An investigation of factors responsible for poor construction and maintenance of rural infrastructure

 \mathbf{BY}

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DECLARATION

I declare that this thesis is original and in entirety an independent investigation and to the best of my knowledge has never been submitted to any other University for any similar award. Acknowledgment has been made where this research is indebted to the work of others.

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DEDICATION

I dedicate this book to my Late Mum Edith, who passed away in the infancy of my Masters course for her invaluable driving force that saw me become what I am today. To my wife Maureen, sons Enoson & Karlson and Daughters Enoreen & Kareen for your great support

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ABBREVIATIONS

A/E Architect/Engineer

CM Construction Management

GDP Gross Domestic Product

MoLG Ministry of Local Government

PEAP Poverty Eradication Action Plan

PMI Project Management Institute

PPDA Public Procurement and Disposal of Public Assets Authority

SPSS Statistical Package for Social Scientists

UNABCEC Uganda Association of Building and Civil Engineering Contractors

UACE Uganda Association of Consulting Engineers

WDR World Development Report

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ABSTRACT

This study was conducted to establish the factors responsible for poor construction and maintenance of rural infrastructure in a decentralized system. Rural Infrastructure refers to roads, transport and communication, Commercial and residential buildings, water supply and sanitation services and rural energy established in a rural setup. The study aimed at determining the perception of stakeholders about the quality of rural infrastructure, identify and assess challenges to effective infrastructure construction in a rural setup, and determine solutions for promoting quality infrastructure development in a decentralized system of governance.

Inadequate rural development is one of the most distressing problems in Africa. In a decentralized country like Uganda, rural development is a principal strategy for poverty eradication. However, it is reportedly unsustainable, due to poor rural infrastructure construction and a host of socio-economic factors. There is wide criticism on the quality of rural physical infrastructure delivered under the decentralized system in Uganda. There have been a number of reported cases of collapsing structures in which many lives have been lost, the most glaring of them being the Bwebajja hotel building collapse incidence. A numbers of many others are unreported. Such include: the frequent failures on Mukono – Katosi road in Mukono; Katera – Minziro road and Kyapa – Kasensero road in Rakai district; the collapsed hand dug well in Kayunga sub county Kayunga district in which two lives were lost in 2003 etc.

In this study a Survey and four focus group discussions were employed in the study that involved 100 respondents randomly selected and 5 Focus Group Discussions that were composed of 47 participants. The study was carried out in five districts of Mukono, Wakiso, Luwero, Masaka and Rakai, all in central Uganda.

The findings show that use of unqualified personnel, limited involvement of stakeholders, political influence and limited funds are the major causes of poor rural infrastructure under the decentralized system in central Uganda. Based on the findings, it is recommended that Local governments should employ technically competent firms with qualified personnel to manage the procurement and implementation of rural infrastructure construction. Involvement of stakeholders should be ensured right from planning through to implementation and evaluation of rural infrastructure. The funding should be improved to rhyme with the technical requirements of local government projects.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Infrastructure development is believed to be the backbone of economic development of any country or government (World Bank, 1997). However, Local governments are experiencing adverse criticism about the serviceability and sustainability of rural infrastructure development (World Bank, 1994). Rural infrastructure refers to roads, transport and communication, Commercial and residential buildings, water supply and sanitation services and rural energy established in a rural setup. Rural infrastructure is critical for several reasons, especially for countries that are predominantly rural and for which agriculture is the mainstay of the economy.

In a poverty eradication drive, through the Poverty Eradication Action Plan (PEAP), the Uganda government prioritized rural infrastructure development as one of the key areas of investment. A strong well-functioning rural infrastructure reduces the vulnerability of the poor. Investing in rural infrastructure creates new economic opportunities, for example by saving time that would otherwise be spent collecting water, by improving access to markets and by generally enhancing mobility and communications. The provision of rural infrastructure enhances democratic processes and skills among the rural population, for example through participation in decentralized systems, local-level water supply and sanitation committees (Karugire & Turner, 2001; WSP, 2002).

The provision of rural infrastructure facilitates and improves the delivery of other rural services such as schools and health clinics. Many decentralized governments have invested substantial sums in rural infrastructure. But few have actually succeeded in establishing systems for provision of rural infrastructure that is genuinely sustainable over a long term.

Sustainable development refers to programs that meet the needs for the present without compromising the ability of the future generations to meet their own needs. This definition while useful in drawing attention to the concern with the long-term implications of the present day development, asks as many questions as it answers. What

constitutes "needs" and how will these change over time? What reductions in the options available to the future generations are acceptable and what are not?

Owing to wide criticism about the rural infrastructure developed under local governments, especially regarding the serviceability and sustainability, there is need to shift the paradigms from the way local governments approach the issue of rural infrastructure development and maintenance. Hence the need to investigate the challenges of rural infrastructure development and maintenance under a decentralized system.

1.2 Research Problem

Development and maintenance of physical rural infrastructure is a major expenditure area in all local governments (Nasasira, 2003). The Uganda decentralization policy of poverty reduction greatly emphasizes poverty reduction through participatory planning and building the capacity of the local construction industry among others (Sebanakita, 1998 a & b). Many of the feeder roads like community roads are only passable during dry seasons; during the rainy seasons, the swamp stretches are overtopped with flood waters and sections of roads are often cut off and closed to motorized traffic for many days (Kagyina, 1998). The state of rural infrastructure is further worsened for public buildings especially in the education and health sectors not excluding the water and sanitation sector under local government, resulting into severe cracks or failures before or shortly after commissioning.

Presently, the understanding of the factors responsible for poor construction and maintenance of rural infrastructure under a decentralized system can partly be placed on the challenges encountered in the planning process, procurement, availability of resources and maintenance polices in local governments. However, there is shortage of empirical information on the planning, procurement, contract administration practices and maintenance policies on construction of rural infrastructure in local governments.

Therefore, there is need to investigate the factors responsible for poor construction and maintenance of rural infrastructure under decentralization as a fundamental step towards the improvement of rural infrastructure development in local governments.

1.3 Significance of the Study

Literature review reveals the importance of rural infrastructure development to the economic development of any country, but the various authors do not explicitly analyze the constraints affecting the construction and maintenance of a sustainable rural infrastructure. This study therefore seeks to provide data on appropriate rural infrastructure development and contribute information to the existing body of knowledge.

Findings from this study will help policy makers in the area of rural infrastructure planning and implementation since infrastructure development is one of the prime reasons for the existence of policy makers. This is more so because in order to have a sustainable rural infrastructure which is of acceptable service level to the user, it is important to generate information on all the major constraints affecting its development and maintenance.

Stakeholders are usually the end point targets for development initiatives and understanding the social relations and ideologies therein is an important step in forming any intervention. For we need not only build and maintain rural infrastructure, but also devise new attitudes to fit in changing times

Scholars interested in the area of participatory approach in infrastructure planning and implementation with particular reference to rural infrastructure will find such a study a useful reference point for future research. It is also intended as an important contribution to the development and formulation of sound rural infrastructure development and maintenance practices.

1.4 Research Variables

- Awareness of good construction Practices
- Factors that are responsible for poor construction of rural infrastructure
- Stakeholder involvement in construction of rural infrastructure
- Stakeholder observed causes for poor works and suggested solutions to poor construction of rural infrastructure

1.5 Overall Objective

The overall objective was to investigate the factors responsible for poor construction and maintenance of rural infrastructure under a decentralized system.

1.5.1 Specific Objectives

- a) To determine the perception of stakeholders about the quality of rural infrastructure
- b) To identify challenges to effective infrastructure construction in a rural setup
- c) To determine solutions for promoting quality infrastructure development in a decentralized system

1.6 Research Questions

This study was guided by the following research questions for the sampled local Governments:

- How is rural infrastructure investment planned in local governments?
- ♣ How adequate are the resources available for various infrastructure investments in local governments?
- How is the procurement process of rural infrastructure development carried out?
- How relevant are the technologies in place for infrastructure development?
- ♣ How adequate is the administrative set-up for the development and maintenance of rural infrastructure?
- What is the level of involvement of stake holders?
- What infrastructure construction and maintenance systems are in place?

1.7 Conceptual Frame Work

In a nutshell, construction of rural infrastructure is an important strategy in decentralization. However, poor construction results from one or a combination of; improper planning, ineffective procurement processes, insufficient resources, poor contract administration or lack of established maintenance policies.

Figure 1 shows the conceptual framework of the study. Arrow styles in the model illustrate the trend followed in conducting the study. Full scale arrows indicate the aspects considered in the study whereas the dotted arrows indicate factors that impact

on the declining construction of rural infrastructure development in decentralization but not considered in the study (bio-physical and chemical problems).

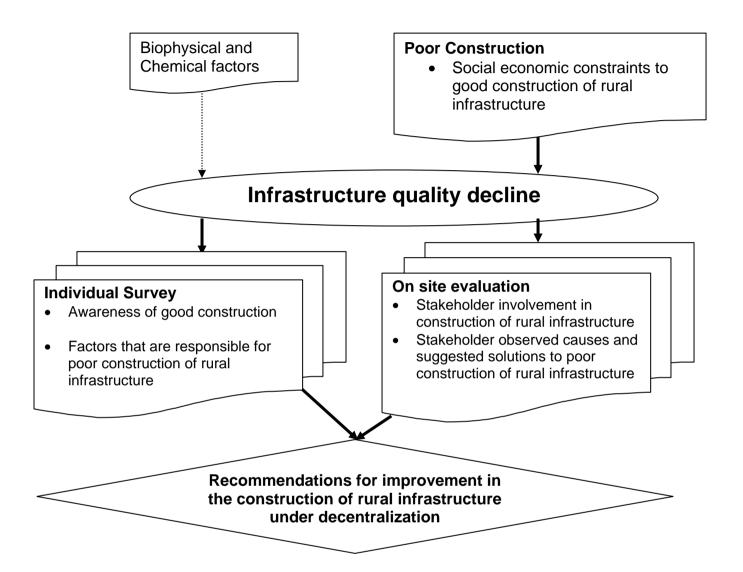


Figure 1.1: Diagrammatical Representation of the Conceptual Framework of the Study

1.8 Scope of the Study

The study was an evaluation research and covered rural infrastructure construction and maintenance in five districts of Uganda namely, Mukono, Wakiso, Luwero, Masaka and Rakai. The stakeholders in rural infrastructure development and maintenance were interviewed: district political leaders and administrators, district works staff at senior level, district tender boards, district health officers, district planning officers and district education officers were interviewed. Consultants, contractors and local council leaders

and community infrastructure users were also interviewed. The research investigated the underlying constraints to the construction and maintenance of an appropriate rural infrastructure in Uganda.

1.9 Organization of the Study Report

Chapter 1 gives an introduction of the study. Chapter 2 reviews the literature of the past studies and research carried out which is relevant to this study. Chapter 3 gives the methodology used. Chapter 4 presents and discusses results of the study. Chapter 5 gives the conclusions and proposed recommendations of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Decentralization as a Means of Service Delivery

The decentralization policy was introduced in Uganda in 1992 and was intended to promote good governance, improve the quality of service delivery by local governments and reduce the high levels of poverty among the population (Kabwegyere, 2005).

Decentralization is a means not an end in itself. It is also a process which has a beginning but no clear end because it is subject to constant improvement. In theory, decentralization can help in a number of ways:

- ♣ Local governments are better informed about local needs and are more sensitive to them. They should therefore be able to provide more appropriate infrastructure than national governments.
- ♣ Local people including otherwise excluded groups can be more closely engaged in decisions about infrastructure provision because they have stronger political voice at the local level.
- ♣ Local providers can be made more accountable to local people.
- ♣ In centralized systems, separate line ministries deal with the different forms of infrastructure. In decentralized systems, coordination by local government agencies allows greater capacity for horizontal, 'integrated' planning.

Decentralization reforms have transformed the governance landscape of Uganda; decentralization has taken root and is irreversible (Kabwegyere, 2005).

In implementing the decentralization policy, the ministry of local governments received considerable support from all levels of government, which has made it a success story. However there are a number of aspects that were not envisaged at the time of its design. These issues range from legal, administrative, environmental, urbanization and physical planning among others (Ssekono, 2005).

According to ArZfa et al, (2000), one of the prime objectives of embracing decentralization in rural areas was to address absolute poverty and the primary

objective of infrastructure development in order to meet the primary functional budgets and quality of services offered to the population. This therefore becomes an area of study to explore into the quality of services offered under infrastructure development, basing on the original principles upon which the decentralization policy was designed. It is important to reflect on our experiences with the policy with the view of converting decentralization into socio-economic transformation and sustainable development.

2.1.1 Key Challenges of Decentralization in Uganda

While decentralization has brought about a number of good things, it has also generated a number of governance problems which the country has been grappling with for some time. (Ssekono, 2005):

- Inability of local governments to raise adequate revenues from local sources to meet the ever increasing cost of service delivery,
- ❖ Lack of Capacity in local governments to deliver quality services. This problem is more pronounced in more remote areas of the country. Until recently most local governments were not able to attract and retain high caliber manpower because the terms and conditions they offer are not attractive,
- ❖ Need to inculcate awareness and a sense of civic responsibility in our communities so that they can demand accountability from their leaders. Also corruption in districts undermines the objectives of decentralization in the whole country (Otekat Capt., as quoted in Ssekono, 2005). Decentralization can lead to increased levels of corruption and entrenchment of local political elites, when political power and financial resources are transferred into structures without democratic accountability (Khan, 2000),
- Increased powers of local governments can conflict with the activities of neighborhood groups in urban areas, or with traditional common property regimes in the areas.

Therefore there is need to focus on how to anchor decentralization as a tool for transforming the local economy in a bid to remove abject poverty from rural

communities (Ssekono, 2005). This calls for an efficient and effective management of the key to economic development-rural infrastructure development.

