

**ACCESSIBILITY AND USE OF LOCAL GOVERNMENT MONITORING  
DATABASE IN THE REFORM PROGRAMME: THE CASE OF LUDEWA  
DISTRICT, TANZANIA**

**BY  
LUSUNGU ESSAU MBEDE**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN RURAL  
DEVELOPMENT OF SOKOINE UNIVERSITY OF AGRICULTURE.  
MOROGORO, TANZANIA.**

**2009**

## ABSTRACT

This study aimed at determining effectiveness of Local Government Monitoring Database (LGMD) in the realisation of Local Government Reform Programme (LGRP) in Ludewa District. The specific objectives were; (i) to examine the type of support provided by the district to villages to facilitate data gathering, management and utilization; (ii) its effects on development planning and monitoring in the district; (iii) to identify problems which hinder performance of LGMD; and (iv) to assess factors that influence effective operation of LGMD and comparison of performance of LGMD operation between semi urban and rural villages. Stratified sampling was used to obtain sample of 20 villages, 10 being semi urban and other 10 were rural villages. From these 20 villages a sample of 120 respondents was drawn. Sampling unit for this study was an- information provider drawn from members of village assembly and extension staff working with the community. Qualitative and quantitative data were collected using interview schedule administered to information providers and observation was also used during survey. Data analysis was done using Statistical Packages for Social Science (SPSS). An ordinary least square model was used to determine the influence of independent variables on the level of effective operation of LGMD. The study revealed that there is no significant difference in the performance of LGMD operation between semi urban and rural villages. This is due to the short life span of the project to manifest true characters of effect in LGMD operation. However, preliminary signs show that there is difference in effectiveness of LGMD between semi urban and rural settings- implying the need of having consideration of urban or rural and metropolitan or periphery conditions on programmes which are to operate throughout the country.

Since LGMD is owned by Government and extend from national to community level the Government should consider financing data collection and management to ensure its effectiveness.

**DECLARATION**

I, Lusungu Essau Mbede, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and that it has never been nor currently being submitted for a higher degree award in any other university.

---

Lusungu Essau Mbede  
(MA. Candidate)

---

Date

The above declaration is confirmed

---

Prof. D.S.Kapinga  
(Supervisor)

---

Date

**COPYRIGHT**

No part of this dissertation may be reproduced, stored in any retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise without prior written permission of the author or Sokoine University of Agriculture in that behalf.

## ACKNOWLEDGEMENT

I am indebted to express my gratitude to almighty God for giving me life and strength through out my study at SUA. I have seen his blessing and spiritual power.

Many individuals were involved in the preparation of this dissertation. It is not possible to mention all who made contributions, however, I would like to express my sincere appreciation to my supervisor Professor D.S. Kapinga for his tireless guidance and patience, constructive criticism and moral support through different stages of this research.

I also wish to acknowledge the academic, technical and social support provided by the community at Sokoine University, in particular members of staff of the Development Studies Institute including Professor E.A.Mwageni and Dr. S.M.M. Simon to mention a few. Professor Nzalayaimisi of Faculty of Agricultural Education and Extension was also very helpful in shaping my concept note as well as in developing this study. To all of them and all others I could not list, I say thank you, in addition may God the almighty bless you abundantly.

A word of thanks goes to the Directorate of Ludewa District Council for allowing me to attend this course despite the limitation of staff. I also appreciate the financial support provided to facilitate my studies at SUA. A special note of appreciation to Engineer A.H. Ngoda for financial and material support provided, I will always remain indebted to your support.

I wish to extend my gratitude to many other individuals who helped to shape this study including the research assistants who supported me during the survey, all respondents at district, ward, village and hamlet levels who spared their time to be interviewed; and others who helped me during data analysis. I pray to God that they all remain blessed.

Isaack my beloved son and Agnes my wife accept my thanks for your patience and moral support, foregoing my fatherly care as I was struggling to complete this leg in my academic pursuit.

Last but not least I am indebted to my father Mwalimu Essau and my mother Tuladzifika who gave me life and love and have remained supportive to all my endeavors including this one. My sisters: Aida, Anna, Evelyn, Margreth, Janeth and Wende along with their husbands, daughters and sons understood my situation spared time, resources and provided moral and spiritual support to ensure my success. I am delighted to share this academic achievement with them.

Since it is not easy to mention every one who contributed in one way or another to the successful production of this dissertation, I request everyone to understand that their contribution is highly appreciated.

## **DEDICATION**

This work is dedicated to my parents Mwalimu Essau Alatanga Iskaka Mbede and Tuladzifika Yona Se-Msosi who laid down the foundation of my education and family at large. This work is also dedicated to my beloved son Isaack Lunyamadzo Mbede who always prays for my success. The boy has given the reason for me to live and keep on working hard.



## TABLE OF CONTENTS

<b>ABSTRACT.....</b>	<b>ii</b>
<b>DECLARATION.....</b>	<b>iv</b>
<b>COPYRIGHT.....</b>	<b>v</b>
<b>AKNOWLEDGEMENT.....</b>	<b>vi</b>
<b>DEDICATION.....</b>	<b>viii</b>
<b>TABLE OF CONTENTS.....</b>	<b>ix</b>
<b>LIST OF TABLES.....</b>	<b>xiv</b>
<b>LIST OF FIGURES.....</b>	<b>xvi</b>
<b>LIST OF APPENDICES.....</b>	<b>xvii</b>
<b>LIST OF ABBREVIATIONS.....</b>	<b>xviii</b>
<b>CHAPTER ONE.....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.1 <i>Background information.....</i>	<i>1</i>
1.2 <i>Statement of the problem.....</i>	<i>7</i>
1.3 <i>Problem justification.....</i>	<i>8</i>
1.4 <i>Objectives of the study.....</i>	<i>9</i>
1.4.1 <i>General objective.....</i>	<i>9</i>
1.4.2 <i>Specific objectives.....</i>	<i>9</i>
1.5 <i>Conceptual framework.....</i>	<i>10</i>
1.6 <i>Research questions.....</i>	<i>13</i>
1.7 <i>Hypothesis.....</i>	<i>13</i>
1.8 <i>Significance of the study.....</i>	<i>14</i>

<b>CHAPTER TWO.....</b>	<b>15</b>
<b>LITERATURE REVIEW.....</b>	<b>15</b>
2.1 Overview.....	15
2.2 <i>History of Local Government.....</i>	15
2.2.1 <i>Decentralization.....</i>	17
2.2.2 <i>Functions of Local Government.....</i>	17
2.3 <i>Local Government Reform Programme.....</i>	18
2.4 <i>Role of Information (ICTs) in good governance and implementing LGRP.....</i>	20
2.4.1 <i>Role of LGAs in improving LGMD operation.....</i>	21
2.4.2 <i>Role of the database in the reform.....</i>	21
2.5 <i>Factors which hinder effective operation of the database.....</i>	22
<b>CHAPTER THREE.....</b>	<b>24</b>
<b>RESEARCH METHODOLOGY.....</b>	<b>24</b>
3.1 <i>Introduction.....</i>	24
3.2 <i>Location of the study area.....</i>	24
3.3 <i>Study population and administration.....</i>	26
3.4 <i>Research design.....</i>	29
3.5 <i>Computation of indices.....</i>	29
3.6 <i>Theoretical model.....</i>	31
3.7 <i>Sampling procedures.....</i>	36
3.8 <i>Sampling unit and sample size.....</i>	37
3.9 <i>Data collection.....</i>	38
3.9.1 <i>Primary data collection.....</i>	38
3.9.2 <i>Secondary data.....</i>	38

3.10	<i>Data processing and analysis</i> .....	39
3.11	<i>Limitations of study</i> .....	39
	<b>CHAPTER FOUR</b> .....	<b>41</b>
	<b>RESULTS AND DICUSSION</b> .....	<b>41</b>
4.1	<i>Overview</i> .....	41
4.2	<i>Personal characteristics of respondents</i> .....	41
4.2.1	<i>Age</i> .....	41
4.2.2	<i>Sex</i> .....	42
4.2.3	<i>Education status</i> .....	42
4.2.4	<i>Occupation</i> .....	44
4.3	<i>How LGMD operate in Ludewa District</i> .....	44
4.4	<i>Awareness on the reform and the database</i> .....	46
4.4.1	<i>Peoples awareness on the reform and the database</i> .....	47
4.4.2	<i>Issues addressed in the database</i> .....	48
4.4.3	<i>Contribution of the database to implement the reform</i> .....	50
4.5	<i>Personal attitude on data gathering and management</i> .....	52
4.6	<i>The database status at community level</i> .....	53
4.6.1	<i>Gathering data for the database</i> .....	54
4.6.2	<i>Type of data mainly collected</i> .....	55
4.6.3	<i>Main Sources of data and frequency of usage</i> .....	57
4.6.4	<i>Village accessibility</i> .....	58
4.7	<i>District backstopping on data gathering</i> .....	61
4.7.1	<i>Training</i> .....	61
4.7.2	<i>Feedback reports</i> .....	62

4.7.3	<i>Other type of assistance.....</i>	64
4.8	<i>Implication of backstopping on improved data gathering.....</i>	65
4.9	<i>Extent to which data is used in the reform operation.....</i>	66
4.10	<i>Problems hindering effective operation of the database.....</i>	69
4.10.1	<i>Access to information.....</i>	69
4.10.2	<i>Opinion on factors which hinder effectiveness of the database.....</i>	70
4.11	<i>Determinants of effective operation of the database.....</i>	72
4.11.1	<i>Relationship of age and participation in data gathering.....</i>	72
4.11.2	<i>Relationship between sex and participation in data gathering.....</i>	72
4.11.3	<i>Relationship between occupation of respondent and participation in data gathering.....</i>	73
4.11.4	<i>Relationship between village accessibility, its distance from headquarters and effect on data management.....</i>	75
4.12	<i>Empirical results of effective operation of the database.....</i>	76
4.12.1	<i>Pooled estimation.....</i>	77
4.12.3	<i>Villages estimates.....</i>	79
4.12.3.1	<i>Semi urban estimation.....</i>	79
4.12.3.2	<i>Rural villages estimation.....</i>	82
4.12.4	<i>Hypothesis testing.....</i>	85
4.12.4.1	<i>Parameter testing.....</i>	85
4.12.4.2	<i>Performance testing.....</i>	87

<b>CHAPTER FIVE.....</b>	<b>89</b>
<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>89</b>
5.1 <i>Overview.....</i>	89
5.2 <i>Major findings and conclusions.....</i>	89
5.3 <i>Recommendations.....</i>	92
5.4 <i>Suggestion for further research.....</i>	93
<b>REFFERENCES.....</b>	<b>94</b>
<b>APENDINCES.....</b>	<b>98</b>

## LIST OF TABLES

Table 1:	Information providers and type of data gathered.....	3
Table 2:	District Agro – Economic zones.....	26
Table 3:	Population of wards in the study area in Ludewa District.....	28
Table 4:	Sample size of respondents.....	37
Table 5:	Distribution of respondents by background characteristics.....	43
Table 6:	Respondents awareness on the reform and the database.....	47
Table 7:	Issues addressed in the database.....	49
Table 8:	Contribution of the database to the reform.....	51
Table 9:	Personal attitude toward data gathering and management.....	53
Table 10:	Respondent's participation in data gathering by village category and sex...	55
Table 11:	Respondent's type of data mainly collected.....	56
Table 12:	Main source used in data gathering.....	57
Table 13:	Rate at which main source is used in data gathering.....	58
Table 14:	Respondent's perception on village accessibility.....	59
Table 15:	Village accessibility index by village category and sex.....	60
Table 16:	Distribution of respondents on training in data management.....	61
Table 17:	LGMD feedback or reports from district in the last 3 years.....	63
Table 18:	Frequency on receiving feedback in the last 3 years.....	63
Table 19:	Type of assistance mainly provided on data management.....	64
Table 20:	Opinion on backstopping to improve data gathering in the last 3 years.....	65
Table 21:	Contributing factors to improved data gathering.....	66
Table 22:	Contribution of data to village development.....	68

Table 23:	Factors hindering community accessing data.....	69
Table 24:	Factors which affect effective operation of the database.....	71
Table 25:	Relation among age, sex, occupation of respondents, personal attitude in data and participation in data gathering.....	74
Table 26:	Relation between village accessibility and effect on data management.....	75
Table 27:	OLS Regression results of the effect in level of operation of the database..	78
Table 28:	OLS Regression results of the effect in level of operation of the database in semi urban villages.....	81
Table 29:	OLS Regression results of the effect in level of operation of the databse in rural villages.....	84
Table 30:	Hypothesis testing on parameter estimate.....	86

**LIST OF FIGURES**

Figure 1: Conceptual framework for study on effectiveness of LGMD in the LGRP...12

Figure 2: Map of Tanzania showing study area.....27



## LIST OF APPENDICES

Appendix 1:	Variables and their operational definitions.....	98
Appendix 2:	Interview schedule for information providers and key Informants.....	99
Appendix 3:	Observation guide during field survey.....	115
Appendix 4:	Computation of t value and F value for t and Chow test.....	116
Appendix 5:	Governance Benchmarks for Council of Mbeya Zone (Summary Score Sheets as at June 2007 (Percentage Wise).....	118
Appendix 6:	Correlation matrix of parameter estimates on level of effective operation of LGMD.....	119
Appendix 7:	Availability and condition of villages' office, storage and display facilities.....	119

**LIST OF ABBREVIATIONS**

ACCA	Association of Chartered Certified Accountants
AO	Agricultural Officer
CBMIS	Community Based Management Information System
CD	Community Development Officer
DALDO	District Agricultural and Livestock Officer.
DCT	District Council Treasurer
DE	District Engineer
DED	District Executive Director
Df	Degree of Freedom
DLDO	District Land Development Officer
DMO	District Medical Officer
DPLO	District Planning Officer
DST	District
DROMAS	District Roads Maintenance System
DWE	District Water Engineer
ERPs	Economic Recovery Programmes
ESRF	Economic and Social Research Foundation
F	Frequency
FO	Forest Officer
HL	Hamlet Leader
HO	Health Officers
ICT	Information and Communication Technology
IFMS	Integrated Financial Management System

LGAs	Local Government Authorities
LGMD	Local Government Monitoring Database
LG M&E	Local Government Monitoring and Evaluation
LGRP	Local Government Reform Programme
MEO	<i>Mtaa</i> Executive Officer
MIS	Management Information System
NGO's	Non Governmental Organizations
NS	Not Significant
OLS	Ordinary Least Squares
PlanRep	Planning and Reporting Database
PMO-RALG	Prime Minister's Office, Regional Administration and Local Government
REPOA	Research on Poverty Alleviation
SAPs	Structural Adjustment Programmes
SNAL	Sokoine University of Agriculture National Agricultural Library
SPSS	Statistical Package for Social Science
TC	Teacher
TSED	Tanzania Social Economic Database
TOMSHA	Tanzania Output Monitoring System for non medical HIV and Aids Interventions
URT	United Republic of Tanzania
VC	Village Chairperson
VO	Village Executive Officer
VW	Village Health Workers

WAD	Ward
WO	Ward Executive Officer
ZRT	Zonal Reform Team

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background information

The Government of Tanzania is implementing the Local Government Reform Programme (THE REFORM) in order to strengthen Local Government Authorities (LGAs) and enable them to discharge their service provision and development mandates more effectively (Kajimbwa *et al.*, 2005). The strategy which is guiding the reform process is decentralization by devolution, which entails to transferring duties and financial resources from central to local government level (REPOA, 2006).

The rationale for decentralization by devolution is derived from the need to respond to people's development needs and priorities, which include mobilizing resources, participation of citizens in planning, decision making and implementation of development activities so as to ensure collective accountability of outcomes (Kajimbwa *et al.*, 2005). Tanzania has always seen decentralization as an ideal approach to rural and urban development. The approach encourages local initiatives in the development process, giving people more power in decision making, and involving them in the planning, implementation and evaluation process (Pessa, 2003). In order to discharge mandatory power and functions effectively a local authority needs to have good plans that are implemented and its performance monitored. There should also be control of effective decision making; safe custody of records and effective information sharing at all levels, from village, ward, district and nation. Good planning and implementation have to base upon available information about all factors which affect people's welfare (Kajimbwa *et al.*, 2005; ACCA, 2000). As such plans are not simple to make, they need

comprehensive information (Massawe, 1996; ACCA, 2000). Information are facts or details about something which enables an organization to clarify, confirm, answer, plan and/or decide on any course of action (Wehmeirer *et al.*, 2006). Information can be in the form of data or statements in reports, minutes, books, tape records, or in any other form that need to be collected, analysed, coded, interpreted, presented, stored and retrieved when needed.

Recognising the importance of getting reliable data timely, coupled with development of Information and Communication Technology (ICT), the Government of Tanzania has developed a number of information systems. These systems include: (i) Planning and Reporting Database (PlanRep); (ii) District Roads Maintenance System (DROMAS); (iii) By-Laws Database; (iv) Integrated Financial Management System (IFMS); (v) Local Government Monitoring Database (LGMD) and; (vi) others are yet to be developed (URT, 2006a).

The Local Government Monitoring Database (LGMD), hereafter referred to as the database, is a computer based program specially designed to capture information or data from the community (village/ward) on demography, education, health, agriculture, lands, works and water for LGAs, Regional Government, Prime Minister's Office Regional Administration and Local Government (PMO-RALG) and other stakeholders for monitoring development at three different levels. These include (i) the macro level which comprise aggregated data from regions; (ii) the meso level which handles data within a region that is collected from LGAs in a particular region and; (iii) the micro level where data from communities and different sectors in each LGA are collected and

entered in a computer software for processing. The background of the database can be traced back to 2002 where a simple database known as the Local Government Monitoring and Evaluation (LG M&E) was designed by PMO-RALG for use in LGAs. Between 2004 and 2005 the LG M&E was redesigned and renamed as LGMD (URT, 2006b).

The data gathering process involves various data providers (for the case of this study they will be referred to as information providers) from different levels within the LGAs. Data gathering within the LGAs uses administrative and sectoral forms, which flow from villages/*Mtaa*<sup>1</sup> to council levels to be entered into the database system annually. The information providers and type of data gathered are summarised in Table 1.

