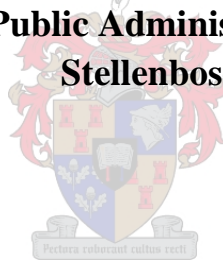


**AN ASSESSMENT OF THE EFFECT OF PARTICIPATION ON  
SUSTAINABLE DEVELOPMENT IN A RURAL  
ELECTRIFICATION PROJECT: A CASE STUDY OF THE IPARI-  
EFUGO PROJECT**

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**Thesis submitted in partial fulfilment of the requirements for the  
Degree of Master of Public Administration at the University of  
Stellenbosch**



**Supervisor: Francois Theron**

**March 2008**

## **Declaration**

I, the undersigned, hereby declare that this thesis is my original work and has not been previously, in its entirety or in part, submitted at any university for a degree.

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**Signature**

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**Date**

## **Abstract**

Due to inadequate financial resources and lack of managerial skills, in this case study the local level of governance does not have appropriate mechanisms to manage their resources adequately. It is observed that the Nigerian government cannot provide all basic amenities for the people at the grass-root level of development. Following the above scenario, rural communities do not have access to basic amenities such as electricity and pipe borne water. In Nigeria, little research has been done with regard to sustainable development in rural electrification.

This study is based on the impact of community and individual participation in a rural electrification project, and shows how sustainable development plays a leading role. The study is based on a rural electrification project initiated and facilitated in 1996, and was completed in 2000 by the Ipari-Efugo Otukpa community members in Benue State in the North Central part of Nigeria.

In spite of prevailing poverty in rural areas, Ipari-Efugo community members were able to be responsible for their own development without government intervention. The research includes literature studies of rural electrification projects and demonstrates how participation and sustainable development can lead to a successful community project.

Irrespective of obstacles such as poverty and lack of economic empowerment, Ipari-Efugo community members are resilient and were able to provide electricity. Access to electricity can serve as a prerequisite for economic development and growth. The benefits accruable from the use of electricity outweigh the costs of providing the amenity to the community. Participation through sustainable development remains the core instrument responsible for the completion of the electricity project in Ipari-Efugo. This study encourages rural communities to take responsibility for their own development.

## Opsomming

As gevolg van onvoldoende finansiële middele en 'n gebrek aan bestuursvaardighede, in die gevallestudie beskik die plaaslike regering nie oor die toepaslike meganismes om hulle hulpbronne na behore te bestuur nie. Boonop blyk dit dat nasionale regerings nie alle basiese geriewe aan diegene op voetsoolvlak kan voorsien nie. Die genoemde scenario impliseer dus dat landelike gemeenskappe nie toegang het tot basiese geriewe soos elektrisiteit en kraanwater nie. In Nigerië word weinig navorsing gedoen op die gebied van volhoubare ontwikkeling in landelike elektrisiteitsvoorsiening.

Hierdie studie is gebaseer op die impak van gemeenskaps- en individuele deelname aan 'n landelike elektrisiteitsvoorsieningsprojek, en toon hoe volhoubare ontwikkeling 'n toonaangewende rol hierin speel. Die studie spruit uit 'n landelike elektrifiseringsprojek wat in 2000 deur die gemeenskap van Ipari-Efugo Otukpa in die staat Benue in die noordelik-sentrale deel van Nigerië aangevoer en gefasiliteer is.

Ondanks die heersende armoede in landelike gebiede, het lede van die Ipari-Efugo gemeenskap sonder die tussenkoms van die regering verantwoordelikheid vir hulle eie ontwikkeling aanvaar. Die navorsing sluit literatuurstudies van landelike elektrisiteitsvoorsieningsprojekte in, en demonstreer hoe deelname en volhoubare ontwikkeling tot 'n suksesvolle gemeenskapsprojek kan aanleiding gee.

Ongeag struikelblokke soos armoede en 'n gebrek aan ekonomiese bemagtiging, was die lede van die Ipari-Efugo gemeenskap vasberade en kon hulle uiteindelik elektrisiteit aan die gemeenskap verskaf. Toegang tot elektrisiteit kan as 'n voorvereiste vir ekonomiese ontwikkeling en groei dien. Die voordele verbonde aan elektrisiteitsverbruik oortref uiteindelik by verre die koste verbonde aan die voorsiening van hierdie gerief aan die gemeenskap. Deelname by wyse van volhoubare ontwikkeling bly die sleutelinstrument vir die voltooiing van die elektrisiteitsprojek in Ipari-Efugo. Hierdie studie moedig landelike gemeenskappe aan om verantwoordelikheid vir hulle eie ontwikkeling te aanvaar.

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Research is an arduous task that requires knowledge regarding the basic skills needed to embark upon a fruitful scientific investigation. Even so, I was able to produce this study and hopefully make a useful contribution to the field of sustainable development. I am grateful to many individuals and organizations for their encouragement and assistance.

My parents, Mr and Mrs FA Itodo, and my siblings, are thanked for their unwavering support. They were always there for me, in good days and bad days, and encouraged me to press on.

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Finally, I wish to thank God, all my friends, acquaintances, relatives, and everyone who assisted in some way or other.

## List of Acronyms

CRE	Comision Reguladora de Energia
DFID	Department for International Development
DFRE	Directorate of Federal Rural Electricity
EPPs	Emergency Power Producers
EPRET	Energy Policy Research and Training
ESMAP	Energy Sector Management Assistance Programme
GBGU	German Advisory Council on Global Change
GEF	Global Environment Facility Publication
HDA	Human Development Approach
IAP2	International Association for Public Participation
ICLEA	International Council for Local Environmental Initiatives
IE	Ipari-Efugo Community
IEA	International Energy Agency
IIRR	International Institute of Rural Reconstruction
IISD	International Institute for Sustainable Development
IRD	Integrated Rural Development
IKS	Indigenous Knowledge System
ILO	International Labour Organization
IPPs	Independent Power Producers
ISRDS	Integrated Sustainable Rural Development Strategy
MDGs	Millennium Development Goals
NEB	National Energy Board
NEC	National Energy Council
NGOs	Non-Governmental Organizations
NEPA	National Electric Power Authority
NERA	Nigerian Energy Research Agency
NPC	National Population Commission of Nigeria
PHCN	Power Holding Company of Nigeria
RE	Rural Energy
SEB	State Electricity Boards
UN	United Nations
UNCED	United Nations Conference for Economic Development
UPDEA	Union of Producers, Transporters, and Distributors of Electric Power in Africa
VLP	Village Level Planning
WCED	World Commission on Environment and Development
WSSD	World Summit on Sustainable Development
WUGs	Water User's Groups

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# CHAPTER ONE

## 1. OVERVIEW OF THE STUDY

### *1.1. INTRODUCTION*

Sustainable development is defined as “development that meets the needs of the present without compromising the ability of the future generation to meet their own needs” (World Commission on Environment and Development 1987- WCED). According to Oakley (1991:18) experience shows that externally introduced development projects frequently fail to become sustainable once the level of project inputs are withdrawn. Whereas participation is regarded as a cure, which can ensure that local communities maintain project dynamic, sustainability refers to continuity and regards participation as a fundamental drive for sustainable development. As Burkey (1993: xvii) remarks, sustainable rural development could only be achieved through the efforts of the rural communities working towards their own sustainability. The government and its agencies can assist in this process, although communities can achieve this goal through self-help projects.

According to Oakley (1991:17) community participation helps people to dominate the mentality of dependence; it promotes self-awareness and confidence, and makes people think positively about their own creative solutions. It also relates to human centred development and increases people’s sense of control over issues which affect their lives, helps them to learn how to plan and implement, and facilitates community participation at both regional and national levels. Theron (2005a: 104-105) defines community participation as a process through which people are given a voice and a choice to participate in matters affecting their lives. During this process, people become empowered and take ownership of the project.

The German Advisory Council on Global Change (2004:41) shows that the availability of high quality energy is unevenly distributed around the globe. Approximately one-third of the world population, primarily in the developing countries, has no access to electricity. These people are usually exposed to major

health risks. Due to their reliance on fuel-wood or dung for cooking and heating, they face major obstacles to their development. Based on the above, the lack of access to rural electricity has been identified as a major problem globally.

This study attempts to assess how community participation could lead to the collective attainment of sustainable development in the Ipari-Efugo (IE) electrification project. IE is situated in Otukpa, a township in the Ogbadibo Local Council in Benue State in the North Central part of Nigeria. It has a small population of about 230 people. The community members are engaged in small-scale farming, palm wine tapping, trading, and other economic activities to sustain themselves economically. Because of the inability of the government to provide electricity, the IE community initiated a rural electrification project. As a resident of IE and a participatory observer, the researcher experiences the benefit of this project and is in a position to assess its impact.

### ***1.2. Aim of the Study***

The aim of this study is to assess how individual participation in a rural electricity project transcends to collective community participation and its impact in the achievement of sustainable development. It will also show how individual initiatives and community participation was used in IE. This study will further demonstrate how indigenous knowledge is used to effectively execute a community project. The local context of participation is also tested on sustainable development as it relates to the electricity project.

### ***1.3. Objectives of the Study***

This study has the following inter-related objectives:

- To assess the importance of participation on community infrastructural development;
- To evaluate and determine the links between individual participation and community participation; and
- To encourage the community to participate and enjoy meaningful development.

#### ***1.4. Motivation for the Study***

Although community participation has its limitations in addressing community problems, there are derivatives from the process of participation. This study focuses on the linkages between individual participation and community participation. These linkages exist in the form of reflecting on the impact of individual contribution to development and how its domino effect impacts on the overall development of the community.

This study will evaluate how an individual initiative is propelled into overall community development. The idea of rural electricity supply in IE arose from the need identified by a community member. He procured the necessary electrical installation equipment ranging from poles, which enhanced the electricity supply linkage, wires, sockets, switches, and the payment of the personnel (logistics), which facilitate installation of electricity in IE. Information sourced through informal communication during this study shows that the government had no plans to provide electricity to IE.

The study uses an interdisciplinary approach that enables a holistic understanding. According to Davids (2005:24), “knowledge of the holistic context is essential, if we have to adhere to the dictum, development is about people”. “Meaningful development” is about understanding people in their own context. Additionally, this will produce a broader understanding of development, as it affects community members.

#### ***1.5. Limitations of the Study***

There was uncertainty about dissemination of information to the researcher from the council secretariat due to the general election that was in progress in Nigeria. It was assumed that the information would be used to the advantage of the opposition parties. Although information was eventually obtained from the secretariat, it was a tedious process. Furthermore, the community members felt uneasy regarding interviews but later agreed to this process. Some of the locals interviewed by the research assistant could not read nor write English. The research assistant was obliged to translate directly from English to Idoma to make the information relevant to those

interviewed, and then translate from Idoma to English to make it relevant to those that would analyse the result of the finding. The services rendered by the research assistant made him to visit 74 households and their responses were sorted for the questionnaire.

### ***1.6. Research Problem***

Brynard and Hanekom (1997:15) observe that a problem statement guides and focuses both the planning of the research, and the research itself. This requires that the researcher provide a description of the problem under study. The correct description is imperative to state the problem properly. It should be clear that the solution to the problem would require analytical thinking.

Benue State in Nigeria has suffered much neglect due to the lack of Federal presence in terms of the provision of infrastructure. As a result of the predicament of the State, this problem has a domino effect on the local councils. In spite of individual initiatives to provide electricity to the community of IE, some community members were unable to purchase copper wire to have their houses wired for the power supply. In essence, the research problem here focuses on the fact that the government cannot meet all the developmental needs of the people. This is due to limited resources and managerial skills on the part of government and her employees. Consequently the local council abandoned its priority of providing basic infrastructure to the members of the community. Among other infrastructural inadequacies, the rural electrification project was the immediate one that the community wished to undertake.

Therefore, it has become a major challenge for the rural community to provide electricity supply, since government intervention is not feasible. The study will foster solutions for community suffering, which results from lack of government intervention in their developmental activities. The following questions are being investigated: why is individual and community participation required and what are the motives behind it? How does community participation connect with the “building blocks of development?” What lessons can be learnt from the developing countries’ electricity supply? A derivable hypothesis emerges from the abovementioned questions.

## ***1.7. Hypothesis***

Bless and Higson-Smith (1995:37) suggest that a hypothesis is a preliminary, yet specific answer to a problem, which has to be tested empirically before being accepted as a concrete answer that can be incorporated into a theory. It is what one would like to know and it serves as the point of departure and as guidance for research planning. In essence, the workable hypothesis of this study shows that individual initiative could lead to participation in a community. This idea of community participation places people at the centre of the development initiative thereby empowering them to greatness in community development. The hypotheses of this study are thus stated:

- Authentic participation is enhanced when community members actively participate in the rural electrification project (zero hypothesis)
- There is no authentic participation when community members actively participate in a community project (alternative hypothesis)

### **1.7.1. Independent variable**

In the formulated hypothesis, two variables are identified - dependent and independent. According to Welman and Kruger (2001:13-14) a variable is a characteristic, or an attribute, of the study object. An independent variable is the factor, which the researcher selects and manipulates in order to determine its effect on the problem. Hence, individual participation and community participation are independent variables. They have effect on sustainable rural electricity supply which the researcher would observe and measure.

### **1.7.2. Dependent variables**

Welman and Kruger (2001:14) state that the dependent variable is considered dependent because its value is assumed to depend on the values of the levels of variable. In this formulated hypothesis, sustainable rural electricity supply is dependent on the levels of individual and community participation. In essence, there is a correlation between the provision of rural electricity and both individual and community participation respectively.

## ***1.8. Research Methodology and Design***

### **1.8.1. Research Methodology**

According to Mouton (2005:148-159) empirical research uses existing data and documentary sources to answer exploratory and descriptive questions. It is applied also to assess whether or not the interventions have been well conceptualised and properly implemented. Mouton further argues that evaluation research uses a combination of qualitative and statistical methods of analysis. This study is conducted by means of interview using questionnaire amongst the community members. Questionnaires are used with the aim of engaging community members and assessing their views about their participation in the rural electricity project of the community. The study also uses both empirical and non-empirical research methodology to address objectives of this study, and gather relevant data and information.

Questionnaires were sent to targeted respondents via e-mail due to distance and logistics involved in having direct contact with them. The researcher coordinated this study with a research assistant through emails and phone calls. Those means of communication quicken the processes of getting feed backs from the fieldwork. The research assistant administered the questionnaire. Apart from the compilation help received from the Stellenbosch municipal official, a Stellenbosch University statistician carried out further fine-tuning to suit the purposes of data interpretation.

In order to have a significant impact on the analysis, the study makes use of both qualitative and quantitative research methodologies. The quantitative and qualitative methods supplement and complement each other in interpreting and analysing data and in order for the results to present a holistic picture of the study. Mouton (2005:159) argues that it is common to use multiple methods of data collection in evaluating research and utilising available modes of observation by using questionnaires and less structured focus group interviews, individual interviews, participatory observation as well as analysing documentary sources such as annual reports, field reports, and participation records.

A schematic representation of the study is presented below in figure 1, to demonstrate the direction of this study. The Millennium Development Goals (MDG) (2000),

United Nations Development Framework, as well as the Johannesburg (2002) Summit on Sustainable Development were used in this study. Different sources such as library books, journals, Internet sources, Ebscohost, Sabinet, as well as the Nexus Databases were also consulted. The methodologies used in this study will be integrated, to justify the essence of the study. The following terms are used interchangeably in this study: sustainability and sustainable development, rural electricity and rural electrification.

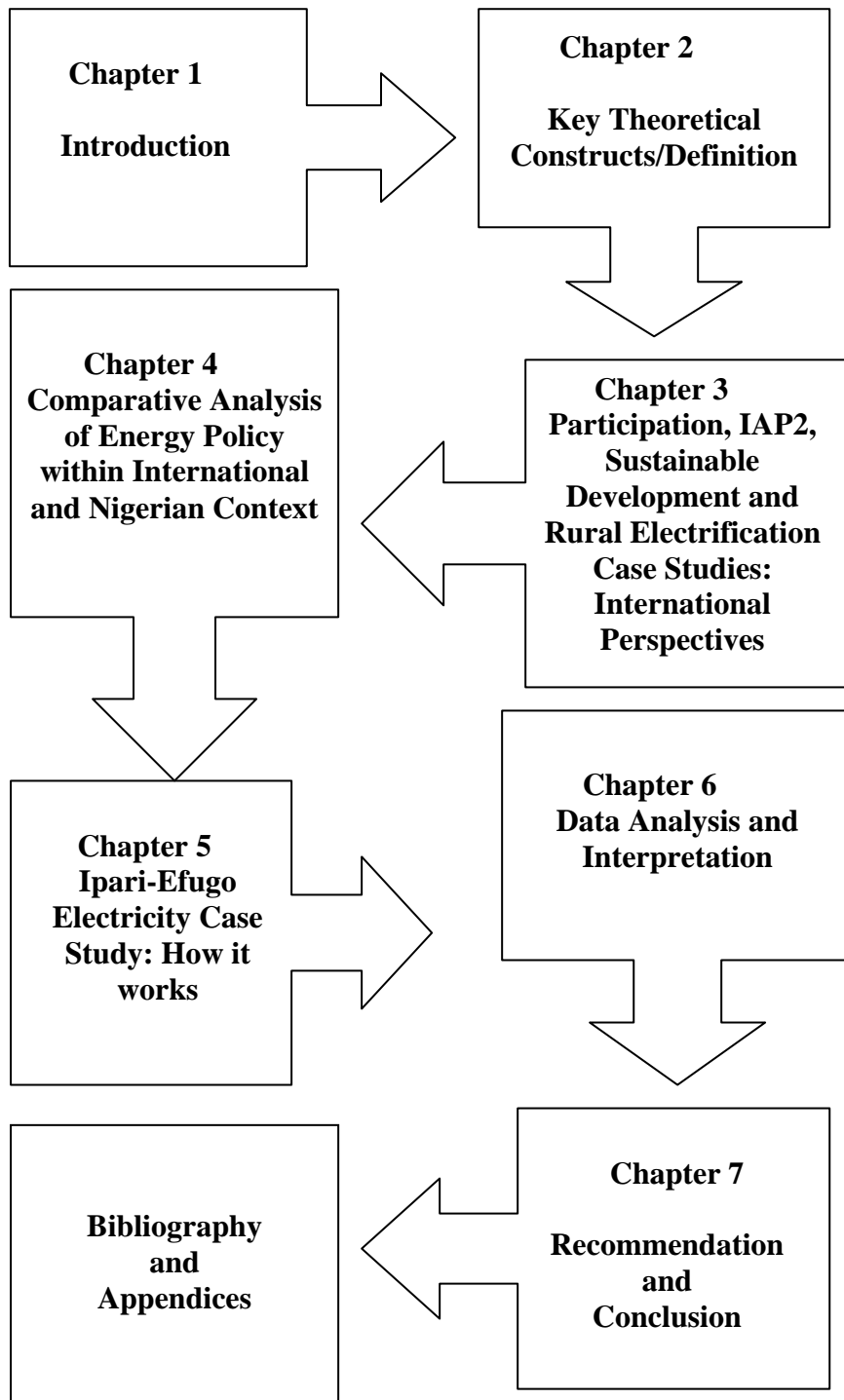
### **1.8.2. Research Design**

According to Welman, Kruger and Mitchell (2006:83) "if a causal relationship is inferred, it is necessary for cause to precede effect. It is often quite difficult in human behaviour sciences, if not impossible, to meet this requirement. Often, the causal factors are not events that take place and are concluded at some or other identifiable point in time, because of a mutual relationship between the variables". The study follows an evaluative design using an experimental and quasi-experimental outcome. The main reason for the study is to assess whether the anticipated outcome of the rural electricity project has materialised or not. The design configuration of the study would be empirical using hybrid data, numeric / contextual data and medium control (Mouton 2005: 160).

Furthermore, to substantiate this study design, a literature study on the interdependencies of the "building blocks of development" (Meyer and Theron 2000:1-5) will be undertaken and its impact tested with individual and community participation vis-à-vis the rural electrification project. In this chapter, the focus was on an introduction aim of the study, objectives of the study, motivation of the study, limitation of the study, research problem, hypothesis, research methodology and research design, among others. The next chapter considers definition of key theoretical constructs.



Figure 1 Schematic Representation of the Study



Source: Compiled by the researcher

## CHAPTER TWO

### 2. DEFINITION OF KEY THEORETICAL CONSTRUCTS

Theoretical constructs determine how various concepts; themes and analytical thinking combine to give meaning to the subjects under review. This study will explore various topical issues concerning key components. Subsequently, further clarification of concepts, themes, philosophies, and other related ideas shall be examined. This approach indicates a correlation among key constructs and enhances an understanding of both participation and sustainable development. Key theoretical constructs described below are the main components of the “building blocks of development”<sup>1</sup>. Participation through community, individual and group are the key “facilitators” and “enhancers” of the other components in the “building blocks of development”.

