	Sex		
	Male	Female	Total %
16 - 20 years	Nil	3	3 (3.33%)
21 - 25 years	18	27	(50.0%)
26 - 30 years	30	12	(46.67%)
30+ years	Nil	Nil	Nil
Total	48 (53.33%)	42 (46.67%)	0 (100%)

Table 6.3: Marital Status of Respondents

Marital Status	Sex			%
	Male	Female	Total	
Married	14	9	23	(25.56%)
Single	34	33	67	(74.44%)
Divorced	-	-	-	-
Separated	-	-	-	-
Total	48	42	90	(100.0%)

Table 6.4 Educational Status of Respondents

Educational Status	Male	Female	Total (%)
Secondary School Completed	48	37	85 (94.44%)
Secondary School not Completed	Nil	5	5 (100.0%)
Total	48	42	90 (100.0%)

Table 6.5: Comparison of Recruitment and Farmers Still on the Programme

Name of Farm	No. of Young Farmers Recruited in 1985/86	No. of Young Farmers at Graduation 1987	No. of Young Farmers on Farm 1992	Percentage Loss		
				a/b	a/c	b/c
	(a)	(b)	(c)			
Sagbama	60	38	27	36.67	55	28.95
Akumoni-Okordia	137	119	62	13.14	54.74	47.89
Bukuma	88	76	24	13.64	72.73	68.42
Ogbia	64	51	26	20.31	59.38	59.38
Bunu -Tai	276	240	92	13.04	66.67	61.67
Egbeke-Nwuba	202	132	81	34.65	59.90	38.64
Iriebe	267	232		CONVERTED TO TRAINING FARM		
Agbeta	137	112	40	18.25	70.80	64.29
Kpaa	199	184	138	7.54	30.65	25.0
Bori New Town	114	114	59	0	48.25	48.25
Total	1,544	1,298	549	15.93	64.44	57.7

6.2.2 Impact of School-to-Land Programme on Income

Two indicators as tabulated in Section 4.4.1 are used to measure the impact of the School-to-Land programme on incomes. These are (i) the improvement of employment opportunities for young school leavers (ii) income of school-to-land participants.

Data obtained from the School-to-Land authority on levels of recruitment and young farmers still in the programme is given in Table 6.5. Between the first recruitment and the graduation of the first batch of participants, there was a loss of 15.93%. Following the revision of the programme in 1989 there was to be a recruitment of 200 crop farmers and 50 livestock farmers from 1989 to date. However this exercise has been quite erratic and the authority has never really been able to recruit these numbers. Thus analysis of the data in Table 6.5 is based on the first batch of recruits. Overall decrease in number of young farmers between the recruitment and graduation is 15.93%. However there are variations in this across the different farms with Sagbama and Egbeke-Nwuba registering a loss of over one-third of their young farmers. However, the more important change is that between those who graduated and the number of active farmers actually settled on the farms. According to the data available, there is a loss of 57.7%. Across the farms, Bukuma registered the

highest loss of 68.42% of its graduates followed by Agbeta. The location with the lowest decrease is Kpaa which still lost one-quarter of its graduates. It is important to note that this decrease is against a background of subsequent recruitment and therefore actual losses could be greater. Using this as a measure of programme impact would indicate a loss of momentum for the programme and inability to meet set objectives.

Most of these withdrawals from the programme were reactions to the over one year of uncertainty between the graduation of participants from the training in December 1987 and their actual settlement on the farm in 1989. Just 21.8% of graduands qualified for loans received approval fifteen months after their graduation (see Table 6.16). Many of them were frustrated into borrowing money from family, friends and money lenders as shown in Table 6.6.

Table 6.6 Initial Source of Finance for Young Farmers

Source	No of Respondents	%
Government Loans only	Nil	Nil
Loan from family and friends	15	16.67
Loan from Traditional Money Lenders	11	12.33
Personal Saving only	Nil	Nil
Bank Loans only	Nil	Nil
Loan form Clubs	18	20
Loan form Family/Clubs/Govt	21	23.01
Loan form Family/Money Lenders	11	12.33
Loan/Personal savings	11	12.33
No Borrowing	3	3.33
Total	90	100.0%

The existing arrangements for interest loan repayment between the authority and the participants does not augur well for the participants in terms of income. Apart from the Okordia farm, where the participants have their own account other farms keep their account with the authority. Where they sell their produce through the authority, the cash is not given to the participants but is put into an account which is in the farmer's name but from which he/she cannot make withdrawals without the written permission from the School-to-Land authority. This is a thorny issue between management and participants. The authority justifies this control over participants' harvests on grounds that it bears the cost of land preparation and this is therefore an avenue for cost recovery and inputs and this is therefore an avenue for cost recovery and loan repayments. However, the part of the ₦5,000 loan package originally kept back by the authority is supposedly for these same two purposes. Moreover when participants sell to the authority, the authority fixes the price it pays.

Thus, participants face cash shortages in meeting the running cost especially labour for weeding. This is in addition to the fact that inputs arrive late and land preparation is delayed regularly. Chief Wiko of Agbeta who gave the land to the authority confirmed this occurrence. A participant at Kpaa reported that when he

complains about the money and inputs he is always asked to wait 2 weeks on a regular basis. Yet another participant at Egbeke reported that his request to be permitted to withdraw some money from his account, over last Christmas when he had need for cash, was turned down. He added that "when we see management, they do not give us face." A female respondent at Bukuma who reported outstanding financial liabilities reported thus;

"I am even afraid of leaving my house because of those I am owing. Even the community now thinks that School-to-Land is a joke. There are things school leavers can do. We went to farm thinking we were going to do it the modern way but now even the traditional method is better due to the uncertainty surrounding the entire programme."

6.2.3 The Impact of the School-to-Land Programme on Productivity

549 young farmers are presently settled on two hectares of land each bringing the total cultivated land under crop farming to 1,098 hectares. As a practice of rotational cropping, each farmer is expected to plant on only one hectare each year. We can therefore estimate that every year 549 hectares of land are cultivated. The fisheries component of the programme has not yet been implemented. Also, owing to the high cost of overhead, no livestock producing participants exist. Plantain is the main produce on the Okordia and Bukuma farms with cassava in small quantities. Ogbia farm produces rice. The other farms produce cassava, yam, maize and vegetables.

An indication of productivity is given by the willingness of participants to continue in farming (See Table 6.7). Their contention is not with farming per se as much as with the management of the School-to-Land programme itself. Apart from the conflict with the villagers over land, other problems detracting from the productivity of participants are the long distances they have to travel to the farms often on foot and in the absence of good farm access roads as shown in Tables 6.8, 6.9 and 6.10 respectively. In this regard, participants sometimes feel that management is not properly responsive to their complaint and in the case of Okordia (See Appendix XVII they had by-passed the management and communicated directly with the governor of the State. This did not yield a better result in this case anyway.

Table 6.7: Willingness of School-to-Land Participants to continue in Farming

Willing	No. of Respondents	%
Yes	57	63.33
No	26	28.89
Up until the five years from now	2	2.22
If management can improve	5	5.56
Total	90	100.00

Table 6.8: Distance from Home to School-to-Land Farm

Distance	No of Respondents	%
Less than 2km	24	26.67
2km - 4km	58	64.44
5km - 7km	3	3.33
8km - 10km	3	3.33
More than 10km	2	2.22
Total	90	(100.0%)

Table 6.9: Mode of Transport to Farm

Mode	No of Respondents	%
On Foot	73	81.11%
Motorcycle	Nil	Nil
Bicycle	17	18.89%
Taxi/Bus	Nil	Nil
School-to-Land Transport	Nil	Nil
Total	90	(100.0%)

Table 6.10: Time Taken to Travel from Home to Farm

Time	No of Respondents	%
Less than 15 min	3	3.33%
15 min - 29 min	17	18.89%
30 min - 44 min	54	60.00%
45 min - 60 min	8	8.89%
Over 1Hr	8	8.89%
Total	90	(100.00%)

Another factor affecting productivity is the inability of the farmers to control their income and their subsequent dependence on the authority to provide inputs and prepare the land before they can plant. In a situation of high labour costs, the farmers are often stretched financially. Young farmers reported that the cash cost of daily labour is N15 on the average exclusive of feeding of labourers. In Tables 6.11 and 6.12 respectively the cost of labour and the source of such labour used by young farmers are shown.

Table 6.11: Amount Spent Annually on Clearing, Weeding and Planting

Amount	No. of Respondents	%
Less than ₦100	Nil	-
₦100 - ₦350	4	4.44
₦351 - ₦550	6	6.66
₦551 - ₦750	3	3.33
₦751 - ₦950	Nil	-
₦951 - and above	77	85.57
Total	90	(100.0%)

Table 6.12: Use of Labour on Farm

Labour	No. of Respondents	%
Wives, children & relatives	Nil	-
Hired labour	4	4.44
Other participants and friends	62	68.89
Family /Hired labour	18	20.00
Other participants/hired labour	6	6.67
Total	90	(100.0%)

6.3 The Planning Environment of the School-to-Land

Programme

To this extent, it is not surprising that the young farmers do not consider the programme as really beneficial to them. When asked if the programme has been of benefit to them the responses given are as shown in Table 6.13. There are various reactions to this response. Some interviewees including a one time manager of the authority considers that no one has benefited from the programme and it was a complete loss. Another respondent is of the view that the society has

Table 6.13: Programme Benefit

	No. of Respondents	%
Yes	8	8.89%
No	41	45.56%
It could be if I can operate	6	6.6%
Training was beneficial	30	33.33%
Not really	5	5.56%
Total	90	(100.0%)

Table 6.14: The Planning Environment of the School-to-Land Programme

The Controlled Environment		The Influenceable Environment		The Appreciated Environment	
ACTORS	FACTORS	ACTORS	FACTORS	ACTORS	FACTORS
The School-to-Land Authority	Conflict Programme Design	The Young Farmers The Local Community	Funding Implementation Conflict	The Federal Government	Policy Objectives
The Rivers State Ministry of Agriculture & Natural Resources	Control				
The Rivers State Government	Statutory Backing Funding				

benefitted and that the replication of the School-to-Land idea nation-wide in graduate farming schemes is indicative of this. The question surely is whether or not the targeted beneficiaries comprising the young participants and the local communities have actually benefited from the implementation of the School-to-Land programme. To the extent that some young school leavers have been given some training in crop production and are willing to remain in farming, the programme cannot be said to be a loss although as individuals, the young farmers are highly dissatisfied.

6.3.1 The Controlled Environment

Within the controlled environment of the School-to-Land programme as shown in Table 6.14 are three principal actors. These are; the School-to-land authority itself; the Rivers State Ministry of Agriculture which is the supervising Ministry and the Rivers State Government which set up the programme. The important factors in this environment for programme impact are: conflict, shifts in priority; administrative capacity and funding.

The School-to-Land authority has since its establishment had to deal with both internal conflict involving management and policy makers and also external conflict with communities in which farms are located. The first set of conflict has led to sudden changes in the board and directorships of the authority. At

inception the authority was managed by a 16-member board made up of representatives of private companies who had given money for the programme to take off. The Chairman of this board was the Commissioner of Agriculture in the Rivers State. A General Manager was appointed. The services of this General Manager lasted for only seven months, from March to September 1985. In October 1985, a revised School to Land edict was signed into law and thus the initial board ceased to exist. The edict also seemed to indicate that the Commissioner for Agriculture ceased to have any authority over the agency. All his previous functions had either been transferred either to the Military Governor or to a part-time Chairman. In addition a new Executive Director was appointed, This marked the beginning of a series of management instability, a situation that has not helped the formation of a well defined policy frame. Important on-going implementation activities such as a soil capability survey of school-to-land farms were seriously delayed because of this change and concomitant personality conflicts. There were also clearly management incompetence and financial irregularities one year after the programme was initiated. The first harvest which went beyond estimates had to be harvested by a combined team of volunteers from the different Ministries, following a request to Heads of Department made by the

Permanent Secretary in a letter dated 7th August, 1985.

By removing the School-to-Land Authority from the control of the Ministry of Agriculture, the conflict deepened. In the first instance the blue-print for the authority was prepared by the Ministry which also seconded to the authority its principal staff (assistant chief agricultural officer (2); Principal agricultural superintendent (9); Senior agricultural superintendent (3); Higher agricultural superintendent (1) and Agricultural superintendent (3); and equipment (32 tractors, 10 bulldozers among others). The direct line of communication between the executive director of the School-to-land and the Military Governor escalated the conflict and removed effective control and monitoring of its activities from the Ministry. Yet the Ministry of Agriculture was being asked from time to time to salvage the School-to-Land programme.

External conflicts between the authority and local communities were the result of land acquisition and compensation. Government had asked local communities to donate land for the programme and had promised in return infrastructure and employment for the youths in the area. Suffice it to note that government failed to follow through on its promises. The external conflict will be treated in greater detail under the influenceable environment (Section 6.3.2).

The second factor under the controlled environment is the programme design itself. As initially conceived substantial changes were made without proper consultation with the planners. At its inception, the School-to-Land programme was to be an agency attached to the Ministry of Agriculture whose officers formed the core of planners that prepared the original proposals. The details of these proposals are as follow: (i) The programme was to be established along the line of farm settlement to be established on land acquired within the local government units aid to settle people who were willing there. This land acquisition was not done. (ii) The programme was meant for young men and women having problem getting their school certificates, (iii) The programme was to start on pre-war abandoned farms around the State (iv) Young people were to be trained and then sent back to their homes to implement the programme but under minimum supervision. The initial starting estimate as approved was ₦4,768,110 (RSG; 1985 p.16). A Project Manager was approved and seconded from the Ministry of Agriculture (MOA). In addition to the MANR staff, the services of Consultants (Prof. Youdeowei, Dr. Ekpere, Mr. Yorama) were utilized. This also raised some internal conflict. Also it was the intention to allocate within a short time from the commencement of the programme, one hectare per farmer and progressively increase this up to a maximum of

four hectares eventually. It was for this reason that the establishment of the farms made provision for four hectare plots demarcated with a net-work of cross roads.

The expansion of the scale of the programme to cover all local government areas was an action that the programme planners disagreed with but were powerless to say so at the time. Planners felt it was better to make it small as it was on an experimental basis having not been tried before.

Before the first harvest, the participants were to be given a monthly stipend of ₦60. Thereafter, the proceeds of the harvest are to be sold and the income shared as follows. The government was to take 12% of the gross harvest and specially trained supervisors 3%. The balance of 85% was to be paid into a bank account which was to give $\frac{1}{12}$ th of that every month to the participants. The 12% to be paid to government was to cater for inputs and land preparation. Yet at the end of the first harvest, all the money realized was paid to the authority rather than being shared with the young farmers. In fact the programme has been described as the pet child of the Military Governor at the time. According to documentation, the announcement of the programme was sudden and completely unplanned. In terms of actual implementation the procedure was as follows: a radio announcement of the programme; registration of

prospective participants; meetings with special interest groups; production of the blue print; land identification and farm establishment; training of participants and supervisors; launching of the programme; harvest and storage. In defence of the above process, the Commissioner of Agriculture noted thus:

It must, however, be said that the sequence through which the School-to-Land Programme has passed has been rather unorthodox. The usual sequence would have been the project conceptualization and identification followed by a feasibility study. Sometimes a pilot scheme even precedes the full blown programme. If the normal and conventional sequence was followed, maybe we would still be at the pilot scheme stage and there may have been no School-to-Land Programme, definitely not the same as the one we know today. We make no apologies for the way we chose to go because we took the position that 'the only way to farm is to farm'. (Spiff, 1986 p.17)

The above statement would appear to buttress the point that critical decisions were made on an ad-hoc basis and were either not thought of during the design stages or were ignored. Such ad-hoc decisions were further complicated by multiple actors, each bringing to the programme his own specific ideas of how best to realize the programmes objectives. The radio announcement asking young school leavers to the MANR to register was done without prior discussion with the

the professionals in the Ministry. It was only after two weeks of the announcement when up to 24,000 young school leavers had registered that the Governor was asked what should be done. It was only then that the idea to prepare a Blue Print was discussed and approved.

The State government itself did not appear to have given sufficient attention to the financial resource requirements of the programme. Between the professionals and the policy-making arm of the MANR itself two widely divergent estimates - the initial one was for N4,768,110 but the blue print estimate was for N71,141,641 emanated within months (See Table 6.15) In the absence of a properly discussed blueprint, this is

Table 6.15 Summary of Cost Estimates of Implementation of the First Phase of the School to Land Programme

Items	Cost
1. Crops -	N26,980,415.00
2. Housing -	N22,500,000.00
3. Water Supply -	N 2,524,000.00
4. Power Supply -	N 5,550,000.00
5. 15% Running Cost of Power Supply -	N 825,000.00
6. Farms Tools -	N 1,587,400.00
7. Stipend -	N 6,000,000.00
8. Machinery -	N 4,760,110.00
9. Ancillary Equipment 15% Running Cost -	N 212,400.00
10. Access Roads (Lump Sum)	N 500,000.00
Total	<hr/> N71,141,641.00 <hr/>

Source: Blue Print for School-to-Land p. 5.

not surprising. Whereas MANR officials thought they would actually handle the programme and that its scale would be kept small, it appears policy makers were already thinking of a state-wide programme. The scale of the programme was too big right from start, a situation that stretched all available resources of funds, equipment and manpower.