**Table 1: Information providers and type of data gathered**

<b>Providers</b>	<b>Type of data gathered</b>
VOs/MEOs	Village/ <i>Mtaa</i> Data (Demography and social economic)
WOs	Ward Data (Demography and social economic)
Head teachers	Primary school data. (education)
DMO and HF I/Cs	Health Facility data (Health)
DPLO/DCT	District Data (Administrative & finance)
DALDO	Agriculture and Ward extension data (Agricultural)
DE	Road and works data (communication)
DLDO	Lands and Natural resource data (Environmental)
DWE	Water (Water and sanitation)

**Source:** LGMD training manual, 2005 (URT, 2006b)

**Key:-**

DPLO =	District Planning Officer;	DCT =	District Council Treasurer
DMO =	District Medical Officer;	DWE =	District Water Engineer
DE =	District Engineer;	DALDO =	District Agric & Livestock Off.
DLDO =	District Land Devt Officer;	WO =	Ward Executive Officer

<sup>1</sup> *Mtaa* is a smallest LGA unit in municipality or city equivalent to village.

VO = Village Executive Officer; MEO = *Mtaa* Executive Officer

The main responsibilities of the information providers are; (i) gathering accurate data from the village/*mtaa*, ward school or facility; (ii) filling in data gathered in data collection forms supplied; (iii) Returning the completed data collection forms within deadline set by the supervisor; and (iv) displaying the feedback report or forms and any other comparative table or graph supplied to them in prominent place (URT, 2006b).

The community level data gathering for the database is supervised by the District LGMD coordinator to ensure data from wards are accurate and delivered timely. Ward Executive Officers (WOs) supervise villages in their respective ward, while Village Executive Officers (VOs) are required to ensure data are accurate and data collections forms are properly filled. The officers also provide feedback reports to community and ensure or forms are obtained and placed in prominent place. Sectoral data collection is supervised by the District LGMD coordinator under whom sector supervisors ensure that data from head teachers, facility managers and extension officers working with community are accurate and delivered timely. Responsibilities of supervisors include: (i) distributing data collection forms and associated instructions (received from the LGMD coordinator) to the information providers; (ii) collecting of completed data collection forms from the information providers; (iii) ensuring as far practicable data provided are accurate; (iv) editing and adding up data from health facility, extension officers and primary schools; (v) following up on late information providers; (vi) identifying and training information providers and; (vii) distribution of feedback reports and comparative graphs or tables to information providers (URT, 2006b).



Processed data at LGAs (LGMD micro level) are stored and generated into various indicators on governance, poverty, education, health, agriculture, food and cash crops, water and sanitation, roads and land ready to be used. Such indicators are also forwarded for compilation into Regional Government (LGMD meso level) and the PMO-RALG (LGMD macro level) databases (URT, 2006b).

The effectiveness of the database at all levels of operation will depend solely on the effective participation of information providers in collecting information or data accurately and timely. This study will focus on the effective operation of the LGMD micro level. It should also be noted that establishment of the database was geared not to replace other existing databases in different sectors of LGAs however; it aims at providing a snapshot of profiles and indicators which can enable stakeholders to deduce on development, poverty and governance of a particular LGA or community. Within short time frame the database is well situated to provide indicators for monitoring the Local Government Reform Programme (LGRP).

The Local Government Reform Programme (LGRP), hereafter referred to as the reform, was developed and approved by the Government of Tanzania to guide structured attainment of the declared vision of the future local government authorities. The overall objective of the reform is to improve the quality of, and access to public services provided through or facilitated by LGAs. The programme has six components each of which aims at contributing to the achievement of the overall goal (URT, 2002b). The components and their respective objectives are listed below:

(i) to establish broad based community awareness of the participation in the reform process and promote principles of democracy, transparency and accountability; (ii) to enhance the effectiveness of LGAs in the delivery of quality services in a sustainable manner; (iii) to increase the resources available to LGAs and improve the efficiency of their use; (iv) to improve the accountability and efficiency of human resource use at local government level; (v) to establish the enabling legislation which will support the effective implementation of local government reforms; and (vi) to support the effective and efficient management of the overall LGRP and in particular the work of the Local Government Reform Team in implementing the reform. The database can act as tool to provide the reform stakeholders with indicators to be used in planning, monitoring and evaluating the reform programme components as the reform is implemented through a series of projects and development programmes with LGAs. LGMD is designed to capture data from those projects and programmes to generate indicators. The database is managed using ICT while data collection is done manually using data collection forms

Data compilation and analysis is done using computer software, hence the role of ICT in the managing the database is very important. Having accurate and timely data is crucial for monitoring development activities; however, LGAs face problems in data collection, analysis, interpretation, storage, retrieval and utilization. Meanwhile the demand for data by various stakeholders, especially central sector ministries, and development partners is increasing. It is therefore important to ascertain that information providers and communities are aware of these needs and they participate

effectively and are capable of providing data accurately and timely to ensure effective operation and sustainability of important database (URT, 2006a). Community levels including villages and wards should also be supported to utilize data so compiled to address development need at their respective levels.

## **1.2 Statement of the problem**

It is commonly accepted that well-planned and targeted adoption of ICT has a positive impact on the way people work and enable an organization to be more efficient and effective in pursuing its corporate goals. The Government of Tanzania recognized the critical value of reliable, accurate and timely information to its stakeholders both within and beyond the government system. It is on this ground that the government embarked on adopting ICT in formulating the Management Information System (MIS) of the government in general and LGAs in particular, to facilitate developing appropriate workable system for sustainable solutions (URT, 2006a). The PMO-RALG has been charged to facilitate LGAs to develop procedures, systems and ICT infrastructure for managing information.

Even though training to information providers is conducted from time to time, the extent to which communities (villages) are aware of the importance for data in planning, monitoring, control and decision-making is very limited. Another problem relates to the limited capacity of district staff to communicate the outcomes of socio economic indicators that are used in the district development plan. Considering these problems, it is important to assess the utilization of data that is collected for the purpose of informing the process of planning and monitoring development activities. In

Ludewa District, there has been no study to assess community awareness, participation and utilization of data that originate from the communities to facilitate development and planning process. It is therefore important to examine the effectiveness and sustainability of the database for the purpose of supporting and guiding development interventions within the districts and local communities. It is also pertinent to assess local communities' awareness, participation and utilization of data that is gathered for the database, and how such data relates to the local government reform objectives.

### **1.3 Problem justification**

The importance of data utilization in day-to-day operation of any organization cannot be underestimated. It is from this ground the government has realised the importance of involving key stakeholders to participate in the whole process of provision of accurate and reliable data in time (URT, 2005). This study is in line with the National Strategy for Growth and Reduction of Poverty (NSGRP) under which target 5.7 emphasizes that, there should be systems in place for gathering, analysing, utilizing data on access, use outcomes of disaggregated data by gender, age, income-status, and geographical location in order to inform equity indicators (URT, 2005). This study will help ordinary people, technical personnel and community leaders to realize the importance of accurate data and utilization in their day-to-day operations in order to enhance the accuracy of data gathering, taking into consideration that no similar study has been done in Ludewa District.

## **1.4 Objectives of the study**

### **1.4.1 General objective**

The general objective of this study was to determine effectiveness of the database in the realisation of Local Government Reform Programme (LGRP) in Ludewa District. Specifically the study intended to achieve the following objectives.

### **1.4.2 Specific objectives**

The specific objectives were to:

- i. To examine the type of support provided by District Council to villages in order to facilitate data gathering, management and utilization under the database.
- ii. To examine the extent to which the Local Government Reform Programme has used the database to assess the effect of such database on development planning and monitoring in the district.
- iii. To identify problems, which impede better performance of the database in Ludewa District.
- iv. To assess factors that influence effective operation of Local Government Monitoring Database and compare performance of LGMD between semi urban and rural villages.

In order to meet these objectives it is important to discuss the conceptual framework on the basis of which research questions and hypothesis for the study will be developed.

## **1.5 Conceptual framework**

The study is guided by a conceptual framework which assesses the probability of how a resident of Ludewa District may participate in process of the database management

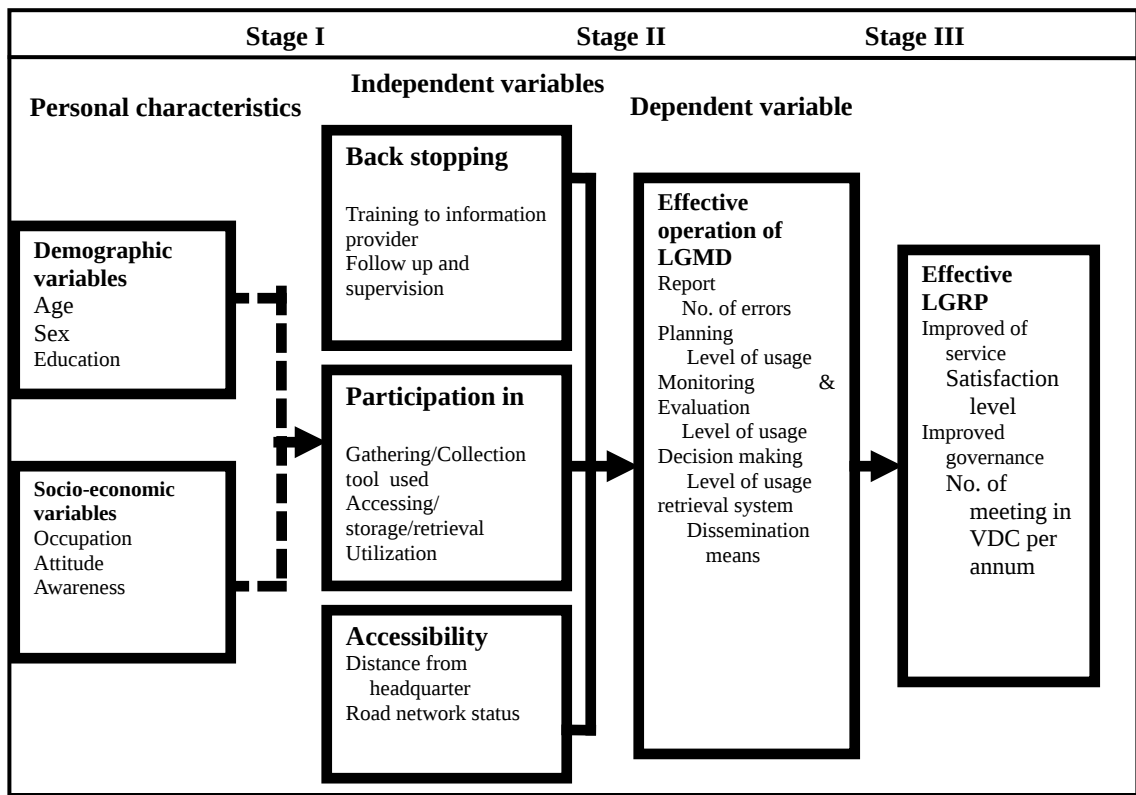
which is influenced by a set of personal characteristics. In turn participation along with backstopping and accessibility of village influence level of effective operation of the database.

The personal characteristics of an individual actor in the database within a village will influence participation in gathering, accessing and utilization of data for various development purposes. Personal characteristics comprised by demographic variables that include age, sex and education and social economic variables that include occupation, attitude and awareness.

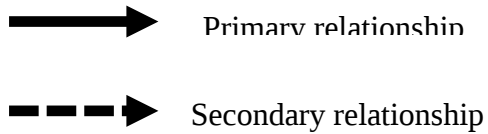
At the second level the conceptual framework assumes that (i) participation; along with (ii) backstopping from the district in terms of training to information providers as well as follow up and supervision and (iii) village accessibility measured in terms of location and distance from the district headquarters and terrain, which are closely related to the quality of access roads. All of these factors influence the effective operation of the database as presented in Fig. 1.; the operational definition of the analytical framework is presented in Appendix 1.

In fact the effective operation of the database in the District is measured by frequency of feedback report produced, frequency of data use in planning and monitoring and how data are displayed to stakeholders. The framework purports that if the database is effectively operated, it will contribute better to implementation of the reform as measured by improved level of customers' satisfaction in services provided by LGAs

and improved level of governance in village governments. However, this last level of the framework is beyond the scope of the study.



**Figure 1: Conceptual framework for study on effectiveness of LGMD in the LGRP**



On the basis of framework a number of research questions and hypothesis were developed.

### **1.6 Research questions**

- i. How does Ludewa District Council handle and facilitate data gathering and management for the LGMD from the village level?
- ii. To what extent the reform has used data in Ludewa District for planning and monitoring reform process?
- iii. What problems affect the implementation of the database in villages of Ludewa District Council?

These questions relate to addressing specific objective number one to three.

### **1.7 Hypothesis**

In order to address objective four (4), which relates to factors that influence the participation of community members in data gathering, management and utilization two hypotheses were developed as follows:



The first hypothesis states that the independent variables have no influence in the variation in effective operation of the database operation, which means that the parameter estimates are not significantly different from zero.

$$H_0 : \beta_j = 0 \dots\dots\dots(1.1)$$

The alternative hypothesis is stated as: independent variables do influence variation in effective operation of the database operations implying that the parameter estimates are significantly different from zero.

$$H_1 : \beta_j \neq 0 \dots\dots\dots(1.2)$$

The second hypothesis relates to difference between semi urban and rural respondents  
The null hypothesis states there is no significant difference between the parameters estimates of semi urban and rural villages.

$$H_0 : \lambda_{j(Su)} = \lambda_{j(Ru)} \dots\dots\dots(1.3)$$

The alternative hypothesis states there is significant difference between parameter estimates for semi urban villages and rural villages.

$$H_1 : \lambda_{j(Su)} \neq \lambda_{j(Ru)} \dots\dots\dots(1.4)$$

**1.8 Significance of the study**

The findings from this study will be useful to LGAs which are now in different stages of implementing the ongoing reform. The utility of the findings will be measured by the

level of effective community participation in data gathering and management of the database in operationalizing the reform.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Overview**

This chapter reviews the literature on Local Government Reform Programme and more specifically on access and use of Information Management Systems in LGAs, particularly in information flow and data management at the community level. Section 2.2 reviews the history of Local Governments in Tanzania, followed by discussion on the Local Government Reform Programme in section 2.3; while section 2.4 reviews the role played by information technology in planning and implementing the reform. In section 2.5 factors that hinder effective operation of the database are discussed.

#### **2.2 History of Local Government**

To understand how information had been accessed and used in Local Authority over a period it is important to review the history of Local Government. The history of Local Government in Tanzania (mainland) can be traced back to the pre-colonial period where different tribes and clans practiced governance under a Council of elders, and in

some tribal societies they formed chiefdoms. The government during the era of German colonial period (1884 -1917) was based on direct rule meaning the German rulers were directly engaged in government administration, however German rule operated under a limited number of Urban Authorities (Max, 1991). After the First World War, when the British colonial rulers came in power, they introduced indirect rule meaning British administration was not involved directly in administering the colonial government instead the Native Authority was used to assist colonial rulers to provide basic service and implement colonial laws. The system was more democratic than the previous one; however, these new Native Authorities were not representative. Both German and British colonial rule had little demand for data from community which enabled them in administration, planning on how to acquire labour force to feed big plantations and arrangement for community to pay head tax (Max, 1991).

Soon after independence some African states scraped or restructured the Local Government System. In Tanzania (by then Tanganyika) the Local Authorities CAP 72 was amended to make it more democratic and effective. In 1962 the government of Tanzania (by then Tanganyika) abolished administrative power of traditional chiefdoms instead the Local Authorities was strengthened to fill gaps where chiefdoms had strong administrative power. These changes were deemed to encourage more inclusive Local Authorities (Lwena, 2005). However, the post-independence Councils were characterized by incompetence and inefficiency (Dryden, 1968), which led to a decline in performance standards and efficiency. Moreover, Local Governments were overwhelmed by duties with limited resources. Consequently, in 1972 rural authorities were abolished, followed by the abolition of urban authorities in 1973. Both were

replaced by a decentralized government administration (Max, 1991; Kajimbwa *et al.*, 2005). The major reason for the failure was that, the bureaucrats who tended to make decisions on behalf of the people had actually hijacked the powers aimed for the people hence failed to achieve its objectives as had been intended (Max, 1991).

To comprehend how information flow and use has been coping with various reforms had been taking place it is important to discuss decentralization process in Tanzania.

### **2.2.1 Decentralization**

Decentralization by deconcentration refers to a process where administrative powers of Central Government are implemented through civil servants of the government working in field offices (Max, 1991). Meanwhile decentralization by devolution is the transfer of authority, functions and resources to LGAs within the framework of a unitary state (Kajimbwa *et al.*, 2005).

The decentralization of 1972 survived for 10 years (1972/82). During that decade it was evident that the decentralization system was weak and did not deliver expected objectives. There was decline in service and general economic performance, due in part to failure to meet demands for local services. Hence the system was abandoned in 1982. One of the shortcomings of the decentralization policy of 1972 was that it adversely affected the information flow especially in the government accounting system. For example a new coding system was introduced for each region, district and sector while Ministries had their own system. This variation had serious effect on

information sharing, monitoring performance and integration of budget at national level (Shila, 1994).

In the next section functions of Local Government will be discussed as pillars under which every programme taking place should abide including the reform.

### **2.2.2 Functions of Local Government**

Article 146(2) of the United Republic of Tanzania Constitution of 1977 (URT, 1982), which provides basic functions and duties of Council as laid down under the Local Government Act No. 7 and 8 of 1982, part V section 11 among other things includes: (i) maintenance of peace, order and good government; (ii) promoting the social welfare and economic well being of all citizens for rural and urban development; (iii) to further economic development of its area of jurisdiction. For this purpose the Local Government Act No. 7 provides that the Village government is the smallest unit of a Local Government in mainland Tanzania, which is required to perform four main functions: (i) to take necessary measures for the economic and social development of the village; (ii) to undertake activities that ensures the welfare and wellbeing of residents of the village and; (iii) to advice and assist residents on agriculture, forestry, industry and other activities; (iv) to participate through partnerships with other villages (stakeholders) in economic enterprises (URT, 1982). These functions are pertinent when assessing the effectiveness of the database at the local level. This in turn influences the effectiveness of the reform.

While decentralization of 1970s was mainly administrative, to a large extent the deterioration of public services during decentralization reduced economic performance such that the economic reform of 1980s had to be followed by administrative reform during 1990s. So it is important to revisit the Local Government Reform Programme.