The other challenge is that of continued decline in local revenue collection by local governments (MoLG, 2006). This was further emphasized by the Minister for Local Government while he was opening the Joint Annual Review of Decentralization workshop for the year 2006, where he indicated that this had a great effect on service delivery in local governments.

2.1.2 Governance Landscape

The decentralization policy has transformed the governance landscape in the country. The key institutions in Uganda's decentralization policy are local councils. A district local council is mandated to initiate, formulate and approve development plans and budgets; to provide social services/ infrastructure to people; to legislate on issues which are local in nature; to approve their own civil servants and supervise and monitor their performance (Ssekono, 2005). All these in essence promote good governance, which promotes citizen participation and accountability by service providers, both to central government and local citizens.

2.1.3 Funding of Local Governments

In developing countries, in particular, maintenance tends to be neglected at all levels because the results of money spent are not as immediately apparent and the pressures to extend the infrastructure network to underserved areas tend to be strong (Fozzard, 2000, World Bank, 2000d). Central government transfers are often earmarked for specific capital expenditures for infrastructure, but maintenance is provided for under a general block grant which can then be used for many competing needs (Khan, 2000)

The funding policy under decentralization is provided for by the Local Government Act (1997), giving powers to local governments to levy, charge and collect fees and taxes as a means to generate local revenue. The fifth schedule of the same act spells out the regulations governing the local government revenue and some of the sources of revenue for local governments indicated include; grants from central governments, graduated tax, property tax, fees and fines or licenses and permits, interest on investments, rents from leased property, donations, contributions and endowments, charges or profits arising from any trade, services or undertakings carried out by the

council, annual motor bicycle licenses, parking fees, charcoal burning licenses and any other as may be prescribed by the local governments and approved by the Minister (LGA, 1997).

The generated funds are expected to be invested in line with the country's Poverty Eradication Action Plan (PEAP) and in the priority areas of: primary education, primary healthcare, rural water and sanitation, rural feeder roads and agricultural extension. The central government usually provides funds for infrastructure investment, while lower-level governments and the private sector participate more often in financing small improvements, modifications and local additions to the national networks (MoLG, 2002).

Regulations

The central government usually plays a coordinating role in setting standards and monitoring compliance. This ensures compatibility and consistent quality across the national network and enables a wide variety of potential service providers. The outcome of decentralizing regulation depends on the political circumstances. On the one hand, turning regulatory authority over local governments will generally facilitate the adoption of regulation to local conditions and preferences. On the other hand, devolution can lead to interest groups capture if local governments do not have adequate regulation capacity and broad-based accountability mechanisms (MoLG, 2002).

Accountability

The links between central government, local government, the private sector and citizens must be designed to ensure that providers of infrastructure are accountable to those who pay for the services as well as those who benefit from the services. Participatory mechanisms should be structured so that the entire community can participate in infrastructure decisions, particularly regarding location and financing issues, which have substantial distribution implications (World Bank, 2000c and Komives, 1999). This enhances the availability of public information regarding budgetary and procurement processes for community participation and accountability.

In summation, the direct provision of infrastructure services by the central government often fails to take into account the geographical and social diversity of requirements and capabilities (UN, 2000). It has few incentives for cost control, it uses highly trained and

therefore expensive technical staff; and it involves over complex technical specifications (Martinussen, 1997). This tends to disadvantage the poor people disproportionately. Urban and higher-income areas often receive coverage before rural and lower income areas. Inefficient services are costly, so demand an unnecessarily high proportion of poor people's income, or are beyond their reach altogether (Martinussen, 1997).

2.2 Rural Infrastructure Development

2.2.1 Rural Infrastructure and Development

Global levels of access to infrastructure in rural areas remain low; access to electricity, in-house water supply, and telephones is an average of two to five times higher in urban areas, than in rural (Komives, et al., 2000). The 1994 World Development Report (WDR) on rural infrastructure discussed the magnitude and the nature of the impact of infrastructure on growth, cautioning that results are neither specific nor solid enough as the basis for designing policies for infrastructure investment. The WDR also pointed out that there is a clear correlation between per capita GDP and per capita availability of major infrastructures, suggesting that as an economy grows the amount of infrastructure increases, nevertheless, it points out that 'past investment in infrastructure have not had the development impact expected (World Bank, 1994).

Infrastructure services have multiple links to poverty reduction and affect rural areas productivity and quality of life, (Malmberg, et al., 1997). Malmberg further argues that basic infrastructure services like transport, water and sanitation, communication, and energy can help create a lot of jobs and raise worker productivity. He adds that, it saves time and human efforts in transporting commodities and can improve health service delivery, access to education and other basic social services. Rural infrastructure services also contribute to reduce poor people's exposure and vulnerability to risks and closely links them to increased agricultural growth and non-farm rural employment (Malmberg et al., 1997).

Despite widespread recognition on the potential impact of infrastructure services on both rural development and poverty reduction, providing infrastructure services to meet the demands of businesses, households and other users is still one of the major challenges of economic development and poverty reduction in rural areas (MoLG, 2006).

2.2.2 Infrastructure Stimulates Economic Opportunities for Growth

Whilst there is no consensus on the magnitude or precise nature of the impact of infrastructure on growth, studies concurs that infrastructure promotes growth with relatively high rates of return compared with other forms of investment (World Bank, 1994, IFAD, 2002 and DFID, 2002). In rural context, infrastructure contributes to both agriculture and non- farm growth, thereby generating economic opportunity for a broad range of rural inhabitants, but most importantly, the poor (World Bank, 1994).

Infrastructure services may be out of reach to the poorest because of socio-economic class, ethnicity, gender, religion and caste (Pouliquen, 2001). This form of exclusion may be observed in many programs, for example, in rural water supply projects in India, water supply points were placed near influential households (White, 1997) as cited in World Bank, 2000/1. Delivery arrangements that are inclusive are critical if infrastructure services are truly to reach the poorest.

2.2.3 Sustainability – How to Ensure Assets and Services will be Operated and Maintained

This challenge is the result of the confluence of design, administration and financial problems. Rural infrastructure services are much dispersed and have to be provided over a wide range of contexts – from remote villages to rural towns and market centers, benefiting at the extreme just a few families and the linkage with higher level networks are important particularly for roads.

Because of the small number of beneficiaries normally served, economic considerations dictate that rural infrastructure investments be designed to fairly low standards. This in turn, makes them fragile and maintenance intensive. If the skills and resources for their maintenance are not readily available they will quickly breakdown (World Bank, 1994). Given geographical dispersion, solutions have to be found at the local level.

2.2.4 Availability, Quality and Affordability of Rural Infrastructure

Data on the physical availability of rural infrastructure in most developing countries is scanty (World bank, 1997). Even where good records are maintained, figures generally paint but part of the picture of service access. This is because measurements of 'physical availability' on infrastructure service utilization and quality and distribution of benefits is high on the poverty – rural infrastructure learning agenda.

2.2.5 The Local Private Sector

The local private sector is often involved in all types of rural infrastructure construction, operation and maintenance, primarily as a contractor financed by government or community funds (MoLG, 2003). Growing evidence suggest that private sector partners can increase the efficiency and effectiveness of service delivery with the potential to make services more cost effective and responsive to the needs of the poor users (ESMAP,2000). The relevance of the private sector approaches will depend on the private or public nature of services provided. However, regardless of the choice of institutional arrangement and actors, accountability cannot be taken for granted. Local communities are not necessarily less immune to corruption, incompetence or cronyism than governments and without competition and transparency the private sector is no guarantee of efficiency (MoLG, 2003).

Accountability has to be enforced through well designed mechanisms including; transparency in decision and project implementation and operation, open competitive bidding, aligned incentives for performance, effective audits, participation by all sub groups of the beneficiary community, and wide dissemination of the achievements of individual communities (Pouliquen, 2001). This enhances improvement of infrastructure development especially where several factors need to be harmonized – Technical operatives, political leaders and finance officials must recognize the need for change and actively promote changes.

The above literature indicates that maintenance of several rural infrastructure has not been given adequate attention by local governments hence the need to investigate underlying constraints to an appropriate rural infrastructure development.

2.3 Project Management Frame work

Quality of construction projects in the decentralization system of Uganda is claimed to have greatly declined in relation to internationally set standards (IGG survey, 2000). This could be due to the insufficient project management process evidenced under local governance. The way local government projects are handled from inception to handover leaves a lot to be desired (MoLG & PPDA, 2006). It is imperative therefore in light of this research to cast some light on the project management framework at least in a broader context.

Local governments because of limited financial resources have embraced project phasing without critically reviewing the associated benefits and challenges and end up only benefiting partially (MoLG & PPDA, 2006). Project management frameworks also require operation and maintenance systems. Operation and maintenance systems are some of the key systems required in place especially for infrastructure premised on minimum cost as the major parameter. This is basically because proper maintenance and operation may greatly prolong the life expectancy of an infrastructure.

More so Project Management framework is worthy reviewing since; quite often local governments employ inexperienced contractors due to political influence or corruption undertakings under the pre-text of poverty reduction strategy. This in turn requires intensive supervision and failure to sustain the desired supervision coupled with the desire to get rich quickly compromises the quality of construction projects (MoLG, 2003).

2.3.1 Project Management Knowledge Areas

Project Management requires knowledge in nine distinct areas [PMI, 2000] and all quality oriented managers need to be focused to them:

- Project integration management to ensure that the various project elements are effectively coordinated. It consists of project plan development, project plan executions, and integrated change control.
- Project scope management to ensure that the project includes all the work required and only the work required, to complete the project successfully. It consists of initiation, scope

planning, scope definition, scope verification, and scope change control.

- Project time management to ensure timely completion of the project. It consists of activity definition, activity sequencing, activity duration estimating, schedule development, and schedule control.
- Project cost management to ensure that the project is completed within the approved budget. It consists of resource planning, cost estimating, cost budgeting, and cost control.
- Project **quality** management to ensure that the project will satisfy the needs for which it was undertaken. It consists of quality planning, quality assurance, and quality control.
- Project human resource management describes the processes required to make the most cost effective use of the people involved with the project.
- ➤ Project **communications** management to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information.
- Project risk management describes the processes concerned with identifying, analyzing, and responding to project risks. It consists of risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, risk monitoring and control.
- Project procurement management describes the processes required to acquire goods and services from outside the performing organization. It consists of procurement planning; solicitation planning; solicitation; source selection; contract administration; and contract close out. In light of the above mentioned project knowledge areas, it was found worthy to establish the effect of these variables in rural infrastructure construction.

2.3.2 Project Stakeholders

Quality is a corrective concern for all project stakeholders and therefore one should not talk about quality of a construction projects without reflecting on the stakeholders. The major project stakeholders include owners, professional services suppliers and contractors. In

addition to these, there are many different names and categories of project stakeholders internal and external, owners and founders, sellers and contractors, team members and their families, government agencies and media outlets, individual citizens, temporary and permanent lobbying organizations, and society at large (Kerzner, 1998). The naming or grouping of stakeholders is primarily an aid to identifying which individuals and organizations view themselves as stakeholders. Stakeholders' roles and responsibilities may overlap, as when an engineering firm provides financing for an infrastructure that it is designing. Managing stakeholder expectations may be difficult because stakeholders often have different objectives that may come into conflict. For example, the manager of a department that has requested a new rural infrastructure may desire low cots, the technical experts may emphasize technical excellence, and the programming contractor may be most interested in maximizing its profits. When an owner decides to seek professional services for the design and construction of a facility, he is confronted with a broad variety of choices. The type of services selected depends to a large degree on the type of construction and the experience of the owner in dealing with various professionals in the previous projects undertaken by the firm. Generally, several common types of professional services may be engaged either separately or in some combination by the owners.

2.3.3 Financial Planning Consultants

At the early stage of strategic planning for a capital project, an owner often seeks the services of financial planning consultants such as certified public accounting [CPA] firms to evaluate the economic and financial feasibility of the constructed facility, particularly with respect to various provisions of tax laws which may affect the investment decision. Investment banks may also be consulted on various options for financing the facility in order to analyze their long-term effects on the financial health of the owner organization.

2.3.4 Architectural and Engineering Firms

Traditionally, the owner engages an architectural and engineering [A/E] firm or consortium as technical consultant in developing a preliminary design. After the engineering design and financing arrangements for the project are completed, the owner will enter into a construction contract with a general contractor either through competitive bidding or negotiation. The general contractor will act as a constructor and/or a coordinator of a large number of subcontractors who perform various specialties for the completion of the project. The A/E firm completes the design and may also provide on site quality inspection

during construction. Thus, the A/E firm acts as the prime professional on behalf of the owner and supervises the construction to insure satisfactory results. This practice is most common in building construction

In the past two decades, this traditional approach has become less popular for a number of reasons, particularly for large-scale projects. The A/E firms, which are engaged by the owner as the prime professionals for design and inspection, have become more isolated from the construction process. This has occurred because of pressures to reduce fees to A/E firms and the threat of litigation regarding construction defects (Maylor, 1999). Instead of preparing a construction plan along with the design, many A/E firms are no longer responsible for the details of construction nor do they provide periodic field inspection in many cases. As a matter of fact, such firms will place a prominent disclaimer of responsibilities on any shop drawings they may check, and they will often regard their representatives in the field as observers instead of inspectors (Kerzner, 1998). Thus, the A/E firm and the general contractor on a project often become antagonists who are looking after their own competing interests. As a result, even the constructability of some engineering designs may become an issue of contention. To carry this protective attitude to the extreme, the specifications prepared by an A/E firm for the general contractor often protects the interest of the A/E firm at the expense of the interests of the owner and the contractor.

In order to reduce the cost of construction, some owners introduce value engineering, which seeks to reduce the cost of construction by soliciting a second design that might cost less than the original design produced by the A/E firm. In practice, the second design is submitted by the contractor after receiving a construction contract at a stipulated sum, and the saving in cost resulting from the redesign is shared by the contractor and the owner. The contractor is able to absorb the cost of redesign from the profit in construction or to reduce the construction cost as a result of the re-design. If the owner had been willing to pay a higher fee to the A/E firm or to better direct the design process, the A/E firm might have produced an improved design which would cost less in the first place. Regardless of the merit of value engineering, this practice has undermined the role of the A/E firm as the prime professional acting on behalf of the owner to supervise the contractor.

