

**COMPARATIVE ANALYSIS OF BENEFICIARIES AND NON
BENEFICIARIES OF LOCAL EMPOWERMENT AND
ENVIRONMENTAL MANAGEMENT PROJECT IN EDATI
AND KATCHA LOCAL GOVERNMENT AREAS OF
NIGER STATE, NIGERIA**

M.SC. (AGRIC. EXTENSION AND RURAL SOCIOLOGY)

BY

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DECEMBER, 2011.

DEDICATION

This thesis is dedicated to Almighty Allah, my late father and mother.

DECLARATION

I hereby, declare that this thesis titled “**Comparative Analysis of Beneficiaries and Non Beneficiaries of Local Empowerment and Environmental Management Project Intervention in EDATI and KATCHA Local Government Areas Of Niger State, Nigeria**”, was written by me and it has not been presented before for the award of a degree programme anywhere.

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CERTIFICATION

This thesis titled: *Comparative Analysis of Beneficiaries and Non Beneficiaries of Local Empowerment and Environmental Management Project Intervention in EDATI and KATCHA Local Government Areas of Niger State, Nigeria*, , meets the regulation governing the Award of Master of Science, Agricultural Extension and Rural Sociology, Department of Agricultural Economics and Rural Sociology, Faculty of Agriculture, Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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ABSTRACT

This study was carried out to analyse the activities of Local Empowerment and Environmental Management Project (LEEMP) on Beneficiaries in Edati and Katcha Local Government Areas of Niger State, Nigeria. Socio-Economic Characteristics of the Respondents were described. Availability of infrastructures were also identified in the study area. The Agricultural output and standard of the living of the respondents were also determined. Four communities namely Rokota, Sakpe, Ebba and Kparaka were the benefiting communities and Edati, Emindayisah, Kaji and Gboyako were the non-benefiting communities. In all, eight communities were selected for the study. From each Local Government, two villages which are beneficiaries of LEEMP activities and two other villages, non-beneficiaries were selected for comparison. Ten percent of the total population from each community was taken as sample size. Descriptive statistics (frequency, percentage and mean) and multiple linear regression were used for data analysis. The findings revealed that the beneficiaries of LEEMP activities had more number of the infrastructure in their communities than the non-beneficiaries. The result also revealed that organized market, irrigation facilities and borehole have positive impact on farmers output while education has negative impact. Furthermore, the material possession and expenditure of the beneficiaries of LEEMP activities were found to be more than that of non-beneficiaries. It was concluded that rural infrastructure should be given a priority by the government and non-governmental agencies so that rural dwellers can contribute their quota to the economic development of the country.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Majority of the world's population live in rural areas where they are engaged in agriculture, (Taimi, 2003). There are clear indications that the rural sector is lagging behind in social amenities, and the gap between the rural and urban areas is still widening (Obibuaku, 1983). Nigeria's rural people are about the most deprived of all Nigerians. They have least access to services such as health and educational facilities. Also, they have limited access to modern agricultural inputs. In essence, infrastructural and institutional arrangements are deficient at the local levels where most people who need them lives (Voh, 1983).

The common man looks at rurality in terms of presence or absence of amenities in the community. However, when the community begins to change—expand in size and starts to enjoy amenities such as pipe borne water, electricity, health centres, schools, good road network and banks, then rural transformation is said to have started taking place in the community.

According to Thor et al (2001), rural transformation connotes a rapid improvement in the personality of rural man and his physical environment. Rural development was almost synonymous with agricultural development. This perception has been broadened recently to encompass the equitable and balanced transformation of complex social, economic, institutional, political and other relationships and process of rural development, including but not limited to

agriculture, education, employment, health care and nutrition, housing and voice in decision-making and actions that affect the lives of rural dwellers (Smith, 1973).

The rural dwellers are gradually becoming the centre of the rural development process, which aims at freeing the rural man from poverty, developing in the group collective personality, encouraging participation and developing self-reliance as the expression of man's faith in his own abilities (Voh, 1983). Local Empowerment and Environmental Management Project (LEEMP) funded by the World Bank came to existence in 2004 and budgeted 80 million US dollars to be spent within five years on improving the standard of living of rural communities and protecting the rural environments (LEEMP, 2005). According to Nma (2006), LEEMP puts rural people in the driving seat when it comes to spending public money for local development. Most LEEMPs budget is spent directly in rural communities on small scale feeder roads, culverts, bridges, health facilities, portable water supply, rural electrification, construction and rehabilitation of primary/secondary schools, soil conservation and erosion control and provision of engine boats.

The project covers nine states of Adamawa, Bauchi, Bayelsa, Benue, Enugu, Imo, Katsina, Niger and Oyo. According to LEEMP (2005), states were chosen based on the following among other criteria:

- at least one state should be from each of the six geopolitical zones.
- The states identified should be experiencing high levels of natural resource

degradation where the populations are already experiencing, or have begun to implement natural resource interventions.

- States should be willing to adopt a community –driven approach to integrated natural resources management involving the decentralization of decision making responsibility and control and authority over financial resources to beneficiary communities
- States should be prepared to decentralize authority to Local Government Areas for approving project proposals emerging from beneficiary communities;
- States already identified for the World Bank supported community development program should not be eligible for inclusion in the pilot phase of LEEMP since that program will also be targeting rural population.

Communities were selected based on the following criteria:

- Lack of functional portable water within 1km;
- Lack of functional government schools within 2km;
- Lack of functioning primary health care facility within 5kms,
- Lack of motorable access and/or feeder roads (Navigable waterways for the riverrine areas);
- Lack of active market centres within 5kms.

1.2 PROBLEM STATEMENT

The polarization of the Nigerian society into a larger rural sector and a smaller urban component is a well known fact. This polarization is in the terms of level of economic development, Quality of life, access to opportunities, facilities and standard of living. Obiguako (1983), referred to polarization as rural urban dichotomy. Infrastructural development is heavily skewed in disfavour of ruralites and rural areas (Igbozurike, 1983). This has led to low incomes and productivity in rural Nigeria, hence rural population remain poor. The poor infrastructures in rural Nigeria, low income and productivity have resulted into migration of youths from rural areas to urban centers and this has created problems in the cities and towns, which are not able to absorb this influx and provide services necessary to human living. Beside, the rural poor are largely unable to assert themselves to gain their shares of the fruits of development resulting from the efforts of governments. Closely related to the above problems is that rural farmers face the difficulties of obtaining agricultural credit, extension education and high prices for inputs. Another major problem is how to create new and viable social institutions around which the rural people will be effectively mobilized to participate fully in the development process and the mobilization of rural economy and savings. Therefore, quite crucial and imperative to rural transformation/development, is the involvement of the non-governmental organizations. It is therefore, pertinent to properly diagnose the impact of Local Empowerment and Environmental

Management Project (LEEMP) and then tap their advantages. To this end, the following research questions were asked:

1. What are the socio-economic characteristics of beneficiaries and non beneficiaries of LEEMP
2. What are the basic infrastructure provided to the rural communities by the LEEMP;
3. What is/are the impact(s) of LEEMP activities on crop output in the study area?
4. What is/are the impact(s) of LEEMP activities on standard of living of people in the study area? and
5. What are the constraints to accessing LEEMP facilities.

1.3 OBJECTIVES OF THE STUDY

The broad objective of the study is to make a comparative analysis of LEEMP activities in Edati and Katcha Local Government Areas of Niger State.

The specific objectives are to:

1. describe the socio-economic characteristics of the beneficiaries and non beneficiaries of LEEMP;
2. identify the infrastructure provided by LEEMP in the study area;
3. determine the impact of LEEMP activities on crop output in the study area;
4. determine the impact of LEEMP activities on the standard of living of the people in the study area; and

5. identify and describe the constraints faced by the benefiting communities in accessing LEEMP facilities.

1.4 JUSTIFICATION OF THE STUDY

There is an overwhelming need to accord rural development a priority on the must-do-list of government at different levels if the rural communities must contribute meaningfully to the social, cultural and economic development of Nigeria. This is because a bulk of the Nigerian wealth is derived from agriculture and oil which lies in abundant quantity in rural communities. Also the rural dwellers have played an important role in the development of Nigerian economy by providing food for her teeming population and employment for about 70% of her population (Igbozurike, 1987). The fight against rural poverty, ignorance and under-development requires concerted efforts by all governments at all levels and private agencies. The number of people who have to be contented with incomes at very minimum threshold for survival or even below is actually increasing (Gana, 2000). It is therefore necessary to strengthen and encourage the organizations and agencies which will help to strengthen the international economic process by transforming rural and traditional farming, improve the employment and earning facilities of rural areas.

This study gives in-depth information on how LEEMP has transformed rural areas. It gives details on how rural transformation has increased agricultural production. This study is justified because it provides techniques on the use

of rural infrastructure to raise the living standard of rural peoples hence adding positively to scientific knowledge.

1.5 HYPOTHESIS

The hypothesis below will be tested in a null form.

H₀: There is no significant difference in the output and standard of living of the LEEMP beneficiaries and non beneficiaries.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 SOCIO –ECONOMIC CHARACTERISTICS OF THE RURAL FARMERS

According to IFAD (1999), the poorest segment of the population of the rural farmers is characterized by below average household sizes, limited labour and access to farm inputs, low crop yield, no marketable surplus and depend on low-income, off farm activities for their economic survivor. The relatively less – poor segment of the rural farmers has enough family labour to produce sufficient marketable surplus but remains vulnerable. These families can afford small quantities of farm inputs when available and hire some labour. Off-farm activities are important sources of additional income. Nevertheless the lack of capital for investment in agricultural production usually forces farmer to sell most of their harvested crops when prices are lowest. Empirical studies, Atala (1980) and Akanya (1989), showed that farmers socio-economic characteristics include age, level of education, membership of association, household size, income, cosmopolitanness and social status. Abdullahi (2005), indicated that farmers participating in programmes are generally of low literacy and income levels, though having higher score in levels of production and living standard than their non-participating counterparts in the area. Peter (1991), indicated that factors like political and social environment could have a strong influence on the potential for meaningful local-level transformation. Similarly (Akanya, 1989) posited that due to family village structural arrangement in which the head of the household act as

both the legal and political spokesperson on all issues, his decision often influence others to either adopt or reject agricultural innovations.

Overall, farmers response to agricultural innovations is attributed to a number of institutional and national economic and environmental factors viz credit, extension agent, input delivery, land tenure, and sources of information.

2.2 THE CONCEPT OF RURAL INFRASTRUCTURE

Infrastructure are those underlying or basic physical, social and institutional forms of capital which enhance rural dwellers' production and consumption activities and ultimately the quality of their life (Ekong, 2003), often it includes structures which cannot be privately provided and so call for large capital outlay on the part of government. Igbozurike (1983), described infrastructures as social services which supplies a public demand. He defined infrastructures as those amenities and facilities which have life-supporting, aesthetic, recreational, or functional value and the provision of which financial cost-benefit rationalization is not a principal objective. Social services range from the solidly palpable (e.g. a public bus) to the naturally intangible (e.g. advice on the spacing of child births) (Igbozurike, 1983). Rural infrastructure include physical capital, institutions or organizations which provide economic and social services and exert external influence on the farm which include roads, electricity, irrigation facilities, storage facilities, market facilities, research and extension institutions, clinics and hospitals, clean drinking water, schools and universities which train and turn out a

variety of skilled manpower (Zinnah, 2008). In order to make effective contribution to rural transformation, the construction of rural infrastructure should be given more emphasis, taking care that the facilities are located where they can make maximum contribution to agricultural production (Zinnah, 2008).

Igbozurike (1983), classified rural infrastructure into two as physical/structural and advisory/instructional, which is not entirely dichotomous. They are design and functional overlaps. The most readily obvious instances of overlap are indicated as composite services.

- Physical and structural services (P) are Electricity, Housing, Markets, Motorable roads, Postal/Telecommunication Services, Public Transportation Vehicles, Water Supply, Recreational, Facilities and Places of Religious worship.
- Advisory and institutional Services (A) are Administrative Institutions, Family Planning Centers, Financial Credit Institutions and Public Libraries.
- Composite services (P/A) are co-operative Service Centres, Medical and Health Centres and Schools.

As an illustration of overlap, although schools are par excellence instructional establishments, they often play a dual role. Those schools which have a boarding component do house, feed and generally cater for boarders, commonly to a better standard than received in their own homes.

Whether or not it is freely articulated by the ruralites directly concerned, the need for social services may be envisioned as occurring at several levels. Or,

perhaps more appropriately, as a multi-level continuum (Igbozurike, 1983). At the bottom end of the spectrum, where bare-bone services sufficiency is being or can be tolerated, i.e. without socio-political upheaval, better than in other regions, certain services should be regarded as social musts. These are basal social services (BSS) and, for Nigeria of the mid-1980s, they include water supply, medical centres, all-seasoned motor-able roads, and electricity. Second-order social services (SSS) constitute the intermediate level of need. Within this group are such services as schools and financial institutions. At the opposite end of the spectrum are the tertiary social services (TSS). Among these are public libraries and community meeting halls which if compared to other social services, are not of critical importance.

Ekong (1988), classified infrastructure into three as:

1. Physical infrastructures which consists of transportation facilities (roads, bridges, ferry services, ports etc.); storage facilities (Silos, where-houses, cribs etc.); processing facilities; irrigation, flood control and water resources development facilities, soil conservation facilities.
2. Social infrastructures are educational facilities (Primary Schools, Secondary Schools, Vocational and technical School, Adult Education etc.); Health Facilities Hospitals, Dispensaries, Maternity Centres etc.; Water Supply; Electricity Supply, Communication Facilities (Post Offices, Postal Agencies, Telephone, Radio, television, Fax and E-mail etc.).

3. Institutional facilities are rural credit and financial institutions, co-operative societies and farmers unions, agricultural research institutions, agricultural extension services, rural community development or self-help agencies and marketing services.

2.3 CONCEPT OF RURAL DEVELOPMENT

For a long time, rural development and agricultural output were viewed as referring to the same situation, Williams (1981). In recent years, however, it has been argued that agriculture is by no means the only possible occupation for rural people and accordingly a new and broader view of rural development for rural people has emerged.

According to Udo (1984), rural development is a process of not only increasing the level of per capita income in the rural sector, but also the standard of living of the rural population. This definition goes on to observe that the standard of living depends on a complex of factors such as food and nutrition levels, health, education, housing, recreation, security among others.

In otherwords, rural development goes beyond agriculture and economic growth. It entails the creation and fair sharing of social and economic benefits resulting from this growth. (Williams, 1981).