### **2.3 Local Government Reform Programme**

Following failure of the deconcentration system, the Government of Tanzania made effort to redress the deteriorating administrative system that had contributed to poor economic performance. In 1986 the government adopted the Structural Adjustment Programmes (SAPs) in the form of Economic Recovery Programmes (ERPs) that were backed by the IFM, World Bank and other bilateral donors. The Government of Tanzania had undertaken these reforms in order to eradicate poverty and attain sustainable social and economic development (Ngware, 2005).

The Local Government Reform Programme aimed at transforming and strengthening local government system (URT, 2004). The programme covered five main functions including: (i) fiscal decentralization; (ii) administrative decentralization; (iii) political decentralization; (iv) service delivery function of decentralization; and (v) changed relations between the Central and Local governments. The reform emanated from the Local Government Reform Agenda of 1996, and subsequent adoption of the Policy Paper on Local Government Reform in 1998 (Ngware, 2005). In order for LGAs to be able to discharge all these functions, a reliable and effective information system is important.

In Tanzania improving communication and information flow within LGAs has been a debated issue from colonial times up to the present. This has been more obvious now, especially after introducing multiparty politics in 1992 (Lwena, 2005). A multiparty political system requires more transparency where arguments are supported by verifiable data. The information flow has been impeded by the poor state of data within the Central government and LGAs as well as weak links within and among LGAs which hinders information flow. To facilitate smooth flow information, strong linkage and effective information sharing it is important to explore the role information in governance and implementation of the reform.

#### **2.4 Role of Information (ICTs) in good governance and implementing LGRP**

Although there is limited exploitation and application of ICT in LGAs, still ICT plays a key role to change especially when aligned with governance goals and the reform objectives. Good planning and sound decision making depends on availability of comprehensive, timely and up to date information (Pessa, 2003). A well established Information System such as LGMD can facilitate delivering information between rural and urban areas more quickly. In any society, information plays three important roles of scanning the horizon of the society and report back (waTC man role); to decide policy, to lead, to legislate (policy role); and socializing the new members meaning to bring them into the society with the skills and belief valued by society (teacher role) (Schram, 1964).

Information system can be an important tool for planning and delivering needed service by the community. The planning process incorporates several stages which need specific information to enable the management to carry out planning and implement

programmes effectively. A sophisticated plan will entail setting a wide range of objectives with large population and wide spread territory (ACCA, 2000). Information system can be an important tool for planning and delivering needed service by the community. According to Pessa (2003) ICTs enables LGAs to develop local level plans for basic services such as water, sanitation and electricity. This means ICTs knowledge can enable to design database which can develop indicators that can be used to plan, monitor and measure performance of governance and the reform from the district down to the community level. If intended objectives are not being achieved remedial action can be taken (ACCA, 2000). The ICTs data can also act as signal when plans are not being implemented well so that course of action to be taken that will address the situation. Having knowledge in ICTs is one thing but knowing the role of LGAs in ensuring smooth operation of LGMD is crucial.

#### **2.4.1 Role of LGAs in improving LGMD operation**

For effective operation of the database LGAs are required to; (i) set up the LGMD software for data entry and analysis; (ii) print out and distribute data collection forms and feedback reports to information providers; (iii) collect completed data collection forms from information providers through Ward Executive Officers and sector supervisors; (iv) enter data into the database system and; analyse data for consistence and integrity (URT, 2006b). The feedback or reports produced from the database are in the form of data displays; indicators and; indicator graphs. Having indicators produced without being utilized is like treating the database as white elephant, it is then important to discuss the role of the database in the reform



#### **2.4.2 Role of the database in the reform**

Information is often gathered, aggregated and processed to produce performance indicators used to monitor plans (ACCA, 2000). It is pointed out that the reform aims at strengthening local government system so as to improve its service delivery to people (URT, 2006a), information concerning resources such as human, physical, financial and appropriate databases such as database for all citizens is fundamental and sound for planning and provision of services like education, health, utilities such as water, electricity and infrastructure like roads network (Pessa, 2003). The database can be used to facilitate and update database at micro level; it is therefore important to assess effective participation in data gathering to ensure that data obtained are reliable and accurate.

#### **2.5 Factors which hinder effective operation of the database**

In developing countries effective operation of databases suffer from several problems. The first stumbling block relates to high operating costs (Pessa, 2003). In order to obtain data particularly from villages, data gathering forms need to be produced, distributed and collected from villages. The costs involved are somehow considered high, relative to other priorities on limited resources available. This may lead many societies to compromise with effectiveness of a data and database in general.

Poor and unreliable infrastructure for communication, transportation and energy supplies pose another serious problem on access and use of information to and from villages (Adam and Wood, 1999). Most of the remote districts have unreliable

infrastructure and their villages are not accessible through out the year. This often limits efficiency of the operating and maintaining of information systems.

Another hurdle to effective operation of database is illiteracy. The low educational level of information providers has a serious problem to compile and manage database. According to Pessa (2003) that “illiteracy is a fundamental barrier to participation in knowledge societies”. Majority of population especially in rural areas in developing countries are either completely illiterate or can read and write, which is a barrier for their effective participation in operations of database such as the LGMD. Effective participation in data gathering needs some more analytical skills and ability to understand the implication of the information gathered otherwise information gathered may be useless or garbage.

Among major challenge that faces many projects is sustainability when external financing period ends or donors withdraw funding if projects are not people centred. Sustainability of the projects is a stumbling block to effective operation of database. Operation of a database is sometimes expensive and most of projects which are, externally financed in their initial stages.

Limited understanding of the management to support operation of the database affects not only the effectiveness of operation of a database but also the development process (Adam and Wood, 1999). Also commitment of decision makers to adopt and use database has influence to its effectiveness. In order to be able to discuss the results

obtained from the study it is important to know the method of how materials were obtained and processed

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines the methodology used in this study. Section 3.2 describes the location of the study area and its agro climatic characteristics. Section 3.3 provides information on the study population and administration while section 3.4 narrates how the research was designed. Section 3.5 explains computational of indices while details on how a theoretical model has been developed found in section 3.6. Section 3.7 provides details on sampling procedures while section 3.8 outlines sampling unit and sample size. Details on data collection are explained in section 3.9; while data processing and analysis elaborated in section 3.10. Section 3.11 narrates limitations of the study.

### **3.2 Location of the study area**

The study was conducted in Ludewa District, Iringa Region in Tanzania mainland. The study area was selected based on the result provided by Mbeya Zonal Reform Team (ZRT) on governance benchmarks for District Councils of Southern highlands that Ludewa ranked first among districts which were in the Reform Programmes implementation (Appendix 5). Among areas in which governance benchmarks result include (i) democracy; (ii) community participation; (iii) transparency and accountability; (iv) gender mainstreaming; (v) planning procedures and; (vi) planning intervention. It was expected that operation and performance in data gathering and management could be effective.

Ludewa District is situated in the southern part of Iringa Region and lies between latitudes 90°35' – 10°33' South of the Equator and between longitudes 34°35' – 35°10' East. The district borders Njombe and Makete districts to the North, Songea (Rural) to the East while in the South there is Mbinga District and Kyela District to the West. Also to the West Ludewa District shares boundaries with Malawi across Lake Nyasa as by map of Tanzania showing study area provided in Fig. 2.

Ludewa District has a total area of 8397 sq.km of which 2072 sq.km (24.68%) is covered by water, while 6325 sq.km (75.32%) is occupied by land area with mountains, forest and valleys. About 74% of the total land area which is 4650 sq.km is suitable for agriculture, however, only 344.44 sq.km (7.41%) of arable land is cultivated (URT, 2003). The district is characterized mostly by mountainous relief with ranges having slope of about 8°, high temperatures and rainfall which consequently affect communication and transportation. It should also be known that the Livingstone

Mountains forms part of these ranges of Ludewa District. The district is divided into three major climatic zones summarised in Table 2.

**Table 2: District Agro – Economic zones**

Zones	Altitudes in metre	Average temperature in °c	Average rainfall in mm/annum	Soil	Area in sq.km
Highland	1800 - 2800	15	1200 - 1500	Clay	864.15
Midland	900 - 1700	25	1100 - 1300	loamy Clay soil	3580
Lowland	500 - 900	27	900	Sand soil	802.43

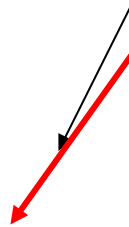
**Source:** Ludewa Dee's Office, 2003

In the next section the study population will be discussed.

### 3.3 Study population and administration

Ludewa District had a total population of 128 155 people in 2002 [60,715 Male (47.4%) and 67 805 Female (52.6%)], with annual growth rate of 1.6% (URT, 2002a). About 90% of the total population engage in agriculture, which contributes about 90% of the district's income (URT, 2003). The major ethnic groups in the district are

Pangwa, Manda and Kisi. Pangwa tribe dominates the population in the district which are found in the Northern and Eastern part mainly engaged in agriculture and animal keeping. Manda and Kisi tribes inhabit the Southern and Western part of the district mainly engaged in fishing, farming and animal rearing.



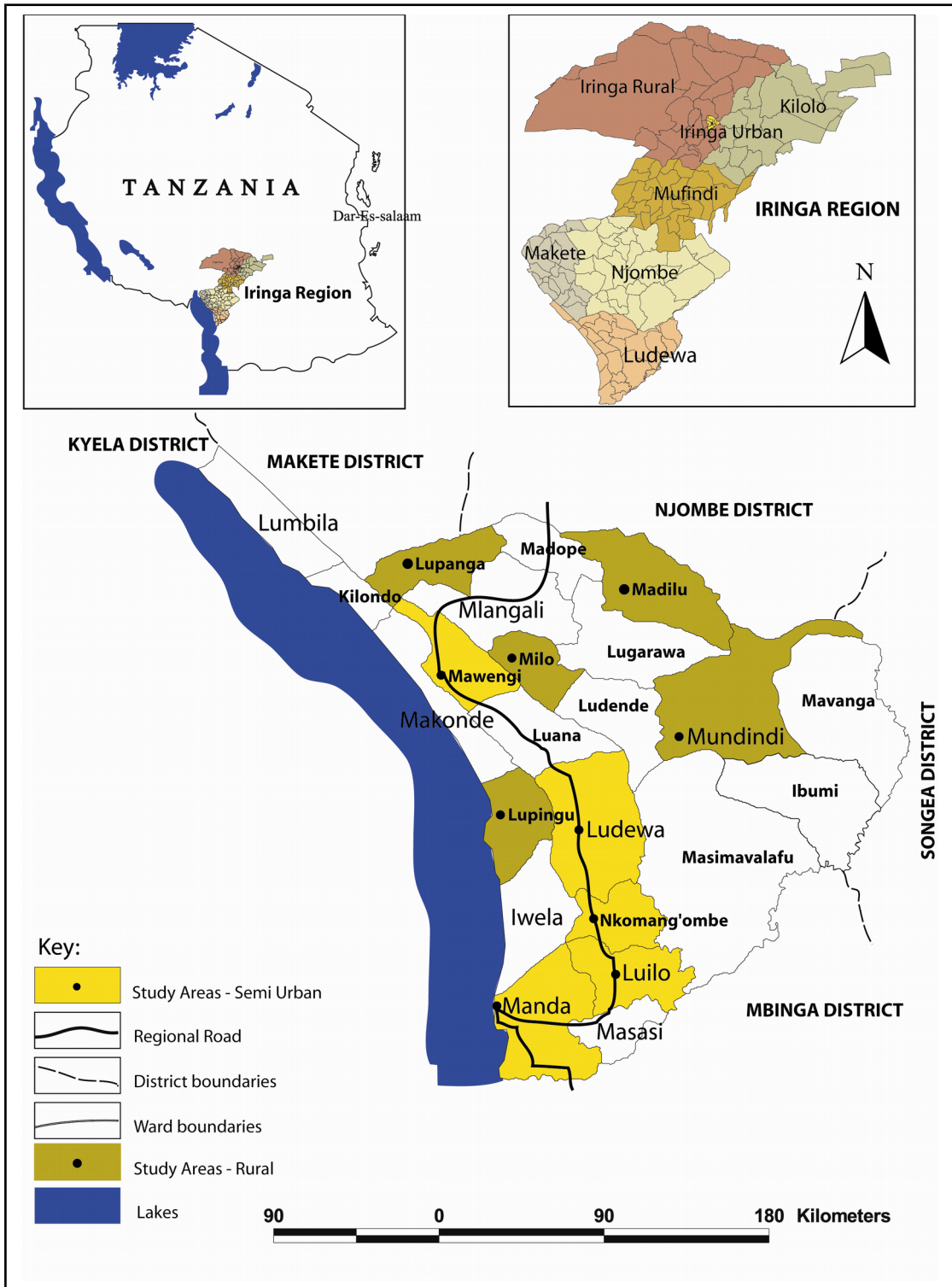


Figure 2: Map of Tanzania showing study area

**Table 3: Population of wards in the study area in Ludewa District**

Division	Ward		Male	Female	Total
	Name	category			
Liganga	Madilu	Rural	4286	4973	9259
	Mundindi	Rural	3421	3377	6798
Mlangali	Lupanga	Rural	2902	3333	6235
	Milo	Rural	3226	3860	7086
Mawengi	Ludewa	Semi urban	4419	4328	8747
	Mawengi	Semi urban	4256	4867	9123
Masasi	Nkomang'ombe	Semi urban	1369	1430	2799
	Luilo	Semi urban	1700	2029	3729
	Manda	Semi urban	3779	4305	8084
Mwambao	Lupingu	Rural	2024	2387	4411
<b>Total</b>			<b>31 382</b>	<b>34 889</b>	<b>66 271</b>

**Source:** National Population Census, 2002

Administratively, the district is divided into five divisions, 22 wards and 76 registered villages and 335 hamlets. Table 3 shows the population of wards in the study area. Having discussed the study population it is important to know research design used in collecting data.

### 3.4 Research design

The study used a cross-sectional research design; implying information was collected at one point in time (Kothari, 2004). This design deemed suitable to generate quantitative and qualitative data for determination of effectiveness of the database in realization of the reform objectives to the communities in the district. Before presenting the theoretical model for analysis it is important to present how computational of indices was done.



### 3.5 Computation of indices

The conceptual framework presented a number of variables which related to one another, among them are variables such as attitude of respondents on data gathering and management; backstopping provided to information providers by LGMD supervisors; participation of respondents in data gathering and management; village accessibility; and effective operation of LGMD can not easily be measured unless specified indices are designed and computed.

Likert scale was used to gauge the attitude of respondents on data gathering and management the nine attitudinal statements was administered to respondents to establish whether they strongly disagree, disagree, uncertain, agree or strongly agree. In order to assess the level of attitude to each respondent a 45 points scale was computed. Each answer whether strongly disagree, disagree, uncertain, agree or strongly agree were weighted as one, two, three, four or five respectively. The summations of weighted answers from nine statements were taken to establish attitude index of each respondent which ranged from 5 to 45 points (Kothari, 2004).

Backstopping provided to information providers ( $Z_1$ ) comprised of training on data management; frequency of LGMD feedback report provided to villages; and other assistance like working facilities provided village. The index of backstopping provided was established by summing up the responses of three factors where a seven points scale was established.

Computation of participation index ( $Z_2$ ) was done by taking summation of participation on LGMD data gathering; participation in filling in data collection forms; possibility of a villager to access information or data when required; and opinion of frequency of data generation per annum, where a 15 points participation index was established.

Accessibility of villages ( $Z_3$ ) comprised of individual perception on village accessibility and type of data mainly collected. A 25 points Likert scale was also used to compute perception of respondents on accessibility of their villages from district headquarters. Respondents were asked to show to what extent they strongly disagree, disagree, uncertain, agree or strongly agree with each statement concerning their village accessibility from district headquarter. Each answer whether strongly disagree, disagree, uncertain, agree or strongly agree weighted as one, two, three, four or five respectively. The summations of weighted answers from five statements were taken to establish the accessibility index of each respondent which ranged from 5 to 25 points score (Kothari, 2004). The category of village accessibility was computed and weighted.

### **3.6 Theoretical model**

An Ordinary Least Square model was used to determine the influence of backstopping provided to information providers, participation in data gathering and management and accessibility of villages on the level of effective operation of the database, as mentioned in conceptual frame work (Fig. 1). The Chi square was used in the first stage

to establish the relationship between personal characteristics and participation in data gathering and management.

In the second stage of analytical framework model assumes that effective operation of LGMD is likely to be influenced by independent variables as presented in general form in equation 3.1 as follows:

$$EP_{ij} = f(z_1, z_2, z_3, \dots, z_j) \dots \dots \dots (3.1)$$

Where:

$EP_{ij}$  = Effective operation of LGMD in  $j^{\text{th}}$  factor

$Z_{ij}$  = the  $j^{\text{th}}$  factor influencing effective operation of LGMD of  $i^{\text{th}}$  respondent  
for  $i = 1, 2, 3 \dots n$  and  $j = 1, 2, 3 \dots m$

Using a Cobb-Douglas model (Kennedy, 1992) this relationship can be presented as shown in equation (3.2) below:

$$EP_{ij} = \Pi \alpha_0 z_{ij}^{\alpha_{ij}} \varepsilon^{v_j} \dots \dots \dots$$

Where:

$\alpha_0$  = Intercept

$\alpha_{ij}$  = Parameter estimate of the  $i^{\text{th}}$  respondent for the  $j^{\text{th}}$  variable  
for  $i = 1, 2, 3 \dots n$  and  $j = 1, 2, 3 \dots m$

$v_j$  = Error term of the  $j^{\text{th}}$  value

$\varepsilon$  = Natural logarithms

Equation (3.2) can be linearized by log transformation the independent variables that influence effective operation of the database as shown in equation (3.3).

$$\ln EP_{ij} = \ln \alpha_o + \ln \alpha_1 z_1 + \ln \alpha_2 z_2 + \ln z_3 x_3 + \ln \alpha_4 z_4 \dots \dots \dots (3.3)$$

Where:

Factors that influence Effective operation of LGMD include; (i) backstopping provided by wards or district to information providers in terms of training, supportive supervision and provision of working facilities and equipments (Backstopping =  $Z_1$ ) was assumed to improve with the level of effectiveness in the database operation of particular village; (ii) effective participation of information providers in data gathering and management (Participation =  $Z_2$ ) assumed to have a positive relation with effective operation of the database; (iii) accessibility of a village from district headquarter (Accessibility =  $Z_3$ ) which assumed to have negative influence on effective operation of the database of particular village and (iv) village category (village =  $Z_4$ ) which assumes that a semi urban villages will have better operative LGMD than rural villages

For convenience the term  $\ln$  used in equation (3.3) will be omitted in the subsequent discussion to read as shown in equation (3.4).

$$EP_{ij} = \alpha_o + \alpha_1 Z_1 + \alpha_2 Z_2 + \alpha_3 Z_3 + \alpha_4 Z_4 \dots \dots \dots (3.4)$$

This model was tested for significance of the influence of the independent variables on the variation of effective operation of the database. The significance for each individual variable was also tested.