#### *2.1. Community participation*

The World Bank (1996:3) defines community participation as a process through which stockholders influence and share control over development initiatives, decisions and resources that affects them. Narayan (1995:7) states that participation is a voluntary process, by which communities influence or control decisions which affect them. The essence of community participation is the exercise of the choice and voice of participants. The above-mentioned views of community participation have an impact on this study. From a broader perspective, Brown (2000:173-175) defines community participation as a process by which communities influence the direction and execution of a project rather than merely being consulted and receiving a share of projects' benefits. To further his argument, Brown regards community participation as an instrument of empowerment. As a result, authentic community participation has the ability to decide and steer one's own future actions, and is able to initiate actions that influence the processes and outcomes of projects. The researcher agrees with the above-mentioned perception on community participation.

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<sup>1</sup> *Theron (2005b: 119-123) defines four building blocks, i.e. participation, a social learning process, empowerment, and sustainability.*

According to Meyer and Theron (2000:1–5) there is no universally accepted definition of community participation. It is a social learning process linking the “building blocks” of development. The process does not operate in isolation but should be understood against a “holistic” perspective of “development.” The building block of development therefore uses sustainable development as its foundation (Theron 2005b: 120). Further on, Swanepoel and De Beer (2006:28) assert “when people are mobilised to participate, they do so fully in all aspect of the project. They become part of the decision-making and planning of the project, as well as implementation and evaluation of the project. Hence, they participate completely in the management of the project.

According to Burkey (1993:56), an advocate of self-reliance, “community participation is an essential part of human growth, which is the development of self-confidence, pride, initiative, creativity, responsibility and cooperation. If such development does not exist within people, all efforts to alleviate poverty will be immensely difficult, if not impossible. The process whereby people learn to take charge of their own lives and solve their own problems is the essence of development.” It is worth stating here that these views are in consonance with the tenet of this study. Oakley and Marsden (1984:13-14) note that community participation is seen as a strategy for the creation of opportunities to explore new, open-ended directions with those who were the objects of development. The above mentioned perception of community participation shows that community participation is the process of social change that enables rural community members to escape from dependency and poverty. Community participation is therefore a multidimensional approach and a process of integrating the “building blocks of development” to achieve sustainable development.

The International Labour Organization (ILO) explains that assessments of international strategies have shown that the grassroots approach to community participation has generated the following definition of participation (Rahman 1994:150):

What gives real meaning to (popular) participation is the collective effort by the concerned people in an organized framework to pool their efforts and whatever other resources they decide to pool together, to attain objectives set

for them. In this regard participation is viewed as an active process, where participants take initiatives and action stimulated by their own thinking and deliberation over which they can exert effective control<sup>2</sup>.

Rahman (1994:150) and Groenewald (1989:258) identified key issues in the definitions of community participation:

- Participation is an organised activity of the people concerned. The primary unit of participation is a collective of persons who stand in a relationship with the State.
- The origin of initiatives for programmes and projects is based on the people's own thinking and deliberations that direct their collective activities.
- These people control the process of action initiated.
- The needs of a particular group of people called a "community" lie at the heart of the programme and project.

Using the above analysis, the point of departure is that community participation could lead to self-reliance. This supports Burkey's (1993:53) argument using Paulo Freire's classic formulation of the "principle of conscientisation". The next subsection will consider the origin of community participation in order to establish its foundation and development.

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<sup>2</sup> See Theron (forthcoming) on defining the concept of change agent

## ***2.2. Origin and development of community participation***

Oakley (1991: vii-viii) states that the mid-1970s saw the beginning of a fundamental shift from the domination of the modernisation paradigm of development thinking and intervention, towards a systematic search for alternatives. In the past thirty years, development thinkers sought and experimented with alternative solutions to eradicating endemic poverty in most of the underdeveloped countries. The literature that accompanied this study reflects the emergence of community participation as a key development strategy.

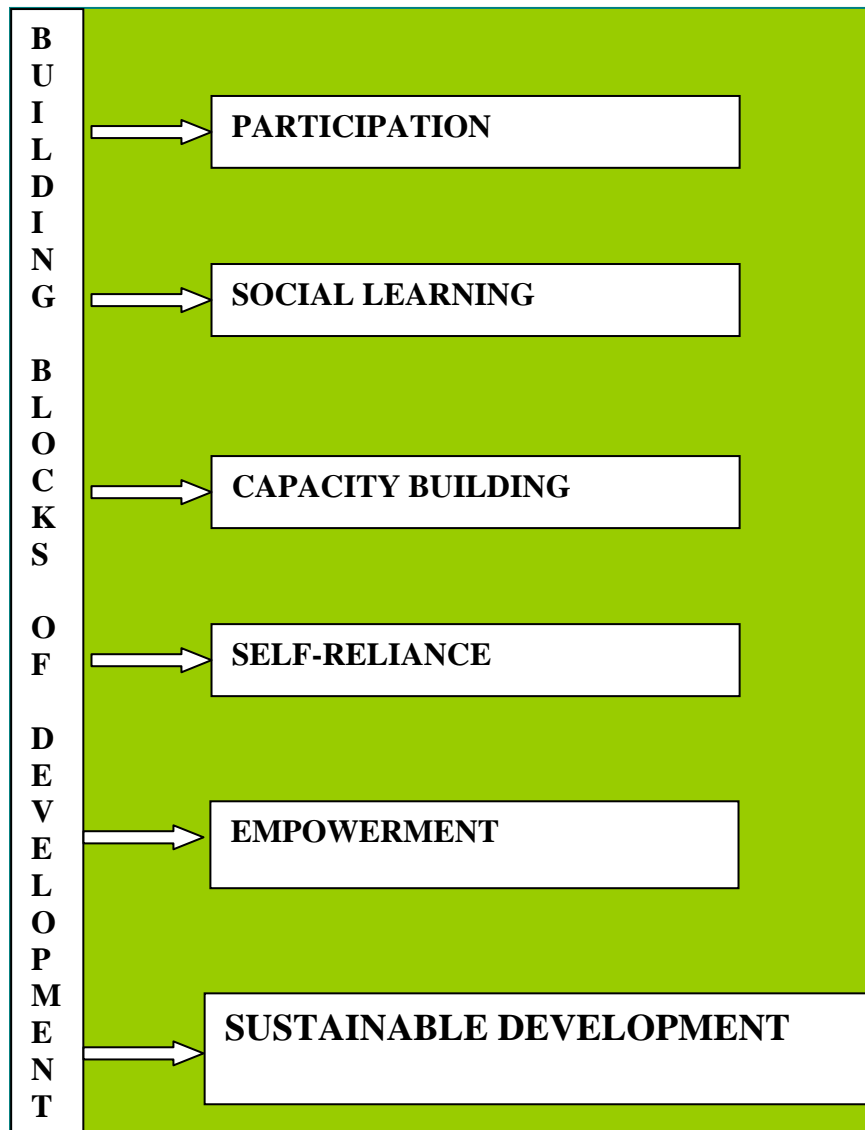
Community participation has today become one of the most dominant people-centred development paradigms. Kotze and Kellerman (1997:41) share the same view as Oakley (1991) above that in the late 1960s and early 1970s, it was realised that unless community members contribute to their development efforts, no meaningful progress can be expected. Community participation acknowledges the fact that community members should be part and parcel of their own projects. In the new millennium no development effort can be considered unless it includes communities in the process of social change. Most development programmes implemented in the last few decades confirm these key issues. The principal goal of development strengthens community members by making their development efforts more effective and sustainable. Giving opportunity for community members to participate in all aspects of their projects enhances aforementioned. Therefore, in order for rural community members especially in developing countries to achieve success in their social development programmes and projects, community participation must be ensured (Gupta 1999).

### **2.2.1. Community participation as a paradigm of development: conceptualising the building blocks of development**

Moreover, Oakley (1991:160) regards community participation as a fundamental dynamic of a developmental project, which is beginning to emerge in practice as a coherent and credible strategy. Njoh (2001:90, 248) points out that the depletion of resources in developing countries; dictate that governments can no longer depend on conventional means in addressing the basic needs of their populations. Community participation in development is only authentic when participation is centred on the people's activities and it becomes an essential ingredient to the empowerment of the local people. Hence, community participation flourishes amidst other components of

the building blocks of development. As shown in figure 2 below, there are inseparable linkages among various components of the building blocks. A proper sequence on the configuration leads to authentic sustainable development.

Figure 2 Analytical Mind Map of the Building Blocks of Development



Source: Compiled by the researcher based on Theron (2005b: 121-123); Burkey (1993:56); Meyer & Theron (2000:1-5); Oakley (1991:17); Singh & Titi (1997:13) and Roodt (2001:312).

### ***2.3. Individual participation***

Individual participation in community development through programmes and projects results from their interest in their community. There are certain requirements of individuals that are needed to make an authentic contribution towards community

development. Individuals of a community will normally participate voluntarily in activities of the community provided that:

- There is recognition of derivable benefits to be attained.
- There is also an acknowledgement of an adequate structure where their interests could be expressed.
- Key areas of their lives are improved.
- There is a high level of commitment on the part of the individuals in the community.
- There is a better understanding of the true situation on the ground.
- Community members are comfortable and happy in the group.

<http://ohioline.osu.edu/cd-fact/1700.html>

Additionally, the requirements for individual participation can be improved by:

- Emphasizing the benefits accruable through participation.
- Identifying the groups that are receptive to individual input.
- Assisting individuals to devise positive ways of responding to situations that need urgent attentions.
- Showing the obligations each individual has to make towards improvement in the community.
- Equipping individuals with better knowledge about opportunities.

<http://ohioline.osu.edu/cd-fact/1700.html>

## ***2.4. Group participation***

Swanepoel and De Beer (2006:28) emphasise that when people are mobilised to participate, they do so fully in all aspect of the project. They become part of the decision-making and planning of the project, as well as implementation and evaluation of the project. Hence, they participate completely in the management of the project.

In addition, Swanepoel and De Beer (2006:28) observed that participation through the “liberal” view compose two points.

- Firstly, through participation, a solid local knowledge base is used for development. They emphasise that “common sense” knowledge of

environmental dynamics possessed by rural community members are valuable to their developmental efforts.

- Secondly, that people who do not participate in their development have no affinity for development efforts and results. The researcher observes that this generalisation is faulted since socio-economic factors like poverty; unemployment and illiteracy are not acknowledged as factors that could hinder community members from participating in their development.

Furthermore, Swanepoel and De Beer (2006:28) add that the “radical” view of participation is a way of ensuring equity. Hence, participation must ensure inclusion of the poorest of the poor, because their democratic right are enforced through it. Swanepoel and De Beer (2006:29) suggest a clear guiding principle as “don’t mobilise people to play a minor role in a project and to fill a subordinate position, in relations to professionals, bureaucrats, and donors. If people are not the main role-players, there is something wrong with their participation”. The indigenous knowledge possessed by the community members enables them to participate in the project.

Sillitoe, Dixon and Barr (2006:3) define indigenous knowledge as being related to any domain in development that currently pertains to natural resources management. According to these authors, it is conditioned by the socio-cultural tradition - a culturally relative understanding inculcated into individuals from birth with a structural interface environment. As a result of many references to the indigenous knowledge approach, there is no overall theoretical model on it. Sillitoe et al. (2006:4) further states that Indigenous Knowledge Systems (IKS) is equally referred to as skills and knowledge transmitted orally through experience and repetitive practices across generations.

Indigenous knowledge is defined as:

...the knowledge that people in a given community develops over time, and continues to develop. It is based on experience, often tested over centuries of use, adaptable to local culture and environment and it is also dynamic and changing (International Institute of Rural Reconstruction - IIRR 1996:7).



Uphoff (1991:474) states that one common failing of many project designers is to underestimate the technical knowledge of local people, which social scientist could bring out. Potter et al. (2003:16) add that IKS is likened to an “actor-oriented approach to development”. Therefore, beneficiaries of development basically initiate and chart their own developmental projects by executing them to address their needs. Long (2003:16) observes that IKS is based on the outcome of daily interactions and their realities in life worlds.

The characteristics of IKS are described below. Dei (1997:148-149) states that if the idea of development is to have credibility, there is a need to legitimise the IKS base to break the web of entangling the conventional debate on development. Thus, there are several possibilities of using indigenous knowledge to empower communities by utilising their own local creativity and resources. Alternative strategies of local development must be developed using the basic principles of indigenous knowledge. The task of integrating and validating indigenous knowledge requires scholarly work and the knowledge base of societies. Any research in knowledge should go beyond academic inclination to the local communities and to the public domain. It is a way of tapping into the knowledge of the communities.

### ***2.5. Social learning process***

According to Kotze and Kellerman (2001:43-45) the social learning process approach makes attitudinal and procedural demands on development organizations and their management. The social learning process in the field of management relates to the concept of the learning organisation. The development organisations ought to develop a learning attitude right from the outset and establish a culture of learning, such that the local people are participating in the process of learning.

Additionally, this learning process is an advanced stage of the institutional building approach. It involves “bottom-up” decision-making and “partnership action”. The local community could make a major contribution to the input of the project and the project design. Communities remain the sources of valuable insights and knowledge that could serve as a basis of innovation and the issue of joint planning reduces risk of using inappropriate methods imposed on the local government. It serves as a foundation for development in the communities instead of the “blueprint” designs,

incapable of bringing about sustainable and authentic development. This approach assists IE community members to address their identified need. In every sphere of the IE electricity project, the social learning process occurs and enables them to be “self-reliant and self-governed”.

Korten (1983:214), Kumar (2004:27), Kotze and Kellerman (1997:44), identify that the learning process takes place in three stages:

- **For social learning to be effective:** A work programme or project is developed at the grassroots with participation from the project management team of experts, as well as the communities’ beneficiaries. IKS is assessed and integrated with skills of the programme/project management experts. The process is participatory and interdisciplinary. This involves all business skills and experience, while considering the notion of conceptualisation and it is one of the first planning steps in programme management.
- **For social learning to become efficient:** the first stage leads to the conversion of the most important activities into routine procedures. An analysis is made of the abilities of the organisation’s resources.
- **For social learning to expand and reach self-reliance:** This stage focuses on orderly expansion. The focus is on continued evaluation and refinement of the organisation’s resources.

## ***2.6. Capacity building***

According to Swanepoel & De Beer (2006:41) capacity building strengthens a community. This strengthening takes place at both the concrete and abstract levels. Community members become more self-sufficient and self-reliant, which does a lot to their dignities. They also learnt how to organise their projects more effectively. Conversely, they learn how to run projects, and their leadership structures develop accordingly. Chambers (2005:48) states that capacity building is used as an inclusive term and sustainably enhances the competence and problem-solving capacities of people and institutions.

According to Paul (1987: 3-18) capacity building is the effort that strengthens skills and knowledge of beneficiaries so that they can take responsibilities for their own development. Capacity building contributes to the sustainability of a project beyond the disbursement period due to the enhanced level of beneficiary interest and competence in project management. In similar vein, Esman (1991:6) regards capacity building as the cultivation of skills, institutions and incentives that enable communities to sustain improvements of their situations and to cope with new challenges. The IE community members possess skills which enable them to improve their situation, by providing electricity for the community.

In order for communities to participate in development activities, their capacity has to be strengthened. Bagadion and Korten (1991:73-75) argue that addressing social issues often involves building new capacities among people at the community level. However, many government agencies assigned to implement large projects have norms, procedures, policies and attitudes that provide little support for building such capacities. When new capacities need to be developed, the need is not for a comprehensive plan but rather for an incremental planning process.

An incremental planning process must allow for trial and error; continuous examination of the activities at community level to identify problems and successful approaches; and adjustments in agency policy, procedures, and organizational structures to accommodate responses to grassroots level of needs. The process itself must be shaped to develop both individual and organizational systems needed for the eventual implementation of new approaches on a broader scale. In short, what is needed is a social learning process approach to capacity building. De Beer (1997:21-22) further suggests that every institution involved with communities has an obligation to facilitate capacity building as a social learning process.

Monaheng (2000:134) identifies the capacity building process as having three significant components. Firstly, it involves acquisition of knowledge and skills to produce goods and services that satisfy communities' needs. In community development, the communities are empowered by strengthening their capacities to engage in development through educational and skill building programmes. Secondly, capacity building pertains to the necessity to make productive resources available to

the underprivileged. Thirdly, capacity building includes the establishment of effective and efficient administration and an institutional structure. It also entails the improvement of coordination and communication between different stakeholders in development. These steps help to strengthen the institutional capacity for sustaining development.

Finally, Swanepoel (1997a: 193) suggests that community participation must become a process through which the capacity of the communities is built, so that they can accept responsibilities to undertake their own development efforts. Therefore, in the process of development, the prime concern must be the development of communities' capacity to accept responsibility for any development and become self-reliant.

### ***2.7. Self-reliance***

Coetzee (2001:125-126) asserts that authentic participation takes place when people are consciously participating in their own development. Participation and self-reliance emphasize the necessity to get beneficiaries to participate in development and breaking the monopoly of knowledge. Self-reliant endogenous development exists, if beneficiaries of development are also its contributors.

According to Burkey (1993:50-51) self-reliance is a common term analogous to terms such as basic needs, awareness, and participation. People make efforts to become self-reliant - the process is not imposing, and rather people become self-reliant. Community members must believe in themselves, that they are responsible for their development, by contributing their own quota to the developmental issue at stake. They must contribute their own human, financial and material resources to develop their communities. If assistance is given from outside, it cannot be managed by them.

Burkey (1993:50) states that self-reliance requires knowledge and skills, that people can learn how to acquire and manage their own resources. They also need to learn how to organise themselves before gaining access to services and resources thereby preventing exploitation. The people must have self-confidence in their knowledge and skills, and in their abilities to identify and find solutions to problems in order to improve their fortunes. As their self-confidence improves, they should participate more in complex activities. When self-confidence evolves, it leads to self-reliance.

For Burkey (1993:50) self-reliance is the ability to do something for oneself, by maintaining one's self-confidence and making independent decisions within the group or as an individual. Self-reliance comes from within, but is generated outwardly.

Oakley (1991:17) refers to self-reliance as a positive effect on rural communities participating in development projects. It helps to break the mentality of dependence, promotes self-awareness and confidence and encourages the people to participate in solving their own problems. As Burkey (1993:50) states, it is doing things for oneself, maintaining one's own self-confidence by making independent decisions. Self-reliance is based on social relationships in which like-minded individuals come together and voluntarily pool their resources and efforts together in small groups. The decisions taken at all levels are based on self-confidence and determination. Burkey's ideas on self-reliance were practiced by the IE community members in the electricity project.

## **2.8. Empowerment**

Taconni and Tisadell (in Swanepoel and De Beer 2006:30) describe empowerment as an ability to have decision-making power. Swanepoel and De Beer (2006:30) reiterate that empowerment does not mean having certain skills or a certain token representation. Participation can only be meaningful if it goes with empowerment (Ibid: 29). Chambers (2005:209) notes that power is often thought and spoken about in an undifferentiated manner as something good to possess. He states that power is 'gained', 'seized', or 'captured' and 'lost', 'abandoned' or 'surrendered'. Convening, catalysing, facilitating, coaching and supporting lowers can turn upper's *power over* into *power to empower*<sup>3</sup>.

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<sup>3</sup> Chambers (2005:209) states that *Uppers with power change their behaviours towards lowers. He observes that a way to foster **power with** includes decentralisation, alliances, networks, social movements and communities of practice, and **power within** through capacity building and development. Thus, lowers gain through synergy of **power with**, **power within** and **power to**. Uppers can further gain by doing what is right, but not by diminishing the stresses of **power over** control orientation. Using one's own **power over** to **empower** others can often be effective, liberating, fulfilling and fun i.e. a gain in well being, not a loss. Change agents could work in alliance with the beneficiaries of development, to ensure a sustainable outcome of an intended development project or programme. This ensures mutuality between the uppers and lowers i.e. change agents and beneficiaries of development.*

According to Singh and Titi (1997:13) empowerment evolves concurrently with the “bottom-up” approach to development. It is a promotion of community development through self-help with emphasis on the process rather than on the completion of a particular project. Empowerment goes beyond the notion of democracy, human rights and participation, to include enabling people to understand the context specific reality of their environment (social, political, economic, ecological and cultural), to reflect on factors that shape their environment and to take steps to effect changes and improve their situations.