2.3.5 Design/Construct Firms

A common trend in industrial construction, particularly for large projects, is to engage the services of a design/construct firm. By integrating design and construction management in a single organization, many of the conflicts between designers and constructors might be avoided. In particular, designs will be closely scrutinized for their constructability. However, an owner engaging a design/construct firm must ensure that the quality of the constructed facility is not sacrificed by the desire to reduce the time or the cost for completing the project. Also, it is difficult to make use of competitive bidding in this type of design/construct process. As a result, owners must be relatively sophisticated in negotiating realistic and cost-effective construction contracts.

One of the most obvious advantages of the integrated design/construct process is the use of phased construction for a large project. In this process, the project is divided up into several phases, each of which can be designed and constructed in a staggered manner. After the completion of the design of the first phase, construction can begin without waiting for the completion of the design of the second phase, etc. If proper coordination is exercised, the total project duration can be greatly reduced. Another advantage is to exploit the possibility of using the turnkey approach whereby an owner can delegate all responsibility to the design/construct firm, which will deliver to the owner a completed facility that meets the performance specifications at the specified price.

2.3.6 Professional Construction Managers

In recent years, a new breed of construction managers [CM] offers professional services from the inception to the completion of a construction project. These construction managers mostly come from the ranks of A/E firms or general contractors who may or may not retain dual roles in the service of the owners. In any case, the owner can rely on the service of a single prime professional to manage the entire process of a construction project. However, like the A/E firms of several decades ago, the construction managers are appreciated by some owners but not by others. Before long, some owners find that the construction managers too may try to protect their own interests instead of that of the owners when the stakes are high. It should be obvious to all involved in the construction process that the party which is required to take higher risk demands larger rewards. If an owner wants to engage an A/E firm on the basis of low fees instead of established qualifications, it often gets what it deserves; or if the owner wants the general contractor to bear the cost of

uncertainties in construction such as foundation conditions, the contract price will be higher even if competitive bidding is used in reaching a contractual agreement. Without mutual respect and trust, an owner cannot expect that construction managers can produce better results than other professionals. Hence, an owner must understand its own responsibility and the risk it wishes to assign to itself and to other participants in the process.

2.3.7 Operation and Maintenance Managers

Although many owners keep a permanent staff for the operation and maintenance of constructed facilities, others may prefer to contract such tasks to professional managers. Understandably, it is common to find in-house staff for operation and maintenance in specialized industrial plants and infrastructure facilities, and the use of outside managers under contracts for the operation and maintenance of rental properties such as apartments and office buildings. However, there are exceptions to these common practices. For example, maintenance of public roadways can be contracted to private firms. In any case, managers can provide a spectrum of operation and maintenance services for a specified time period in accordance to the terms of contractual agreements. Thus, the owners can be spared the provision of in-house expertise to operate and maintain the facilities.

2.3.8 Facilities Management

As a logical extension for obtaining the best services throughout the project life cycle of a constructed facility, some owners and developers are receptive to adding strategic planning at the beginning and facility maintenance as a follow-up to reduce space-related costs in their real estate holdings. Consequently, some architectural/engineering firms and construction management firms with computer-based expertise, together with interior design firms, are offering such front-end and follow-up services in addition to the more traditional services in design and construction. This spectrum of services is described in Engineering News-Record [now ENR] as follows: Facilities management is the discipline of planning, designing, constructing and managing space in every type of structure from office buildings to process plants. It involves developing corporate facilities policy, long-range forecasts, real estate, space inventories, projects [through design, construction and renovation], building operation and maintenance plans and furniture and equipment inventories.

A common denominator of all firms entering into these new services is that they all have strong computer capabilities and heavy computer investments. In addition to the use of computers for aiding design and monitoring construction, the service includes the compilation of a computer record of building plans that can be turned over at the end of construction to the facilities management group of the owner. A computer data base of facilities information makes it possible for planners in the owner's organization to obtain overview information for long range space forecasts, while the line managers can use asbuilt information such as lease/tenant records, utility costs, etc. for day-to-day operations.

2.3.9 General Contractors

Builders who supervise the execution of construction projects are traditionally referred to as contractors, or more appropriately called constructors. The general contractor coordinates various tasks for a project while the specialty contractors such as mechanical or electrical contractors perform the work in their specialties. Material and equipment suppliers often act as installation contractors; they play a significant role in a construction project since the conditions of delivery of materials and equipment affect the quality, cost, and timely completion of the project. It is essential to understand the operation of these contractors in order to deal with them effectively.

The function of a general contractor is to coordinate all tasks in a construction project. Unless the owner performs this function or engages a professional construction manager to do so, a good general contractor who has worked with a team of superintendents, specialty contractors or subcontractors together for a number of projects in the past can be most effective in inspiring loyalty and cooperation The general contractor is also knowledgeable about the labour force employed in construction. The labour force may or may not be unionized depending on the size and location of the projects. In some projects, no member of the work force belongs to a labour union; in other cases, both union and non-union craftsmen work together in what is called an open shop, or all craftsmen must be affiliated with labour unions in a closed shop. Since labour unions provide hiring halls staffed with skilled journeymen who have gone through apprentice programs for the projects as well as serving as collective bargain units, an experienced general contractor will make good use of the benefits and avoid the pitfalls in dealing with organized labour.

2.3.10 Specialty Contractors

Specialty contractors include mechanical, electrical, foundation, excavation, and demolition contractors among others. They usually serve as subcontractors to the general contractor of a project. In some cases, legal statutes may require an owner to deal with various specialty contractors directly. In the State of New York, for example, specialty contractors, such as mechanical and electrical contractors, are not subjected to the supervision of the general contractor of a construction project and must be given separate prime contracts on public works. With the exception of such special cases, an owner will hold the general contractor responsible for negotiating and fulfilling the contractual agreements with the subcontractors.

2.3.11 Material and Equipment Suppliers

Major material suppliers include specialty contractors in structural steel fabrication and erection, sheet metal, ready mixed concrete delivery, reinforcing steel bar detailers, roofing, glazing etc. Major equipment suppliers for industrial construction include manufacturers of generators, boilers and piping and other equipment. Many suppliers handle on-site installation to ensure that the requirements and contractual specifications are met. As more and larger structural units are prefabricated off-site, the distribution between specialty contractors and material suppliers becomes even less obvious.

CHAPTER THREE: METHODOLOGY

This chapter deals with research design, area of study, sample selection, population of study, research procedure, research instruments and data analysis.

3.1 Research Design

The study employed both the qualitative and quantitative survey research designs. The qualitative descriptive design was used by carrying out Focus Group Discussions, while the quantitative design was used to elicit data from various stakeholders involved in construction and maintenance of rural infrastructure under a decentralization system of governance.

3.2 Area of Study

The study was conducted in five districts of central Uganda which were randomly selected to reflect the various levels of rural infrastructure development and maintenance in Local governments specifically in the central region. The five districts include; Mukono, Rakai, Luwero, Masaka and Wakiso. Within the randomly selected districts, the questionnaires were administered to 10 categories of people who included district engineers, politicians, health officials, community users, consultants, planning officials, education officials and water officials, tenderers and production officials.

3.3 Population of Study

The researcher used a population of 100 respondents. 20 respondents were involved from each of the five selected districts. The 20 respondents from each district were composed of the 10 categories of people highlighted above.

3.4 Sample Selection

The researcher used the simple random sampling technique to select 5 districts out of the 25 districts in central region. A list of all the 25 districts in central Uganda was obtained from the Ministry of Local Government and each district's name was written on small pieces of paper. The papers were folded, put in a cup, shaken, and then picked one piece of paper at a time. Whatever number of a given district was picked made that

district to be part of the sample. The process continued until the required number of 5 districts was realized.

From each district, 2 respondents were randomly selected from each of the 10 categories, making a total of 20 respondents per district. This realized a sample size of 100 respondents for the study. The table below shows the number of people per category and the sampled number of people per district.

Table 3.1: Showing Number of People per District and those selected for the Study

Districts	Mukono District		Rakai District		Masaka District		Wakiso District		Luweero District	
Category	No.	No	No.	No.	No.	No.	No.	No.	No.	No.
	People	Selected	People	selected	People	Selected	People	selected	People	selected
Engineering	4	2	4	2	4	2	4	2	4	2
Staff										
Politician	5	2	5	2	5	2	5	2	5	2
Tender	7	2	5	2	9	2	4	2	5	2
Boards/PDU's										
Health	9	2	9	2	9	2	9	2	9	2
Community	11	2	9	2	10	2	11	2	8	2
Consultant	5	2	3	2	3	2	4	2	3	2
Planning	3	2	3	2	3	2	3	2	3	2
Education	4	2	4	2	4	2	4	2	4	2
Water	3	2	3	2	3	2	3	2	3	2
Production	6	2	6	2	6	2	6	2	6	2
Total	57	20	51	20	56	20	53	20	50	20

3.5 Procedure

Permission to conduct the research was obtained from relevant authorities like the School of Post-graduate studies Makerere University, the respective District authorities and the area Local Council officials in the areas of study.

During data collection, the respondents were assured of the confidentiality of the information provided. The researcher carried out interviews with all the selected 20 respondents from each district.

3.6 The Instruments

The instruments used in the study included a questionnaire, and a Focus Group Discussion (FGD) guide and observation.

3.6.1 Questionnaire

The researcher prepared a set of questions, which was administered to the sampled participants. The questions were both open-ended and close-ended.

3.6.2 Focus Group Discussions

The Focus Group Discussions were conducted in the five districts of the study. One Focus Group was conducted from each district. Participants constituted of the selected lower local councils (LC3) in each district of study. However the membership of the ten people that participated in the focus group discussion was limited to works and investment committee members at the selected lower local government. The total number of participants in the Focus Group Discussion was 47 people in the five districts.

The focus group discussions were intended to assess the situation of the rural infrastructure from the perspective of key stakeholders at lower local government levels. During the discussions special attention was given to the following indicators: the history of the project and feasibility study, project documentation, the procurement process for the specified infrastructure, project administration, project supervision and monitoring, project cost management, project quality management and certification for payment.

3.6.3 Observation

The researcher also used field observation technique during the data collection period in order to assess the way various infrastructures like schools, public toilets, water sources and roads had been constructed. The researcher also tried to look at the type and adequacy of the materials that were used in this construction and maintenance process within local governments in the districts under study.

3.7 Content Validity

The questionnaire was presented to a number of professionals within the construction field and colleagues from Ministry of works and Transport. Guidance of the professionals and colleagues was sought regarding clarity of questions, general questionnaire layout and on whether the questionnaire covered the problem areas stated in the objectives.

The redundant, double-barreled and irrelevant questions were removed from the questionnaire. Layout formatting was improved and later subjected to real data collection.

3.8 Reliability Tests

The questionnaire was also tested to determine its degree of consistency or reliability. This involved testing and retesting of the instruments on 20 respondents from Wakiso and Kampala districts. A two-week interval for the retest was given between the two tests. The two-week interval for the retest was considered the most appropriate for avoiding memory-recall effects (Bell, 1997).

The respondents were encouraged to be as objective as possible in their responses and were assured of the confidentiality of the information they provided. A reliability correlation coefficient between the two administrations of the tests was computed to determine the extent to which individuals maintained the same relative position. The reliability coefficient obtained was 0.83, an indication that the instrument was reliable since it was between 0.7 and 0.9, according to Davies scale (1971).

3.9 Data Analysis

The data collected was coded, edited and analyzed by qualitative and quantitative descriptive methods. The coded quantitative data was entered and analyzed using computer programme called Statistical Package for Social Sciences (SPSS). The results obtained were in form of frequencies and percentages. The qualitative data was

analyzed by content analysis which involved capturing important information on the social factors affecting construction of infrastructure in a decentralisation system.

The qualitative data was converted to common themes and codes then attached to these themes to derive meaning from responses to poor construction of rural infrastructure. The results of the analysis were presented in form of tables, charts and graphs.

3.10 Limitations to the Study

- ♣ Due to limitation of time and financial resources the study was restricted to 5 local governments of central Uganda and this is not representative of all the local governments in Uganda. Because of the possible differences in the social economic characteristics across the regions the results may not be generalize-able across the country and can only be generalized in the central region.
- Reluctance of some respondents to give information that was sensitive to their areas of operation which may distort some of the realities. However in an attempt to minimize it, efforts were made to explain to the respondents the purpose of the study and reassuring them of a high level of confidentiality. The level of rapport created between the respondents and the researcher is believed to have mitigated the reluctance to a high degree.

CHAPTER FOUR: RESULTS, ANALYSIS AND DISCUSSION

4.1 Introduction

The purpose of this study was to investigate the factors responsible for poor construction and maintenance of rural infrastructure in a decentralized system so that workable recommendations are put in place. This chapter is composed of the results of the study and their interpretation under the guidance of the questions.

The chapter presents brief socio-economic and demographic characteristics of respondents, findings and interpretations of results. The findings are discussed and interpreted in relation to the objectives of the study, and compared to the literature reviewed, to establish the links and divergences. The results are presented in tables and charts which help to explain quantitative data. The findings of the study were found to concur with the current literature.