The study assumed that there would be differences in the level of effective operation between semi urban and rural respondents. In order to test parameter estimates for structural change the data were sub-divided semi urban and rural. The models for the two settings are presented as Equation (3.5) (semi urban villages) and Equation (3.6) (rural village) (Gujarati, 2003).

$$EP_{ij(Su)} = \lambda_o + \lambda_1 Z_1 + \lambda_2 Z_2 + \lambda_3 Z_3 \dots \dots \dots (3.5)$$

Where:

$\lambda_i$  for i = 1, 2,3 ... n representing parameter estimates from rural villages

$$EP_{ij(Ru)} = \gamma_o + \gamma_1 Z_1 + \gamma_2 Z_2 + \gamma_3 Z_3 \dots \dots \dots (3.6)$$

Where:

$\gamma_i$  for i = 1, 2, 3 ... n representing parameter estimates from rural villages

The adjusted  $R^2$  term and corresponding parameter estimates were compared using  $t$  test to check if there were spatial differences to effective operation of LGMD. The decision criterion is: reject  $H_0$  if the computed value is greater than the critical value as provided from analysis.

In order to compare difference in personal participation between semi urban villages (  $PP_{ij(Su)}$  ) and rural villages(  $PP_{ij(Ru)}$  ), separate regression models were run for pooled sample; semi urban villages data and; rural villages data from equations (3.4); (3.5) and (3.6) respectively to obtain parameter estimates for  $\alpha_{ij}$ ,  $\lambda_{ij}$  and,  $\gamma_{ij}$

On this basis the first null hypothesis which stated that the independent variables have no influence in the variation in effective operation of the database was tested. The hypothesis implies that parameter estimates are not significant from zero while the alternative hypothesis would imply that the parameter estimates are significantly different from zero. Mathematically this could be represented as shown in equation (3.7) and (3.8) below:

$$H_0 : \alpha_j = 0 \text{ for } i = 1, 2, 3 \dots n \dots\dots\dots (3.7)$$

$$H_1 : \alpha_j \neq 0 \text{ for } i = 1, 2, 3 \dots n \dots\dots\dots (3.8)$$

The Chow test was used to asses for differences in LGMD operation between the semi urban and rural villages as details on computation of the F test given in the appendix 4. In the second null hypothesis stated that there is no significant difference between the parameters estimates of semi urban and rural villages, while alternative hypothesis

stated that there is significant difference between parameter estimates for semi urban villages

and rural villages. The null and alternative hypotheses are therefore presented as follows:

$$H_0 : \lambda_{j(Su)} = \gamma_{j(Ru)} \text{ for } j = 1, 2, 3, \dots, k \dots\dots\dots (3.9)$$

$$H_1 : \lambda_{j(Su)} \neq \gamma_{j(Ru)} \text{ for } j = 1, 2, 3, \dots, k \dots\dots\dots (3.10)$$

In the next section sampling procedures will be discussed.

### **3.7 Sampling procedures**

Ludewa District Council comprised of 22 wards of which eight wards are Semi urban and 14 are rural wards. A semi urban ward or village is characterised by having rural and urban residents, easily accessible from the district headquarters with good transport and communication infrastructure. A rural ward or village is characterised by having rural residents, located in remote areas or have less reliable transport and communication infrastructure. In order to obtain the desired sample (respondents), stratified sampling was listed to select semi urban and rural villages then simple random sampling was used to select villages from each ward. The study was conducted in 10 wards of which five were semi urban wards and five being rural wards. A total of 20 villages were drawn from the 10 wards, of which 10 being semi urban villages and remaining 10 being rural villages. From each village six (6) respondents were

purposively selected, four (4) being from members of village assembly and two (2) from among extension staff depending on the role they play in the database.

The data for this study were collected from 20 villages in 10 wards and different divisions of Ludewa District. These 20 villages comprised of 10 semi urban villages which include Ludewa (K), Ludewa (M), Nkomang'ombe, Kimelembe, Madilu, Mawengi, Madunda, Luilo, Ngelenge and Nsungu while the other 10 rural villages are Lusala, Lupanga, Manga, Kipangala, Mavala, Milo, Mundindi, Amani, Nindi and Lupingu.

### **3.8 Sampling unit and sample size**

The sampling unit for this study was information providers comprised of selected village assembly members include: (i) Ward Executive Officer (WO); (ii) Village Chairperson (VC); (iii) Village Executive Officer (VO); (iv) Hamlet Leaders (HL); (v) Village Health Workers (VW); and extension staff working with community like (vi) Teachers (TC); (vii) Health Officers (HO); (viii) Agricultural Officers (AO); (ix) Forest Officers (FO) and (xi) Community Development Officers (CD).

A sample of one hundred and twenty (120) information providers was selected from 20 villages as shown in Table 4. The sample also included six (6) key informants of which four (4) were district database supervision and coordination team and two (2) were selected from among NGO's that working with communities at ward level. Table 4 below shows the sample size of respondents who were expected and those who were interviewed.



**Table 4: Sample size of respondents**

CATEGORY	RESPONDENTS											
	KEY INFORMANT	INFORMATION PROVIDERS										
		VILLAGE ASSEMBLY							EXTENSION			
		MEMBERS										
	DST	WAD	WO	VC	VO	HL	VW	TC	HO	AO	FO	CD
Expected	10	5	10	20	20	40	20	20	10	10	5	5
Interviewed	4	2	3	18	20	28	14	22	8	5	1	1
<b>TOTAL</b>	<b>6</b>							<b>120</b>				

### 3.9 Data collection

The study collected primary and secondary data, primary collection took place through survey while secondary data was collected throughout the study period.

#### 3.9.1 Primary data collection

Primary data collection involved formal and informal surveys. Formal survey was done using interviews while informal survey was done through observation during formal survey.

Semi structured interview schedule as presented in Appendix 2 was used to collect qualitative and quantitative information in order to address of this study. The schedule was pre tested at Ludewa (M) village prior to the study. The instrument was then corrected to address shortcomings that had been identified.

During primary data collection, observation was done on data storage facilities and information on this was recorded for subsequent analysis and discussion

### **3.9.2 Secondary data**

Secondary data included published and unpublished studies, papers and materials related to the reform, Information and Communication Technologies (ICTs) and other reports concerning government reforms and good governance. Secondary data on the reforms and LGMD were also obtained from village government offices, district headquarters office, ZRT office (Mbeya), Sokoine University of Agriculture National Agricultural Library (SNAL), University of Dar es salaam and Mzumbe University.

### **3.10 Data processing and analysis**

Data from primary source was processed and verified by sorting, cleaning and coding using an excel spread sheet before being entering into Statistical Package for Social Science (SPSS) for analysis. Cleaning was done to the raw data to detect errors, omissions and contradictions to ensure that data was accurate, consistent, uniformity so as to facilitate coding and categorization for meaningful data analysis. Data cleaning was done using SPSS version 12.0 at Sokoine University of Agriculture.

Data analysis was done using SPSS version 12.0 where data cross tabulation for which variables or characteristics with associated chi square test was to assess the likelihood of factors affecting the database operation across the 20 villages. For every successful work done should have gone through a number of limiting factors, in the section below discussion of the limiting factors encountered during this study is presented

### **3.11 Limitations of study**

During the study several problems were encountered. Some of the respondents especially extension staff were not ready to provide information on the argument that

they were not allowed giving sensitive government information that might cause conflicts with their heads of sections or departments. This was handled by assuring them that respondent would not be listed by names and answers provided would not be disclosed to any body without their consent.

Some of the respondents refused to be interviewed pleading that they were too busy. This was especially true for key informants at district and ward levels. Respondents in some villages were expecting to be paid assuming this study was a project which was funded. Following clarification, respondents agreed and cooperated when they understood the objective of the study.

Due to limitations of resources, i.e. time and financial resources required to accomplish data collection; affected the time table of this study. The selected sample was diverse being distributed across the district. Prolonged the data collection period as the researcher had to collect most of the data from field himself hence affected the schedule of research some how. The chapter that follows presents results and discussions.

## **CHAPTER FOUR**

### **RESULTS AND DICUSSION**

#### **4.1 Overview**

This chapter consists of sections on personal characteristics of respondents; how LGMD operate in Ludewa District; awareness on the reform and LGMD; attitude on data gathering and management; The database status at community level; District backstopping in data gathering; and implication of backstopping on improved data gathering. Other sections include extent at which data is used in the reform operation; problems hindering effective operation of the database; determinants of effectiveness the database and; empirical results of effective operation of the database.

#### **4.2 Personal characteristics of respondents**

The personal characteristics of the respondents include age, sex, education level attained and occupation discussed in the following sections.

##### **4.2.1 Age**

According to Table 5, 83.4% of the respondents interviewed were between 21 to 50 years old while 16.6% were above 50 years old. The youngest respondent had 24 years while, the oldest respondent was 61 years. The sample within active age, were about

43.3% of which more than two thirds were information providers selected members from village assembly which plays key role in ensuring development of the village and welfare. The sample also composed of extension staff who collaborate with and support villages to rollup their development.

#### **4.2.2 Sex**

The majority of respondents interviewed during the survey were men (78.3%) while the remaining 21.7% were female. Since the sampling at village level was done randomly this reflects the dominance of men in development process that relate with planning. Out of 26 female only 6 were extension staff while the remaining 20 were selected members of village assembly. This is reflecting the fact that was observed in Zonal Reform Team governance report during governance benchmarking which indicated that only 18% of the village and hamlet representatives were women (URT, 2007a). During the current study it was established that there was no female village chairperson and only one Village Executive Officer from among the villages in the sample as shown in Table 5.

#### **4.2.3 Education status**

Table 5 shows that 50.8% reached pre primary, primary, adult and vocational level of education, of whom majority were village assembly members which included 16 chairpersons, 25 hamlet leaders and 13 Village Health Workers. The education level of information providers, especially that of leaders is important for two main reasons. First they play a key role to ensure data accuracy, second they determine utilization of data from the district in participatory planning and development process. According to Pessa, (2003) illiteracy is a fundamental barrier to participation in knowledge societies.

Primary, adult and vocational education level may be satisfactory but not sufficient to enable effective management of advanced database such as LGMD unless there is good backstopping provided from the district, region or national level.

**Table 5: Distribution of respondents by background characteristics**

Variable (N=120)	Respondents										Total	%
	VC	VO	HL	VW	TC	HO	AO	FO	CD	WO		
<b>Age group</b>												
21 - 30	0	2	4	9	0	0	1	0	1	0	17	14.2
31 - 40	4	10	20	4	9	2	1	0	0	2	52	43.3
41 - 50	5	8	2	1	9	3	2	1	0	0	31	25.8
51 - 60	8	0	2	0	4	3	1	0	0	1	19	15.8
61 - 70	1	0	0	0	0	0	0	0	0	0	1	0.8
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>
<b>Sex</b>												
Male	18	19	21	2	19	6	5	1	0	3	94	78.3
Female	0	1	7	12	3	2	0	0	1	0	26	21.7
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>
<b>Education</b>												
Pre primary	0	0	1	1	0	0	0	0	0	0	2	1.7
Primary	13	5	20	9	0	0	0	0	0	0	47	39.1
Vocation	0	1	0	3	0	1	0	0	0	0	5	4.2
Adult education	3	0	4	0	0	0	0	0	0	0	7	5.8
<b>Sub total</b>	<b>16</b>	<b>6</b>	<b>25</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>50.8</b>
O - Level	2	14	2	1	0	0	0	0	0	2	21	17.5
Secondary Certificate	0	0	1	0	14	5	3	1	1	1	26	21.7
A - Level	0	0	0	0	1	0	0	0	0	0	1	0.8
secondary Diploma	0	0	0	0	7	2	2	0	0	0	11	9.2
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>
<b>Occupation</b>												
Agriculture	17	0	25	13	0	0	0	0	0	0	55	45.8
Government employee	0	20	0	0	21	5	5	1	1	3	56	46.7
<b>Sub total</b>	<b>17</b>	<b>20</b>	<b>25</b>	<b>13</b>	<b>21</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>111</b>	<b>92.5</b>
Business	1	0	3	0	0	0	0	0	0	0	4	3.3
Employee of other institution	0	0	0	1	1	3	0	0	0	0	5	4.2

<b>Sub total</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>7.5</b>
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>100.0</b>

Key: VC = Village Chairperson  
 HL = Hamlet Leaders  
 TC = Teachers  
 AO = Agricultural Officer  
 CD = Community Development Officer  
 VO = Village Executive Officer  
 VW = Village Health Workers  
 HO = Health Officers  
 FO = Forest Officer  
 WO = Ward Executive Officer

#### 4.2.4 Occupation

The findings show in Table 5 that majority (92.5%) of the respondents were engaged in agriculture or civil service while 7.5% were employees of other institutions and engaged in business. Participation in database management is affected to these information providers in some of the seasons in a year. This could be explained by the fact that 45.8% of the respondents depend on agriculture as main source of earning lively hood, of which most of them are selected members of village assembly who plays key role in data gathering and management. It is also true that, farmers may be much occupied with farm activities in certain seasons of the year especially during the cultivating seasons. Therefore, participation of such information providers in data gathering during peak seasons may not be optimal. Before going into further discussion it is important to know how LGMD operate in Ludewa District so that can be used as basis for discussion of results

#### 4.3 How LGMD operate in Ludewa District

Ludewa District started using the database in 2005 after a district LGMD coordinator was selected and attended a two weeks course on how to operate the database and use it to guide decision making within local government. Information for the database are collected and entered into the database system on annual basis. During the first week of December each year data collection forms for village data should be printed and

distributed to WOs and sector supervisors for distribution to wards and villages. During the third week of December follow up and supportive supervision should be

done to provide backstopping to information providers on how to fill in data collection forms and to assess if the data sources used in data collection are up to date and reliable. By fourth week of December the LGMD coordinator starts receiving filled data collection forms from sectors, wards and villages through WOs and sector database supervisors.

The first week of January is set for sending the remainder letter to those who had not submitted filled data collection forms. The coordinator also uses this time to check for errors in data collection forms second week of January checking of errors in data collection forms continues while data entry into the database system commences. The while fourth week of January is set aside for printing various displays, indicators and graphs for distribution to wards, sectors, villages and other stakeholders should start. Then data should be forwarded to the LGMD meso at regional level and to the LGMD macro level at PMO-RALG. This should happen by the first week of February at the latest. Data from LGMD micro at LGA level can be saved into a CD or in a flash drive for delivery to the regional level and PMO-RALG. Alternatively can be sent through e-mail to [ras\(region\)@pmoralg.go.tz](mailto:ras(region)@pmoralg.go.tz) at LGMD meso level and [mis@pmoralg.go.tz](mailto:mis@pmoralg.go.tz) at LGMD macro level. It is required that micro level data should be reported to the district council for discussion in every second council meeting. The third week of April is set aside for supervision to make follow up and check if distributed feedback reports are



being stored, used and displayed in prominent place to be used by community and other stakeholders.

During the survey for this study it was revealed that the District faces three major problems which hinders effective operation of the database. These include: (i) lack of funds to finance the database operation especially printing and photocopy of data collection forms and feedback reports. The data collection forms and reports required for sectors and villages are bulky. The cost of printing, photocopying and operation of generator is big since Ludewa District does not have permanent source of power to run computers. (ii) Other problem encountered in managing the database relate to the low rate of returning filled data collection forms from villages and poor accuracy for some of the data. This is attributed to having only limited number of supervision at wards and villages which is in turn associated with lack of funds. (iii) Lack of adequate manpower affect the database operation since most of the trained the database sector supervisors have been transferred to other LGAs or are attending further studies making supervision and backstopping a problem. After having knowledge LGMD operation in Ludewa District it is important to assess awareness of respondents on the reform and the database.

#### **4.4 Awareness on the reform and the database**

One way to assess a social practice is to gauge people's level of awareness of it. The study assessed the extent to which respondents were aware of the reform and the database, issues addressed by database and contribution of the database on the reform implementation.

#### 4.4.1 Peoples awareness on the reform and the database

Ludewa District Council is among 24 councils which are in the third phase of the reform programme in Tanzania (URT, 2003). The district has been implementing this programme since 2003 with the aim of enhancing the capacity of Local Governments to perform effectively. Under this programme there have been various efforts made to build the capacity of the districts, wards and villages in data management. Respondents were asked if they were aware or have ever heard of the reform and the database.

**Table 6: Respondents awareness on the reform and the database**

Awareness in (N = 120)	Respondents											Total	%	
	VC	VO	HL	VW	TC	HO	AO	FO	CD	WO				
<b>LGRP</b>														
Aware	18	19	26	12	22	8	5	1	1	3	115	95.8		
Not aware	0	1	2	2	0	0	0	0	0	0	5	4.2		
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>		
<b>LGMD</b>														
Aware	18	20	28	14	21	8	5	1	1	3	119	99.2		
Not aware	0	0	0	0	1	0	0	0	0	0	1	0.8		
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>		

Table 6 shows that, majority of the respondents were aware of both the reform and the database. It seems more people (99.2%) are aware of LGMD compared to the reform programme only 4.2% and 0.8% were not aware of the reform and the database respectively, among them was a Village Executive Officer. It was observed that, the Village Executive Officer who was not aware of the database was a new employee at one village. This implies that, new employees were not well oriented to different

programmes taking place in the district, since the employee had more than six month in employment.

#### **4.4.2 Issues addressed in the database**

In order to assess further the awareness level respondents were asked to express their knowledge on issues addressed in the database as summarised in Table 7. The study shows about half of the respondents interviewed said LGMD provides demographic information, while 13.6% said it provides avenue for data collection, analysis, presentation, storage and coordination. The remaining issues were stated by less than 10% of the respondents as shown in Table 7. These include LGMD provides public health, water, nutrition, family planning and curative information. Other issues highlighted by respondents include: provision of academic, education and gender issues; sensitization of community on data and right to information; inputs, production, finance and economic status of households; agriculture, natural resources and environmental issues; and legal, administrative and infrastructure development.

