

**MANAGEMENT INFORMATION SYSTEM FOR TRACKING PROGRESS OF
RURAL FARMING PROJECTS IN UGANDA: ACASE STUDY OF NAADS IN
ENDIINZI SUB COUNTY, ISINGIRO DISTRICT**

BY

KYOBUTUNGI UNICE

DCS/10020/81/DU

**PROJECT REPORT SUBMITTED TO FACULTY OF COMPUTER SCIENCE, IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
DIPLOMA IN COMPUTER STUDIES OF KAMPALA
INTERNATIONAL UNIVERSITY**

JUNE 2010

DECLARATION

I, kyobutungi unice, declare that this Project is original and has not been published or submitted for any other Diploma award to any other University before it was done under close supervision and guidance of my supervisor.

NAME: KYOBUTUNGI UNICE

SIGNATURE.....UNICE.....DATE 01.07.10.....

APPROVAL

This Report has been submitted for Examination with my approval as the university .

Signed:  Date: 

Mr SSEGAWA E.JAMES KIGGUNDU

DEDICATION

This project is dedicated to our dear parents Mr.Gafayo George and Mrs Aidah Gafayo brothers, sisters and friends for their tireless efforts rendered to me during the period of my study.

ACKNOWLEDGEMENT

I would like to thank the Almighty God for giving me the ability, health and wisdom to successfully complete this project research work.

I register my sincere gratitude to my beloved parents Mr.Gafayo George ,Mrs Aidah Gafayo and Brothers and sisters Joel,Charles,Annitah,Eric for the spiritual, moral and financial support accorded to me through out my course of education.

I acknowledge Mr. Ssegawa E.jemes kiggundu my supervisor, for his constant support, patience and guidance throughout the project.

Finally, I would like to express my gratitude to all the staff of Kampala International University and especially the staff of Faulty of Computer Science for the assistance that they have accorded me throughout my studies at the University.

May the good Lord richly bless everyone who has in one way or another contributed to this Project

TABLE OF CONTENTS

DECLARATION.....	i
APPROVAL.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS.....	v
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.0 Introduction.....	1
1.1 Background.....	1
1.2 Statement of the problem.....	2
1.3 The main Objective.....	2
1.4 Specific Objectives.....	3
1.5 Research question.....	3
1.6 Scope.....	3
1.6.1 Geographical scope.....	3
1.6.2 Research scope.....	3
1.7 Significance of the study.....	4
CHAPTER TWO.....	6
LITERATURE REVIEW.....	6
2.0 Introduction.....	6
2.1 Information system.....	6
2.4 Advantages of Information system.....	8
2.5 Review of methodologies.....	9
2.6 System development life cycle (SDLC).....	9
2.7 Design tools to be used.....	9
2.7.1 Visual basic.....	9
CHAPTER THREE.....	10
METHODOLOGY.....	10
3.0 Introduction.....	10

3.2 Research Procedure.....	10
3.3 Study population.....	10
3.3.1 Sampling techniques	11
3.3.2 Sample size	11
3.4 Research Instruments	11
3.4.1 Observation.....	11
3.4.2 Questionnaires	12
3.4.3 Data analysis.....	12
3.5 Development Methodology and Tools.....	12
3.5.1 Tools.....	12
3.6 Information System Plan.....	13
3.6.1 System Request.....	13
3.7 Economic feasibility.....	13
3.7.1 Organization feasibility	13
3.8 Project plan.....	13
CHAPTER FOUR;	15
DATA PRESENTATION & ANALYSIS	15
4.0 Introduction	15
4.1 Results from Interviews	15
Gender characteristics of the respondents.....	15
CHAPTER FIVE;	18
SYSTEM ANALYSIS, DESIGN AND DEVELOPMENT	18
5.0 Introduction	18
5.2 Data Input.....	18
5.5 Entity Relationship Diagram	21
Figure 5.0 Entity Relation Diagram	21
5.6 Flow chart.....	22
CHAPTER SIX.....	25
EVALUATION, RECOMMENDATIONS AND CONCLUSION	25
6.0 Introduction	25
6.1 Project implementation.	25
6.2 System implementation	25

6.3 User Interface.....	25
6.5 Recommendation	26
6.6 Conclusion.....	27
REFERENCES	28
APPENDENCES	29
APPENDIX A STUDY QUESTIONNAIRE FOR STAFF AND LOCAL FARMER...	29
APPENDIX B ESTIMATED BUDGET:.....	31

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter contains the background of the study, statement of the problem, main objective, and specific objectives scope of the study.

1.1 Background

Isingiro District is found in western part of Uganda boarding Mbarara in the North Rakia district in the east, Kiruhura district to the North and the republic of Tanzania to the south, Formally it was part of Mbarara but due to the National program of decentralization and Massive Fragmentation of District giving the autonym led to the emergency of Isingiro District. The National Agricultural Advisory Services (NAADS) program of Uganda is an innovative public-private extension service delivery approach, with the goal of increasing market oriented agricultural production by empowering farmers to demand and control agricultural advisory services. Although initial evaluations of NAADS have been quite favorable, these evaluations have been primary qualitative in nature. This study quantifies the initial impacts of NAADS in the districts and sub-counties where the program was operating by 2005. It is based on descriptive analyses of results of a survey of 116 farmer groups and 894 farmers in sixteen districts where the program was operating at the time and four districts where NAADS had not yet begun operating to control for factors that may have contributed to differing initial conditions among the communities. Based on observed differences across the NAADS and non-NAADS sub-counties, it appears that the NAADS program is having substantial positive impacts on the availability and quality of advisory services provided to farmers, promoting adoption of new crop and livestock enterprises as well improving adoption and use of modern agricultural production technologies and practices. NAADS also appears to have promoted greater use of post-harvest technologies and commercial marketing of commodities, consistent with its mission to promote more commercially-oriented agriculture. Despite positive effects of NAADS on adoption of improved production technologies and practices, no significant differences were found in yield growth between NAADS and non-NAADS sub-counties for most crops, reflecting the still low levels of

adoption of these technologies even in NAADS sub-counties, as well as other factors affecting productivity. However, NAADS appears to have helped farmers to avoid the large declines in farm income that affected most farmers between 2000 and 2004, due more to encouraging farmers to diversify into profitable new farming enterprises such as groundnuts, maize, Cows, goats and rice than to increase in productivity caused by NAADS.

1.2 Statement of the problem

The National Agricultural Advisory Services (NAADS) program of Uganda is an innovative public-private extension service delivery approach, with the goal of increasing market-oriented agricultural production by empowering farmers to demand and control agricultural advisory services. NAADS is also a key component of the government's plan to reduce poverty. That's why there need to develop a system that can track Records of each and every farmer activities and avoid mismanagement of funds given to the local farmers for developmental purposes. The current procedures use manual paper-based file folders as a means of data management, which includes data capture, processing and updating, which has created a situation where the office has to handle multitude of files on a given day. This is constrained further with the increasing number of farmers. The office of NAADS has often times had to hire facilities to reduces the immense workload to manageable sizes.