The findings presented are on such aspects as; rural construction constraints in the planning process, funding, procurement, contract administration and management, and maintenance under the decentralization system. In each of the above, the researcher identified sub-themes under which the findings are presented and discussed. Both qualitative and quantitative results are discussed and linked to make valid interpretations

4.1.1 Socio-economic and demographic characteristics of respondents

In an effort to identify the socio-economic and demographic characteristics, the respondents were asked to indicate them. The responses obtained from the respondents are indicated in the table below:

Table 4.1: Characteristics of Respondents

Category	Frequency	Percentage
Gender		1
Male	65	65
Female	35	35
Total	100	100
District of origin		
Luweero	20	20
Mukono	20	20
Wakiso	20	20
Masaka	20	20
Rakai	20	20
Total	100	100
Title/position		1
Engineering Staff	10	10
Politicians	10	10
Procurement committee	10	10
Staff		
Health officials	10	10
Community users	10	10
Consultants/Contractures	10	10
Planning Officials	10	10
Education officials	10	10
Water officials	10	10
Production officials	10	10
Total	100	100

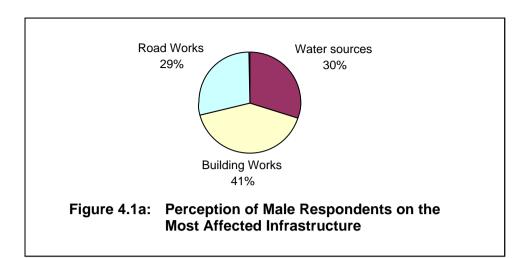
4.1.2 Characteristics of the Respondents

Data depicting the characteristics of the sample is summarized in Table 4.1. The study involved 65% of males and 35% of females in the five districts of Mukono, Wakiso, Luwero, Masaka and Rakai. This study was limited to sectors which play substantial roles in the development of infrastructure in a decentralized system. It was limited to five randomly selected districts of the central region. The results further show that the category of people who were involved in the study included the district engineers (11%), politicians (12%), procurement officers (15%), health officials (12%), community users (15%), consultants (9%), planning officers (5%), education officers (6%), water officers (7%) and production officers as shown in Table 4.1 above.

There is a belief that females are more sensitive to the quality of domestic related infrastructure such as water sources and males are mostly concerned about facilities that aid trade such as roads. Surprisingly an analysis along gender lines to establish the most affected infrastructure in local governments as regards quality of constructed works revealed among both the males and females that the buildings sector and water source construction were the most affected as reflected by the relatively high percentages in Figure 4.1a and Figure 4.1b below.

The research also sought for the most constructed infrastructure in local governments as a basis for determining critical areas that may desire intervention for quality improvement. The researcher computed a cross tabulation (table 4.2) and chi-square values for significance (Table 4.3).

The findings indicated that road works dominated the quality concerns as reflected by the testimony of 19 males and 7 females compared to classroom blocks with 17 males and 8 females that strongly competed for infrastructure resources in local governments.



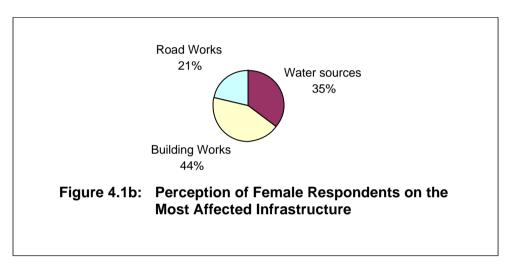


Table 4.2 Relationship between Gender and Quality concerns for various Rural Infrastructures

Type of Infrastructure		Gender of respondent		
	, 12 0 0 0 0 1	Male	Female	Total
Construction	Health staff houses	6	2	8
Work done	Boreholes	12	6	18
	Roads	19	7	26
	Class room	17	8	25
	Shallow well	7	6	13
	Valley dam	1		1
	Offices	4	5	9
Total		66	34	100

Table 4.3 Chi-square Tests of Significance showing the Relationship between Gender and Quality concerns for Rural Infrastructures

	Value	df	Asymp. Sig. (2-sided)
Pears on Chi-Square	4.152 ^a	6	.656
Likelihood Ratio	4.352	6	.629
Linear-by-Linear Association	2.131	1	.144
N of V alid Cases	100		

a. 5 cells (35.7%) have expected count less than 5. The minimum expected count is .34.

Tenderers are believed to be great partners in infrastructure development thus; the high percentage of their involvement was required to indicate the strength attached to their opinion. For many years politicians have been found to influence development of infrastructure in local governments while community users opinion was given due recognition because of the role they are expected to play in the sustainability of investments. Other categories were also based on their potential to influence quality of rural infrastructure development in local governments.

To address the diverse nature of rural infrastructure development, respondents were asked to establish the areas that required more attention in order to improve rural infrastructure development. The following areas as shown in Figure 4.2 below were mentioned.

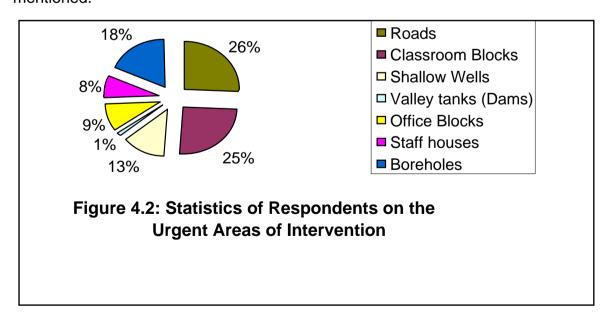


Figure 4.2 above indicates that the majority (26%) of respondents reported road works was one of the areas that required to be focused on in order to improve infrastructure development in local governments. This was followed by classroom construction (25%) and construction of water sources especially boreholes (18%) and shallow wells with a response of 13%. Other areas mentioned by the respondents include; valley dams, office blocks and staff houses among others. An emphasis in this area could improve the construction works in local governments.

4.2 Constraints to Rural Construction under Decentralization System

The respondents were asked to indicate the various constraints that are faced in enhancing rural infrastructure construction under a decentralized system. Table 4.4 below shows the constraints to rural infrastructure construction under decentralization.

Table 4.4: Constraints to Rural Construction under Decentralization

	Frequency	Attached	Weighted	Rank score
Constraints		weight by	Mark	
		researcher		
Use of unqualified	64	20.00%	12.80	1
personnel				
Corruption and	59	17.50%	10.33	2
embezzlement				
Lack of information	52	10.00%	5.20	3
Poor construction materials	49	5.00%	2.45	6
Under-costing of	47	5.00%	2.35	7
construction materials				
Limited time to implement	42	2.50%	1.05	9
Limited availability of some	40	5.00%	2.00	8
construction materials				
Low funding capacity	30	15.00%	4.50	4
Inadequate specifications	29	15.00%	4.35	5
Untimely disbursement of	25	2.50%	0.63	10
funds				
Price fluctuations	22	2.50%	0.55	11

The results in Table 4.4 above indicate that the leading constraint to the construction of rural physical infrastructure under a decentralized system as lack of qualified personnel, as reported by 64% of the respondents supported by 12.8 weighted score. This was followed by corruption which was reported by 59% supported by a weighted score of 10.33, while 52% of them highlighted lack of information as number three in being another serious constraint. Other constraints as summarized from the table above include;

- Low funding capacity of local governments
- Inadequate specifications
- Use of poor construction materials
- Under-costing of construction materials
- Limited availability of some construction materials
- Limited time allocated for project implementation
- Untimely disbursement of funds from the central government and
- Price fluctuation of materials on the market

The staffing requirement is one of the key parameters to be explored in any contest for quality management of construction work. The staffing requirements define what kinds of competencies are required from what kind of individuals or groups and in what time frame.

4.3 The planning Process for Rural Infrastructure Construction

4.3.1 Evaluation of stakeholder participation in the planning process

Table 4.5 below shows the level of stakeholders' participation in the planning for rural infrastructure and Table 4.6 shows the criteria used in the planning process for selecting rural infrastructure investments. The findings obtained from (Table 4.5) indicate that stakeholders were not being involved in the planning process as results report a big percentage of (57%) who say no involvement of stakeholders, only 27% acknowledged involvement in the planning process while, surprisingly 16% did not know about involvement in the planning process yet they are key stakeholders in the development of physical infrastructure in local governments. This agrees with the findings from focus group discussions.

The fundamental tenets for modern quality management require that quality should be planned in - not inspected in. The primary benefit of meeting quality requirements is less rework, which means higher productivity, lower costs, and increased stakeholder satisfaction. Certainly, if there is limited involvement of key stakeholders in decision making, the needs of stakeholders will not be met hence qualifying the works as substandard and thus poorly constructed. In any sustainable planning, the identification of stakeholders and the needs of various stakeholders should be analyzed to ensure that their needs will be met.

Table 4.5 Stakeholders' Participation in the Planning Process

Do stakeholders participate in the planning process?	Frequency	Valid Percent
Yes	27	27.0
No	57	57.0
I don't know	16	16.0
Total	100	100.0

4.3.2 Criteria used in the planning process for selecting construction work

The criteria used in the planning process for selecting rural infrastructure investments are summarized in Table 4.6 below. On average the majority of respondents reported political influence (35%) having an upper hand in the prioritization of investment options. Economic needs were ranked second with 27% of the respondents reporting that it is a major criterion in the planning process. Details of other concerns are summarized in the table.

Planning is the spine of any project and must be based on clearly defined objectives. With proper planning, adequate resources are available at the right moment, adequate time is allowed for each stage in the process and all the various component activities start at the appropriate times.

Any organization to guarantee quality must be in position to forecast on resource requirements of people, material and equipment and analyze for their most efficient use; it must make forecasts of financial requirements, must provide milestones against which processes can be measured. If this is not done and just heed to political ambition

as the case seems to be in most local governments (Reflected in Table 4.6), certainly quality and sustainability has to be compromised.

Table 4.6 Criteria Used in the Planning Process for Selecting Rural Infrastructure Investments

Criterion used in planning	Frequency	Percent
Social needs	15	15.0
Economic needs	27	27.0
Political needs	35	35.0
Environmental concerns	13	13.0
None is used	10	10.0
Total	100	100.0

4.3.3 Carrying out a feasibility study by local governments in the planning process for selecting construction work

Table 4.7 summarizes the feasibility study status for construction projects in local governments.

In a bid to adequately establish the constraints in the planning process, the researcher asked respondents whether feasibility studies were being carried out on projects. Surprisingly, those who said yes were 61% as compared to 31% who said no. Results indicate that there were very few people who did not know (8%) whether feasibility studies are carried out not.

Table 4.7 Feasibility Study Status for Construction Projects in Local Governments

Do you conduct project feasibility studies?	Frequency	Valid Percent
Yes	61	61.0
No	31	31.0
I don't know	8	8.0
Total	100	100.0

4.3.4 Communication of Project Definition to all Stakeholders

Table 4.8 shows the communication status to project stakeholders. Further analysis of the construction planning process revealed that only 22% believed project definitions were shared by stakeholders while 78% did not believe so as summarized in table 4.8.

Communication is rated by reviewed theory as one of the most important aspects of project management; it involves determining the information required by stakeholders and communicating it to all the stakeholders. It involves specifying who needs what information, when it is needed and means of disseminating the information in a timely manner to facilitate decision making. It is therefore of great concern if such a high percentage (78%) testify absence of communication among stakeholders.

Table 4.8 Communication Status to Project Stakeholders

Is project definition communicated to key parties to a project?	Frequency	Valid Percent
Yes	22	22.0
No	36	36.0
Sent to some members	32	32.0
Don't know	10	10.0
Total	100	100.0

4.3.5 Projects Budget/Cost Estimation

Table 4.9 summarizes the current practices in Project Cost estimation of rural infrastructure in Local Governments. Also Table 4.17 shows Respondents' noted causes of poor rural infrastructure over time.

The study on factors responsible for poor construction of rural infrastructure in Local Governments revealed project cost management as one of the weak areas. The survey revealed that cost estimation is mainly done by user departments as reported by 44% of the respondents. An appreciable number (40%) reported that cost estimation is done by the engineering department and there was little evidence of involvement of consultants in local governments (6%).

One of the major constraints leading to poor construction as reported by 29% of the respondents (Table 4.4) was inadequacy of technical specifications for construction projects. This was confirmed by group discussions that cited limited use of standard documents or poor specification (Table 4.17) in Local Government contracts.

The limited use of experts accounts for the inadequacies in the technical specification as the engineering departments in all Local Governments were reportedly understaffed within sectors of electrical engineering and mechanical engineering. The sectors are not given due consideration in the Local Government structures yet district engineers are engaged in series of management meetings leaving little time for them to pay attention to the adequacy of technical specifications for construction projects besides lack of sufficient expertise in some engineering disciplines. More so the user departments that play a big role in the budgeting for physical infrastructure e.g. health departments, education departments etc. have less expertise to provide appropriate estimates on construction projects and little effort is made to liaise with engineering departments citing excuses that engineering departments inflate construction costs. Quite often these inadequacies are realized during implementation when there is limited room to maneuver and this subsequently culminates into poor construction in the bid to keep within the budget.

Table 4.9 Current Practices in Project Cost Estimation of Rural Infrastructure in Local Governments

Who estimates project costs adopted in Budgets?	Frequency	Valid Percent
Consultants	6	6.0
District Engineers	40	40.0
Heads of Department	44	44.0
Community Users	8	8.0
Political leaders	2	2.0
Total	100	100.0

4.3.6 Major Problems encountered during the Planning of Rural Infrastructure in Local Governments

The factors reportedly responsible for the poor construction of rural infrastructure in the planning process were also explored. Table 4.10 below shows the major problems encountered during the planning process of rural infrastructure in local governments.