It was only after prospective participants have registered that the need to involve the organized private sector and local interest groups was realized. With the level of publicity given to the School-to-Land concept, all who were consulted were prepared to make contributions. For instance "community leaders" were reported to have "donated" large hectarages to government, a situation that later proved not quite correct and is one that will be more fully discussed under the section on the influenceable environment. In his first briefing on the programme given on February 11th, 1985 the State Military Governor announced that, "as of today, total cash contribution amounts to one hundred and fifty-six thousand, five hundred Naira (N156,500). Total contribution of equipment and expertise (bulldozers, graders, low loaders, pay loaders, provision of boreholes, spare parts, personnel, time and laboratory space) computed to cash amounts to one million, five hundred and thirteen thousand, nine hundred

Naira (N1,513,900)." (Rivers State Govt. 1985 p. 25)

By march of the same year donations in cash and kind had reached N2,740,900 and by June it had climbed to N3.7m.

In addition to such voluntary contributions in cash and kind, all taxable adults in the state whose annual incomes were below N800, paid a flat rate levy of N5.00 for a year, while with effect from February 1985 all taxable adults who earned above N800 per year were required to pay 2% of their annual income for six months in the first instance.

Statutory backing for the programme in form of an enabling edict was first promulgated in May 1985. This edict established the School-to-Land authority. By October of the same 1985, an amendment to the edict had been made. Substantially this amendment removed the Board Chairmanship from the Commissioner of Agriculture and created the position of an Executive Director with a part-time Chairman. In reality, what the amendment achieved was to attempt to by-pass MANR and give a direct line of communication between the Governor and the authority. The result was personality clashes and conflicts that culminated in uncertainty. The atmosphere of uncertainty was one that did not augur well

for implementation of the programme as all officers concerned had to literally run to government house before taking decisions.

In fact, so deep was the governor's personal involvement and commitment that when he was replaced as the Chief Executive of the State, the programme suffered a near total collapse (National Concord, October 26th, 1988). The in-coming administrator did not give the programme the priority it had enjoyed under its predecessors and therefore, as the programme had depended so much on the person of the governor and his specific interests, it suffered obvious funding problems. It was

Table 6.16 Trained Young Farmers Initial List of Approved Loan Applications

Farm	Number Approved	% of Young Farmers at Graduation in 1987
Agbeta	12	10.71%
Bori New Town	22	19.29%
Bukuma	12	15.79%
Bunu-Tai	18	7.50%
Egbeke-Nwuba	53	40.15%
Kpaa	82	44.57%
Ogbia	20	39.22%
Okordia	42	35.29%
Sagbama	22	57.89%
Total	283	21.80%

Source: Nigerian Tide, Monday, March 13th, 1989
 Percentages calculated based on Column (b) of Table 6.5

clear that the scale of the programme had to be pruned substantially. Young farmers still in training were to

settled. The loans needed for them to settle was however long delayed and this bred uncertainty and ultimately loss of interest on the part of the participants. From December 1987 when the young farmers were graduated, the first meeting of the loans committee did not take place until September 19th 1988. However it was not until March 1989 that the first set of loan approvals were made (See Table 6.16.

In addition to the above factors precipitating uncertainty in both management and participants alike, the authority could not meet its target of internally generated revenue. In Table 6.17 the details of this from 1985 to 1990 is given. Official projections for the revenue estimates from crops in the first year of operation alone was put at N11.02 million. Since then, characteristically projected revenues have fallen far short of actual returns. In an analysis of the programme it was noted thus: "The Authority operated 1 (one) livestock and 10 (ten) crops training/production farms scattered all over the State with average monthly expenditure of about N500,000. Its average monthly internally generated revenue stood at about N30,000.

The revenue generated by the Authority from the eleven farms could not cover a reasonable proportion of its recurrent expenditure. (Oruwari et al, 1990 pg. 3).

Yet the authority by the provisions of the edict that established it (School-to-Land Edict No. 4 of 1985 Section 4) was expected to operate on "sound commercial lines".

Table 6.17: Internally generated Revenue of the School-to-Land Programme 1985 to 1992

Year	Amount in Naira
1985	160,133.75
1986	276,510.13
1987	334,080.03
1988	691,637.39
1989	723,318.84
1990	1,023,015.00
1991	N/A
1992	N/A
Total	

Source: School-to-Land Authority (Audited Accounts)

6.3.2 The Influenceable Environment of the School-to-Land Programme

The principal actors in the influenceable environment of the School-to-Land programme include the young farmers and the local community in which the farms were located. The young farmers were to be trained and settled on the farms in their local government areas of origin. To enable them settle down the government was to provide a loan of ₦5,000 for each participant. The actual disbursement of the loans became problematic and in the process subjected the participants to suffering. Many of them were forced to borrow in order to start, under conditions of high interest rates (See Table 6.6).

Loan disbursements were by the state-owned Pan African Bank through the Central Bank. Conditions for consideration were as follows:

1. Candidates are to be identified by the School-to-Land Authority
2. Guarantors are to be senior officers not below grade level 10. The guarantor would indicate in writing their willingness to accept guarantorship for the borrower, to be accompanied by three certified passport photographs.
3. The candidate was to be identified by the Chairman of the L.G.A.
4. Interest on the loan was put at 15 3/4%.

The loan was to be paid in instalments repayable over a period of 5 years with the first year as a period of moratorium. However, it took almost a year and half for loans to get to participants. When the loans finally came for some of them, the amount given fell short. For instance, the sum of N2,400 out of the N5,000 promised, was paid in three instalment of N500 and N1,400. The result was that participants who could not handle the uncertainty dropped out of the programme.

For the communities that had School-to-Land farms located on their land, the critical factor here was the land acquisition itself. Local community level survey

revealed that chiefs had been contacted by the government and reportedly "donated" land voluntarily to the programme, within their various communities. There were conflicts of various forms. One such area of conflict emanated from the fact that chiefs had either not properly consulted with their subjects or had given land out without the consent of actual owners. In Table 6.18 below show the medium through which villages in local communities learnt of the School-to-Land programme. 43% of total respondents learnt of the programme from radio announcements and only 7% through community leaders.

Table 6.18: Medium of Information on School-to-Land Programme By Communities

Medium	No. of Respondents			
	Iriebe	Ogbia	Total	%
Radio	29	14	43	43
Television	3	Nil	3	3
Newspaper	3	1	4	4
Local Group	Nil	21	21	21
Community Leaders	5	2	7	7
Radio/Community Leaders	Nil	3	3	3
Radio/Newspapers	2	2	4	4
Radio/Television/News- papers	2	2	4	4
Radio/Television	4	Nil	4	4
Television/Community Leaders	2	Nil	2	2
Local group/Community Leaders	Nil	5	5	5
Total	50	50	100	100%

Table 6.19: Programme benefit to Communities

Benefit	No of Respondents			
	Iriebe	Ogbia	Total	%
Yes	8	3	11	11
No	42	47	89	89
Total	50	50	100	(100.0%)

Table 6.20: Disagreement with Programme in Communities

Disagreement	No of Respondents			
	Iriebe	Ogbia	Total	%
Yes	22	7	29	29
No	28	43	71	71
Total	50	50	100	(100.0%)

The Pyawii Women's group in Wiyakara (an all women farmers group) stated that the group was never consulted. A group of seven chiefs excluding the paramount ruler had given the land to government for the construction of the Bori New Town (subsequently utilized for the School-to-Land). The group alleged that four of these chiefs were not even indigenes of the village. When the news reached the group, the women came out in protest and petitioned the governor. The Police arrested all the women and some were in detention for two weeks. The villagers had protested on grounds that there was already scarcity of land in the village. The villagers took the government to court in 1981.

At Iriebe and Bunu-Tai, community members alleged that land was acquired under duress. While crops were yet to mature, government began clearing the sites. A female respondent at Iriebe said thus, "I went to the site acquired by the authority and swear that God will pay the government by their own coins". Prince Charles O Eleto another respondent from Iriebe also stated that, "government have used power of coercion and compensation was not paid and we are powerless." The respondents from the Kpaa community complained bitterly. The community said that in 1965, they gave 15 acres of land to the Niger Delta Development Board. In 1980 they increased the land to 179.86 hectares for the Agricultural Development Agency and in 1985 this was increased to 355.54 hectares. Two communities - Kpaa and Luudee-Lueku jointly gave the land to the ADA and three communities, Kpaa, Luudee-Lueku, Baa-Lueku and Seme Lueku jointly gave the School-to-Land area. None of the above communities had been paid compensation on the mass destruction of the food crops. They put their requests as follows:

- (i) A cash payment of twelve million naira.
- (ii) 75% of the young farmers to come from within the above-mentioned communities and also 60% of any employment.
- (iii) Construction of local feeder roads linking the communities.

The Bunu-Tai community actually won its court case against the State government and was awarded a one million naira compensation. What appears to irk communities more is that land so committed to the School-to-Land programme has not been properly utilized. The rest is "locked" and cannot be used by the villagers themselves. This is why one of the chief complaints of the participants is encroachment and harassment by the villagers. A female participant at Agbeta reported that she could not plant for a whole year because the land given to five of them was under dispute with villagers. In a letter dated 24th May 1989 to the Executive Director of the school-to-Land Authority, the farm Manager reported that the Ministry of Commerce and Industry had surveyed a large part of the School-to-Land farm to be included in their rural industrialization project sited at Sagbama and that the natives also had started taking back their land. Moreover an allegation which have been confirmed is the fact that government actually bulldozed more land than it was given by the communities. This antagonized the people. In addition, government did not follow through on its promises to the people to provide rural infrastructure. Harvests were also sold in Port Harcourt, not to the people. The result is widespread dissatisfaction with the programme (See Tables 6.19 and 6.20).

Table 6.21: Contribution of Local Communities to School-to-Land

Type of Contribution	No of Respondents			
	Iriebe	Ogbia	Total	%
Land	11	5	16	16
Money	24	19	43	43
Labour	1	1	2	2
Land/Money	9	18	27	27
No Contribution	5	7	12	12
Total	50	50	100	(100.0%)

It must also be noted that the villagers did not only give their land, they gave money (N5 per taxable adult); and labour in some cases. In fact one of the Farm Managers of the programme has identified consultation with the local community concerned before the execution of the project, as the priority for rural development planning. The implementation experiences of the School-to-Land programme would lend credence to this point of view.

6.3.3 The Appreciated Environment of the School-to-Land Programme

Within the appreciated environment there were really no significant actors and factors except the Federal government which provides the policy framework for agricultural development in the country. From its financial support and the adoption of the School-to-Land idea in its own graduate farming scheme it got involved in the programme. In 1986 the Federal government gave N500,000 to the scheme.

It is important to note that across the State, the Federal government-owned graduate farmers are allocated plots on School-to-Land sites. The Pyawii Women's group reported that in 1988 members of their group actually illegally harvested crops on graduate farmers plots and because of the existing conflict, government could not take any action against them.

By actually applying the idea of a farming programme targeted on educated young men and women, the Federal government may have given tacit moral backing for the continuation of the School-to-Land programme in Rivers State in spite of its many lapses.

6.4 Summary of Findings on the School-to-Land Programme

The School-to-Land programme is perhaps the one which local communities identified most with at its inception. The enormous publicity coupled with the promise of employment opportunities, as well as infrastructure provision activated the interest of local communities and even the organised private sector in the programme. As a farming based rural employment programme, it had large hectares of land committed to it. This is the source of the conflict currently between the programme and local people. Most of the land is not in use by young farmers neither is this land available to local farmers having been surveyed and registered as government acquisitions. Incidences of assault on School-to-Land participants

include physical abuse and destruction or stealing of their crops.

The socio-economic impact of the programme on the participants has been mixed. About 63% of them were willing to continue with the programme. However, the rate of withdrawals from the programme is quite high and is likely to continue particularly as recruitment has not taken place in the last one and half years. The major complaints that participants had were the financial control that the management has over their output; the long delays suffered before release of funds and the delay in essential operations such as land clearing.

The planning environment is characterized by both internal and external conflicts. Internal conflict occurred between the authority's management and the Ministry of Agriculture at the inception of the programme, as a direct result of the undue politicization of the programme. Between 1985 and 1992, over a period of eight years, the programme had 5 chief executives. Changes in programme design and ad-hoc decision-making rapidly isolated professionals in the Ministry of Agriculture. The sharp increase in the estimated cost of implementation from the ministry's submission of 4.77 million naira to 71.14 million naira can be attributed to this. Moreover, the programme idea as it exists now is incomplete. The livestock component has not been

implemented as the authority has not been able to mobilize loans for young farmers trained in livestock production.

The programme's fortune in terms of funding is a typical example of shifts in priority that usually accompany change in political administration. With internally generated revenue not even enough to cover substantial proportions of the recurrent expenditure needs of the programme, government subvention is necessary. It is the inability of the authority to generate public confidence that has instilled fear both on the part of government and participants, as to the future of the programme.

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CHAPTER 7

CONCLUSION

This concluding chapter is divided into three parts. The first part provides a summary of the major findings of the research. The second and third parts discuss the implications of the study for further research and recommendations respectively.

7.1 Summary of Major Findings of the Study

The main objective of the research was to assess the social and economic impact on local communities of three selected rural development programmes; particularly their differential impact based on income groups and gender. The programmes were: the Directorate of Food, Roads and Rural Infrastructure's feeder roads programme; the Rivers State Agricultural Development Programme's extension services programme and the Rivers State Government's School-to-Land programme. The study covered the period from 1985 to 1992 and used three criteria for assessment namely: incomes; productivity; social and economic welfare.

The impact of the feeder roads on rural incomes was inconclusive. Incomes for 1985 were compared with those of 1991/92 on both the aggregate level of the sample population, and across gender groups on the basis of male and female respondents. There was a significant difference; noting of course that income responses were pre-coded and were not adjusted for inflation.

Factors affecting respondents' income situation include the higher prices for the sale of products and increase in cost of agricultural land. Indirect measure of income using increase in land holdings revealed that the DFRRRI road impact was not much but was significant in improving respondents' income, as about one quarter of respondents stated that they have increased their land holdings because of the construction of DFRRRI feeder roads.

For the agricultural extension services programme income was measured for 1987; 1990 and 1991/92 and adjusted for inflation. Using cross-tabulations and other inferential statistical analysis, it was observed that income situation of respondents had generally worsened over the study period. Those who were worse off were lower income groups and illiterate women. Indirect measure of income using the possession of household assets such as kerosene stove, radio and foam mattress showed that women generally and lower income respondents had fewer assets.

The Schhol-to-Land programme had very limited impact on any aspect of the participant's social and economic life generally. Income effects on participants have been influenced negatively by the prolonged delays in release of loans which then forced many participants to borrow from private services with high interest rates.

Subsequently also, the School-to-Land Authority was controlling their accounts because of the loans granted them. Indirect measure of impact on income using improvement in employment opportunities for young school leavers also show limited impact.

At the graduation of the first set of 1,544 trainees, only 1,298 were left in the programme. Others had dropped out. Moreover just 42.3% of those graduands ultimately settled on the farms. Participants gave the uncertainty surrounding the programme as the main factor causing withdrawals by young people. Not only were the loans promised delayed, what was finally paid to participants was in fractions of the expected sums of ₦5,000.

Assessment of the impact of the three case studies on rural productivity also used direct and indirect measures. Increase in productivity due to the feeder roads programme was measured on the basis of increase in output; improvement in access to farms and markets; and improvement in mode of transportation. There was generally no significant difference in output of cassava, maize, fruits and vegetables. The production of yams recorded an increase. Yams are planted mainly by men. Generally the increase in output reported due to DFRRRI road was small totalling only 16.76 of respondents. Over three quarters of the respondents stated that the DFRRRI

roads were not relevant to their journey to and from farms as these were not farm access roads. Often DFRRRI had taken existing community roads and graded them. It was only in the area of expansion of marketing opportunities that a significant difference had occurred between 1987 and 1991/92. Even in this regard, the data does not suggest that this difference was due entirely to DFRRRI feeder roads per se but to a combination of a number of factors including the construction of class B roads linking communities by the state government and oil companies operational roads.

Agricultural extension services of the Rivers State Agricultural Development Programme (RISADEP) had very limited impact on productivity. Using various measures of the programme reaching its target group who are small farmers in the state, there was sufficient evidence to argue that the programme existed more in plan documents in the agency's offices than in local communities. Measures included frequency of extension agent visit; receipt of extension services type and cost of input received. Sex and educational levels were significantly related to the receipt of extension services and type of inputs received with illiterate female farmers being discriminated against. It is important to point out that out of eleven communities visited for field survey, only

in two were extension agents seen, in spite of the fact that the selected communities were circle operational bases where extension agents are expected to reside.

The School-to-Land programme's impact on rural productivity is also not significant. With one hectare of land per participant under cultivation each year totalling 549 Ha across nine communities, the School-to-Land Authority should generate sufficient revenue to meet most of its recurrent expenditure. Since this is not the case, it can imply that productivity is either low or what is produced is mismanaged. Another possible argument is that not all the 549 participants on the authority's document are still active farmers. With respect to the productive activities of the villagers in which the School-to-Land farms are located, there has been a loss of farmland and the productive employment of young people is not really at a level that makes a difference to local unemployment. These are some of the reasons for the hostility towards the programme by local people.