A number of files have always been reported lost this unprofessional way of doing things have left the public in a position of losing confidence in the Program and lots of funds mismanaged. This whole process is so expensive in terms of cost, time and infrastructure since it is manual. Also this paper application process has associated problems in filling, retrieval, and storage space. It is also liable to damage and destruction in case of unexpected hazards, hence the need for management information system There is no present computerized system that track Records of NAADS participant in Isingiro District, this study seeks to provide an alternative to this problem.

1.3 The main Objective

To develop an information system that can track farmer's activities and participation in the National Agricultural Advisory services (NAADS)

1.4 Specific Objectives

- i) To study and analyse the working of the current system, by examining and determining the effectiveness and efficiency of the current working procedures
- ii) To develop a system that can store farmer's records
- iii) To test and implement of the prototype system developed, to ensure that its effective and efficient and to make sure that it is operational.

1.5 Research question

- i) How will the information management system help to track farmer's activities and participation in the National Agricultural Advisory services (NAADS)?
- ii) Will the Information system ensure effectiveness and efficient operation of the National Agriculture Advisory services (NAADS)?
- iii) Of what Importance is the information system to farmer and to Government?

1.6 Scope

1.6.1 Geographical scope

The study centered on the National Agricultural Advisory Services, in Isingiro District. The study carried out in at most 9 months and it focused more on a managing information system for tracking progress of rural Farming projects participating in the National Agricultural Advisory Services, Isingiro District in Endiinzi Sub County.

Isingiro District is located in the south-western part of Uganda, 230 Km from the capital Kampala with population 50000 people living in the district, most of the people farmers.

1.6.2 Research scope

The study covered Isingiro District; Endiinzi Sub County. The study used a total sample of 100 people of which 5 of these was from the office of National Agriculture Advisory services (NAADS) in Endiinzi Sub County and the rest of the 95 was used to find out what really happens the ground regarding the study. The researcher was constituted objects like banks, coordinators, saccos, individuals and government as major stake holders of the fund.

1.7 Significance of the study

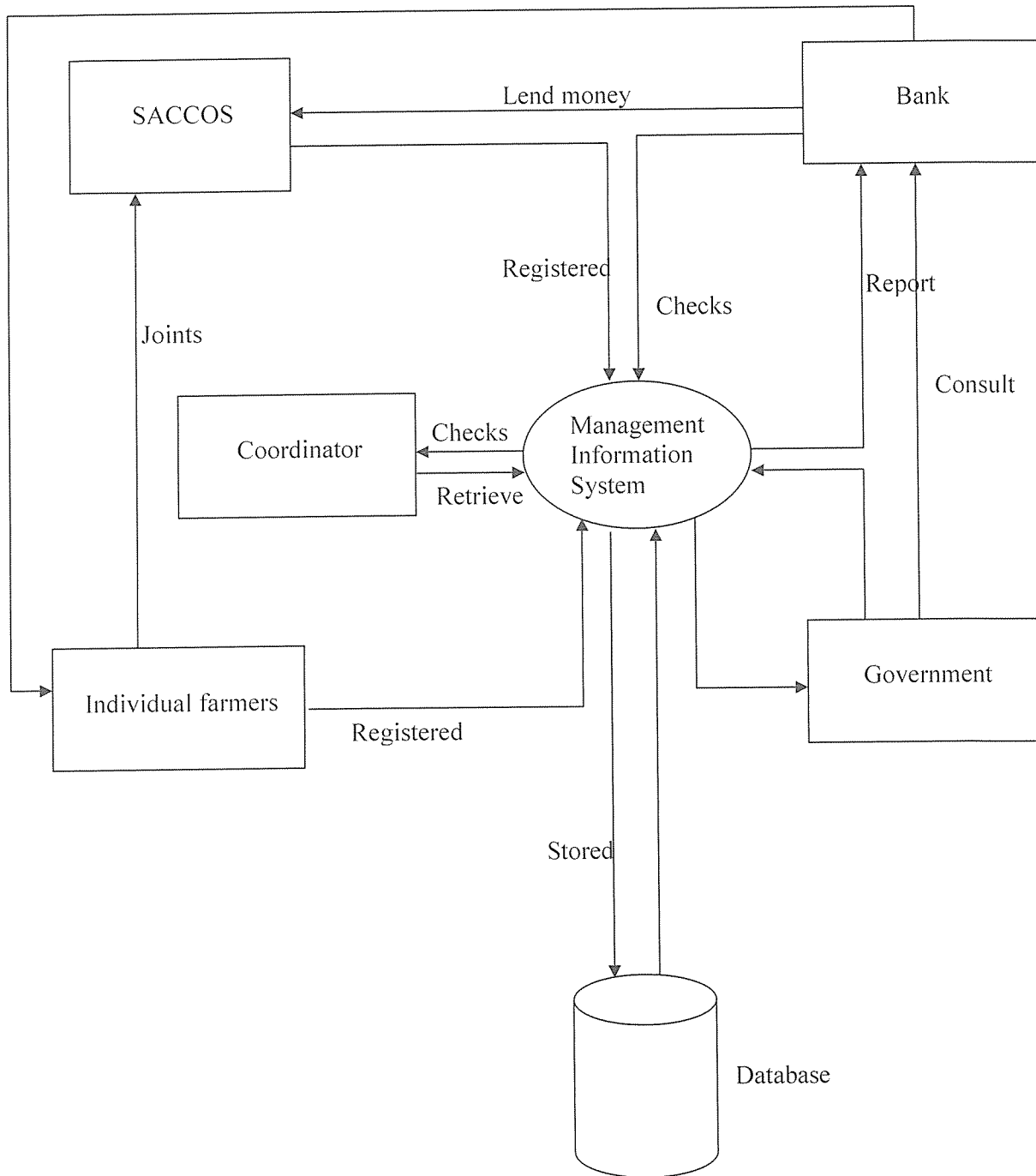
This study aided the National Agricultural Advisory (NAADs) in Isingiro District to enhance the work procedures of handling information and all the attributes that deals with NAADS Funds and Programmes, consequently cutting the time and cost involved in dealing with a specific individual by an exorbitant 95%, cut down on the archives requirements, and make the work more flexible and pleasant; this with the introduction of an information management system. The system can also be used by any other potential database based establishment who has a need to streamline document handling and enhance work structures.

Improved farmers goodwill was expected because the system ensured that time is saved and this increases efficiency. The employee moral was improved because it was less tedious to use the new system than using the manual system. The system likely enhanced better decision making, that is, through reviewing the computerized summaries the managers was able to make quick decisions based on accurate information because computers rarely make errors. The cost of developing the system was estimated from the outset of the project and it was reviewed after the end of each project phase.

Also academicians and other researchers used the researched work to compare ideas. Hopefully this project increased the security of the farmer's information from unauthorized persons. For instance sensitive information was also protected from access by unauthorized persons by using views and granting of privileges in the database.

Since system runs on a networked environment, information was shared efficiently hence reduce the time wasted by moving from one place to another. Since the system was running on a networked environment a database was used. This probably increases the privacy of farmer's information since the database was accessed by the authorized personnel only.