Table 4.10: Major Problems encountered during the Planning Process

	Frequency	Attached weight by	Weighted	Rank
Problems		researcher (%)	Mark	
Political influence	72	12.5	9	1
Uncompleted previous work	68	10	6.8	6
Inaccurate feasibility studies	66	12.5	8.25	2
Late release of funds	65	5	3.25	8
Corruption	59	12.5	7.38	4
Lack of accurate information on costs	58	12.5	7.25	5
Low budgets	56	10	5.6	7
Delays in planning	54	5	2.7	9
Price fluctuations	52	5	2.6	10
Limited funds to facilitate the process	52	15	7.8	3

The results in Table 4.10 summarize the factors related to planning that affect the quality of rural infrastructure. Weights based on the ability of the factor to affect the quality of the final project were applied on the field results to establish the most likely factor that affects the quality of projects under decentralized systems. Upon applying the weights, the following is the summary of factors related to planning that affect the quality of works under decentralization: Political interference, inaccurate feasibility studies, limited funding to the planning process, corruption, lack of accurate information on costs, previously uncompleted works, low budgets, late release of funds from central government, delays in planning and price fluctuation on the market. The fact that the budgets are inadequate; there is a tendency to spread the resources thin in a bid to harmonize the needs of various geographical localities. This is exasperated by the fact that more objective investments can not logically be defended in the absence of accurate feasibility studies. Owing to the scramble for infrastructure by various

electorates, politicians lose objectivity during allocations and end up prioritizing less feasible investments in a bid to guarantee their return to power. The fact that some construction work remains uncompleted from the preceding financial year means that they have to compete for resources with the priority projects of the current year if they are to be completed.

In light of central government failing to fund all activities as agreed, the planning process is distorted. The effect being, attempts to spread the inadequate resources in a bid to balance the need of various electorates. In turn, this hampers sustainability of investments and promotes poor quality works.

4.3.7 Proposals for Improvement of Quality of Works in Local Governments

The respondents were requested to propose possible interventions that could enhance effective rural infrastructure construction in a decentralized system. The summary of the responses are presented in the table below:

Table 4.11: Respondents' Proposals for Improvement of Quality of Works under Decentralization

Proposals	Frequency	Attached weight by researcher (%)	Weighted Mark	Rank
Increase funding	71	10	7.1	2
Hire qualified personnel	58	15	8.7	1
Appropriate scheduling of key resources	56	8	4.5	8
Community sensitization	55	10	5.5	5
Involve all stakeholders	51	12	6.1	3
Proactive Planning (Timely planning)	51	10	5.1	6
Emphasize Quality of raw materials	46	10	4.6	7
Arrest corrupt officials	42	10	4.2	9
Emphasize accountability	37	15	5.5	4

Table 4.11 above summarizes the actions required to enhance improvement in the quality of works undertaken at local government level. Prior to analyzing the field data, identified factors were allocated weights according to their potential to enhance the

quality of works. Upon weighing the factors the following were observed to be essential requirements for improving the quality of works in Local Governments. They are: Hiring qualified personnel, increase funding, involvement of stakeholders, emphasizing accountability, community sensitization, proactive planning, emphasizing the quality of construction materials, appropriate allocation of resources and reprimanding corrupt officials.

Results show that if the quality of works in local government is to be improved, qualified personnel should be hired. There is also need to increase the revenue base to curb the scramble for resources that culminate into spreading resources thin without concern for quality. A sufficient revenue base is a pre-requisite because the needs at Local Government level are enormous. This prompts the authorities to spread the resources thin on ground which subsequently breeds substandard works. This was evidenced by the great divergence in unit costs for similar projects yet the standards of measure of quality are deemed to be the same.

Involvement of all stakeholders at all planning and implementation levels has an effect on the clarity of roles and expectation that form a sound basis for allocation of resources, other than leaving it to the technocrats and politicians at council level. This may appear costly in the short run but quite beneficial in strategic terms since the costs are offset by the benefits in the long run. Respondents observed that there is need to enforce accountability laws if the quality of works under Local Governments is to be improved – a number of projects are shoddy done but no one is conclusively held accountable (Ssekono, 2005). Many respondents observed that projects are frequently changed, sometimes in the middle of implementation an indication that the planning was not properly done; project documents do not observe the importance of quality control making it very difficult to emphasize quality at implementation level; most projects overrun the allocated time and other resources. All these need to be addressed right from planning level if quality is to be achieved under decentralized service delivery in the central region.

4.4 Funding of Rural Infrastructure Projects

4.4.1 Sources of Funding for Rural Infrastructure Projects

In an attempt to establish the reliability of funding for rural infrastructure development, sources of funds and their percentage contribution towards rural infrastructure development was sought from the planning department of the studied entities. The questions were restricted to the planning department to enhance the reliability of the generated information. The information was obtained from district plans and budgets by the planning staff.

Rural infrastructure in Local Governments is funded by various sources but in varying magnitude. Table 4.12 below summarizes the major sources of funds and their percentage contribution to rural infrastructure development. The study revealed that the development of rural infrastructure is highly dependent on transfers from central government. 60-70% of the budget for physical development is funded from conditional grants from various ministries. These funds come with guidelines for expenditure and expected performance standards. However the standards tend to vary across different sectors causing a lot of problems during implementation. District engineers in the area of study observed that there is need to harmonize documents governing the development of rural infrastructure if quality is to be achieved. It was observed for example that the way the school facilities grant was designed embedded poor quality of works right from planning through to implementation.

The study established that Local Governments fund only between 5-10% of the requirements for their development needs. This supports the earlier finding that resources tend to be spread thin on the ground in an attempt to cover more with the funds obtained from central government – This in turn affects the quality of works. Other sources of funding include NGOs that account for 10-15% of development budgets and community contribution that accounts for 0-5% of development budgets in local governments in the central region.

All the sources tend to fluctuate from year to year yet some, such as NGOs are not dependable. This tends to erode objectivity of political leaders in fear of unreliable

funding and this subsequently leads to resources being spread thin leading to poor quality works.

The majority of respondents indicated that central governments are the major source of funds for infrastructure developments in local governments (Table 4.12). These come in form of conditional grants. The great reliance on central government transfers other than local revenue means an inability to make sustainable investments. Due to insufficient local revenues, there is a tendency to scramble for the little funds released by central governments and NGOs which come to support specific programs and there is always a fear on the reliability of these funds. This prompts spreading the resources so that as many communities benefit before the end of the program. This was cited as a unique concern during the focus group discussions.

Table 4.12 Sources of Funding for Rural Infrastructure Development

Source of funds for Rural infrastructure	% Contribution to
development	Development Budget
Conditional grants from Central Government	60-70%
Local Revenue generated by Local Government	5 – 10%
Non Governmental Organizations	10 -15%
Community contributions	0- 5%

NB: This information was obtained from heads of planning units in the study area.

4.4.2 Constraints in the Funding Process of Rural Infrastructure Construction

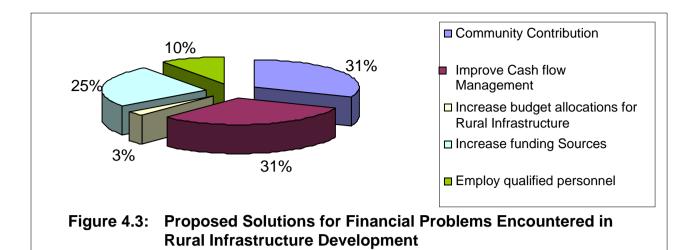
Table 4.13 shows constraints in the funds management for rural infrastructure projects. The constraints included corruption and embezzlement of funds (35%), untimely release of funds (25%), price fluctuations (22%) and lack of experienced personnel to manage accounts (10%). Low revenue base was ranked least (8%) as a constraint to local government although local governments can only foot 5-10% of their infrastructure requirements. The study revealed that although the funding is limited, that is not their major problem. The major problem is misappropriation or embezzlement of the little money earmarked for infrastructure development. The effects of untimely release of funds and price fluctuation reflect on the level of insufficiency in the planning process (poor forecasts). The above observations agree with Ssekono (2005) in what he observed to be the current challenges to decentralized service delivery.

Table 4.13 Constraints in the Funds Management for Rural Infrastructure Projects

Constraints in funds management process	Frequency	Percent
Low revenue base	8	8.0
Price fluctuations	22	22.0
Corruption and embezzlement	35	356.0
Un-timely disbursement of funds	25	25.0
Lack of experienced personnel	10	10.0
Total	100	100.0

4.4.3 Interventions to Constraints in the Funding Process of Rural Infrastructure Construction

Figure 4.3 below shows the proposed solutions for financial problems encountered in rural infrastructure development. Respondents were consulted on the possible means for improving the quality of rural infrastructure. Respondents suggested a number of possible interventions; 31% proposed community contribution (cost sharing or cofunding to the construction projects) as a major step to improve the quality of construction works. This would enhance communities to own the investments and safe guard against poor quality. Untimely release of funds from central government and other funding sources was also cited as a constraint that guite often leads to increased operation costs; contractors take long to complete construction projects due to poor cash flow management on the side of clients. In a bid to distribute the losses borne by these anomalies, the quality of works suffers. The proposed solution to this problem is to improve cash flow management as suggested by 31% of the respondents. Other proposed interventions were; lobby for more funding sources as expressed by 25% of the respondents and employing qualified financial managers (10%). The least proposed intervention for improvement of the quality was to increase the budget allocations for rural infrastructure (3%). This could probably be strongly reflected on after achieving sufficient efficiency on the little funding so-far available.



4.5 Procurement for Rural infrastructure Construction

4.5.1 Existence of Procurement Guidelines for Rural Infrastructure Construction

Table 4.14 shows statistics on the existence of procurement guidelines for rural infrastructure construction. 64% of the respondents in the study observed that local governments lack guidelines in the procurement of physical infrastructure. They reported that local governments do not prepare procurement plans; it is done haphazardly; each department is responsible for its procurements; requests are raised to procurement boards at the convenience of heads of departments etc. Departmental plans are never integrated to constitute a district procurement plan to allow experts analyze the requirements and make a procurement schedule. This scenario accounts for the percentage of 29% in Table 4.4 suggesting that documents used in the procurement process are lacking in detail. If the solicitation planning is not adequately done, the project scope will be unclear, requirements will be vague and the ultimate result is poor quality works.

The majority of the respondents reported that solicitation for bids in local governments is mainly selective and group discussions suggest that use of local notice boards undermines the principle of transparency – usually the notices are pinned up just a few days before the closing date and backdated. This limits the information to insiders. Solicitation is usually limited to those close to the political leadership and the technocrats involved in the procurement management. Transparency can only be enhanced by use of bigger communication media especially newspapers since there

would be limited possibility for backdating the advertisements as usually is the case in local governments. It would also limit unnecessary phasing of adverts which is usually done to benefit a few individuals. This agrees with the findings of a World Bank study on infrastructure development (1994), where majority of the respondents (89.5%) in rural areas and (74.5%) in urban areas respectively don't access the procurement guide lines.

The above findings which indicate that a high percentage (64%) of people who did not know about the procurement guide lines in their respective local governments indicate that either the system used in awarding contracts is not transparent or awards are based on the subjectivity of the committees concerned. This is fertile ground for loss of quality. This was evidenced by a contractor in one of the surveyed districts who preferred anonymity that;

"Some firms are awarded contracts in local governments without fulfilling even 30% of the requirement for the tender; imagine a company with no qualified engineer, no financial resources or even experience in the works at stake being given contracts worthy hundreds of millions - How do you expect performance?"

Table 4.14 Existence of Procurement Guidelines for Rural Infrastructure

Construction

Are there procurement guidelines?	Frequency	Percent
Yes	36	36.0
No	64	64.0
Total	100	100.0

4.5.2 Pre-qualification of Firms by Districts for Rural Infrastructure Construction

Table 4.15 shows the Status on Pre-qualification of firms by districts for rural infrastructure construction.

The Public Procurement and Disposal of Public Assets Act (PPDAA) require all local governments to pre-qualify third party providers on a yearly basis to reduce participation of firms that lack the basic requirements. A questionnaire was administered to establish the extent to which this requirement is observed. This

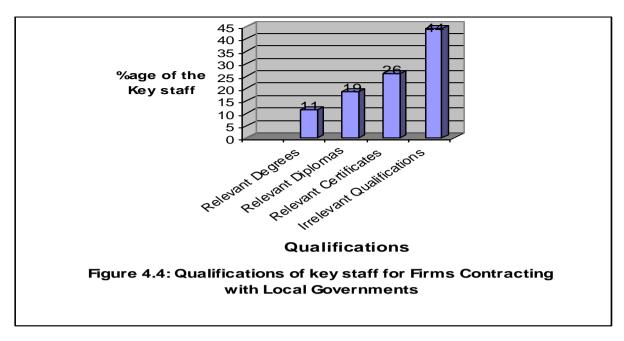
questionnaire was limited to the procuring and disposal units (PDUs) to enhance validity of findings. The study revealed that pre-qualification of service providers is done in most local governments as reflected by a percentage of 80%. Despite observing this requirement the quality of works remains poor. This supplements the earlier observation that the major problem could be lack of qualified personnel in local governments – despite not meeting some basic requirements some firms are short-listed among those meeting the requirements. This could possibly be due to lack of sufficient skills among the evaluating team or succumbing to influence of some sort.

The objective of the pre-qualification process is to vet the capacity of the contracting firms to ensure that resources for the project are utilized in the most effective way. Consideration must be given to quality and completion time as well as cost. However, decisions on procurement are not based solely on efficiency and quality.

During the Focus Group Discussions, participants highlighted that the cause of poor work despite the vetting of contractors at pre-qualification stage was due to preference schemes that aim to favor local firms. This subsequently lowers the quality of the pre-qualified contractors in local governments which subsequently transforms into poor quality work done. It was also highlighted that, there is a tendency to emphasize use of locally available materials in a bid to ensure that the local community benefits from the project funds – on a number of occasions such materials do not meet the required standards. The participants further reported that lack of qualified personnel on the part of contractors and lack of close supervision and monitoring on the part of local government technical staff aggravate quality problems.

Table 4.15 Status on Pre-qualification of Firms by Districts for Rural Infrastructure Construction

Do you pre-qualify construction firms on	Frequency	Percent
a yearly basis?		
Yes	8	80
No	2	20
Total	20	100.0



The statistics in Figure 4.4 indicate that 44% of the key staff of the firms that undertake contracts with Local Governments lack relevant qualifications for undertaking the assignments. The statistics reveal that only 11% of the staff of the contracting firms has degrees in the relevant fields while 19% and 26% have relevant diplomas and certificates respectively. This question was restricted to PDU's and User departments to enhance the validity of responses.