To understand the concept “rural development”, it is perhaps more logical to first understand what “development” mean. At the individual level it implies increased skill and capacity, greater freedom, creativity, self-discipline,

responsibility and material well-being (Smith, 1973). He went further to state that: at the level of the social group, development generally means the increasing capacity to regulate both internal and external relationships, this implies the ability to guard the independence of the social and indeed to fringe upon the freedom of others-something that often came about irrespective of the will of the persons within the socialites involved. It is a normative concept which implies growth and change, hopefully for the better (Igbozurike, 1983).

Rural development, therefore denotes the actions and initiatives taken to improve the standards of living in non-urban neighbourhoods, countryside, and villages. Agricultural activities may be prominent in this case whereas economic activities would relate to the primary sector production of foodstuffs and raw materials (Smith, 1973). According to Ekong (2003), rural development is a process which a set of technical, social, cultural and institutional measures are implemented with and for the inhabitants of rural areas with the aim of improving their socio-economic conditions in order to achieve harmony and balance both on the regional and national levels. Idachaba (1980), sees rural development as the outcome of a series of quantitative and qualitative changes occurring among a given rural population and whose converging effects indicate, in time, a rise with standard of living and favourable changes in the way of life of the people concerned. It does not mean isolated programmes of 'community development', health, mass education, agricultural extension, health and nutrition extension' or any of the other terms applied to sectoral programmes which are carried out in the

rural areas or within the rural community. It means rather, a comprehensive development of the rural areas. This idea of comprehensiveness further led to the popularization of the term “Integrated Rural Development” which according to Ekong (2003), presupposes the recognition of a rural-urban continuum and the implication that the rural areas cannot be considered in isolation but in relation to the urban counterpart for it is in this sense that the problems of rural – urban migration, rural exodus and agricultural and industrial development can be tackled. Development must be harmonized in such a manner that both sectors can complement each other.

2.4 INSTITUTIONS AND PROCESSES OF RURAL INFRASTRUCTURAL DEVELOPMENT IN NIGERIA: PAST AND PRESENT

The various types of physical, social and institutional infrastructure are desirable because of their important roles in the economy (Ayoola, 2001). In Particular, it is recognized that among the available policy instruments of rural development, the provision of basic infrastructure constitutes the most useful method of providing the solutions contemporaneously to the problems of rural people (Ayoola, 2001). In spite of the preponderance of rural infrastructural development in the programmes of the past and the present government, still pessimism prevail because significant improvements in the living standards of the rural people have not been observed in order to justify the huge budget and non-budget support to the rural sector (Idachaba, 1989). However, the general belief

remains in the efficiency of the rural-oriented strategy of developments, particularly the ability to provide contemporary solutions to the numerous problems of the rural people through infrastructure support.

The traditional approach toward rural infrastructural development is consistent with the idea of Mosher (1976), that is, it is simultaneity that is most important, but not administrative integration. The arrangement based on this idea led to the initial multi-ministerial efforts. Under this arrangement, the ministry of education is to establish schools in rural areas. Works ministry is to construct rural roads. Rural markets are the responsibility of the Trade ministry. Agriculture ministry is to carry out extension and associated works etc.

During the colonial administration, historical data and impressionistic evidences suggests that, rural infrastructural build-up was not a deliberate policy, but merely represented the residual outcome of the surplus extraction theory. That is, the road, the railway, the rural markets and other infrastructure of the period were unavoidable necessities for sourcing export produce, and not the results of people oriented development efforts (Mosher, 1976).

After independence, two limitations of the traditional approach were soon realized: Firstly, for selected infrastructure, simultaneity has less important than integration, and secondly, passive rural. infrastructural build up could not generate fast progress in solving the poverty bur Problem. Consequently, integrated rural development has conceptualized and a deliberate programme in this regard was mounted in the form of “farm settlement scheme” (Adegboye, 1969).

Farm settlement was deliberate effort of the old western regional government to address the rural development problem. The scheme involved the settlement of young school leavers in specific rural locations. This was aimed to solve the problem of unemployment among the schools leavers. The rural infrastructural component of the scheme include physical (rural roads, rural housing and markets); social (primary school and health care); and institutional (organization of cooperatives, tailoring societies to execute a school uniform projects in rural areas) (Olatunbosun, 1971). However, because the primary attention of the government was to solve an impending unemployment, the resultant rural infrastructural facilities put in place were only a residual outcome. By any standard judgments, the farm settlement scheme failed woefully, having petered out into near nothingness and leaving as its main legacy today a system of ill-maintained and inaccessible building structure with few or no settlers, which are scattered over a number of states in the country (Idechaba, 1985). In practical terms, they have petered out from human memories as a component of the integrated rural development policy.

The permissive atmosphere around rural infrastructural development in the early days was actually as a result of constitutional neglect (Ayoola, 200). There was no ministry at the federal level initially to coordinate agricultural development activities, which were conceptually subsumed in the overall rural development problem. Agriculture appeared on the residual legislative list, which made it a regional responsibility (Olatunbosun, 1971). However, following a recommendation

of the Food and Agricultural Organization (FAO) of United Nations at the instance of the Nigerian government, a ministry of Natural resources and research was created in April 1964. Initially this ministry had limited functional scope and capabilities, essentially because it was not immediately backed up by necessary statutory powers and instrument (Rajah, 1988). This explains the deliberate omission of the word “Agriculture” in the name of the ministry, which was done so as not to offend the political sensibilities of the regions. Finally, this ministry has variously transformed in name, scope and size to become what is now known as the Federal Ministry of Agriculture and Rural Development.

The most determined thrust behind rural infrastructural development was made in March 1976 when the Federal Department of Rural Development (FDRD) was established (Idachaba, 1985). This department was immediately charged with the responsibility for the design, formulation and implementation of the integrated Agricultural Development Projects (ADPs). ADP was a collaborative efforts of Federal and State Governments as a rural infrastructure programme under the funding assistance of the World Bank. The first generation of ADPs were the enclave types which commenced as follows: Funtua (1975), Gusau (1975), and Gombe (1975). Newer enclave type projects later developed in Lafia (1977), Ayangba (1979), Ilorin (1979), Bida (1980), Ekiti–Akoko (1981) and Oyo North (1982); presently each state of the federation has the ADP either in the enclave stage or at the statewide level (CBN, 1999). According to Dumoye (1989) the

ADP concept is a package of rural infrastructural development works distinguished by the following elements:

- An input delivery and credit supply system through a network of farm service centres which ensures that no farmer travels more than 5-15km to purchase needed inputs.
- A massive rural feeder road network that has opened up new areas for cultivation and marketing of farm produce and timely delivery of farm inputs,
- A revitalized, intensive and systematic extensions and training system backed up by timely input supply and adaptive research services; and
- Autonomous project management together. The World Bank had given loans of about 1.5 billion dollars (about ₦175.5 billion) to Nigeria's agricultural sector by 1986 and 95 percent of the loans was specifically devoted to the integrated Agricultural Development projects and their supporting institutions (Dumoye, 1989).

The decision of the Nigeria state to go along with the bank's preference for the ADPs can be traceable to the desire to nurture capitalism in the agricultural sector and to control the rural sector (Omokore, 2008). The farmer was expected to change his cropping patterns to meet market requirements. In order to do this, he was expected to grow crops for sale primarily and to abandon some of his risk minimizing strategies such as mixed cropping and the growing of traditional seeds which though not very responsive to fertilizer, were drought resistant (Omokore,

2008). Voh (1983), noted that many farmers relying on 1-2 hectare plots could afford to take these risks and make themselves dependent on bought seeds which needed a lot of fertilizer, and were not drought resistant in an environment where both the rains and market were unpredictable. The consequence of all these, was under performance and failure. The current situation now that the World Bank assistance has ended has left the farmers with no option than to grapple with inadequate input supply and adulterated chemicals.

The River Basin Development Authorities (RBDAs) also came to existence by the Decree No 25 of 1976 as an agency for rural infrastructural development in the country. Originally, eleven RBDAs were established for the primary aim of developing the economic potential of the available water bodies. Later, a major departure in their functions took place with additional responsibilities to perform direct agricultural and other rural development activities. The most notable ones are the Kano River project in Kadawa, the Sokoto Rima project at Bakalori (now in Zamfara State) and Goronyo and the Lake Chad Basin Development in Borno State.

The high capital demand of this project as well as its usually complex social costs are likely to have stood in the way of Colonial administration whose policies were to exploit the country's resources at a minimum cost (Omokore, 2008). Preference was therefore given to such less capital demanding strategies of agricultural extension services mixed farming and input cost subsidization in Colonial agricultural policies (Baba, 1985). Each authority is to generate and

manage the development programme within its basin. The Colossal amount expended on the irrigation projects are alarming. Forest (1985), ₦535 Million was invested on River Basin Development Authorities.

Forest (1985), appraised the Kano River Project and concluded that like other irrigation projects, it radically alters the farming systems. The farmers were compelled to grow wheat and some vegetables for the market in dry season, in the wet season they grow maize primarily for sale. The farmer is expected to give up growing food for his own consumption and must grow for the market. He is no longer supposed to choose what to grow, he is told what to grow. He is no longer in control of his own agricultural technology, but has to rely on paid staff to handle irrigation equipment, water supply, new seeds that are responsive to fertilizer, tractors to level the land and chemical sprays. He is expected to borrow money to invest in these new expensive inputs without which wheat cannot grow in northern Nigeria (Forest, 1985). He is forced to use more labour on his farm throughout the years, and yet agriculture is increasingly becoming commercialized, and labour becomes more expensive to hire. The imposition of such radical change on the farmers is justified in the plan because irrigated farming will produce wheat and this save foreign exchange and individual farmers will profit and grow wealthy (Omokore, 1988).

On the plight of the farmers' participation in irrigation project, Wallace (1980) noted that during the dry season of 1976/77, the project management recorded non-participation rate of about 40 percent. Many farmers simply not

finance the purchasing of all the necessary inputs. So they hired their irrigated land out to others or left it fallow. Therefore the performance of irrigation programme in Nigeria has not substantially mitigated poverty within the affected communities, inspite of their impact on farming systems. They altered rural employment patterns, but they also have the tendency to generate unemployment and underemployment among certain segments of the community. In conclusion. Large irrigation scheme has failed to tackle the problem of inequality in both its spatial and social contexts (Forest, 1985).

The slow pace of rural infrastructural development is of utmost concerns to the government. This led to the establishment in December 1986 of the Directorate of Food, Roads and Rural Infrastructure (DFRRI). Its nomenclature epitomizes the areas of immediate attention. Food in this name specifies the particular problem area, and rural infrastructure is to constitute the main policy instrument. The particular reference to roads connoted that this category of rural infrastructure among the others, posses the greatest explanatory power in the viability of rural welfare standards in the short run (Ayoola, 2001). This nomenclature on the whole helps to narrow the scope of the rural infrastructural build up down so that the directorate will direct its limited resources, within a limited period of time, to the most effective areas.

Nigeria's DFRRI was perceived as a kind of rural infrastructural build up strategy with the following objectives:

- Build a natural network of rural roads;

- Implement a national rural water supply scheme;
- Launch a national rural water supply scheme;
- Launch a rural electrification programme;
- Raise the level of agricultural production; and
- Provision of rural housing, rural health, rural education and rural sports (Omokore, 2008).

The establishment of DFRRRI is generally informed by the need to hasten progress in the rural areas of the economy by locating the decision-making authority of the highest level of political authority (Ayoola, 2001). The stream of budgetary allocations to DFRRRI confirms the government's commitment to address the rural development problem squarely as follows: Initially, a sum of ₦450 Million out of ₦900 Million realized from the newly introduced second-tier Foreign Exchange market operation was expected to be used by the directorate to provide about 600,000km length of rural feeder roads. Consequently, budgetary allocations were ₦360 million (1986), ₦ 400 million (1987) and ₦ 500 million (1988) for DFRRRI Operations (Idachaba, 1985). In addition, the directorate was organized in such a way as to be free from the mainstream of sluggish civil service bureaucracy. Its affairs are to be directed from the apex and down the line by top military officers who are expected to mobilize money, materials and manpower to achieve concrete results within a short period of time. A critical analysis of the impact of DFRRRI between 1986 and 1993 by Omokore (2008), revealed that while some quantitative achievements were recorded in the area of infrastructural

development, the effectiveness of the project leaves much to desire. This according to Omokore (2008), was attributed to hasty planning and faulty implementation of some of the projects. DFERRI under performance could be traced to over-involvement of the Directorate in many programmes, inadequate funding, greater emphasis on quantity than quality, diversion of resources, poor feasibility studies, problem of conceptualization and effective operational methods. Idachaba (1989), sees the short comings of the DFERRI as fatal failure of DFERRI to monitor its programmes, resulting in programme atrophy and Colossal waste of resources. Specifically the directorate has been indicted for lack of programme accountability and being shrouded in “role confusion and programme fuzziness”. Since a culture of monitoring and evaluation has not evolved within the DFERRI outfit, then its activities could only be coagulated from the bits and pieces of uncoordinated media reports. The National Fadama Projects is another intervention conceived by World Bank, Africa Development Bank and Federal Government with active participation of the states and Local Government aimed at reducing poverty and increasing the income of the rural farmers (Bello, 2006). The National *Fadama* Development Project (NFDP) uses demand driven approach where all *Fadama* users groups identify their development priorities and these are addressed based on socially inclusive approach, while building their capacity to enable them make use of scare resources (Bello, 2006).

Fadama, the Hausa name for irrigable lands, are flooded plains and low-lying areas underlined by shallow aquifer and found along Nigeria river system.

The National *Fadama* Development Projects I was implemented between 1992 and 1999 and was adjudged successful. The “success” has culminated into federal Government of Nigeria requesting the second phase of *Fadama* Project known as *Fadama* II. The objective of the *Fadama* II has been defined as to sustainably increase the income of *Fadama* users, which include farmers, pastoralists, fishers, hunters and service providers. Direct beneficiaries of *Fadama* II project are some 2 million rural families pursuing their livelihoods in the *Fadama* lands who are not only farmers (Forest, 1985), however disclosed the fact that about 30 million dollars (~~N~~360 million) have been spent in the *Fadama* communities in 12 states supported by the World Bank to implement their community sub-projects. *Fadama* has registered substantial impact, especially from income generating activities supported through the asset acquisition component and increased commercialization of produce, made possible through the investments in rural infrastructure particularly *Fadama* access roads linking farmers to the markets”.