1.8 Conceptual Framework



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides a critical review of the issues that have been explored and studies both theoretically and empirically in the existing literature made by other scholars and academicians on stock control systems. Literature review covers different knowledge of various authors about the proposed system.

2.1 Information system

The Concept of management information systems originated in the 1960s and become the byword of almost all attempts to relate computer technology and systems to data processing in business. During the early 1960s, it became evident that the computer was being applied to the solution of business problem in a piecemeal fashion, focusing almost entirely on the computerization of clerical and record – keeping tasks. The concept of management information systems was developed to counteract such in efficient development and in effective use of the computer. The MIS concept is vital to efficient and effective computer use in business of two major reasons: It serves as a systems framework for organizing business computer applications. Business applications of computers should be viewed as interrelated and integrated computer – based information systems and not as independent data processing job.

In emphasizes the management orientation of electronics information processing in business. The primary goal of computer based information systems should be the processing of data generated by business operations.

A management information system is an integrated man – machine systems that provides information to support the planning and control function of manager in an organization (<http://www.management-hub.com>)

Aronson, (2001) information system sometimes refers to a system of persons, data records and activities that process the data and information in an organization, and it includes the organization's manual and automated processes. Computer-based information systems are the field of study for information technology, elements of which are sometimes called an "information system" as well, a usage some consider to be incorrect.

Steven Alter(2000), in his book '*Information Systems 2nd edition*' defines information systems as system that use information technology to capture, transmit, store, retrieve, manipulate or display information used in one or more business processes Steven(2000), and explain types of information system as below.

2.2 Types of information systems

Executive Support Systems

It is designed to help senior management to make strategic decision. It gathers, analysis and summarizes the key internal and external information used in business.

Management Information System

Management information system (MIS) is mainly concerned with internal source of information. MIS usually take data from the transaction processing system and summarize it into a series of management report. MIS report tends to be used by middle management and operational supervisor.

Decision Support System

Decision support system (DSS) are specifically designed to help management make decision in situations where is uncertainty about the possible outcomes of those decisions. DSS comprises tools and techniques to help gather relevant information and analysis the options and alternatives. Often involves use of complex spreadsheet and database to create "what if" model.

2.3 Characteristics of information systems

The Organization of data into information: For data to be made meaningful it must have a purpose. The purpose of the stored data should reflect the purpose and type of information system. Data needs to be processed and organised before it becomes information. Organising the data will most likely involve the processes of sorting and filtering (classifying) before it can be analysed and stored for later retrieval. Data dictionaries are used to help organise the

data. Ability to analyse the Information: Once the data has become information it needs to be analyzed to make the most of the information stored. Analysis of databases is done through the tools of queries and reports (<http://www.encyclopedia.com/articles/04322.html>)

2.4 Advantages of Information system

Steven, (2000) Information systems have facilitated quick access of data stored in databases hence saves time the user requires to access data. Information systems are accurate in their execution of services/ processes. This reduces errors made during processing of data.

Aronson, (2001) information system facilitates sharing of hardware resources like printers and disk drives. It also enables sharing of data between computers in the system. This reduces duplication of data. Information systems also enhance security of data by use of passwords and data encryption methods. It entails only people with full access rights to enter the system and make changes to the system and data stored in there. It also facilitates easy backup of data. Information systems have also provided for easy manipulation of the ever increasing amount of data.

It Facilitates planning: MIS improves the quality of plants by providing relevant information for sound decision – making. Due to increase in the size and complexity of organizations, managers have lost personal contact with the scene of operations. In Minimizes information overload: MIS change the larger amount of data into summarized form and there by avoids the confusion which may arise when managers are flooded with detailed facts. MIS Encourages Decentralization: Decentralization of authority is possibly when there is a system for monitoring operations at lower levels. MIS is successfully used for measuring performance and making necessary change in the organizational plans and procedures.

It brings Coordination: MIS facilities integration of specialized activities by keeping each department aware of the problem and requirements of other departments. It connects all decision centres in the organization. It makes control easier: MIS serves as a link between managerial planning and control. It improves the ability of management to evaluate and improve performance. The used computers has increased the data processing and storage capabilities and reduced the cost

2.5 Review of methodologies

Whitten, (2000) System development methodology is a very formal and precise system development process that defines a set of activities, methods, best practices, deliverables and automated tools for system developers and project manager to use to develop and maintain most or all information systems and software.

2.6 System development life cycle (SDLC)

Turban, (2001) the information system used the system development life cycle (SDLC). A traditional SDLC consists of four fundamental phases i.e. Planning, Analysis, Design and Implementation phases. They argue that it is cycle because it is possible to return to any phase from any other. According to them all projects must go through these phases. Whitten (2000) argues that development life cycle methodologies have seven phases these are preliminary investigation, problem analysis, requirement analysis, decision analysis, design, construction and implementation. In general terms the proposed system will use the system development life cycle which includes the four major phases which are planning, analysis, design and implementation.

2.7 Design tools to be used

2.7.1 Visual basic

Burrows and Langford, (2000) the information system will use visual Basic programming language to build the user interface. Visual Basic is a programming environment that is, a program specifically designed to facilitate the creation of new programs .Visual Basic runs on windows operating system and it is mostly used to create business applications.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter includes research procedure, target population, sample population, data collection, fact finding techniques, development methodology, information system plan, feasibility analysis, project plan, schedule, and risk assessment which were the steps taken to arrive at the new system.

3.1 Research design

The study employed both descriptive analytical research design in collection and analysis of data to enable the researcher systematically collect and present data. Both quantitative and qualitative data were used to aid in depth data collection. Under qualitative method, questionnaires were administered while the quantitative method figures and tables were used to give a clear picture.

3.2 Research Procedure

Before the research started a letter of introduction was acquired from the necessary authority. This letter was to help the researcher to be able to carry out the research in Isingiro district. The researcher was also required to book an appointment with the people that he expected to collect data from so that he could avoid disrupting their work. The researcher was also review the documentation of the existing system in order to establish the requirements of the new system. The purpose of the above procedure helped the researcher come up with a good Information system in order to provide better services to the farmers

3.3 Study population

According to Mouton (1996), a population is a collection of objects, events or individuals having some common characteristics that the researcher is interested in studying. According to Babbie and Mouton (2001), the population for a study is that group (usually of people) about whom we want to draw conclusions. The study was conducted in Isingiro District, Endiizi Sub County which 230km from Kampala city, with a population 18600 (National census 2002), of these 90% are farmers. The study population included the office of the

National Agriculture Advisory Services (NAADS), farmers of Isingiro district. The farmers provided the required information because they understood the existing system more than any other person in the District; the researcher reviewed the documentation of similar systems from other companies to compare ideas.

3.3.1 Sampling techniques

To select the sample population the researcher used simple random sampling technique because everyone involved in conducting business with the project was having an equal chance of being selected in the sample. This method ensures randomness so that personal bias doesn't influence the selection. The procedure to carry out random sampling involved obtaining a list of farmers in Isingiro District. For instance the ten farmers of Isingiro were identified and eight out of the ten farmers was picked at random

3.3.2 Sample size

A sample of 60 respondents was used in the study. It was distributed in the ratio of, 15 officials from NAAD office, 10 respondents were officials from District agriculture office (DAO) and 35 people from the local farmers. The distribution has been opted for because it gives an equal and fair representation of all respondents focused on in the study.