Evaluation of the impact of the three selected programmes on social and economic welfare used the indicators of income distribution and improvement in living conditions. Indirect measures of the impact of the feeder roads on income distribution, using increase or non-increase in size of land holdings show that 93 respondents reported an increase in size of holdings due

to DFERRI roads. About 10% of these also increased their output. Majority of these were men, and larger farmers with farm sizes averaging 7 Hectares and above recorded increases in income. The feeder roads had not quite enhanced local organizational activities and thus failed to meet one of its stated objectives. With respect to the agricultural extension service programme, improvement in social and economic welfare measured in terms of reported increase in size of operations and possession of household assets show concentration among larger farmers and fishermen. One cannot really talk of improvement in social and economic welfare of the School-to-Land programme as far as local communities are concerned. The case of participants is different. As long as some participants are prepared to continue with the programme, it does imply that the School-to-Land programme provides opportunity for employment to albeit a very small fraction of young school leavers.

The results of data analysis was in each case examined against the background of the planning environment focusing on the key actors and factors identified as affecting programme planning and implementation. Some of the essential factors include the element of conflict and control arising from inter-governmental and inter-agency relations and community involvement. Other factors are the multi-dimensional

nature of programme design; incompetence and funding.

7.2 Implications of the Study for Further Research

The study has shown clearly, the gap that exists between programme objectives and actual improvements in the social and economic conditions of the majority of rural people as a result of programme interventions. From our assessment of the impact of our three programme case studies, it is clear that several problem areas exist, which require further investigation.

First is the complexity of the programme environment characterized by multiple actors; multiple objectives and lack of control by the programme implementators of the critical elements in both planning and actual implementation. The DFRRI feeder roads were designed by the federal government and funded principally by it. The federal government at that particular time was giving special attention to rural areas in Nigeria. The state government wanted to make its own contribution by coming up with the RIARDEP concept. However, in the reality of inter-governmental relations under military rule, the state government had to succumb to federal authority. Inter-governmental relations in the context of rural development planning and improvement is an area for thorough research in Nigeria (see examples in Cloke, 1986; Cloke and Little, 1987a & 198b).

The agricultural extension programme is designed by World Bank bureaucrats and both the Rivers State and federal government are more willing to follow its dictates in order to benefit from continued financial support. Thus sensitivity to the conditions of the beneficiaries and local realities easily take less prominent positions, the primary motive being to ensure continuous funding of the programmes. The School-to-Land programme is presently highly disorganized and it is not clear who is presently in control. However it does appear that the persistent intervention of the State government itself particularly its use of veto powers in making appointments to the authority's management position has created an atmosphere of uncertainty to the extent that even operational decisions are only made following clearance from the State government.

Secondly are the problems arising from the programme objectives. Certainly the main objectives common to all the programmes is increased productivity (See Sec 2.1.1). This objective is not wrong for the realization of overall developmental objectives but a focus on that single objective or using it as the underlying motive for other equally important objectives certainly does not augur well. Principally it informs programme design as exemplified in the use of contact farmers who are already better off peasants; and also as exemplified in the

decision to locate a School-to-Land farm in each local government area of the state simultaneously or indeed in the construction of laterite roads all across the country. This takes us back to the debate over the past three decades on what the primary concerns of rural development ought to be; that is productivity and growth versus the elimination of inequality and poverty. Our analysis of the impact of the three programme would support the view that a tacit acceptance to get on with the job is not enough. As has been rightly noted, "focusing on production system is not an effective approach to realizing the productive potentials of the great mass of the population, nor to creating a production system responsive to their needs" (Korten and Carner 1984:206). They recommend therefore that increases in productive output must be done in ways consistent with the principles of equity and participation. An associated problem is the programme idea itself. Rather than starting on an experimental scale and expanding in the context of a learning process backed by evaluation and monitoring, the programme idea "tends to be standardised, top-down, authoritarian, and unable to adapt to local condition". (Chambers, 1983:150). In effect, inadequacies in the content of plans become less amenable to correction.

Another problem that can be identified from our analysis is the failure of programmes to take cognizance of the "environment" in programme design and implementation. In such situations, as noted in our analysis the goals and policies of the plan are not really consistent with the potentials and limits of the implementation environment. Thus the funding problem can not be seen in isolation from the wider rural development environment. Paul (1982) in his review of successful development programmes in different parts of the world submits that terms such as "unrealistic" and "over ambitious" are used to characterize plans which among other things failed to match their environments. The uncertainty in the planning environment has broadened the scope for multiple influences and actors who influence the out come of the decision-making process. De Valk and Sibanda (1986) have noted such influences in a detailed study of the actors and decision outcomes in a rural development project in Zimbabwe. Thus the policy making and implementation processes at various stages in rural development planning with particular attention to the inter-relationship between actors should constitute an area of critical research in Nigeria. School-to-Land programme has suffered from this factor of uncertainty, Perhaps after the Babangida administration the same fate may befall the DFRRRI programme.

Another reality of the rural development environment as identified in our case studies is that rural development policy and programme decisions are made often hurriedly and spontaneously; or after the fashion of what a former Head of State has termed our "fire-brigade" approach to rural development (Obasanjo, 1989). Rural development policies, programmes and projects are the components of a rural development strategy. Even with the new initiative by the present administration, what we have are basically policy statements, (Tipoteh, 1985). Thus, from one administration to the other, we move from one priority to the other. The way and manner the School-to-Land programme was initiated and even the DFRRRI machinery set-up nationwide are testimonies to this fact.

Yet another element in our planning environment that emerges from the study is the complete inadequacy of beneficiary participation either in planning or implementation. In the School-to-Land programme local chiefs and other elites hijacked the participation process with motives that in instances appeared suspect leading to intra-communal conflict. In the agricultural extension and feeder roads programme there is no participation in the proper sense of the word. The community participation in the DFRRRI feeder roads was actually their individual and group contributions in

various forms. There is no evidence that DFERRI consulted with the local people in the location of priority roads. What DFERRI officials understood as participation was that local governments were in some cases involved and some of the roads constructed were actually submitted to DFERRI by local governments. This does not negate the fact that elites from the different communities were able to hijack some of the roads thereby by-passing more needy areas. The hallmarks of a learning process approach involving - dialogue and negotiation - are absent. Kent (1981:3.13) asks thus, "why should local people be the beneficiaries but not the producers of their own development". The motives for this unwillingness of programme planners and implementators to put in place the machinery for effective local participation, requires further study.

There are also identifiable flaws in the management of programme implementation. There are evidence of institutionalized ignorance of actual conditions in rural areas generated either inadvertently or deliberately to achieve the ends of personal interest. There is in the agricultural extension programme for instance attempts by officials based in Port Harcourt to paint a rosier picture of impact at the local level than what is true. The same applies to the School-to-Land programme. This pattern may be due to failure on the part of agency staff to undertake objective evaluations internally. The

typical reaction is for agency staff to depend on policy makers to also identify the shortcoming and then engage in institutional reforms. There are actions such as: a closer monitoring of field staff activities which a more effective organization can undertake as an integral part of programme planning. This necessitates planning and management procedures that are based on social learning rather than on scientific knowledge (Korten, 1980). The case of women and their marginalisation in the training and visitation system of the agricultural extension programme is a case in point. Recently a new component - women in agriculture - has been added to the extension programme, as part of the World Bank's effort in helping women. There was cause to believe that this did not meet the approval of some agency staff in spite of the need for it. With a closer monitoring by agency staff, the deficiency in its extension services as pertaining to women would have been identified earlier. However, one may not expect it to come easily in the face of male dominant attitudes.

Another feature of the rural development environment that is problematic is the fact that too much emphasis and effort go into starting a project without proper planning and even less into the implementation. More attention is paid to numbers and funding than to effectiveness, particularly in the use of available

resources. The paradox of the situation then is thus that at a later stage more planning does not produce better results. One would suggest that the planning is usually given priority because it is the basis of resource allocation by funding agencies and government.

There is also the tendency to see implementation as a separate activity from planning. This should not be so. An examination of the blue-print for the School-to-Land programme and the actual procedure for implementation that the programme has followed from inception show that the blueprint may not have existed at all. Annual work plans are required by government and the World Bank of its RISADEP programme. Yet the issue is how much of these are really implemented. It is this situation that has led some scholars to suggest that when rural development programmes fail to realize their set objectives, the incidence should not be attributed to implementation problems per se such but that the planning itself had in-built problems that did not augur well for the realization of programme objectives. (Williams, 1986: Okafor, 1985).

Finally, there is the real issue of the differential impact of programmes. In the agricultural extension programme particularly and to a lesser extent, the feeder roads programme, impact showed that small-scale farmers/fishermen and women were less affected in terms

of benefit and were generally less well-off during the period under review by the study. They were marginalized in the receipt of inputs and extension agent visitation and increase in incomes and productivity were concentrated among the small proportion of males with larger farms or fish ponds. Part of the problem comes from the conceptualisation of the programmes, particularly in their failures to realize that rural society was differentiated according to income levels and gender and therefore to target this group of persons for assistance. The programmes were clearly not designed to do this. Obviously a blanket targeting of "rural people" or rural areas as is normally done is not acceptable because there are rural people as shown by our data whose farm holdings, and production levels and incomes are high enough to baffle the average civil servant. Part of the problem also comes from the programme objectives as mentioned earlier. These are geared more towards increasing productivity than to the reduction of inequality or poverty. In such circumstances success is measured by the aggregate numbers of lengths of roads constructed or persons visited or amount of input distributed or communities served or general increase in output rather than worry about who or what sections of the rural populace are actually benefiting in specific terms.

7.3 Recommendations

Recommendations will first be made generally on the basis of conclusions in the preceding section and then specifically on each programme. There is need for proper planning of rural development programmes. Their scale must be such that existing manpower and financial resources will be sufficient to embark on the actual implementation without dependence on resources external to the state government. Where it is necessary to mobilize resources, this must first be accomplished before the implementation starts. It is necessary to do this in order to avoid delays and to ensure that all involved understand what their specific roles are.

The objectives of rural development programmes must be more specific and be committed to equity as much as productivity. It is from this premise that more appropriate targeting can be achieved. While it may not be possible to achieve this for the entire programme, specific components of the programme can then be tailored to meet the needs of the low income and women in rural areas. There is need also to move away from area-based programmes to people-based programmes and to put in place modalities for ensuring that such people are mobilized for participation in the programmes. Success of the programme will then be measured not in general terms but in more specific terms as pertaining to the

proportion of the group that has benefited. In this regard experience has shown that the use of non-governmental organisations (NGO) including local groups at some point in the programme especially those having to do with service delivery, such as inputs, can achieve better results than government agencies. Non-governmental organizations are by their nature more sensitive to the needs of special groups; more familiar with local conditions and less subject to bureaucratic red-tape and therefore less costly than government agencies. The Community Development Committees concept is not quite the same as that of an NGO. The formation of the Community Development Committees were initiated by government and to that extent, their activities are circumscribed by government but this is not true of NGOs. A properly composed NGO is made up of persons with common problems and likely to have become effective in its local area before the attention of government is drawn to its activities. It is also more likely to consist of specific target groups in the rural areas.

The argument that rural people should be producers of their own development has much to commend it. In the first instance studies including this particular research have shown that much of what is being done in the name of rural development is not relevant to the transformation of social and economic conditions of the rural people.

Also, there is considerable distrust of government initiated programmes on the part of rural people. There is also the element of control over resources for development by bureaucrats based in head offices removed from the realities of rural living and productive activities. An approach that gives rural people the power to initiate and manage their own development process, would eliminate this obvious distrust and facilitate commitment to the proper implementation of whatever ideas and projects are embarked upon. The people will also have more control over resources and be willing to mobilize their own manpower, material and financial resources towards the realization of their common objectives. Also important is the institution of the learning approach which ought to characterize the rural development planning process. In fact large development programmes must be encouraged to start on an experimental scale, in view of the complexity of the programme environment, as shown by this research.

It is imperative that monitoring and evaluation must be an integral part of the process of planning and implementation. Whereas external monitoring and evaluation units are also needed. This should be an independent department within the programme's agency. Its activities must be on-going. Many government initiated rural development programmes as seen in our case studies

are guilty of regarding monitoring and evaluation as seasonal activities when annual and progress reports are to be submitted or when an on-coming regime asks for a situation report. This practise should be discouraged. Monitoring and evaluation are critical parts of the planning process. Perhaps the objective of the exercise should not be regarded as witch-hunting as is usually the case but to help management at particular points in time assess programme performance; problems identified and deficiencies rectified in good time.

As pertaining to individual case studies recommendations will take into consideration the serious problem areas.

The DFRRRI feeder roads programme suffers from a confidence crisis. The communities have made substantial contributions in cash, labour and materials but what they got in terms of the quality of output fell short of their expectations. Also they are not clear as to what their role should be in keeping up road maintenance. It is obvious that the feeder roads concept as decided by DFRRRI was not made clear to local people. They were expecting all season roads. There is also a participation gap here. If rural people had been involved in the actual planning of the programme, these gaps would not occur. The communities would have had something to say about the type of roads they need and how to maintain such roads.

Also all parties would have been clear on the issue of rehabilitation of existing community roads or re-grading.

The state government ought to have continued to develop its RAIRDEP concept based on contribution by the local and state governments and improved on DFRRRI roads. The federal government must change its paternalistic approach to the two lower tiers of political administration and must be willing to accommodate their views where this will definitely lead to improved programme output. Today, DFRRRI roads are held in contempt in many parts of the state. When government embarks on a programme that due to obvious lapses in design, fail to match their environment, such programme represent colossal waste of public resources, We know that the rainy season is also the active farming season. If at this time DFRRRI roads cannot be used, their usefulness is curtailed.

Problems arise in the implementation of any programme but they are more likely in situations where government bureaucrats sit in offices removed from local people and plan programmes for them and expect such programmes to meet their needs. The programme then becomes something done, to not for or with rural people. All levels of government in Nigeria, must move away from this tendency. DFRRRI can decide in the Rivers State to

reduce the lengths of roads and improve on the quality of the roads.

The Agricultural Extension programme being a service delivery programme is the one of the three case studies that is most sensitive to differential impact. Its two most critical problems are simply that extension services are not effective at the local level in general and specifically there is marginalization of the low income, smaller scale producers and women. Yet of all three programmes, this is the one with the most elaborate design in terms of planning, manpower and funding.

Obviously its monitoring and evaluation process is faulty. Either monitoring and evaluation is not being properly done or not objectively done. The use of contact farmers as World Bank requirements is another matter. The experience with RISADEP as well as other ADPs in Nigeria should suggest to all concerned that the contact farmer idea needs a re-think. In fact the use of the ADP in its entirety needs a re-thinking. The World Bank's financial support for the programme is not a gift but a loan. If due to loan conditionalities, the very objective of the programme becomes questionable, then there must be reconsiderations of whether the loan is necessary or not. The RISADEP appears to be a huge bureaucratic outfit that on the surface is running around doing a lot of work but in reality, in comparison to its large expenditure outlay

is achieving comparatively little, at least in the provision of extension services.

Perhaps special consideration like that being recently given to the women-through the women in agriculture scheme-ought to be thought out for other disadvantaged groups.

The School-to-Land programme needs complete re-planning. Perhaps even its name needs to be changed to instil public and participant confidence in the programme. The programme as it is now, exists more in the minds of bureaucrats based in Port Harcourt, than in terms of young people properly settled on land in their localities, engaged in farming. The programme has a management crisis and this includes funding, inefficiency and uncertainty. The state government's handling of this crisis has not helped at all. This programme has not benefited from the experience of large scale agricultural settlement schemes in other parts of the country in time past. No where in Nigeria have such schemes been successful. This was the reason why at its inception, Ministry of Agriculture staff requested that it be made as an experimental scheme first.

In the re-planning of the scheme, the views of the few young farmers, who have kept faith with the programme by continuing in it in spite of the many lapses, must be sought and utilized. Also, the element of conflict

between the authority and the communities over land must be addressed. The government should endeavour to pay outstanding compensations and should reduce the land acquired by releasing unused parcels of land back to their original owners. These suggestions should be part of a well programmed social cost/benefit analysis in which all the interest groups affected by the programme are identified and the costs and benefits to each one of them estimated. The results of such an analysis together with findings from research such as those of this particular study should constitute the basis for future policy and programme decisions.

Rural development is about people - poor people and marginalised groups who in relation to the prevailing social and economic structures require specific forms of intervention to increase their incomes, improve productivity with the attendant improvements in their social and economic welfare. The relevance and effectiveness of any project for rural development must therefore be seen in these terms, that is from the point of view of its distributional impact.