Oakley (1991:9) identifies two basic views of empowerment. The first views empowerment as the development of skills and abilities, which enable people to manage and/or negotiate better with a development delivery system. The second views empowerment as a process that equips people to decide to take action regarding their development process. In the light of this explanation, empowerment is defined by Burkey (1993:59) as a process that “makes power available” so that it may be used to gain access to resources in order to transform their standard of living (Max-Neef 1991:61). Rahman (1994:206) describes empowerment as a process of enabling people to articulate and assert by words and deeds toward contributing to their community development. Rahman’s view on empowerment aligns with the efforts made by IE community members to initiate and facilitate the electrification project.

Singh and Titi (1997:6) remarked that the concept of empowerment has been at the centre of a re-conceptualisation of development efforts. This indicates a paradigm shift, and it is a strategy for poverty alleviation in development, especially in the rural areas. According to the UNDP (in Singh and Titi 1995:6) development must be woven around the community, not the community around development, and it should empower groups and individuals instead of disempowerment of the people. Despite developmental assistance, the number of rural communities under the poverty line continues to increase.

Chambers (1997:27) warns that whether empowerment is good or not, depends on who is empowered, and how they use their new power. If those who gain power are outsiders, or the local elite, that dominate and exploit the poor and the disadvantaged, then the poor may be worse off. Therefore, the challenge is to identify the poor to

empower themselves and to achieve equity. Furthermore, Chambers (1997:11) suggests that equity can be served by empowering the poor. Thus, good change becomes more sustainable when it is owned locally. Chamber's view supports sustainability ideology behind the IE community electricity project.

### ***2.9. Sustainability (sustainable development)***

The last component of the "building blocks of development" is sustainability. The same as the other components of the building blocks of development, community participation should lead to sustainable development.

Clayton and Radcliffe (1996: 34) refer to sustainability of the human species as been ultimately at the level of interaction between the entire complex human systems and all environmental systems. He further states that sustainability can be understood based on the understanding of behaviour within the systems in general and of human and environmental systems in particular. Liebenberg and Theron (1998:126) assert that participation and empowerment constitute a central component of sustainable development. In their view, the poor can base sustainable development on beneficiaries attaining access to resources and mobilisation of those resources, in order to address their basic needs. Roodt (2001:312) states that it requires more than community participation in order to achieve sustainable development. However, it also requires a coherent State policy at national, regional, and local level, with participation from the private sector and NGOs. The abovementioned statement is not always applicable, especially in cases where a rural community (like IE) take full responsibilities for their infrastructure developments without outside assistance.

Dresner (2002:51) refers to sustainable development as old fashioned development through economic growth, by paying lip service to concern about the environment. He observed that the Brundtland report and wealthy countries views on economic growth contributed to this tendency. Furthermore, Dresner (2002:47) quoted Donella Meadows as stating that "sustainability means meeting those physical requirement; and beyond that, meeting those social requirements that have to be met so that the system doesn't blow up itself apart socially". Dresner (2002:76) observes that "the idea of sustainability originally emerged out of "limits to growth" thinking. He opines

that the “sustainable” part of Brundtland “sustainable development” imposed limitations by the state of technology and social organisation on the environment’s ability to meet present and future needs. Sustainability and community participation entail decisions at the local level: because rural community members are experts of their local realities. It is in consonance with the IKS approach to community participation.

### ***2.10. Interdependence of the building blocks of development***

The experience of development practitioners in the previous decades shows that community participation can be linked and integrated with other approaches to development. Thus, a “holistic” understanding of the “building blocks of development” (see Figure 2) is enhanced from this relationship. The various components of the building blocks of development cannot exist in isolation, because there is a need for them to harmonise, grow and work together. Earlier it was shown how various components of the building blocks are applied within the literature. It was also discovered from the abovementioned theoretical constructs that the building blocks of development are interlinked. This interdependence shows that participation leads to social learning as social learning leads to capacity building, capacity building leads to empowerment, as empowerment results in self-reliance; finally self-reliance leads to sustainable development. Therefore, a multi-pronged approach like the building blocks of development must be used to effectively address challenges facing development. Subsequently, in using a “holistic approach” as a tool in this study, various components of the building blocks of development are explored for further analysis (Kotze in Kotze 1997:61).

### ***2.11. Relevance of the building blocks of development to the case study***

Project participants should have a direct say in the outcome of a development intervention and should own the process (IAP2 2000; Theron, Ceasar and Davids 2007). On the contrary, it happens seldom. The building blocks of development agree with the principles behind the IE case study. Project beneficiaries should take ownership of their project and ensure its completion and sustainability. As an authentic participatory development approach, community members acknowledge the “meaning-giving and living context” of their situations and devise means to address



their needs (Kotze in Kotze 1997:67). Mutual social learning takes place during this process of participation, self-reliant, capacity building, empowerment and sustainability. People in rural areas should be empowered to pursue their own developmental projects and attain their objectives.

In this study, there will be a demonstration of how an individual initiative leads to community participation, which is beneficial to a rural community project. There will also be a demonstration of how community members identify their needs, work earnestly to attain their goals and objectives of facilitating a rural electricity supply. This study will also show how participation through sustainable development leads to authentic development in IE.

### ***2.12. Summary***

This chapter integrated relevant literature to meet the aims and objectives of the study. From the abovementioned analysis, both inductive and deductive reasoning are inferred. The components of the building blocks of development demonstrate to be strong facilitators of sustainable development. The researcher uses relevant literature to present a broader view on the topics. The next chapter considers participation and IAP2, sustainable development, and rural electrification based on case studies.

## **CHAPTER THREE**

### **3. PARTICIPATION AND IAP2, SUSTAINABLE DEVELOPMENT, AND RURAL ELECTRIFICATION CASE STUDIES: INTERNATIONAL PERSPECTIVES**

#### ***3.1. Introduction***

This chapter deals with international perspectives on participation and the International Association for Public Participation's (IAP2) principles of participation, sustainable development, and rural electrification project case studies. The following themes are considered: participation, contemporary approaches to sustainable development, principles of sustainable development, the 2000 Millennium Declaration, Agenda 21 of 1992, the Johannesburg Summit 2002, the UN Development Frameworks and Strategies for Sustainable Development, and the international context and case studies of rural electrification. These views by various authors and schools of thoughts can clarify terms used in this study. The abovementioned analysis falls within the context of integrated rural sustainable development, with special reference to rural electrification. It focuses on integrating various themes and constructs with the concept of integrated rural sustainable development.

As previously asserted, the availability of a high quality form of energy is inconsistent globally (German Advisory Council on Global Change 2004:41). Access to modern energy is an essential part of the fight against poverty and a prerequisite for reaching the Millennium Development Goals (DFID 2002). The global thinking and philosophy concerning these key issues show that participation leads to sustainable development in a rural community. Hence, as discussed in chapter 2, community and individual participation remain the panacea for sustainable development.

### 3.1.1. Principles and Spectrum of Participation

At the international level, the principles of participation formulated by IAP2 (2002) conform to the following global declaration<sup>4</sup>.

- The public should have a say in decisions about actions that affect their lives;
- Participation includes the promise that the communities' contribution will influence decisions;
- The participation process communicates the interest and meets the process needs of all participants;
- The participation process seeks out and facilitates the participation of those potentially affected;
- The participation process involves participants in defining how they participate;
- The participation process communicates to participants how their input affects the decision;
- The participation process provides participants with the information they need to participate in a meaningful way ([www.iap2.org/corevalues/index.shtml](http://www.iap2.org/corevalues/index.shtml)).

While the abovementioned views deal with participatory processes, Pryosusilo et al. (2005)'s views were based on collaboration, empowerment, involvement, information and consultation (see Appendix 4 for an alternative interpretation of IAP2's principles, as well as Theron, Ceasar and David 2007).

An application of the IAP2 Principles to the case study shows that the IE community members collaborate, and were empowered, informed, and were also consulted in all phases of the project ranging from its beginning to completion. The community members were engaged through community meeting and were conscientised on the need to directly participate in all spheres of the project and make it sustainable.

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<sup>4</sup> *Well structured planning models such as IAP2's principles of Participation, becomes irrelevant if applied to the complex settings in developing countries (Theron, Ceasar and Davids 2007). These authors add that further modification of IAP2's principles will make it more adaptive to the setting of developing countries (Ibid).*

A town crier passed across information concerning village meeting to the community members at the dawn of day. The core values of IAP2 Principles of participation enlisted above led to the formation of five key Spectrums of participation<sup>5</sup> shown below (Theron, Ceasar and Davids 2007).

**Table 1 Spectrum of participation**

**IAP2 PUBLIC PARTICIPATION SPECTRUM**

**INCREASING LEVEL OF PUBLIC IMPACT**

INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
<b>Promise to the Public:</b>	<b>Promise to the Public:</b>	<b>Promise to the Public:</b>	<b>Promise to the Public:</b>	<b>Promise to the Public:</b>
We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
<b>Example Tools:</b>	<b>Example Tools:</b>	<b>Example Tools:</b>	<b>Example Tools:</b>	<b>Example Tools:</b>
<ul style="list-style-type: none"> <li>• fact sheets</li> <li>• web sites</li> <li>• open houses.</li> </ul>	<ul style="list-style-type: none"> <li>• public comment</li> <li>• focus groups</li> <li>• surveys</li> <li>• public meetings.</li> </ul>	<ul style="list-style-type: none"> <li>• workshops</li> <li>• deliberate polling.</li> </ul>	<ul style="list-style-type: none"> <li>• citizen advisory committees</li> <li>• consensus-building</li> <li>• participatory decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>• citizen juries</li> <li>• ballots</li> <li>• delegated decisions.</li> </ul>

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### 3.1.2. Participation Strategies

There are 47 identified strategies of participation by IAP2 (2000). For the purpose of this study, the relevant strategies will be featured. The Spectrums above ranges from inform to consult to involve, collaborate and empower through the process of community participation. It is observed that more authentic participation is attain when community members follow the “building blocks of development” in a logical

<sup>5</sup> See page 42 for more description of the IAP2 Spectrum of participation.

sequence via community participation to social learning to capacity building, self-reliant and empowerment to enhance sustainable development.

The IE community utilised both individual and community participation strategies as the driver in ensuring success of the electricity project. Given the IE electricity project environment, individual and community participation strategies that were used during its initiation and completion include:

**Level 1: Community participation strategies through “consulting” of participants**

1. Community meetings were organised and communication passed on to community members via a town crier. The town crier announces and conscientise members of the community about the time of the meeting and agenda to be discussed.
2. An interview was carried out through a questionnaire using a research assistant. There was a good liaison between the researcher and the research assistant through both phone calls and e-mails.
3. A survey was indirectly conducted through questionnaire given to participants and based on their responses to the questionnaire. During the consultation strategy, there is no information sharing.

**Level 2: Community participation strategies through “informing” participants**

1. Information regarding the project was made available to community members and feedback given based on the progress of the project (IAP2 2002). The people are informed to facilitate collective individual action.
2. Field trips were embarked upon by the research assistant to enhance adequate data collection and enhance a good output and outcome of the data analysis.
3. The Internet was used as a medium of communication between the researcher and the research assistant. Information on data collected became available after he completes the field trip section.
4. The Research assistant was responsible for the collection of data during the field trip.
5. An unpublished article was used for the gathering of information regarding the IE community electrification project.

6. The telephone was used sometimes to get the feel of what happens during the field trip and interview. This enables the researcher to know where there are problems in the fieldwork and proffer solution accordingly.

The information sharing strategy is referred to as a “means to an end” because community participation is generally on short-term basis. Emphasis is been placed at attaining the objective and not so much on the act of participation itself.

### **Level 3: Community participation strategies through empowering participants**

1. **Capacity building:** Some of the community members were capacitated, empowered and trained to be responsible for the maintenance and installation of electricity in IE. Their capacities were greatly enhanced through training provided in the process of the electricity installation (Swanepoel & De Beer 2006:41; Paul 1987: 3-18; Bagadion and Korten 1991:73-75).
2. **Workshop and stakeholders meeting:** Community members who are trainable attended workshop, where their capacities are developed and are empowered to be responsible for their own self-development and community development (IAP2 2002).

A community participation strategy that empowers participants is recommended for any rural community project. Decision-making on the project lies in the hand of IE community members, because they financed the project. Therefore, decentralisation is encouraged at the local level of governance, in order to enhance effective response of community members to address their needs through community participation.

### ***3.2. Sustainable Development***

Other authors and the Brundtland Commission defined sustainable development in sub-sections 1.1 and 2.9 respectively. Theoretical and conceptual analogies of sustainable development with approaches to sustainable development will influence output of this section in the study.

### **3.2.1. Theoretical and conceptual analogies of sustainable development**

Baker (2006:41-47) considers the theoretical and conceptual analogies of sustainable development.

- Sustainable development is about the long-term transformation of basic aspects of the present industrial economic system. Promoting sustainable development is about the construction of a new development paradigm framed within the ecological limits of the planet;
- There has been a proliferation in the meanings and applications of the term, making the search for a precise definition frustrating;
- Sustainable development has come to be associated with several normative principles that now guide environmental management practices and the international law, but increasingly stretch into other issues.

### **3.2.2. Approaches to Sustainable Development**

Sustainable development has different meanings and interpretations in various development fields. Hounsome and Ashton (2001) contend that sustainability is a value-based concept that varies, depending on people's perception of the relative value of economical, ecological and social capital. The four approaches to sustainable development include economists, ecologists, socialists, and the human development approach.

- **Economic Approach**

The economic approach explains sustainable development on the basis of an assumption that the consumption of the earth's capital is income, described as the maintenance of capital (Escobar in Peet & Watts 1997:46-56). Capital is limited to the use and maintenance of machinery, buildings, finances and infrastructure that promote and support the production of goods and services. Economic growth is referred to as an enhancer, capable of meeting the objectives of sustained development. Economists contend that economic growth serves to enhance well being of people and as such enlarges people's choices, thereby ensuring sustainability (Dollar cited in Hopwood et al. 2005).

- **Ecological Approach**

Ecologists put more emphasis on improving human welfare by protecting the sources of raw materials used for human needs and ensuring that reservoirs for human waste are not filled beyond limits in order to prevent harm to humans (IISD 2002). These include provision of resources for direct use such as consumption, and indirect use such as the provision of containers for human waste. To buttress this point, the ICLEA (1996) adds that fundamental to sustainable development is the need to ensure that human consumption remains within the limits to which ecosystem goods and services can be utilised as set by the natural environment.

- **Social Approach**

WCED (1987) observes that sustainable development is attained if community members gain control over their resources, consumptions, productions and knowledge bases. It implies that the socialists prioritise the need to address human needs in order to overcome economic inequalities and ecological destruction, and therefore, sustainability. Unlike the Economists and Ecologists, this approach defines sustainable development in terms of people's empowerment, their participation in development, social mobility and cohesion, cultural identity and institutional development. In other words, it is achieved when people experience power to take actions that improve their short and long-term livelihoods.

The IISD (2002) further assume that when people are in control of their lives and resources, their quality of life will improve automatically. This will ensure the accomplishment of sustainable development. In the social approach, sustainable development is geared towards meeting the needs of all societies and individuals. However, this should be done within the carrying capacity of the natural system and ensure that the rich and poor people have equal opportunities and choices for the improvement of their lives.

- **Human Development Approach**

One of the practical applications of sustainable development that seems inclusive of social, economical, and ecological approaches is the Human Development Approach



(HDA). Addressing the needs of the poor will stabilize the use of the environment, increase productivity and establish long-term balance between population growth and natural resource consumption (Roseland in Hopwood et al. 2005).

The UNDP (1991; 1992) refers to the HDA as a process through which people's choices are expanded at all levels. The process upholds lasting and a healthy life as well as people's acquisition of knowledge and access to resources needed for a decent standard of living. Furthermore, Ul Haq in Harris et al. (2001:60) agrees that the "human development paradigm is the most holistic development model... It embraces every development issue, including economic growth, people's empowerment, provision of basic needs and social safety nets, political and cultural freedoms, and all other aspects of people's lives". There are four elements of the HDA namely empowerment, equity, productivity and sustainability that are pivotal to sustainable development (Ul Haq in Harris et al. 2001). For the purpose of this study, the HDA will be followed.

### ***3.3. Translating the Human Development Approach into practice***

An increase in community participation through decision-making, transformation of the world economy and power structures remain vital to successful implementation of sustainable development strategies, policies and programmes. This is translated into activities and commitments to the integration of social, ecological and economic objects of sustainable development at local, national and international levels. For sustainable development to be successful there has to be sound "commitment to social equity; with a view that access to livelihood, good health, resources, economic and political decision making are connected. When people are not having control of their lives and resources, inequality and environmental degradation are inevitable" (Hopwood et al. 2005:38).

Wals and Jickling (2006:9) support an emancipatory view of sustainability. Their position on "grassroots sustainability", is open, self-determined and co-created by active, empowered citizens as against "big brother sustainability" (also called ecototalitarianism) in which sustainable development is closed, predetermined and prescribed, with passive, detached citizens. Grassroots sustainability is based on a

deep and broad interaction through integrated, participatory, democratic and social learning processes, while the “big brother sustainability” is based on narrow, deep, or shallow interaction, through hierarchical, authoritative, technocratic conditioning (Wals and Jickling 2006:9). The next sub-section discuss the Johannesburg 2002 Summit on sustainable development, views of the Rio 1992 Earth Summit, and the United Nations Development Framework and Strategies for Sustainable Development. These views have tremendous impact on sustainable development.

### **3.3.1. Earth Summit 1992, the United Nations Development Frameworks and Strategies on Sustainable Development and World Summit on Sustainable Development 2002.**

This report is based on the United Nation Development Framework and Strategies for Sustainable Development. Agreements at the 1992 Rio Earth Summit and the 2002 World Summit on Sustainable Development reinforce the Millennium Declaration and particularly the Millennium Development Goals, adopted in 2000, that pledge to "integrate the principles of sustainable development into country policies and programmes, and reverse the loss of environmental resources" (see MDG Goal 7, Target 9 in appendix 1). Most countries have gone to great lengths regarding both execution and innovation of environmental objectives.

The report reiterates that a strategic approach is required to address sustainable development challenges such as poverty, political instability and conflict, environmental deterioration, population growth and disease, as well as integrating environmental sustainability into development policy and practice. This agenda, being complex, requires establishing long-term and effective strategies for sustainable development. A strong commitment and leadership at the national level will improve coherence of existing processes, frameworks and strategies. Its implication is an interactive process of planning; setting priorities, implementing choices relevant to a country's sustainable development needs and learning from experience to continually improve people's lives. The documentation and dissemination of successful experiences will also accelerate and facilitate the work of participating countries ([http://www.undp.org/fssd/about\\_us.html](http://www.undp.org/fssd/about_us.html)).

The Third World Summit on Sustainable Development (WSSD) was held in Johannesburg in 2002. The WSSD had two goals: to hold a ten-year review on the Earth Summit of 1992 and to reaffirm global commitment to sustainable development (Hens and Nath in Baker 2006:65). The summit resulted in the Johannesburg 2002 Declaration on Sustainable Development. It refers to the need of promoting sustainable development through multi-level policy actions; adopting a long-term perspective and encouraging participation (see Agenda 21 in appendix 3). The declaration lacks intellectual sophistication and authority, which the Rio Declaration still commands (Hens and Nath in Baker 2006:66). Unlike the Rio Declaration, the Johannesburg Declaration was unlikely to lead to new international negotiations or legal conventions (Hans and Nath in Baker 2006: 64).

According to the aforementioned Johannesburg 2002 Declaration, community participation remains an integral part of sustainable development. These viewpoints clarify the essence of this study. The principle of community participation should be acknowledged in the field of sustainable development. Participation guarantees authentic sustainable development, especially in the rural areas. The next subsection discusses links between the 2000 Millennium Development Goals and energy vis-à-vis their impacts on the public policy context.

### ***3.4. Links between Millennium Development Goals with energy and its impact on public policy***

The International Energy Agency (IEA), states that achievement of the 2000 MDGs is predicted to extend access to electricity to over five hundred million people by 2015 (IEA, 2004). The energy sector has a major role to play in achieving the millennium goals (see appendix 1 for overview of the millennium development goals). Further the reports by IEA (2004) show that more than half of the world's population i.e. more than 70 per cent of the world poorest inhabitants, are located in rural areas. Access to energy can have a tremendous impact on rural growth and livelihood. It can provide a basis for improving productivity of the people in terms of economic development, facilitating income generating activities and improving the business climate. From a human development angle, the energy sector contributes to reducing child mortality, maternal mortality and many diseases by facilitating better health services. It can also

facilitate the emergence of higher literacy rates, gender equality and women empowerment.

