

FARMERS' PARTICIPATION FOR SUCCESSFUL RURAL FOOD SECURITY

Effectiveness of farmers' participations in NAADS project for improved yields

The case study of Pader District, Uganda

**A Research Project submitted to Van Hall Larenstein University of Applied Sciences
in partial fulfillment of the requirements for the award of Professional Master Degree
in Management of Development**

Specialization: Rural Development and Food Security

By

Ochen Morrish

Van Hall Larenstein University of Applied Sciences

Part of Wageningen UR

September 2011

© Copyright Ochen Morrish 2011. All rights reserved

Van Hall Larenstein, Part of Wageningen UR, The Netherlands.

Permission to use

This research project is submitted in partial fulfillment of the requirements for a Postgraduate Degree. I agree that the library of this University may make freely available for inspection. I further agree that permission for copying this research project in any manner, in whole or in part, for scholarly purposes may be granted by Larenstein Director of Research. It is understood that any copying or publication or use of this research project or parts thereof for financial gain shall not be allowed without my written permission. Recognition shall be given to me and to the University in any scholarly use which may be made of any material in my research project.

Request for permission to copy or to make other use of material in this research project in whole or part should be addressed to;

Director of Research
Larenstein University of Applied Sciences
Part of Wageningen UR
Director of Research
P.O. Box 9001
6880 GB, Velp
The Netherlands
Fax: 0031 26 3615287

Acknowledgement

I would like to thank God for keeping me safe and healthy throughout the course and at the time of this study.

Appreciation goes to Nuffic for providing all the financial support, and the hosting institution, Van Hall Larenstein University of Applied Sciences which facilitated the study so well in the Netherlands.

I highly recognise and appreciate the efforts made by my supervisor Dr. Bernard Gildermacher for his parental and technical guidance during the time of his supervision which shaped the direction and quality of this thesis.

The Specialization Coordinator, Dr. Eddy Hesselink and all lecturers for their tireless efforts during my academic time in this University. I equally recognize my classmates for their valuable support during this demanding course.

At my workplace, I appreciate the efforts made by colleagues and supervisors in giving me relevant data and ample time to concentrate on my research.

To all my family members; Joan (wife), Jos (son), Jim (daughter), and Doreen (niece), I do greatly appreciate your endurance during my absence. It had been difficult time to be away from you in the last one year when I deprived you of my physical presence.

Love and blessings to all those who contributed in one way or another to helping me and my family in Uganda during the course of this study.

Table of contents

Permission to use	ii
Acknowledgement	iii
Table of contents	iv
Lists of tables.....	vii
Lists of figures	viii
Lists of Acronyms.....	ix
Abstract	x
CHAPTER ONE: INTRODUCTION	1
1.1 Further research.....	2
CHAPTER 2: RESEARCH PROBLEM AND METHODOLOGY	3
2.1 Problem Context.....	3
2.2 Research Problem statement.....	3
2.3 Working Definitions	4
2.4 Objective of the research	5
2.4.1 Main research question.....	5
2.4.2 Sub research questions.	5
2.5 Study area	5
2.5.1 Farming systems.....	6
2.5.2 NAADS program	7
2.6 Research Strategy	8
2.6.1 Research Study frame work.....	8
2.6.2 Respondents.....	8
2.6.3 Data collection and tools used.....	9
2.6.4 Data Analysis and tools used.....	10
2.6.5 Limitations/challenges of the research.	11
CHAPTER 3: PARTICIPATION AND EXTENSION CONCEPTS.....	12
3.1 Unraveling main theoretical concepts.....	12
3.2 The concept of participation	12
3.2.1 Participation process	13

3.2.2 Types and levels of participation	13
3.2.3 Importance of participation	14
3.2.4 Obstacles to participation	14
3.3 Agricultural extension concept	15
3.3.1 Extension and Participation.....	16
3.3.2 Extension methods and Participation	16
3.4 Agricultural extension in Uganda.....	17
3.5 Farmers' local knowledge and participation.....	18
3.6. Enterprise Selection and extension.....	19
3.7 Groups' social capital and participation	19
3.8 Gender and participation process.....	19
3.9 Off farm and non- farm activities.....	20
CHAPTER 4: RESULTS AND FINDINGS	22
4.1 Implementation criteria and farmers' participation	22
4.1.1 Criteria in enterprise selection	22
4.2 Extension methods and participation.	25
4.2.1 Extension coordination and farmers participation.....	26
4.2.2 Staffing and inputs	26
4.3 Household characteristics and participation	27
4.4 Ownership of NAADS projects.....	28
4.4.1 Other household livelihoods.....	28
4.5 Gender and participation.....	29
CHAPTER 5: DISCUSSIONS AND ANALYSIS.....	31
5.1 Farmers and NAADS participation criteria.	31
5.1.1 Enterprise selection criteria and farmers' participation	33
5.2 Extension methods and participation	34
5.2.1 Coordination of farmers' extension	35
5.3 Ownership of NAADS projects and other household livelihoods.....	36
5.4 Gender and participation.....	37
CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS	39
6.0 Conclusion.....	39
6.1 General conclusion (main research question)	39