3.4 Research Instruments

Data management was done using cross-examination of secondary and primary data to generate a detailed analysis of variables. In order to achieve the objectives of the study, the researcher used the following methods of data collection to get information. The methods generated enough information to make conclusions.

Record review and extra reading

Textbooks and other related works of outstanding scholars were used. Written data sources was included published and unpublished documents, agency reports, newspaper articles and internet sources to get more detailed information

3.4.1 Observation

Observation method was used by the researcher. The researcher went and observes the farmer doing their normal duties in Isingiro District. Observation is a fact finding technique where by the researcher participated in or watched a person perform activities to learn about the

system being used in Isingiro District. Observation has several advantages for instance data gathered by observation can be highly liable as this method was conducted to check the validity of data.

3.4.2 Questionnaires

Also the researcher used questionnaires with the free format. These are special-purpose documents that allow the analyst to collect information and opinions from the respondents. Questionnaires provide a relatively inexpensive means for gathering data from large number of individual.

3.4.3 Data analysis

After the data had been collected was analyzed both qualitatively and quantitatively, different data sets was used in analyzing data collected. Data was tabulated showing numbers scored and percentages that summarized in descriptive form by use Excel, Access, Spss. The existing system was analyzed by collecting facts from the existing documentation so that the researcher can know the problem with the current system and be able to come up with solutions. Requirements of the new system were analyzed. This is because fact finding activities can produce requirements that are conflicting with each other.

3.5 Development Methodology and Tools

The system was developed using the system development life cycle. During the planning step, the researcher identified the scope and the boundary of the system and plans the development strategy and goals. In the analysis stage, the researcher studied and analyzed the problem, causes and effects of the new system and also analyzes the requirement that has to be fulfilled for the new system to be successful. The researcher was then designs the new system and develops a prototype .In the implementation stage, the system was put into use then the system was developed using modern technology tools.

3.5.1 Tools

Visual basic programming language will be used to develop the user interface. This is because visual basic offers a strong Graphical User interface (Aronson, 2001). MYSQL will be used to store the information and handle the large number of clients. This is because MYSQL can be used in distributed computing, that to say it can be used in a networking

environment. The application operates on Windows operating systems this is because windows operating system is widely used in many organizations.

3.6 Information System Plan

3.6.1 System Request

System request report is a document which tries to solve the problem of the organization. It shows the value of the system to the organization.

Expected functionality of the system

The system is expected to automate the NAADS programs in Isingiro District. The system was also run on a networked environment (LAN) share the resources i.e. the database. The system enabled the users to know the number of farmers stored.

3.7 Economic feasibility

The expected benefits of building the system was (tangible benefits) Fewer processing errors because all processes was automated and decreased response time between when a query is sent and when the feedback is received was expected, also elimination of job steps i.e. Recording the number of farmers can be done by one individual. Also the overall expenses of the project were reduced because of reduced number of employees.

3.7.1 Organization feasibility

The management and the end users was have a positive attitude towards the system because it has been tedious conducting the manually. Although some end-users may resist the new system, for the fear of losing jobs, this problem can be avoided by retraining the employees and motivating them. It was also be difficult getting information from the office of NAADS because of their tight schedule. Training users is expected to be easy because the system have an easy to use graphical user interface.

3.8 Project plan

The project plan was based on the four phases of the system development life cycle (SDLC) which includes planning, analysis, design and implementation. During the planning phase the researcher produced a system request report. This is a document produced by the researcher to show the need of a new system for an organization. It includes project name, name of the

organization, and the expected functionality of the system. The researcher was also required carrying out a feasibility analysis and coming up with a feasibility analysis report. Also the researcher was required drawing up a schedule to show the various tasks and activities against a specified time frame. It was also be necessary to carry out a risk assessment and come up with a risk assessment report.

Analysis phase

During the analysis phase, the researcher was required studying the existing system (current system) and was expected to come up with a current system report. This report shows the strength and weakness of the existing system. The researcher was also required determining the requirements of the new system and come up with a report. This report identified data, process and interface requirement of the new system. Also the researcher was expected to produce a conceptual design of the database. This was involved coming up with a conceptual design model which shows logical structure of the entire database. The target users of the system were identified.

Design phase

The researcher was required producing process models i.e. come up with a UML or data flow diagrams to show the flow of data through the system and work or process performed by the system. The user interface and screen displays forms and report designs were also be produced. The system architecture design was produced. This was included coming-up with network models, hardware and software specification and also security design of the new system. Program designs were produced to show how the program files linked to each other.

Implementation phase

During the implementation phase the researcher constructed the application and the database program codes, database and documentation was done during this phase. The researcher documented the program tools and hardware tools and came up with a list of the software and hardware tools which was used to develop or build the system. During this phase the researcher was required to produce a change management plan. This is a plan for organizational issues such as training, assessing cost-benefits of the system change of management policies etc

CHAPTER FOUR;

DATA PRESENTATION & ANALYSIS

4.0 Introduction

This chapter sets out to give the findings of the research instruments used in the study. A detailed analysis, interpretation and discussion of the results is obtained from a group of informants (sample) selected from a target population comprising of farmers, staff working with NAADS in Isingiro District (Endiinsi Sub county)

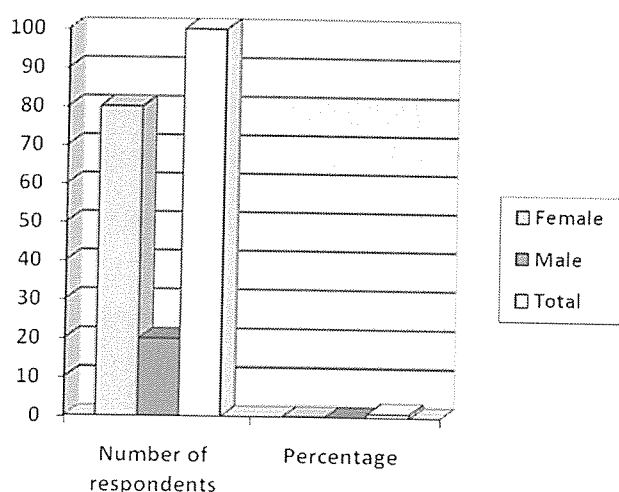
4.1 Results from Interviews

Gender characteristics of the respondents

The research interviewed 100 respondents in total of which 10 of them were from staff of NAADS and the rest were farmers of the study area. They were purposively chosen because they were expected to have information pertaining to the study.

Table 1: 4.1: Sex characteristics of respondents

Gender	Number of respondents	Percentage
Female	80	80%
Male	20	20%
Total	100	100%



The table above reflects the number of men and women who responded to the interview. Out of the population of 100 respondents 20 were males making 20% while females were 80 making 80%. Similar questionnaire was administered to both male and female respondents. The number of females was higher due to several factors among which include; the ratio of women to men in the study area is high hence there were many chances of capturing female responses as compared to males.