Omokore (2008), however, noted that approximately 100,000 hectare *Fadama* land was developed without adequate attention to the needs of livestock. Consequently, Omokore further noted that, there were increased conflicts between arable farmers and livestock keepers who are involved in open grazing, whereas opportunities for diversification of the *Fadama* production systems were missed. In order to reduce conflicts in phase II of *Fadama* development project concrete efforts were employed to adopt and reinforce conflict management mechanisms in order to raise rural productivity and income (Bello, 2006).

2.4.1 Persistent Problems of rural infrastructural development in Nigeria

Ayoola (2001), enumerated three recurring problems in the rural infrastructural development process include:

- i). Dwindling commitment of programme sponsors,
- ii). Incessant perturbations in the institutional framework and
- iii). Low level of in-house operational research and planning of projects.

2.4.2 Commitment to Rural infrastructural development

The problem is not so much absence of projects, as relatively ineffective projects. One reason for ineffectiveness of rural infrastructure projects is the lack of sustained commitment of the sponsors (Idachaba, 1989) as reported by Ayoola (2001), the actual fund allocations to ADPs are fairly lower than the budgeted amounts (consider the total and average commitment values). In practical terms, poor commitment increases in the order of federal government (86%), state government (81.7%), other source (71.4%), and World Bank (47.5%) (Ayoola, 2001). This fact is related to the great numbers of unfinished roads, and bridges, building structures, water projects and other infrastructure distributed all over the country.

2.4.3 Perturbations

Two levels of perturbation exist according to Ayoola (2001), first at the policy level-charging perception of the role of government has pronounced effects on the continuity of all the overall rural development strategy. If the role perception of government continues to become uneven, then at each point of

charge some part of the recorded achievements of the preceding efforts will definitely be lost (Idachaba, 1989). Second, at the organization level, perturbations arise mostly from frequent personnel changes in leadership positions. The evidence high rates of turnover in the political, administrative and professional leadership positions create adverse effects. They end up in particular programmes being given more or less emphasis, redesigned, reintroduced or the implementation pace speeded up or slow down, so to reflect the new political, philosophical, ideological and occupational biases of the new people involved (Ayoola, 2001). Again. The rural development pathway consequently becomes uneven.

2.4.4 Operational Research and Planning

The technical processes involved in rural infrastructure contained inherent problems (Ayoola, 2001). First there exists a great paucity of data necessary for good infrastructure planning. Some key areas of data inadequacy as regard rural road planning are existing, road network and density, traffic flows, produce movements by types and quantities (FACU, 1988). For example, the 1986 data on cost was used for planning the project year two feeder road improvement programme in Benue State ADP in 1987, owing to unavailability of updated figure (FACU, 1988). This is grossly inadequate judging from the unstable price movements in the economy. The second problem according to Ojukwu (1987), is shortage of operational research activities to backup rural infrastructure planning. This result in inappropriate generalization in concepts and measurement. For

example, it is usually assumed that there would be no measurable increase in crop production without rural road improvement. This has been done so as to allocate the entire incremental crop production to road construction efforts in the absence of suitable criteria for benefit allocation (Ojukwu, 1987). Omokore (2008), noted that, the crises facing Nigerian peasantry is still persistent through the 21st century i.e. post 2000. The rural farmers are still saddled with the problem of feeding Nigeria teeming population. Virtually all the interventionist programmes to improve rural infrastructures are characterized by “Top Bottom” approach (Omokore, 2008). The rural farmers were not involved in the conception, planning and monitoring of all of them.

2.5 RURAL DEVELOPMENT STRATEGIES OF OTHER COUNTRIES

2.5.1 China

Aziz (1980), observed that China’s development objective are deeply embedded in its overall political and social philosophy. The China want to build modern progressive economy, achieve sustained growth in industrial and agricultural, production and above all, full employment and equitable distribution of the country’s resources and incomes, (Dirven, 2004). Against this ideological background, the basic objective of rural transformation was formulated. Basically, it aimed to organized, develop and utilize the available resources of land, water and manpower in such a manner that the entire rural population depended on these resources has an equal opportunity to meet, as a minimum, their basic needs of

food, clothing and shelter with reasonable facilities for education and health and can live together in a positive and healthy social environment (Dirven, 2004).

Land reform was introduced. The land reform resulted in the redistribution of land and property among the poor and middle peasants, including the land lords and rich peasants who were prepared to “reform” themselves and live on allotted holdings (Dirven, 2004).

Land reform, even when they were drastic and succeed in achieving a minimum of quality in the distribution of land and other resources among rural population, create only certain pre-conditions for rural transformation. They must be followed by appropriate institutional and organizational arrangements that will help to organize the rural population for successive rural transformation.

The bureaucratic apparatus in China is manifested in the entire communal system, the system includes production teams, production bridges, communes, provinces and the central planning commission (Aziz, 1980). The first three administrative units play the major role in the transformation of rural China (Aziz, 1980).

A production team is often historic hamlet or cluster of houses with 20-40 families or 100 – 200 members. Production team combine into production bridges and bridges into people’s communes. Counties are multi commune governmental units, while counties combine into provinces. The central planning commission coordinates the national production plan and targets (Olarenwaju, 1985).

Within the bureaucratic structure, the commune popularly known as 'peoples communes', a composite unit of local government which is the basic unit of rural transformation (Olarenwaju, 1985). Its essential purpose is to organize and mobilize the rural population to develop their land and other resources in order to meet their essential needs on the principles of self-reliance, while of the same time reducing social inequalities and treating a rural society based on justice and equality.

Modernization of Agriculture in China

The pace of technological change in China has been rapid, it is reflected in the modernization of agriculture through the introduction of the most modern inputs into the communes. Amongst these are (Aziz, 1980);

- Chemical fertilizers from local modern industries as well as manures, compost etc.
- Irrigation and other infrastructures- electricity, water supply, roads etc
- Fast growing and high-yielding seeds from National Agricultural Research Institutes;
- Mechanization to suit the local situation of saving time but not labour. This consists of animal drawn, small tractors rather than massive machinery.
- Efficient marketing system whereby the state handles the produce from the farm buying up a given percentage allocating to families based on the number in and the structure of the families and keeping a part for the unit or commune.

China's approach to rural transformation is a fully integrated rural development approach. It is multi-sector, multi-level and multi-sectional. It is a success story work emulating by the less developed countries.

2.5.2 Latin America

The persistence of rural poverty concentration in rural areas, rising inequality in the distribution of rural incomes remain vexing aspects of rural transformation in Latin America, inspite of expensive programmes at reducing poverty and inequality (Dirven, 2004). This widespread failure calls upon exploring alternative approaches to rural transformation that may have greater chances of success.

Driven (2004), noted that, most Latin American countries have increased revenue sharing with municipalities (Brazil, Colombia, Mexico, Chile, Bolivia, Guatamala or with provinces (Argentina) and states (Venezuala). In many cases, responsibility for primary education, health, water supply, local infrastructure and security have been transferred to municipalities.

Decentralization has however, been mostly incomplete in that it has rarely been accompanied by fiscal decentralization and financial (borrowing) capacity for municipalities.

In Bolivia, extensive decentralization in 1994 made the municipality the basic unit of governance (Faguet, 1997). He posited that the share of national fiscal revenues transferred from the central to municipal governments increased from 10% to 20% on a per capital basis. Decentralization led to a change in

municipal budget allocation, with sharp increases in project in rural transformation, education, health, water management, communication and water and sanitation (Faguet, 2003). Decentralization has accompanied by greater representation, participation and accountability. Changes introduced included direct election of mayors, introduction of vigilance committees set up to oversee municipal spending, recognition of legal status for organization of small farmers and indigenous people and reduction of urban bias through extension of municipal jurisdiction to suburban and rural areas in municipality (Dirven, 2004).

In Colombia, direct election of mayors and transfers of revenues and responsibilities (oversight of healthcare, water, local roads and primary education) to municipalities were introduced starting in 1983 (Faguet, 1997). This led to sharp improvements in educational and health services, with a decline in illiteracy and with health services coverage rising from 35% in 1990 to 63% in 2001, (Faguet, 1997).

Results from the Bolivian and Colombia experiences are important in showing both the potential gains from decentralization at the municipal level in achieving greater efficiency in basic social services and small scale infrastructure, and also the limits of municipal level decentralization in promoting investments for employment creation and income gains.

In Mexico, a territorial approach was used in transforming rural areas in the following areas (Dirven, 2004);

1. Globalization offering new opportunities through the “new agriculture” and the industrialization of rural areas. A territorial approach focuses on links to dynamic markets for agriculture, both in proximate cities and in distant markets. It also looks at the economy of the region in terms of multi-sectoral projects.
2. Increasing integration between rural and urban areas, in particular through the labour market. Links between rural and urban dimensions of territory are indeed central to the approach.
3. Decentralization of governance, increasing participation and representation is also a key component of the approach.
4. A rapid rise in the social capital of rural areas, with increasing participation to, and power of representation for, producers organizations. A territorial approach gives an important space to linkages between civil society organizations and local governance.

2.5.3 Dimensions of Territorial Approaches to Rural Transformation

Changes in the industrial structure of European countries (Italian Industrial Districts, decentralization in design based manufacturing in Denmark) have shown success with a more territorial approach to development, and with flexible small-medium enterprises and clusters of economic activity providing support to innovation and competitiveness (Dirven, 2004). The rural dimension of these strategies has been essential.

Based on lessons learned from the successful experiences reviewed of regional development in Europe, the USA and the Latin America, pursuing a territories approach to rural transformation would imply putting into place the following five dimensions (Dirven, 2004)

1. Define regions: Region for a territoria approach to rural transformation can be defined in several ways. They are classified in four ways:

- Municipality for local governance; they provide local goods and services, but are generally too small for the management of successful economic projects.
- Ad-hoc association of municipalities of particular projects (e.g. watershed management delivery of public service).
- Regions as larger administrative units; sub-national governments at the state, department, or province level.
- Regions as functional economic units: natural economic unit with shared comparative advantage, diversified employment basin, or social capital unit. These regions can be defined functionally through organizations such as a development bank (Banco do Nordeste for agro-industrial development), a cooperative (non-traditional exports in Ghatemia) or a processing centres (milk production systems in Peru and Brazil). Key to this regions are the links between rural areas and urban centres.

Dimension 2: Institutional transformation of the region which involve strengthen and modernize the capacity of local governments, strengthened the

capacity of local organizations (Social Capital and build institutions to plan and formulate project for regional and local government.

Dimension 3: Productive transformation of the region which involves regional projects for infrastructure and financial development (state-region contracts and promote the competitiveness of the region and local entrepreneurs (region-driven development projects).

Dimension 4: Social transformation of the region which involves rural transformation programmes (social and productive expenditures) in support of the social incorporate of the poor.

Dimension 5: Implementation of territorial rural transformation as a national strategy which involves auditing and impact analysis for accountability.

2.5.4 Mexico's Microregions Strategy to Rural Transformation

The Micro-Regions Strategy (MRS) aims at promoting the integral and sustainable development of the most marginal regions (Dirven, 2004). Success of the strategy lead to gradual convergence in living standards between marginal and non-marginal municipalities, resulting in both poverty and spatial inequality reduction. The instruments to implement the strategy consist (Dirven, 2004);

1. Creating micro-regions that regroup a number of municipalities with very high marginality.
2. Selecting in each municipality one or several localitiesize than the municipality centre, to serve as strategic community centres (CEC). These

localities are natural confluence points for the localities in their territorial vicinity or hinterland.

3. In the microregions strategy, CEEs will concentrate the delivery of basic infrastructure and the promotion of productive projects (II areas of investment) to serve both the population of the CECs and of localities in their territory of influence.
4. Over time, the population of poor households located in non-CEC localities will expectedly concentrate in CEC localities on a voluntary basis, as dispersed populations would be attracted by greater availability of social services in these localities changes in the structure of employment and sources of income for rural population in Latin America.

Reliance on non-agricultural employment and income for the rural population has been increasing rapidly and is of great importance (Dirven, 2004).

Farm employment has declined in most countries, especially its self-employment components. There has been a rapid rise in the share of rural population employed in non-agricultural wage labour and non-agricultural self-employment. Driven (2004), give the following changes in percentage employed in non-farm activities:

- Chile 19% (1990) —————> 26% (1998)
- Columbia 31% (1991) —————> 33% (1997)
- Costa Rica 48%(1990) —————> 57% (1997)
- Honduras 19%(1990) —————> 22% (1998)

- Mexico 35%(1989) —————→ 45%(1998)
- Panama 25%(1989) —————→ 47%(1998)
- Yanezuala 34%(1990) —————→ 35%(1994)
- Brazil 26%(1990) —————→ 24%(1997)

with the exception of Brazil, these figures show that employment in non-farm activities of the rural employed population has been rising rapidly.

2.5.5 Tanzania Model of Rural Transformation

Tanzania under the leadership of Julius Nyerere has adopted a unique administrative and political approach to agricultural and rural transformation based on the principle of rural villages conceived or communal organization (Olarenwaju, 1985). The most explicit statement on the Tanzania approach was made by Nyerere in which he specifically rejected rural capitalism the strategy involves attempts of the transformation of society through the framework of villagization that implies the concentration of peasants into villages, the encouragement of cooperative agriculture and the principle of self-reliance.

Nyerere vizualizes rural development primarily along political lines. In rural areas agricultural technicians work to assist the political arm of government, the ministry of Rural Development, in its efforts to create Ujamma– a form of communal socio-organization based on the concept of the indigenous extended family. Thus, the Ujamaa principle is making its way among Tanzania farmers who are mostly small holders (Aziz, 1980). These farmers received government assistance, encouraging them toward collectivism in farming operations. Thus in

contrast to some other African countries, Tanzania rural dwellers are at least not oppressed or exploited. The Ujamaa strategy of rural transformation is the most original on the African continent and represents a concerted effort at rural reorganization for accelerated development (Aziz, 1980). The greatest merit of the mode, lies in the bold attack on rural poverty and rural animation as well as their grassroot approach to development so that rural development can be viewed more as the concern of the masses of peasants and workers and not that of a few technocrats. Thus, the peasant are not only involved in the planning and execution of projects but they are also seen as the agents of socio-economic change (Aziz, 1980).

In the end, the villagization scheme had remarkable impact on population redistribution. It has been estimated that by 1968 about 60,000 people were resettled in 180 villages, by 1973 up to two million people had been regrouped into nearly 57,000 Ujamaa villages (Olarenwaju, 1985). By 1974, it has been estimated that about 3 to 4 million people have been resettled (Aziz, 1980). However, as 1971, 90 percent of the settled villages were classified as stage 1 villages, that is, without significant communal productive activity. It has been observed that Ujamaa villages still have a long way to go in raising rural welfare and narrowing the gap between village and town life. Unless this gap is narrowed, manpower, often the best educated youth badly needed in the village, will continue to emigrate to the urban areas with a detrimental impact on both as well as on the long term development of the country (Olarenwaju, 1985).