6.1.1 NAADS implementation and coordination criteria (Research question 1)	39
6.1.2 Extension and coordination methods (Research question 2)	39
6.1.3 Ownership on NAADS project by farmers (Research question 3 and 4)	40
6.1.4 Participation of women in the program (Research questions 2-5)	41
6.1.5 The success of the approach in increasing and improving yields (Research question 5).....	41
6.2 Recommendations to NAADS policy makers (NAADS secretariat and local government.	41
6.2.1 General recommendations (main research question).....	41
6.2.2 Recommendations to improve extension and coordination methods (Research sub questions 1 and 2)	42
6.2.3 Recommendations to improve farmers' ownership of the program (Research sub questions 3 and 4).....	43
6.2.4 Recommendations to improve on women participation (Research questions 2-5)	43
6.2.5 Recommendations to strengthen the success of current approach on improving yields (Research question 5).....	44
References.....	45
Appendices	47
Annex1: Topic lists for district staff and extension workers	47
Annex 2: Topic lists for farmers' respondents	47
Annex 3: research questionnaires.....	48
Annex 4	51
Table 4.1 List of Sub County NAADS Coordinators (SNC) in Agago County (new district)	51
Table 4.2 List of Agricultural Advisory Service Providers (AASPs)	52

Lists of tables

Table 1: Clustering of responses on satisfaction parameters from the questionnaires..... 10

Table 2: Current enterprises per Sub County..... 24

Table 4: Different sources of households' income..... 29

Lists of figures

Figure 1: Cause-effect visualization of the research problem	4
<i>Figure 2: Location of Pader district in Uganda.....</i>	<i>6</i>
<i>Figure 3: Research study framework.....</i>	<i>8</i>
<i>Figure 4: A modified DFID Sustainable Livelihood framework analysis tool.....</i>	<i>11</i>
<i>Figure 5 : Unraveled theoretical concepts</i>	<i>12</i>
<i>Figure 6: The empowerment model.....</i>	<i>14</i>
<i>Figure 7: Goats enterprise respondents.....</i>	<i>23</i>
<i>Figure 8: NAADS information sources to farmers</i>	<i>25</i>
<i>Figure 9: Organogram of Production directorate</i>	<i>26</i>
<i>Figure 10: The educational levels of farmers' respondents.</i>	<i>27</i>
<i>Figure 11: Responses (%) on time allocated to NAADS fields per week</i>	<i>28</i>
<i>Figure 12: Farmers using PRA income and expenditure tool analysis on income sources.....</i>	<i>29</i>
<i>Figure 13: Enterprise selections for new financial year 2011/2012 (%).....</i>	<i>34</i>

Lists of Acronyms

CAO	Chief Administrative Officer
NAADS	National Agricultural Advisory Services
DNC	District NAADS Coordinator
SNC	Sub county NAADS Coordinator
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
RDC	Residence District Commissioner
IDP	Internally Displaced Peoples' camps
DDP	District Development Plan
SDP	Sub county Development Plan
PEAP	Poverty Eradication Action Plan
PMA	Plan for Modernisation of Agriculture
UBOS	Uganda Bureau of Statistics
PCC	Parish Coordinating Committee
AASP	Agricultural Advisory Service Providers
DPC	District Production Coordinator
SMS	Subject Matter Specialists
GOU	Government of Uganda
SGBV	Sexual Gender Based Violence
MFPED	Ministry of Finance, Planning and Economic Development

Abstract

A qualitative case study was conducted on the participation process of small scale farmers in NAADS project in Pader district, Uganda. The objective of the study was to contribute to the improvement of local food security by obtaining more insight understanding into how the participation process of small scale farmers affect their farm yields.