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APPENDIX 1

RURAL FEEDER ROADS CASE STUDYQUESTIONNAIRE ON IMPACT OF DFERRI RURAL FEEDER ROADSSECTION A (BACKGROUND)

- | | | | |
|----|-------------------------------|------------------------------|----|
| 1. | Name of Village | | |
| 2. | Date of Interview | | |
| 3. | Sex of Respondent | | |
| 4. | Length of stay in Locality | | |
| | | 1 - 5 years | 01 |
| | | 6 - 10 years | 02 |
| | | 11 - 15 years | 03 |
| | | Over 15 years | 04 |
| 5. | Age of Respondent | | |
| | | 20 - 29 years | 01 |
| | | 30 - 39 years | 02 |
| | | 40 - 49 years | 03 |
| | | 50 - 59 years | 04 |
| | | 59 years and above | 05 |
| 6. | Level of Education | | |
| | | None | 01 |
| | | Primary School Completed | 02 |
| | | Sec/Comm. School completed | 03 |
| | | Teacher Training/Voc. School | 04 |
| | | Polytechnic/University | 05 |
| 7. | Main occupation of Respondent | | |
| | | Farming | 01 |
| | | Fishing | 02 |
| | | Trading | 03 |
| | | Artisan/Handcraft | 04 |
| | | Local manufacturing | 05 |

SECTION B (SOCIAL ACTIVITY)

- | | | | |
|-------|---|-----------|----|
| 8(a) | Do you belong to any village organisation (club, society, co-operative etc) | | |
| | | Yes | 01 |
| | | No | 02 |
| | (b) Name of Organisation | | |
| 9. | What are the three main activities of this organisation? | | |
| 10(a) | Are you aware that DFERRI has built a feeder road in your community? | | |
| | | Yes | 01 |
| | | No | 02 |
| | (b) If Yes, what part did you play? | | |
| 11. | What contribution did your organisation make to the construction of DFERRI roads? | | |
| | | Cash | 01 |
| | | Labour | 02 |
| | | Materials | 03 |

- 12(a) Has the road helped to promote the activities of your organization?
- Yes 01
- No 02
- (b) In what ways has this occurred? (Give only three main reasons)
13. Did your organization make any petition or complaint on the DFERRI road?
- Yes 01
- No 02
14. If Yes, what was the complaint/petition about?
15. Did you receive any response?
- Yes 01
- No 02
16. If "Yes", was the response favorable?
- Yes 01
- No 02
17. Did any concrete action follow from this response?
- Yes 01
- No 02

SECTION C

18. Did you or anyone in your household make any contribution to DFERRI road programme?
- Yes 01
- No 02
19. If "Yes", in what form was this contribution?
- Land 01
- Cash 02
- Labour 03
- Materials 04
- Any other, please specify?
- 20(a) If contribution was land, who owned the land so given?
- Family 01
- Community 02
- Private individual 03
- Any other, please specify? 04
- (b) If cash, state the specific total amount N
21. What access do you have to your farm?
- Bush path 01
- Existing earth road 02
- New earth road (DFERRI of Local Government) 03
- Asphalt road (State Govt., DFERRI, Local Govt.) 04
- Oil Co. Location road 05
- Specify 06

22(a) By what mode of transport do you go to farm, usually?

Treking	01
Bicycle	02
Motor cycle	03
Canoe	04
Other (specify)	05

(b) Since after construction of new DFRRRI road?

Treking	01
Bicycle	02
Motor cycle	03
Canoe	04
Other (specify)	05

23(a) What is the distance from your home to the farm/
fishing ground?

Under 1km	01
1 - 3km	02
4 - 6km	03
7 - 9km	04
10 and over	05

(b) Since commissioning of DFRRRI road? What is the
distance since a new road came into use?

Under 1km	01
1 - 3km	02
4 - 6km	03
7 - 9km	04
10km and over	05

24(a) What time did it take to get to the farm from home
previously?

Under 15min	01
15 - 29min	02
30 - 44min	03
45 - 59min	04
1 Hour and above	05

(b) What time does it take if you now use DFRRRI Road?

Under 15min	01
15 - 29min	02
30 - 44min	03
45 - 59min	04
1 Hour and above	05

(c) What is the size of your farm? (1 Hectare is approximately
1 football field).

Less than 1Ha	01
1 - 2Ha	02
3 - 4Ha	03
5 - 6Ha	04
7 - 8Ha	05
9 - 10Ha	06
Over 10Ha	07

25. Do you think your holding has increased as a result of the new road from your home to the farm, and by how much?
- (a) Yes 01
No 02
- (b) If Yes, by a quarter 01
by a third 02
by a half 03
26. What was the usual output of your farm products harvested weekly, all year round.
- Vegetables: 1 stack 01
2 - 5 stacks 02
6 - 9 stacks 03
10 - 13 stacks 04
Over 13 stacks 05
- Cassava: 1 Basket 01
2 - 5 baskets 02
6 - 9 baskets 03
10 - 13 baskets 04
Over 13 baskets 05
- Products harvested weekly within 3 months duration.
- Fruits: 1 Basket 01
2 - 5 baskets 02
3 - 9 baskets 03
10 - 13 baskets 04
Over 13 baskets 05
- Maize: 1 Basket 01
2 - 5 baskets 02
6 - 9 baskets 03
10 - 13 baskets 04
Over 13 baskets 05
- Plantain: 1 Bunch 01
2 - 5 bunches 02
6 - 9 bunches 03
10 - 13 bunches 04
Above 13 bunches 05
- Products harvested once.
- Yam: Less than 100 tubers 01
100 - 249 tubers 02
250 - 499 tubers 03
500 - 749 tubers 04
750 - 1,000 tubers 05
Over 1,000 tubers 06
26. Has your output changed as a result of DFRI road to the farm and by how much?
- (a) Yes a quarter 01
a third 02
a half 03
doubled 04
Other (specify) 05
- (b) No 01

27. Where do you sell your products?

	Before	After DFERRI road	
(i) Road side			01
(ii) Village market			02
(iii) Urban market			03

28. What is the distance of farm/village to the market?

	Before	After DFERRI road	
(i) Under 1km			01
(ii) 1 - 3km			02
(iii) 4 - 6km			03
(iv) 7 - 9km			04
(v) 10km and above			05

29. What quantity of products do you transport to the market? weekly, all year.

Vegetables:	Before	After DFERRI road	
(i) 1 stack			01
(ii) 2 - 5 stacks			02
(iii) 6 - 9 stacks			03
(iv) 10 - 13 stacks			04
(v) Over 13 stacks			05

Cassava:	Before	After DFERRI road	
(i) 1 Basket			01
(ii) 2 - 5 baskets			02
(iii) 6 - 9 baskets			03
(iv) 10 - 13 baskets			04
(v) Over 13 baskets			05

Fruits:	Before	After DFERRI road	
(i) 1 Basket			01
(ii) 2 - 5 baskets			
(iii) 6 - 9 baskets			03
(iv) 10 - 13 baskets			04
(v) Over 13 baskets			05

Weekly, for maximum of 3 months.

Maize:

	Before	After DFERRI road	
(i) 1 Basket			01
(ii) 2 - 5 baskets			02
(iii) 6 - 9 baskets			03
(iv) 10 - 13 baskets			04
(v) Over 13 baskets			05

Yam Tubers:

	Before	After DFERRI road	
(i) Less than 100			01
(ii) 100 - 249 tubers			02
(iii) 250 - 499 tubers			03
(iv) 500 - 749 tubers			04
(v) 750 - 1000 tubers			05
(vi) Over 1000 tubers			06

OTHER Plantain:

	Before	After DFERRI road	
(i) 1 Bunches			01
(ii) 2 - 5 bunches			02
(iii) 6 - 9 bunches			03
(iv) 10 - 13 bunches			04
(v) Above 13 bunches			05

30. By what mode do you transport your products?

	Before	After DFERRI road	
(i) Foot			01
(ii) Bicycle			02
(iii) Wheel barrow			03
(iv) Canoe			04
(v) Motor cycle			05
(vi) Pick up van			06
(vii) Mini bus			07
(viii) Lorry			08

31. How much income per annum did you realize from your work in 1987?
- | | |
|------------------|----|
| N100 - N299 | 01 |
| N300 - N499 | 02 |
| N500 - N799 | 03 |
| N800 - N999 | 04 |
| N1,000 and above | 05 |
32. How much income did you realize from your work in 1991
- | | |
|------------------|----|
| N100 - N299 | 01 |
| N300 - N499 | 02 |
| N500 - N799 | 03 |
| N800 - N999 | 04 |
| N1,000 and above | 05 |
33. To what three main factors would you attribute your income situation?
- | | |
|-------------------------------|----|
| Increase in output | 01 |
| Increase in vol. of sales | 02 |
| Higher prices for goods | 03 |
| Diversification of employment | 04 |
- 34(a) Has the cost of land increased over the past 5 years?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
- (b) If "Yes" what can be attributable to this increase?
- | | |
|--|----|
| None-availability of land | 01 |
| Increase in Agric. production | 02 |
| General Increase in cost of living | 03 |
| DFRRI road creating improved accessibility | 04 |
| Other, please specify | 05 |
35. Let respondent give cost of unit area of land then and now.
- | | |
|--------------------------------|----|
| Area of land | 01 |
| cost of land in 1987 N | 02 |
| Cost of the same piece of land | 03 |
| Now N | |

FOR PICK UP/MINI-BUS/LORRY DRIVERS

36. How long have you been operating transport service between village and market?
- | | |
|--------------|----|
| Under 1 year | 01 |
| 2 - 3 years | 02 |
| Over 3 years | 03 |
37. Has there been any noticeable increase in volume of farm products you transport from this village to the market?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
38. If Yes, how many trips a week were you making previously and now between village and market?
- | | | |
|---------------------|----------------|----|
| Previously (before) | 1 trip a week | 01 |
| | 2 trips a week | 02 |
| | 3 trips a week | 03 |
| Presently (now) | 2 trips a week | 01 |
| | 3 trips a week | 02 |
| | 4 trips a week | 03 |
39. Will you attribute the increase in trips to a new DFRR road which gives you better access to the village, which you now use?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |

APPENDIX II

AGRICULTURAL EXTENSION PROGRAMME CASE STUDYQUESTIONNAIRE ON IMPACT OF AGRICULTURAL EXTENSION SERVICESSECTION A (BACKGROUND)

1.	Name of Village	
2.	Date of Interview	
3.	Sex of Respondent	
4.	Length of stay in Locality	
	1-5 years	01
	6-10 years	02
	11-15 years	03
	15 years +	04
5.	Age of Respondent	
	20-29 years	01
	30-39 years	02
	40-49 years	03
	50-59 years	04
	59 years and above	05
6.	Level of Education	
	None	01
	Primary School completed	02
	Sec/Comm. School completed	03
	Teacher Training/Voc. School	04
	Polytechnic/University	05
7.	Occupation	
	Farming	01
	Fishing	02

SECTION B

8.	For how long have you been engaged in fishing/farming?	
	1-5 years	01
	6-10 years	02
	11-15 years	03
	15 years and above	04
9(a)	Do you belong to a fishing/farming co-operative?	
	Yes	01
	No	02
(b)	For how long have you received extension services?	
10.	How often does an extension agent visit you?	
	Once every two weeks	01
	Once every month	02
	Once in two to three months	03
	Once in six to nine months	04
	Once in a year	05
	Never	06

11. What do you receive from the extension agent?
- | | |
|--------------------------------------|----|
| Inputs such as chemicals, Fertilizer | 01 |
| Inputs such as equipment | 02 |
| Advice on new techniques | 03 |
| Loans | 04 |
| Nothing | 05 |
| All of the above | 06 |
12. If you received any inputs what were the costs of these in 1990
13. Where you forced or pressurized in any way to accept the items.
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
- 14(a) Have you ever refused to accept any inputs from an extension agent?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
- (b) Give reasons for your answer
15. How many persons do/did you employ as paid labour to assist you.
- | <u>Year</u> | <u>No. of Employees</u> |
|-------------|-------------------------|
| In 1987 | |
| In 1990 | |
| In 1991 | |
16. What were the reasons for the increase/decrease/no change?
- | | |
|--|----|
| Use of Labour-saving machinery | 01 |
| Use of more family labour | 02 |
| Use of more advanced fishing/farming methods | 03 |
| Poor/increased turnover | 04 |
| Other (specify) | 05 |
17. Give an idea of the size of your enterprise.
- (a) No of farms and size
- (b) No of ponds and size
- (c) Have these increased in the last 4 - 5 years?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
18. To what do you attribute this increase or non-increase
- 19(a) What was your monthly income in 1987 ₦
- (b) What was your monthly income in 1990 ₦
- (c) What is your monthly income this year ₦
20. What household assets do you own?
- | | |
|------------------------------|----|
| Means of transport (specify) | 01 |
| Radio | 02 |
| Kerosene stove | 03 |
| Foam mattress and bed | 04 |

- 21(a) Do you have your own home, one you built?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
- (b) When was it built?
22. For interviewer (notes on the respondents House)
- | | |
|---------------------------|----|
| Types of roofing material | 01 |
| Type of wall | 02 |
| Number of living rooms | 03 |
23. Do you take active part in extension agent demonstration exercise
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
24. How would you rate the work of your village's extension agent
- | | |
|-----------|----|
| Very Good | 01 |
| Good | 02 |
| Average | 03 |
| Poor | 04 |
25. Please give reasons for your answer in (24) above.
- 26(a) Have you had cause to complain to headquarters about the extension service in your village?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
- (b) If Yes, when was this (year)
- (c) What was the main cause of complaint?
27. What was the response you received from the authorities?
- 28(a) Have you ever had to pay in cash or kind for an extension agent's service?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
- (b) Is this the normal practice or you just felt like showing appreciation?

APPENDIX III

QUESTIONNAIRE FOR COMMUNITY LEVEL DATA COLLECTION ON
SCHOOL-TO-LAND PROGRAMME

SECTION A BACKGROUND INFORMATION

1.	Name of Village or Town		
2.	Local Government Area		
3.	Sex of Respondent		
		Male	01
		Female	02
4.	Age of Respondent		
		17 - 27 years	01
		28 - 38 years	02
		39 - 49 years	03
		50 years and above	04
5.	Length of stay in locality		
		Less than 3 years	01
		3 - 5 years	02
		6 - 8 years	03
		9 years and above	04
6.	Occupation of Respondent (Main source only)		
		Farming/Fishing	01
		Trading	02
		Local Manufacturing	03
		Artisan/Handcraft	04
7.	If farmer or fishman, have you ever received any inputs from government.		
		Yes	01
		No	02
8.	What was the nature of the input		
		Loan	01
		Seeds, Fertilizers and chemicals	02
		Machinery	03
		Technical Advice	04
9.	Level of education		
		None	01
		Primary School completed	
		Secondary/Comm. School completed	03
		Teacher Training/Vol. School	04
		Polytechnic/University	05
10.	Level of Income per month		
		Less than N 50	01
		N 50 - N150	02
		N151 - N250	03
		N251 - N350	04
		N351 - N450	05
		N451 - N550	06
		About N550	07

SECTION B

1. Are you aware of the governments
School-to-land Programme
Yes 01
No 02
2. How did you get to know about it?
Radio 01
Television 02
Newspaper 03
Local group or association 04
Community Leaders 05
3. Did you or anyone in your family you know, make contribution
to the programme?
Yes 01
No 02
4. If Yes, in what form was the contribution
Land 01
Money 02
Labour 03
5. If contribution was land, who owns the land so given
Family 01
Community 02
Private Individuals 03
- 6(a) If the contribution was land, was it being farmed at
the time?
Yes 01
No 02
- (b) If contribution was money, how much did you pay ₦
7. Were sanctions imposed on those who did not make the
required contributions.
Yes 01
No 02
Do not know 03
- 8(a) Were you or anybody you know of directly involved in
bringing the programme to the village?
Yes 01
No 02
- (b) Who was this? (status in village)
9. Has this programme been of benefit to you as an individual?
Yes 01
No 02
10. Have you had occasion to disagree with the programme.
Yes 01
No 02
11. If Yes, what aspects of the programme were these?
12. Who else that you know of has had occasion to disagree
with the programme.
13. How was the disagreement handled?

14. What was your initial reaction to the programme?

15. Has this reaction changed?

Yes

01

No

02

16. What factors are responsible for the change?

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APPENDIX IV

QUESTIONNAIRE FOR SCHOOL-TO-LAND PARTICULARS

- | | | | |
|------|--|--------------------------------|----|
| 1. | Name of Farm, Village or Town | | |
| 2. | Local Government Area | | |
| 3. | Sex of Participant | | |
| | | Male | 01 |
| | | Female | 02 |
| 4. | Marital Status | | |
| | | Married | 01 |
| | | Single | 02 |
| | | Divorced | 03 |
| | | Seperate | 04 |
| 5. | Age of Pariticipant | | |
| | | 16 years - 20 years | 01 |
| | | 21 years - 25 years | 02 |
| | | 26 years - 30 years | 03 |
| | | 30 years and above | 04 |
| 6. | Educational Qualification | | |
| | | Secondary School completed | 01 |
| | | Secondary School not completed | 02 |
| 7. | Where you employed anywhere before the S - L Programme | | |
| | | Yes | 01 |
| | | No | 02 |
| 8(a) | Date recruited as trainee farmer | | |
| | (b) Date graduated | | |
| 9. | Date settled as farmer | | |
| 10. | What area of the programme are you involved in | | |
| | | Livestock | 01 |
| | | Crop | 02 |
| | | Others (specify) | 03 |
| B. | Give an indication of the size of your holdings | | |
| | | No. of hectares | 01 |
| | | No. of livestock | 02 |
| 11. | What is the distance from where you live to the farm? | | |
| | | Less than 2 kilometres (km) | 01 |
| | | 2km - 4km | 02 |
| | | 5km - 7km | 03 |
| | | 8km - 10km | 04 |
| | | More than 10km | 05 |
| 12. | By what means do you travel to the farm? | | |
| | | On foot | 01 |
| | | By motor cycle | 02 |
| | | By bicycle | 03 |
| | | By taxi/bus | 04 |
| | | By company provided transport | 05 |

13. How long does it take you to travel to your farm?
- | | |
|----------------------|----|
| Less than 15 minutes | 01 |
| 15 - 29 minutes | 02 |
| 30 - 44 minutes | 03 |
| 45 - 60 minutes | 04 |
| Over one hour | 05 |
14. Do you intend to continue in the business of farming?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
15. Please give reasons for your answer.
16. Has this programme been of benefit to you?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
17. If Yes, what are these benefits?
18. How often do you discuss problems with your management?
- | | |
|----------------|----|
| Regularly | 01 |
| When necessary | 02 |
| Never | 03 |
19. Have you had occasion to make specific complaints to management?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
20. If Yes, what was the complaints about?
21. What was the response?
22. Would you regard your training as adequate for the work you are now doing?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
23. If No, what are the problem?
24. Have you had any disagreements with the villagers?
- | | |
|-----|----|
| Yes | 01 |
| No | 02 |
25. What was the disagreement about?
26. How was it resolved?
- 27- How much have you spent so far on clearing and planting?
- | | |
|----------------|----|
| Less than N100 | 01 |
| N100 - N350 | 02 |
| N351 - N550 | 03 |
| N551 - N750 | 04 |
| N751 - N950 | 05 |
| N951 and above | 06 |
- 28(a) What was your estimated income from the farm?
- | | |
|---------|--|
| In 1988 | |
| In 1989 | |
| In 1990 | |
| In 1991 | |

(b) How much were you paid for your products by the S - L Authority?