Females were more willing to respond to the topic since they carry much of the burden of farming in most Villages in this district. The other factor was that the study was conducted during working hours where majority of men work outside their homes unlike women who largely work within their area of residence.

4.2 Result from Questionnaires

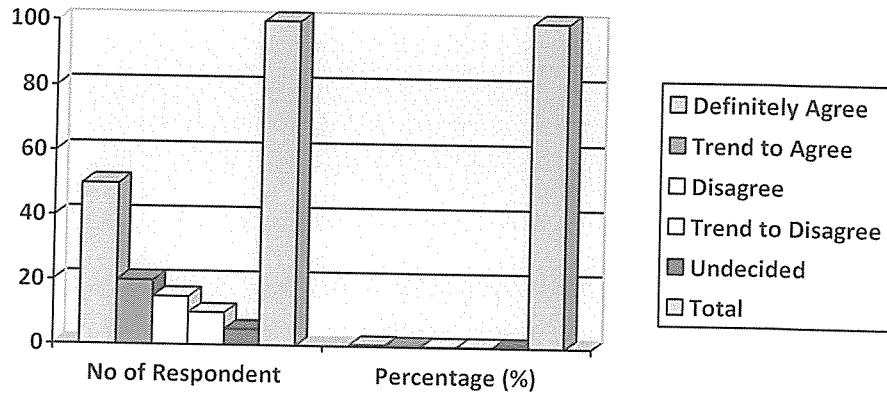
Among 100 questionnaires distributed 95 questionnaires were collected from respondents, after removing 3 unusable questionnaires, ninety two (n=92) were retained for data analysis. The response rate was 92 % this percentage was high because these questionnaires were filled by the farmers in their own time. After collecting the information from the sampled group of farmers by the use of questionnaire the researcher presented the data in the table and then in a bar graph. The samples of the table and bar graphs are discussed below.

4.3 Response from Questionnaires

Statement 1: Will the New system be effective and efficient in tracking farmer's activities?

This statement was to help in determining whether the respondents considered new systems effectiveness

Response	No of Respondent	Percentage (%)
Definitely Agree	50	50%
Trend to Agree	20	20%
Disagree	15	15%
Trend to Disagree	10	10%
Undecided	5	5%
Total	100	100



The total population surveyed gave their views on this statement and indicate 50% of the population agreed that the new system, if implemented it was even more effective than the old system and these were mainly farmers were un contented of the old system, however 20% were about to agree but they need time to be trained on how the new system was work. The results of the survey clarifies that 15%, 10%, of the population did not recognise the effectiveness of the new system because they got worried of losing their Jobs and these were some of staff from the office NAADS, 5% were undecided because they were green about the topic of discussion.

CHAPTER FIVE;

SYSTEM ANALYSIS, DESIGN AND DEVELOPMENT

5.0 Introduction

This chapter explains the logical design, physical design developed by the researcher, entity relationship diagram, flow chart, the new design system, data input and findings from questionnaires and observation. The new system is designed to meet the needs of farmers. It was expected to overcome the shortfalls associated with the current system.

5.1 System analysis

The New System Design.

The new design system is a platform depended software that runs on windows only. It automates virtually all the business processes and stores the data in a database developed. The data on the system is protected by user names and passwords.

Problem of Current System

The researcher made a survey about NAADS in Isingiro district to find out how it runs its programs and activities. Most of the work is done manually,

Purpose of the System

The major purpose of the system is to disseminate the NAADS program and also work as a data base where Management can access information about farmer who participates in the program and to avoid embezzlement of funds which is common today in NAADS.

5.2 Data Input

Data/command is inputted using the mouse and keyboard. There is a provision for the user to type on a provided space to search for something in the database. The user interacts with the system using a graphical user interface which is simple and easy to use.

System Requirements

Before embarking on the project, an analysis was carried out to determine what was required in order for the project to be a success.

This analysis mostly included the cost benefit analysis, collection of the necessary data to be displayed on the site.

5.3 Software Requirement

For the management information system development, the following software was needed:

- Network operating system software (windows XP)
- Windows NT version 6.0
- Internet service provider access e.g. Info COM
- Visual fox pro
- Visual inter dev

Hardware Requirements

The following hardware needs were identified

- 2 computers (Pentium 4) server
- 4 computer (Pentium 5) server
- 1 GB of RAM-P
- 4 or more computer for the client computers

Security requirements

- Firewalls
- Data encryption

Other Related Requirements

- Speakers
- Uninterrupted power supply-UPS
- Cables
- Hubs/Switches
- Satellite dish
- Dial up systems
- Printers
- Scanners
- External Modern and fax
- And other hardware which may be needed from time to time
- External USB hard disk

5.4 Logical design

This is concerned with the conversion of logical records structures of a data model supported by a database management system identifying entities and their matching attributes and the relationship types determining the attributes domain. It involves the use of entity relations

diagrams. Design shows not only what a system does, but also how the system is physically and technically implemented. It transforms the logical design material into real computer work and describes how the logical structure is to be physically implemented in the target database management system

Table 5.0 Farmers Table

The farmers table shows the farmers in the database.

Field	Type	Constraints	Description
Farmers_id	Varchar(10)	Primary key	Farmer identification number
Farmers_name	Varchar(15)	Required	Farmer's names
Address	Varchar(15)	Required	Address of the farmer
Village	Varchar(19)	Required	Village of the Farmer
Phone No	Varchar(27)	Required	Telephone number of the farmer

Field shows the attributes in the Farmer table which are Farmers_id which shows the Farmers identification number, Farmers name which describes the name of the Farmer, address which describes farmer's residence, village which describe the village where the farmer stay.

Type shows the data type and data size of each attribute while Null describes whether the field should be left blank or not (null or not null)

Table 5.2 Item Table

The Item table show the various Item that the farmers need. Their category name and many others.