Primary data was collected through focus group discussions, interview questionnaires (annexes 1-3) and observations, self-administered on 21 respondents. Three farmers groups involved in goats, cassava and sunflower enterprises were purposely sampled for interviews from Lukole Sub County where NAADS project was first pioneered in 2006. The four technical staff interviewed included the District Production Coordinator (DPC), an administrative head of the district agricultural directorate, District NAADS Coordinator (DNC), the technical officer coordinating NAADS and two field agricultural extension workers. All the respondents have been involved in NAADS projects both as beneficiaries and technical staff in the last three years. Secondary data was obtained through review of NAADS district reports, district and sub county development plans and NAADS program implementation guidelines. Data was analyzed through descriptive summary and discussions based on results obtained. Using PRA income and expenditure tool, other household strategies were analysed in relation to NAADS project. The sustainable livelihood framework helped in analysing the assets and capabilities of the farmers interviewed.

Results indicated that many stakeholders are involved in NAADS program with specific roles. There were however indications of roles not being followed especially in the reporting procedures between DNC and DPC. Duplication of activities and roles were also discovered between the SNC and AASPs. Gender analysis indicated that women were not being given opportunity to participate freely in the program. It was also found out that more than three quarters of the farmers' respondent believe that they don't own NAADS projects which affect their participations. Farmers were found to be putting more efforts on food crops and other non-farm activities such as local beer brewing compared to NAADS fields. Further analysis indicated that improved livestock were not doing well and farmers are demanding for the local type which calls for review in NAADS criteria. Internal factors that seem to hinder the participation process were mentioned by respondents to include inadequate transparencies, procurement problems, inadequate coordination, inadequate information sharing, continuous changes in the program implementation guidelines and self-interests that appeared to be above the program goal. There also exist external factors beyond the program control such as weather effect, lack of appropriate market, weak infrastructure development and pests and diseases. On the positive sides, methods of group formation and development were satisfactory. There were also opportunity for learning process and involvement of stakeholders in enterprise selections which received positive feed backs from the stakeholders.

In conclusion, NAADS program and the way it's designed presents a promising way of improving extension services to the farmers. This is due to the fact that it promotes use of private extension approach which is initiated and managed by the farmers themselves. The program seems to work for only market oriented production which does not adequately address farmers' interests. Consequently, NAADS accounts for averagely 20% of total households' incomes/yields compared to other livelihoods strategies in the participating beneficiaries' households. As a limitation to the study, farmers presented varied opinions about their participation in the program which makes it difficult to have solid conclusions in the research. In addition, this research was carried out in one district (Pader) involving only 21 respondents. It may be difficult to generalize the findings and conclusions to reflect the general picture about NAADS throughout Uganda due to different farming systems across regions among other factors. This therefore presents an opportunity for further research.

CHAPTER ONE: INTRODUCTION

This research was conducted in Uganda, a landlocked country located in Eastern Africa. The country has a total area covering approximately 241,039 km², 81% of which is suitable for agricultural production (UBOS, 2010). The research looked at the effectiveness of small scale farmers' participation in an agricultural project called NAADS introduced by the government of Uganda since 2001/2002 financial year, with the aim of improving households' incomes and food security.

According to UBOS (2010), majority of Ugandan farmers are small scale subsistence farmers constituting approximately 87% of the current 33 million population and lives in the rural areas of the country. Consequently, targeting small scale farmers as respondents was considered an appropriate choice for effective data collection in this particular research. The farming livelihood of these small scale farmers is being facilitated by the country's fairly fertile loamy soils and average annual rainfall suitable for agricultural production (MAAIF, 2000). Agricultural sector therefore provides an economic and livelihood foundation of the majority currently contributing 23% to the total GDP (MFPED, 2010).

The research was specifically conducted in Pader district local government, one of the 112 districts located over 470kms north of capital Kampala. The district has implemented NAADS project in the last 6 years with 4,570 registered farming groups currently participating in the project which presents a suitable level of experiences needed for this research (DDP, 2010). Being a working area of the author, the district provided a suitable study area for this research because of the author's knowledge of the local area and language as well as necessary supports jointly initiated by the district stakeholders during the identification of the research problem.

Participation was chosen as a relevant topic in this research because of the vital role it plays in contributing to the success of most development projects. The government of Uganda has for long been using the concept of participation in most development projects but whether it works effectively for farmers remains a desirous statement that motivated and provided the basis upon which this research endeavors were conceived. As was cited by Semana (1999), "Participation of farmers in decision making processes related to their farm production has since colonial times of 1950s been recognized by the Ugandan government in policies aimed at modernizing agriculture for improved incomes and food security

The government developed a broader multi sectorial framework policy called Plan for Modernization of Agriculture (PMA) aimed at addressing among others, gaps that existed in effectively addressing farmers' participation in the development interventions for improved households yields and incomes.