In 1988
 In 1989
 In 1990
 In 1991

29. What are your sources of financial support for the farm

Government loan	01
Loan from family and friend	02
Loan from traditional money lenders	03
Personal savings	04
Bank Loans	05

30. Do you employ the service of:

Wives, children, relatives	01
Hired labour	02
Other participants/friends on your farm?	

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APPENDIX V

INTERVIEW SCHEDULE FOR CASE STUDIES

A. Basic Information

1. Name of Interview
2. Title of case study
3. Position of person interviewed
4. Name of agency

- B. 1. Could you describe how this programme came to be approved by government for execution?
2. Were you directly involved in the planning? If not, who do you know was involved.
3. Did you have occasion to disagree with the proposal?
4. Please provide details of the disagreement, who was involved and what the issues were.
5. Did you accept the objectives for which the programme was proposed - why?
6. Were any alternatives to this programme considered as appropriate for achieving the same objectives? Yes or No.
7. What were these alternatives and who proposed them?
8. Did you agree with all aspects of the programme elements such as the scale, the timing, locations, beneficiaries?
9. Was the programme considered a priority by federal or state policy makers? Yes or No.
10. What are/were the indicators to support your view?
11. Apart from persons within your organization, which others that you know about within or outside governments were involved in planning the programme?
12. Which of the above were also involved in the execution of the programme?
13. What has been the reaction of the local communities in which you located these programmes.
14. Has there been specific expression of concern or dissatisfaction with the programme?
15. What are the source of the above and what do you feel have led to it?
16. How has such reactions affected your activities? How did you handle them?
17. Do you know of any reaction to the programme when it was first initiated from known groups within the state such as private consultancies, contractors, farmers, trade union, the press, academicians or such groups.
18. Do you have any evidence to support this?
19. What aspects of the programme proposal were affected by the groups in (17).
20. Was the programme in line with your agency's proposals for the plan period? Yes or No.

21. Did the programme as executed differ substantially from initial proposals? Yes or No.
22. Would you say these changes were of a positive nature in terms of the objectives of the programme? Why?
23. Were the intended beneficiaries involved in effecting these changes?
24. Was there any reason for disagreement over the programme's planning or execution among the officers directly working on it? Please provide details.
25. Who would you say benefitted most from this programme?
26. Were persons within the administration involved in sharing from this? How?
27. What are your sources of financial support for the programme?
28. Could you identify all other agencies - state, federal or private which are involved in the planning and implementation of this programme?
29. How would you describe your agency's working, relationship with these other agencies?
30. Could you indicate areas of conflict experienced in this relationship?
31. How do you resolve such conflicts?
32. Who is responsible for the provision of guidelines on your operations?
33. What happens if you fail to comply? (Please provide details of any such occasions).
34. Who is responsible for disbursements of money to the programme?
35. Would you regard the procedure as adequate? How?
36. Which offices within the state or at federal level are involved in your financial decision making?
37. Who are/were involved in the appointment of your management making?
38. Would you regard your implementation strategy as adequate? Yes or No? Why?
39. Was your department actively involved in the planning of the programme? Yes or No. If no, who did?
40. Has there been disagreement within the department over any specific procedures regarding the planning and execution of the programme? Who were involved?
41. Has there been conflict over the use of financial resources? Any reported cases of mismanagement?
42. How do you monitor your field operations?
43. Did you experience delays and major modifications during implementation?

44. What were the sources of the above?
- (a) charges in the organization framework for programme management.
 - (b) implementation agency is different from funding agency. Conflict in procedure, programme elements.
 - (c) internal problems of management
 - lack of technical capability necessary for execution
 - political interference in management decisions
 - mismanagement of funds
 - (d) Excessive fragmentation of the decision making progress. Too many clearance points.
 - (e) Personal conflicts between officials responsible.
 - (f) Procedure conflicts between officials responsible.
 - (g) Inadequate funding (delays, shortfalls, withdrawals).
 - (h) Opposition from local communities (Please tick/as appropriate).
45. Would you say that sufficient attention was given to:
- (a) the financial resource requirements
 - (b) the manpower and technical resource requirements at the time of planning?
46. Do you feel that sufficient room is given to you and your colleagues in the planning and execution of the programme to exercise your professional judgement? How?
47. Was there a need for coordination in the planning and execution of the programme?
48. Who did the coordinating:
- (a) within the organization
 - (b) other organization.

APPENDIX VI

INTERVIEW WITH SPECIFIC LOCAL GROUPS/CHIEFS AND ELDERS

1. Name of group
2. Date of formation
3. Membership (Sex)
4. Type of group (main activities)
5. What aspects of the programme were you involved in?
6. Would you say that the programme has been of benefits to you.
 - (a) As a group?
 - (b) As a community
7. If your answer is yes, in what ways has it been of benefits?
8. Did you have occasion to discuss the programme at your meetings?
9. Was any government official present at this discussions.
 - (a) As representing a government agency
 - (b) As a member of the community
10. Have you as a group make representation to the government regarding this programme?
11. What was it about?
12. Was there any response?
13. Was response as expected?
14. To whom in government was this representation directed?
15. What specific contribution did the group or community make to the programme?
16. If contribution was land, was any compensation paid?
17. Was compensation for the land demanded by village?
18. Were contributions made following specific requests to do so by either government or village elders or local group leaders?
19. Who were these? (Office, occupation, status).
20. Has there been any conflict with government regarding the programme?
21. Has there been any conflict between individuals or families with regard to the programme?
22. What were the conflict about?
23. How was it resolved?
24. Have you as a group made representation to government on behalf of the village regarding the programme?
Any evidence to support this?
25. What was the response?
26. How were you as a group first made aware of the programme?

APPENDIX VII

TOTAL LENGTH OF PHASE I DFRI FEEDER ROADS

ALGA:	1.	Ogbede-Ikodi Road 16km
	2.	Udebu-Ihuaba-Idoke-Ihuawo Road 9km
BALGA:		Shell Flow Station-Imiringi Otuasega 5.6km
BOLGA:		Bori-Kpong-Beeri-Bunu-Kabangba 20km
DELGA:		Orukalama-Angulama-Minama-Degema 13.5km
KELGA:	1.	Isiokpo-Ogbodo 6.5km
	2.	Isiokpo-Omuanwa-Ubima 15.35km
	3.	Obelle-Ibaa-Rumuji-Rumuewhor 13.6km
	4.	Umuaturu-Umundele-Ndashi-Igbodo-Egbeka-Nwuba 20km
OLGA:	1.	Abalamabie 5.6km
	2.	Secondary School-Nkporo Town 2.0km
	3.	Opoho-Kalaibama 5.50km
	4.	Ngo-Oyorokoto 11.50km
OTELGA:	1.	Egberu-Afam Ukwu-Afam Nta-Afam Ukwu-Koroboro 16.70km
	2.	Kira-Kporghor-Wakama 4.60km
	3.	Refinery-Oba Amad 3.50km
	4.	Umuagbagbai-Okwali 7.00km
	5.	Refinery Road-Okujagu Ama 5.00km
	6.	Refinery-Organ-Ama 2.00km
PHALGA:	1.	Uniport-Aluu 14km
	2.	Femie-Abuloma 1.9km
	3.	Ozuboko-Abuloma 1.70km
YELGA:	1.	Korokorosei-Azuzuama 10km
	2.	Obunagha-Gbarantoru-Tombia-Akaibiri 10km
	3.	Okolobiri-Polaku 7km
	4.	Odi-Trofani 16km
	5.	Kaiama-Opokuma-Sagbagirea 16km
SALGA:	1.	Sagbama-Tungbo 7.00km
	2.	Elemebiri-Omoku 5.20km
	3.	East-West-Agbere-Odoni 18.4km

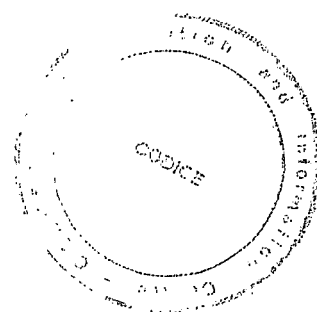
Source: Rural Energizer Vol. I No. 1 February 1989, pg. 21-22

APPENDIX VIII

FEEDER ROADS PROGRAMME

<u>Variable No.</u>	<u>Description</u>
1.	Name of Village
2.	Sex of Respondent
3.	Age of Respondent
4.	Respondent's length of stay in locality
5.	Respondent's Level of Education
6.	Respondent's participation in local organizations
7.	Awareness of the existence of DFERRI road
8.	Road Helped local organization
9.	Any petition on the DFERRI Road
10.	Nature of complaint in the Petition
11.	Any receipt of Response on the Petition
12.	Nature of Response Received
13.	Any concrete Action Following Response
14.	Household Contribution to the Construction of the Road
15.	Ownership of Land Through which Road Passes
16.	Amount of Cash Donated To Road Construction
17.	Usual Distance From Home to Farm
18.	Distance Following DFERRI Road
19.	Usual Time to Farm
20.	Time Following DFERRI Road
21.	Size of farm/other productive unit
22.	Increase of Holding Due to Road
23.	Amount of Increase due to Road
24.	Pre-Road General Output (vegetable, Cassava, Fruits, Maize, Plantain and Rice)
25.	Post-Road General Output (Vegetable, Cassava, Fruits, Maize, Plantain, Rice)
26.	Pre-Road Yam Output
27.	Post-Road Yam Output
28.	Increase In Output Due to the Road
29.	Increase In Output Not Due to the Road
30.	Distance to Market after Road
31.	Quantity of General products To market Before Road
32.	Quantity of General Products To market After Road
33.	Quantity of Yam to Market Before Road

<u>Variable No.</u>	<u>Description</u>
34.	Quantity of Yams to Market After Road
35.	Income in 1987
36.	Income in 1991/92
37.	Income situation due to Increase in Output
38.	Income situation due to Increase in Sale
39.	Income situation due to Higher Prices
40.	Income situation due to Diversification of Employment
41.	Income situation Due to Increase in Cost of Land
42.	Increased cost of Land Due to scarcity
43.	Increased cost of Land Due to Increase in Agricultural Production
44.	Increased cost of Land Due to General Increase in cost of living
45.	Increased cost of Land Due to DFRRI road Access.
46.	Increased cost of Land Due to other Reasons
47.	Area of Land cultivated
48.	Cost of Land in 1987
49.	Cost of Land in 1991/92



CROSS TABULATIONS OF SEX AND TYPE OF INPUT RECEIVED

Page 89

Crosstabulation: VAR2 SEX-OF RESPONDENT
By VAR11

Page 1 of 2

	Count	Exp. Val.	Row Pct.	Col Pct.	Residual	Row Total
VAR11 ->						
VAR2						
1-00	18	34	98	1	151	
MALE	17.9	31.2	101.4	5	45.9%	
	11.9%	22.5%	64.9%	7%		
	46.2%	50.0%	44.3%	100.0%		
	1	2.8	3.4	5		
Column	39	68	221	1	329	
(Continued) Total	11.9%	20.7%	67.2%	3%	100.0%	

Page 89 SPSS/PC+ 1/1/80

Page 90

Crosstabulation: VAR2 SEX-OF RESPONDENT
By VAR11

Page 2 of 2

	Count	Exp. Val.	Row Pct.	Col Pct.	Residual	Row Total
VAR11 ->						
VAR2						
2-00	21	34	123	0	178	
FEMALE	21.1	36.8	119.6	5	54.1%	
	11.8%	19.1%	69.1%	0%		
	53.8%	50.0%	55.7%	0%		
	1	2.8	3.4	5		
Column	39	68	221	1	329	
Total	11.9%	20.7%	67.2%	3%	100.0%	

Chi-Square	D.F.	Significance	Min-E.F.	Cells with E.F. < 5
1.85551	3	.6029	.459	2 OF 8 (-25.0%)

Page 90 SPSS/PC+ 1/1/80

Statistic	Symmetric	With VAR2 Dependent	With VAR11 Dependent
Lambda	.00386	.00662	.00000
Uncertainty Coefficient	.00437	.00492	.00393
Somers' D	.02714	.02727	.02701
Tau		.07510	.02135

Statistic	Value	Significance
Cramer's V	.07510	
Contingency Coefficient	.07489	
Kendall's Tau-B	.02714	.3052
Kendall's Tau-C	.02683	.3052
Pearson's R	.02135	.3498
Gamma	.05463	

Number of Missing Observations = 0

Page 91 SPSS/PC+ 1/1/80

CROSS-TABULATION OF MONTHLY INCOMES 1987 TO 1991/92

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92

		1.00 - LESS THAN N100	
Count			
Exp Val			
Row Pct	LESS THAN		
VAR23 -> Col Pct	N100-N250	Row	
Residual	1.00	Total	
VAR22	2.00	1	1
N100-N250		1.0	100.0%
		100.0%	
		100.0%	
		.0	
Column		1	1
Total		100.0%	100.0%

*** Statistics cannot be computed when # of non-empty Rows or Columns is 1 ***

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92

		2.00 - N100-N250	
Count			
Exp Val			
Row Pct	N100-N250 N251-N400		
VAR23 -> Col Pct	0 0	Row	
Residual	2.00 3.00	Total	
VAR22	3.00	44	0
N251-N400		36.7	7.3
		100.0%	.0%
		80.0%	.0%
		7.3	7.3
Column		55	11
(Continued) Total		83.3%	16.7%
		100.0%	

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92

		2.00 - N100-N250	
Count			
Exp Val			
Row Pct	N100-N250 N251-N400		
VAR23 -> Col Pct	0 0	Row	
Residual	2.00 3.00	Total	
VAR22	4.00	11	11
N401-N550		18.3	3.7
		50.0%	50.0%
		20.0%	100.0%
Column		55	11
Total		83.3%	16.7%
		100.0%	
		7.3	7.3
Column		55	11
Total		83.3%	16.7%
		100.0%	

Chi-Square	D.F.	Significance	Min. E.F.	Cells with E.F. < 5
22.97273	1	.0000	2.557	1 of 4 (.250%)
26.40000	1	.0000		(Before Yates Correction)

Statistic	Symmetric	With VAR22 Dependent	With VAR23 Dependent
Lambda	.55333	.50000	.00000
Uncertainty Coef	.40586	.34467	.48720
Somers' D	.61538	.80000	.50000
Gamma		.63246	.63246

Statistic	Value	Significance
Phi	.63246	
Contingency Coefficient	.53457	
Kendall's Tau-B	.63246	.0000
Kendall's Tau-C	.44444	.0000
Pearson's R	.63246	.0000
Gamma	1.00000	

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 = 3.00 N251-N400

Count	Exp. Val.	Row Pct.	Col Pct.	Row	Col
VAR22 -> Residual	3.00	Total			
6.00	11	11			
N201-N850	11.0	100.0%			
	100.0%				
	0				
Column	11	11			
Total	100.0%	100.0%			

Some statistics cannot be computed when 1 of non-empty rows or columns is 1 cell

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 = 4.00 N401-N550

Count	Exp. Val.	Row Pct.	Col Pct.	Row	Col
VAR22 -> Residual	3.00	4.00	5.00	Total	
6.00	24	20	11	55	
N701-N850	20.0	25.8	9.2	83.3%	
	43.6%	36.4%	20.0%		
	100.0%	64.5%	100.0%		
	4.0	5.8	1.8		
Column	24	51	11	66	

Page 1 of 2

Count	Exp. Val.	Row Pct.	Col Pct.	Row	Col
VAR22 -> Residual	3.00	4.00	5.00	Total	
6.00	24	20	11	55	
N701-N850	20.0	25.8	9.2	83.3%	
	43.6%	36.4%	20.0%		
	100.0%	64.5%	100.0%		
	4.0	5.8	1.8		
Column	24	51	11	66	

(Continued) Total 36.4% 47.0% 16.7% 100.0%

(Continued) Column 24 31 11 66
 Total 36.4% 47.0% 16.7% 100.0%

Page 47 SPSS/PC+ 1/1/80

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 4.00 N401-N550

Page 2 of 2

Count	Exp. Val	Row Pct	Col Pct	Residual	Row
VAR23 ->					
VAR22	7.00	0	0	0	11
N851-N1000	4.0	5.7	1.0	16.7%	
	0%	100.0%	0%		
	0%	35.5%	0%		
	4.0	5.8	1.8		
Column	24	31	11	66	
Total	36.4%	47.0%	16.7%	100.0%	