Although the MDG mentions the importance of energy, it cannot be realised without the provision of energy, which enhances all aspects of human and economic development. Following this argument, government can formulate and implement energy policy using a people-centred approach. In both developing and developed countries, development strategies can be based on achieving the 2000 MDGs. Developing countries can place greater emphasis on the development of rural energy demands. A good knowledge of energy uses in rural development can guarantee sustainable energy policy and enhance a sustainable rural electricity energy policy. The idea of individual and community participation ought to be encouraged especially in rural areas, where the government is not effectively involved with development. Integrated rural development and the international context of electrification (using case studies of rural projects) is been explained in the next section.

### ***3.5. Integrated Rural Development and International Context: Case Studies of Electrification Projects***

#### **3.5.1. Introduction**

The issues of inadequate local capacity and excessive centralization of decision-making are some of the main factors that constrained rural projects (Rondinelli 1993: 77, 157, 172). According to the ISRDS, rural areas of developing countries worldwide suffer from pervasiveness of poverty and poor service delivery, which continue to constrain their development efforts (ISRDS 2000:1). The prevalence of rural poverty provides major challenges to the governments, organizations, civil societies and developmental agencies. Failure of many rural development projects for the last three decades, led those involved to consider in more detail factors that undermine successful outcomes.

Furthermore, due to globalisation, many developing countries discover that if rural and urban communities are appropriately empowered, they can often manage their own local development efforts considerably better than agencies of the State (ISRDS

2000:2). Theron (forthcoming) asserts that a properly worked through system of participation and decentralisation holds the promise of providing mechanisms for empowering communities adequately. It is vital to determine how sustainable development fits into the context of integrated rural development. The next subsection shows how rural development thrives amidst sustainability.

### **3.5.2. Integrated Rural Development**

According to the ISRDS (2000:14) integrated rural development (IRD) is known to be multi-faceted in terms of ensuring improved provision of services, enhanced opportunities for income generation and local economic development. It aims at the improvement of physical infrastructures, social cohesion, physical security within rural communities, active representation in local political processes and effective provision for the vulnerable. The concept places emphasis on facilitating change in rural environments to enable poor people to earn more, by investing in themselves and their communities. It could also contribute towards maintaining key infrastructures for their livelihoods by identifying opportunities and acting on them.

IRD is sustainable whenever it meets needs of the local community in terms of growth - the people care for the success of their projects, and there are available resources for enhancing such programmes. This can be facilitated through effective community participation, especially when the people respond to the projects and activities, and the projects are well articulated and prioritised at the local level. The local level of governance facilitates and coordinates participatory decision-making by mobilising available resources (Theron forthcoming).

IRD deals with a poverty-oriented strategy and adopts its features from community development. In this strategy different stakeholders of development coordinate their efforts with governments, non-government organizations and the local communities. They work together to maximise their efforts and avoid unnecessary duplication of tasks (Monaheng 2000:125-131 and Theron forthcoming). This enforces a partnership planning approach to community participation.

According to the abovementioned view, IRD focuses on issues of rural poverty, within a “holistic approach” (Kotze and Kotze 2001:61). For example, an increase in the production of agricultural products is not enough to meet these challenges. It is crucial to look at the factors responsible for the inability among the poor to benefit from increased agricultural outputs. Monaheng (2000:125-131) identifies a lack of access to land, inadequate infrastructural facilities, inadequate education, inadequate health personnel and poor transport facilities as negative factors in the rural areas. These variables make it difficult for meaningful development to occur. One way forward is to engage stakeholders to collectively solve their problems. This could eventually lead to efficiency and effectiveness in their efforts to attain development (Theron forthcoming). This concept has a constant stability with ideologies behind the “building blocks of development”. In essence, in an environment where community members collectively participate in a community project through social learning, empowerment, capacity building, and self-reliance; sustainable development flourishes.

Following the ISRDS (2000:20)’s report, the quest to attain integration of developmental plans at the local level of governance remains complex. Local governments fail to initiate appropriate structures for the integration of developmental plans in their communities. Rural development is not being integrated into the mainstream of development due to the multiplicity in their levels of governance. As stated previously, an effective mechanism for local level integration is a participatory self-reliant development. This involves the beneficiaries of development charting their own course of development (Burkey 1993:40-70, Theron forthcoming). Thus, Rondinelli (1993:4) emphasises that the planning and management procedures ironically adopted by government and international aid agencies for preparing and implementing development projects are more detailed and more complex and uncertain and less amenable to system design and analysis. Furthermore, Rondinelli (1993:5) reiterates that detailed and systematic planning is time-consuming, costly and frequently entails long delays in translating policies into action and does not always ensure effective results (see Theron forthcoming). Finally, he noticed how planners observed that rural community members are better in suggesting solutions to

their local problems than local government official or international development agencies using IKS approach<sup>6</sup> (Rondinelli 1993: 124).

The outcome of IRD initiatives can be sustained, provided the community members use the following strategies:

- A local context specific and relevant government developmental plan;
- A mechanism that could fully integrate existing programmes and projects;
- An enabling environment for self-reliant participatory development;
- Clarification of the roles of local government and all stakeholders in IRD;
- Decentralization of decision-making; and
- Outsourcing of some services, where local efficiency and effectiveness is lacking (ISSDS 2000:20).

### **3.5.3. How successful is IRD?**

Cernea (1991:439) emphasises that successful projects have appropriate social design for innovation. He states that such projects incorporate indigenous cultural and social structures for their implementations. Cernea connects grassroots mobilisation to long-term success in achieving sustainability.

Furthermore, Cernea (1991:443) states that projects are less successful if planners ignore established socio-economic and cultural patterns of the community in which such a project is situated. For example, an Asian irrigation project ignored social obstacles in the target area to farming water users' organisation and instead relied on the force of ministerial decrees, which farmers refused to follow. A counter example was provided by a Thai irrigation project, its operation and maintenance were expected to be the responsibility of farmers organised into Water User's Groups (WUGs). Water distribution was a responsibility of the farmers elected by WUGs. An audit concludes that the WUGs existed on paper mainly and the canal was badly managed, water distribution was inequitable and people downstream faced water shortages. In both Thailand and Indonesia, WUG problems reflected inadequate consideration of social, cultural, and local economic factors in design and implementation (Cernea 1991:450).

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<sup>6</sup> *see section 2.4 on IKS*

Kottak (1991:452) observes that a rural infrastructural project in Korea had a combination of a strong and experienced implementing organisation. Grass roots participation of beneficiaries help in ensuring success of this project. Kottak mentioned that by identifying needs and planning the projects which address them using socially informed implementation strategies, government faced challenges in making use of natural resources, social experts, indigenous anthropologists and sociologists in the development planning (Kottak (1991: 457). Finally, Kottak explains that the flaws in the projects social designs resulted in failure of many projects not attaining desirable outputs. The next section gives other examples that involve case studies of international rural electrification projects.

### ***3.6. International Case Studies of Rural Electrification Projects***

There are different interpretations in describing rural electrification by different people. Some people describe it as the provision of electricity to rural villages; others refer to it as the electrification of smaller towns far from urban centres. A seminar on rural electrification offers this definition: “To provide rural people with an electricity supply which is appropriate to their social and economic context through the most suitable available technology” (Khalema in Mbewe et al. 1992:141). Khalema shows that the importance of rural electrification has been realised in many countries. Although, in developing countries rural areas are largely un-electrified, efforts are being made to extend the reach of this vital energy source, widely seen as the catalyst of development.

Many governments in developing countries realise that rural electrification can help to solve the problem of non-competitive production costs. Electrification projects call for high initial investments absorbing substantial amounts of scarce resources and capital. The Zimbabwean government, for example, embarked on a major rural electrification programme in 1984 at a cost of Z\$5.8 million<sup>7</sup>. The programme was heavily subsidised by the government and the standard connection fees per customer in 1988 was Z\$250 (Khalema in Mbewe et al. 1992:142). Furthermore, the contributions by customers thus cover no more than 18 per cent of the total capital

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<sup>7</sup> Z\$ signifies Zimbabwean Dollars, MW represents Megawatts, RS represents rural supply.



costs of electrification. The main reason for subsidisation was that as a social service, the return on rural electrification is negative or non-existent in the short-term. Positive returns on the investment are expected in 10-15 years because of growth in domestic and industrial demand. A further benefit in the long term is that the use of indigenously generated electricity will reduce consumption of diesel and paraffin and thus reduce the foreign exchange burden (Khalema in Mbewe et al. 1992:142).

Khalema states that in the 1940s the Irish government subsidised rural electrification. Poverty and lack of development in rural areas were matters of continued concern to the Irish government. It was further realised that unless the quality of farmers' life and their low productivities were improved upon, the country's main export products would continue to be produced by young people from the rural areas. Ireland's first rural electrification pole scheme was erected on 5 November 1946. It was an act of faith on the part of such a small and impoverished country. Some help was possible through the Marshall Plan under which the US government provided aid for post-war reconstruction in Europe, but the vast bulk of the expenditure came from meagre resources of the Irish State (ibid).

The low income among farming communities was a major problem in Ireland. In order to reach financial viability, the government therefore excluded 30 per cent of households' electricity supply, especially in most remote areas where costs of electricity supply per dwelling is high. Even so, the estimated capital cost of the remaining 280 000 households was 21 million Euros in 1946, and was expected to escalate considerably during the course of the scheme. Some form of subsidy was necessary. In some of the other countries that had carried out rural electrification programmes, it was achieved by cross-subsidisation of the rural consumers. In Ireland, however, there were only 240 000 urban consumers. Therefore the government agreed to contribute 50 per cent to the cost of the scheme (ibid).

In India, Rajvanshi (2003) states that even after fifty-six years of independence, 63 per cent of all rural households do not have electricity and use kerosene for lighting. Even in those rural areas that are electrified; there is a shortage of power supply. Thus, it is not uncommon for these areas to have 10-15 hours of power-cuts every day. According to Rajvanshi, there is a shortfall of about 15, 000 - 20, 000 MW of

electricity in the country and India requires about 140 000 MW of additional capacity by 2010 with an estimated outlay of Rs. 5 50 000 corers. Because of the enormous shortage of electricity, industrial growth and general life in the country are seriously affected. Moreover, with problems in the national grid, rural areas are mostly affected since the State Electricity Boards (SEB) provides urban areas with electricity on priority basis (<http://pune.sancharnet.in/nariphaltan/ruralelec.htm>).

In contrast to the abovementioned electrification projects, the Zimbabwean government subsidised cost of the rural electricity project, but in Ireland the government took responsibility of providing electricity. The afore-mentioned international examples are quite different from the case study where community members strictly own the whole electrification project.

Given the abovementioned context of developing countries, governments cannot provide all the basic amenities for the people. Rural community members enjoy fewer amenities provided by the government than in urban areas. Thus, there is a lack of infrastructural facilities in the rural areas. Following these points of departures, rural community members that lack government developmental intervention, should take initiatives of participating in the provision of their amenities.

### **3.7. Summary**

It is pertinent to relate the above viewpoints to local contexts. Sustainable development remains the cynosure to addressing problem of IRD through community programmes and projects, especially where the government cannot provide. The principles behind MDGs (see appendix 1 and section 3.4) are negated where government cannot provide infrastructural amenities for her citizens.

The economic, ecology, social, and the humanist approaches to sustainable development originated from the building blocks of development. The Johannesburg 2002 Summit, as well as rural electrification projects case studies, shows true reflections of community participation in sustainable development. Contrary views were observed in the Asian irrigation project as well as the Indonesian and Thailand projects. Those examples demonstrated why those government programmes and projects without acknowledging the local and social context often fail. A government

decree imposed on community members can not yield any sustainable outcome in such communities. These views contribute to the proper integration of sustainable development and participation in rural community programmes and projects, based on experiences of those case studies.

The IAP2 Spectrum of participation should be understood in the context of developing countries. Those environments of underdevelopment are not conducive enough for technological advancement and breakthrough. An aspect of the Spectrum that should be utilised in developing countries involves participatory decision-making. The developed countries' environments facilitate active compliance with the IAP2 Spectrum of participation (refer to IAP2 Spectrum on page 26-29).

Based on the above international case studies and views of various literatures, it is relevant to observe that success of any rural community project originates from a participatory approach by community members in such project. Where rural community members participate in their own developmental activities through provision of amenities, an authentic participation is ensued to attaining sustainable development. Hence, individual and community participation provide insitu positions to achieving sustainable development.

At the local level of development, decision-making can be decentralised to address lapses of bureaucracy and lack of adequate manpower and financial resources to addressing the immediate needs of community. Allowing rural community members to make well-informed decision about what amenity is required in their communities can enhance it, and device means of providing such amenities for their communities.

Earlier, it was observed that many governments do not have the necessary apparatus to address all developmental issues in local, regional, and national levels of governance. Cases of negligence on the part of government officials in addressing developmental problems cannot be ruled out. Where needs of community members are not met, such community members can devise means of addressing their problems themselves. Rural community members remain the best solution to their development problems, where government fails. Therefore, rural community members using individual and community participation as instruments of executing their community

projects are likely to be successful. The comparative analysis of energy policy within international and Nigerian context will demonstrate how rural communities are capable of addressing their own needs.

## CHAPTER FOUR

### 4. A COMPARATIVE ANALYSIS OF ENERGY POLICY WITHIN INTERNATIONAL AND NIGERIAN CONTEXT

#### *4.1. Introduction*

This chapter focuses on the international context of energy with special references to case studies in Mexico, Ghana and South Africa. These cases are compared in relationship with applications of the energy policy in Nigerian context. In 2004, Kapadia wrote an unpublished World Bank paper stating three primary reasons for the productive uses of energy. These include: maximization of economic and social benefits through access to energy; facilitation of the 2000 Millennium Development Goals; and improvement of the economic sustainability of rural electrification projects and renewable energy markets (see Appendix 1). Although all these reasons for the uses of energy are pertinent, they rule out wider understanding of the meaning of development.

Sen (1999) stresses that development entails a process of expanding the real freedom people enjoy. Within the context of energy many usages are consumptive (e.g., home lighting or television). In fact, these uses can facilitate development. For instance, television viewing is considered traditionally as a consumptive or unproductive use of electricity. However, a recent study in Bangladesh reveals that women in households with electricity were more aware of gender equality issues compared to those without electricity. Energy projects that have a positive impact on education and health are important, because improved health and education increase people's income. The next sub-section considers the international case studies of energy policy. It will also enhance proper integration of energy policy within the Nigerian context.

## ***4.2. International Contexts: Case Studies***

### **4.2.1. Mexico**

According to the Comision Reguladora de Energia (CRE) report of February 2001, people attempt to make a better living where at least their basic needs are fulfilled. Recently rural electrification in Mexico employed grid extension or the use of diesel in village power supplies. Through this means practically all the rural villages were electrified even those with more than 1 000 inhabitants. Due to the growing problem of dispersal, the rural electrification process in some villages has been slow and alternatives to grid extension and the use of diesel in village power supplies are being sought (<http://www.ises.org/sepconew/pages/CountryCaseStudyMX/3.html>).

Energy policy in Mexico focuses predominantly on electrification, subsidisation of domestic kerosene supplies and management of fuel prices. In 1980, as part of the energy programme introduced, the objectives of extending energy supplies to isolated and marginalised parts of the country were identified. The emphasis was on reliable and economic provision of electricity. The extension of an electricity grid to isolated communities exceeded reasonable costs and involved technical difficulties. The policy was to concentrate on installing decentralised systems such as gasoline and small hydroelectric generators (Guzman in Loon 1996: 59).

The Mexican government has good intentions regarding electrification projects and programmes. However, its orientation is misguided, being supply-oriented and narrow-minded. Although the energy programme promised to address energy needs of the weakest sectors, it neglected the consideration of biomass in its strategy, even though biomass constitutes roughly 84 per cent of energy consumed in rural areas. The perception was that since Mexico had an abundant supply of commercial energy resources, it would make sense to encourage their penetration into the rural markets. This perception exists in South Africa as well. The problem is that it is a supply-oriented perspective; strategies devised nationally and based on invalid assumptions often not explicitly expressed (Loon 1996: 62).

Although, Mexico is fortunate to enjoy self-sufficiency due to cheap oil supplies, the rural poor unfortunately continue to use other fuels to meet their energy needs. The Mexican national energy strategy neglected to specify definite steps required to improve supplies of energy in rural areas. This resulted in the continuation of the problems, even though broad policy promised their resolution (Loon 1996:59). Globally, sound national energy policies can be attested but those policies do not have significant impact on rural dwellers. Although, it is clear that the Mexican energy policy neglected specific provision for the rural population, it has not deterred the rural population from attaining reasonable electricity supply. When compared to the Nigerian energy policy, a similar outcome of the impact on the rural communities can be observed.

#### **4.2.2. Ghana**

Turkson (in Loon 1996:55) states that Ghana's energy sector experienced the same problems inhibited by an integrated energy planning process as in many developing countries. As found in most countries before the oil price shocks of the 1970s, imbalances between demand and supply were tackled by augmenting supply. With the oil price shocks, the government became more aware of the need of being guarded regarding energy supplies. Consequently this awareness exposed other previously neglected issues such as the coordination between different energy carriers; analysis of the interaction between energy and the economy; the use of demand management and the implementation of disaggregate analysis of both supply and demand conditions of the energy sector.

Turkson states that a National Energy Board (NEB) had been established since 1986 with the intention of providing overall energy policy analysis. A version of integrated energy planning was being implemented, with the main objectives of improving the reliability and equitable distribution of energy supplies. More specifically, the NEB has three focal responsibilities: energy planning and policy analysis; appraisal of energy investment proposals; and preparation and implementation of renewable energy projects.

Turkson warns against underestimating the size of the task of producing a suitable National Energy Master Plan, but is positive that the NEB has been slowly but surely achieving its goals of doing away with the confusion which characterized management of the energy sector since its inception (Loon 1996: 56).

In view of the energy sector experience in Ghana, the Nigerian government can initiate the Ghanaian strategies of rural energy planning and back it up with an effective implementation policy. Though the federal government of Nigeria established a Directorate of Federal Rural Electrification (DFRE) in 1987, which was meant to undertake rural electrification projects, its objectives were not attained. In Ghana, the planning approach started in 1989 and was formalised in mid-1992 as a “Village Level Planning” (VLP) methodology. It is a useful methodology on which rural energy planning policy can build. In contrast to the planning in Botswana, where local responsibility and participation have been neglected in the past, this approach focuses on the promotion of self-help and participatory decision-making in rural development (Nkum in Loon 1996:57).

The Ghanaian policy of self-help is an essential aspect of the process of rural electrification. The VLC approach is been communicated to the local communities from the outset of the project. Community members contribute to their developmental project using community participation in the project selection, planning and implementation. Prior to the implementation of VLP in Ghana, there was a tradition of self-help. Nkum (in Loon 1996: 58) further notes that for development to be meaningful and sustainable, it must arise from the grassroots as a process where people develop “critical awareness” of the causes of their present state of being, and develop systematic ways of overcoming constraints to their development.

The issue raised above is a confirmation of Freire’s principle of conscientisation (in Burkey 1993:55). It emphasises the issue of “critical awareness” of communities in their developmental activities. If community members are “critically aware” of their developmental needs and problems, it is a step forward in the actual realisation of their needs and concerns in their localities. In essence, development is a process of transformation by community members themselves (Ibid). The principle behind the



Ghanaian experience of VLP is compatible with the IE principles of initiating and funding the rural electrification project.

The General Secretary of the Union of Producers, Transporters and Distributors of Electric Power in Africa (UPDEA), affirmed that access to electricity in Africa was generally very poor and worse in the rural areas, except in countries in North Africa which have about 98 per cent electricity coverage. In sub-Saharan Africa, access to electricity in the rural areas ranges from three to thirty per cent except in South Africa, which had about a fifty per cent coverage record (<http://www.myjoyonline.com/news/asp>). In Ghana, rural communities provided with electricity participated actively by procuring poles, digging holes for the poles and wiring their households and business premises in order to have access to electricity connection. The electricity supply stimulate economic activities, improve educational and health facilities. The rural community members pay token levy to provide street lighting in their communities (<http://www.privatisation.gov.ls/press/prss-study-ghana.htm>).