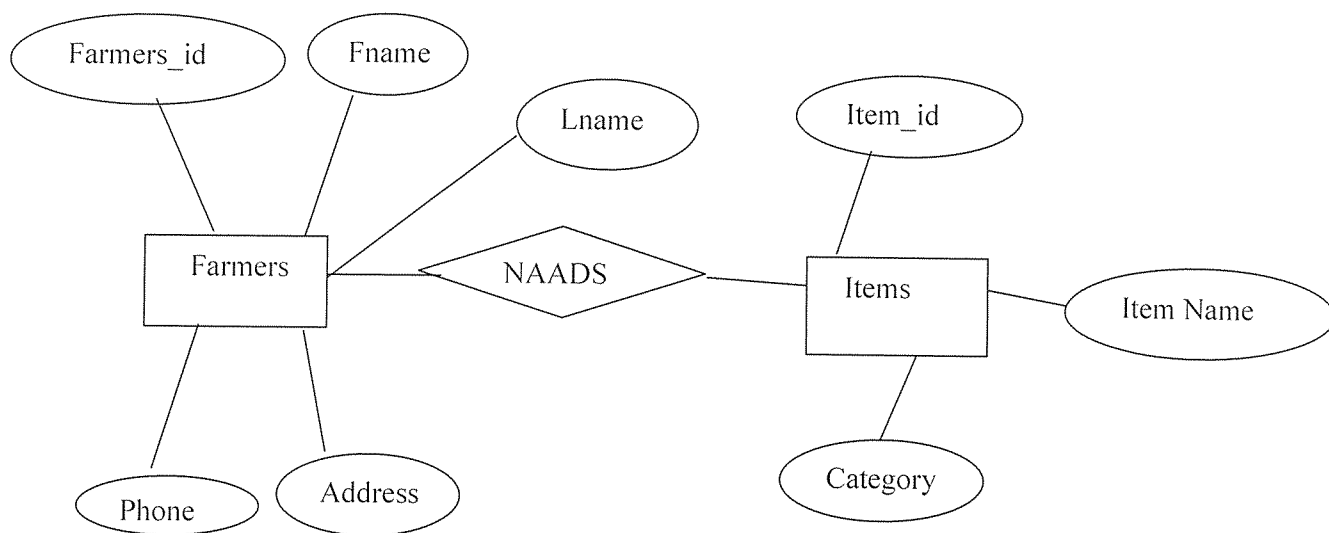
Field	Type	Constraints	Description
Item_Id	Varchar(15)	Primary key	Item's identification number
Item_name	Varchar(17)	Required	The name of the item
Category_id	Varchar(15)	Required	The category

Field shows the attributes in the item table which are item_id and it shows the item identification number, item_name which describes the name of the item. Category-id which describe the category of the item. The data type and data size of each attribute while Null describes whether the field should be left blank or not (null or not null).Description shows what each field describes.

5.5 Entity Relationship Diagram

An entity relationship model is part of system development methodology that provides an understanding of the logical data requirement of a system independently of the systems' organization and process. Its also reflects a static view of the relationship between different entities

Figure 5.0 Entity Relation Diagram

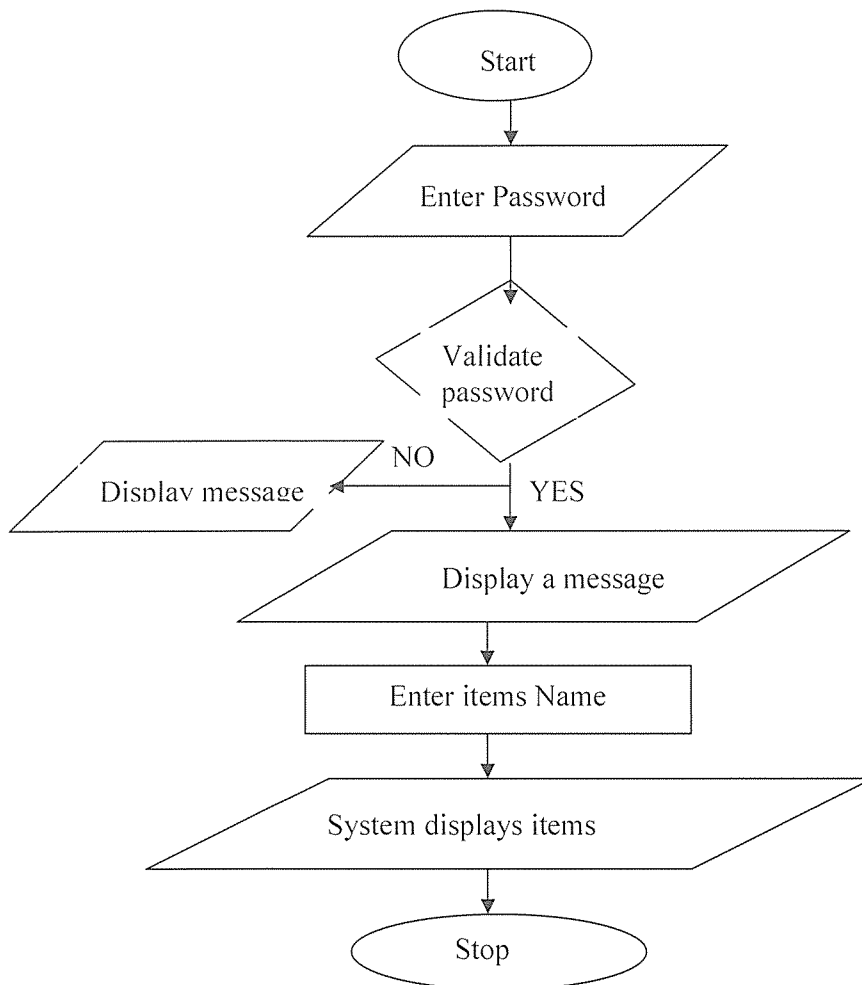


From the above diagram, it indicates that farmers can participate in NAADS program and the relationship between the farmers table and Items tables is many to many. Also we can have many farmers participating in many NAADS program. For instance one farmer can participate in two different Item for example a farmer may decide to participate in Agriculture and poultry at one given moment.

5.6 Flow chart

Data flow diagram is a tool that depicts the flow of data through a system and the work of processing performed by the system (Jeffrey and Whitten, 2001). It can also be described as a graphical modeling technique that models the sources and destination of data inputs and outputs and the data maintained by the information system. It's a graphic design that shows both how data flows to, from and within an information system and various processes that transforms the data

Figure 5.1 flow chart

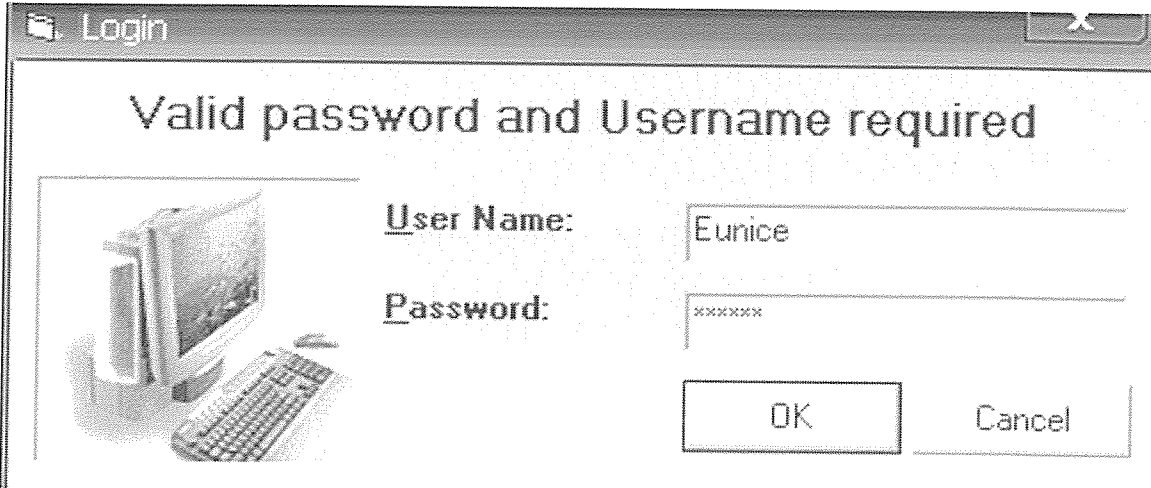


The above flow chart shows how the farmer interacts with the system. When a farmers enters items name the system displays the item.