Page 48 SPSS/PC+ 1/1/80

Chi-Square 5.1 Significance .0006 Min. E. F. 2.0E-5 Cells with E. F. < 5

14.90323 2 .0006 1.833 2.0E-5 5 (-33.3%)

Statistic	Symmetric	With VAR22 Dependent	With VAR23 Dependent
Lambda	.08696	.00000	.1429
Uncertainty Coefficient	.19712	.32199	.14203
Somers' D	.14637	.10600	.23636
Ta		.47519	.12565

Statistic Value Significance

Gramer's V	.42519	
Contingency Coefficient	.42770	
Kendall's Tau-B	.15729	.0906
Kendall's Tau-C	.13131	.0903
Pearson's R	.02565	.6574
Gamma	.37143	

Page 49 SPSS/PC+ 1/1/80

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 6.00 N701-N850

Page 1 of 2

Count	Exp. Val	Row Pct	Col Pct	Residual	Row
VAR23 ->					
VAR22	1.00	11	0	11	
LESS THAN N100	10	9	91.7%		
	100.0%	0%			
	100.0%	0%			
	9	9			
Column	11	1	12		
(Continued) Total	91.7%	9.3%	100.0%		

Page 50 SPSS/PC+ 1/1/80

Crosstabulation of VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 6.00 N701-850
 Page 7 of 7

Count	Exp. Val	Row Pct	Col Pct	Residual	Row Total
VAR23 ->			0	00	
VAR22	7.00		7.00		
N851-N1000	9	1	8.3%		
	0%	100.0%			
	0%	100.0%			
	9	9			
Column	1	1	1%		
Total	91.7%	8.3%	100.0%		

Page 51 SPSS/PC+ 1/3/80

Statistic	One Tail	Two Tail
-----------	----------	----------

Fisher's Exact Test .08333 .08333

Statistic	Symmetric	With VAR22 Dependent	With VAR23 Dependent
Lambda	1.00000	1.00000	1.00000
Uncertainty Coefficient	1.00000	1.00000	1.00000
Somers' D	1.00000	1.00000	1.00000
Tau	1.00000	1.00000	1.00000

Statistic	Value	Significance
Phi	1.00000	
Contingency Coefficient	.70711	
Kendall's Tau-B	1.00000	.0005
Kendall's Tau-C	.69738	.0005
Pearson's R	1.00000	
Gamma	1.00000	

Page 52 SPSS/PC+ 1/1/80

Crosstabulation of VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 7.00 N851-N1000

Count	Exp. Val	Row Pct	Col Pct	Residual	Row Total
VAR23 ->			00		
VAR22	8.00	21	21		
ABOVE N1000	21.0	100.0%	100.0%		
	100.0%	100.0%			
	0				
Column	21	21			
Total	100.0%	100.0%			

*** Statistics cannot be computed when # of non-empty rows or columns is 1 ***
 Page 53 SPSS/PC+ 1/1/80

Crosstabulation of VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990

*** Statistics cannot be computed when 1 of non-empty Rows or Columns is 1 ***

Page 53 SPSS/PC+ 1/1/80

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92

	Count	Exp. Val	Row Pct	Col Pct	Row	Col
VAR23 ->						
7-00	7	7.00	100.0%	100.0%	7	7
8-00	8	8.00	100.0%	100.0%	8	8
VAR22						
7-00	7	7.00	100.0%	100.0%	7	7
8-00	8	8.00	100.0%	100.0%	8	8
Total	15	15.00	100.0%	100.0%	15	15

Row	Count	Exp. Val	Row Pct	Col Pct	Row	Col
8-00	8	8.00	100.0%	100.0%	8	8
ABOVE N1000	8	8.00	100.0%	100.0%	8	8
Total	8	8.00	100.0%	100.0%	8	8

*** Statistics cannot be computed when 1 of non-empty Rows or Columns is 1 ***

Page 54 SPSS/PC+ 1/1/80

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92

	Count	Exp. Val	Row Pct	Col Pct	Row	Col
VAR23 ->						
N N100	0	0.00	0.0%	0.0%	0	0
1-00	1	1.00	100.0%	100.0%	1	1
2-00	2	2.00	100.0%	100.0%	2	2
9-00	9	9.00	100.0%	100.0%	9	9
VAR22						
1-00	1	1.00	100.0%	100.0%	1	1
2-00	2	2.00	100.0%	100.0%	2	2
9-00	9	9.00	100.0%	100.0%	9	9
LESS THAN N100	12	12.00	100.0%	100.0%	12	12
Total	12	12.00	100.0%	100.0%	12	12

Column	Count	Exp. Val	Row Pct	Col Pct	Row	Col
(Continued) Total	12	12.00	100.0%	100.0%	12	12

Page 55 SPSS/PC+ 1/1/80

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987
 By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92

	Count	Exp. Val	Row Pct	Col Pct	Row	Col
VAR23 ->						
N N100	0	0.00	0.0%	0.0%	0	0
1-00	1	1.00	100.0%	100.0%	1	1
2-00	2	2.00	100.0%	100.0%	2	2
9-00	9	9.00	100.0%	100.0%	9	9
VAR22						
N100-N250	1	1.00	100.0%	100.0%	1	1
2-00	2	2.00	100.0%	100.0%	2	2
9-00	9	9.00	100.0%	100.0%	9	9
Total	12	12.00	100.0%	100.0%	12	12

Column	Count	Exp. Val	Row Pct	Col Pct	Row	Col
(Continued) Total	12	12.00	100.0%	100.0%	12	12

Page 56 SPSS/PC+ 1/1/80

Crosstabulation: VAR22 AVERAGE MONTHLY INCOME IN 1987

By VAR23 AVERAGE MONTHLY INCOME IN 1990
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 9.00 NO RESPONSE

Count	Exp. Val	Row Pct	Col Pct	Residual	Row Total	Col Total
VAR23 >						
VAR22	2.00	11.2	11.2	9.2	11.2	108
N251-N400	2.00	11.2	11.2	9.2	11.2	108
Column Total	22	20.4%	59.3%	20.4%	108	108

Crosstabulation:
 By VAR23 AVERAGE MONTHLY INCOME IN 1987
 Controlling for VAR24 AVERAGE MONTHLY INCOME IN 1991/92
 9.00 NO RESPONSE

Count	Exp. Val	Row Pct	Col Pct	Residual	Row Total	Col Total
VAR23 >						
VAR22	9.00	4.5	0%	4.5	9.00	108
NO-RESPONSE	9.00	4.5	0%	4.5	9.00	108
Column Total	22	20.4%	59.3%	20.4%	108	108

Chi-Square	Df	Significance	Min. Cell	Cells with E-F < 5
203.28657	6	.0000	2.241	6 (5.6%)

Statistic	Symmetric	With VAR22 Dependent	With VAR23 Dependent
Lambda	.84536	.75472	.95455
Uncertainty Coefficient	.80955	.72461	.91699
Somers' D	.88520	.94455	.97526
Ua		.98999	.99897

Statistic	Value	Significance
Cramer's V	.97012	
Contingency Coefficient	.80812	
Kendall's Tau B	.86255	.0000
Kendall's Tau C	.81019	.0000
Pearson's R	.98460	.0000
Gamma	.98622	

Number of Missing Observations = 0

APPENDIX XI

CROSS-TABULATIONS OF AGRICULTURAL EXTENSION PROGRAMME
RESPONDENTS RECEIPT OF SERVICES, SEX AND EDUCATIONAL STATUS

Page 7 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
Controlling for VAR9 RECEIPT OF EXTENSION SERVICE

VAR11
1-00 NEVER
3-00 ADVICE

Count	Exp Val	Row Pct	Col Pct	Row
VAR5 →	Row Pct	NONE	PRIMARY	Row
VAR2	Col Pct	SCHOOL C	Row	Residual
		7-00	7-00	Total
	2-00	5	1	6
FEMALE	5-0	1-0	100-0%	
	83-3%	16-7%		
	100-0%	100-0%		
	0	0		
Column	5	1	6	
Total	83-3%	16-7%	100-0%	

*** Statistics cannot be computed when # of non-empty Rows or Columns is 1 ***

Page 8 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
Controlling for VAR9 RECEIPT OF EXTENSION SERVICE

VAR11
2-00 LESS THAN 6 MONTHS A
3-00 ADVICE

Count	Exp Val	Row Pct	Col Pct	Row
VAR5 →	Row Pct	PRIMARY	SCHOOL C	Row
VAR2	Col Pct	SCHOOL C	Row	Residual
	1-00	4	4	Total
	4-0	100-0%		
MALE	100-0%			
	100-0%			
	0			
Column	4	4		
Total	100-0%	100-0%		

*** Statistics cannot be computed when # of non-empty Rows or Columns is 1 ***

Page 9 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
Controlling for VAR9 RECEIPT OF EXTENSION SERVICE

VAR11
5-00 6 MONTHS-12 MONTHS AGO
3-00 ADVICE

Page 1 of 2

Count	Exp Val	Row Pct	Col Pct	Row
VAR5 →	Row Pct	NONE	SEC/COMM	Row
VAR2	Col Pct	SCHOOL	Row	Residual
	1-00	3-00	Total	
	1-00	0	4	4
MALE	2-0	2-0	50-0%	
	0%	100-0%		
	0%	100-0%		
	2-0	2-0		
Column	4	4	8	
(Continued) Total	50-0%	50-0%	100-0%	

Contabulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11
 3.00 6 MNTHS-12 MNTHS AGO
 3.00 ADVICE
 Page 2 of 2

Count	Exp Val	Row Pct	Col Pct	Residual	NONE	SEC/COMM	SCHOOL	Row	Total
2	2.00	4	0	4	2.0	2.0	50.0%	100.0%	0%
EMALE	2.0	2.0	50.0%	100.0%	0%	2.0	2.0	100.0%	0%
Column	4	4	8	Total	50.0%	50.0%	100.0%		

SPSS/PC+ 1/1/80

STATISTIC	One Tail	Two Tail
Fisher's Exact Test	.01429	.02857

Statistic	Symmetric	With VAR2 Dependant	With VAR5 Dependant
bda	1.00000	1.00000	1.00000
certainty Coefficient	1.00000	1.00000	1.00000
fisher's D	-1.00000	-1.00000	-1.00000
		1.00000	1.00000

Statistic	Value	Significance
Contingency Coefficient	1.00000	
Cramér's Tau B	.70711	
Cramér's Tau C	-1.00000	
Fisher's R	-1.00000	
Gamma	-1.00000	

SPSS/PC+ 1/1/80

Contabulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11
 6.00 OVER 24 MNTHS AGO
 3.00 ADVICE
 Page 1 of 2

Count	Exp Val	Row Pct	Col Pct	Residual	NONE	PRIMARY	SEC/COMM	SCHOOL C	SCHOOL	Row	Total
2	1.00	0	5	5	10	3.3	3.3	3.3	47.6%	0%	0%
EMALE	1.00	0	5	5	10	3.3	3.3	3.3	47.6%	0%	0%
Column	7	7	7	21	Total	33.3%	33.3%	33.3%	100.0%		

SPSS/PC+ 1/1/80

Contabulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11
 6.00 OVER 24 MNTHS AGO
 3.00 ADVICE

abulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VART1 6.00 OVER 24 MONTHS AGO
 3.00 ADVICE

Count	Exp. Val	Row Pct	Col Pct	Residual	Total
		NONE	PRIMARY	SEC/COMM	
			SCHOOL C	SCHOOL	
2.00	7	2	2	2	11
	3.7	3.7	3.7	52.4%	
	63.6%	18.2%	18.2%		
	100.0%	28.6%	28.6%		
	3.3	1.7	1.7		
Column	7	7	7		21
Total	33.3%	33.3%	33.3%		100.0%

SPSS/PC+ 1/1/80

Chi-Square	D.F.	Significance	Min. E.P.	Cells with E.P. < 5
54545	2	.0085	3.333	6 OF 6 (100.0%)

Statistic	Symmetric	With VAR2 Dependent	With VAR5 Dependent
Contingency Coefficient	.45833	.60000	.35714
Nominal	.32745	.47364	.26685
Linear	.54475	.47619	.63636
Quadratic		.67420	.58387

Statistic	Value	Significance
Likelihood Ratio	.67420	
Nominal	.55902	
Likelihood Ratio	.55048	.0045
Nominal	.63492	.0045
Likelihood Ratio	.58387	.0027
Nominal	.77778	

SPSS/PC+ 1/1/80

abulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VART1 1.00 NEVER
 4.00 LOANS

Count	Exp. Val	Row Pct	Col Pct	Residual	Total
		NONE	PRIMARY	SEC/COMM	
			SCHOOL C	SCHOOL	
1.00	3	6	3	12	
	4.3	4.9	2.8	30.8%	
	25.0%	50.0%	25.0%		
	21.4%	37.5%	33.3%		
	-1.3	1.1	-.2		
Column	14	16	9		39
Total	35.9%	41.0%	28.1%		100.0%

SPSS/PC+ 1/1/80

abulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VART1 1.00 NEVER

Case 16 SPSS/PCF 1/1/80

Contingency Table
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 = 1.00 NEVER
 = 4.00 LOANS

Page 2 of 2

Count	Exp. Val.	Row Pct.	Col Pct.	Row
Row Pct.	NONE	PRIMARY	SEC/COMM	
Col Pct.	SCHOOL C	SCHOOL		Row
Residual	1.00	2.00	3.00	Total
2	2.00			
FEMALE	9.7	11.1	6.2	69.2%
	40.7%	37.0%	72.2%	
	78.6%	67.5%	66.7%	
	1.3	1.1	2.2	
Column	14	16	9	39
Total	35.9%	41.0%	23.1%	100.0%

Case 17 SPSS/PCF 1/1/80

Chi-square D.F. Significance Min. R.F. Cells with F.P. < .5

.94147 2 .6245 2.769 3 OF 6 (.50.0%)

Statistic	Symmetric	With VAR2 Dependent	With VAR5 Dependent
Lambda	.02857	.00000	.04348
Certainty Coefficient	.01477	.02013	.01160
Numer's D	.11002	.09109	.13889
		.15537	.11288

Statistic	Value	Significance
Numer's V	.15537	
Contingency Coefficient	.15538	
Sidall's Tau B	.11248	.7318
Sidall's Tau C	.11834	.7318
Numer's R	.11288	.7469
Phi	.21127	

Case 18 SPSS/PCF 1/1/80

Contingency Table
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 = 2.00 LESS THAN 6 MONTHS A
 = 4.00 LOANS

Count	Exp. Val.	Row Pct.	Col Pct.	Row
Row Pct.	SEC/COMM			
Col Pct.	SCHOOL			Row
Residual	3.00			Total
2	2.00			
FEMALE	4.0	100.0%		
	100.0%			
	100.0%			
	0			
Column	4	4		
Total	100.0%	100.0%		

Statistics cannot be computed when F of non-empty Rows or Columns is 1 ***

Case 19 SPSS/PCF 1/1/80

Contingency Table
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 = 3.00 6 MONTHS-12 MONTHS AGO
 = 4.00 LOANS

Column 4
Total 100.0% 100.0%
Statistics cannot be computed when # of non-empty rows or columns is 1 ***

19 SPSS/PC+ 1/1/80

Tabulation: VAR2 SEX OF RESPONDENT
By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
3-00 6 MONTHS-12 MONTHS AGO
VAR11 4-00 LOANS
Page 1 of 2

Count	Exp. Val	Row Pct	SEC/COMM	POLYTECH	Row
5-> Col Pct			SCHOOL	NIC/UNIV	Row
Residual			3-00	5-00	Total
1-00	15	4	19		
E	15.2	3.8	95.0%		
	78.2%	21.1%			
	93.8%	100.0%			
	2	2			
Column	16	4	20		
(inued) Total	80.0%	20.0%	100.0%		

20 SPSS/PC+ 1/1/80

Tabulation: VAR2 SEX OF RESPONDENT
By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
3-00 6 MONTHS-12 MONTHS AGO
VAR11 4-00 LOANS

Page 2 of 2

Count	Exp. Val	Row Pct	SEC/COMM	POLYTECH	Row
5-> Col Pct			SCHOOL	NIC/UNIV	Row
Residual			3-00	5-00	Total
2-00	1	0	1		
AFE	1.1	2	5.0%		
	100.0%	10%			
	6.2%	10%			
	2	2			
Column	16	4	20		
Total	80.0%	20.0%	100.0%		

21 SPSS/PC+ 1/1/80

STATISTIC	One Tail	Two Tail
Fisher's Exact Test	.80000	1.00000

Statistic	with VAR2		with VAR5	
	Symmetric	Dependent	Dependent	Dependent
Gamma Coefficient	.00000	.00000	.00000	.00000
Gamma Coefficient	.03286	.05784	.02295	.02295
Sig. D	.09632	.06250	.21053	.21053
		.11471	.11471	.11471
Statistic	Value	Significance		
Gamma Coefficient	.11471			
Fisher's Tail B	.11376			
Fisher's Tail C	.11471	.3085		
Fisher's Tail D	.04000	.5085		
Fisher's Tail E	.11471	.3151		
Fisher's Tail F	1.00000			

22 SPSS/PC+ 1/1/80

Tabulation: VAR2 SEX OF RESPONDENT
By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
6-00 OVER 24 MONTHS AGO
VAR11

Contingency Coefficient = .11471
 Gull's Tau B = .11471
 Gull's Tau C = .04000
 Pearson's R = .11471
 N/A = 1.00000