2.6 IMPACT OF RURAL INFRASTRUCTURE ON CROP OUTPUT

The view is widely held that provision of rural infrastructure is the essential foundation for sustained increases in food production. The general notion underlying the rural infrastructure strategy is that it is difficult for the rural sector to contribute significantly to economic and industrial progress in the absence of basic facilities that also enhance their production activities as well as their living standards. These facilities and their roles are generally described under these categories:

1. Rural physical infrastructure:

- Rural roads which cause accelerated delivery of farm inputs, reduce transportation costs and enhance spatial agricultural production efficiency.
- Storage facilities which help to preserve foods in the farms that consumers need them and to the time they need them. On-farm storage also helps to stabilize inter-seasonal supplies.
- Irrigation facilities which assure farm water supply and stabilize food production by protecting the farm production system against uncontrollable and undesirable fluctuation in domestic food production.

2. Rural Social Infrastructure

- Clean water, decent housing, environmental sanitation, personal hygiene and adequate nutrition which help to improve the quality of life;
- Formal and informal education which promote rural productivity by making the farmer able to decide agronomic and other information and

carryout other desirable modern production practices; basic education also promotes feeding quality, dignity, self respect and sense of belonging as well as political integration of the rural people.

3. Rural Institutional Infrastructural

- Farmers unions and cooperatives which facilitate economics of scale and profitability of rural people.
- Agricultural extension which improves technological status of the farm business.

Assessing the impact of Anyagba ADP on quality of rural life, Adejo (1983), enumerate the following positive impact on Agricultural production. Many villages and hamlets were opened up and connected by well-graded, laterite, all-seasoned roads and linked with market and urban centres. Thus, the provision of crop requisites and input, effective extension services, marketing of produce, access to the Rural, Development centres has been enhances bearing in mind the road situation in the area before ADP.

- The extension programmes have increased the rural farming awareness of increased agricultural production opportunities and possibilities available and within reach.
- On inputs for crop production; the ADP has rendered useful services by supplying all types of agricultural, inputs, as well as catering for the farmers' credit needs. Improved varieties of seeds and agro-chemicals are sold to the farmers.

- On the marketing and grading of farm produce, the commercial service department act as a licensed buying agent (LBA) for all the Nigerian commodity boards. The farmers are assured of adequate market prices.
- There were growing demand for birds and poultry mash at the rural area for livestock production. The ADP hatchery unit annually produces about 8,000 day-old chicks which are sold to farmers at the age of 2 weeks at 75k each.
- There were noticeable reduction on urban drifting in the number of young school leavers drifting into towns for work. Many farmers have increased their hectarage and operations to enable their children to be gainfully employed on the family farms.
- Farmers have leant to use modern implements and have acquired a higher level of skill in farming and farm management.
- The ADP tractor service has awakened rural farmers to the use of tractors for land clearing and ridging operations. Access to the regular and timely use of tractors by rural farmers is a necessity of increased food production.

Adejo (1983) reported that, the Ayangba ADP has had a positives impact on the grain production of the project area in 1979 compared to that of 1977 and 1978. He also observed that the year also recorded the highest loans repayment rate suggesting a positive higher rate of investment in the right sector, all these must have accounted for the increase in the quantity of grains harvested in that year.

Mabawonku (1983), assessing the impact of Lafia ADP, reported that farms in the Lafia ADP are much larger than they were before the project. The farmers cropping pattern has changed; there exists wide spread integration of livestock and crop enterprises, farmers are very much aware of how to tackle farm problems; the average farm income has increased more than three fold farmland because; increasingly commercialized, seeds and farm chemicals were supplied by the project to the farmers; the net supply of agricultural products in the market is impressive.

- Assessing the impact of Anyagba ADP on quality of rural life, Adejo (1983), enumerate the following positive impact on Agricultural production.
- Many villages and hamlets were opened up and connected by well-graded, laterite, all-seasoned roads and linked with market and urban centres. Thus, the provision of crop requisites and input, effective extension services, marketing of produce, access to the Rural, Development centres has been enhances bearing in mind the road situation in the area before ADP.
- The extension programmes have increased the rural farming awareness of increased agricultural production opportunities and possibilities available and within reach.
- On inputs for crop production; the ADP has rendered useful services by supplying all types of agricultural, inputs, as well as catering for the farmers' credit needs. Improved varieties of seeds and agro-chemicals are sold to the farmers.

- On the marketing and grading of farm produce, the commercial service department act as a licensed buying agent (LBA) for all the Nigerian commodity boards. The farmers are assured of adequate market prices.
- There were growing demand for birds and poultry mash at the rural area for livestock production. The ADP hatchery unit annually produces about 8,000 day-old chicks which are sold to farmers at the age of 2 weeks at 75k each.
- There were noticeable reduction on urban drifting in the number of young school leavers drifting into towns for work. Many farmers have increased their hectarage and operations to enable their children to be gainfully employed on the family farms.
- Farmers have leant to use modern implements and have acquired a higher level of skill in farming and farm management.
- The ADP tractor service has awakened rural farmers to the use of tractors for land clearing and ridging operations. Access to the regular and timely use of tractors by rural farmers is a necessity of increased food production.

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Adejo (1983) in the study of the Ayangba ADP reported that ADP has had a positive impact on the rural farmers especially in the project areas. The project has creditably improved the farmers' lots of three main areas, access roads, supply of inputs and improved extension services. Many rural dwellers has also benefited interms of job opportunities, credit facilities and inputs to raise production.

Akanya (1989), observed that the first enclaved ADPs have aided farmers' productivity and has been known to increase the income of a few priviledge set of farmers and a highly skewed income distribution for small scale peasant farmers.

The major strategy to increase food production is to encourage the rapid up-take of improve farming techniques, which could be under taken by the extension staff and farmers education programme (Adejo 1983). A distinctive feature of ADPs, he posited in the development of rural infrastructures, closely related to agriculture and rural development, this includes construction of rural roads, dams, farm service centres and rural water supply.

Considering the important role of modern technology in rural productivity with respect to the Green Revolution in Agriculture, rural credit is a major force for rural transformation (Okafor, 1980). If credit is used to inject required capital inputs into agriculture, it is obvious that productivity will rise and the overall welfare of rural dwellers will be enhanced (Adejo, 1983). According to Anyane (1986), rural credit can be used to induce rural changes through helping to finance agricultural innovations. He posited that rural producers require loans for a variety of activities. These include the purchase of seeds, fertilizers, livestock feeds and items of farm equipment for marketing and payment of wages between planting and harvesting. The peasant small-scale producers have moderate resources for production and, therefore, need production credit more than the large scale producer (Dirven, 2004). He posited that when small scale producer adopt new technology and new husbandry practices based on better scientific knowledge, they depend on borrowed capital to a greater extent than large-scale producers.

As a form of organizing services to the rural areas, co-operatives have been officially encouraged in many spheres of rural activity, especially in agricultural marketing, production and credit (Okafor, 1983). The current trend in the organization of cooperative in the rural areas of many less developed countries has been towards the establishment of multipurpose movements embracing marketing, tariff, credit and supply of agricultural inputs (Adejo, 1983).

Looking at the impact of marketing in agricultural production, Udo (1990), stated that markets develop because of the need of the individual to barter and

thereby encouraging exchange of goods. The background to the need for exchange is of course the emergency of the division of labour which is associated with surplus farm production, Udo (1990). Thus, as an economy change from a self-sufficient and subsistence one to a commercial, markets that will facilitate the collection, exchange and distribution of commodities produced in different localities are bound to emerge (Udo 1990).

Good health constitutes an essential aspect of socio-economic welfare since it is a major component of the quality of life as well as prerequisite for high level of productivity. Rural areas generally are at a disadvantage with respect to the availability and accessibility to health services (Adejo, 1983). Rural electrification and improved sanitation also aid agricultural production, the latter is a measured of improved living standards and the former will arrest immigration of the youth, since the events in town can be brought to them in the rural areas; they can use electrical appliances, processing plants can be operated, and there will be better storage, heating and cooling more attractive conditions of farming (Okafor, 1983). In the end a much better health condition, better night-life and a better enlightened rural sector will emerge.

2.7 RURAL INFRASTRUCTURAL STRATEGY TO ECONOMIC DEVELOPMENT

The discernible trend in development economics is the gradual movement away from growth and other non-poverty oriented performance criteria toward the people, particularly rural people, as the focal point of any development strategy

(Ayoola, 2001). He went further to state that, the world approach is to launch massive attack on rural poverty, which will benefit the urban economy in the long run. In this connection, rural infrastructural build-up is construct as the primary requirement of the rural people to manifest their full economic potentials. Therefore, the rural infrastructure strategy is only a subject of the overall economic development strategy, which in turn is an integral part of the general economic development strategy of the developing countries. In essence, the rural infrastructure strategy is not an alternative to other poverty alleviation strategies of economic development, but an extension and natural revolution.

According to Idachaba (1989), the general notion underlying the rural infrastructure strategy is that; it is difficult for the rural sector to contribute significantly to the economic progress in the absence of basic facilities that also enhance their living standards. The facilities are generally described under the three categories:

1. Rural physical infrastructures;
2. Rural social infrastructure and
3. Rural institutional infrastructure

Igbozurike (1982) refers to rural infrastructures as social services which he refers to as those amenities and facilities which have life-supporting, aesthetic, recreational, or functional value and in the provision of which financial cost-benefit rationalization is not a principal objective. He classified social services into three categories as:

- physical and structural services;
- Advisory and instructional services and
- composite services.

Ekong (2003) refers to infrastructures as those underlying as basic physical, social and institutional terms of capital which enhance rural dwellers' production, distribution and consumption activities and ultimately the quality of life. Often these include structures which cannot be privately provided and so call for large capital outlay on the part of government.

2.8 THEORETICAL ISSUES ON STANDARD OF LIVING IN RURAL COMMUNITIES

One of the major problems confronting most developing countries is how to improve the standard of living in the rural areas and thus stem the unprecedented flow of migrants from rural to urban areas (Kuntz, 1968).

This assertion assumes a high degree of inequality in the standard of living enjoyed by rural and urban dwellers. The dimension of this inequality is wide-ranging from income differentials to the quality of food to housing, clothing and access to services such as education, health, postal, communications, transportation, recreation and leisure. This situation leads to a polarized society with serious detrimental consequences. Kuntz (1968), sums it up as "the polarization into a dual society (educated urban/rural illiterates) is associated with the evils of rural stagnation and under-employment and mass migration into urban areas".

In describing conditions in rural areas and in developing countries, Meier (1964), asserts that most of the world remains poor, still suffering from inadequate 'standard of living' and that 40% of the people in less developed countries live in condition of "absolute poverty" – a condition of life so degraded by disease, illiteracy, malnutrition and squalor as to denying its victims basic human necessities. "Whatever the controversy over the appropriateness or inappropriateness of expression such as "underdeveloped", "undeveloped", "less developed", "developing" "poor" and "backward". One thing is incontrovertible, that poverty, hunger, unemployment and squalor predominate in countries so designated (Edozie, 1980). His division of the society into three groups the under-sufficiently group, sufficiency group and over-sufficiency group denotes an unsatisfactory condition in which the majority of people in developing countries live in conditions of insufficiency in terms of living standards. This majority or the masses inevitably consist of the rural dwellers. Many rural communities in Nigeria are isolated due to the barriers of bad transportation and have very little access to health services, education, facilities, postal services, clean drinking water and electricity supply. This have led to an unprecedented move to the urban areas which stand out as "Island" of wealth, affluence and success–of at least in the view of rural dwellers. This migration has resulted in massive urban problems for various government in the country. It is tempting to assert that the growing urban problems due to rural-urban migration and the threat it poses to various power

groups, rather than any major humanitarian concern for the rural dwellers, are the cause of the present stampede to develop rural areas (Mabogunje, 1992).

According to Mabogunje (1990), in reducing rural – urban inequalities, the economic growth approach has failed because in spite of tremendous growth in the GNP of some developing countries, the life of an ordinary rural person has not changed. Indeed, it has become worse as the “oversufficiency” group achieved bursting over-sufficiency and the “sufficiency” group achieved complacent oversufficiency, while the “undersufficiency” group remained in abject or absolute under-sufficiency. To improve this situation the approach of modernization was developed.

According to Learner (1968), “modernization is the process of social change in which development is the economic component. Modernization produces the societal environment in which rising output per head is effectively incorporated” (Lerner, 1968). Developing countries embracing this approach, concentrated on building schools and other educational facilities, radio stations and mass media, health centres and postal services, better housing and recreational facilities. All this had a consumption dimension. “To be modern meant to endeavour to consume goods and services of the type manufactured in advanced industrial countries” (Lerner, 1968). However, modernization bred its own needs and desires in those exposed to it. In particular, the enhanced appetite for consumption of certain good ‘modern’ goods and services which it stimulated created considerable disaffection with traditional conditions especially in rural

areas (Mabogunje, 1990). This situation continues to intensify rural-urban migration with increasing pauperization of those left behind. More than ever before, development as modernization has exacerbated income inequalities between individuals, between regions of a country and between urban and rural areas. Most underdeveloped countries came to exhibit more sharply the picture of a small minority of extremely wealthy individuals living off, as it were, the backs of a large poverty-stricken and destitute majority (Mabogunje, 1990).

According to Ayoola (2001), the debate about standard of living in rural areas of Nigeria has followed the colonial scheme, in which colonial masters, comparing living conditions in colonial territories with home countries quickly concluded that we must be inferior and backward. They concluded that it must be as a result of educational, religious and technological backwardness. Their efforts of re-organizing the society- introduction of new consumption patterns, educational policy, economy and western culture – was no more than an attempt ‘to raise the standard of living of poor primitive and unfortunate natives’ to ‘acceptable levels’.

More humanitarian approaches to improve the lots of ruralites has been developed – the “social justice” and the “basic needs”. The social justice approach is a tacit agreement among many planners that reduction of inequalities should be one of the main aims of development policy (Meier, 1964). The approach is summarized thus as “A process of economic growth which worsens social and economic equalities is elitist and indefensible. It is growth without equality. It is

against the ideas of social justice or distributive justice which are broader in scope than the concept of legal and political justice. Social justice goes beyond this, proclaiming the idea of a fair distribution of economic and social benefits as well as costs” (Meier, 1964).