#### **4.2.3. South Africa**

According to the report of the South Africa Energy Policy Objectives of 1988, the government is responsible to provide affordable energy access to the disadvantaged households, small businesses, and farms, and is to ensure community services (White Paper on Energy Policy of the Republic of South Africa, 1988). The White Paper states that the role of its policy is to facilitate maximum consumption of energy to meet social needs. By the year 2000, the South African government planned to electrify 2.5 million households. The government also targeted electrification of all clinics and schools, and set a goal of universal access to electricity by the year 2010. As a result of this goal, most households are electrified except rural households that are geographically dispersed, due to poor accessibility problem ([http://www.e8.org/upload/File/South-Africa\\_Mini\\_Grid\\_Assessment.pdf](http://www.e8.org/upload/File/South-Africa_Mini_Grid_Assessment.pdf)).

Additionally, the focus on access to basic energy services among the rural poor of the Energy Policy Research and Training (EPRET) Project at the Energy for Development Research Centre at the University of Cape Town is widening. It sets out

to provide a broad framework for energy provision in rural areas by considering the present conditions and key aspects of future rural development policy. It also explored domestic energy services used by rural people and highlights some of the linkages between energy services and other aspects of development. It summarised policy recommendations devised during the EPRET projects that are applicable to rural areas within a broad IRD framework for energy planning. With regard to rural energy planning, the EPRET paper suggested five principles applicable in South Africa, and constitutes the first attempt to introduce the concept of participatory planning into energy planning and policy (Thom in Loon 1996:67-68).

The first of these principles is that integrated energy planning should occur within and/or in accordance with a framework of IRD and hence should address broad objectives and concerns of rural development. Secondly, the starting point of rural energy planning should be a system-oriented understanding of the circumstances, needs, and priorities of energy users. For this to occur, participatory planning that understands the context within which the rural people use energy is necessary. This also implies a sound understanding of the socio-economic and political systems that operate in the community.

The third principle is that rural energy planning should be responsive to the needs, problems, and priorities of rural people and therefore a national or regional energy development framework should be flexible and be able to respond to the local conditions. The fourth principle shows that mechanisms need to be provided in the rural energy planning process to ensure that planners and policy-makers are accountable to the rural people. The final principle is that if an integrated and participatory approach were to be adopted, a wide range of energy-related functions would need to be fulfilled at a local level (Thom in Loon 1996:68).

### ***4.3. Summary***

This chapter focused on the international context of rural electrification vis-à-vis their policy environments. It was found that government's intentions on energy policy were good; but implementation poses a serious problem and therefore a major set back to the realisation of policy aims and objectives. A rural electrification policy ought to be integrated and constantly sustained to meet the needs of community members. This

would enhance integrated rural and sustainable development and provide a framework for proper coordination of electrification projects and other projects in rural communities.

In Ghana, the government followed a grassroots approach and implemented its energy policy strategies through community participation. In contrast, the South African government, at no cost to the community members, provides rural electricity. In Mexico, the implementation strategies of the policy end on paper and there is no genuine effort by these governments to address electricity needs of rural communities. These aforementioned scenarios also negated as mentioned earlier (in sections 3.4 and 3.7 respectively) the principles of the MDGs on the provision of energy to rural areas.

In view of government's clear policy documents on rural electrification, it is obvious that there is either little impact of the policy experience in some places or no impact at all in other places. The theoretical constructs discussed formed the basis of analysis in this chapter. The researcher's observation from these constructs shows that sustainable development functions as the source of enhancing IKS, IRD, participation and other components in the building blocks of development. The next chapter deals with the national context of energy policy within IE. It gives a background about the Nigerian context and IE.

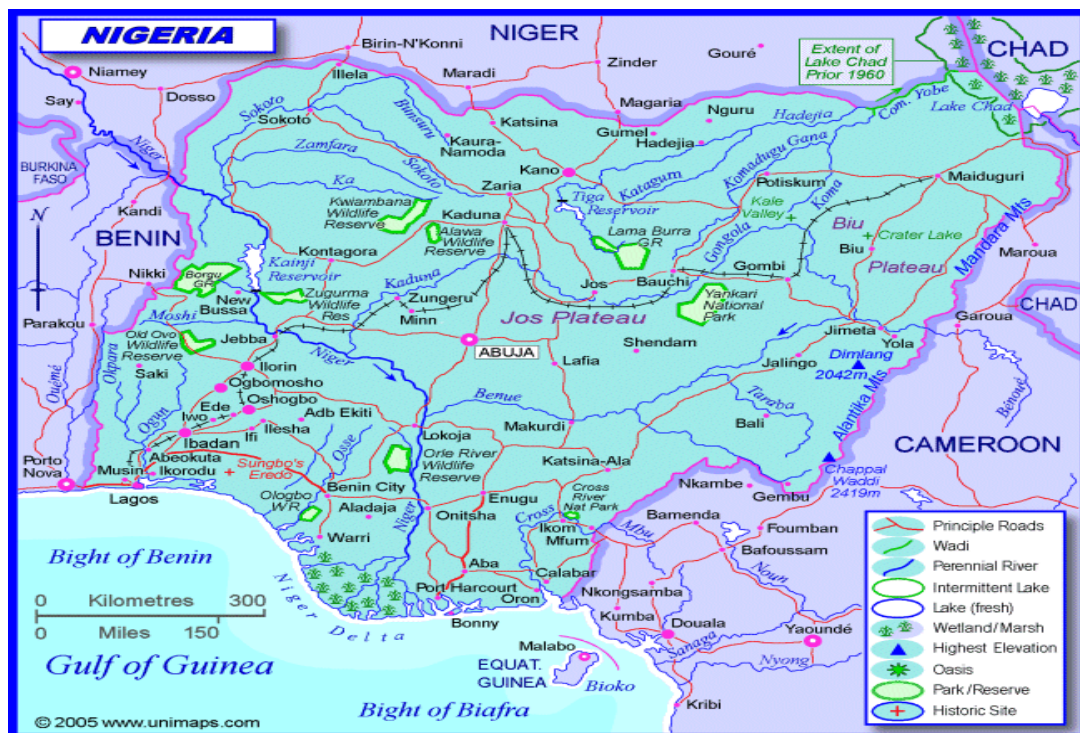
## CHAPTER FIVE

### 5. NATIONAL CONTEXT OF THE NIGERIAN ENERGY POLICY ENVIRONMENT AND THE IE CASE STUDY

#### 5.1. Introduction

The Federal Republic of Nigeria (see figure 3) comprises 36 states, divided into six geo-political zones. The capital city is Abuja. The country is located in an area of roughly 1 million km<sup>2</sup> with a population of over 140 million. There are 250 ethnic groups and there are three major languages in the country namely Hausa, Yoruba, and Igbo. English is the official language of communication and French the second. The previous subsection focuses on the international context of energy policies, their uses and benefits. In this section, comparison will be made between national and international perspectives on energy policies.

Figure 3 The Map of Nigeria



Source: [www.unimaps.com](http://www.unimaps.com)

### **5.1.1. Nigerian National Policy on Energy Research and Development**

According to the Energy Sector Management Assistance Programme (ESMAP)'s 2005 report, the Federal Executive Council approved an energy policy for Nigeria in 2003. It provided for co-ordinated development and the utilisation and management of all energy resources. It particularly allows for energy supply using rural energy via conventional means (petroleum products, gas, biomass, electricity, coal or gas), and non-conventional means (solar, wind, biomass, fuel woods, etc). The provisions on the policy relevant to energy services for the rural people include:

- Taking particular measures to ensure the use of these energy resources in rural energy supply.
- De-emphasising the use of wood fuel and promoting alternative use of energy resources and technologies to wood fuel, among others (ESMAP 2005).

The national rural electrification programme started in 1981, with the aim of connecting all the country's local government headquarters and some important towns to the national electricity grid. The programme is managed by the Federal Ministry of Power and Steel and implemented by National Electric Power Authority (NEPA). Until the time of this study, not all local councils in Nigeria had been connected to the national grid. The local distribution network in Nigeria is poor and slow, because there is no government funding to increase the distribution network. As a result of this constraint, the local distribution network has to contend with insurmountable problems when attempting to restore optimum power supply for rural electrification demands (ESMAP 2005).

On 22 May 2005, the Global Environment Facility Publication (GEF) announced that about 40 per cent of Nigeria's population has access to grid-based electricity, while less than 20 per cent of the rural population is connected to the national grid. Power supply to already electrified end-users is unstable and of poor quality. Rural dwellers depend on a combination of kerosene, candles and oil lamps to meet their lighting needs. About 95 per cent of the aggregate energy demands in rural areas are provided through biomass, primarily wood and agricultural wastes. Liquefied Petroleum Gas

(LPG) stoves and diesel generators serve the energy needs of a tiny minority of the rural rich.

Additionally, GEF discovered that rural electrification has been traditionally grid-based. It is a shared responsibility between the Federal and State governments. The programme is under-funded; suffers from significant gold-plating of technical designs; without time-bound access targets, burdened with high costs per connection; does not stimulate the use of the mini-grid and has no incentives for off-grid electrification through renewable energy.

GEF is of the opinion that Nigeria's population is likely to double in two decades. In the absence of a comprehensive overhaul of rural and renewable energy policy and regulatory frameworks, more Nigerians will be without electricity in the future. Closing the access gap will demand connection targets in excess of half a million annually. The present arrangement for rural electrification can hardly meet one-fifth of this requirement.

### **5.1.2. Nature and extent of power demand**

The nature and extent of energy demand and utilisation in the Nigerian economy relates largely to the pace of industrialisation. On the other hand, the management of energy demand and utilisation depends on the way research and development tools are employed to promote a judicious cost-effective exploitation of the nation's conventional alternative and renewable sources of energy. Because of the importance of national energy policy in this study, there will be a brief introduction of key policy areas with a view of stating the prerequisite involved in the policy ([www.fmst.gov.ng](http://www.fmst.gov.ng)).

### **5.1.3. National energy policy statement**

Policy is described as government programmes of action in achieving goals to address societal problems. Policy implementation is the delivery of strategy-level services and can result in the physical supply of a product, be it a good or a service to the public (Fox & Meyer 1996: 96-98, 107). The nation's energy policy states that resources

shall be developed and utilized on a self-sustaining basis through research, development and profitable application ([www. fmst.gov.ng](http://www.fmst.gov.ng)).

A criticism against policy analysis is its propensity to focus on current policies and how these can be adapted to circumstances instead of following a bottom-up approach by first determining the real (not perceived) need and then formulating a policy. Based on the aforementioned, policy analysis must cease to cover the powerful and the organised and endeavour to reach as wide a public as possible, enriching and enlarging political debate, by promoting competition between ideas and values (Parsons 1995: 615; Hogwood & Gunn 1984: 268-27).

In order to ensure a proper analysis of the literature on energy policy, a comparison of analysis between the Nigerian and international context can enhance such outcomes. The national energy policy is the focus of the next subsection, followed by a comparative analysis between international and national context usages of electrification and energy vis-à-vis their policy implications.

#### **5.1.4. Analysis of the energy policy environment on electricity in a national context**

It is important to consider an environment where policy exists and governs people to greatness. The environment is crucial because it determines government's operations within confines of existing policy on rural electrification.

According to Pasteur (in Mulugetta et al. 2006:100) the policy environment represents a broad context in which development processes take place. Experience with energy projects suggests that the environment may in fact be either an enabling or constraining factor in delivering sustainable outcomes. For example, poorly conceived policies such as fuel subsidy policies across the developing world have not created conditions that are to the advantage of low-income groups, even though such policies were intended to help in the first instance. An understanding of the policy on the environment can yield information on the impact of policies on livelihoods and help in defining appropriate policy options (Pasteur in Mulugetta et al. 2006:100). The

Electric Power Sector Committee on Implementation is constituted to address this issue ([www.fmps.gov.ng](http://www.fmps.gov.ng)).

#### **5.1.5. Ways of expanding access to electricity**

The full usage of both “grid” and “off-grid” approaches focus on expanding access, though both the new distribution companies to be formed by the Power Holding Company of Nigeria (PHCN) and a range of other companies are crucial to the rapid expansion desired. The Bureau for Public Enterprises (BPE) served as advisers and consultants to:

- Develop a rural energy policy
- Develop an information baseline, i.e. consumer survey, assessment and business opportunity reviews as a means of establishing a strategy
- Develop a rural electricity (RE) Strategy Formulations and an Implementation Plan
- Develop capacity building and knowledge transfer plan
- Prepare a RE regulation implementation plan
- Prepare design specifications for a low cost system
- Market design ([www.fmps.gov.ng](http://www.fmps.gov.ng))

The abovementioned approaches ought to be part of the rural energy policy guidelines in Nigeria. They do not unfortunately feature in the policy. Where there is no government policy in place, it is impossible to carry out directives that need policy backing.

Most of the aforementioned energy policies, international and Nigerian cases, are hampered by lack of implementation with exceptions in South Africa and Ghana. Due to uneven distribution of wealth in the rural areas, rural electrification projects through community participation are not common practice. There is no adequate funding for rural electrification projects by government and private sectors. Community participation in rural infrastructural development happens in a rare occasion. Therefore, is crucial that rural community members initiate, mobilise their resources and participate in projects, which has a direct bearing to their needs (Theron forthcoming).



## ***5.2. Ipari-Efugo Electricity Case Study: How it Works***

### **5.2.1. Introduction**

Otukpa in Benue State of Nigeria (see figure 3 for the location of Benue) is located in the North Central Zone. The predominant language is Idoma. Its origin can be traced from APA in the Kwarafa Kingdom of the old Northern Region, i.e. since the amalgamation of Nigeria in 1914. There are three dialects of the Idoma language; Akpa, Utonkon and Igede but the major language Idoma remains widely spoken among the people. The people of IE hail from Apoju kindred, part of the Apowuno clan in the Otukpa district (Ogbadibo local government) of Benue State, Nigeria. Otukpa is a fast growing commercial township in the North Central Region. Its rapid growth is mainly because of its central location along the major highway that links the northern, southern, eastern, and western part of the country (Akpa 2006).

In Benue State where IE is situated, there are twenty-three local government areas. The people of IE belong to the Idoma, which is one of the tribes in the North Central Zone, one of the six geo-political zones in Nigeria. The people are hospitable and friendly to neighbours and to strangers. About 90 per cent of the entire population of seven hundred and fifty thousand (750 000), projected in the last population census figure, reside on Idoma land (NPC 2006). The people engage in farming activities and plant crops such as yams, beni-seed, soya beans, babara nuts, millets, maize, and guinea corn. There is also large-scale production of palm wine, palm oil and palm kernel in IE. The next sub-section sets out to justify why there is a need by IE community members to carry out the electrification project.

### **5.2.2. Need Identification of the project**

Uphoff (1991:494) declares that by ensuring project participation in project design and implementation, the past development knowledge experience is practiced through a new effort. However, community members know what method is been tried and is workable. Chambers (1991:515-537) adds that experience also shows that conversely where people are consulted, where they participate freely, where their needs and priorities are given primacy in project identification, design, implementation, and monitoring, then economic and social performance is better and development is more sustainable.

A good number of people in developing rural areas are without access to electricity supply. Government does not have enough resources to address the electricity needs of these people. Therefore, community members ought to partake in processes of ensuring and providing developmental projects in their communities through active participation.

Lack of electricity in IE necessitated an initiative of the identified need in the community. Swanepoel and De Beer (2006:172) state that “all community projects are centred on needs. The starting point of any project is a need”. After the need identification, planning becomes vital to determine how available resources are been utilised. Theron (Forthcoming) states that planning is a means of allocating and distributing resources in a sustainable manner. The IE project was carried out with the help of community members through an initiative of one of the community member. Burkey (1993: xvi, xii, 135) agrees with the above initiative. The sum of one million two hundred and fifty thousand naira (N1, 250,000.00) was expended on the project. The initiator (i.e. one illustrious son of IE) provided the bulk of the funding and community members also jointly supported. Burkey (1993: xii, 126, 135, 175) advocates that rural communities engaged in self help projects, in order to provide their amenities. The project started in 1996 and was completed in 2000. The electricity supply was facilitated in IE through erection of eighteen electric poles from the Government Comprehensive College in Otukpa Benue State, in order to get a connection from the national grid of electricity (Akpa, 2006).



Extract from Akpa (2006)

**Figure 4. Electric Poles from Government Comprehensive College**

The IE community members made their own contribution to the project by procuring electric poles and wires and connecting electricity to their households from the main supply to the township. Their physical energies were equally utilised to erect electricity poles from where electricity was tapped. They procured electric meters as

well in order to pay electricity bills. IE community members also participated in the planning, organising, monitoring, and evaluation of the project (Burkey 1993: xii, 126, 135, 175; Narayan 1997:91, Chambers 2005: 80, 86, 87, 88-95, 98, 125). The IE community members made use of individual and community participation in ensuring success of this project.

The impacts of IKS on participation indicate that it becomes more effective provided it is appreciated and valued. If people are empowered to take control over their lives situations, participation also becomes more effective. It is attain by supporting and capacitating them to be responsible and chart their own development. Participation is more effective whenever it is less rigid but flexible, and facilitated by acknowledging the local specific context. Potter et al. (2003:17) solidifies this point by describing IKS as the understanding of a specific local knowledge, which requires change agents to pay attention to the roles played by local elites as gatekeepers.

**Figure 5. Electric Poles enroute household connection**



Extract from Akpa (2006)

**Figure 6. Electricity supplies at night in IE Community**



Extract from Akpa (2006)

Swanepoel and De Beer (2006:71) assert that “real participation adds quality and co-operation and eventually brings together a number of diverse players in an issue based process towards achieving acceptable solutions”.

Narayan (1997:59, 78, 79) make the following observations: If project design evolved based on IKS, participation is strongly supported. If the community capacity is

supported, participation is made a goal that is valued, monitored, rewarded and also linked to project evaluation. **Myth:** Participatory approaches to development take a long time and can only be done on a small scale. **Fact:** When people respond to demand, action is rapid and the community organisational process occurs quickly. **Fact:** The whole participatory process is about giving people a voice and a choice. Participation cannot be turned on and off by outsiders; participatory processes mean giving control to communities. **Fact:** The concept of participation can be put into operation and simply measured. Measuring, monitoring, and evaluating participation makes agencies more accountable to support human development through participation (see Theron forthcoming).

Swanepoel and De Beer (2006:72) give the following reasons why community members should participate in the management of their projects:

- through participation both concrete and abstract needs of participants are fulfilled
- it encourages a learning process where people participate and take initiative from the start by participating in needs identification and decision-making
- collective action that include decision making is stimulated
- if communities do participate, development is needs oriented
- because communities work toward addressing their needs, they focus on achieving objectives
- it involves people of grass roots and through this process, provides an opportunity for ordinary people to participate (has a demonstration effect)
- it brings about awareness among people of their situation and their abilities to address their situation themselves
- it leads to community building by encouraging leadership skills, institutional development and organisational ability
- people gain awareness and power for further developmental activities
- it is the people's democratic right to participate in decision-making (Swanepoel & De Beer 2006:72).

### *5.3. Summary*

Based on the energy policy statements and documents presented by the federal government of Nigeria and ESMAP 2005's report, there is no prompt implementation strategy of the set out policy. It is predominantly noticed in Benue State that most rural areas are without government presence in the form of infrastructural development. The above scenario necessitated rural community members to be proactive, action-oriented, and goals oriented in providing needed infrastructures in their communities.

The key theoretical constructs (i.e. those components of the building blocks of development) were effectively utilised in IE electricity project. Thus, individual and community participation follow through social learning, capacity building, self-reliance, empowerment and resulted in the formation of sustainable development.

Rural community members who desire to enjoy developmental amenities are encouraged to utilised both individual and community participation. The IE community example is a model for other rural communities to follow, in their quest to attain authentic sustainable development of their community projects. This case study shows that apart from the combination of individual and community participation in IE project; IKS of the people is effectively and efficiently used to ensure successful completion of the project. A pattern of IKS used by the IE community follows an ideal life cycle of a project i.e. planning, organising, scheduling, scoping, monitoring, evaluating and maintaining. The indigenous knowledge of the rural community should be hold in high esteem and acknowledged due to potentials accruable from it. The IE community members executed the electricity project without contribution from government or NGOs. The IE community members play multiple roles of change agents, initiators, and facilitators to effect a provision of electricity to the township. Thus, the "building blocks of development" became enforced through IKS, which results in IRD.

IRD as a concept was also utilised within the context of the IE community electricity project. The pattern of an IKS approach demonstrated by IE community members using individual and community participation, indicate that within the "components of

the building blocks of development” an IRD approach was used. This chapter provides a platform for making an analysis of data collected. In order to prove these points, an analysis of the data collected can either prove or disprove the hypotheses set out earlier.