SPSS/PC+ 1/1/80

Stabilization: VAR2 SEX OF RESPONDENT
 BY VARS EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11 6.00 OVER 24 MONTHS AGO
 4.00 LOANS

Count	Exp. Val	Row Pct	Col Pct	Residual	Row	Col	Total
			NONE		POLYTECH		
			NTC/UNIV				
				1.00		5.00	

Row	1	2	3
1.00	1	2	3
	33.3%	66.7%	60.0%
	50.0%	66.7%	
	-2	-2	
Column	2	3	5
Total	40.0%	60.0%	100.0%

23 SPSS/PC+ 1/1/80

Stabilization: VAR2 SEX OF RESPONDENT
 BY VARS EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11 6.00 OVER 24 MONTHS AGO
 4.00 LOANS

Count	Exp. Val	Row Pct	Col Pct	Residual	Row	Col	Total
			NONE		POLYTECH		
			NTC/UNIV				
				1.00		5.00	

Row	1	2	3
2.00	1	1	2
MALE	8	12	40.0%
	50.0%	50.0%	
	50.0%	33.3%	
	-2	-2	
Column	2	3	5
Total	40.0%	60.0%	100.0%

24 SPSS/PC+ 1/1/80

STATISTIC	One Tail	Two Tail
Fisher's Exact Test	.70000	1.00000

Statistic	Symmetric	With VAR2 Dependent	With VARS Dependent
Ja	.00000	.00000	.00000
Fainty Coefficient	.02057	.02057	.02057
s' D	.16667	.16667	.16667

Statistic	Value	Significance
Contingency Coefficient	.16667	
Gull's Tau B	.16440	
Gull's Tau C	.16667	
Pearson's R	.16000	
	.16667	.3944
	.33333	

Crosstabulation: VAR2 SEX OF RESPONDENT
 BY VARS EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 = 1.00 NEVER
 VAR11 = 5.00 NOTHING
 Page 1 of 2

Count	Exp Val	Row Pct	Col Pct	Residual	Total
		NONE	PRIMARY	SEC/COMM	
		SCHOOL C	SCHOOL		
VAR2	1.00	2.00	3.00		
MALE	8	28	17	48	32.2%
	29.6	13.2	5.2		
	16.7%	58.3%	25.0%		
	8.7%	68.3%	75.0%		
	21.6	14.8	6.8		
Column	92	41	16	149	
(Continued) Total	61.7%	27.5%	10.7%	100.0%	

Crosstabulation: VAR2 SEX OF RESPONDENT
 BY VARS EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 = 1.00 NEVER
 VAR11 = 5.00 NOTHING
 Page 2 of 2

Count	Exp Val	Row Pct	Col Pct	Residual	Total
		NONE	PRIMARY	SEC/COMM	
		SCHOOL C	SCHOOL		
VAR2	2.00				
FEMALE	84	13	4	101	67.8%
	62.4	27.8	10.8		
	83.2%	12.9%	4.0%		
	91.3%	31.7%	25.0%		
	21.6	14.8	6.8		
Column	92	41	16	149	
Total	61.7%	27.5%	10.7%	100.0%	

Chi-Square	D.F.	Significance	Min E.P.	Cells with E.P. < 5
61.13586	2	.0000	5.154	None
			With VAR2	With VARS

Statistic	Symmetric	Dependent	Dependent
Lambda	.40952	.47917	.35088
Uncertainty Coefficient	.28115	.34017	.23957
Somers' D	.60811	.55390	.67409
Ta		.64066	.60012

Statistic	Value	Significance
Kramer's V	.64066	
Contingency Coefficient	.53945	
Sendall's Tau-B	.61105	.0000
Sendall's Tau-C	.58880	.0000
Cramer's R	.60012	.0000
Gamma	.56823	

Crosstabulation: VAR2 SEX OF RESPONDENT
 BY VARS EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 = 2.00 LESS THAN 6 MONTHS A
 VAR11 = 5.00 NOTHING
 Page 1 of 2

Statistic	Value	Significance
Cramer's V	.64066	
Contingency Coefficient	.53945	
Kendall's Tau B	-.761305	.0000
Kendall's Tau C	-.58880	.0000
Pearson's R	.60012	.0000
Gamma	.86828	

Page 28 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
 BY VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11 2.00 LESS THAN 6 MONTHS A
 5.00 NOTHING

Page 1 of 2

Count	Exp. Val	Row Pct	Col Pct	Residual	Row	
			NONE	PRIMARY	SEC/COMM	
VAR5->			SCHOOL C	SCHOOL		Row
			1.00	2.00	3.00	Total
VAR2	1.00	0	4	4	8	
MALE	4.0	0%	50.0%	50.0%	50.0%	
	0	0%	100.0%	100.0%		
	-4.0		2.0	2.0		
Column			8	4	4	16
(Continued) Total			50.0%	25.0%	25.0%	100.0%

Page 29 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 VAR11 2.00 LESS THAN 6 MONTHS A
 5.00 NOTHING

Page 2 of 2

Count	Exp. Val	Row Pct	Col Pct	Residual	Row	
			NONE	PRIMARY	SEC/COMM	
VAR5->			SCHOOL C	SCHOOL		Row
			1.00	2.00	3.00	Total
VAR2	2.00	8	0	0	8	
FEMALE	4.0	100.0%	0%	0%		
	100.0%		0%	0%		
	4.0		2.0	2.0		
Column			8	4	4	16
Total			50.0%	25.0%	25.0%	100.0%

Page 30 SPSS/PC+ 1/1/80

Chi-Square	D.F.	Significance	Min. E.C.	Cells with E.F.C. > 5
16.00000	2	.0003	2.000	6 OF 6 (100.0%)

Statistic: Symmetric With VAR2 Dependent With VAR5 Dependent

Statistic	Value	Significance
Lambda	.75000	1.00000
Uncertainty Coefficient	.80000	1.00000
Somers' D	-.88889	.80000
Eta	1.00000	.90453

Statistic	Value	Significance
Cramer's V	1.00000	
Contingency Coefficient	.70711	
Kendall's Tau B	-.89443	.0001
Kendall's Tau C	-1.00000	.0001
Pearson's R	-.90453	.0000
Gamma	-1.00000	

Page 31 SPSS/PC+ 1/1/80

Pearson's V = 1.00000
 Contingency Coefficient = .70711
 Kendall's Tau B = .89443 .0001
 Kendall's Tau C = 1.00000 .0001
 Pearson's R = .90453 .0000
 Lambda = 1.00000

Page 31 SPSS/PC+ 1/1/80

Cross-tabulation: VAR2 SEX OF RESPONDENT
 BY VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 - 3.00 6 MONTHS-12 MONTHS AGO
 VAR11 - 5.00 NOTHING
 Page 1 of 2

Count	Exp. Val.	Row Pct.	Col Pct.	Residual
		PRIMARY	SEC/COMM	
		SCHOOL C	SCHOOL	Row
		2.00	3.00	Total
2				
1.00	.4	20	24	
MALE	3.4	20.6	85.7%	
	16.7%	83.3%		
	100.0%	83.3%		
	.6	.6		
Column	4	24	28	
Total	14.3%	85.7%	100.0%	

Page 32 SPSS/PC+ 1/1/80

Cross-tabulation: VAR2 SEX OF RESPONDENT
 BY VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 - 3.00 6 MONTHS-12 MONTHS AGO
 VAR11 - 5.00 NOTHING
 Page 2 of 2

Count	Exp. Val.	Row Pct.	Col Pct.	Residual
		PRIMARY	SEC/COMM	
		SCHOOL C	SCHOOL	Row
		2.00	3.00	Total
2				
2.00	0	4	4	
FEMALE	.6	3.4	14.3%	
	.0%	100.0%		
	.0%	16.7%		
	.6	.6		
Column	4	24	28	
Total	14.3%	85.7%	100.0%	

Page 33 SPSS/PC+ 1/1/80

Chi-Square D.F. Significance Min E.P. Cells with E.P. < 5
 .01215 1 .9122 .571 3 of 4 (.75.0%)
 .77778 1 .3778 (Before Yates Correction)

Statistic	Symmetric	With VAR2 Dependent	With VAR5 Dependent
Lambda	.00000	.00000	.00000
Contingency Coefficient	.05833	.05833	.05833
Pearson's D	.16667	.16667	.16667
Kappa	.16667	.16667	.16667

Statistic	Value	Significance
Contingency Coefficient	.16667	
Kendall's Tau B	.16440	
Kendall's Tau C	.08163	.1932
Pearson's R	.16667	.1983
Lambda	1.00000	

Page 34 SPSS/PC+ 1/1/80

Cross-tabulation: VAR2 SEX OF RESPONDENT

Page 34 SPSS/PC+ 1/1/80

Controlling for VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 VAR9 RECEIPT OF EXTENSION SERVICE
 4.00 13 MONTHS-18MONTHS-AGO
 VAR11

5.00 NOTHING Page 1 of 2

Count	Exp. Val	Row Pct	Col Pct	Residual	NONE	SEC/COMM	SCHOOL	Row	Total
1.00					1.00	3.00			4
MALE	2.0	0%	0%	-2.0	2.0	100.0%			50.0%
Column		4	4	8					
Total		50.0%	50.0%	100.0%					

Page 35 SPSS/PC+ 1/1/80

Controlling for VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 VAR9 RECEIPT OF EXTENSION SERVICE
 4.00 13 MONTHS-18MONTHS-AGO
 VAR11

5.00 NOTHING Page 2 of 2

Count	Exp. Val	Row Pct	Col Pct	Residual	NONE	SEC/COMM	SCHOOL	Row	Total
2.00					2.00	0			4
FEMALE	2.0	100.0%	100.0%	2.0	2.0	0%			50.0%
Column		4	4	8					
Total		50.0%	50.0%	100.0%					

Page 36 SPSS/PC+ 1/1/80

STATISTIC	One tail	Two tail
Shapiro-Wilk's Exact Test	.01429	.02857

Statistic	Symmetric	With VAR2 Dependent	With VAR5 Dependent
Kendall's Tau B	1.00000	1.00000	1.00000
Kendall's Tau C	1.00000	1.00000	1.00000
Pearson's R	-1.00000	-1.00000	-1.00000
Spearman's R	1.00000	1.00000	1.00000

Statistic	Value	Significance
Agency Coefficient	1.00000	
Kendall's Tau B	.70711	
Kendall's Tau C	-1.00000	
Pearson's R	-1.00000	
Spearman's R	-1.00000	

Crosstabulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 6.00 OVER 24 MONTHS AGO
 VAR11
 5.00 NOTHING
 Page 1 of 2

Count	Exp. Val.	Row Pct.	Col Pct.	Residual	Row Total	Col Total
			NONE	1.00	1.00	5
			SEC/COMM	3.00	3.00	11
			POLYTECH	5.00	5.00	4
			SCHOOL			20
			NIC/UNIV			20
VAR2	1.00	0			14	
MALE	3.5	3.5%	78.6%	21.4%	20.0%	
	0	0%	100.0%	75.0%		
	-3.5			2		
Column	5					
(Continued) Total	25.0%	55.0%	20.0%	100.0%		

Page 38 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
 By VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 6.00 OVER 24 MONTHS AGO
 VAR11
 5.00 NOTHING
 Page 2 of 2

Count	Exp. Val.	Row Pct.	Col Pct.	Residual	Row Total	Col Total
			NONE	1.00	1.00	5
			SEC/COMM	3.00	3.00	11
			POLYTECH	5.00	5.00	4
			SCHOOL			20
			NIC/UNIV			20
VAR2	2.00	5			6	
FEMALE	1.5	83.3%	0%	16.7%	30.0%	
		100.0%	0%	25.0%		
	-3.5			2		
Column	5					
Total	25.0%	55.0%	20.0%	100.0%		

Page 39 SPSS/PC+ 1/1/80

Chi-Square D.F. Significance Min. E.F. Cells with E.F. < 5

16.42857 2 .0003 1.200 5 OF 6 (83.3%)

Statistic Symmetric with VAR2 with VAR5
 Dependent Dependent

Lambda .66667 .83333 .55556
 Uncertainty Coefficient .61284 .81589 .49276
 Somers' D -.58128 -.49580 -.70238
 Eta .90633 .60348

Statistic Value Significance

Cramer's V .90633
 Contingency Coefficient .67155
 Kendall's Tau B -.59012 .0035
 Kendall's Tau C -.52000 .0035
 Pearson's R -.60348 .0024
 Gamma -.72840

Page 40 SPSS/PC+ 1/1/80

Crosstabulation: VAR2 SEX OF RESPONDENT
 BY VAR5 EDUCATIONAL STATUS OF RESPONDENTS
 Controlling for VAR9 RECEIPT OF EXTENSION SERVICE
 2.00 LESS THAN 6 MONTHS A
 VAR11
 6.00 CHEMS, EQUIPMENT, CO

Count	Exp. Val.	Row Pct.	Col Pct.	Residual	Row Total	Col Total
-------	-----------	----------	----------	----------	-----------	-----------

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. VAR9 RECEIPT OF EXT SERVICE

Beginning Block Number 1. Method: Enter

***** MULTIPLE REGRESSION *****

Equation Number 1 Dependent Variable.. VAR9 RECEIPT OF EXT SERVICE

Variable(s) Entered on Step Number

- 1.. VAR31 FARM SIZE
- 2.. VAR1 VILLAGE NAME
- 3.. VAR10 FREQ OF EXT AGENT VISIT
- 4.. VAR17 NO. EMPLOYED IN 1991/92
- 5.. VAR12 COST OF SERVICE RECEIVED
- 6.. VAR30 PAYMENT IN CASH FOR EX SERV
- 7.. VAR23 INCOME IN 1990
- 8.. VAR8 PARTICIPATION IS SOC ACTVTY
- 9.. VAR11 TYPE OF INPUT RECEIVED
- 10.. VAR26 OWNERSHIP OF OWN HOUSE
- 11.. VAR18 REASONS FOR NO EMPLOYED
- 12.. VAR3 AGE OF RESPONDENTS
- 13.. VAR21 REASONS FOR INCREASE
- 14.. VAR4 LENGTH OF STAY IN LOCALTY
- 15.. VAR2 SEX OF RESPONDENTS
- 16.. VAR24 INCOME IN 1991/92
- 17.. VAR20 INCREASE IN SIZE OF OPERATIONS
- 18.. VAR7 LENGTH OF PRACTICE
- 19.. VAR25 POSSESSION OF HOUSEHOLD ASSETS
- 20.. VAR29 COMPLAINT OF EXT WORK
- 21.. VAR5 EDUCATIONAL STATUS OF RESPONDENTS
- 22.. VAR28 RATING OF EXT WORK
- 23.. VAR27 ACTIVE PARTICIPATION IN FIELD DEMO
- 24.. VAR19 SIZE OF OPERATIONS
- 25.. VAR15 NUMBER OF EMPLOYED IN 1987
- 26.. VAR14 REFUSAL TO ACCEPT SERVICE
- 27.. VAR16 NO EMPLOYED IN 1990
- 28.. VAR6 OCCUPATION OF THE RESPONDENTS
- 29.. VAR22 AVERAGE MONTHLY INCOME

30.. VAR13 PRESSURE TO RECEIVE SERVICE

***** MULTIPLE REGRESSION *****

Equation Number 1 Dependent Variable.. VAR9 RECEIPT OF EXT SERVICE

Multiple R .86937
 Square .75581
 Adjusted R Square .73123
 Standard Error .90808

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	30	760.58443	25.35281
Residual	298	245.73168	.82460

30.74548 Signif. F = .0000

***** MULTIPLE REGRESSION *****

Equation Number 1 Dependent Variable.. VAR9 RECEIPT OF EXT SERVICE

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
VAR31	.02254	.07054	.02060	.461	.6449
VAR1	-.01078	.01776	-.01944	-.607	.5443
VAR10	.43873	.10423	.34205	4.202	.0000
VAR17	-.15646	.23093	-.09457	-.678	.4986
VAR12	1.53761	.31162	.39855	4.934	.0000
VAR30	-.43550	.08400	-.44128	-5.184	.0000
VAR23	.32218	.13670	.46302	2.465	.0143
VAR8	-.23944	.25621	-.07065	-.935	.3508
VAR11	.02109	.10266	.0438E-03	-.205	.8374
VAR26	-.54410	.25205	-.16997	-2.159	.0317
VAR18	-.30782	.08313	-.24796	-3.703	.0003
VAR3	-.08813	.09490	-.05919	-.929	.3535
VAR21	.02044	.24336	.02255	.290	.7724
VAR4	-.03131	.19784	-.01036	-.158	.8744

***** MULTIPLE REGRESSION *****

Equation Number 1 Dependent Variable.. VAR9 RECEIPT OF EXT SERVICE

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
VAR2	1.0082	.16262	.02873	.594	.5529
VAR24	-.08308	.04557	-.13387	-1.823	.0693

VAR20	.44462	.32644	.09758	1.322	.1873
VAR7	.14922	.11431	.10063	1.305	.1928
VAR25	-.09839	.14373	-.05507	-.671	.5030
VAR29	.11463	.06725	.14228	1.705	.0893
VAR5	-.41762	.12363	-.24376	-3.378	.0008
VAR28	-.23306	.10184	-.15135	-2.288	.0228
VAR27	1.37434	.36920	.35068	3.722	.0002
VAR19	-.41368	.22902	-.17027	-1.806	.0719
VAR15	-.2198243E-03	.17810	1.931E-03	-.017	.9867
VAR14	.30126	.26948	.58511	1.118	.2645
VAR16	.16924	.18756	.10553	.902	.3676
VAR6	-.170863	.60649	-.49041	-2.814	.0052

***** MULTIPLE REGRESSION *****

Equation Number 1 Dependent Variable.. VAR9 RECEIPT OF EXT SERVICE

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
VAR22	.18583	.13842	.26670	1.342	.1805
VAR13	-.71869	.24575	-1.37492	-2.925	.0037
(Constant)	15.26985	2.01335		7.584	.0000

End Block Number 1 All requested variables entered.