The Basic Needs Approach, supported by the World Bank and International Labour Organization (ILO) seeks to meet the basic needs of the entire population. Streeten and Burki (1976) classified basic needs into three:

- a. Basic consumption goods—food, clothing and shelter to which everyone is entitled
- b. Basic services—such as education, health, clean water supply, transportation and communication services to which everyone should have access and
- c. The right to participate in the making and implementing decisions which affect one’s own development.

It is assumed that provision of productive employment is an essential component of the basic needs approach, partly as a means of earning income which in turn can be used to purchase basic goods and services. This is concerned with the Question of Equity and social justice— i.e. that every individual is entitled to those basic requirements as part of his or her rights as a member of society. According to Ghai (1977), the final goal is an egalitarian society, at both the national and international levels. Its basic principle is the recognition that each human being, simply because of his existence, has inalienable human rights regarding the satisfaction of basic needs that are essential to complete and active

incorporation into his cultures nothing short of the provisions of basic needs can solve the rural problem. However, there are variations in standards, differences in socio-cultural objectives and problems in ranking basic goods and services. The inadequacy of an etic perspective is reflected in the above dilemma and the fact that basic needs to sustain life vary between geographical regions, cultures, level of technological development and period of time, one can prescribe an adequate amount of food or style and quality of housing, or income level which is Universally acceptable to everybody. Streeten and Burki (1978), proposed three levels of basic needs to be met for successful implementation. They are basic needs for;

- a. basic survival – enough to keep alive
- b. continued survival – comprises a minimum of food, water, protection from fatal diseases and adequate shelter.
- c. productive survival – more food, better shelter, and other social services backed by adequate income to pay for them

The foregoing points from the requisite frame, around which the level of standard of living can be built. Since it is difficult to establish an objective level of standard, the approach, through which societies can define their present satisfaction level and propose their own basket of basic – goods and services designed to satisfy their own yearnings is proposed. The practice so far, has been for government to define its development aims and policy with little reference to the people whose lives will be affected.

The waste component of this approach is incalculable, as a lot of money and effort is expended on plans that may not meet the yearnings of particular societies. To build a basic need bundle from which a proper planning policy and strategy can be built, a participatory approach is advocated, whereby people being planned for help government in defining present standard of living in rural areas as ruralites see it as jointly building a 'standard' which will benefit the people. Once started, this will be a continuous exercise since the achievement of certain standard creates yearnings for higher ones (Ayoola, 2001). It is argued that there is no objective standard of living which can meet the definition of rational decision-making as far as desired state of living is concerned. Such goals or yearning come under the concept of subjective rationality. This is because, from a phenomenological point of view, we can only speak of rationality to a frame of references. This frame of reference – desired standard of living in this case-results from the past experiences and present awareness levels of individuals or communities concerned. In making choices that meet 'satisfactory' standard, the 'standard' itself is part of the definition of the situation – which can be seen in different ways depending on the angle or perception (Atte, 1974). Setting standards therefore involves subjective probability which is derived from the basic behavioural hypothesis that human yearnings and decisions results from a tendency to maximize expected utility (Atte, 1974).

Each group, the rural dwellers inclusive, seeks to exploit what it considers a "utility" on the basis of its desire for ordering its life and organizing its society.

According to Edozie (1980), man is driven by ‘rage for order’. Whether in the industrial west, or in developing Africa, Asia or Latin America, man seeks to make sense of his surrounding and locate himself within it. He organizes it and endows it with meaning. He is not governed by a detached contemplative apprehension of the world. He is rather concerned with what exists, and what happens around him in terms of his perception on image, his momentary desires and his long-range ideals about the type of life he would want to live. Although this schema is the same, world-wide. The detailed content differs from society to society. To take a particular standard, and impose it on a society as desirable is the greatest insults to the recipients, for it assumes that the later are incapable of defining what they want (Idachaba, 1989).

2.9 LEEMP AS A POVERTY TARGETED INTERVENTION USING THE COMMUNITY DRIVEN DEVELOPMENT (CDD) APPROACHES

The complex inter-linkaged between poverty and environmental degradation could best be understood within the framework that rural dwellers rely completely on natural resources for their livelihood and the existence of any form of stress on these resources is bound to translate to reduced earnings (LEEMP,2006). It is within this complex inter-relationship that a viable relation could be found for reducing the incidence of increasing poverty. Similarly, efficient and sustainable use of natural resources will require civic utilities and infrastructures such as link roads and markets at the community level.

Considering that LEEMP seeks to improve the environment and enhance rural livelihood as well as empower Government at the lowest level to deliver services, the project is a veritable vehicle for a sustainable poverty reduction strategy (Nma, 2005).

The project is anchored on community driven approaches to development which entails that communities prioritize their own development needs through a participatory process. The resulting priorities would revolve around pure goods (schools, health centers, link roads and portable water), impure public goods (soil, erosion control, soil conservation, e.t.c.) and alternative income generating schemes (Nma, 2005).

The participatory process with an emphasis on environmentally sound and socially inclusive planning and decentralization of prioritization, fiscal and implementation eternity directly to communities will provide additional incentives for community participation and ownership of development initiatives (LEEMP 2005).

2.9.1 Targeting and Targeting Mechanism

The LEEMP covers nine states which are Adamawa, Bauchi, Bayelsa, Benue, Enugu, Imo, Katsina, Niger and Oyo. According to LEEMP (2005), state were chosen based on the following criteria.

- At least one state should be from each of the six geographical zones;

- The states identified should be experiencing high levels of natural resource degradation wherein the populations are already experiencing, or have begun to implement natural resource intervention.
- States should be willing to establish and fully fund salaries of at least 10 full time Multi-disciplinary Facilitation Teams (MFTs); each comprising four experienced government employees, drawn from relevant state line ministries of water resources, Environment, Agriculture and Rural Development;
- States should be willing to adopt an open, transparent, objective and competitive selection process for identifying members of the MITs;
- States should be willing to adopt a community driven approach to integrated natural resources management involving the decentralization of decision-making responsibility and control and authority over financial resources to beneficiary communities;
- States should be willing to actively involve and build capacity of Local Government Areas;
- States should be prepared to decentralize authority to LGAs for approving micro-project proposals emerging from beneficiary communities;
- States with established NGOs that have experience in facilitating community-based natural resources management should be given priority;

- States already identified for the World Bank Supported community-Development program should not be eligible for inclusion in the pilot phase of LEEMP since that program will also be targeting rural population.

2.9.2 Local Government Selection

In each participating state, nine LGAs would benefit from the project. Three of these will be selected based on a set of weighted indices. The remaining six shall be chosen based on the result of a state wide LGA scored assessment process, with two LGA per senatorial district to ensure equitable distribution in the states. The number of participating LGAs shall not exceed nine during project life. This is to ensure systematic targeting for effective impact and benefits. The number of communities within each participating LGA shall be ten and this could be increased in multiples of ten (10) or any other number that could be accommodated by project resources.

2.9.3 Selection of Communities

The criteria for community selection shall include level and access to physical/social infrastructure and level of environmental management as follows:-

- Lack of functional portable water within 1km;
- Lack of functional government schools within 2km;
- Lack of functional primary health care facility within 5km;
- Lack of motorable access and/or feeder roads (Navigable water ways for the Riverine areas);

- Lack of active market centers within 5kms. In addition, other considerations would include
- Social harmony/cohesion;
- Number of self help projects executed;
- Distance from nearest urban/semi-urban center, and
- Nature of primary economic activity.

2.9.4 Micro-project categories of LEEMP

The LEEMP may not be able to provide directly needed support for all micro-projects hence core intervention areas are identified for guidance and proper targeting (LEEMP, 2005). The list is, however, not exhaustive especially as the communities are to decide the micro-projects they desire to implement. Communities are to ensure micro-projects are selected through participatory process and only positive list of micro-projects would be funded.

The following constitutes categories of eligible micro-projects of LEEMP:-

(1) Physical infrastructure

- Feeder roads; construction and rehabilitation,
- Culverts, bridges, drifts and stock routes,
- Boreholes (with or without pumps).

(2) Social infrastructure

- Health facilities
- Rural electrification

- Construction and rehabilitation of primary and secondary schools; dormitory blocks and classrooms, staff quarters, laboratories,
- Ventilated improved pit (VIP) toilets
- Television viewing centers
- Civic centers
- Water transportation (provision of engine boats, speed boats, etc.).

(3) Economic infrastructure

- Modern markets
- Vocational training centers (skill development centers)
- Community storage facilities
- Community agro-processing facilities
- Cattle trough
- Livestock water pools

(4) Environmental and Natural Resources management

- Soil conservation/erosion control flood control
- Agro-forestry
- Desertification control
- Drainage systems
- Decentralized nurseries raising seedlings of economic trees, indigenous tree/grass species and medicinal plants.
- Homestead fish production using indigenous species
- Small-scale post-harvest infrastructure e.g. groundnut oil expeller

and sheabutter extraction units.

- Beekeeping (apiculture)
- Sustainable agriculture using crop rotation, soil moisture conservation and other agronomic practices to increase yield.

2.9.5 Financing Method

Depending on the type of micro-project, different levels of community contribution has been developed ranging from 10% to a maximum of 30% (LEEMP, 2005). The percentage community contribution is as follows:

- 10% cash and/or kind for infrastructure and social services
- 30% cash only for economic and private goods;
- 15% cash and kind for semi-public goods;
- 0% for advisory services, and
- 0% for capacity building and environmental management

Market prices are used for the valuation of goods and services contribution of communities.

2.10 SOCIO-ECONOMIC INDICATORS AND QUALITY OF LIFE IN RURAL COMMUNITIES

Ever since the industrial revolution, the rate of urbanization, modernization and industrialization have been increasing at alarming rates, particularly in capitalist societies. As a result, national well-being became associated mainly with economic performance and technological breakthrough. Consequently, progress has been measured mainly in terms of growth and in the GNP and per

capita income of the countries, with very little reference being made to the quality of life (Smith, 1973).

While national pride has continued to be sought in increasing the degree of industrialization and urbanization, very little attention has been paid to their externality effects such as unemployment, accidental deaths, environmental pollution, social discrimination, crime, social disorganization.

According to Carlisle (1972), four types of social indicators can be identified: these are informative indicators, predictive indicators, problem-oriented indicators and problem evaluation indicators. The first type, informative indicator is used essentially to describe social conditions of a given point in time; predictive indicators on the other hand, are informative indicators which are linked to a particular theory or model of social change, while problem-oriented indicators are quantitative measures of particular problems and are designed to form the basis of public policies; problem-evaluation indicators are essentially monitoring devices for assessing the progress and effectiveness of a particular policy goal.

In defining social indicators, Wilcox (1975), stated that social indicator is a generic term for a number of over-lapping concepts. It is not an easy task to separate social indicators from economic indicators, hence many social scientists aggregate both and term them socio-economic indicators. Thus some social scientists maintain that any set of statistics measuring the satisfaction of the needs and wants of the population are social indicators. Others have defined social indicators as statistics of direct informative interest which facilitate concise,

comprehensive and balanced judgement about the condition of a major aspect of the society (Baver, 1966).

In all cases, a social indicator is a direct measure of well-being, and is subject to the interpretation that if it changes in the right direction, while other things remain equal, things have gotten better or people are better off (Baver, 1966). In this vein, Baver (1966) sees social indicators as direct and or surrogate measure of some goals or parameters considered to be important in the development process.

A major task in attempting a comprehensive list of social indicators for rural Nigeria will be to identify the main socio-economic circumstances and aspirations of rural Nigerians. The principal areas of concern relevant to measuring rural development include education, health, shelter, employment and consumption patterns and social stability (Okafor, 1983).

Missing in this list are most of those items which rural communities often present to visiting politicians or government officials. Such items often include roads, bridges, water supply, electricity and similar physical infrastructure to which community members will boldly point as indices of rural development and modernization.

2.11 THEORETICAL FRAMEWORK

Theory is a set of abstract and logical composition which attempts to explain relationship between phenomena based on untested assumption about

realities. Social theories serve a general principles put forward to represent facts and events of social realities in the society. The theoretical framework for this study is social change theory with specific emphasis on the social impact assessment perspective. This is expected to form the basis for the empirical analysis of the proposed study.

2.11.1 Theoretical Model

A model is a construction that shows the relationship existing among variables and most often, these relationship are depicted schematically or mathematically (Asika, 2001). Here, the model starts with the projects embarked upon by the LEEMP to the rural communities as independent variables. It is expected that the involvement of these variables will eventually create influence on rural transformation. Thus figure I represents the model.

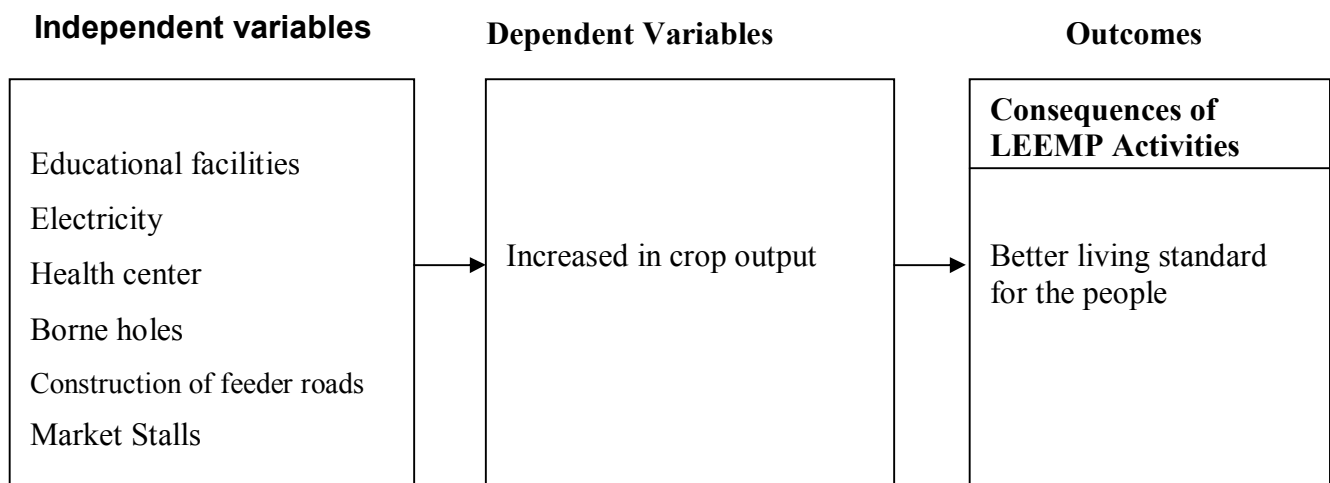


Fig. 1: Model of LEEMP on Rural Development

2.11.2 Conceptual Framework

2.11.3 Social Change

Various scholars have defined social change in many ways. Social change is the process by which alteration occur in the structure and functions of a social system (Rogers, 1995). According to Moore (1985), social change is the significant alteration of social structure (i.e. patterns of social action and interaction), including consequences and manifestations of such structure embodies in norms, values and cultural products and symbols. Social change is also defined as changes in social structure and social relationship (Chitamber, 1973). Social change is the change that occurs in human societies i.e. the social system that may be a social group, a community, a town, city or even a nation. A change in values, ideas/mores, roles, habits of people and culture is considered as social change. Changes can be planned or unplanned. Planned changes involve direct human intervention in directing the change towards predefined goals. Example is government policy like land reform. Unplanned change on the other hand includes accidental changes that happen suddenly and are beyond human control e.g. earthquakes, flood (Ekong, 2003). Social change takes the following forms according to Moore, (1985).