**Table 7: Issues addressed in the database**

Category (n = 103)	Respondents	
	Frequency	%
Provides population structure, birth, death, migration and vulnerable.	56	54.3
Provides avenue for data collection, analysis, presentation, storage and coordination.	14	13.6
Provides public health, water, nutrition, family planning and curative aspects	10	9.7
Provides academic, education and gender issues.	8	7.8
Inputs, production, finance and economic status of Households.	5	4.9
Agriculture, natural resources and environmental issues	5	4.9
Legal, administrative and infrastructure development	3	2.9
Sensitization of community on data and right to information.	2	1.9
<b>Total</b>	<b>103</b>	<b>100.0</b>

The issues pointed out by majority of the respondents are commonly used in day to day operation or village meetings and committees, while many respondents did not know issues on economic, production and environmental issues that are also addressed by the database. This means, if information has direct economic gain to individual or society can be easily assimilated prevailing community (Mcanany, 1980).

#### 4.4.3 Contribution of the database to implement the reform

During the study, respondents were asked to state if the database has contributions to effective implementation of the reform in their villages. Majority of the respondents indicated that the database has great contribution to effective implementation of the reform.

Table 8 shows that 19.0% of the interviewed sample said the database helps to prioritize, plan, monitor and coordinate reform, 14.3% said the database enable communities to know the actual need of society and the level of reform achieved, 13.3% said the database enables to create awareness on the importance of improved social service, while 11.4% said the database makes easy accessing data and ability to compare performance. Other contributions mentioned were; assurance in implementing reform efficienciently (10.5%), provision of fair share of human and financial resources (10.5%). Other issues were mentioned by less than 10% of the respondents as shown in table. This result implies that the community recognises the contribution of data in planning and implementing development programmes.

**Table 8: Contribution of the database to the reform**

Category (n = 93)	Respondents	
	Frequency	%
Is means to prioritize, plan, monitor and coordinate reform	20	19.0
Knowledge of actual need of society and level of reform achieved.	15	14.3
Awareness on importance of improved social service.	14	13.3

Easy accessing data and ability to compare performance	12	11.4
Assurance in implementing reform efficinciently	11	10.5
provision of fair share of human and financial resources	11	10.5
Uniformity on data management at community level	9	8.6
Accountability responsibility on information/data	7	6.7
provided		
Easy identification of opportunity and obstacles to	4	3.8
reform		
Maintenance of standardized indicators accepted by all	1	1.0
stakeholders		
Having database is part of reform	1	1.0
<b>Total</b>	<b>105</b>	<b>100.0</b>

**Note:** Frequency can not add up to 93 because of multiple responses

#### 4.5 Personal attitude on data gathering and management

The study sought the attitude of respondents on data gathering and management by administering nine attitudinal statements as described in section 3.5. Respondents were asked to strongly disagree, disagree, uncertain, agree or strongly agree to each of the nine statements. However, for convenience during analysis respondents who answered strongly disagree and disagree their answers were merged to be disagree while those who answered agree or strongly agree combined to mean agree. Hence results of likert scale had three categories as shown in Table 9.

Table 9 shows that respondents agreed with almost all statements that may affect data gathering and management. More than 80% of the respondents indicated agreement that lack of effective database feedback, reliable data storage facilities and good channel of communication affect data gathering and management. Out of 120

respondents interviewed 55% indicated disagree that norms and values affect data gathering and management while 49.2% disagreed that perception of an individual on particular information affect data gathering and management. This implies that, if attention is not paid to those factors data gathering and management is likely to be affected.

**Table 9: Personal attitude toward data gathering and management**

S/No	Attitudinal statements (N=120)	Responses		
		Disagree %	Uncertain %	Agree %
1	Lack of effective database feedback affect data gathering and management	6.7	10.0	83.4
2	Lack of reliable data storage facilities affect data gathering and management	10.8	5.8	83.3
3	Lack of good channel of communication affect data gathering and management	8.9	8.3	82.5
4	Lack of coordination of existing information systems affect data gathering and management	16.6	10.0	73.3
5	Level of education of an individual affect data gathering and management	25.0	2.5	72.5
6	Lack of good governance affect data gathering and management	19.2	10.8	70.0
7	Religious orientation of an individual affect data gathering and management	30.0	10.0	60.0
8	Perception of an individual on particular	49.2	17.5	33.4

	information affect data gathering and management			
9	Norms and values affect data gathering and management	55.0	14.2	30.8

---

#### **4.6 The database status at community level**

Respondents were asked about their participation in data gathering, the type of data gathered, main data source used in data gathering and the frequency using data for planning and monitoring the local government reform process. These aspects are discussed in the next section.

##### **4.6.1 Gathering data for the database**

Respondents were asked if they participated in gathering data for the database in the last three years. Table 10 shows that 67.5% and 20.8% of male and female respondents in that respect participated in gathering data for the database in the last three years. About 10.9% and 0.8% of male and female respondents respectively did not participate. Out of respondents who did not participate in gathering data 10.1% were Village Chairpersons who were supposed to be the key owners of the database at village level. In fact two thirds of the Village chairperson did not participate in data gathering. It has been observed that, most of the Village Chairpersons considered data collection was responsibility of extension staff and some designated members of village assembly.



**Table 10: Respondent's participation in data gathering by village category and sex.**

Respondent title (N = 120)	Participation											
	Semi urban				Rural				Total			
	Male		Female		Male		Female		Male		Female	
	Yes %	No %	Yes %	No %	Yes %	No %	Yes %	No %	Yes %	No %	Yes %	No %
Village Chair person (VC)	2.5	4.2	0	0	2.5	5.9	0	0	5.0	10.1	0	0
Village Executive Officer (VO)	8.3	0	0	0	7.5	0	0.8	0	15.8	0	0.8	0
Hamlet Leader (HL)	11.7	0	0.8	0	5.0	0.8	4.2	0.8	16.7	0.8	5.0	0.8
Village Health Worker (VW)	0.8	0	4.2	0	0.8	0	5.8	0	1.7	0	10.0	0
Teacher	7.5	0	1.7	0	8.3	0	0.8	0	15.8	0	2.5	0
Health Officer (HO)	3.3	0	0.8	0	1.7	0	0.8	0	5.0	0	1.7	0
Agricultural officer (AO)	2.5	0	0	0	1.7	0	0	0	4.2	0	0	0
Forest Officer (FO)	0	0	0	0	0.8	0	0	0	0.8	0	0	0
Community Dev Officer (CD)	0	0	0	0	0.0	0	0.8	0	0	0	0.8	0
Ward Executive Officer (WO)	1.7	0	0	0	0.8	0	0	0	2.5	0	0	0
<b>Total</b>	<b>38.3</b>	<b>4.2</b>	<b>7.5</b>	<b>0</b>	<b>29.2</b>	<b>6.8</b>	<b>13.3</b>	<b>0.8</b>	<b>67.5</b>	<b>10.9</b>	<b>20.8</b>	<b>0.8</b>

This implies that, if 10.1% of Village Chairpersons who are also the principal key managers of the villages' development process did not effectively participate in data gathering, then the database is likely to be adversely affected.

#### 4.6.2 Type of data mainly collected

Respondents who participated in data gathering were further asked to state the type of data they were involved in collecting in the last three years. Results from Table 11 show that 30.2% of respondents in study area collect demographic information. The rest reported collecting data on health and academic issues (19.8%); while economic, financial and administrative issues (18.9%). Other type issues reported by less than 10% of the respondents were on legal and other social issues; agriculture data; and data on natural resources and environmental issues.

Demographic information include population data, mortality, morbidity and migration of people collected mainly by selected members of village assembly especially hamlet leaders who have educational level below secondary level. As stated earlier, analytical ability may be affected by one's level of education attained (Pessa, 2003), which is likely to limit the ability to analyse and comprehend the type of information collected.

**Table 11: Respondent's type of data mainly collected**

Type of Data mainly collected (n=106)	Respondents										Total	%
	VC	VO	HL	VW	TC	HO	AO	FO	CD	WO		
Demographic	3	1	25	1	1	0	0	0	1	0	32	30.2
Health	0	0	0	13	0	8	0	0	0	0	21	19.8
Academic	0	0	0	0	21	0	0	0	0	0	21	19.8
Economic/	0	18	1	0	0	0	0	0	0	1	20	18.9

administrative												
Legal/other	3	1	0	0	0	0	0	0	0	2	6	5.7
social issues												
Agricultural	0	0	0	0	0	0	5	0	0	0	5	4.7
NR/Environm	0	0	0	0	0	0	0	1	0	0	1	0.9
ental												
<b>Total</b>	<b>6</b>	<b>20</b>	<b>26</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>106</b>	<b>100</b>

#### 4.6.3 Main Sources of data and frequency of usage

Majority of respondents (56.6%) use village register, Community Based Management Information System (CBMIS) reports as well as education forms or reports as main source in data gathering. Other main sources used that account for at least 8% of the respondents include field visit and observation, legal, administration and finance reports. It has been observed that Ludewa District has shortage of village registers such that some of the hamlets in villages have unupdated village register meaning information provided may not be very reliable. The accuracy and reliability of data depends on the frequency of participation in data gathering and rate at which data source has been used.

**Table 12: Main source used in data gathering**

Category (n = 106)	Respondents	
	Frequency	%
Village register	37	34.9
CBMIS reports	12	11.3
Education forms and reports	11	10.4
<b>Sub total</b>	<b>60</b>	<b>56.6</b>
Other health registers, forms and reports (Birth and death register)	10	9.4
Field visit and observation	9	8.5
Legal, administration and finance reports	9	8.5
Child register	7	6.6
Health, water and sanitation reports	6	5.8
Agricultural forms and reports	3	2.8
Natural resource, environmental and land reports	1	0.9
Community development and gender issues	1	0.9
<b>Total</b>	<b>106</b>	<b>100.0</b>

Findings in Table 13 show that 53.8% of the respondents rarely use data source during data gathering while 37.7% normally use while 8.5% always use data source in data collection. This finding confirms with observation found by household budget survey that despite the importance of birth and death registration only very few Village Offices had registers and their usage is very low level in urban and rural villages (URT, 2007b). This implies that, data gathered for LGMD are either obtained directly from the field or from sources which are not up to date, which has implication on the effective operation of data management and utilization.

**Table 13: Rate at which main source is used in data gathering**

Rate (n = 106)	Respondents										Total	%
	VC	VO	HL	VW	TC	HO	AO	FO	CD	WO		
Rarely used	2	6	14	7	16	8	2	0	0	2	57	53.8
Normally used	2	14	7	7	4	0	3	1	1	1	40	37.7
Always used	2	0	5	0	2	0	0	0	0	0	9	8.5
<b>Total</b>	<b>6</b>	<b>20</b>	<b>26</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>106</b>	<b>100</b>

#### 4.6.4 Village accessibility

Likert scale was used to establish perception of respondents on accessibility of their villages from district headquarters. Respondents were asked to show to what extent they strongly disagree, disagree, uncertain, agree or strongly agree with each statement concerning their village accessibility from district headquarter. For convenience responses category were collapsed to disagree, uncertain and disagree.

**Table 14: Respondent's perception on village accessibility**

S/No	Statement	Responses		
		Disagree %	Uncertain %	Agree %
1	Geographical feature of an area strongly affect accessibility of village	18.3	10.8	70.9
2	Lack of reliable transport contribute to inaccessibility of village	25.0	7.5	67.5
3	Weather during wet season strongly affect accessibility of village	29.2	15.0	55.8
4	Distance of feeder road to major roads affect accessibility of village	46.7	5.0	48.3
5	Lack of major and periodic maintenance of road affect accessibility of village	35.0	24.2	40.8

The results from Table 14 indicate respondents agreed that geographical feature of an area (70.9%); lack of reliable transport (67.5%); and weather during wet season (55.8%) influence village accessibility throughout the year and therefore may affect management of the database.

In order to be able to assess the perception of each respondent on village accessibility a 25 points scale was computed from answers provided. Each answer whether strongly disagree, disagree, uncertain, agree or strongly agree weighted as one, two, three, four or five respectively. The summations of weighted answers from the five statements were used to establish the accessibility index of each respondent which ranged from 5

to 25 points score (Kothari, 2004). The category of village accessibility was computed as presented in Table 15.

**Table 15: Village accessibility index by village category and sex**

Rate (n = 120)	Responses											
	Semi urban			Rural			Male		Female		Both	
	Male	Fem	Both	Male	Fem	Both	Frq	%	Frq	%	Frq	%
Hardly accessed in a year	28	5	33	21	4	25	49	40.8	9	7.5	58	48.3
Fairly accessed in a year	12	0	12	22	13	35	34	28.3	13	10.9	47	39.2
Easily accessed in a year	11	4	15	0	0	0	11	9.2	4	3.3	15	12.5
<b>Total</b>	<b>51</b>	<b>9</b>	<b>60</b>	<b>43</b>	<b>17</b>	<b>60</b>	<b>94</b>	<b>78.3</b>	<b>26</b>	<b>21.7</b>	<b>120</b>	<b>100.0</b>

The result from the study indicates that 48.3% of villages hardly accessed throughout the year while 39.2% of the villages are fairly accessed in a year and only 12.5% of the villages are easily accessed through out the year. These results may be explained by geographical feature of the district and weather condition where most villages in Ludewa District are situated in mountainous area with rough accessed road especially during rain seasons. This hinders good communication and therefore may affect the data management.

#### **4.7 District backstopping on data gathering**

In order to ensure effective and sustainable operation of the database various backstopping interventions measures provided by the district and the ward levels

should be provided to village information providers. In the study respondents were asked if they had any backstopping in the last three years on data gathering and management.

#### 4.7.1 Training

Training had always been a foundation to build capacity and experience of any one in any field of specialisation. If training was properly provided it could be the best backstopping. Respondents were asked if they had training in data management in the last three years.

**Table 16: Distribution of respondents on training in data management**

Category (N = 120)	Respondents										Total	%
	VC	VO	HL	VW	TC	HO	AO	FO	CD	WO		
Had	15	19	20	12	17	5	2	1	0	2	93	77.5
training												
Had no	3	1	8	2	5	3	3	0	1	1	27	22.5
training												
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>

Table 16 shows that 77.5% of the respondents agreed that, they had attended at least one training session on data management in the last three years. The remaining 22.5% had not received any training in data management however; the content of the training was very limited. About two thirds of the respondents were trained on LGMD awareness and data collection only, but not much on data analysis, presentation and storage. This has been confirmed during survey for this study because in most of villages data and other information are stored on tables or on the floor. Most of villages had no good storage facilities like offices shelves and cupboards. Under such condition it is easy for data to be misplaced or for documents being mixed up reducing reliability

of the database. Divergence in practice taking place in the community is the implication of different of interpretation and implementation of various programs. Kapinga (2002) also found that there is divergence in conceptualization of key policy issues, strategies and practices between top leadership and villagers.

#### 4.7.2 Feedback reports

As described in section 4.3 Procedure for managing the LGMD requires that after the district has compiled the data report summarizing key indicators should be provided to villages for using in planning, monitoring and display. When data are entered into computer produces different indicators and reports which need to be disseminated to village as feedback reports and village social economic indicators. The database coordinator also produces errors reports on entries that are wrongly posted or wrong calculated information in data gathering forms brought to district headquarters. In the study respondents were asked if they received feedback in the last three years.

**Table 17: LGMD feedback or reports from district in the last 3 years**

Categories (N = 120)	Respondents	
	Frequency	%
Did not receive feedback	115	95.8
Got feedback	5	4.2
<b>Total</b>	<b>120</b>	<b>100.0</b>

Table 17 shows that overwhelmingly 95.8% of the respondents interviewed said they did not receive any feedback or reports in the last three years. The five (4.2%) respondent who received feedback reports include; extension staff while two of them



were members of village assembly responsible for collecting information on health as shown in table 18.

**Table 18: Frequency on receiving feedback in the last 3 years**

Frequency (n = 5)	Respondents					Total	%
	H L	VW	TC	HO			
Once	0	1	1	1		3	60.0
Twice	1	0	1	0		2	40.0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>		<b>5</b>	<b>100.0</b>

It has been further observed that feedback reports had been provided to hamlet leaders, Village health workers and health officers who gather information health and teachers who gather education information only. This might imply that, the district had no good flow of the database information, poor coordination due to lack of good chain of a database management.

#### 4.7.3 Other type of assistance

As shown in Table 19, 95 of the respondents reported to have received other type of assistance in forms of awareness seminars training (53.7%); on working facilities (35.8%); instructions and guidelines (7.4%); facilitative supervision and follow up (3.1%); and building infrastructures and furniture for data storage and management.

**Table 19: Type of assistance mainly provided on data management**

Assistance (n = 95)	Respondents	
	Frequency	%
Awareness seminars	51	53.7
Working tools and facilities.	34	35.8

Instructions and guidelines	7	7.4
Facilitative supervision and follow up	2	2.1
Infrastructure and furniture	1	1.0
<b>Total</b>	<b>95</b>	<b>100.0</b>

Observation in the field revealed that feedback and the backstopping mechanism is weak. All the villages in study did not receive any list of annual complete database feedback report from district headquarters in the last three years. The district database coordinator reported that financial limitations adversely affected effective backstopping and free flow of feedback reports to and from villages.

#### 4.8 Implication of backstopping on improved data gathering

Respondents were asked to give their opinion whether backstopping provided by the district had any impact on improving data gathering and management. The findings show that 80 respondents (66.7%) said backstopping had no impact on improves data gathering. Out of these 58 (48.3%) were selected members of village assembly, while 37 (30.8%) said backstopping contributed to improvement in data gathering. There were 3 (2.5%) who were not sure.

**Table 20: Opinion on backstopping to improve data gathering in the last 3 years**

Opinion (N = 120)	Respondents										Total	%
	VC	VO	HL	VW	TC	HO	AO	FO	CD	WO		
Has no impact	15	11	21	11	7	6	4	1	1	3	80	66.7
Has impact	3	9	4	3	15	2	1	0	0	0	37	30.8
Not sure	0	0	3	0	0	0	0	0	0	0	3	2.5
<b>Total</b>	<b>18</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>120</b>	<b>100.0</b>

Respondents who said backstopping has a positive impact on improved data gathering were further asked to mention the main contributing factors to this.