APPENDIX XIII

End Block Number 1 All requested variables entered.

Page 45 SPSS/PC+ 1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable: VAR10 FREQ OF EXT AGENT VISIT

Beginning Block Number 1 Method: Enter

Page 46 SPSS/PC+ 1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable: VAR10 FREQ OF EXT AGENT VISIT

Variable(s) Entered on Step Number

- 1. VAR31 FARM SIZE
- 2. VAR1 VILLAGE NAME
- 3. VAR3 AGE OF RESPONDENTS
- 4. VAR12 COST OF SERVICE RECEIVED
- 5. VAR30 PAYMENT IN CASH FOR EX SERV
- 6. VAR15 NUMBER OF EMPLOYED IN 1987
- 7. VAR11 TYPE OF INPUT RECEIVED
- 8. VAR7 LENGTH OF PRACTICE
- 9. VAR21 REASONS FOR INCREASE
- 10. VAR8 PARTICIPATION IN SOC ACTIVITY
- 11. VAR26 OWNERSHIP OF OWN HOUSE
- 12. VAR18 REASONS FOR NO EMPLOYED
- 13. VAR4 LENGTH OF STAY IN LOCALITY

- 14. VAR23 INCOME IN 1990
- 15. VAR9 RECEIPT OF EXT SERVICE
- 16. VAR2 SEX OF RESPONDENTS
- 17. VAR24 INCOME IN 1991/92
- 18. VAR20 INCREASE IN SIZE OF OPERATIONS
- 19. VAR28 RATING OF EXT WORK
- 20. VAR5 EDUCATIONAL STATUS OF RESPONDENTS
- 21. VAR29 COMPLAINT OF EXT WORK
- 22. VAR25 POSSESSION OF HOUSEHOLD ASSETS
- 23. VAR27 ACTIVE PARTICIPATION IN FIELD DEMO
- 24. VAR16 NO EMPLOYED IN 1990
- 25. VAR19 SIZE OF OPERATIONS
- 26. VAR14 REFUSAL TO ACCEPT SERVICE
- 27. VAR17 NO EMPLOYED IN 1991/92
- 28. VAR6 OCCUPATION OF THE RESPONDENTS
- 29. VAR22 AVERAGE MONTHLY INCOME
- 30. VAR13 PRESSURE TO RECEIVE SERVICE

Page 47 SPSS/PC+ 1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable: VAR10 FREQ OF EXT AGENT VISIT

Multiple R .93961
 R Square .88287
 Adjusted R Square .87108
 Standard Error .49034

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	30	540.04782	18.00159
Residual	298	71.64823	.24043

F = 74.87240 Signif F = .0000

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable.. VAR10 FREQ OF EXT AGENT VISIT

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
VAR31	.04515	.03801	.03666	1.188	.2359
VAR1	3.825191E-03	9.59093E-03	8.8509E-03	.399	.6903
VAR9	.18721	.05016	.16128	3.732	.0002
VAR12	7.068119E-03	.17500	2.3499E-03	-.040	.9678
VAR30	.14055	.04666	.18266	3.012	.0028
VAR15	-.48405	-.09199	-.40206	-5.262	.0000
VAR11	.04757	.05537	.02441	.859	.3909
VAR7	-.22139	-.06056	-.19149	-3.656	.0003
VAR21	-.78745	-.12326	-.32322	-6.389	.0000
VAR8	-.33240	-.13721	-.12580	-2.423	.0166
VAR26	.21567	.13659	.08641	1.579	.1154
VAR18	-1.46906E-03	-.04591	-1.518E-03	-.032	.9745

VAR4	-.39959	-.10430	-.16966	-3.831	.0002
VAR23	-.48473	.06553	-.89351	-7.397	.0000

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable.. VAR10 FREQ OF EXT AGENT VISIT

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
VAR9	-.12792	.03039	-.16407	-4.209	.0000
VAR2	-.17076	.09115	-.06240	-1.873	.0620
VAR24	.12037	.02374	.24877	5.071	.0000
VAR20	.30386	.18135	.08553	1.676	.0949
VAR28	.17596	.05453	.14656	3.227	.0014
VAR5	-.44295	.06300	-.33162	-7.031	.0000
VAR29	.11216	.03590	.17856	3.124	.0020
VAR25	-.03858	.07764	-.02827	-.497	.6196
VAR27	1.67372	.17942	.54777	9.329	.0000
VAR16	.06597	.10134	.05276	.651	.5156
VAR19	-.24866	.12350	-.13127	-2.013	.0450
VAR14	.72378	.13966	1.80304	5.182	.0000
VAR17	.20102	.12425	.15585	1.618	.1067
VAR6	2.03168	.31024	.74881	6.549	.0000

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable.. VAR10 FREQ OF EXT AGENT VISIT

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
VAR22	.69847	.06311	1.28576	11.067	.0000
VAR13	-.42901	.13227	-1.05268	-3.243	.0013
(Constant)	-1.95288	1.18205		-1.652	.0996

End Block Number 1 All requested variables entered.

APPENDIX XIV

End Block Number 1 All requested variables entered

Page 51 SPSS/PC+ 1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 3 Dependent Variable.. VAR11 TYPE OF INPUT RECEIVED

Beginning Block Number 1. Method: Enter

Page 52 SPSS/PC+ 1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 3 Dependent Variable.. VAR11 TYPE OF INPUT RECEIVED

Variable(s) Entered on Step Number

- 1.. VAR31 FARM SIZE
- 2.. VAR1 VILLAGE NAME
- 3.. VAR10 FREQ OF EXT AGENT VISIT
- 4.. VAR17 NO EMPLOYED IN 1991/92
- 5.. VAR12 COST OF SERVICE RECEIVED
- 6.. VAR30 PAYMENT IN CASH FOR EX SERV
- 7.. VAR23 INCOME IN 1990
- 8.. VAR6 PARTICIPATION IS SOC ACTVY
- 9.. VAR18 REASONS FOR NO EMPLOYED
- 10.. VAR26 OWNERSHIP OF OWN HOUSE
- 11.. VAR3 AGE OF RESPONDENTS
- 12.. VAR4 LENGTH OF STAY IN LOCALITY
- 13.. VAR21 REASONS FOR INCREASE
- 14.. VAR2 SEX OF RESPONDENTS
- 15.. VAR24 INCOME IN 1991/92
- 16.. VAR20 INCREASE IN SIZE OF OPERATIONS
- 17.. VAR9 RECEIPT OF EXT SERVICE
- 18.. VAR7 LENGTH OF PRACTICE
- 19.. VAR28 RATING OF EXT WORK
- 20.. VAR5 EDUCATIONAL STATUS OF RESPONDENTS
- 21.. VAR29 COMPLAINT OF EXT WORK
- 22.. VAR25 POSSESSION OF HOUSEHOLD ASSETS
- 23.. VAR27 ACTIVE PARTICIPATION IN FIELD DEMO
- 24.. VAR19 SIZE OF OPERATIONS
- 25.. VAR15 NUMBER OF EMPLOYED IN 1987
- 26.. VAR14 REFUSAL TO ACCEPT SERVICE
- 27.. VAR16 NO EMPLOYED IN 1990
- 28.. VAR6 OCCUPATION OF THE RESPONDENTS
- 29.. VAR22 AVERAGE MONTHLY INCOME
- 30.. VAR13 PRESSURE TO RECEIVE SERVICE

Page 53 SPSS/PC+ 1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 3 Dependent Variable.. VAR11 TYPE OF INPUT RECEIVED

Multiple R .71719
 R-Square .51436
 Adjusted R-Square .46547
 Standard Error .51238

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	30	87.86001	2.92867
Residual	298	76.23422	.25582

F = 10.52067 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig. T
VAR31	-.235681E-03	.03982	-.3729E-03	-.059	.9528
VAR1	-.588557E-03	.01002	-.02654	-.587	.5573
VAR10	.05194	.06046	.10122	.859	.3909
VAR17	-.31790	.12910	-.48026	-2.462	.0144
VAR12	.47672	.18077	.30884	2.637	.0088
VAR30	.10100	.04914	.25578	2.055	.0407
VAR23	.16143	.07391	.57984	2.184	.0297
VAR8	.40172	.14290	.29625	2.811	.0053
VAR18	.09978	.04263	.20088	2.095	.0370
VAR26	.07668	.14326	.05987	.535	.5929
VAR3	.18940	.05249	.31794	-3.608	.0004
VAR4	.17129	.11119	.14172	1.540	.1245
VAR21	-.26608	.13647	-.21282	-1.950	.0521
VAR2	-.11147	.09559	-.07938	-1.166	.2445

Page 55

SPSS/PC+

1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 3 Dependent Variable: VAR11 TYPE OF INPUT RECEIVED

Variables in the Equation

Variable	B	SE B	Beta	T	Sig. T
VAR24	-.03354	.02578	-.13508	-1.301	.1943
VAR20	-.07772	.19034	-.04263	-.408	.6833
VAR9	-.671416E-03	.03268	-.01678	-.205	.8374
VAR7	-.02413	.06467	-.04067	-.373	.7093
VAR28	.29567	.05538	.47990	5.339	.0000
VAR5	7.065257E-03	.07108	.01031	.099	.9209
VAR29	-.09105	.03776	-.28245	-2.411	.0165
VAR25	.13486	.08079	.19256	1.669	.0961
VAR27	.41300	.21176	.26339	1.950	.0521
VAR19	-.41588	.12768	-.42783	-3.257	.0013
VAR15	.12486	.10023	.20210	1.246	.2138
VAR14	-.07162	.15232	-.34765	-.470	.6386
VAR16	.29302	.10461	.45665	2.801	.0054
VAR6	.51726	.34543	.37149	1.497	.1353

Page 56

SPSS/PC+

1/1/80

***** MULTIPLE REGRESSION *****

Equation Number 3 Dependent Variable: VAR11 TYPE OF INPUT RECEIVED

Variables in the Equation

Variable	B	SE B	Beta	T	Sig. T
VAR22	-.15860	.07780	-.56890	-2.039	.0424
VAR13	.13464	.14042	.64376	.959	.3384
(Constant)	.81197	1.23994		.655	.5131

***** MULTIPLE REGRESSION *****

Equation Number 4 Dependent Variable.. VAR12 COST OF SERVICE RECEIVED

Beginning Block Number 1. Method: ENTER

***** MULTIPLE REGRESSION *****

Equation Number 4 Dependent Variable.. VAR12 COST OF SERVICE RECEIVED

Variable(s) Entered on Step Number

- 1.. VAR31 FARM SIZE
- 2.. VAR1 VILLAGE NAME
- 3.. VAR10 FREQ OF EXT AGENT VISIT
- 4.. VAR17 NO EMPLOYED IN 1991/92
- 5.. VAR23 INCOME IN 1990
- 6.. VAR30 PAYMENT IN CASH FOR EX SERV
- 7.. VAR8 PARTICIPATION IS SOC ACTVTY
- 8.. VAR4 LENGTH OF STAY IN LOCALTY
- 9.. VAR11 TYPE OF INPUT RECEIVED
- 10.. VAR26 OWNERSHIP OF OWN HOUSE
- 11.. VAR18 REASONS FOR NO EMPLOYED
- 12.. VAR21 REASONS FOR INCREASE
- 13.. VAR3 AGE OF RESPONDENTS
- 14.. VAR2 SEX OF RESPONDENTS
- 15.. VAR20 INCREASE IN SIZE OF OPERATIONS
- 16.. VAR24 INCOME IN 1991/92
- 17.. VAR9 RECEIPT OF EXT SERVICE
- 18.. VAR25 POSSESSION OF HOUSEHOLD ASSETS
- 19.. VAR29 COMPLAINT OF EXT WORK
- 20.. VAR7 LENGTH OF PRACTICE
- 21.. VAR5 EDUCATIONAL STATUS OF RESPONDENTS
- 22.. VAR28 RATING OF EXT WORK
- 23.. VAR27 ACTIVE PARTICIPATION IN FIELD DEMO
- 24.. VAR19 SIZE OF OPERATIONS
- 25.. VAR15 NUMBER OF EMPLOYED IN 1987
- 26.. VAR13 PRESSURE TO RECEIVE SERVICE
- 27.. VAR16 NO EMPLOYED IN 1990
- 28.. VAR6 OCCUPATION OF THE RESPONDENTS
- 29.. VAR22 AVERAGE MONTHLY INCOME
- 30.. VAR14 REFUSAL TO ACCEPT SERVICE

***** MULTIPLE REGRESSION *****

Equation Number 4 Dependent Variable.. VAR12 COST OF SERVICE RECEIVED

Multiple R .94015
 R Square .88389
 Adjusted R Square .87220

Standard Error 16231

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	30	59.76858	1.99202
Residual	298	7.85036	.02634

F = 75.61717 Signif F = .0000

***** MULTIPLE REGRESSION *****

Equation Number 4 Dependent Variable.. VAR12 COST OF SERVICE RECEIVED

Variables in the Equation

Variable	B	SE B	Beta	T	Sig
VAR31	.02950	.01250	.07205	-2.361	.0189
VAR1	-4.49074E-03	3.16487E-03	-.03125	-1.419	.1570
VAR10	7.744401E-04	.01917 2.3294E-03	.040	.040	.9678
VAR17	-.04191	.04124	-.09773	-1.016	.3103
VAR23	.01638	.02358	.02083	.695	.4877
VAR30	-.02687	.01560	-.10503	-1.722	.0861
VAR8	.04747	.04578	.05404	1.037	.3006
VAR4	-.26357	.03190	-.33661	-8.263	.0000
VAR11	.04784	.01814	.07384	2.637	.0088
VAR26	.22179	.04355	.26729	5.093	.0000
VAR18	-.12793	.01327	-.39756	-9.642	.0000

*** MULTIPLE REGRESSION ***

Equation Number 4 Dependent Variable.. VARI2 COST OF SERVICE RECEIVED

Variables in the Equation

Variable	B	SE B	Beta	T	Sig.
VAR20	.29826	.05778	.25253	5.162	.0000
VAR24	-.01805	8.12254E-03	-.11221	-2.222	.0270
VAR9	-.04912	9.95526E-03	-.18951	-4.234	.0000
VAR25	-.08282	.02526	-.18253	-3.279	.0012
VAR27	-.01116	.01206	.05344	.925	.3556
VAR7	-.08601	.01987	.22376	4.328	.0000
VAR5	.03761	.02240	-.08920	1.768	.0780
VAR28	-.01453	.01834	-.03640	-.792	.4289
VAR27	.15582	.05620	.15339	2.322	.0205
VAR19	-.28979	.03758	-.46016	-7.711	.0000
VAR15	.14406	.03072	.35991	4.689	.0000
VAR13	-.25122	.04211	-1.85417	-5.966	.0000
VAR16	-.02529	.03354	-.06084	-.754	.4514
VAR6	-.08371	.10973	-.09280	-.763	.4461

*** MULTIPLE REGRESSION ***

Equation Number 4 Dependent Variable.. VARI2 COST OF SERVICE RECEIVED

Variables in the Equation

Variable	B	SE B	Beta	T	Sig.
VAR27	-.07430	.02444	-.41137	-3.040	.0026
VAR14	.16673	.04729	1.24932	3.526	.0005
(Constant)	3.18814	.34627		9.189	.0000

End Block Number 1 All requested variables entered.

0 Outliers found. No Casewise PLOT produced.

*** MULTIPLE REGRESSION ***

Equation Number 4 Dependent Variable.. VARI2 COST OF SERVICE RECEIVED

Residuals Statistics:

	Min	Max	Mean	Std Dev	N
R*PRED	-.5731	4.7547	1.1155	.4268	329
R*RESID	-.3690	.4459	.0000	.1547	329
R*ZPRED	-.12708	1.5259	-.0000	1.0000	329
R*ZRESID	-.2.2732	2.7471	.0000	.9532	329

Total Cases = 329

Murbin-Watson Test. -2.09627

AGRICULTURAL EXTENSION PROGRAMME

Variable No.	Description
1.	Village Name
2.	Sex of Respondent
3.	Age of Respondent
4.	Length of stay in Locality
5.	Education status of Respondent
6.	Occupation of Respondent
7.	Length of practicing the occupation
8.	Participation in local organizational activity
9.	Receipt of Extension service
10.	Frequency of extension Agent visit
11.	Type of input received
12.	Cost of service received
13.	Pressurized to receive service
14.	Refusal to accept service
15.	Number employed in 1987
16.	Number employed in 1990
17.	Number employed in 1991/92
18.	Reasons for number employed
19.	Size of operations
20.	Increase in size of operations
21.	Reasons for increase
22.	Average monthly income in 1987
23.	Average monthly income in 1990
24.	Average monthly income in 1991/92
25.	Possession of Household assets
26.	Ownership of own house
27.	Active participation in field demonstration
28.	Rating of extension work in Village
29.	Complaint of extension work
30.	Payment in cash for extension service
31.	Farm size