- Modification in human attitude and behavioural pattern as a result of education.
- Alteration in social condition as a result of changes in the policies of a social organization.

- Effecting reforms in major legal and functional system of a society e.g. land use Decree or fertilizer distribution policy.
- Change in material culture.

In this case, social change denotes the planned changes. The LEEMP is the interventionist aimed at transforming the rural communities. In this study it implies outcomes.

2.11.4 Social Impact Assessment (SIA) Perspective

There are three areas in any social impact assessment (Moore, 1963) these are socio-cultural feasibility, spread effects and distribution impact. Socio-cultural feasibility should ascertain that the assessment is based on accurate understanding of the social organization of production activities, that is it should find out how the intended beneficiaries have access to make use of and exercise control over natural and production resources available in the area. Spread effects refer to the likelihood that the new technology introduced to the initial target group will be diffused among others. Distribution impact is concerned with the differential impact of technology and the distribution of benefits/burden upon different categories of people. That is, it should find out who benefits from technology and in what ways. Distributional impact components is the framework for this study. This deals with the investigation of the changes that occur in the life of the people as a result of a project. Sanginga (1999), stated that impact analysis means finding out how far the introduction of an improved technology been successful in meeting socio-economic objectives and how well improved agricultural

technology have satisfied the needs and priority of households and other units in the target population.

In this case, social impacts are changes that have occurred in rural communities at large as a result of LEEMP. Emphasis however is solely on positive impact on rural transformation. The indicator of impact of household level include income, food security, material welfare and human capital development. At the farm level the impact indicators include increase in output, use and allocation of resources, land use expansion and input use. At the community level impact can be seen in the changes in attitudes, values, innovativeness, labour and market expansion and sustainability of farm produce.

CHAPTER THREE

3.0 METHODOLOGY

3.1 STUDY AREA

The study was conducted in Edati and Katcha Local Government Areas (L.G.A.) of Niger State. The L.G.A. are both located in the Guinea Savanna ecological zone of Nigeria. Niger state lies between latitude 8° and 11°20'N and longitude 4°30' and 7°40'E. It covers a land area of about 84,22,455km². Its total arable land is 80%, representing about 7 million hectares. About 71% of the State's population are mainly farmers while about 29% are involved in other occupations. The state has a mean annual rainfall of 1225mm to 1500mm for six months as from March to September which supports the cultivation of many crops (Gana, 2000).

Agricultural crops grown are mainly cereals (sorghum, millet,) roots and legumes supplemented by tree crops, small stocks and river fishing. The bush fallow type of cultivation is practiced. Small-holders employ hoes, machetes and axes in land cultivation. While small herds of cattle are in the hand of the Fulani herdsmen, who keep goats, sheep and poultry on a small scale. Fishing is an important industry along the river Kaduna and other small ponds, swamps and flood areas, which provide good fishing grounds.

3.2 SAMPLING TECHNIQUE AND SAMPLE SIZE

A multistage sampling technique was used in the selection of the respondents. Two Local Government Areas out of six LGAs benefiting from LEEMP activities, were purposively selected in the first stage. The second stage involved random selection of two villages each out of the 20 villages that have benefited from the LEEMP projects in the two LGAs. The third stage involved the selection of 2 villages each from the 2 LGAs on the basis that they have not benefited from the LEEMP projects. In all, eight villages were used for this study. The inclusion of the non-benefiting villages was to examine the comparative advantages which the benefiting villages have over the non-benefiting villages. Ten percent (10%) of the population of each village was randomly selected as a sample size, giving a total of one hundred and twenty respondents as follows:

Table 1: Sampling Technique and Sample Size

		Beneficiary		Non-beneficiary			
LGA	Village	Population	Sample Size	LGA	Village	Population	Sample Size
Edati	Rokota	156	16	Edati	Edati	142	14
	Sakpe	205	21		Emindayisah	128	13
Katcha	Ebba	120	12	Katcha	Kaji	125	13
	Kparaka	153	15		Gboyako	156	16
TOTAL		634	64			551	56

Source: Fieldwork, 2010

3.3 METHOD OF DATA COLLECTION

Primary and secondary data were used for the study. The primary data were obtained from the field using structured questionnaire and Focus Group Discussion while the secondary data were obtained from relevant literature such as World Bank reports, FAO reports and other agencies including unpublished research theses and dissertations, scholarly journals, scientific and technical reports. Questionnaires were used to collect information on the farmers demographic and socio-economic characteristics e.g. educational level, farm size, farm income, labour, membership of association, household size, off-farm activities (processing, marketing and transportation) were taking into consideration. Other aspects like material possessions/assets and several expenditure were investigated to determine the living standard.

3.4 MEASUREMENT OF VARIABLES

3.4.1 Dependent Variables

Increase Crop Output: This means the intensity of agricultural production which is indicated by the use of improved inputs and the operational techniques to record high yield per hectare. Rural roads cause accelerated delivery of farm inputs, reduce transportation costs and enhance production efficiency. High outputs in terms of quantity harvested (bags) was a major indicator.

3.4.2 Independent Variables

1. **Educational facilities:** Rogers (1997) stressed that education is not only an important determinant of knowledge of an innovation but also an instrument for correct use of innovation for profitability. Educational facilities were measured by the number of classrooms provided to the benefiting communities.
2. **Health Facilities:** Good health constitutes an essential aspect of socio-economic welfare since it is a major component of the quality of life as well as a pre-requisite for high level of productivity. Health facilities were measured by the number of dispensaries and health centres provided in the communities.
3. **Market Stalls:** A market is a place where sellers and buyers assemble to exchange goods and services (Igbozurike, 1983). Market stalls are the locked up shops and also open constructed spaces for the collection of the farm production, where sellers and buyers meet to exchange goods. Market stalls were measured by the number of stall constructed for the benefiting communities.
4. **Feeder Roads:** Roads accelerated delivery of farm inputs and evacuation of farm produce from the farm, reduce transportation costs and enhance spatial agricultural production efficiency. Feeder roads were measured by the number of roads and linkage within the communities in the study area.

5. **Irrigation Facilities:** Irrigation ensured water supply and stabilize food production by protecting the farm production system against uncontrollable and undesirable fluctuations in domestic food production (Ayoola, 2001). Irrigation facilities were measured by the number of engines and pipes for pumping water from the streams, rivers and ponds to the farms especially for rice farming in the study area.
6. **Electricity:** Electricity in rural areas reduce migration of the youth from the rural areas to the urban centres since the events in town can be brought to them in the rural areas. They can use electric appliances, processing plants can be operated and living standard improved. The usage of electricity was measured by the number of processing machines using electricity for operation in the study area.
7. **Boreholes:** Water is one of the most important basic needs of every household. The provision of clean drinking water for human and animal is of vital importance for maintaining the health of rural people and livestock. This was measured by the number of boreholes provided to the communities.

3.4.3 Expected Outcome of LEEMP Activities

- (i) ***Improved Standard of Living:*** It is assumed that provision of social amenities to the rural dwellers will enhance their living standard. To measure the level of living standard with precision is very difficult as perceptions differ in various areas among diverse societies. However, income, i.e. income earned as

well as consumption (expenditure) and materials possession by the household was used to measure standard of living.

(ii) *Creation of employment:* The provision of electricity create job opportunities other than farming and it also enhances the processing of farm produce. This was measured by the number of the grinding machines, milling machines and welding machines in the communities studied. Also the number of the people involved in such businesses was recorded. Also feeder roads enhance the marketing of the agricultural produce. Feeder road was measured interms of the number of the transporters in the communities studied.

3.4 ANALYTICAL TECHNIQUES

Descriptive statistics such as mean, percentage and frequencies were used to achieve objectives 1, 2 and 5. Multiple linear regressions were used to determine the relationship between the variables in order to achieve objective 3. Z-test was used to achieve objective 4.

The multiple linear regression model is depicted as:

$$Y_i = b_0 + b_1 X_{1i} + b_2 X_{2i} + b_3 X_{3i} + b_4 X_{4i} + b_5 X_{5i} + b_6 X_{6i} + \dots + E_i \quad (1)$$

Where:

- Y = LEEMP Activities
- b₀ = Constant
- b₁-b₅ = Regression coefficients
- X₁ = Educational facilities
- X₂ = Health facilities

- X₃ = market stalls
- X₄ = Feeder roads
- X₅ = Irrigation facilities
- X₆ = Boreholes

To achieve objective 4, the z-test statistics was used and the model was expressed as:

$$Z = \frac{\bar{X} - m}{S_{\bar{X}}} \quad (2)$$

Where:

- Z = the calculated value of Z
- \bar{X} = Computer sample mean
- m = theoretical mean of the population
- S_x = Standard error of the mean
- Z = Significant at .05, two – tailed test (1.96).

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 SOCIO ECONOMIC CHARACTERISTICS OF LEEMP BENEFICIARIES AND NON-BENEFICIARIES

The socio economic characteristics examined in this study included age, educational level and occupation of the respondents. Table 2 represent the distribution of the respondents according to their socio-economic characteristics.

4.1.1 Age of the Respondents

Age distribution of the respondents was found to be between 29 and 51 years. The mean age of the beneficiaries was 46 years while that of non-beneficiaries was also 45.5 year. The mean age of beneficiaries and non-beneficiaries had no significant variation. However the range of the ages of the beneficiaries was between 29 – 51 years and that of non-beneficiaries was between 29-50 years.

Table 2 shows that about 36% of the beneficiaries were within the ages of 41-50 years while about 58% of the non-beneficiaries fell within that range. The result implied that both the beneficiaries and non-beneficiaries fell within the same age bracket.

4.1.2 Educational level of the respondents

In terms of the educational qualification, the level of education for the beneficiaries of the LEEMP programme ranges between non-formal education to tertiary education. About 31.25% of the beneficiaries had non-formal education

while 41.07% non- beneficiaries had non formal education. About 39.06% of beneficiaries had primary education, while 35% of the non- beneficiaries had same. The result also showed that 23.43% of beneficiaries had secondary schools while 23.21% of non-beneficiaries had same. Only 6.25% of the beneficiaries had tertiary education and no any member of non beneficiaries had tertiary education. This result shows that majority of the respondents had low level of education. This implies that the need for education for increase access to useful information about LEEMP activities may be low. The respondents may not be able to interpret and analyze the LEEMP programme for increase production.

4.1.3 Occupational Distribution of the Respondents

In terms of occupational distribution, majority of the beneficiaries and non-beneficiaries were predominantly farmers. From Table 2, 80% of the respondents in the benefiting communities were farmers while 89.2% of the respondents from the non-benefiting communities were farmers. Members of the benefiting communities have 6% of them involved in trading while 5.3% of the respondents of the non-benefiting communities were involved in trading. The study also revealed that 3% of the respondents in the benefiting communities have craft as their occupation as against 1% of the respondents in the non-benefiting communities. The result also revealed that 5% of the respondents in the benefiting communities had building as their occupation, while 3.5% of the respondents in the non-benefiting communities were involved in building as an occupation. Another 3% of the respondents in the benefiting communities involved in tailoring

as an occupation and non from the non-beneficiaries. The findings in table 2 also shows that 3% of the respondents in the benefiting communities were civil servant and non from the non-benefiting communities. This result agrees with the finding of Ekong (2005), that majority of the rural populace are predominantly farmers.

4.1.4 Household Size of the Respondents

In terms of household size of the respondents, the study shows that majority of the respondents in both benefiting and non-benefiting community had 1-5 persons as household size. The benefiting community members of LEEMP programme had 54.6% of 1-5 persons in the household. While 68% the non-benefiting community members had 1-5 persons in the household. The study also revealed that 40.6% of the LEEMP benefiting community members had 6-10 persons as their household size while 14% of the respondents in the non benefiting community had 6-10 persons in the household. The table also shows that 4.6% of the respondents in the benefiting communities had above 10 persons as household size whereas 7% of the non-benefiting communities members had more than 10 persons as their household size.

4.1.5 Farm Size

The findings in Table 2 shows that 79.6% respondents in the benefiting community of LEEMP had farm sizes of between 0.5 – 5.0 hectares while 87.5% respondents from the non-benefiting community had farm size of between 0.5 – 5.0 hectares. Those with farm size of 6.0 – 10.0 hectares from the benefiting community accounted for 15.6% while 9% of the respondents in the non-

benefiting communities had farm size of 6-10 hectares. The study also revealed that 4.6% of the respondents in the benefiting communities had 11-15 hectares of farm size as against 3.5% of the respondents in the non-benefiting communities. This shows that majority (79.6%) of the respondents were small holders.

4.1.6 Income of the Respondents

Table 2 shows that 31.2% of the beneficiaries of the LEEMP project had an annual income of N10,000.00 while 53.57% of non-beneficiaries of LEEMP had N10,000.00 as their annual income. The result also indicated that 39% of the respondents in the benefiting communities of LEEMP had an annual income level of between N10,500-N20,500.00 per annum. While 32.14% of the non-benefiting communities had annual income of N10,500-N20,500.00 per annum. The table further revealed that 15.6% of the respondents in the benefiting communities had income level of between N21,000.00 – N30,500.00 per annual as against 8.92% respondents in the non-benefiting communities. About 12.5% of the respondents in the benefiting communities had an income level of N31,000-N40,500.00 per annum while 5.35% respondents in the non-benefiting communities had the same income level of N31,000-N40,500.00 per annum. It is noteworthy that only 1.5% respondents in the benefiting communities had an annual income level of N40,500.00 and above while non respondent from the non-benefiting communities had such. This result agreed with Ekong (2003), that majority of the rural populace have very low income level which greatly affect their agricultural production.