**Table 21: Contributing factors to improved data gathering.**

Contributing factor (n = 37)	Respondents							Total	%
	VC	VO	HL	VW	TC	HO	AO		
Facilitation/backstopping from District/ Ward	2	1	0	0	10	0	0	13	35.1
Basic training	0	2	3	1	5	1	0	12	32.4
Experience	0	3	1	1	0	1	1	7	18.9
Village reform	1	3	0	0	0	0	0	4	10.8
Increased awareness	0	0	0	1	0	0	0	1	2.7
<b>Total</b>	<b>3</b>	<b>9</b>	<b>4</b>	<b>3</b>	<b>15</b>	<b>2</b>	<b>1</b>	<b>37</b>	<b>100.0</b>

Findings in Table 21 show that out of 37 respondents who reported positive impact that 35.1% of the sample said facilitation from the ward and district level was most useful. Another 32.4% said basic training in the form of awareness and sensitization seminars was a key factor which improved data gathering; while 18.9% of the respondents said experience was the most useful.

#### **4.9 Extent to which data is used in the reform operation**

The study also examined the extent to which the reform used data from the database by asking respondents to mention the contribution of the database in village development.

An open ended question was administered to 103 respondents to give their views on the contribution of data to their village development. Results in Table 22 indicate that 34.4% of the respondents mentioned that the data provided as direction for planning and realization of goals; 15.2% indicated that the data creates awareness on demographic information and health status; while 10.4% said the data make it easy to identify opportunities and obstacles and hence promote efficiency in executing development plans.

Other contributions mentioned by respondents include: facilitating fair resource distribution (8.8%); creating awareness and sensitization on community development (8.0%); provide communities with the right to information to enable them to make the right decisions (8.8%); providing a data bank, easy access and utilization and to enable immediate responses to problems, emergencies or outbreaks (6.4%). The rest of the responses were mentioned by less than 5.0% of the respondents. This implies that community is aware of importance of information in implementation of community development.

**Table 22: Contribution of data to village development**

Category (n = 103)	Respondents	
	Frequency	%
Provide direction for planning and realization of goals	43	34.4
Create awareness on population, birth, death and health status	19	15.2
Easily identify opportunity and obstacles and high efficiency	13	10.4
Enable distribution of resource and other needs fairly	11	8.8
Provide assurance, indicators and feedback to community	10	8.0
Create awareness and sensitization on community development	10	8.0
Provide data bank and easy access and utilization	8	6.4
Enabling in making right decisions	5	4.0
No data no development	3	2.4
Provide community with right to information	2	1.6
Enables sharp responses to problems, emergency or outbreak	1	0.8
<b>Total</b>	<b>125</b>	<b>100.0</b>

**Note:** Frequency can not add up to 103 because of multiple responses

#### 4.10 Problems hindering effective operation of the database

Respondents were asked to mention the main factors that hinder community members from accessing information and factors that hinder effective operation of the database.

#### 4.10.1 Access to information

Only five respondents replied to the question on factors that hinder free flow of information and accessing the data depends on the prevailing environment, which allows guidelines and instructions from the district as well as documents or forms from the villages to the district reach the destination in time. Effective information flow also depends on commitment and willingness of political leaders to support users to access and use the information for development planning.

**Table 23: Factors hindering community accessing data**

Category (n = 5)	Respondents	
	Frequency	%
Lack of will and negligence of leaders	3	60.0
Delay of documents, reports and guidelines	2	40.0
in transit		
<b>Total</b>	<b>5</b>	<b>100.0</b>

Out of the five respondents three (60%) said lack of political will and negligence of leaders to support community members to access information from the database. The other two respondents (40%) indicated that delay in issuing the guidelines and other related reports affects the ability of community members to access information from database. It has been further observed that political leaders tend to disclose to communities only information which they think have political gains to them or their party, which limits the effectiveness of the database to be used for addressing a broad range of societal issues.

#### 4.10.2 Opinion on factors which hinder effectiveness of the database

To solicit opinion on factors which hinder effective operation of the database in the community an open ended question was administered to 77 respondents to mention factors which affect effective operation of the data base.

Table 24 revealed that 24.6% of respondents said lack of continuous training on data management was main the factor which hinder the effectiveness of the database to the reform; This was followed by lack of reliable communication, transport, poor infrastructure which was mentioned by 21.3% of the respondents. Lack of work tools, facilities and proper guidelines was the third most frequently mentioned factor, as mentioned by 16.4% of the respondents while 9.0% said poor chain of command was a hindrance. The remaining factors were mentioned by less than 5.0% of the respondents.

**Table 24: Factors which affect effective operation of the database**

Category (n = 77)	Respondents	
	Frequency	%
Lack of continuous training on data management	30	24.6
Lack of reliable communication, transport, poor infrastructure	26	21.3
Lack of work tools, facilities and proper guidelines	20	16.4

Poor chain of command and management	11	9.0
Language acts as barrier to effective data gathering	3	2.5
Geographic feature of area and weather affect data	8	6.6
management		
Low awareness of community on importance of data	8	6.6
management		
Funds/budget should be allocated for data at village level	8	6.6
Lack facilitative supervision and follow up	4	3.3
Poor/low level of education of key people in data	3	2.5
collection		
High rate of migration affect data management	1	0.8
<b>Total</b>	<b>122</b>	<b>100.0</b>

**Note:** Frequency can not add up to 77 due to multiple responses

#### **4.11 Determinants of effective operation of the database**

In order to determine the level of effective operation of the database participation of an individual in data gathering has been seen as main variable from which various variables were cross tabulated to establish if there were relationship and association among them.

The Chi square test was used to establish if there were any relationships among age, sex, occupation of respondents, personal attitude on data and participation in data gathering and management. Results of the test are presented in Table 25 and discussed in the following sections.

##### **4.11.1 Relationship of age and participation in data gathering**

Based on cross tabulation Chi square test was used to determine the relationship between the age of respondents and their participation in data gathering and



management. Results in Table 25 show that there is significant relationship between age and participation in data gathering ( $p < 0.01$ ). This implied that the age of a respondent is likely to affect data management. The Chi square implies that as ones age increases, they are more likely to participate in the database process including data gathering, capacity building and backstopping.

#### **4.11.2 Relationship between sex and participation in data gathering**

The study also aimed at establishing whether there was a relationship between sex and participation in data gathering and management. Result in Table 25 indicates that, there is significant association between sex and participation in data gathering ( $p < 0.01$ ).

This implies that gender issues measured by sex as proxy factor has significant impact in influencing the level of participation in data management. In other words the district can not ignore mainstreaming gender issues to ensure successful implementation of the database. Women are the majority producers in this regard they are the most affected positively or negatively by any programme introduced including the database. Therefore successful implementation and management of the database depends on considering participation of women as an important factor.

#### **4.11.3 Relationship between occupation of respondent and participation in data gathering**

The results in Table 25 also indicate that there is significant relationship between the respondent's occupation and their participation in data gathering ( $p < 0.01$ ). For example farmers are less likely to participate during certain periods of the years when they are busy with farm activities especially between November and April during

cultivating, planting and weeding. However, the relation between a respondent's attitude on the database and their participation was not significant.

**Table 25: Relation among age, sex, occupation of respondents, personal attitude in data and participation in data gathering**

Variable (N = 120)	Participation in data gathering				$\chi^2$	Df	P value
	Participated		Did not participate				
	No.	%	No.	%			
<b>Age of respondent</b>							
21 - 30	17	14.2	0	0	14.616	4	0.006*
31 - 40	48	40.0	4	3.3			
41 - 50	27	22.5	4	3.3			
51 - 60	14	11.6	5	4.2			
61 - 70	0	0	1	0.8			
<b>Sex of respondent</b>							
Male	81	67.5	13	10.8	1.970	1	0.106****
Female	25	20.8	1	0.8			
<b>Occupation of respondent</b>							
Agriculture	42	35.0	13	10.8	15.908	3	0.001*
Business	4	3.3	1	0.8			
Government	55	45.8	0	0			
employee							
Employee of other institution	5	4.2	0	0			
<b>Personal attitude on data management</b>							
Not affected	8	6.7	2	1.7	0.846	2	0.655NS
Moderate affected	70	58.3	8	6.7			
Highly affected	28	23.3	4	3.3			

Level of significance: \* at 1% and \*\*\* at 10%, NS = Not significant.

#### 4.11.4 Relationship between village accessibility, its distance from headquarters and effect on data management

The study aimed at establishing whether there was direct relationship between effect on data gathering and management with village accessibility.

**Table 26: Relation between village accessibility and effect on data management**

Village accessibility (N = 120)	effect on data management				$\chi^2$	Df	P value
	Had effect		Had no effect				
	No.	%	No.	%			
Hardly accessed in a year	30	25.0	28	23.3	7.297	2	0.026**
Fairly accessed in a year	36	30.0	11	9.2			
Easily Accessed in a year	8	6.7	7	5.8			
<b>Total</b>	<b>74</b>	<b>61.7</b>	<b>46</b>	<b>38.3</b>			

Level of significance: \*\* at 5%

Table 26 shows that, there is significant association between village accessibility and effect on data management at  $P < 0.05$ . Majority of the population in the study sample (61.7%) indicated that there was effect on data management as village became less accessible from district headquarters. This implied that data gathering was likely to be influenced by village accessibility as village became less accessed throughout the year. This could be explained by the geography and location of the village. As discussed previous, most of villages in Ludewa District situated in mountainous areas and in the

slope of mount Living Stone ranges along shores of Lake Nyasa which are not accessed by road except water ways. Such areas are difficult to manage and involve high administration cost.

#### **4.12 Empirical results of effective operation of the database**

Regression analysis was used to assess the effect of explanatory variables on effective operation of the database. The explanatory variables include backstopping provided to information providers by the district ( $Z_1$ ); participation of respondents in data gathering and management ( $Z_2$ ); Accessibility of villages ( $Z_3$ ); and a dummy variable of village

category ( $Z_4$ ) for which one (1) if the village category is rural and zero (0) if otherwise. Each of these has been previously defined. Equation 3.4 which was derived in chapter three was used in empirical estimation. It is rewritten here as equation 3.4a for convenience.

$$EP_{ij} = \alpha_o + \alpha_1 Z_1 + \alpha_2 Z_2 + \alpha_3 Z_3 + \alpha_4 Z_4 \dots \dots \dots (3.4a)$$

Where all variables are as previously defined, the model was tested for multicollinearity, autocorrelation and heteroscedacity, it was found to be free of those problems.

#### 4.12.1 Pooled estimation

The result in Table 27 shows that adjusted  $R^2$  value of the model is 0.473 which is significant at 99.0% level of confidence. This means that 47.3 percent of the variation in the level of effective operation of the data management among information providers in the sample is explained by variations in the independent variables namely backstopping provided to information providers; Participation of respondent in data gathering and management; and village accessibility. A dummy variable was also included to distinguish semi urban and rural respondents.

The parameter for Participation of respondent in data gathering and management is positively related with coefficient 0.490 significant at one percent while village accessibility is positively related with coefficient 0.132 significant at ten percent. This indicates that participation of respondent in data gathering and management is positively related with effective operation of the database and village accessibility is negatively related with effective operation of the database.

**Table 27: OLS Regression results of the effect in level of operation of the database**

Variable	$\beta_j$	SE $\beta_j$	Beta	T	Sig T
(Constant)	19.169	1.565		12.248	0.000*
Backstopping ( $Z_1$ )	0.270	0.218	0.083	1.239	0.218
Participation ( $Z_2$ )	0.490	0.160	0.663	9.334	0.000*
Village Accessibility ( $Z_3$ )	-0.132	0.082	-0.112	-1.603	0.112***
Village category ( $Z_4$ )	0.261	0.329	0.055	0.794	0.429
Multiple R		0.700			
$R^2$		0.491			
Adjusted $R^2$		0.473			
Standard Error		1.730			
F value		27.680			
Significance F		0.000*			
Durbin-Watson		2.355			
Df	Regression	4			
	Residuals	115			
Sum of squares	Regression	331.524			
	Residuals	344.342			
Mean square	Regression	82.881			
	Residuals	2.994			
N		120			

Level of significance: \* at 1% and \*\*\* at 10%,

This may further be explained that, if the level of participation of respondent in data gathering and management is increased by one percent, the level of effectiveness in database operation would be increased by 49.0 % likewise if village inaccessibility is reduced by one percent the level of effectiveness in database operation would be increased by 13.2 %

Nevertheless the coefficient backstopping provided to information providers by the district is 0.270 not significant at ten percent. This indicates effectiveness in the database operation is positively related with level of back stopping provided to information providers by the district. This implies that if the district increase the rate of back stopping provided to information providers by one percent through training and other type of assistance it is likely to increase the level of effectiveness in database operation by 27.0 % holding other factors constant.

#### **4.12.3 Villages estimates**

In order to make estimations on level of effective operation in database two separate OLS regressions for semi urban villages and rural villages were run. The results for semi urban and rural villages are presented in the next sections.

##### **4.12.3.1 Semi urban estimation**

The results show adjusted  $R^2$  value of the model in Table 28 is 0.388 which is significant at 99.0% level of confidence. This means that 38.8 % of the variation in the level of participation in the database operation among information providers in the sample is explained by variations in the independent variables namely back stopping provided to information providers; participation of respondent in data gathering and management; and village accessibility. The coefficients of back stopping provided to information providers; Participation of respondent in data gathering and management; and village accessibility are 0.279; 0.546; and -0.098 respectively; being statistically

significant at five percent and have expected positive and negative signs. This implies that, back stopping provided to information providers and participation of respondent in data gathering and management; are positively related with effective operation of the database. Village accessibility is negatively related with effective operation of the database.

**Table 28: OLS Regression results of the effect in level of operation of the database in semi urban villages**

<b>Variable</b>	$\lambda_j$	SE $\lambda_j$	<b>Beta</b>	<b>T</b>	<b>Sig T</b>
(Constant)	20.077	2.451		8.191	0.000*
Backstopping ( $Z_1$ )	0.279	0.097	0.592	2.890	0.038**
Participation ( $Z_2$ )	0.546	0.251	0.638	6.154	0.000*
Village Accessibility	-0.098	0.118	-0.086	-0.833	0.409



(Z <sub>3</sub> )		
Multiple R		0.648
R <sup>2</sup>		0.420
Adjusted R <sup>2</sup>		0.388
Standard Error		1.825
F value		13.494
Significance F		0.000*
Durbin-Watson		2.204
Df	Regression	3
	Residuals	56
Sum of squares	Regression	134.852
	Residuals	186.548
Mean square	Regression	44.951
	Residuals	3.331
N		60

Level of significance: \* at 1% and \*\* at 5%

This also implies that, if the rate of backstopping provided to information providers and the level of participation of respondent in data gathering and management increased by one percent then the level of effectiveness in database operation would increase by 27.9 % or/and 54.6 % respectively. This assumes when considering net influence of one factor the other respective factors should remain constant. This also implies that, if the village inaccessibility is reduced by one percent the level of effectiveness in data management would increase by 9.8 % while other factors are held constant.

#### 4.12.3.2 Rural villages estimation

The results indicate that adjusted R<sup>2</sup> value of the model in Table 29 is 0.531 which is significant at 99.0% level of confidence. This means that 53.10 % of the variation in

the level of effective operation in the database among information providers in the sample is explained by variations in the independent variables namely back stopping provided to information providers; participation of respondent in data gathering and management; and village accessibility.

The coefficients of backstopping provided to information providers; participation of respondent in data gathering and management; and village accessibility are 0.284, 0.418 and -0.181 respectively, being statistically significant at ten percent and have expected positive and negative signs. This implies that, backstopping provided to information providers and participation of respondent in data gathering and management are positively related with effective operation of the database, while village accessibility is negatively related with effectiveness in the database operation.

In other words there is need for investment in capacity building to ensure that rate of backstopping provided to information providers and the level of participation of respondents in data gathering raised by one percent, then the level of effectiveness in database operation would increase by 28.4 % or/and 41.8 % respectively. This assume when considering one factor other respective factors should not vary. Like wise if the village inaccessibility is reduced by one percent the level of effectiveness in database operation would be increased by 18.1 % while other factors remain constant.

**Table 29: OLS Regression results of the effect in level of operation of the database  
in rural villages**

<b>Variable</b>	$\gamma_i$	SE $\gamma_i$	<b>Beta</b>	<b>T</b>	<b>Sig T</b>
(Constant)	18.840	2.235		8.429	0.000*
Backstopping ( $Z_1$ )	0.284	0.098	0.581	2.885	0.038**
Participation ( $Z_2$ )	0.418	0.065	0.648	6.402	0.000*
Village Accessibility	-0.181	0.121	-0.148	-1.502	0.139***
<b>(<math>Z_3</math>)</b>					
Multiple R		0.745			
$R^2$		0.555			
Adjusted $R^2$		0.531			
Standard Error		1.674			
F value		23.264			
Significance F		0.000*			
Durbin-Watson		2.580			
Df	Regression	3			
	Residuals	56			
Sum of squares	Regression	195.482			

	Residuals	156.851
Mean square	Regression	65.161
	Residuals	2.801
N		60

---

Level of significance: \* at 1%, \*\* at 5% and \*\*\* at 10%

The signs of all the parameter estimates in Table 26; Table 27 and Table 28 conform to expectations prior to the study except the sign of parameter for village accessibility which assumed that the level of effective operation of the database would increase as village become more accessible. The reasons for obtaining different sign of village accessibility parameter estimate can be explained that, as village become more accessible it is likely that more programmes and development activities may be allocated to such village that concentration of villagers will be on programmes which have a direct impact or gain to them.