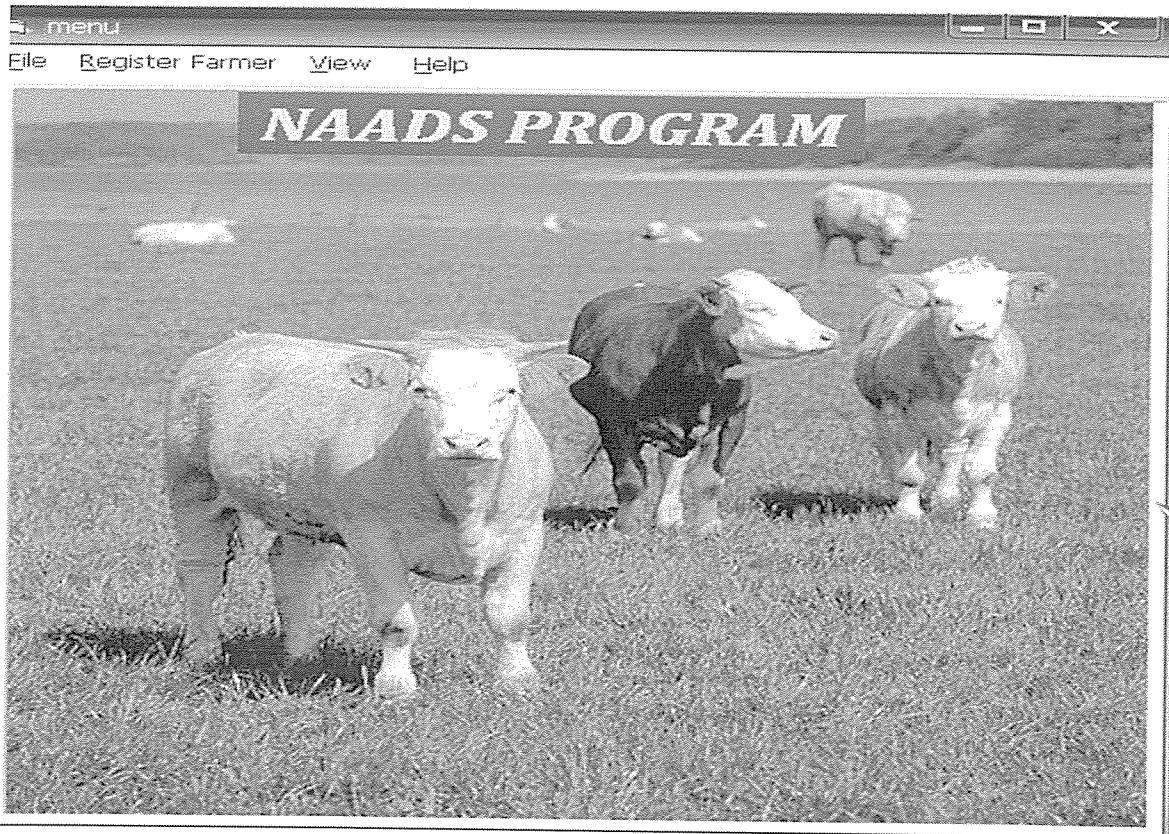
5.7 Physical Design

This dealt with the creation and development of interfaces for which data was visualized by the user.

LOGIN INTERFACE



MENU INTERFACE



REGISTRATION INTERFACE

FARMERS REGISTRATION SYSTEM

Farmers_ID: 12

First Name: Kyobutungi

Last Name: Eunice

Phone No: 775965270

Address: isingiro

Buttons: Save, Previous, Next, Add New, Delete, Go main menu, View Report, Exit

ITEMS INTERFACE

ITEMS REGISTRATION FORM

Item_ID: 1

Item Name: cassava

Category: cereals

Buttons: Save, Previous Item, Next Item, Delete Item, Add New, Menu, View Report, Search Item

CHAPTER SIX

EVALUATION, RECOMMENDATIONS AND CONCLUSION

6.0 Introduction

This chapter explains the system implementation, evaluation, recommendation and conclusion arrived at by the researchers.

6.1 Project implementation.

To implement the system acquiring the installation requirements e.g. hardware and software was needed. Planning analysis and project writing was done. The System was designed and users were trained on how it works. This was done in a period of two days because the user interfaces provided a short learning curve. System testing and review was also done to ensure that it was performing as it was designed to perform. It was reviewed to ensure that it has met the objectives The System was then implemented and a report was written.

6.2 System implementation

User training

The trainees to work with the new system were selected and trained. These are system users and Training involved teaching and guiding the users on how to operate and manage the system program plus interfaces.

6.3 User Interface

The goal of the interface design is to provide the best way for people to interface with the computers, or what is commonly known as human computer Interface (HCI).Provision of good interface is becoming more important because of its impact on the system. This impact is increasing, because most people in office are spending more time with computers as part of their normal work –they enter transactions retrieve data, design artifact, and do other myriad things that to be done in the office. Their work and satisfaction are improved with better interface, leading to an improvement in their quality of the work and the effectiveness of the office.

Many people believe that improving interaction between people and computers is one of the most important activities in design. One of the most important reasons for paying attention HCI is that, nowadays, computers are used nearly by everyone, not only people closely associated with computers. People are no longer interested in technology behind the computers; they simply want a tool that is easy to use and can help them with their problems. They do not want to spend a lot of time learning about computer software, they just want computers to make their own work easier. A good interface certainly helps to fulfill this goal.

6.4 Evaluation of the new system.

The new system if implemented was achieving the following: the information system controlled data redundancy in the NAADS thus improving performance. Also the system was ensuring data integrity within the organization since there was only one single storage area of data.

The system increased efficiency and effectiveness in its operations, making it stand at the competitive environment. For instance, the system was permit only valid entries into the database. To make sure that this is accomplished; the system was validated the user's entries. The system was permitted only authorized users to update the data in the database whenever it's necessary. This was achieved by use of passwords and usernames also the system permitted instant data storage, fast retrieval, monitoring NAADS program.

Although the new system achieved the above performances it has some Limitations.

For instance a comprehensive computerized record system should be capable of doing all that the new system has been designed to do.

6.5 Recommendation

NAADS limited should adopt the database in order to store farmers' information and also record details. This enables easy retrieval of farmer's records.

It should also test the system in order to ensure that it of the expected quality. Testing the system avoids unexpected failure or break down which may lead to lose farmer's loyalty. Testing the system ensures that bugs are identified and taken care of before full system implementation takes place. NAADS should also use the user-interactive information system because it is easy for the users to learn how it is used. Interactive user systems have a short learning curve which is cost effective and also save time.

6.6 Conclusion.

This project can be considered to have achieved most of the set goals and objectives as they were intended during the analysis phase. For instance a database to store the farmer's information was designed and implemented. This is expected to increase efficiency and proper record keeping

Also the information system and business processes of NAADS were automated and computerized. Farmer records are computed automatically which reduces the time taken to serve one farmer.