Table 2: Distribution of Respondents According to Socio-economic Characteristics:

Characteristic	Beneficiaries		Non- Beneficiaries	
	Frequency	%	Frequency	%
Age (Years)				
29 – 40	21	32.8	19	33.93
41 – 50	23	35.94	20	35.71
51 – above	20	31.25	17	30.36
Total	64	100	56	100
Education				
Non-formal	20	31.25	23	41.0
Primary	25	39.06	20	35.71
Secondary	15	23.43	13	23.21
Tertiary	4	6.25	0	0
Occupation				
Farming	51	79.68	50	89.2
Trading	4	6.25	3	5.3
Craftwork	2	3.12	1	2.0
Building	3	4.68	2	3.5
Tailoring	2	3.12	0	-
Civil service	2	3.12	0	-
Household size				
1-5	35	54.6	38	68
6-10	26	40.6	14	25
>10	3	4.6	4	7
Farm size (ha)				
0.5-5.0	51	79.6	49	87.5
6.0-10.0	10	15.6	5	9
11.0-15.0	3	4.6	2	3.5
16.0-20.0	0	-	0	-
Income/Annum (N)				
10,000.00	20	31.2	30	53.57
10,500-20,500	25	39.0	18	32.14
21,000-30,500	10	15.6	5	8.92
31,000-40,500	8	12.5	3	5.35
>40,500	1	1.5	0	-
Total	64	100	56	100

4.2 PHYSICAL AND SOCIAL INFRASTRUCTURE IN THE STUDY AREA

The result in Table 2 shows that there were 4 primary schools in the benefiting communities while non-benefiting communities had 3. The result also

indicated that benefiting communities had two secondary schools while non-benefiting communities had non. The result revealed that there were 4 dispensary/clinics in the benefiting communities while non-benefiting communities had only 1. The Table indicated that benefiting communities had 6 boreholes and non-benefiting communities had 3. On electricity the result shows that 4 communities of the beneficiaries had electricity and non-benefiting communities had non. The result further revealed that there were 3 feeder road in the benefiting communities linking them to other communities, while non-benefiting communities had 1. All the benefiting communities had organized market while non-benefiting communities had only 1.

The result of the analysis shows that beneficiaries had more physical and social infrastructure than non-beneficiaries. The result agreed with Table 2 which shows that beneficiaries had formal education than the non-beneficiaries. Also the presence of infrastructure could be the reason while beneficiaries are engage in other occupations other than farming. This is inline with Igbozurike (1983), that rural infrastructure create employment for rural dwellers.

Table 3: Distribution of Respondents According to Available Physical and Social Infrastructure

Infrastructure	Beneficiaries	Non beneficiaries
	Frequency	Frequency
Primary school	4	3
Secondary school	2	-
Dispensary/clinics	4	1
Boreholes	6	3
Electricity	4	-
Feeder roads	3	1
Motor parks	3	1
Organized markets	4	1
Recreational centres	1	-
Place of worship	4	4

Source: Field Survey, 2010

4.2.1 Availability of some rural institutions

The result in Table 4 shows that 77.4% of the respondents belonging to the LEEMP benefiting communities indicated the existence of cooperative society in their communities while 22.58% respondents in the non-benefiting communities indicated same. On extension services, 60.78% of the total respondents belonging to the LEEMP benefiting communities indicated their access to extension services while 39.2% members of the non-benefiting communities had the same. The table further revealed that, out of 75 respondents in the study area, 60% respondents in the LEEMP benefiting communities had access to credit facilities as against 40% respondents in the non-benefiting communities. The Table also shows that 90% of the total respondents belonging to the benefiting communities had access to farm supplies and equipment while 9% from the non-benefiting communities indicated same.

This results agreed with Igbozurike (1983), that provision of physical and social infrastructures to the rural communities will give room for a viable rural institutions such as extension services and establishment of farm supplies/ equipment.

Table 4: Distribution of Respondents According to Available Rural Institutions

Infrastructure	Beneficiaries		Non Beneficiaries		
	Frequency*	%	Frequency*	%	
Co-operative society	48	77.41	14	22.58	62
Extension services	31	60.79	20	39.21	51
Credit facilities	45	60	30	40	75
Farm supplies equipment	20	90	2	9.0	22

* Represent multiple responses

4.3 IMPACT OF LEEMP ACTIVITIES ON CROP OUTPUT

Focus Group Discussion was used to capture this, community leaders, Women, youth (boys and girls) were involved in providing information about the activities of LEEMP and their perceived impact on the agricultural out-put in the communities.

The result of the Focused Group Discussion on the impact of infrastructures as provided by the LEEMP shows that the provision of schools, clinics, boreholes, motorable roads and organized markets exert some impact on agricultural production of the respondents in the study area. The result revealed that the benefiting communities in the study area had both positive and negative impact in terms of agricultural activities. The impact of LEEMP activities on agricultural out-put as determined by the provision of schools in the various communities, the

result revealed that the provision of schools in some communities had negative impact on the agricultural out-put. This is due to the increase number of pupils and students enrollment into the schools. This has led to the reduction in total area under cultivation and hence reduce the quantity of the produce harvested by the farmers.

The result further revealed that the benefiting communities has access to dispensaries very close to them there by contributing to good health which invariably enhanced their agricultural activities. The construction of 43km feeder road was provided to one of the benefiting communities. The benefactors show that the presence of this road led to increase in the vehicular activities in the area. It also causes the accelerated delivery of the farm inputs, reduces transportation costs and enhances the evacuation of the farm produce from the farm to the market. The result further revealed that the provision of boreholes resulted to the availability of supply of good quality water to livestock and domestic use and to some extent used for backyard vegetable production.

Organized markets; markets are places where sellers and buyers assemble on specific days to exchange goods and services. Small scale establishment which predominate the commerce of rural communities in the study area are carried out in the market places. The construction of more market stalls in the communities of the study area has reported to have increased farmers production capacity. Thus, it has increased economy changes from self-sufficient and subsistent production to a commercial production. This is because the construction of more stalls in the

organized markets facilitated the collection and distribution of farmers produce without much problems which invariably encourages more production. The report further revealed that the expansion of this markets has led to the involvement of long distance traders coming to a local market for exchange of goods and services. This findings agreed with Udo, 1982.

The result of the Focus Group Discussion (FGD) indicated that the provision of electricity in the study area led to the establishment of more rice, and sorghum milling machines to carter for the high produce of rice, maize and sorghum in the study area as a result of increase in production.

Table 5: Distribution of Respondents Based on Accessibility to some Rural Physical Infrastructure

<i>Name of infrastructure</i>	<i>Beneficiaries</i>		<i>Non-Beneficiaries</i>	
	<i>Frequency*</i>	<i>(%)</i>	<i>Frequency*</i>	<i>(%)</i>
Primary schools	64	100	48	85.71
Secondary schools	61	95.31	28	50
Dispensary clinics	52	81.25	19	33.93
Electricity	35	54.69	10	17.86
Feeder roads	41	64.06	28	50.00
Organized markets	21	32.81	12	21.43

*** Multiple Responses**

Source: farm survey, 2010

4.3.1 Respondent Accessibility to some Farm Inputs

The result in Table 6 shows that about 21% of the beneficiaries had access to pesticides while 55.5% of the non-beneficiaries had access to same. Accessibility to fertilizer was 32.1% for the beneficiaries and 18.5% for the non-beneficiaries. The result further revealed that 23.4% of the beneficiaries had access to herbicides while only 2.0% of the non-beneficiaries had access to

herbicides. Similarly, 23.4% of the beneficiaries had access to seeds as against 24.0% of the non-beneficiaries.

FGD revealed that, many of the beneficiaries had access to farm inputs through the co-operative societies in their communities and through the credit facilities of the LEEMP. This is in line with the result in table 3, that 32.4% of the beneficiaries belongs to one co-operative society or the other as against 20.9% of the non-beneficiaries. The result also agreed with Nma (2005), that LEEMP operate in communities where functional co-operative society exist.

Table 6: Showing respondents accessibility to some farm inputs.

	<i>Beneficiaries Frequency*</i>	<i>%</i>	<i>Non- Beneficiaries Frequency*</i>	<i>%</i>
Pesticides	17	26.56	30	53.57
Fertilizer	26	40.63	10	17.86
Herbicides	19	29.68	1	1.78
Seeds	19	29.68	13	23.21

* Represent multiple responses

Source: Farm Survey, 2010

4.3.2 Respondents Crop Output

As indicated in Table 7, the findings of the study revealed that the agricultural output of the beneficiaries was greater than that of the non-beneficiaries. This could be as a result of beneficiaries access to LEEMP interventions in providing rural institutional infrastructure such as co-operative society, extension services, credit facilities and farm inputs. Analysis on Table 5 shows that the total output of the beneficiaries for all the crops was greater than that of non-beneficiaries in the study area.

Table 7: Distribution of Respondents According to Agricultural output

<i>Crop</i>	<i>Beneficiaries</i>	<i>Non-beneficiaries</i>
	\bar{X} yield /tones/ha	\bar{X} yield /tones/ha
Maize	1.2	0.9
Sorghum	1.1	0.6
Rice	2.3	1.8
Ground-nut	0.7	0.6

Source: Field Survey, 2010

4.3.3 Means of Transportation of Farm produce to the market

From the Table 8, 15.62% of the beneficiaries of LEEMP activities used trekking to transport their farm produce to the market and non-beneficiaries 26.78%. In addition, 23.43% of the beneficiaries use bicycle and non-beneficiaries 44.64%. The Table also revealed that 39.06% of the beneficiaries used motorcycle while 19.64% non-beneficiaries use same. As the Table shows, 21.87% of the beneficiaries used motor vehicle and 8.92% non-beneficiaries use the same to transport their produce to the market.

Table 8: Respondents Means of Transportation of Farm produce to the market

	Beneficiaries		Non Beneficiaries	
	Frequency	%	Frequency	%
Trekking	10	15.63	15	26.78
Bicycle	15	23.44	25	44.64
Motorcycle	25	39.06	11	19.64
Motor vehicle	14	21.87	5	8.92
Total	64	100	56	100

4.3.4 Result of regression to determine the impact of LEEMP activities on crop output

To test the level of influence that the LEEMP infrastructure had on beneficiaries on agricultural production in the study area. Some infrastructures provided by the LEEMP to the communities were regressed on agricultural output. The infrastructure are primary and secondary schools, irrigation facilities, electricity, motorable roads, organized markets, recreational facilities and places of worship. Based on the values of R^2 (43.2%), a number of significant variables and conformity of the sign of the co-efficient of independent variable, the result of the multiple linear regression was used for further analysis.

The result revealed that provision of primary and secondary schools were negative although significantly related to farmers output. It was also found that organized market, provision of recreational facilities and irrigational facilities as provided by LEEMP were positively and significantly related to farmers agricultural output.

4.3.5 Educational Facilities

The findings as presented in Table 9 interpreted to mean that the provision of primary and secondary schools in the study area had negative impact on the farming households. This is probably because children enrolment has reduced the supply of labour to the farm. This agrees with Ekong (2003), that majority of the rural populace depends on family labour for their farming operations.

Electricity: The findings in Table 7 revealed the provision of electricity was not significant but positively related to farmers output. The positive relationship could

be attributed to the fact that the provision of electricity to rural areas could result to the many cottage and agricultural processing plants. The provision of this infrastructure may contribute meaningfully to increase in agricultural production because farmers will be able to have easy way of processing their farm produce.

4.3.6 Motorable roads

Rural roads which cause accelerated delivery of farm input, reduce transportation cost and enhanced spatial agricultural production efficiency was found to be negative and not significant related to agricultural production in the study area. This could be due to the fact that these roads were spatially distributed in the study area and so farmers did not actually have significant benefit from the roads.

4.3.7 Organized markets

The result of the analysis revealed that organized market has positive and significantly related to farm output at 1% level of probability. This findings show that organized markets facilitated farmers means of marketing their farm produce because farmers were probably assured of adequate market prices and reduce delay in the sales of their produce hence the positive relationship between organized market and agricultural output.

4.3.8 Irrigation facilities

Provision of irrigation facilities was positively and significantly related to farmers output. The positive relationship could be attributed to the fact that irrigation facilities could result to dry season agricultural production which may

promote more agricultural productivity thus enabling the farmers to be engaged in gainful employment throughout the year to contribute significantly to economic production as well as increasing his living standard.

4.3.9 Boreholes

The findings in Table 9 revealed that the provision of boreholes has positive and significantly related at 1% level of probability, clean water is importance for maintaining good health which is a pre-requisite for farm labour.

Table 9: Result of Multiple linear Regression on the Impact of LEEMP to Beneficiaries

<i>Amenities</i>	<i>Co-efficient</i>	<i>Standard error</i>	<i>T- Ratio</i>
Educational Facilities	-.771	.277	-2.778*
Irrigation facilities	.632	.299	2.112*
Electricity	.134	.230	.582
Feeder roads	-.061	.209	-.292
Borehole	0.630	0.299	2.112*
Organized market	.620	.25	2.885*

R² = 65.7%
 * 1% level of probability
 **5% level of probability

4.3.10 Result of Z-Test analysis showing the impact of LEEMP activities on the beneficiaries

In this study, the differences in the output of beneficiaries and non-beneficiaries were tested using Z test analytical tool. Table 9 shows the analysis carried out using the Z test statistics at 5% level of probability (1.96) to determine whether there was significant difference in the output of LEEMP beneficiaries and non-beneficiaries. The result shows that the calculated Z value for output was 6.50

when compared with the Z-critical at 1.96 was greater than the critical Z value at 5% level of probability. This findings revealed that the hypothesis which stated that there is no significant difference between the output of LEEMP beneficiaries and non – beneficiaries is therefore rejected and the alternative hypothesis is accepted that there is significant differences in the output of beneficiaries and non-beneficiaries.

Table 10: Result of Z test Showing Differences between outputs of beneficiaries and non beneficiaries

Variables	Respondents	t-value	df	Mean df	Std. error	Z-cal	Z-tab
Output of beneficiaries	64	12.2	.447	7.50	.614	6.50	1.96
Output of non-beneficiaries	56	11.6	0.30	1.00	.645		

Significant at 5% level of probability

4.4 IMPACT OF RURAL INFRASTRUCTURES ON THE LIVING STANDARD OF THE COMMUNITIES

In investigating the indices of standard of living, it was discovered that the people approached the whole issue of change from the ‘traditional’ to the ‘modern’ style of living in a combination of three related concepts or terms as ‘development’, ‘progress’ or ‘civilization. Using the FGD, respondents were asked to list the articles or materials they possess which they considered necessary as an improvement in their living standard.