#### **4.12.4 Hypothesis testing**

In order to determine the influence in the variation in effectiveness in the database operation parameter estimates hypothesis and comparison of performance of the database between semi urban and rural villages hypothesis were tested as follows

##### **4.12.4.1 Parameter testing**

The first null hypothesis was tested to determine whether the independent variable had any influence in the variation in effective operation of the database, meaning parameter estimates are not significantly from zero, based on *t* test (appendix 4). Since the regressions output of the *t* statistic can be obtained from Table 26; Table 27; and Table

28 then comparison of  $t$  statistic and critical value for each parameter estimate and its respective decision are summarised in Table 30

**Table 30: Hypothesis testing on parameter estimate**

Parameter	Estimates for t statistic and critical value								
	Pooled			Semi urban			Rural		
	(Df = 4)			(Df = 3)			(Df = 3)		
	$t$	$t_{\alpha/2}$	D	$t$	$t_{\alpha/2}$	D	$t$	$t_{\alpha/2}$	D
Backstopping ( $Z_1$ )	1.239	1.5	A	2.890**	3.2	A	2.885**	3.2	A
Participation ( $Z_2$ )	9.334*	8.6	R	6.154*	12.9	A	6.402*	12.9	A
Village Accessibility ( $Z_3$ )	-1.603***	2.1	A	-0.833	1.2	A	-1.502***	2.3	A

Level of significance: \* at 1%, \*\* at 5% and \*\*\* at 10%

Key:-	Df	=	Degree of freedom	$t$	=	$t$ statistic
	$t_{\alpha/2}$	=	Critical value	D	=	Decision
	P	=	P- value			
	A	=	Accept $H_0$ if $t < t_{\alpha/2}$	R	=	Reject $H_0$ if $t > t_{\alpha/2}$

Results from Table 30 suggests that, the null hypothesis should be accepted, since the computed  $t$  values (in absolute terms) are less than critical values to all parameter estimates except to parameter estimate for participation of respondent in data gathering and management. This implies that for instance holding other variable constant,

participation of respondent in data gathering and management has significant (positive) effect to the level of effectiveness of the database operation.

#### 4.12.4.2 Performance testing

The second null hypothesis was tested to compare performance of the database between semi urban and rural villages where F test (appendix 4) was used to determine if there were structural changes between regress and  $EP_{ij}$  and regressors  $Z_{ij}$ . By structural change the study meant that, the values of parameters of the model do not remain the same when considered as semi urban villages sample or rural villages sample (Gujarati, 2003). For the data given in Table 26; Table 27; and Table 28 the counter part of the proceeding three regressions are as follows:

$$\hat{EP}_{ij(R)} = 19.169 - 0.270Z_1 - 0.473Z_2 + 0.132Z_3 + 0.261Z_4$$

(12.248)            (1.239)            (- 9.334)            (1.603)

(0.794).....(3.4a)

$$R_R^2 = 0.473 \quad RSS_R = 344.342 \quad Df = 115$$

$$\hat{EP}_{ij(1)} = 20.077 - 0.279Z_1 - 0.546Z_2 + 0.098Z_3$$

(8.191)            (- 2.890)            (- 6.154)

(0.833).....(3.5a)

$$R_1^2 = 0.388 \quad RSS_1 = 186.548 \quad Df_1 = 56$$

$$\hat{EP}_{ij(2)} = 18.840 - 0.284Z_1 - 0.418Z_2 + 0.181Z_3$$

$$(8.429) \quad (- 2.885) \quad (- 6.402) \quad (1.502).....(3.6a)$$

$$R_2^2 = 0.531 \quad RSS_2 = 156.851 \quad Df_2 = 56$$

**Note:** Figures in parentheses are T-ratios

From equations (3.4a); (3.5a) and; (3.6a) Chow test was computed. The idea behind the chow test was that, if in fact there was no structural change (that is regressions in (3.5) and (3.6) were essentially the same); then  $RSS_R$  and  $(RSS_1 + RSS_2)$  and should be statistically different. The chow test (Gujarati, 2003) was proved by F statistic using equation (3.12) assuming a change in slope of coefficients (Green, 1990) as follows:

$$F = \frac{(344.342 - 186.548 - 156.851) \div 3}{(186.548 + 156.851) \div [115 - 2(6)]} \approx F_{0.05[3, (115 - 2(6))]} .....(3.12a)$$

$$F = 1.36568 \quad \approx F_{0.05(3,103)} = 8.55$$

The computed F value was 1.37 while the critical value for 3 and 103 degrees of freedom at five percent level of significance is 8.55. This indicates that, parameter estimates for semi urban villages and rural villages are not significantly different from each other (Green, 1990). These results may be interpreted to mean that while rural villages estimates had some significant impact on the level of effectiveness in operation of data management, as reflected by adjusted  $R^2$  and significance levels of its parameters however, the change did not bring into significant different in parameter estimates associated with variation in level of effectiveness in the database operation in Ludewa District. These result must however, be interpreted with cautions bearing in mind the time of three years of the database operation in the district is too short for all parameters to show a significant impact in variation for the level of effectiveness of the

database operation. Nonetheless, these results provide interesting findings, which can form the basis for acting on policy review or changes and future follow up studies on ICTs and community development. Based on the discussions of the results chapter five presents summary of major findings, conclusions and recommendations

## **CHAPTER FIVE**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Overview**

The study aimed at determining the effectiveness of the database in the realisation of Local Government Reform Programme (LGRP) objectives. The data collected in this study focused on respondents' access and use of the data from the database at community level. The LGMD provides demographics, education, health and agriculture indicators in order to facilitate planning, gathering, analysing, utilizing data within villages, wards and districts. Indicators that are processed from the database are useful for gaining the success of the local government reform designed to improve service to residents of the district. Summaries of key findings of the study are presented in the section that follows this.

#### **5.2 Major findings and conclusions**

The study revealed that majority of respondents received training on data collection only once in three years of the database operation implying that, there are no incessant programmes of training. This means, in every year employees are recruited and new information providers need to be oriented on programmes taking place in this particular case need orientation on how to manage data and utilize in planning, implementation and decision making. Nevertheless, the study shows other assistance provided by the



district include feedback reports, working facilities in terms of data collection forms, supervision, and provision of building infrastructures and furniture in some villages. However, only a minority of respondents received feedback reports.

The study also revealed that, data that is used often is administrative, governance and planning as confirmed by response from majority interviewed. This implies that, the community is not well oriented on utilizing information in other areas like marketing, production, agriculture which can facilitate them design projects that can alleviate poverty. Community is as well not well oriented in using information provided so as to enable taking advantages of programmes taking place in their localities. This is attributed by limited accessibility of villages where by about 50% of all villages are not well accessed throughout the year due to geographical feature and bad condition to some of the district or feeder roads.

Among problems which hinder effectiveness of the database operation include (i) limited free flow of information and data which is attributed by lack of political will and negligence of leaders to support community accessing information; (ii) lack of constant training on data collection and management and; (iii) lack of reliable transportation. The mountainous relief and economic status of community do not attract people to invest in public transport to different destinations from district headquarters, thus all these hinders free flow of information.

The study revealed that despite the increased investment in improving level of participation in gathering and management at village level through training and backstopping, maintenance of information provider at active age through sensitization

and awareness on health care services and improving their level of education to semi urban villages and rural villages, there is no statistical difference in the level of effective operation of the database which in turn have influence on implementing the reform in Ludewa District. Nonetheless, parameter estimates for the two village settings are numerically different as can be seen from Tables 27; 28 and; 29. Even if the study has been done in a short period of time, following operation of the database in the district, it however, gives some useful results, which have important policy implications to both at the District and at the National level.

In other words, when considering improving the level performance of any programme being implemented in rural and urban settings, policy should be designed such that it considers major factors such as mainstreaming of gender and other crosscutting issues, distance, geographical features and location from headquarters which can influence its operation according to settings whether rural or semi urban. This had implication in implementing many programmes in the country which designed were to operate uniformly through out the country; without paying a special attention to whether the area in which the project being implemented is either rural or urban, periphery or metropolitan. In this case, the database is computer based database operating in all districts in Tanzania mainland however, some of the Districts Councils don't have a reliable source of electricity to run the computers effectively, this implies that, needs more resources to generate power than to District Councils which are connected to national grid or other reliable and affordable sources. It is concluded that LGMD should not only be a good collector of data from the community but also good provider of output generated to community. This means the study has revealed that data from the

community are collected and entered in the database system while the feedback report in terms of indicators, indicator graphs and displays are not delivered to community as required.

### **5.3 Recommendations**

In the view of the above conclusions the following are recommended:

- In order to enhance data gathering, management and utilization a good backstopping mechanism to community should be designed by LGAs and adhered to it. This should include continuous on job training programmes to orient new recruited workers and information providers; timely provision of working facilities; and supportive supervision.
- Utilization of data by community should be raised only if and if all programmes taking place in community to incorporate component of sensitizing community on using simple methodology of scanning its environment (SWOT analysis) in their plans and programmes taking place in their localities. Government should continue allocating adequate resources to improve infrastructures to facilitate remote villages to be reached. Investment in E-Government should be enhanced particularly establishing of community tele-centres to enable community to access information which can enable them to gain more economically. This should be coupled with investment in education particularly secondary or post secondary education.
- Better performance of the database will be enhanced by ensuring political leaders are effectively involved in data management where by data management becomes a permanent agenda to be deliberated in Council meetings. This will enhance collective participation and accountability on good or bad

performance of data management among community, political leaders and administrators. This should be coupled with the improvement of LGAs to allocate resources to enhance data collection and utilization.

- When designing programmes which are to be implemented throughout the country considerations should be made to incorporate urban and rural settings or periphery and metropolitan settings in pilot project phases.
- Government should emphasize on improvement of the database and linking with other social and economic databases like Tanzania Social Economic Database (TSED), Tanzania Out put Monitoring System for non medical HIV and Aids Interventions (TOMSHA) and others to enable community and other stakeholders to get more comprehensive social economic profile and indicators than it does now.
- Since the database is a database which extend from macro level (national), meso level (region) to micro level (LGAs where community is) and owned by Government it is important to ensure that data collection process is financed for its effective operation, reliability and trust by all stakeholders.
- Village resource centres and village resource teams should be formed in order to enhance community participation and coordination of data collected in community by different databases to ensure output from those databases are utilized and properly stored in village offices or facilities.

#### **5.4 Suggestion for further research**

So far this study focused on assessing effectiveness of operation of LGMD at micro level (LGAs) especially community level performance between semi urban villages and

rural villages. Comprehensive study could be done to compare performance at LGMD micro level among LGAs. Further study could be done to assess performance of LGMD meso level as well.

### REFERENCES

- ACCA (2000). Information analysis. ACCA study text certificate paper 5.  
[[http://www.acca\\_infor/02.org](http://www.acca_infor/02.org)] site visited on 12/2/2007.
- Adam, L. and Wood, F. (1999). An investigation of the impact of information and communication technologies in Sub Saharan Africa. *Journal of Information Science* 25(4): 307 – 318.
- Dryden, S. (1968). *Local Administration in Tanzania*. East African Publishing House, Nairobi. 187pp.
- Green, H. (1990). *Econometric Analysis*. Macmillan Publishing Company, New York. 783pp.
- Gujarati, D. (2003). *Basic Econometrics*. Fourth Edition. Mc Graw Hill, Boston. 1002pp.
- Kajimbwa, M.; Lwaitama, A. and Kaijag, P. (2005). Capacity implications for Good Local Governance: Experience and prospects. In: *Proceedings of a symposium on local governance in Tanzania*. 23 – 24 August 2004, Arusha, Tanzania. 47 – 109 pp.
- Kapinga, D. S. (2002). Building Socialism in Tanzania: Divergences in the Conceptualization of Key Policy Issues, Strategies and Practices

- between Top Leadership and Villagers. Consultative report to the village development administration study. Development Studies Institute, Sokoine University Agriculture, Morogoro, Tanzania. 24pp.
- Kennedy, P. (1992). *A Guide to Econometrics*. Third Edition. The MIT Press, Massachusetts. 410pp.
- Kothari, C. R. (2004). *Research Methodology. Method and Technique*. Second Edition. New Age International Publishers, New Delhi. 401pp.
- Lwena, A. M. (2005). Challenges and prospect of communication and information flow between district councils and village government in Tanzania: A case study of Songea District Council. Dissertation for Award of MA Degree at University of Dar es Salaam, Dar es Salaam, Tanzania, 113pp.
- Massawe, A. A. F. (1996). *Urban management issues, problems and trends*. Mzumbe Press, Morogoro. 166pp.
- Max, J. A. O. (1991). *The Development of Local Government in Tanzania*. Educational Publishers and Distributors Ltd., Dar es Salaam. 208pp.
- Mcannany, E. G. (1980). *Communication in the third world: The role of information in development*. Praeger Publishers., New York. 222pp.
- Ngware, S. (2005). Is the Local Government Reform Programme Impacting Positively to Lives of Tanzanians? In: *ESRF policy dialogue workshop*. 20 -23 June 2005, Dar es Salaam, Tanzania. 24 - 32pp.

- Pessa, C. J. (2003). Information and Communication Technologies (ICT's) for good Local Governance in Tanzania: Case study of Dar es salaam City and Morogoro Municipality. Dissertation for Award of MA Degree at University of Dar es Salaam, Dar es Salaam, Tanzania. 100pp.
- REPOA (2006). *Local Government Reform in Tanzania 2002-2005: Summary of Research Findings on Governance, Finance and Service Delivery*. Mkuki na Nyota Publishers Ltd., Dar es Salaam. 37pp.
- Schram, W. (1964). *Mass Media and National Development: The Role of information in Developing Countries*. Stanford University Press, Stanford. 145pp.
- Shila, H. (1994). Informatics Policies Studies in Africa: Case of Tanzania. [<http://www.sas.upenn.edu/africastudies/ECA/tanzan.html>] site visited on 31/3/2007.
- URT (1982). *The Local Government (District Authorities) Act No. 7*. Government Printers, Dar es Salaam, Tanzania. 122pp
- URT (2002a). *2002 Population and Housing Census: Village and Street Statistics Vol II*. Government Printers, Dar es Salaam, Tanzania. 194pp.
- URT (2002b). *The Local Government Reform Programme in Tanzania: Country experience*.

[<http://www.victoria.ac.nz/commonwealthseminar/Papers/2002>] site visited on 19/6/2007.

URT (2003). *Ludewa District Council: Report on Data Analysis of Council Service Delivery*. Government Printers, Dar es Salaam, Tanzania. 91pp.

URT (2004). *Restructuring Manual: A Strategic Approach to Reform by Local Authority*. Government Printers, Dar es Salaam, Tanzania. 183pp.

URT (2005). *National Strategy for Growth and Reduction of Poverty (NSGRP)*. Government Printer, Dar es Salaam, Tanzania. 102pp.

URT (2006a). Report on LGMD Capacity Building to Regional secretarial and Local Government staff. [[http://www.pmoral.go.tz/the\\_reform/plan/php](http://www.pmoral.go.tz/the_reform/plan/php)] site visited on 31/3/2007.

URT (2006b). *Local Government training Manual. Local Government Reform Programme*. Government Printers, Dar es Salaam, Tanzania. 39pp.

URT (2007a). *Report on result on governance benchmarking exercises for Mbeya zone*. Government Printers, Dar es Salaam, Tanzania. 55pp.

URT (2007b). *The house hold budget survey community characteristics Tanzania mainland*. Government Printers, Dar es Salaam, Tanzania. 65pp.



Wehmeirer, S.; McIntosh, C.; Turnbull, J. and Ashby, M. (Eds). (2006). *Oxford Advanced Learner's Dictionary of Current English*. Seven Edition. Oxford University Press, Oxford. 1715pp.

## APENDINCES

### Appendix 1: Variables and their operational definitions

S/N	VARIABLE	OPERATIONAL DEFINITION
<b>1. Personal characteristics:</b>		
1.1	Age	Absolute number of years of a person since one was born,
1.2	Sex	• Being male or female in a biological sense.
1.3	Education	Highest level of formal schooling attained
1.4	Occupation	• Legal Source enabling a person to earn a living.
1.5	Attitudes	Perception of individuals towards an individual or a certain
		system operating in the area (LGMD data use)
1.6	Awareness	Ability of a person to understand of LGMD, data use.
<b>2. Independent variables:</b>		
2.1	Backstopping	Capacity of district or ward to support village improving
		LGMD data management and utilization
2.2	Participation	Involvement of Information providers in data gathering,
		utilization and dissemination
2.3	Accessibility	Ability of a village to be easily accessed through out the year
		from district head quarter.
<b>3. Dependent variable</b>		
3.1	Effective	Capacity of the LGAs in obtaining sufficient data for
	LGMD	community use and other stake holders for Planning,
	operation	controlling, Communication and other uses

### Appendix 2: Interview schedule for information providers and key Informants

#### A: GENERAL INFORMATION:

Ward Name .....Ward Type .....

Village Name .....Village Type .....

Distance from district headquarters (in kms)..... Status of accessibility .....

Respondent's Name.....Respondent's No .....

Respondent's title .....

Department/NGO/FBOs Name.....

Level of Interview.....

Date of Interview.....Enumerator No .....

**B: PERSONAL CHARACTERISTICS:**

1. Sex of respondent

**a)** Male [ ]

**b)** Female [ ]

2. How old are you? ..... in years (**fill in the space provided**)

3. What is the highest level of education you attained? *Please tick (✓) the most appropriate answer.*

**a)** Never gone to school [ ]

**b)** Pre Primary [ ]

**c)** Primary [ ]

**d)** Vocational [ ]

**e)** Adult education [ ]

**f)** O-level secondary [ ]

**g)** Certificate [ ]

**h)** A-level secondary [ ]

- i) Diploma [ ]
- j) Degree [ ]
- k) Others [ ] (specify).....

4. Occupation of respondent? *Please tick (√) the most appropriate answer.*

- a) Agriculture [ ]
- b) Business [ ]
- c) Employed by government [ ]
- d) Employed by private sector [ ]
- e) Others [ ] (specify).....

**C: AWARENESS, PARTICIPATION AND UTILIZATION OF THE DATABASE**

5. Have you ever heard about Local Government Reform Programme?

- a) Yes [ ]
- b) No [ ] **If no, ask question No.8**

6. If yes from whom/how did you get informed? *Please tick (√) the most appropriate answer.*

- a) Village leaders [ ]
- b) Ward leaders [ ]
- c) District leaders [ ]
- d) District Staff [ ]
- e) Seminar/training [ ]
- f) Extension worker [ ]
- g) Radio [ ]
- h) Books/News paper [ ]
- i) Public meeting [ ]

- j) Your village fellow [ ]
- k) Others [ ] (specify).....