4.6 Contract Administration and Management of Rural Infrastructure Construction

Table 4.16 summarizes the use of project schedules/programs as a management tool on the part of contractors, whereas Table 4.17 shows the constraints encountered by local government staff in the course of contract administration and management.

The results in Table 4.16 indicate that 83% of the respondents reported that contracting firms in local governments never provide work schedules for construction works. Only 17% of contracting firms working with local governments in the central region observe work schedules as important tools of project management. Failure to provide work schedules greatly hinders effective contract management and administration. Lack of schedules makes it difficult to know what is needed at what time and as a result effective supervision cannot be made on the part of local government – this is one area where quality of works in local governments is lost. This agrees with Maylor (1999) who

observes that successful project management relies on effective use of project planning and quality control tools.

Table 4.16 Use of Work Schedules/Programs by Contractors

Do contractors make detailed work schedules/programs?	Frequency	Percent
Yes	17	17.0
No	83	83.0
Total	100	100.0

Table 4.17 Constraints in Contract Administration and Management of Rural Infrastructure Construction in Local Governments

What problems do you encounter during	Frequency
project management?	
Untimely release of funds	48
Lack of information on contracted projects	33
Lack of skilled personnel	66
Lack of funds to facilitate management	46
Political influence	69
Total	262

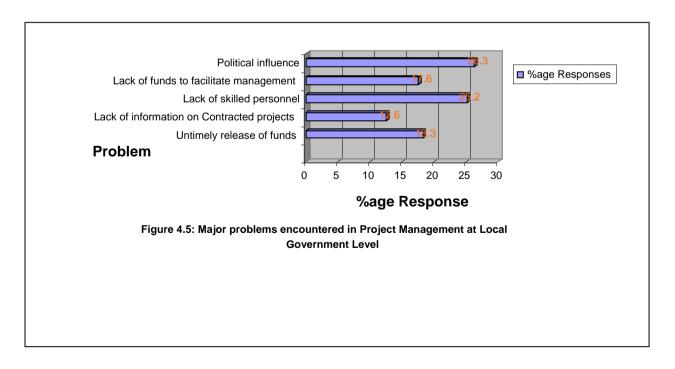
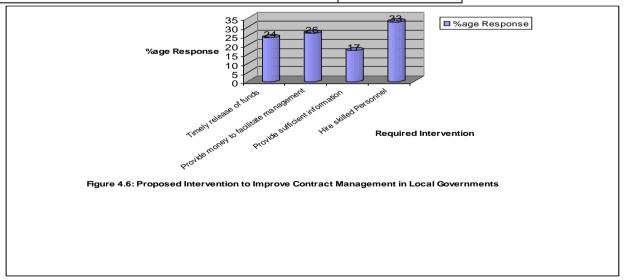


Figure 4.5 above summarizes the factors responsible for poor contract administration and management in local governments. The statistics indicate that there are several factors responsible for poor contract management in local governments. The statistics indicate that the factors in the order of impact include; political influence, lack of skilled personnel, lack of funds to facilitate project management, untimely release of funds from central government, lack of funds (budgets) to facilitate project management and lack of sufficient information on contracted projects (Table 4.17 and Figure 4.5). The study also established a number of actions required to improve contract management in local governments (Table 4.18 & Figure 4.6). Hiring skilled personnel and funding the contract administration activities such as pre-tender meetings, site mobilization meetings, site management meetings and inspections were noted to be the most practical solutions to poor contract management and administration in local governments. Other solutions include; ensuring timely release of funds from central government and providing sufficient information about projects.

Table 4.18 Proposed Interventions to Constraints in Contract Administration and Management

Proposed Interventions	Frequency
Timely release of funds	58
Provide money to facilitate management	64
Provide enough information	41
Get skilled personnel	79
Total	242



4.7 Maintenance of rural infrastructure

4.7.1 Presence of maintenance systems for existing infrastructure

Table 4.19 reflects on availability of maintenance systems for rural infrastructure in local governments.

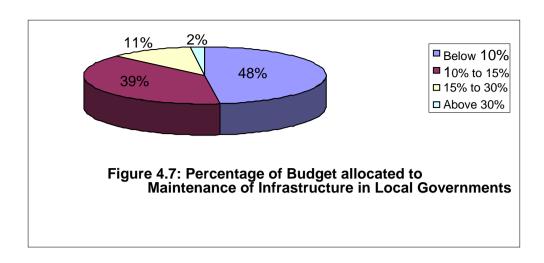
The study attempted to establish whether local governments give due attention to the maintenance of rural infrastructure. The majority of the respondents (84%) indicated that maintenance of rural infrastructure is not given due attention. Since rural infrastructures are often constructed to fairly low standards, they must be complemented by strong maintenance systems if the infrastructure is to be sustained.

Table 4.19 Availability of Maintenance Systems for Rural infrastructure

Do you have a maintenance system for existing infrastructure	Frequency	Percent
Yes	16	16.0
No	84	84.0
Total	100	100.0

4.7.2 Percentage Budget Allocation to Maintenance

Figure 4.7 shows the percentage of budget allocated to maintenance of infrastructure in local governments. The question regarding budget allocation was limited to planning units in each district to enhance the validity of figures given. Since the planning staff referred to the development plans and budgets of the respective districts the information given was regarded to be factual rather than opinions. The generated statistics indicate that 48% of the local governments in the central region allocate less than 10% of their resources towards the maintenance of existing infrastructure; 39% allocate between 10 and 15% towards rural infrastructure maintenance while 11% allocate between 15 and 30% towards maintenance. The statistics revealed that only 2% of the local governments allocate above 30% of their budget towards maintenance. This is in agreement with the concern of 84% of the respondents who observed that local governments lack a clear maintenance system for existing infrastructure. When asked further where the rest of government funds in committed all local governments revealed that more than 50% of the budget is allocated to administrative costs, between 40 to 50% on Development projects and less than 10% to maintenance requirements.



4.8 Results from Group Interaction

Table 4.20 summarizes the noted causes of poor rural infrastructure over time whereas Table 4.21 shows noted factors affecting the quality of specific categories of infrastructure. On the other hand Table 4.22 summarizes the pair-wise rankings of requisites for good rural infrastructure construction.

Groups of ten people per district surveyed were engaged in discussions to generate supplementary information on rural infrastructure construction under a decentralization system. The participation in groups was restricted to key stakeholders at community level that had been actively involved in the management, monitoring and evaluation of construction projects in their community. The groups were dominated by members of works committees and investment committee members at lower government level.

Table 4.20: Respondents' noted Causes of Poor Rural Infrastructure over Time

Causes	Number
Use of unqualified personnel by contracting firms	45
Limited funds financing capacity of local contractors	35
Political influence in the Procurement Process	30
Lack of sufficient construction information	30
Lack of enough initial money/ capital	20
Corruption among the civil service	15
Inadequate monitoring and supervision by Engineering Department	10
Use of poor construction materials	5
Under costing of construction materials	5

In summation, discussion groups ranked lack of qualified technical personnel, limited financial capacity and political influence as the major causes of substandard works. Inadequate specification of construction works was also a notable concern in the management of the quality of rural infrastructure.

During focus group discussions, several other causes other than generated by the questionnaire were revealed. These included lack of capital, corruption within the civil service, inadequate monitoring and supervision among others.

It was highlighted by focus group discussions that some areas of infrastructure construction require urgent attention to save investments made in those areas. The most urgent attention was notable in the road sector while all the others were ranked at almost the same level with a slightly lower rank than roads. The major causes of the poor quality works in each of the infrastructure type were also enumerated by the discussants. The summary of the quality concerns are summarized in table 4.21 below. Before the workshops were conducted, people were sent the agenda of the meeting to enable them prepare their views appropriately. Appendix 2 shows the checklist used by focus groups to evaluate construction projects implemented in their areas.

Table 4.21 Group Responses on Factors Affecting the Quality of Rural Infrastructures

Type of Infrastructure	No. of people disputing the quality of works	Perceived causes of the poor quality
Roads	45	Corruption, use of poor construction materials, inadequate funds and lack of qualified personnel and lack of quality control measures.
Class room blocks	35	Use of poor construction materials, corruption, political influence, use of unqualified local contractors, under costing of materials by contractors.
Boreholes	35	Political influence, use of poor construction materials, limited involvement of stakeholders, and low capacity of local contractors.
Shallow wells	35	Political influence, use of poor construction materials, limited involvement of stakeholders, and low capacity of local contractors.
Office blocks	35	Corruption, political influence, under-costing of construction materials and use of poor construction materials and poor specifications.
Health staff houses	30	Use of poor construction materials, corruption, political influence, use of unqualified local contractors, under-costing of materials by contractors.
Valley dam	20	Poor specifications, lack of qualified personnel by contracting firms, corruption and under-costing of construction materials.

In an attempt to explore various avenues for improving the quality of rural infrastructure; focus groups raised additional requisites for improving the quality of works in local governments. The raised requisites were analyzed using pair-wise ranking and are summarized in Table 4.22 below. The agreed procedure was that 0 = less important

while 1 = more important. The total score for each requisite was obtained by simple row addition and deriving the rank from the totals. The requisite with the highest score was given the first rank. Training qualified personnel was ranked highest followed by the need to use good construction materials. The need to increase funding was ranked third while the need to involve stakeholders was ranked fourth. Holding community sensitization was ranked last. Compared to survey results, the constraint ranked first by the focus group agrees with the survey (Table 4.4). However despite the differences in ranking for the other factors, the requisites as raised and ranked by the group are similar to those generated through the survey.

Table 4.22 Pair-wise Rankings of Requisites for Good Rural Infrastructure Construction

	Provide more funding	Involve stakeholders	Use good construction materials	Employ and Train qualified personnel	Hold community sensitization	Totals	Rank
Provide more		1	0	0	1	2	3
funding							
Involve	0		0	0	1	1	4
stakeholders							
Use good	1	1		0	1	3	2
construction							
materials							
Train qualified	1	1	1		1	4	1
personnel							
Hold community sensitization	0	0	0	0		0	5

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary to the back ground information, general objectives, and the findings of the study. It also presents conclusions, which represents the implications and application of the deductions derived out of the findings. The summary and conclusions are presented according to the themes of the study namely; planning process, procurement, funding, contract administration, and maintenance. The recommendations are also thematically given in the same order mentioned above.

5.2 Summary

In summary, looking at socio-economic characteristics, the results indicate that 65% of respondents were males, while females were 35%. The total respondents were 100 people including 20 people from each of the 5 sampled districts.

Regarding constraints to the construction of rural infrastructure under decentralization, the following were identified: use of unqualified personnel in contracts, corruption and embezzlement, lack of information, poor construction materials, under-costing of construction materials, limited time to implement the construction projects, limited availability of some construction materials, low funding capacity by local governments, inadequate specifications, untimely disbursement of funds and price fluctuations.

The criteria used in the planning process for selecting rural infrastructure investments include; social needs, economic needs and environment concerns. Some of the major problems encountered during the planning process include; political influence, uncompleted previous work, inaccurate feasibility studies, late release of funds, corruption, lack of accurate information on costs, low budgets, delays in planning, price fluctuations and limited funds to facilitate the management process.

The proposals made by the respondents for improvement of quality of work in local government include; increase in funding, hire of qualified personnel, providing enough time to execute the contracts, community sensitization, involvement of all stakeholders,

early planning, use of quality materials, arresting of corrupt officials and emphasizing accountability.

The main sources of funding by local governments were found to be: the central government, district local governments, private funders/companies, non-government organizations (NGOs) and community contributions.

The proposed solutions to financial problems in supporting rural infrastructure development include; community contributions, improving cash flow management, increasing of funding sources and ensuring appropriate budget allocations.

The constraints experienced in contract administration and management of rural infrastructure construction include; political influence, lack of funds to facilitate projects management, use of unskilled personnel, lack of information on contracted projects and untimely release of funds.

Also to note is that, the percentage of budget allocation for rural infrastructure maintenance was on average reported to be below 10% of the total budget for the local governments.

In a nut shell therefore, the key factors responsible for poor construction and maintenance of rural infrastructure in local governments were identified to be; use of unqualified people in engineering areas, high political influence in the delivery of rural infrastructure development, an under-developed private sector in these areas, high corruption among civil servants in local government and limited supervision, monitoring and evaluation by technical staff in local governments.

5.3 Conclusions

From the study findings it can be concluded that local governments generally have the framework required for the effective construction of rural infrastructure. There is an existing framework for the management of procurements right from the planning stage through implementation and post implementation. However, the efficiency of the framework is affected by the quality of personnel responsible for the operations of the procurement units.

Key project development stages are observed throughout the lifetime of projects undertaken by Local Governments but the basic principles end up being compromised because of the enormous needs when compared to available resources.

The study also established that the level of stakeholder involvement at the various levels of a project is not sufficient in local government. Stakeholders are not actively involved in the definition of projects that affect them and where it is done communication later breakdown during implementation thereby affecting the quality and ownership of the final product.

Despite attempts to outsource construction works to contracting firms, the quality of works in local government is still wanting and this is largely accounted for by the low capacity of firms attracted (quality of the local private sector) – Most of the firms contracted lack the financial, technical and the personnel capacity required to execute technical works. There is also a high level of political interference and corruption yet the enforcement of the existing regulations is weak.

The Maintenance framework is generally weak and currently little attention is being paid to the constructed facilities. The local governments are mainly dependent on central government transfers in form of conditional grants. This substantially affects their independence when planning the development and maintenance of rural infrastructure.

5.4 Recommendations

5.4.1 Strengthening the Procurement Units

Procurement units should be staffed with people with the necessary competencies to ensure that procurement is well planned and implemented according to plans.

Procurement audits should be made on a quarterly basis to detect fraud in the procurement management and enforce compliance to procurement guidelines.