## CHAPTER SIX

### 6. DATA ANALYSIS AND INTERPRETATION

#### 6.1. Introduction

The previous chapter dealt with a background on the case study. Community and individual participation strategies influence sustainable development in the IE electricity project. These variables (community and individual participation) formed the basis through which development interventions can be tested and measured in IE. The correlation between them and sustainable development will be shown. It is proper to reiterate the relevance of the hypotheses as preamble toward making a justifiable analysis of the data.

A random sampling technique was used to administer the questionnaire in IE, which has about 230 community members. This technique serves time and cost instead of situation where the whole population is covered. About one-third (74 respondents' responses) of the population was used for the analysis through random sampling selection. Community participation depends on the interest community members attached to their developmental projects. This section deals with the interpretation of the data collected, in order to establish that community members can take ownership of their projects without government intervention.

#### 6.1.1. Analysis and Interpretation of Data

Data for interpretation were gathered through questionnaires as mentioned in (sub-section 1.8.1) and supported by information from the literature study and similar comparative case studies. The questionnaire is categorised into general questions and questions on community participation, (see appendix 2). Questions 1 to 16 fall under general questions, whereas questions 17 to 27 cover community participation issues. In the criteria enlisted below, various options were used to test the identified hypothesis of this study through the questionnaire. The options of the questionnaire vary from 1 per cent to 100 per cent, as well as 1 per cent to 200 per cent in special

instances where six options are identified in question 27. Respondents are meant to choose more than one response in that instance. The scales of the questions are represented below:

(1) no interest in the project (2), indifference, (3) fairly, (4) actively

(1) not much (2) not at all (3) to a very large extent

(1) totally disagree (2) disagree (3) neutral (4) agree (5) totally agree

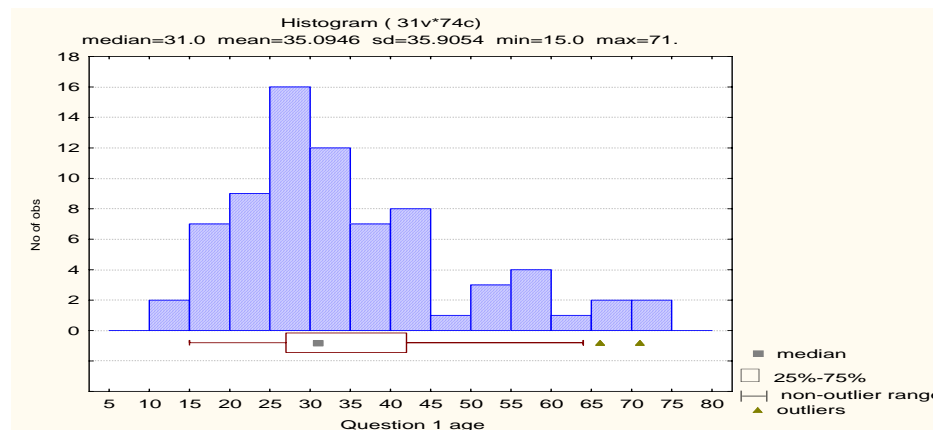
(1) unsuccessful (2) total failure (3) neutral (4) successful (5) very successful

(1) not well managed (2) fairly managed (3) neutral (4) well managed (5) none

(1) motivation (2) encouragement (3) showing examples through active participation (4) been responsible for the initiative of the project

The percentages of the scales in questions 1-27 determine the extents that IE community members participate in the rural electricity project. An analysis of this study follows patterns described below:

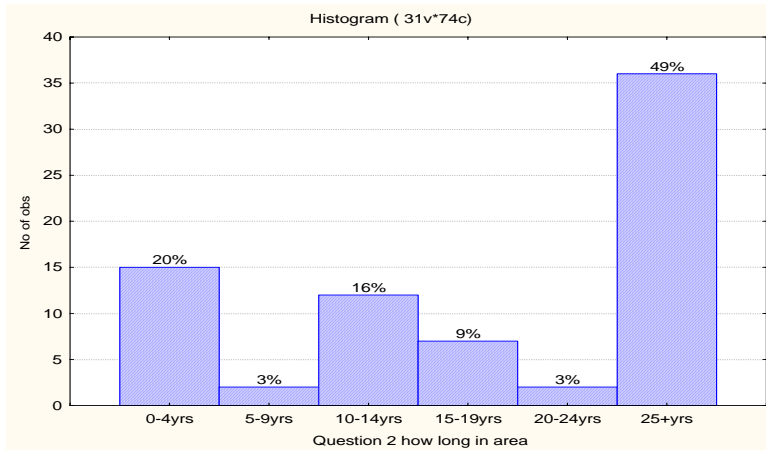
### Question 1 Age



Question 1 shows that the median average age of the IE population who responded to the questionnaire as 31.0. This indicates that an average size of the population is economically viable and active.

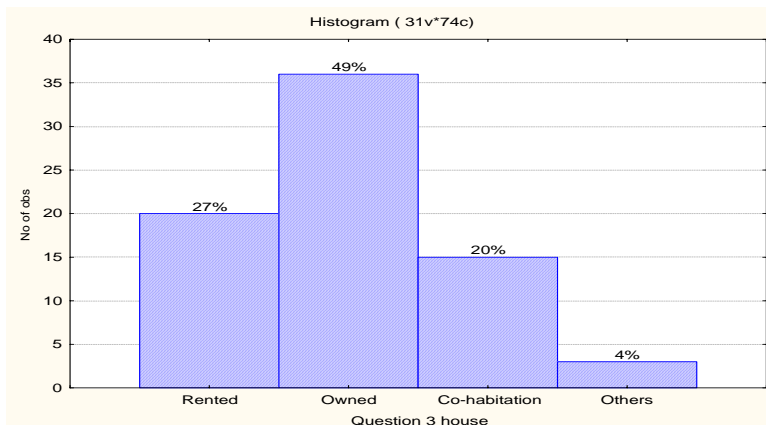
**Questions 2** For how long have you resided in this area?





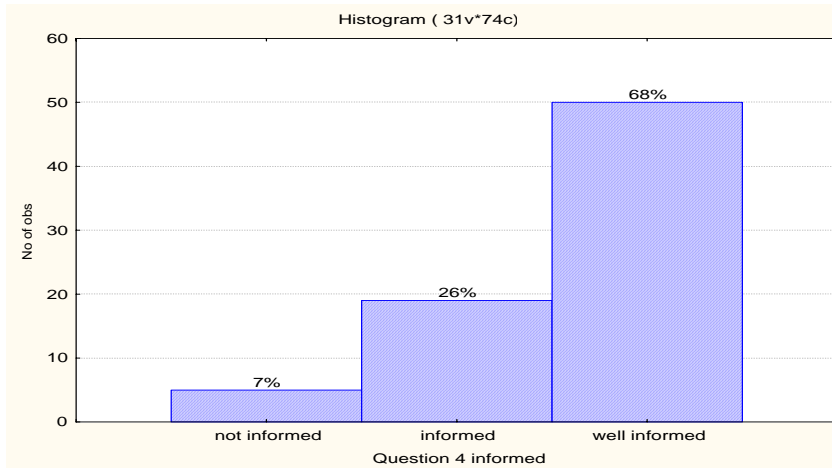
Question 2 shows that 49 per cent of respondents lived in IE for more than 25 years, 20 per cent respondents have lived there between 0-4 years, 16 per cent of respondents have lived there between 10-14 years and 9 per cent have lived there between 15-19 years. Respondents' period of residence in a community can influence their levels of participation in the electrification project.

### Question 3 Status of Occupancy



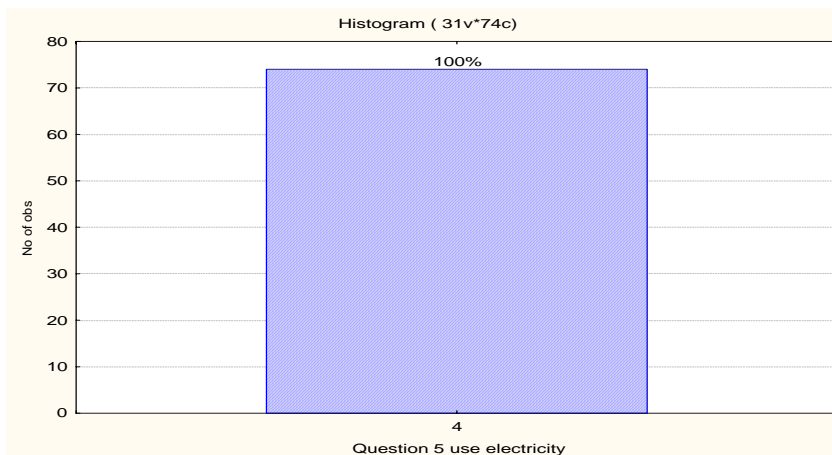
49 per cent of respondents in question 3 owned houses, 27 per cent rented houses, and 20 per cent co-habituated. Respondents' ability to rent, own, or co-habitat affects their levels of participation in the electrification project. Community members invariably participated in the electricity project, because of benefits accruable from using it.

### Question 4 How informed are you regarding the electricity project?



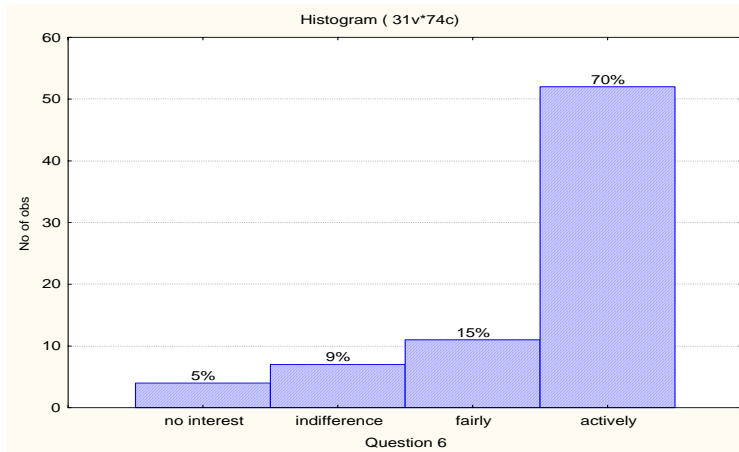
Question 4 shows that 68 per cent of respondents are well informed about the electrification project, while 26 per cent of respondents are informed. These percentages put together amount to 94 per cent of the population who are aware of the project. Due to their levels of awareness, they are able to participate in the project. The above analysis is a confirmation of Uphoff (1991:466)’s view; “beneficiaries involved in planning and execution of project are better informed and more committed to make the project work more than when a project is suddenly handed over to people without any genuine contribution from the beginning of such project”.

**Question 5** How long have you used electricity?



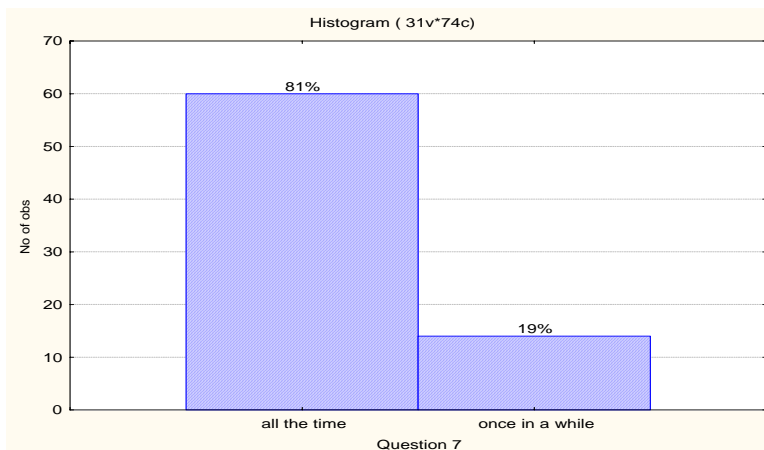
This result in question 5 shows that all respondents have made use of electricity in their households for more than five years. This is reflected by the ways in which their responses are given in the questionnaire.

**Question 6** How would you rate the level of participation in the electrification project?



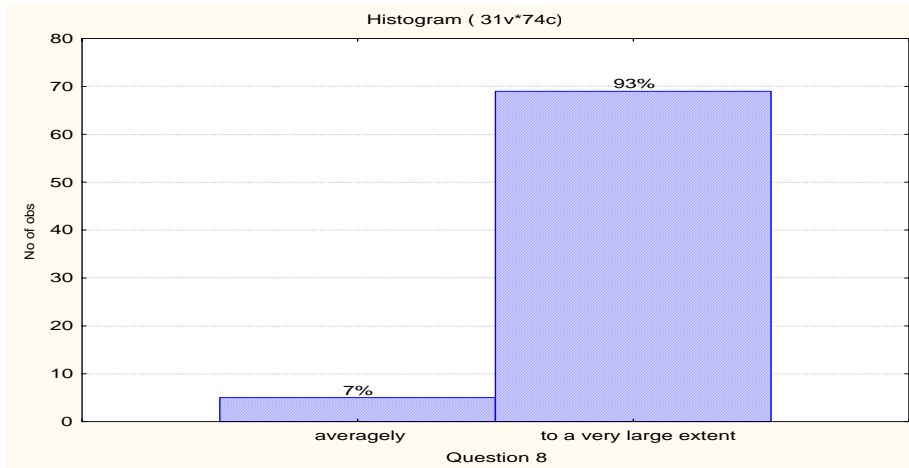
From question 6, a total of 70 per cent of respondents actively participate in the electricity project. Other results reflect that 15 per cent fairly participate and 9 per cent of respondents were indifferent towards the project (Chambers 2005: 87, 88).

**Question 7** How often do you use electricity in your house?



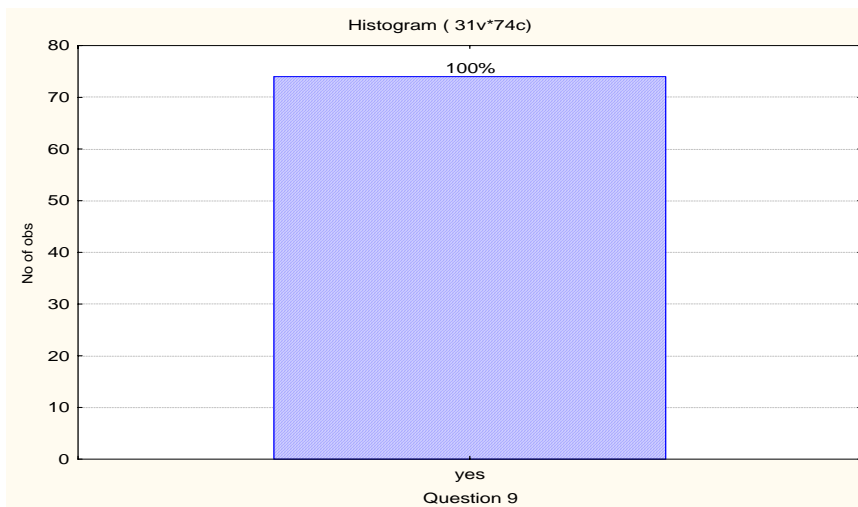
Question 7 shows 81 per cent of the respondents use electricity all the time. This means that electricity supply is an integral part of their daily activities. 19 per cent of the respondents use electricity occasionally. This reflects that such respondents use electricity whenever it is necessary.

**Question 8** To what extent does electricity make life easier for you?



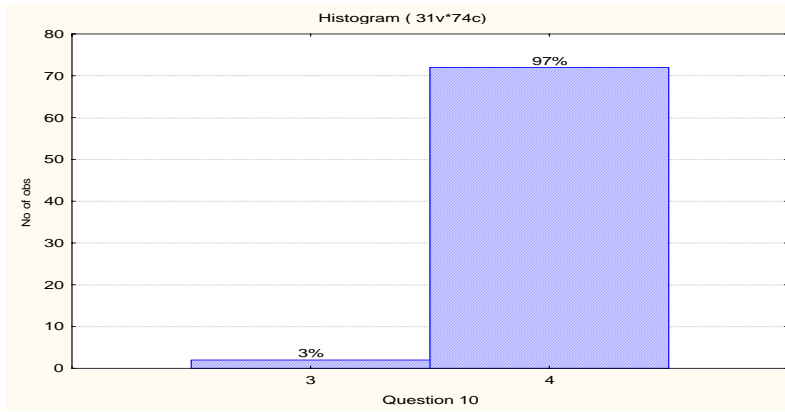
In question 8, 93 per cent of respondents indicated that electricity makes life easier for them to a large extent. This shows that electricity facilitates their daily chores and activities.

**Question 9** Would you encourage other communities without electricity to initiate and connect their own electricity like IE?



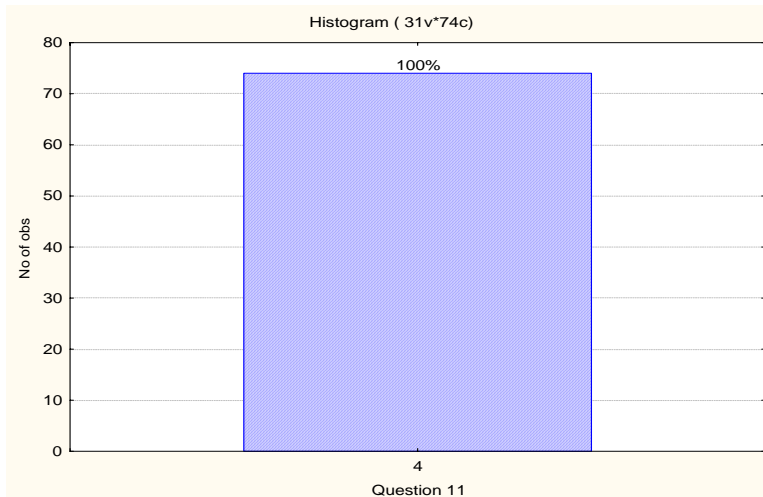
In question 9, 100 per cent of respondents agreed to encourage other rural communities to initiate their own electricity project.

**Question 10** Electricity assists in making your trade or daily engagements easier



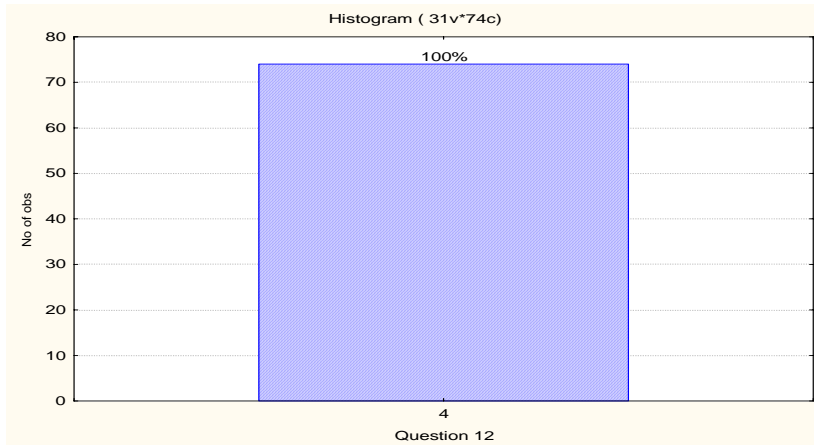
Question 10 shows that 97 per cent respondents totally agreed that electricity makes daily engagements easier for them.

**Question 11** Insufficient knowledge of electricity use leads to electrocution in the households and community



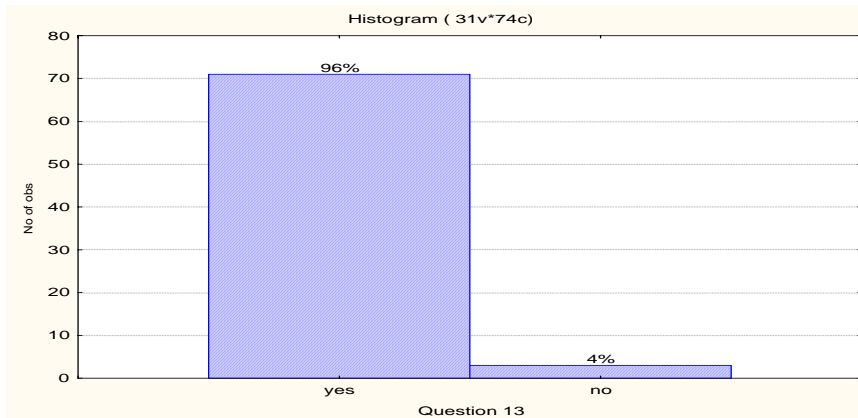
Question 11 shows that 100 per cent of the respondents totally agreed and accepted that lack of sufficient knowledge about the use of electricity can lead to electrocution.