7. Have you ever heard about Local Government Monitoring Database? *Please tick (√) the appropriate answer.*

- a) Yes [ ]
- b) No [ ] **If no, ask question No.10**

8. If yes from whom/how did you get the informed? *Please tick (√) the most appropriate answer.*

- a) Village leaders [ ]
- b) Ward leaders [ ]
- c) District leaders [ ]
- d) District Staff [ ]
- e) Seminar/training [ ]
- f) Extension worker [ ]
- g) Radio [ ]
- h) Books/News paper [ ]
- i) Public meeting [ ]
- j) Your village fellow [ ]
- k) Others [ ] (specify).....

9. What do LGMD address in your village/level? *Ask this question to VO/key informants.*

- a) .....
- b) .....

- c) .....
- d).....

10. Have you ever been involved in data gathering for the LGMD? *Please tick (√) the appropriate answer.*

- a) Yes [ ]
- b) No [ ] **If no, ask question No.16**

11. If yes, at what level do you gather LGMD data? *Please tick (√) the appropriate level if you are information provider.*

- a) Hamlet level [ ]
- b) Village level [ ]
- c) Ward level [ ]
- d) District level [ ]

12. What type of data do you collect?

- a) Economic data [ ]
- b) Demographic data [ ]
- c) Legal/Adminstratio data [ ]
- d) Health data [ ]
- e) Academic data [ ]
- f) Natural resource data [ ]
- g) Others [ ]

13. What is the main source(s) do you use in data gathering? *Please tick (√) the most appropriate answer(s).*

- a) Village register [ ]
- b) Community based management information systems forms [ ]

- c) Child register [   ]
- d) Other Health registers/forms and reports [   ]
- e) Education forms and reports [   ]
- f) Other sector quarterly/annual report (specify)..... [   ]
- g) Field visit [   ]
- h) Others (specify)..... [   ]

14. How frequent is source(s) mentioned above used? *Please tick (√) the most appropriate answer.*

- a) Rarely [   ]
- b) Normally [   ]
- c) Always [   ]
- d) Never [   ]

15. Where are sources used in data gathering stored? *Please tick (√) the most appropriate answer.*

- a) In cup board or bookshelf in file [   ]
- b) In the village office [   ]
- c) At home of leaders or officers [   ]
- d) In the office of other facility [   ]

16. Have you ever received any training/awareness seminar on data management in the last three years?

- a) Yes [   ]
- b) No [   ] **If no, ask question No.20**

17. If yes what did the training address? Please tick (√) the most appropriate answer.

- a) Data gathering [ ]
- b) Data utilization and storage [ ]
- c) Data dissemination [ ]
- d) Others [ ] (specify).....

18. Does your district bring feed back in terms of a printed the database/report?

*Please tick (√) the appropriate answer. Ask to information provider or key informants.*

- a) Yes [ ]
- b) No [ ] **If no, ask question No.20**

19. If yes, how frequent are data/report brought to you in the last three years? *Ask this question to information providers.*

- a) Thrice [ ]
- b) Twice [ ]
- c) Once [ ]

20. How is data/feedback report utilized in your village?  
.....

21. How many times have you filled in data gathering forms for the last three years? *Please tick (√) the most appropriate answer. Ask this question to information providers*

- a) Thrice [ ]
- b) Twice [ ]
- a) Once [ ]
- d) Never [ ] **If it is (d), ask question No.26**

22. Can you fill LGMD data gathering forms without any need of assistance for the last three years? *Please tick (✓) the most appropriate answer. . Ask this question to information providers*

a) Easily understood [ ]

b) Fairly understood need assistance [ ]

c) Not under stood need assistance [ ]

d) Not understood at all [ ]

23. How many times have you made correction on errors committed for the last three years? Please tick (✓) the most appropriate answer. *Ask this question to information providers.*

a) Thrice [ ]

b) Twice [ ]

c) Once [ ]

d) Never [ ] **If it is (d), ask question No.26**

24. Can you read, understand and correct LGMD error report without any need of assistance for the last three years? Please tick (✓) the most appropriate answer. . *Ask this question to information providers.*

a) Easily understood [ ]

b) Fairly understood need assistance [ ]

c) Not under stood need assistance [ ]

d) Not understood at all [ ]



25. How many times did your village/sector receive an error report for the last three years? Please tick (✓) the most appropriate answer. *Ask this question to information providers.*

a) Thrice [ ]

b) Twice [ ]

c) Once [ ]

d) Never [ ]

26. In your opinion, has data gathering for the LGMD improved over time? Please tick (✓) the appropriate answer.

a) Yes [ ]

b) No [ ]

c) Don't know [ ] **If it is (c), ask question No.29**

27. If yes, what has contributed to the improvement? Please tick (✓) the most appropriate answer.

a) Basic training [ ]

b) Facilitation/back stopping from ward/district [ ]

c) Experience [ ]

c) Village reform [ ]

d) Increased awareness [ ]

e) Others specify ..... [ ]

28. If not, what has hindered improvement? Please tick (✓) the most appropriate answer.

a) Lack of continuous training [ ]

b) Lack of facilitation/backstopping from District /Ward [ ]

- c) Lack of experience [ ]
- d) Lack of coordination [ ]
- e) Lack of working tools and facilities [ ]
- f) Others [ ] specify .....

29. Do you think distance from head quarter affect better implementation of LGMD in your village/ward? Please tick (√) the appropriate answer. *Ask this question to information providers*

- a) Yes [ ]
- b) No [ ]

30. If yes, do you think following factors contribute much to accessibility being a factor which affects better implementation of LGMD in your village/ward? Please indicate to what extent do you agree or disagree by writing number of codes against box provided in each factor using the following codes **(1)** strongly disagree **(2)** disagree **(3)** uncertain **(4)** agree **(5)** Strongly agree.

Items	Extent
a) Lack of reliable transport contribute to inaccessibility of village	
b) Lack of major and periodic maintenance of road affect accessibility of village.	
c) Weather during wet season strongly affect accessibility of village	
d) Geographical feature of an area strongly affect accessibility of village	
e) Distance of feeder road to major roads affect accessibility of village	
f) Others (specify).....	

31. Which means do you use to communicate with district/ward concerning data management? *Please tick (√) the appropriate answer.*

Items	Tick
a) Mobile telephone	
b) Land line telephone	

- c) Radio call
  - d) Road transportation net work
  - e) Postal mailing
  - f) Others (specify).....
- |  |
|--|
|  |
|  |
|  |
|  |

32. Which of the following do you possess? *Please tick (✓) the appropriate*

Items	Tick	
	yes	No
a) House thatched with corrugated iron or other advanced roofing materials		
b) Plough or ox - cart		
c) Bicycle		
d) Radio		
e) Torch		
f) Kerosene stove or modern cooking stove		
g) Mobile or stationery telephone		

33. If you do not own a mobile or stationery telephone do you still have access to either of them?

- a) Yes [   ]
- b) No [   ]

34. Do you get any assistance or backstopping on data gathering, accessing and utilization from district or ward level? *Ask this question to information providers*

- a) Yes [   ]
- b) No [   ]
- c) Don't know [   ]

35. If yes mention what kind of assistance? *Ask this question to information providers*

- a).....
- b).....
- c).....
- d).....
- e).....

36. Do you think data gathering, accessing and utilization have any significant impact contribution on village development?

a) Yes [ ]

b) No [ ]

c) Don't know [ ]

37. If the answer is yes explain?

.....

38. In your opinion, does the database improved the LGRP implementation? *Please tick (√) the appropriate answer. Ask this question to key information providers.*

a) Yes [ ]

b) No [ ]

39. If yes how?

.....

40. If no why not?

.....

41. Does your Village use data from the database for any purpose? Please tick (√) the appropriate answer. *Ask this question to key information providers.*

a) Yes [ ]

b) No [ ]

42. If yes, to what extent is data used in the planning and monitoring of development projects in this village? Please tick (√) the most appropriate answer. *Ask this question to key information providers.*

a) Monthly [ ]

b) Quarterly [ ]

c) Semi annually [ ]

**d) Annually** [ ]

43. Does village residence have access to data? *Please tick (√) the appropriate answer. . Ask this question to information providers.*

**a) Yes** [ ]

**b) No** [ ]

44. If no why not?

.....

45. Do other stakeholders/institutions have access to data contained in the database?

*Please tick (√) the appropriate answer. Ask this question to key informants or village Executive officer*

**a) Yes** [ ]

**b) No** [ ]

46. If yes, mention the common institutions?

**a)**.....

**b)**.....

**c)**.....

**d)**.....

**e)**.....

47. If no, why not?

.....

48. Is there an increasing trend in data use by stakeholders at (a) hamlet level (b)

village level, (c) ward levels in the last three years? *Please tick (√) the appropriate answer*

**a) Yes** [ ]

**b) No** [ ]

49. If yes, what has accounted for this trend increasing? *Please tick (✓) the most appropriate answer*

**a) Training** [ ]

**b) Facilitation/backstopping from ward/district** [ ]

**c) Experience** [ ]

**d) Awareness** [ ]

**e) Communication channel/accessibility** [ ]

**f) Others** [ ] specify .....

50. If not, what has accounted for poor utilization of data in different levels of administration?.....

51. How often do you think should the database generate data per annum? *Please tick (✓) the most appropriate answer. Ask this question to information providers.*

**a) Once** [ ]

**b) Twice** [ ]

**c) On quarterly** [ ]

**d) Others specify .....** [ ]

52. What village resources/properties does your village own/possess? *Please tick (✓) the most appropriate answer. Ask this question to information providers.*

**a) Forests** [ ]

**b) School buildings** [ ]

**c) Dispensary** [ ]

**d) Water projects** [ ]

**e) Land** [ ]

f) Others [ ] (specify).....

53. Are village resources/properties sustainably managed?

a) Yes [ ]

b) No [ ]

54. If not, how are not sustain ably managed? Explain

.....

55. Does Ludewa District Council use data for any purpose? Please tick (√) the appropriate answer. **Question 55 to 62 should be asked to key informant at district level only.**

a) Yes [ ]

b) No [ ]

56. If yes, what type of data does district use most? *Please briefly explain.*

.....

57. Do you provide any assistance or backstopping to ward and village level in data gathering, accessing and utilization? Please tick (√) the appropriate answer.

a) Yes [ ]

b) No [ ]

58. If yes mention what kind of support you provide

a).....

b).....

c).....

d).....

e).....

59. If you don't provide any support, what is the reason(s)?

.....

60. What issues does the LGRP address?

At district level:

.....

At ward/village level:

.....

61. Do you think LGRP has helped the Ward/village to improve service provision to community? *Please tick (√) the appropriate answer.*

a) Yes [ ]

b) No [ ]

62. If yes explain how?

.....

63. *In your opinion, do the following factors directly affect data gathering and management in your village/ward? Please circle the appropriate answer in each factor using the following codes (1) strongly agree (2) agree (3) uncertain (4) disagree (5) Strongly disagree*

- a) Norms, values and taboos affect data gathering 1 2 3 4 5
- b) Perception of individual affect data gathering 1 2 3 4 5
- c) Religious orientation of an individual affect data gathering 1 2 3 4 5
- d) Lack of good Governance affect data gathering 1 2 3 4 5
- e) Lack of good channel of communication affect data gathering 1 2 3 4 5
- f) Lack of effective data/report affect data gathering 1 2 3 4 5
- g) Lack of reliable data storage affect data gathering 1 2 3 4 5
- h) Lack of coordination with other information systems affect data gathering 1 2 3 4 5
- i) Occupation of individual affect data gathering 1 2 3 4 5
- j) Level of education of an individual affect data gathering 1 2 3 4 5

64. What are other problems do you think affect implementation of LGMD in your village/ward/district? Explain

.....



**THANK YOU FOR YOUR COOPERATION****Appendix 3: Observation guide during field survey**

- State of village office or other public facilities
- How documents are stored and condition of storage facilities
- How information or data are displayed to community
  - ⇒ Village/ward Public notice board
  - ⇒ Village assembly meeting minutes
  - ⇒ Presence and use of suggestion box
- Source of information used in community development planning
- Condition of facilities
  - ⇒ Office
  - ⇒ Data storage

⇒ Display

#### Appendix 4: Computation of t value and F value for t and Chow test.

##### Computation of t value for Chow test

To test hypothesis  $t$  test was used where  $t$  statistic for each parameter estimate were computed from regression output by dividing the value of the parameter with its estimated standard deviation (the standard error) mathematically presented in equation (3.4.7) as follows:

$$t = \frac{\hat{\beta}_j}{se_{\hat{\beta}_j}} \approx t_{\alpha/2} \dots \dots \dots (3.11)$$

Where:

$t$  = Calculated  $t$  statistic

$\hat{\beta}_j$  = the value of parameter estimate

$se[\hat{\beta}_j]$  = the standard error of parameter

$t_{\alpha/2}$  = Critical value read from t student table

The decision criterion to rejection of the null hypothesis (H0) is given as:

Reject  $H_0$  if  $t > t_{\alpha/2}$

**Computation of F value for Chow test**

$$F = \frac{(RSS_R - RSS_1 - RSS_2) \div k}{(RSS_1 + RSS_2) \div (n_1 + n_2 - 2k)} \approx F_{\alpha[k, (n_1+n_2-2k)]} \dots\dots\dots(3.12)$$

Where:

$F$  = Calculated F statistic

$RSS_R$  = the Restricted Residual Sum Squares (for the whole sample)

$RSS_1$  = the Residual Sum Squares for semi urban villages sub set

$RSS_2$  = the Residual Sum Squares for rural villages sub set

$n_1$  = the number of observations for semi urban villages

$n_2$  = the number of observations for rural villages

$k$  = the number of parameters including the intercept

$F_{\alpha[k, (n_1+n_2-2k)]}$  = Critical value read from F value table

The decision criterion to reject of the null hypothesis ( $H_0$ ) is given as:

Reject  $H_0$  if  $F > F_{\alpha[k, (n_1+n_2-2k)]}$

### Appendix 5: Governance Benchmarks for Council of Mbeya Zone (Summary Score Sheets as at June 2007 (Percentage Wise)

S/No.	Area of benchmark	IRINGA REGION							RUVUMA REGION					MBEYA REGION						RUKWA REGION					
		Iringa MC	Iringa DC	Kilolo DC	Mufindi DC	Njombe DC	Makete DC	Ludewa DC	Songea MC	Songea DC	Mbinga DC	Nantumbo DC	Tunduru DC	Mbeya MC	Mbeya DC	Chunya DC	Rungwe DC	Kyela DC	Mbozi DC	Ileje DC	Mbarali DC	Sumbawanga DC	Sumbawanga MC	NMkasi DC	Mpanda DC
1	Democracy	74	70	81	66	56	53	77	57	60	66	68	52	51	64	64	60	63	74	56	42	46	60	64	64
2	Community Participation	71	74	78	59	66	62	95	89	57	70	76	42	63	65	75	82	47	67	71	49	65	51	62	66
3	Rule of law	92	86	59	57	68	90	83	57	66	67	63	67	94	68	83	56	86	93	53	53	63	68	67	79
4	Integrity of leaders and workers of LGAs	70	66	55	75	78	77	80	86	75	91	67	73	88	62	53	77	73	73	77	50	78	59	77	83
5	Transparency and accountability	88	73	77	75	63	71	90	90	83	90	92	65	81	77	71	90	63	79	71	73	75	67	76	79
6	Executive and Administrative Efficiency	80	84	81	73	77	77	92	86	79	78	96	64	82	80	72	85	90	76	79	73	65	80	60	72
7	Gender Mainstreaming	72	69	35	52	75	43	81	74	72	49	64	41	72	45	42	69	49	60	32	54	45	45	39	39
8	Planning Procedures	90	88	75	75	75	90	75	93	88	88	94	88	87	88	88	88	88	88	88	88	88	88	88	87
9	Planning skills and resources available	85	79	82	80	83	85	82	82	88	85	88	68	72	86	75	83	78	80	84	75	87	68	72	87
10	Planning intervention	89	89	76	98	91	95	98	96	91	82	87	89	94	95	87	91	94	64	95	94	86	89	82	91
.	<b>Average grant Total</b>	<b>81</b>	<b>78</b>	<b>70</b>	<b>71</b>	<b>73</b>	<b>74</b>	<b>85</b>	<b>81</b>	<b>76</b>	<b>77</b>	<b>80</b>	<b>65</b>	<b>78</b>	<b>73</b>	<b>71</b>	<b>78</b>	<b>73</b>	<b>75</b>	<b>71</b>	<b>65</b>	<b>70</b>	<b>68</b>	<b>69</b>	<b>75</b>
	Position in the Region	2	3	7	6	5	4	1	1	4	3	2	5	1.5	4.5	6.5	1.5	4.5	3	6.5	8	2	4	3	1
	Position in the Zone	2.5		6	19.5	17.5	12	1	2.5	9	8	4	23.5	6	14	17	6	14	10.5	17.5	23.5	19.5	22	21	10.5

Source: Mbeya Zone Office, 2007

**Appendix 6: Correlation matrix of parameter estimates on level of effective operation of LGMD Pooled**

	$Z_1$	$Z_2$	$Z_3$	$Z_4$
$Z_1$	1.000	0.028	0.011	-0.091
$Z_2$		1.000	-0.258	0.197
$Z_3$			1.000	0.108
$Z_4$				1.000

Source: Survey data, 2007

**Appendix 7: Availability and condition of villages' office, storage and display facilities**

Village	Office			Storage facilities			Display facilities		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
Ngelenge			x			x			x
Nsungu (Manda)		x			x		x		
Luilo	x				x		x		
Kipangala		x			x				x
Nkomang'ombe		x				x			x
Kimelembe		x				x			x
Ludewa (K)		x			x			x	
Ludewa (M)	x			x			x		
Nindi			x			x		x	
Lupingu									
Mawengi	x				x			x	
Madunda		x			x				x
Milo		x			x			x	
Mavala		x			x			x	
Lasala		x				x		x	
Lupanga		x			x			x	
Manga		x			x			x	
Madilu	x				x			x	
Mundindi		x			x			x	
Amani		x				x		x	

Source: Survey data, 2007

**Key:**

- Office = Government building especially ward/village office.  
 Storage facility = Furniture especially cup boards and shelves and stationeries  
 Display facility = village meeting schedules, suggestion box and public notice board  
 x = Available at stated condition  
 Good = Facility is used effective and maintained  
 Fair = Facility is used but not maintained  
 Poor = Facility is occasionally used and not maintained.