5.4.2 Improve Quality of the Local Construction Industry

The study revealed that contracting firms lack qualified persons to do professional work as expected of them. It is therefore recommended that every firm that is to be prequalified by the local governments should have their key engineering staff registered with the Engineers Registration Board. It is hoped that this will improve on the quality of work.

The Engineers Registration Board (ERB) should network with the relevant ministries such as the Ministry of Local Government and the ministry of Works and Transport and any other relevant ministries to ensure that enabling laws are made to guard against poor engineering practices. Contracting firms should be certified by professional bodies regulating engineering practices in the country such as the Uganda Association of Consulting Engineers (UACE) and Uganda National Association of Building and Civil Engineering Contractors (UNABCEC). This would ensure that contracting firms are competent enough to handle engineering works. All Construction projects should also have sign boards spelling out the supervising engineer by name other than merely the name of the company as currently the case is. This would caution the supervising engineer to make appropriate judgments before making decisions of engineering nature on that specific project. The technical staff in the works department should strictly adhere to supervision, monitoring and evaluation of the on-going construction work in order to ensure that the work in question is done according to the agreed plan with the construction materials.

5.4.3 Improve Capacity of Engineering Departments at Local Government level

Ensure that Engineering Departments are manned by competent and experienced professionals. The capacity of local governments should be enhanced through outsourcing engineering services from consulting firms in the private sector to handle the time consuming activities that may not be competently handled by the limited engineering personnel provided under the organizational structure at local government level. Project design, documentation and supervision could be outsourced. The Employers should also plan for continuous professional development through training, mentoring by appropriate bodies and encouraging their staff to participate in professional seminars and workshop organized by Engineering professional bodies to keep them abreast with new developments in Engineering and technology.

5.4.4 Involvement of all Stakeholders

Involvement of all stakeholders offers an opportunity for their participation in decisions that affect them. It ensures counter-action of their alienation and secures their consent on issues that affect them. It is therefore recommended that all stakeholders including community users be participants in the development of rural infrastructure.

5.4.5 Provide Maintenance Framework for Existing Infrastructure

Research findings revealed 48% (Figure 4.7) of Local Governments allocate less than 10% of their budgets to maintenance of existing infrastructures while 39% allocate between 10 to 15% towards maintenance. Only 13% of the local governments allocate more than 15% of their budgets toward maintenance of existing infrastructure. Between 50% and 60% of local government budgets is spent on administrative cost, 40% to 50% on Development projects and less than 10% on maintenance operations.

Existing literature indicates that; Because of small numbers of beneficiaries normally served in the rural set up, economic considerations dictate that rural infrastructure investments are designed to fairly low standards (WDR, 1994). This in turn makes rural infrastructure fragile and maintenance intensive. It is therefore essential that local governments prioritize the maintenance of all constructed physical infrastructure if they are to guard against quick breakdown.

5.4.6 Further Research

This research could be complemented with research on the following aspects:

- ❖ Limited funding came out explicitly as a constraint in the delivery of quality rural infrastructure. There is need to establish whether there is a difference in the quality of works between local governments that apply different unit costs for the construction of rural infrastructure.
- ❖ Research findings indicate on average that Local Governments carryout feasibility studies for physical infrastructure yet on the contrary the specifications are said to be inadequate. There is need to investigate the rationale used in the prioritization of investments or efficiency of investment decision models used by local governments for physical infrastructure developments.

❖ The study also revealed that local governments screen contracting firms on an annual basis (Pre-qualification of Contractors) yet findings indicate that the quality of the pre-qualified contractors is poor due to their inability to fund and use of competent personnel to handle engineering projects. There is need to investigate the adequacy of the technical evaluation information used to screen tenderers in local governments.

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APPENDICES

Appendix	1:	Questionnaire	to	Investigate	the	Factors	Responsible	for	Poor
Constructi	ion	and Maintenand	ce o	of Rural Infra	struc	ture und	er Decentraliz	atior	1

DateQuestion	naire No
Name of respondent Gender 1= Male	0= female
Job-Title/Position Firm/Organization/secto	r
District:	
 What are your greatest problems in construction of rural inf your problems beginning with the most critical. 	rastructure? Rank
Problems	Rank

2. List the type of works com	monly constructed ir	n your district
For the construction work y experience of the following in r		ed in 2 above, what is your
Section A: The Planning proc	ess of rural infrast	ructure construction
(3) Do stakeholders participat development?	e in the planning pro	ocess regarding rural infrastructure
(a) Yes	(b) No	(c) I don't know
Tick the criteria used when plann (you may tick more than one when (a) Social needs (b) Economic concerns	re applicable)	work in your area/sector needs (d) Environmental
(4) Does your local government project needs?	t carryout project fe	easibility studies and definition of
(a) Yes	(b) No	(c) I don't know
(5) If yes, is the project definition(a) Yes	communicated to all (b) No	the relevant parties (c) Sent to some
	projects usually a	dopted in your local government
budgets? (a) Hired Consultants	(b) District Enginee	r (c) Heads of User
Department (d) Community leader	(e) Political leaders	(f) specify any other

(7)What problems do you face during the planning process in relation to construction projects? Rank them in order of effect beginning with the greatest problem encountered.

Problems	Rank

(8) What suggestions can you make to improve the quality of rural infrastructure construction? Rank your proposals in order; beginning with the one you consider being the most critical.

Suggestions	Rank

Section B: The Funding of rural infrastructure projects

(9)) What are	the sources of	funds for th	e construction	projects in loc	al government?
v	, vviiat aic	ti io ocaloco ci	Tallac Iol II			ai govoiiiiioii

Sources of funds		Percentage contribution
_		
(10) What problen	ns do you face in the fundin	g of construction projects? List them.
(11) What do you	u think can be done to im	prove the funding and management of
project funds in loca	al governments? List them.	
	•••••	
Section C: The P	rocurement of rural infras	tructure construction
(12) Is there a proc	urement guideline for const	ruction works?
(a) Yes	(b) No	
(13) Does the Distri	ct pre-qualify firms for cons	struction of works on an annual basis a
required by the		
PPDAA?		
(a) Yes	(b) No	

(14) State the average level of relevant qu	ualifications of the key cor	ntractors' staff that
participates in the execution of constructi	on works in your District	(Average level of
technical staff.) Level of Education	Number of Staff	
	ators from the list of my	alifia al firma a\
(Look at the three randomly selected contra	actors from the list of pre-q	juaililed firms)
Section D: Contract Administration a	nd Management of ru	ral infrastructure
construction		
(15) Do Contractors provide you with wo timing of all the key activities?	ork schedules/Work progi	rams detailing the
(a) Yes (b) No		
(16) What problems (constraints) do you management of construction works in you effect		k them in order of
Problems		Rank
(17) What do you think can be do management of rural infrastructure importance.	•	
Suggestions		Rank

Section E: Maintenance of existing rural infrastructures

(18) Do you have a	a maintenanc	e system for exis	ting infrastructure	?		
(a) Yes		(b) No	; if no go to	(17c)		
(18b) If yes is the e	xisting strate	gy satisfactory?				
(a) Yes		(b) No				
(18c) If no what do						
(19) What is the so	urce of fundin	ng for maintaining	existing infrastru	cture?		
(a) NGO (b) Do	onor (c) Ce	entral Governme	nt grant	(c) Loc	cal Rev	enue
(20) What is the av infrastructure?	erage percen	itage of the budg	et allocated to ma	aintenan	ce of e	existing
(To be answe	red by the pla	nning unit only)				
(a) Below 10% 30%	(b) Between	10% - 15% (c) E	setween 15% - 30)%	(d)	Above

(21) State other areas of the budget that compete with maintenance requirements in the budget and the portion of the budget allocated to them.

THANKS FOR YOUR CONTRIBUTION

Appendix 2: Checklist used by focus groups to evaluate construction projects implemented in Local Governments

- Community rating of the stakeholder involvement during construction of rural infrastructure:
 - Contractors
 - Technical staff
 - Political leaders
 - Consultants
 - Community users (beneficiaries)
- 2. Perceived factors causing poor construction of rural infrastructure.
- 3. Community suggestions from their experience to improve construction of rural infrastructure.
- 4. Other components perceived as necessary for effectively combating poor construction of rural infrastructure (to be listed and ranked)
- 5. Any other comments in line with the theme.

MINUTES OF THE FOCUS GROUP DISCUSSIONS

DISTRICT: LUWERO

VENUE: ZIROBWE SUB-COUNTY

DATE: 21/02/2006

Focus Group Discussions

Discussion was led by three facilitators Mr. Lule Ali, Miss Nambwere Jane and Mr.

Sentamu Gadafi.

Question 1

The group started by introducing each other, the chairman L.C.I being Mr. Senyonjo of

Walukuba village Zirobwe sub-county where classroom blocks were constructed and

the road from Zirobwe to Kampala was constructed by Luwero District.

The respondents started by rating stakeholders in the construction work.

Concerns about Contractors Firms -

• Most local contractors are not quality oriented – construct substandard works

• Most local construction firms are dominated by business persons who know little

about quality of construction materials

· Most contractors do not relate properly with locals and end up losing vital

information

Contractors work haphazardly without following any program

Concerns about Engineering Department

These are experienced people but they are very proud and very few. We have only one

engineer who knows about quality of works but often comes to inspect works when they

are in advanced stages

He only comes and talks to the site supervisor and some few workers.

Concerns about Political Leaders

• These people usually demand for money from contractors

They normally ensure that works tenders are awarded to their cronies.

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- Politicians are sometimes involved in tenders themselves and are very difficult to supervise
- One of the Councilors in the meeting testified that most of the companies belong to political leaders. These companies usually lack the qualifications to win contracts but often they win contracts and do substandard works.

Concerns about Consultancy

We do not see them and we do not know if we have consultants; these would be good people to advise us on constructing good infrastructure.

Concerns about Community Users

- Communities are only invited to attend hand over ceremonies, or some times the parents are called to see completed classroom blocks in the case of schools.
- Communities are never involved in planning. They are only told about the projects and programs by councilors as a matter of information.
- The communication forums are usually political meetings or commissioning ceremonies of projects.

Question 2

The respondents gave the possible causes of poor construction of rural infrastructure

Problems Causing Poor Infrastructure

The quality of various rural infrastructures was discussed and the numbers quoted in brackets show the number of people that contested the quality of the infrastructure in question.

Roads (11 people):

Causes of poor construction

 Use of poor construction materials, inadequate funds, lack of qualified personnel, political interference.

Classroom blocks (9 People)

Causes of poor construction

- Political interference, corruption amongst politicians and supervisors, use of unqualified personnel by contractors during construction, poor construction materials- the cheapest materials in vicinity are used irrespective of the quality.
- Some contractors argue that the costs are fixed by the district and contractors
 just have to size themselves to fit in the budget; the scope of work cannot be
 reduced. So when contractors fail to breakeven they resort to cheap and often
 substandard materials.

Shallow wells (5 People)

Causes of poor construction

- Involvement of community users is very important in the location of water sources but most times politicians influence their location for selfish interests.
 They also compromise with contractors so that profits are maximized which is subsequently shared amongst the politicians, technocrats and the contractors.
- Political interference, use of poor construction materials. Limited involvement of stakeholders – community members who would help in mobilization of good construction materials are left out at implementation.

Bore Holes (12 People)

Causes of poor construction

- Community users are not involved; there is much political interference, use of poor construction materials.
- Some times the water sources are poorly located leading to low water yields

Office blocks (9 People)

Causes of poor construction

 Use of poor construction materials, political influence, corruption, and poor specification, inadequate funds and the money given is not adequate, lack of competent engineers and other qualified personnel to supervise and ensure the quality of works.

Health Staff Houses (4 People)

Causes of poor construction

- Use of poor construction materials.
- Cases of political influence, under costing of materials by contractors and engineers.
- Use of unqualified personnel.
- Limited supervision by engineers often citing lack of facilitation from user departments.

Valley Dams (14 People)

Causes of poor construction

- Poor specifications of the scope and quality of works, lack of qualified personnel, corruption, and under costing of projects.
- Valley dams are some times poorly located to favor political leaders
- Limited supervision from district engineering departments

Question 3 and Question 4

Rankings of the group suggested interventions (The smaller the rank the greater the importance)

Suggested Intervention	Rank
Provide more funds	1
Involve stake holders	2
Use of good construction materials	5
Employ and train qualified personnel	3
Hold community sensitization meetings	4

QUESTION 5

Participants expressed concern about lack of feedback on very important surveys usually carried out.

DISTRICT: MASAKA

VENUE: GAYAZA

DATE: 23/02/2006

Focus Group Discussions

Discussion was led by three facilitators; Mr Lule Ali, Miss Nambwere Jane and

Mr. Sentamu Gadafi.

Question 1

The group started by introducing each other.

The respondents started by rating stakeholders in the construction work.

Concerns raised about Contracting Firms -

- Contractors' foremen sometimes don't have the competence to interpret contract documents.
- Most Contractors need to be policed can not make good mixes when district supervisors are not present on site.
- Most contractors terminate services of their foremen whenever they disagree on how activities should be done – Foremen do things the way the boss instructs not how it should be done.
- Most times contractors go for the cheapest and nearest source of construction materials irrespective of the quality
- Some representatives of contractors sell construction materials to the locals to raise funds for their benefit – subsequently they use poor mixes.
- The majority of contractors do not display work plans for stakeholders to know what is being done.

Concerns about Engineering Department

District Supervisors of works sometimes get involved in works and also do poor works

- Sometimes connive with contractors to compromise the quality and maximize profits which are subsequently shared.
- They tend to be arrogant when supervising contracts in which they have vested interest would not accept to correct reported faults.

District supervisors claim to be understaffed and not well facilitated and therefore cannot supervise all projects on time.