NAADS project (pillar no.2 of PMA) was chosen in this research because of the way its implementation processes are designed. The design empowers the local farmers to have control over decisions that affect their households' production processes. Among others, the project allows farmers to select the kind of enterprise they would want to farm in a given season, procure inputs, participate in recruiting and paying for the extension workers to guide them and so forth. These arrangements provide a favourable context in which participation of farmers in rural food security project as a research topic can be fairly understood and analysed, suitable for this research project in rural Uganda.

The research begun by desk study review of the relevant information related to the research problem statement. Documents such as NAADS implementation guidelines, the district and Sub county development plans as well as other quarterly implementation reports on the project provided a good foundation for understanding the research topic and coming out with appropriate problem definition.

In chapter 2, the problem statement, research objective and research questions whose answers were geared towards achieving the overall objective of the study are presented. The study area (Pader district) as well as the NAADS program and how it is being implemented are described. The methodology adopted for tackling the questions, how and why the initially 25 respondents who included farmers groups and extension staff involved in NAADS project in the last three years were chosen are also explained.

Chapter 3 provides information obtained through desk study on literatures related to the concept of participation and extension. Major concepts were operationalized in order to narrow the focus and direction of the research. Information sources were from textbooks and online data in the fields of small scale farmers' participation and extension, rural development and food security livelihoods program in developing countries.

Chapter 4 presents the results and findings of the study. Results obtained using questionnaires tools were processed and presented in tables, figures and charts to ease interpretations by the research. Other information from focus group discussions and topic lists were recorded as appropriate for further qualitative analysis backed by those tables, figures and charts.

In chapter 5, the results and findings obtained were quantitatively and qualitatively analysed. These were done through assistance of tools such as sustainable livelihood frame work tool (modified with provisions of the farming systems model), Excel software and PRA income and expenditure analysis tool. Other qualitative data were interpreted based on the results obtained.

Chapter 6 presents the conclusions and recommendations of the research generated from the results in relations to the research questions administered. These are aimed at guiding decisions of different stakeholders, particularly the policy makers involved in the implementation of NAADS project in Pader district and NAADS secretariat.

1.1 Further research

Participation of farmers are affected by a number of factors. Some of these factors could not be easily investigated in details by the research. Farmers for example mentioned the economic disparity that exists among the groups members that affect groups' decisions. This was not captured in the research questions in this study. The research therefore provides a basis upon which further research can be undertaken by other scholars or other agencies to improve on the participation process of farmers in NAADS program.

CHAPTER 2: RESEARCH PROBLEM AND METHODOLOGY

This chapter presents the context in which the research problem was generated, the research problem statement, the objective and research questions. It also indicates the strategy, methods and tools with their justifications adopted in collecting data for answering the research questions. The number of respondents, how and why they were selected for interviews are outlined. The study area, where the research was conducted and NAADS program are described. The chapter concludes by providing an overview on how the data obtained was analysed and the limitations encountered during the research.

2.1 Problem Context

Majority of Ugandans who live at the country sides derive their livelihoods through subsistence agriculture. With the current 24% of the people living below poverty line (UBOS, 2010), efforts to improve farm yields by choosing profitable enterprises would greatly contribute to households' income and food security therefore reducing poverty in the households. Just like other rural districts in Uganda, Pader district located in the northern part of the country has 96% of her less educated total population dependent on subsistence agriculture as a source of their livelihoods (DDP, 2010). Consequently, many intervention programs by both local government and development partners have been initiated and implemented in the agricultural sector in an attempt to improve farm yields. One such program being implemented by the local government is NAADS. NAADS helps farmers group to choose an enterprise (crops, livestock) for NAADS support. The supports include; provision of inputs, agronomic trainings, provision of microcredits, establishment of demonstration plots and field advisory visits to the groups. The activities are coordinated by local government extension workers located at sub country levels.

According to MAAIF (2000), the entire process is mandated to be participatory with farmers taking control in enterprise selection, planning, implementation and evaluation of the projects. However as cited by pretty, et al. (1995), the term participation commonly used in most development project seems not to be clearly understood by the stake holders. Douglaha and Sicilian (1997) stated that;

Contrary to the general practice in rural development, people's participation is not limited to farmers attending meetings or contributing their labour to the implementation of projects designed by officials. Genuine participation entails the active involvement of the people in the planning process and is enhanced by their interaction with experts through educational methods that increase the influence farmers can exert upon the program planning process.