4.4.1 Respondents’ Material Possession

The result of the analysis in Table 11 show that 13.37% of the respondents of the benefiting communities indicated that they had bicycle while 20.24%

respondents of the non-benefiting communities indicated same. The table also revealed that 15.32% respondents in the benefiting communities had motorcycle while 15.38% members of the non-benefiting communities had motorcycle. About 11.14% members of the LEEMP benefiting communities had radio while 17.00% of the members of the non-benefiting communities had same. The possession of tape recorder accounted for 12.53% for the LEEMP benefiting respondents as against 11.33% for the non-benefiting respondents. Television accounted for 6.96% for the LEEMP benefiting communities members while 2.02% accounted for the respondents of the non-benefiting communities. The result also revealed that 5.57% respondents of the LEEMP benefiting communities indicated they had video as against 0.80% respondents of the non-benefiting communities. About 4.17% respondents from the LEEMP benefiting communities indicated they had generator while 8.09% in the non-benefiting community had the same. About 10.58% members of the LEEMP benefiting communities indicated they had bed/mattress while 10.12% members of the non-benefiting communities indicated the same. The result shows that 4.17% respondents in the benefiting communities had wrist hatch while 4.85% in the non-benefiting communities had the same. On furniture, 9.7% members of the LEEMP benefiting communities indicated they had furniture while 8.09% from the non-benefiting communities indicated the same. The table further revealed that 4.17% members of the LEEMP benefiting communities had motor car for private or commercial purposes while 0.80% had same from the non-benefiting

communities. On grinding machine, 22.2% respondents from the LEEM benefiting communities indicated they had grinding machine as against 1.21% from the non-benefiting communities.

The result shows that beneficiaries have possess more materials that will enhance their living standard than the non-beneficiaries. This could be as a result of more infrastructure in their communities especially electricity which could influence the possession of electrical appliances and grinding machines.

Table 11: Distribution of Respondents According to Material Possession

Materials possession	Beneficiaries		Non Beneficiaries	
	Frequency	%	Frequency	%
Bicycle	48	13.37	50	20.24
Motorcycle	55	15.32	38	15.38
Radio	40	11.14	42	17.00
Tape	45	12.53	28	11.33
Television	25	6.96	5	2.02
Video	20	5.57	2	0.80
Generator	15	4.17	20	8.09
Red/mattress	38	10.58	25	10.12
Wrist watch	15	4.17	12	4.85
Furniture	35	9.74	20	8.09
Motor private/ commercial	15	4.17	2	0.80
Grinding machine	8	2.22	3	1.21

Source: Field Survey, 2010

4.4.2 Respondents expenditure in naira per annum.

The results in Table 12 shows that 11.2% respondents in the LEEMP benefiting community spent ₦95,000.00 on food purchases per annum while 5.31% from non-benefiting communities spent N68,000.00 on food per annum. The payment of school fees for the children accounted for 10% totaling

N60,000.00 for the respondents in the benefiting communities as against 4.78% totaling N30,000 for the non-benefiting communities. Expenditure on clothes accounted for 25.6% of the respondents totaling N98,000.00 while 26.59% totaling N95,000.00 accounted for the non-benefiting community members. The study also revealed that, 12.4% respondents in the LEEMP benefiting communities spent N50,000.00 on household articles per annum while 14.89% from the non-benefiting communities spent N48,000.00 on household articles. The data also revealed 20.85% respondents in the benefiting communities spent N160,000 on farm inputs per annum as against 20.21% from the non-benefiting communities that spent N155,000.00 on farm inputs per annum. Medicare care accounted for 12% respondents in the benefiting communities that spent N68,000.00 while 13.29% totaling N49,000.00 from the non-benefiting community members spent on the same item. It was not possible for them to give the estimate on the building of the houses as they said it is a continue processes that hardly completed within a year. To confirm this, 15 houses were seen completed but have not been roofed, 5 houses no windows yet and 25 houses were counted without plastering.

Table 12: Distribution of Respondents According to their Expenditure

Expenditures	Beneficiaries			Non-Beneficiaries		
	Frequency	%	Valued(₦)	Frequency	%	Valued(₦)
Food purchases	28	11.2	95,000	10	5.31	68,000
Pay School fees	25	10	60,000	9	4.78	30,000
Buy clothes	84	25.6	98,000	50	26.59	95,000
Household articles	31	12.4	50,000	28	14.89	48,00
Farm inputs	52	20.8	160,000	38	20.21	155,000
Medicare	30	12	68,000	25	13.29	49,00
House building/ improvement	20	8	-	28	14.89	-
Total	250	100	531,000	188	100	445000

The data in table 13 give the results of Z-test on living standard of respondents in the study area. The results shows that the Z-calculated was greater than the critical Z-value (1.96).

Since the results of the Z-test indicate z-calculated was greater than the critical value, the null hypotheses was rejected suggesting that the LEEMP activities had made some positive impact on the living stand of the beneficiaries.

Table 13: Z-Test Analysis showing respondents standard of living

Variable	Respondents	Mean	Std error	Std. deviation	z-value	df	z-crit.
Living standard beneficiaries	64	5.130	0.082	1.655	1.429	2.136	1.96
Living standard non-beneficiaries	56	4.480	0.167	1.250	2.56		

4.5 CONSTRAINTS FACED BY THE LEEMP BENEFITING COMMUNITIES IN TERMS OF ACCESSING LEEMP FACILITIES

About 23% of the LEEMP beneficiaries complained of the inadequate fund which is required before the approval of any project by the LEEMP. As a rule, the community must contribute 10% of the total cost of the project which will be made available and deposited in the bank before the LEEMP releases its 90% counterpart fund. The second problem faced by the LEEMP beneficiaries is bureaucracy in having access to LEEMP officials. This account for 22.22% of the respondents. According to the respondents, visiting the LEEMP at Minna headquarters is quite a distance. Respondents also complained about the inavailability of the LEEMP staff at the headquarters. Cooperative leadership have also been identified as a problem. LEEMP deals with only those communities where functional cooperative societies exist. Many (85.94%) of the respondents complained about the leadership inconsistence and lack of transparency in running the co-operatives. Infact some of the respondents alleged connival of the cooperative leader with LEEMP officials in embezzling the cooperative fund. Communities are allowed to make choices of projects to be embarked upon by the LEEMP. Some of the respondents, about 15.32% revealed how their divergent interest in the choice of the projects brought delayed in the activities of the LEEMP in their communities. They complained of how some few of the community members imposed their decisions on the majority. Another problem identified by 18.39% of the respondents was that of low level of

education. They revealed some of the problems they encountered when they were going to the LEEMP headquarter in pursue of the projects. Sometimes the elites in the communities had to be consulted in order to get things done. Many of these elites according to them reside in the urban centres.

Table 14: Constraints faced by LEEMP benefiting Communities

Constraints	Frequency*	%	Ranking
Inadequate fund	60	93.75	1 st
Bureaucracy in having access to LEEMP	58	90.63	2 nd
Co-operative leadership problem	55	85.94	3 rd
Low level of education among community members	48	75	4 th
Choice of the projects by the community	40	62.50	5 th

*** Multiple Responses**

Amongs the constraints faced by the LEEMP beneficiaries, inadequate fund ranked first followed by bureaucracy while choice of the projects by the community ranked last (5th).

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This study was on the comparative analysis of beneficiaries and non-beneficiaries of Local Empowerment and Environmental Management Product (LEEMP) on rural transformation and living standard of the rural dwellers in the study area . The study was based on both primary, secondary data collected and also oral interview. The primary data was collected by the use structured questionnaire administered to both the beneficiaries and non-beneficiaries of the LEEMP projects. The data were analyzed using descriptive statistics and linear regression.

From the finding of this study, there are no significance difference between the socio-economic characteristics of the LEEMP beneficiaries and non-beneficiaries. The mean age of the beneficiaries and non- beneficiaries was between 29 and 51. The result also shows that majority of the respondents had low level of education. Only 20% of the beneficiaries and 19% of the non-beneficiaries had education above primary school. It was discovered that the majority of the respondents had farming as their main occupation while few of them combined farming with other business like craft work, building and tailoring. Findings of the study also revealed that, the beneficiaries had comparative advantage of asses to rural infrastructure over the non- beneficiaries. The beneficiaries also had contact with extension services more than the non-

beneficiaries. The result also shows that members of the benefiting communities belong to one co-operative society or the other unlike the members of the non-benefiting communities.

The result of findings on the infrastructural impact on agriculture revealed that, provision of schools had reduce the labour force in the farm and so had a negative impact an agricultural production. Motorable roads were found to be spatially distributed in the study area and so there was no significant benefit from the road activities of the LEEMP. Markets were found to be significant for farm output at 1% level of probability. Electricity was not significant but positively related to farmers out put interms of the processing of their farm produce.

Despite the contributions of LEEMP, the beneficiaries indicated some problems hindering the success of the project in the study area.

5.2 CONCLUSION

Based on the findings of the study, it can be concluded that life in the rural areas is characterized by poor infrastructural facilities and that attempts by non-governmental organizations to arrest the situation is faced with challenges such as low level of education and income of the members of the communities. The poor infrastructural facilities have also led to the poor standard of living in the rural areas.

5.3 RECOMMENDATIONS

On the basis of this study, the following recommendations are made.

1. There should be an extensive expansion of the scope of social service provided in the rural areas through Integrated Rural Development Programmes. Services such as health care facilities, functional education, rural electrification, motorable roads and water supply. The federal department of rural development should assume the responsibility with the approval of the national council for agriculture for the co-ordination of these activities.
2. One of the findings revealed that non-benefiting communities had no functional co-operatives as required by the LEEMP for their activities. It is therefore recommended that government through the Agricultural Development Projects (ADPs) at various states, should encourage and help the rural areas in forming co-operative societies and should be monitored by the ADPs.
3. The LEEMP should include tractor hiring unit in their activities, this will reduce the negative impact of education which has reduced the labour force of the farmers.
4. The LEEMP should also make their accessibility as easy as possible so that more communities will take advantage of their presence in the state.
5. The LEEMP should also make a strong provision on how the infrastructures provided to the communities will be maintained.

6. In one of the findings, politicians in the local communities interferes with the choice of the type of the infrastructure to the provided to the communities LEEMP officials should always make their research on the need of the communities before embarking on any infrastructural development so that the people will see it as their own project.

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APPENDIX

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY FACULTY OF AGRICULTURE, AHMADU BELLO UNIVERSITY, ZARIA

IMPACT OF LOCAL EMPOWERMENT AN ENVIRONMENTAL MANAGEMENT PROJECT (LEEMP) ON THE RURAL TRANSFORMATION IN EDATI AND KATCHA LOCAL GOVERNMENT AREAS OF NIGER STATE

RESPONDENTS QUESTIONNAIRE

A. Respondents Socio-Economic Characteristics

1. Age of Respondent: _____
2. Village: _____
3. Marital Status: Single: _____
Married: _____
Divorced: _____
Widow: _____
Separated: _____
4. Level of Education:
 - (a) No formal Education []
 - (b) Primary School []
 - (c) Secondary School: []
 - (d) Tertiary Institution []
 - (e) Others (specify) _____
5. Size of your household
 - (a) Number of Wife/Wives: _____
 - (b) Number of Children: _____
6. Farm Size:
 - (a) 0.5 – 5.0 []
 - (b) 6.0 – 10.0 []
 - (c) 11.0 – 15.0 []
 - (d) 16.0 – 20.0 []
7. Income/Annum (N)
 - (a) 10,000 []
 - (b) 10,500 – 20,500 []
 - (c) 21,000 – 30,500 []
 - (d) 31,000 – 40,500 []
 - (e) >40.500 []

8. Apart from farming, what other activities do you engage yourself in the season (Tick)

- (a) Trading []
- (b) Craftwork []
- (c) Building []
- (d) Civil Service []
- (e) Tailoring []
- (f) Others specify _____

B. AVAILABLE PHYSICAL/SOCIAL AMENITIES IN YOUR COMMUNITY (TICK)

- (a) Primary []
- (b) Secondary School []
- (c) Dispensary []
- (d) Pipe-born water []
- (e) Borehole Water []
- (f) Electricity []
- (g) Motorable Road []
- (h) Motor park []
- (i) Organized Market []
- (j) Recreational Facilities []
- (k) Place of Worship []
- (l) Public Transport Vehicles []

C. AVAILABLE RURAL INSTITUTIONS (TICK)

- (a) Co-operative Society []
- (b) Credit Facilities []
- (c) Agricultural Extension Services []
- (d) Farm Supplies and Equipment []
- (e) Other specify: _____

4. INPUTS USED ON FARM (TICK)

- (a) Fertilizer []
- (b) Pesticides []
- (c) Herbicide []
- (d) Improve Seed []
- (e) Local Seed []

5. If you use the above inputs in your farm what is the source? (Tick)

- (a) From Local Government []
- (b) Farm Neighbour []
- (c) From the Co-operative []
- (d) Others specify _____

6. If you do not have the above inputs, indicate why:

- (a) Lack of money to buy them []
- (b) They are not available []
- (c) Lack of technical know how []
- (d) Others specify _____

E. LIST OUT THE TYPES OF CROPS YOU GROW ON YOUR FARM

CROPS	HECTARE OF LAND	QUANTITY HARVESTED (BAGS)

F. EXTENSION CONTACTS AND SERVICES

1. Have agricultural extension workers ever visited your farm or home?

(a) Yes [] (b) No []

2. If yes, how often?

(a) once a week [] (b) 2-3 times a week [] (c) once a month []

(d) others specify _____

3. What kind of services do extension workers provide?

(i) _____

(ii) _____

(iii) _____

(iv) _____

4. Have you adopted any new agricultural technology?

(a) Yes [] (b) No []

5. If no why _____

H. MARKETING OF AGRICULTURAL PRODUCTS

1. Where do you sell your agricultural products?

(a) at home [] (b) at market [] (c) other specify _____

2. If at home, who buy them?

(a) individuals [] (b) money lenders [] (c) co-operative []

(d) government agents [] (e) others specify _____

3. If at market, how do you transport them to market?

(a) trekking [] (b) bicycle [] (c) motorcycle []

(d) motor vehicle [] (d) other specify _____

I. LIST OUT THE MATERIALS YOU POSSES

J. MAKE AN ESTIMATE OF YOUR LAST YEAR'S EXPENDITURE IN NAIRA

- (a) Food purchases
- (b) Pay school fees
- (c) Buy clothes
- (d) Household articles
- (e) Farm inputs
- (f) Medical care
- (g) House building/improvement
- (h) Others (specify) _____