**Questions 12** The advantages of access to electricity are more than the disadvantages.



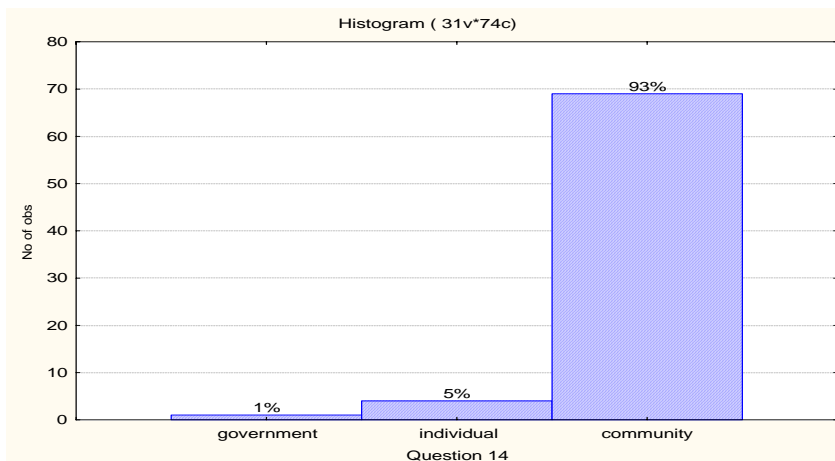
Question 12 shows 100 per cent of respondents totally agreed that the advantages of having electricity outweigh the disadvantages.

**Question 13** Electricity is your only source of energy supply



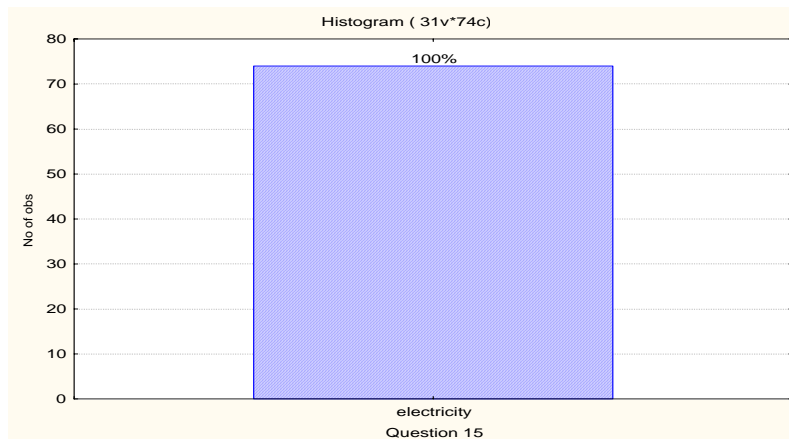
In question 13, 96 per cent of respondents acknowledged that electricity is their only source of power supply. This proves that the respondents are major users of electricity.

**Question 14** Who repairs the electrical installations in your community?



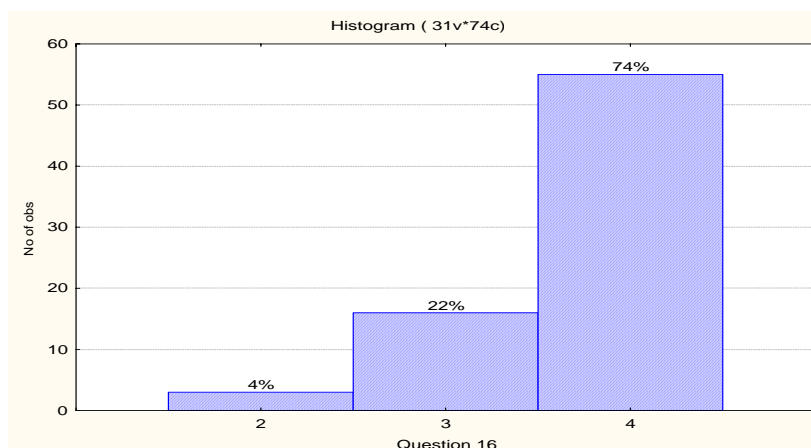
Question 14 shows that 93 per cent of respondents indicating community members as been responsible for repairs and maintenance of their electricity installations. Uphoff (1991:499) justifies the above analysis by stating; “to achieve autonomy, organisations must mobilise some of their resources and not depend entirely on outside sources of help”. Narayan (1997:95) supports the above statement that community members are capable of operation, maintenance and repairs of their community projects.

**Question 15** Select one major source of energy you used



Question 15, shows 100 per cent of the respondents indicated that electricity is their major source of power supply.

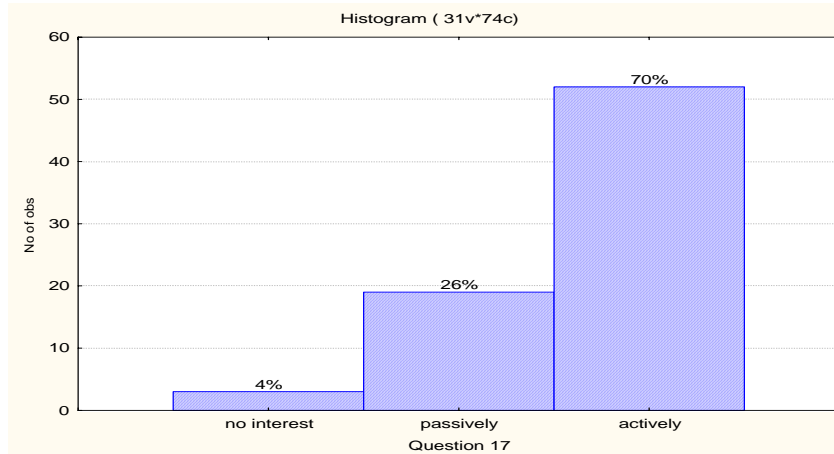
**Question 16** There is enough awareness regarding the use of electricity in your locality



Question 16 shows that 74 per cent of respondents totally agreed that there is enough awareness on the use of electricity in the community, whereas 22 per cent of

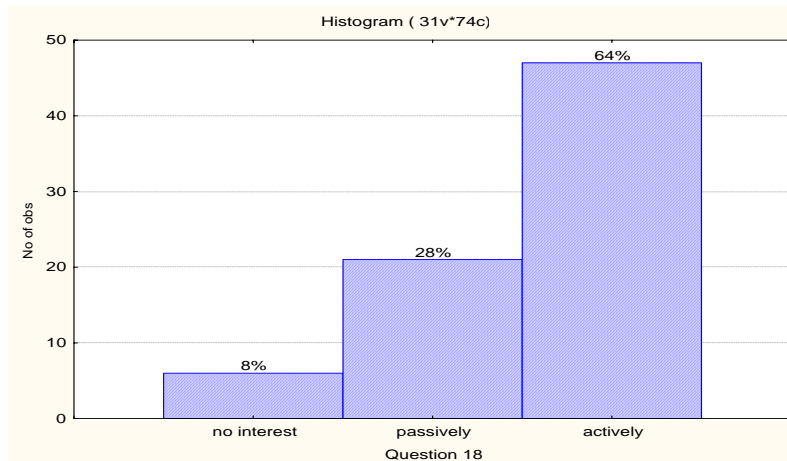
respondents agreed that there is enough awareness on the use of electricity in the community.

**Question 17** How do you participate in the project identification?



In question 17, 70 per cent of the respondents actively participated in the identification of the electricity project, whereas 17 per cent respondents participated passively.

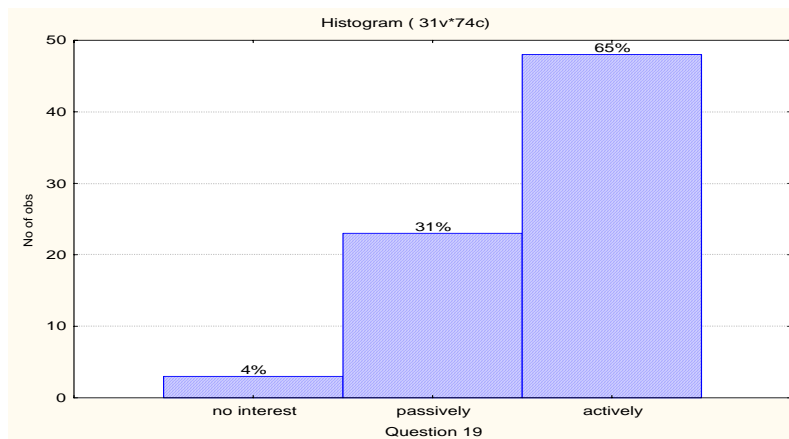
**Question 18** How do you participate in the project selection?



Question 18 shows that 64 per cent of the respondents actively participated in selection of the project. This is because they lived within the community. Whereas, in the selection of the project 28 per cent of respondents passively participated, because they were not within the community during initial planning of the project. Uphoff (1991: 494, 497)'s views: "the local people know what, if anything, has been tried before and what, if anything has worked before, and project through community members' initiatives have higher performance scores than those by outsiders" are in consonance with the above analysis.

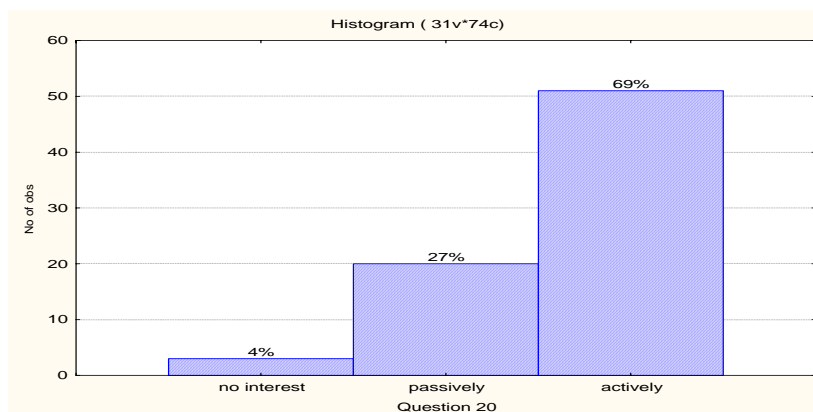


**Question 19** How do you participate in the project planning?



Question 19 shows that 65 per cent of respondents actively participated in the planning of the project for the community - because they lived in the community. 31 per cent of respondents also passively participated, because they were not within the community during initial planning of the project. The above analysis agrees with Uphoff's view in that villagers may offer insights of merit even on matters as technical as where to locate a dam or whether a method of construction will be adequate or not (Uphoff 1991: 493, 499; Swanepoel and De Beer 2006:28).

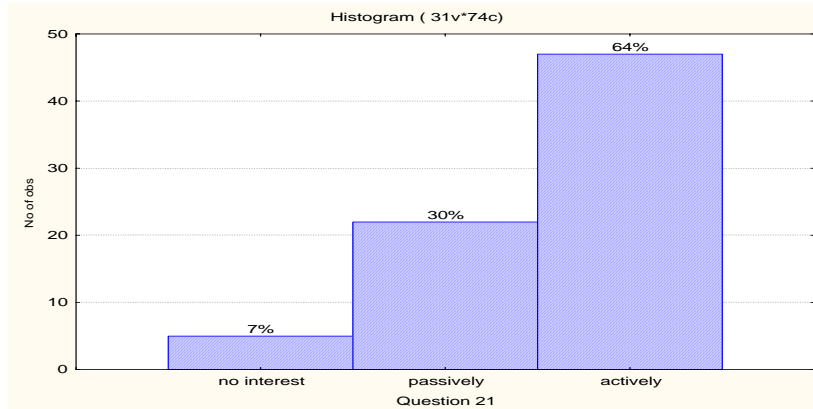
**Question 20** How do you participate in the project implementation?



Question 20 shows that 69 per cent of respondents actively participated in the implementation of the project, due to their presence during initial planning of the project. 27 per cent of the respondents passively participated in the project implementation. The above analysis aligns with the view that “the poor are more confident as well as more competent to handle responsibilities of decision-making and implementation; local capacities are increasing due to development programmes, and the political boundaries are moving toward a participatory approach to development”

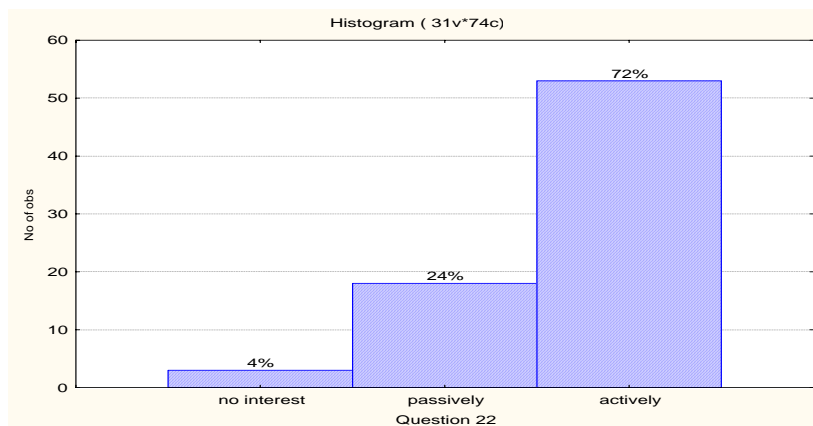
(Uphoff 1991:503, 504; Swanepoel and De Beer 2006:28, Chambers 2005: 76, 100, 102, 107, 126).

**Question 21** How do you participate in the project evaluation?



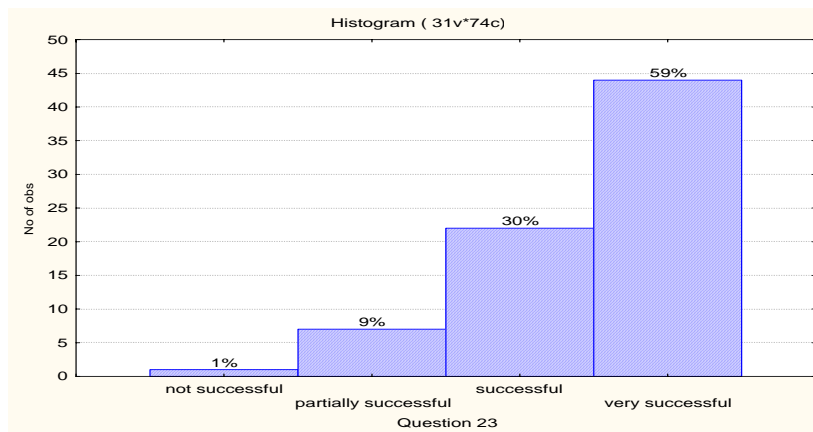
Question 21, shows 64 per cent of the respondents actively participated in the evaluation of the project. 30 per cent of respondents participated passively, because they were not within the community during initial planning of the project (Chambers 1997:132; Chambers 2005: 76, 100, 102, 107, and 126; Swanepoel and De Beer 2006:28).

**Question 22** How do you participate in project monitoring?



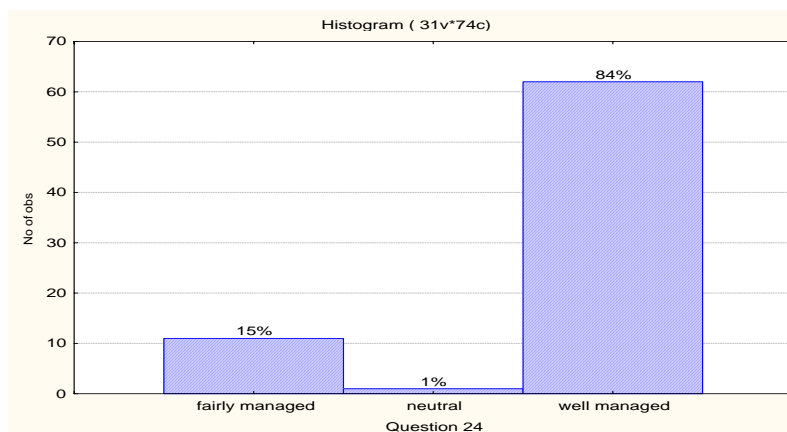
Question 22 shows that 72 per cent of the respondents actively participated and 24 per cent passively participated in monitoring of the project. The above analysis affirms Uphoff's view that "it is important that monitoring and evaluation are fully participatory and community members who represent different roles and statuses are encouraged to interact during the project life cycle" (Uphoff 1991:501; Chambers 1997:132; Chambers 2005: 76, 100, 102, 107, 126; Swanepoel and De Beer 2006:28).

**Question 23** How do you evaluate participation in the electricity project?



In question 23, 59 per cent of the respondents evaluated participation in the electrification project as being very successful. 30 per cent of respondents' evaluated participation in the project to be successful. The aforementioned analysis in question 22 applies to this question as well. The ISRDS (2000:2) adds that rural communities benefit from initiatives designed to build capacities and manage their own affairs, and empower them to take responsibilities for their own local development programmes.

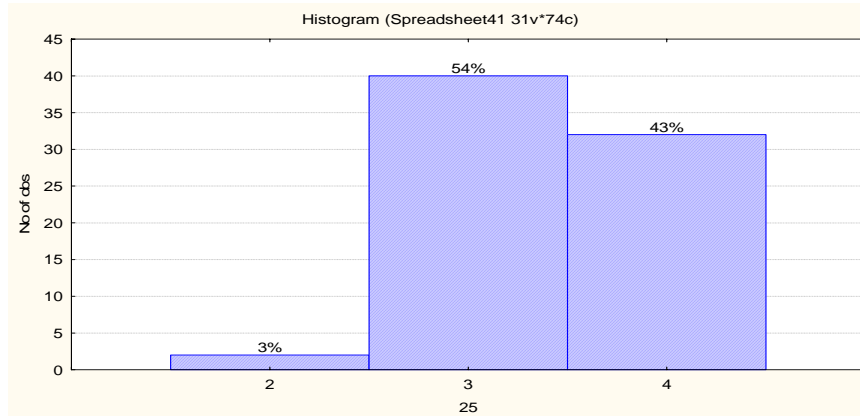
**Question 24** How was the electricity supply project managed?



Question 24 shows 84 per cent of the respondents indicated that the electrification project is well managed, because the outcome of the project was materialised. 15 per cent of the respondents indicated that the project was fairly managed. Moreover, the latter participants mentioned their lack of knowledge of the project from its beginning to completion, because it was completed before they took up residence in IE. Uphoff (1991:504) confirms the above analysis by asserting that “local capacities are increasingly responsible for success in developmental projects and programmes

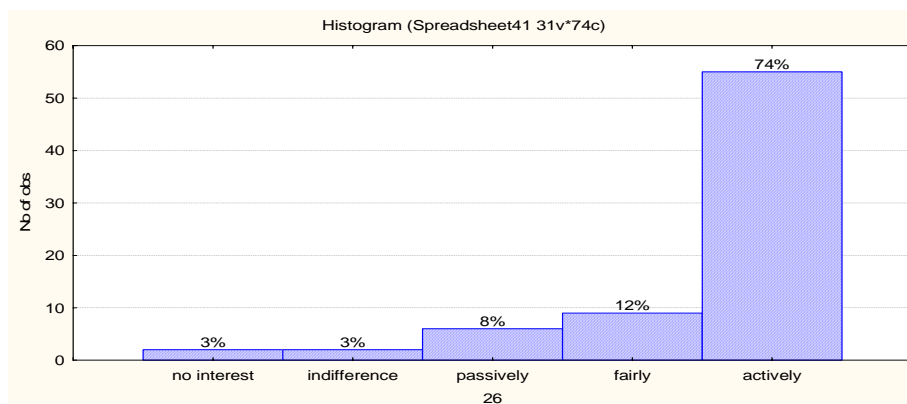
towards a participatory approach”. Hence, Narayan (1997:95) adds beneficiary participation is the most important factor that contributes to project effectiveness.