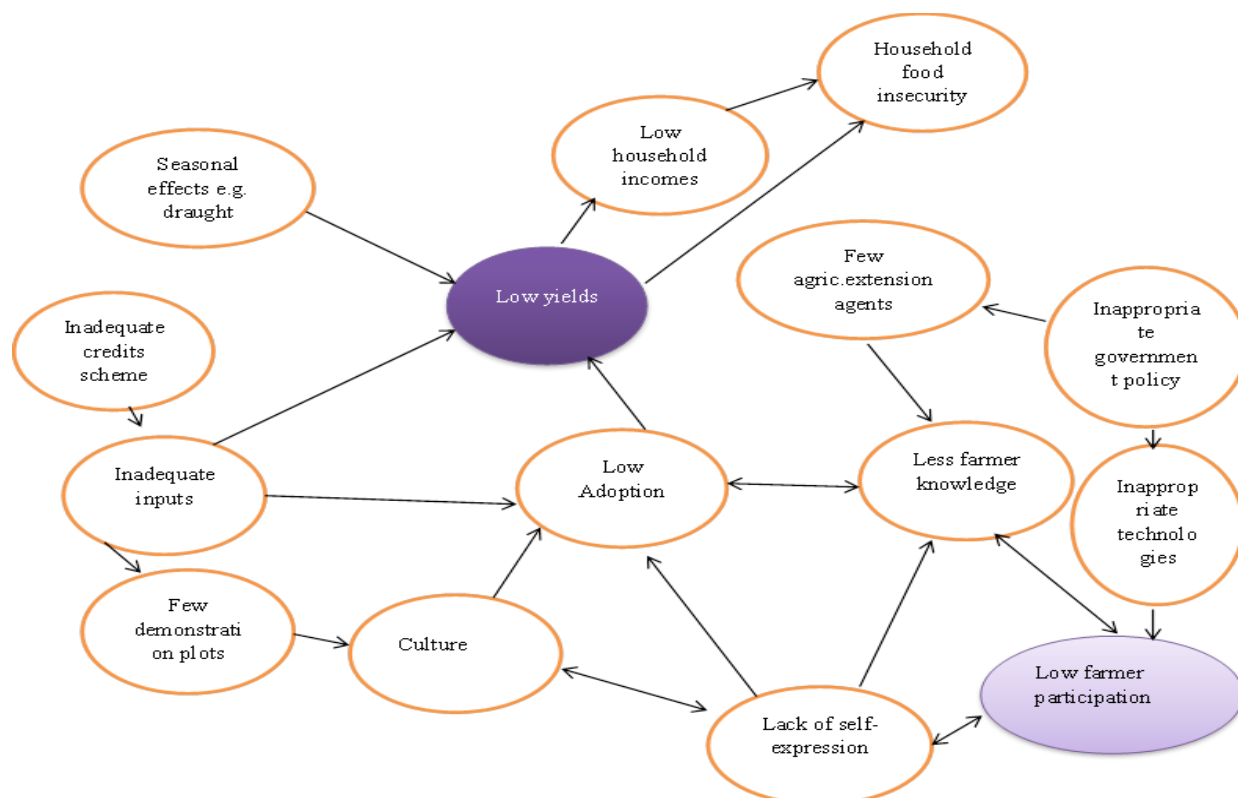
This argument is correlated by World Bank (2003) which indicated that a fair representation of farmers in their programs design is crucial in achieving better outputs.

2.2 Research Problem statement

Although NAADS interventions have been implemented in the district for the last six years, farmers' yields have remained low contributing to low incomes and food insecurity in most households (DDP, 2010). The 2010 food security assessment report of the district further indicated that farmers harvest less than 50% of their expected yields (FAO, 2010). Some of the challenges such as; low farmers participation, bad weather, culture, inappropriate government policies and technologies packages, among others have been advanced by stakeholders as contributing to this failure. However, low participation of small and limited resources farmers in

government aided programs remains an important contributing factor to low farm yields in developing countries (AEAG, 2000). Therefore, the current lack of adequate information as to how the effectiveness of participation of small scale farmers contributes to their yields in NAADS projects remains an area of interest in the district worth investigation.