A user interactive system was also designed. The information system has attractive interfaces which are easy to learn. This has reduced the time and money spent by the NAADS on training new employees, this is because user-interactive systems have a short learning curve.

After the system was developed, it was tested to ensure that it was functioning as expected and to ensure that it had no bugs. System testing avoids future system breakdowns which may cost NAADS daily

REFERENCES

Aronson E, (2001) Decision Support Systems and Intelligent Systems Pearson Education Inc. India

Case J, Bradely A, Millspaugh C (2000) Programming in Visual Basic 6.0. McGraw-Hill. New York

David Flanagan, (1997) Java in A Nutshell. O'Reilly and Associates Inc. United States of America.

Hoffer J, George F. and Valancith (2005) Modern system analysis and design, Benjamin/cummings. Masachusetts.

Jeffrey Whittin, Lonnie .D Bentley, Kevin C Dittman (2000) System Analysis And Design Methods. McGraw-Hill. New York.

John Edwards, Sage Software (2006) [http://itconsulting.com/interviews/sfa-trends-chris-reich-12\(2006\)](http://itconsulting.com/interviews/sfa-trends-chris-reich-12(2006))

Ramachandra, T.m Nambissan, (1995) Computerized Business Application. Suned Golgotia. India

APPENDENCES

APPENDIX A

STUDY QUESTIONNAIRE FOR STAFF AND LOCAL FARMER

TOPIC: Management information system for tracking progress of rural farming projects in Uganda

This questionnaire is seeking information about the information system for tracking of rural farming project in Isingiro district. The information you will provide will be treated with the highest level of confidentiality.

You are kindly asked to fill the form below appropriately.

Guidelines: Put a tick in the appropriate box.

Objective: To study and analyse the working of the current system, by examining and determining the effectiveness and efficiency of the current working procedures.

Question1

(a) Will the New system be effective and efficient in tracking the progress farmer's activities?

Agree

Trend to Agree

Disagree

Trend to disagree

(b) What do you think about the management information system being developed to be used for tracking the progress farmer's activities in your area?

It's necessary

Not necessary

I don't know

Objective: To develop a system that can store farmer's records

Question 2

(a) Are the old systems computerized?

Yes

No

(b) What do you think about development and implementation of a computerized system?

It's necessary

Not necessary

I don't know

Objective: come up with a user interactive management information

Question 3

(a) How long does it take to train new employees on how to use the current system?

1-2 weeks

2-4 weeks

More than a month

APPENDIX B

ESTIMATED BUDGET:

Items	Cost in Uganda Shillings
Stationary	200000
Transport	150000
Data collection	100000
Total	450000

APPENDIX C

System code for the login interface

Option Explicit

Public LoginSucceeded As Boolean

Private Sub cmdCancel_Click()

'set the global var to false

'to denote a failed login

LoginSucceeded = False

Me.Hide

End Sub

Private Sub cmdOK_Click()

'check for correct password

If txtPassword = "eunice" And txtUserName = "Admin" Then

'place code to here to pass the

'success to the calling sub

'setting a global var is the easiest

LoginSucceeded = True

Me.Hide

frmmenu.Show

Else

MsgBox "Invalid Password, try again!", , "Login"

txtPassword.SetFocus

SendKeys "{Home}+{End}"

End If

End Sub

System code for the MDI interface

```
Private Sub details_Click()  
frmfarmer.Show  
End Sub
```

```
Private Sub exit_Click()  
Me.Hide  
End Sub
```

```
Private Sub item_Click()  
frmitem.Show  
End Sub
```

```
Private Sub Picture1_Click()  
  
End Sub
```

System codes for the farmers registration

```
Private Sub cmdaddnew_Click()  
Adodc1.Recordset.AddNew  
End Sub
```

```
Private Sub cmddelete_Click()  
On Error Resume Next  
confirm = MsgBox("Are sure you want to delete this record?", vbYesNo +  
vbExclamation, "Deletion confirmation")  
If confirm = vbYes Then  
Adodc1.Recordset.Delete  
MsgBox "Record deleted!", , "Message"  
Else  
MsgBox "Record not deleted!", , "message"  
End If  
End Sub
```

```
Private Sub cmdexit_Click()
```

```
Unload Me
```

```
End Sub
```

```
Private Sub cmdmenu_Click()
```

```
Me.Hide
```

```
frmmenu.Show
```

```
End Sub
```

```
Private Sub cmdnext_Click()
```

```
On Error Resume Next
```

```
Adodc1.Recordset.MoveNext
```

```
End Sub
```

```
Private Sub cmdprevious_Click()
```

```
On Error Resume Next
```

```
Adodc1.Recordset.MovePrevious
```

```
End Sub
```

```
Private Sub cmdsave_Click()
```

```
On Error Resume Next
```

```
Adodc1.Recordset.Save
```

```
End Sub
```

```
Private Sub cmdviewreport_Click()
```

```
farmer.Show
```

```
End Sub
```

```
Private Sub Frame1_DragDrop(Source As Control, X As Single, Y As Single)
```

```
End Sub
```

System codes for the items registration

```
Private Sub Command1_Click()
```

```
End Sub
```

```
Private Sub Adodc1_WillMove(ByVal adReason As ADODB.EventReasonEnum,  
adStatus As ADODB.EventStatusEnum, ByVal pRecordset As  
ADODB.Recordset)
```

```
End Sub
```

```
Private Sub cmdaddnew_Click()
```

```
Adodc1.Recordset.AddNew
```

```
End Sub
```

```
Private Sub cmddeleteitem_Click()
```

```
On Error Resume Next
```

```
confirm = MsgBox("Are sure you want to delete this record?", vbYesNo +  
vbExclamation, "Deletion confirmation")
```

```
If confirm = vbYes Then
```

```
Adodc1.Recordset.Delete
```

```
MsgBox "Record deleted!", , "Message"
```

```
Else
```

```
MsgBox "Record not deleted!", , "message"
```

```
End If
```

```
End Sub
```

```
Private Sub cmdmenu_Click()
```

```
Me.Hide
```

```
frmmenu.Show
```

```
End Sub
```

```
Private Sub cmdnextitem_Click()
```

```
On Error Resume Next
```

```
Adodc1.Recordset.MoveNext
```

End Sub

Private Sub cmdpreviousitem_Click()

On Error Resume Next

Adodc1.Recordset.MovePrevious

End Sub

Private Sub cmdsave_Click()

On Error Resume Next

Adodc1.Recordset.Save

End Sub

Private Sub cmdsearch_Click()

On Error Resume Next

Dim strsearch As String

strsearch = InputBox("Enter the Item Name.")

Adodc1.Recordset.MoveFirst

While Not Adodc1.Recordset.EOF

If Val(strsearch) = Val(Adodc1.Recordset.Fields(0)) Then

MsgBox ("search successful")

Exit Sub

Else

Adodc1.Recordset.MoveNext

End If

Wend

MsgBox ("Record not found")

End Sub

Private Sub cmdviewreport_Click()

DataReport2.Show

End Sub

Private Sub Frame1_DragDrop(Source As Control, X As Single, Y As Single)

End Sub