**Question 25** The rural electricity project is sustainable



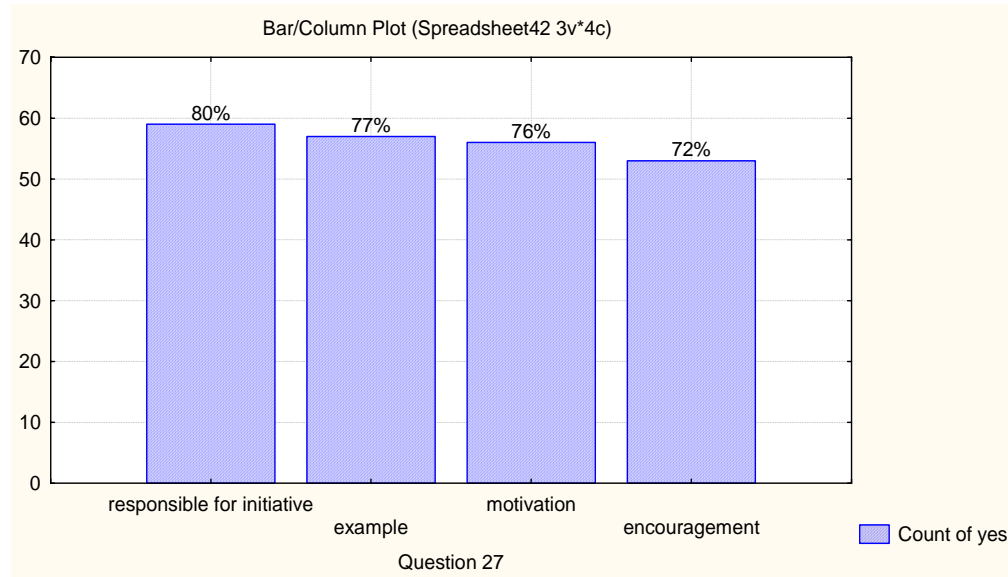
Question 25 shows that 54 per cent of respondents totally agreed that the electricity project is sustainable, whereas 43 per cent of them agreed that the project is sustainable. Cernea (1991: 11 & 439) observes that a re-evaluation of long-term sustainability of twenty-five World Bank financed project, found thirteen to be unsustainable because there was no participation amongst community members. They were neglected during the project formulation and implementation stages. A correlation between Cernea’s opinions and question 25’s analysis shows that the IE electricity project is sustainable because community members were fully engaged in it and participated in all phases of the project (Narayan 1997: 93, 95). Thus, the IE electricity project is sustainable in its entire ramification.

**Question 26** Choose one of these options to indicate your level of participation



In question 26, 74 per cent of the respondents indicated their level of performance in the electricity project as being actively engaged, whereas 12 per cent of respondents are fairly rated on their levels of performance in the project.

**Question 27** Select as many options as possible measures you take to improve upon capacity of the people to participate in the rural electrification project



Question 27 requires respondents to choose more than one option. 80 per cent of the respondents indicated that they are responsible for the initiative, 77 per cent of the respondents indicated their participation by showing examples, 76 per cent of the respondents participated through motivation, and 72 per cent of the respondents participated by encouragement. These responses have shown that respondents actively participated in the rural electricity project. Uphoff (1991:499) opines that “self-reliance strategies foster the idea of self-sufficiency in local organisation”. A high level of participation recorded by IE community members during the electrification project justifies that sustainable development was effectively exploit in the project.

### 6.1.2. Summary

These findings have established measurable valid arguments that are definable and observable. Thus, effects of individual and community participation on sustainable development were established and demonstrated throughout the IE electricity project cycles. Analysis has shown how the hypotheses are derived using those data analysed. Individual and community participation are responsible for the sustainability of IE rural electricity project. Thus, a zero hypothesis prevails in the study. Its implication

shows that individual participation leads to community participation, which in turn leads to sustainable development in the rural electrification project. The “building blocks of development” have also shown resultant influence on participation and its effect on sustainable development.

IE community members utilised the sequence and relationship laid out in the building blocks of development i.e. participation, social learning, capacity building, empowerment, and self-reliant to effectively and efficiently carry out the electrification project. IKS was also effectively utilised amidst individual and community participation, in all aspects of the project, and resulted to the project’s successful and sustainable outcome. Thus, IE community members showed IKS in all aspects of the electricity project.

The alternative hypothesis does not have a theoretical background in this study, thus, cannot be proven empirically. The IE community members participated in all spheres of the project - from start to finish. Hence, the alternative hypothesis is null and void.

## CHAPTER SEVEN

### 7. CONCLUSION AND RECOMMENDATIONS

#### *7.1. Conclusion*

Past efforts at development were based on “blueprint” and “top-down” approaches without considering the local setting. As a result of these measures, there is no meaningful development especially at the grassroots of development. Recently, development thinkers revealed that if rural communities do not participate in their own development, there would be no authentic sustainable development. Hence, it becomes essential for beneficiaries of development to be initiators and facilitators in the provision of their infrastructures (see Theron forthcoming).

The provision of rural electricity as a global problem is one of the basic needs. This study has shown that a rural electricity project will become very effective provided rural communities members participate in all facets of it, and are able to contribute and manage the running and maintenance of the projects. The Ghanaian case study showed how a participatory approach to a rural project led to sustainable development. The VLP serves as an avenue that enhanced community participation in that case study. In Mexico, the rural electrification projects were slow as a result of dispersal problems. Consequently the energy policy objectives of the government were not fully achieved. In South Africa, government was responsible for the provision of rural electricity. The rural communities were not utilising opportunities provided through this amenity. Other examples mentioned earlier also demonstrated that rural community members are capable of taking responsibilities for their projects. The case study in IE shows that community members were solely responsible for the electricity project without outside intervention.

This study focused on assessing how community and individual participation strategies affect sustainability of the rural electricity project in IE. The findings have indicated support from the community members, who ensured their viable contributions toward sustainability of the community electricity project. It indicates that rural community members can initiate and execute their own projects. It also

demonstrates that community members, who take ownership of their developmental projects, are liable to sustain such projects.

An indigenous knowledge approach used to execute the IE electrification project can be applied elsewhere. This knowledge was effectively utilised by IE community members based on the context of addressing their specific need. Other aforementioned case studies also made use of IKS to carry out their community projects, which turn out to be successful. As a strategy in addressing developmental problems, an IKS approach has the potential for sustainable success, provided it is linked to community and individual participation in such projects.

Community and individual participation are valuable instruments in ensuring the success of the rural electrification project in IE, and in addressing arising needs. The project is sustainable because IE community members manage its installation and maintenance. The findings of this study have shown that individual participation leads to community participation, which in turn also leads to sustainability of the rural electrification project.

Findings of the study demonstrated that authentic participation led to sustainable development in IE. The rural community utilised both individual and community participation to solve their developmental problem. Globally is a common knowledge that governments lack adequate funding to support most communities' projects. Hence, the initiative taken by IE community members have proved beyond doubt that rural communities should be encouraged by government and its agencies to initiate and sustain their own projects. If applicability of individual and community participation enhanced the installation and maintenance of electricity in rural IE, then the same application can work elsewhere. Recommendations enlisted below are guidance toward ensuring a sustainable and successful rural community project.

## ***7.2. Recommendations***

- Rural electrification as a global challenge demands a joint effort by international organisations, non-governmental organisations, and the government to be able to provide support to the rural communities in dire need. This clarifies Esman's (1991:136) point that the government alone



cannot command sufficient resources, capacities, or incentives to move societies toward sustained development. In order to foster and enhance an enduring rural participatory approach to development, policies ought to be in place as an enabling environment.

- Government ensure proper co-ordination amongst various organs of State on government policies on rural infrastructural development, by enhancing policies formulations, implementations, monitoring, and evaluation.
- A good and purposeful rural electrification project can contribute to the growth and development of a nation. The rural stakeholders should participate and their views considered before formulation and implementation of energy policy in their communities.
- Government policy plays a major role in influencing the standard of living of the people. Thus, implementation and formulation of government policy ought to be reflected on the community's ways of living and have a positive impact on the lives of the people.
- The government can partner and form alliances with community members, ensuring that their needs are addressed adequately. IKS used in IE should be appreciated and form a basis of emulation for other rural community projects, without government's assistance.
- Policy makers should acknowledge potentials in individual participation, community participation, and sustainable development by formulating relevant policies that would enhance and encourage efforts to ensure rural development.
- As a matter of importance, the IKS in rural areas ought to be part of the mechanisms in the development planning process (Theron 2005:133-148).

- There should be more research on individual and community participation. This will ensure that other mechanisms are discovered to address developmental needs of communities.
- Participatory Action Research methodology should be acknowledged and used as an appropriate tool in grassroots planning, implementation, monitoring, evaluation, management of rural development mechanisms (Chambers 2005: 167-168).
- Individual and community participation are important throughout the life cycles of a project; they are cyclical, inseparable and iterative processes that cannot be broken into elements (Narayan 1997: 75, Theron forthcoming).
- Government's policy implementation strategy is a problem. The vacuum that exists in implementing government's policy especially in rural areas can be researched. This would determine why government often fails in its policy implementation.
- The government should consider her subjects, especially during initiation and formulation of policy, which often has direct bearing on the lives of rural communities.
- Government could put in place a mechanism of decentralisation, which can checkmate policy-making that affects grassroots level of development. It will also ensure that decision-making at that level is in the hand of the rural people, and there is devolution of power. Rondinelli (1993:174) confirms that a decentralised system ensures that the needs of rural community members are addressed, because they are part of the decision-making processes.

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## Appendices

### *Appendix (1) 2000 Millennium Declaration*

The Millennium Declaration of the UN agreed upon at the Millennium Summit in 2000, summarized the agreements and resolutions of the UN world conferences held during the previous ten years to establish the Millennium Development Goals. These are seen as benchmarks for measuring actual development.

There are eight Millennium Development Goals and the environment is one of their essential components. The first seven are about poverty reduction and improving health. These goals are directly linked with the promotion of sustainable development.

Goal No.7 is particularly important for the promotion of sustainable development. It has several targets: maintaining the environment and compiling relevant policies and programmes (environmental policy integration), reversing the loss of environmental resources and improving access to environmental services. It aims also to halve the proportion of people without access to safe drinking water by 2015. Moreover, it seeks to achieve a significant improvement in the lives of at least 100 million slum dwellers by 2020.

Goal No.8 emphasises that the achievement of these goals requires a global partnership for development. The Millennium Development Goals are reflected in the Johannesburg Plan of Implementation. Source: adapted from <http://www.un.org/millenniumgoals/>, accessed 27 April 2005.

## **Appendix (2) Questionnaire Formats**

The questionnaire composes of the following: general questions and questions on community participation

### **(A)General questions**

(1) How old are you? .....

(2) For how long have you resided in this area?

0 – 4	
5 – 9	
10 – 14	
15 – 19	
20 – 24	
25 + yrs	

(3) Do you rent the house or do you own the house where you presently reside?

Rented	
Owned	
Co-habitation	
Others	

(4). How informed are you regarding the electrification project?

(a) not informed at all (b) informed (c) well informed

(5) How long have you been using electricity?

1(1year), 2 (2years), 3 (3years), 4 (4years), 5 (more than four years)

(6) How would you rate your level of participation in the electrification project?

(1) no interest in the project (2) indifference (3) fairly (4) actively

(7) How often do you use electricity in your house?

(1) all the time (2) once in a while (3) not at all (4) do not have electricity

(8) To what extent does electricity make life easier for you?

(1) not at all (2) averagely (3) to a very large extent

(9) Would you encourage other communities without electricity to initiate and connect their own electricity like Ipari-Efugo?

(1) yes (2) no

(10) Electricity assists in making your trade or daily engagements easier

(1) totally disagree (2) disagree (3) agree (4) totally agree

(11) Insufficient knowledge of electricity could lead to electrocution in the households and community



- (1) totally disagree (2) disagree (3) agree (4) totally agree
- (12) The advantages of access to electricity are more than the disadvantages  
(1) totally disagree (2) disagree (3) agree (4) totally agree
- (13) Electricity is your only source of energy supply  
(1) yes (2) no
- (14) Who repairs the electricity installation in your community?  
(1) government (2) individual (3) community (4) non-governmental organization (5) others
- (15) Select one major source of energy you used  
(1) electricity (2) firewood (3) gas (4) solar energy (5) methane
- (16) There is enough awareness regarding the use of electricity in your locality  
(1) totally disagree (2) disagree (3) agree (4) totally agree
- (B) Questions on community participation:** Indicate how you participated in each of the following activities of the electricity project:
- (17) Project identification? (1) no interest in the project (2) passively (3) actively
- (18) Selection of project? (1) no interest in the project (2) passively (3) actively
- (19) Planning of the project? (1) no interest in the project (2) passively (3) actively
- (20) Implementation of project? (1) no interest in the project (2) passively (3) actively
- (21) Evaluation of the project? (1) no interest in the project (2) passively (3) actively
- (22) Monitoring of the project? (1) no interest in the project (2) passively (3) actively
- (23) How do you evaluate participation in the electricity supply project? (1) not successful (2) partially successful (3) successful (4) very successful
- (24) How was the electricity supply project managed? (1) not well managed (2) fairly managed (3) neutral (4) well managed (5) none
- (25) The rural community electricity projects are sustainable (1) totally disagree (2) disagree (3) agree (4) totally agree
- (26) Choose among one of these options your level of performance in this project  
(1) no interest in the project (2) indifference (3) passively (4) fairly (5) actively
- (27) Select as many as possible the measures you take to improve upon the capacity of the people to participate in the electrification project? (1) motivation (2) encouragement (3) showing examples through active participation (4) been responsible for the initiative of the project.

### ***Appendix (3) Agenda 21***

Agenda 21 refers to the need for broad participation in various chapters.

In Chapter 8 (Integrating environment and development in decision-making): an adjustment or even a fundamental reshaping of decision-making, in the light of country specific conditions, may be necessary if the environment and development is to be put at the centre of economic and political decision-making - in effect achieving full integration of these factors.

In Chapter 23 (Strengthening the role of the major groups), Agenda 21 requires, in the specific context of the environment and development, the need for new forms of participation and notes the need of individuals, groups and organizations to participate in decisions, particularly those which affect the communities in which they live and work.

In Chapter 26 (Recognizing and strengthening the role of indigenous people and their communities), active participation is called for to incorporate their “values, views, and knowledge”.

In Chapter 33 (Financial resources and mechanisms): priorities should be established insofar as to incorporate community participation and to provide equal opportunity for men and women. In this respect, consultative groups and roundtables, and other nationally based mechanisms, can play a facilitating role.

In Chapter 37 (National mechanisms and international cooperation for capacity-building): as an important aspect of overall planning, each country should seek internal consensus at all levels of society on policies and programmes needed for short- and long-term capacity building to implement its Agenda 21 programme. This consensus should result from a participatory dialogue of relevant interest groups and lead to an identification of skill gaps, institutional capacities and capabilities, technological and scientific requirements and resource needs to enhance environmental knowledge and administration to integrate the environment and development.

It is noticeable that Agenda 21 calls, effectively, for ‘participation in all elements of a strategy cycle’ as quoted in (Clayton-Dalal & Bass 2003:192).

***Appendix (4) Pryosusilo; Pilioussis; Howden; Phillips and Gooley (2005) Analysis of the IAP 2 Principles of Participation.***

In the IAP2 Spectrum (see Table 1), from **inform** through to **empower**, there is a corresponding increase in expectation of community participation and its impact. By simply “informing” stakeholders there is no expectation of receiving feedback and consequently there is a low level of public impact. At the other end of the spectrum, “empowering” stakeholders to make decisions implies an increase in expectations and therefore an increased level of community impact.

It is also worth noting that the level of tasks can be high at the “**inform**” end of the spectrum, while the strength of the relationship between yourself and the stakeholder/community may be low. As you move through the spectrum, tasks begin to differ and the strength of relationships increases through consult, involve, collaborate and finally to empower, where the main focus is not the task but the importance of the relationship. It is sometimes assumed that the level of difficulty involved in the engagement process increases with the level of participation, with “inform” being perceived as being easy by comparison to “empower”. In reality, where engagement is effective to its purpose, no part of the Spectrum is harder or more preferable than another. Indeed, the need for different skills and depth and trust in relationships can make all parts of the Spectrum

**Human, Social and Community Capacity**

There is an accepted government imperative to look at participatory processes that build the capacity of a community. Other stakeholders, as well as us, respond to social, environmental and economic challenges. Consequently, an understanding of human, social and community capacity is required for effective engagement in planning and implementation. Community capacity is the sum of two important concepts – human and social capacity. There exists a level of trust between an individual’s strength and the nature of the relationships. These two elements can be mutually reinforcing. For example, individual skills can be applied much more effectively in an environment where there is trust and cooperation. Similarly, a close-knit community can respond more quickly to change if there is a range of individual

skills and leadership abilities available to sustain development. The increasing level of community impact of the Spectrum has implications, not just for the effect of the engagement on the community, but also the ability of the community to participate or respond positively to this impact.

As part of engagement planning you may need to consider:

What is the community's capacity (human and social) to participate or meet your expectations?

What is your role in building community capacity?

What is your capacity (human and social) and others in the project to build community capacity?

In addition, social relations constitute an additional resource for individuals and communities. By understanding the dynamics of these relationships, it is possible to derive substantial benefits towards achievement of mutual outcomes.

The process of disseminating information (inform) is fundamental to many government and non-government activities. While this serves to build individual knowledge (human capacity), it contributes only minimally to social capacity. This is particularly true of one-way participation processes such as newsletters or media releases.

However, engagement activities from further along the Spectrum, such as a participatory extension or education programme, cannot only build individual knowledge (e.g. through the subject or nature of the programme), but also build relationships between those who are learning together. Skills learnt are often reinforced through peer support, exchange of ideas and experiences. While there is an increasing level of expectation in participation and a greater reliance upon the abilities of those participating to meet this expectation, the positive impact on learning and relationships extends the potential success of the activity. Community engagement is an investment in both the present and the future of a community's human and social capacity. For example:

If communities are not adequately informed, an imbalance in knowledge is created that privileges some and alienates others. If involvement is promised, or action from a consultation expected, but not delivered, trust between the community and

government is eroded. Future approaches may then be compromised by current actions.

If representatives of some segments of the community are empowered and not others, this can further divide a community. If leadership programmes are not sensitive to community structure or diversity, they can erode any trust the leader has built within that community. The “inform” column of the Spectrum describes the communication of information to the community, or other stakeholders, and is the foundation of all community engagement processes. The general goal of this type of engagement is to provide stakeholders with balanced and objective information. This process can provide the basis for building knowledge and skills in the community in order to assist decision-making and change through:

- Increasing understanding of issues, alternatives or solutions.
- Increasing stakeholder/community ability to address issues.
- Increasing community compliance with regulation and other requirements associated with change.

Those you inform can range from the broad community to key stakeholder groups and organizations. The processes used can be proactive (information dissemination) or responsive (responding to questions from the community). Informing involves one- or two-way communication over various timeframes. Examples include one-off communication, such as brochures or media releases, through to longer term; intensive processes such as community education (see Theron 2005: 126-128). This column of the Spectrum describes the process of eliciting feedback on information provided. The goal of this type of engagement is to obtain feedback on analysis, alternatives or decisions.

**Consultation** actively seeks community views and input into policy, plans and decisions. The responsibility for the decisions remains with government or the organization doing the consulting. There is a range of ways consultation can occur, including processes that require little or no dialogue. Examples include written consultation (e.g. a one-off survey in a newsletter, or documents made available for community comment) through to those involving dialogue and debate such as public meetings, focus groups and processes where the stakeholder/community is able to

influence proposed options. Processes for gaining rural intelligence, social research and attitudinal surveys would also be included here. The goal of this method of engagement is to work directly with the community throughout the process to ensure that community concerns and aspirations are consistently understood and considered. The distinguishing difference between “consult” and “involve” is the level of participation expected of the community and other stakeholders. While consulting requires the facilitator to seek feedback at a given point in time, involving means deliberately putting into place a method to work directly with stakeholders throughout the process.

However, while “**involve**” assumes a greater level of participation by stakeholders as they work through issues and alternatives to assist in the decision-making process, the organization undertaking the engagement generally retains responsibility for the final decision.

**Collaborate:** there must be clarity about the extent of decision-making power that is delegated and, in particular, what is not included. The goal of this type of engagement is to partner with the community in each aspect of the decision, including the development of alternatives and the identification of the preferred position. This method of engagement further extends the level of participation and, consequently, the impact upon the community. Ownership is shared between the organization and the stakeholders. There is a greater level of delegated decision-making, but the organization responsible for the engagement may still retain the overall decision-making power.

Collaborative partnerships can range from loose affiliations through to the setting up of formal boards or committees. An example of a collaborative engagement arrangement can be seen in the establishment of the Victorian Catchment Management Authorities. While the establishment of these entities devolves management at a local level, responsibility for final policy, legislative frameworks and overall budget decisions is still retained by government.

**Empower:** Empowered communities share responsibility for making decisions and accountability for the outcomes of those decisions. The goal of this method of engagement is to place final decision-making in the hands of the community.

Empowered communities share responsibility for making decisions and accountability for the outcomes of those decisions. Legislative and policy frameworks give power to communities to make decisions. The community may have the power to make a limited range of decisions (e.g. on a specified issue or for a limited time), or it may have extensive decision-making powers. The pilot mini-Citizen's Jury, conducted by the Victorian Glenelg Hopkins Catchment Management Authority, to aid in the development of their Draft River Health Strategy is an example of empowerment.