Concerns about Political Leaders

- Very influential in award of tenders in their constituencies
- Ensure that tenders are awarded to their relatives and colleagues
- Own most of the contracting firms in their localities
- When instructed to redo poorly done works, usually vow and sometimes succeed in unseating those responsible for the instructions.
- Allocate facilities selfishly to benefit themselves rarely consult the locals during planning; usually decide on their own.

Concerns about Consultancy

There is limited involvement of consultants at both district and sub county level – may be for projects above Five Hundred Million Shillings.

Concerns about Community Users

- Some communities are involved during planning but never get feedback –
 people have given up attending the consultancy/planning meetings.
- Usually not involved in the planning but attempts are made to inform communities when works are starting and the next communication is usually at handover. Because of lack of consensus at planning level some projects are abandoned by communities when completed citing poor location and other reasons.

Question 2

The respondents gave the possible causes of poor construction of rural infrastructure.

Problems Causing Poor Infrastructure

Roads (7 people):

Causes of poor construction

 Use of poor construction materials, in adequate funds, lack of qualified personnel, political interference, corruption of tender boards – if you do not buy your way, even if your bid is the best it will be thrown out.

Classroom Blocks (7 People)

Causes of poor construction

- Political interference, corrupt officers, employment of unqualified personnel during construction, use of poor construction materials.
- Some contractors claim that tender sums are fixed by district officials and so cannot do much on quality.

Shallow Well (6 People)

Causes of poor construction

- Political interference, use of poor construction materials, limited involvement of all stakeholders.
- Engagement of poor quality contractors have no technical competence, sometimes are very fresh in the construction industry but given big work.
- Poor financial capacity of contractors sometimes not even capable to pay casual laborers; so laborers subsequently resort to stealing construction materials.
- Understaffing and sometimes lack of qualifications among supervising district staff.

Bore Holes (8 People)

Causes of poor construction

 Community users are not involved; there is much political interference, use of poor construction materials.

Office Blocks (7 People)

Causes of poor construction

- Use of poor construction materials, political influence, corruption, and poor or inadequate specifications, inadequate funds.
- Quality control usually left to district engineers who are pre-occupied by management functions and have very little time for technical supervision yet the amount of money and scope of works is usually large and requires fulltime attendance.

Health Houses (8 People)

Causes of poor construction

- Use of poor construction materials.
- Political influence, under costing of works by contractors and engineers.
- Use of unqualified personnel.
- Inadequate specifications

Valley Dams (3 People)

Poor location of dams, Poor construction techniques, Poor or insufficient specifications – limited details, Political peddling and corruption among district officials.

Questions 3 and Question 4

Rankings of the group suggested interventions (The smaller the rank the greater the importance)

Suggested Intervention	Rank
Provide more funds	1
Involve stake holders	3
Use of good construction materials	2
Employ and train qualified personnel	5
Hold community sensitization meetings	4

DISTRICT: RAKAI VENUE: KALISIZO

DATE: 28/02/2006

Focus Group Discussions

Discussion was led by two facilitators, Miss Nambwere Jane and Mr. Sentamu Gadafi.

Question 1

The group started by introducing each other.

The respondents started by rating stakeholders in the construction work.

Concerns about Contracting Firms -

- Most contractors lack core staff change staff so often which means they are always on the learning curve.
- Most contractors do not meet the specified qualification information but are often awarded contracts due to political influence.
- Most of the contractors awarded contracts at district level have 'god fathers' and are not awarded on merit.
- Most of the contracting firms are 'patronized' by technical staff.
- These are people who normally construct sub-standard work.
- Contractors with political or technical 'patronage' are sometimes paid upfront.
- Most contractors tend to use the cheapest materials in the locality irrespective of the quality but often get away with it through corruption.

Concerns about Engineering Departments

District Supervisors of works sometimes get involved in works and also do poor works

- Sometimes connive with contractors to compromise the quality and maximize profits which are subsequently shared.
- They tend to be arrogant when supervising contracts in which they have vested interest – would not accept to correct reported faults.

District supervisors claim to be understaffed and not well facilitated and therefore cannot supervise all projects on time.

Concerns about Political Leaders

Very influential in award of tenders in their constituencies

- Ensure that tenders are awarded to their relatives and colleagues.
- Own most of the contracting firms in their localities.
- When instructed to redo poorly done works, they usually vow and sometimes succeed in unseating those responsible for the instructions.
- Allocate facilities selfishly to benefit them rarely consult the locals during planning, usually decide on their own.

Concerns about Consultancy

Consultants only used on big projects such as the construction of district headquarters building.

Concerns about Community Users

 Communities sometimes involved but the final work plan always differs from what was agreed by the community and reasons are never given.

Question 2

The respondents gave the possible causes of poor construction of rural infrastructure.

Problems Causing Poor Infrastructure

Roads (7 people):

Causes of poor construction

- Lack of capacity among contracting firms.
- Use of poor construction materials.
- Lack of watering and compaction.
- Lack of competent technical staff among local firms.
- Lack of provision for testing the quality of construction materials.
- Inadequate specification of works.
- Political and technical Influence in award of road works.

Classroom Blocks (9 People)

Causes of poor construction

- Preference of local contractors that often lack the specified competencies.
- Political influence at both tendering and implementation level.
- Lack of qualified staff among contracting firms.
- Poor specification of works (Argued by contractors).
- Lack of Clerk of works on most construction works.

Shallow Well (10 People)

Causes of poor construction

 Political interference, use of poor construction materials, limited involvement of all stakeholders, low capacity of contracting firms; both technical and financial.

Bore Holes (6 People)

Causes of poor construction

 Community users are not involved, there is much political interference, very few engineers, use of poor construction materials.

Office Blocks (5 People)

Causes of poor construction

 Use of poor construction materials, political influence, corruption, and poor specification, inadequate funds and the money given is not adequate, lack of engineers.

Health Houses (7 People)

Causes of poor construction

- Use of poor construction materials.
- Causes of political influence, under costing of projects.
- Use of unqualified personnel in construction works.

Valley Dams (3 People)

- Poor location of dams.
- Poor construction techniques.
- Poor or insufficient specifications limited details.
- Political peddling and corruption among district officials.

Question 3 and Question 4

Rankings of the group suggested interventions (The smaller the rank the greater the importance)

Suggested Interventions	Rank
Provide more funds	2
Involve stake holders	1
Use of good construction materials	4
Employ and train qualified personnel	3
Hold community sensitization meetings	5

DISTRICT: WAKISO

VENUE: NANGABO - KITTI

DATE: 17/02/2006

Focus Group Discussions

Discussion was led by three facilitators Mr.Lule Ali, Miss Nambwere Jane and Mr.Sentamu Gadafi.

Question 1

The group started by introducing each other.

The respondents started by rating stakeholders in the construction work.

Concerns about Contracting Firms -

- Most contractors are learning on job have no professional experience.
- Do not want to employ competent personnel to manage the construction works.
- Do not mind substandard works as long as it can be paid for No future plans.
- They use poor materials because these are businessmen who want to maximize profits.
- No formal work plan made for implementation done informally.

Concerns about Engineering Department

- Inadequate specification may not have sufficient time to reflect on all project issues because of work load.
- Have limited logistics to facilitate supervision and monitoring of construction projects.
- Engineering department is understaffed.

Concerns about Political leaders

- Scatter resources during planning making it difficult to design quality work.
- Play an influential role in the award of tenders making it difficult to award contracts to competent firms.
- Interfere with the management of quality especially where the contractors have some degree of affiliation to them.

Concerns about Consultancy

Consultants only used on big projects such as the construction of district headquarters building.

Concerns about Community Users

- Politicians play a representative role for community users yet some have vested interests. There is limited participation of the actual beneficiaries.
- The little participation usually achieved is at planning stage but often excluded at implementation. This limited involvement often "kills" the ownership of the constructed facilities.

Question 2

The respondents gave the possible causes of poor construction of rural infrastructure.

Problems Causing Poor Infrastructure

Roads (8 people):

Causes of poor construction

- Use of poor construction materials especially gravel which is most times not compacted or compacted without sufficient watering.
- Inadequate funds for road works available funds usually spread thin to cover several works.
- Lack of qualified personnel in contracting firms.
- Political influence both at procurement and implementation stage.

Classroom Blocks (5 People)

Causes of poor construction

 Political interference especially at procurement of contracts, corruption among tender board members, use of under qualified personnel during construction, use of poor construction materials especially sand and aggregates.

Shallow Well (7 People)

Causes of poor construction

 Political interference, use of poor construction materials, limited involvement of all stakeholders.

Bore Holes (4 People)

Causes of poor construction

- Community users are not involved in citing boreholes; there is much political interference in award and location of boreholes to benefit political people and technocrats.
- Limited supervision by engineers.
- Use of poor construction materials.

Office Blocks (8 People)

Causes of poor construction

 Use of poor construction materials, political influence, corruption, and poor specification, inadequate funds and the money given is not adequate, lack of engineers among contracting firms.

Health Houses (6 People)

Causes of poor construction

- Lack of feasibility studies leading to a lot of variations during construction.
- Use of poor construction materials.
- Poor specifications.
- Political influence, under costing of materials by contractors and engineers.
- Use of unqualified personnel by contractors.

Valley Dams (0 People)

No valley dam works executed in the period under review

Question 3 and Question 4

Rankings of the group suggested interventions (The smaller the rank the greater the importance)

Suggested Interventions	Rank
Provide more funds	1
Involve stake holders	2
Use of good construction materials	3
Employ and train qualified personnel	5
Hold community sensitization meetings	4

DISTRICT: MUKONO

VENUE: GWAFU-GOMA

DATE: 16/02/2006

Focus Group Discussions

Discussion was lead by three facilitators Mr. Lule Ali, Miss Nambwere Jane and

Sentamu Gadafi.

Question 1

The group started by introducing each other.

The respondents started by rating stakeholders in the construction work.

Concerns about Contracting Firms -

• Most contractors do not meet the specified qualification information but are often

awarded contracts due to political influence.

· Most of the contractors awarded contracts at district level have 'god fathers' and

are not awarded at merit.

• Most of the contracting firms are 'patronized' by technical staff.

• Contractors with political or technical 'patronage' are sometimes paid upfront.

• Most contractors tend to use the cheapest material in the locality irrespective of

the quality but often get away with it through corruption.

Concerns about Engineering Department

These are experienced people but they are very proud and very few.

He only comes and talks to the site supervisor and some few workers.

Concerns about Political Leaders

• Interfere with contracts administration and management – follow-up payment of

contractors, influence award tenders to colleagues, they also get the tenderers

for construction using other people's names, and some clandestinely own

construction firms.

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Concerns about Consultancy

Consultants only used on big projects such as the construction of district headquarters building.

Concerns about Community Users

 Communities sometimes involved but the final work plan always differ from what was agreed by the community and reasons are never given.

Question 2

The respondents gave the possible causes of poor construction of rural infrastructure

Problems Causing Poor Infrastructure

Roads (10 people):

Causes of poor construction

• Use of poor construction materials, in adequate funds, lack of qualified personnel, political interference.

Classroom Blocks (5 People)

Causes of poor construction

 Political interference, corruption, use of unqualified personnel during construction, poor construction materials, and some materials are under-costed and yet the value of Shilling keeps on changing with time. Some community members are not involved in the construction work.

Shallow Well (7 People)

Causes of poor construction

 Political interference, use of poor construction materials, limited involvement of all stakeholders.

Bore Holes (5 People)

Causes of poor construction

 Community users are not involved, there is much political interference, and very few people are knowledgeable about boreholes, use of poor construction materials.

Office Blocks (6 People)

Causes of poor construction

 Use of poor construction materials, political influence, corruption, and poor specification, inadequate funds and the money given is not adequate, lack of highly qualified personnel in rural areas.

Health Houses (5 People)

Causes of poor construction

• Use of poor construction materials, political influence, under costing of projects, lack of technical capacity by local firms that are politically preferred.

Question 3 and Question 4

Rankings of the group suggested interventions (The smaller the rank the greater the importance)

Suggested Interventions	Rank
Provide more funds	2
Involve stake holders	1
Use of good construction materials	3
Employ and train qualified personnel	4
Hold community sensitization meetings	5

Summaries of Ranking of Suggested Intervention Of Focus Group Discussions

	Luwero	Masaka	Rakai	Wakiso	Mukono	Total rankings
Provide funds	5	2	4	3	3	17
Involve stake holders	3	5	3	5	4	20
Use of good construction materials	2	3	1	2	1	9
Employ and train qualified personnel	1	1	2	1	2	7
Sensitization	4	4	5	4	5	22

The smaller the rank and total the greater the importance

PAIR WISE RANKING OF SUGGESTED INTERVENTIONS OF FOCUS GROUP DISCUSSIONS

	Provide funds (17)	Involve stake holders (20)	Use of good Construction materials (9)	Employ & Train Qualified personnel (7)	Hold Community Sensitization (22)	Total	Rank
Provide funds		1	0	0	1	2	3
(17)							
Involve stake	0		0	0	1	1	4
holders <i>(20)</i>							
Use of good	1	1		0	1	3	2
construction							
materials (9)							
Employ &	1	1	1		1	4	1
Train							
Qualified							
personnel (7)							
Hold	0	0	0	0		0	5
Community							
Sensitization							
(22)							

0= Less important, 1= More important, Figure in brackets = Total rankings for comparison

SUMMARY FOCUS GROUP DISCUSSIONS ON QUALITY CONCERNS

	21/02/06	23/02/06	28/2/06	17/02/06	16/02/06
District	Luwero	Masaka -	Rakai –	Wakiso –	Mukono –
	Zirobwe	Gayaza	Kalisizo	Nangabo –	Gwafu ,
				Kitti	Goma
Infrastructure					
Roads	11	9	7	8	10
Class room blocks	9	7	9	5	5
Shallow wells	5	6	10	7	7
Office blocks	9	7	5	8	6
Health offices	4	8	7	6	5
Bore holes	12	8	6	4	5
Valley dams	14	3	3	0	0

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