Figure 1: Cause-effect visualization of the research problem



Source: Author based on literature

2.3 Working Definitions

Enterprise selection; for the purpose of this research, it refers to how farmers group choose a particular type of crops or livestock as their project for that period and submit it for supports from NAADS. The supports may include any one or a combination of inputs, agronomic trainings, microcredits, demonstration, group development and general advisory services.

Participation; in this research means people participate in joint analysis, development of action plans and the formation of new groups or the strengthening of existing ones, leaders listen to their views and help to define both problems and solutions and may modify these in the light of their (farmers) responses in planning, implementation and evaluation stages of projects and the groups take control over resources management initiatives.

Success in this research is defined in terms of increased farm yields per hectare in crops or increased multiplication rates in animals and poultry in farmers groups' projects under NAADS. It also implies the extent to which farmers have gained/adopted better agronomic field knowledge for their sustainable production.

Ownership: Farmers who are participating in NAADS project take the enterprises as what they chose and are appropriate for their livelihood and later invest their time and energy for better outputs.

2.4 Objective of the research

To contribute to the improvement of local food security by obtaining more insight understanding into how the participation process of small scale farmers affect their farm yields.

2.4.1 Main research question

To what extent does NAADS project contribute to higher yields of participating farmers in Pader district?

2.4.2 Sub research questions.

1. What participation criteria are used by NAADS in implementing its projects?
2. Do the extension methods used by NAADS contribute to participation of farmers in the projects?
3. Do the NAADS enterprises selected fit into the livelihood strategies of target farmers?
4. Are farmers having ideas of ownership of the project they are participating in?
5. Does the approach succeed in increasing and or improving yields?

Note. Sub questions 2, 3, 4 and 5 are administered as perceived by participating men and women

2.5 Study area.

Pader district is situated in the northern region of Uganda between longitudes 33 degrees East and 34 degrees East and latitude 2 degrees North and 3 degrees North. The district is bordered by Kitgum district in the North, Agago district in the East (recent creation), Gulu district in the West, Oyam district in the South West and Lira district in the South.

Administratively, the district is currently made of one county (Aruu County), 12 lower local government units (sub counties) including one urban town council and 52 parishes. According to 2002 national census report, the district has a population of 139,287 inhabitants out of which females constitute 52%. The district has an annual population growth rate of 5% compared to national average of 3.2% which makes a projection of approximately 237,100 people by 2011.

Pader has an overall literacy rate of 39.3% with 21.6% men and 18% being women. Subsistence agriculture provides a livelihood to approximately 96% of the population who have access to land through customary inheritance. The district is one of the areas in Uganda with lower agricultural potentials partly contributed by the 21 years of LRA rebellion.

The poverty situation in the district remains alarming with 67% of the population considered poor. At the national level, the government is determined to address the poverty situation in the country. This is evidenced through the recently launched National Development Plan (NDP) that provides a multifaceted framework through which the level of poverty can be reduced. Programs aimed at achieving NDP include; Prosperity For All (PFA), PMA, NAADS, among others. Despite the government's efforts through various interventions, poverty situations remained prominent. Indicators such as; increasing gap between the rich and the poor, deforestation evidenced by rampant and indiscriminate felling of trees for firewood and charcoal for sale, high disease prevalence, high and pre mature deaths, low life expectancy,

high school drop outs, high SGBV incidences, dominance by men over women in all spheres, rampant Corruption, low household income among others have persisted (DDP, 2010)

Figure 2: Location of Pader district in Uganda



Source: District planning unit, Pader

Pader district has both wet and dry seasons. The wet season extends from April to November with highest rainfall peaks in April and August. The total annual rainfall is 1,330mm. The average monthly maximum temperature is 29 while the minimum is 17 degrees Centigrade.

The soil in the district is reddish brown layer of clay loam which covers about 90% of the cultivable land. This soil is suitable for rain fed agriculture. The vegetation of the district is predominantly savannah type comprising mainly of *Hyperhania*, *terminalia acacia* and *Butterspermum* species. Isolated riverine forests are found around the two major rivers of Agago and Aswa crossing the district. There are a few wetlands covering a proximately 37.2 km² which can provide water for animals and farming especially vegetable production.

2.5.1 Farming systems

There are two major agricultural seasons in the district. First season begins from March to June (long season) and the second season is from July to September (short one). The basic type of farm management systems is the family farm (constituting 75%) on plots of landholdings of an average 1 hectare of land per household. Labour for cultivation is provided by the family members. Traditional communal labour provided by the local population on a rotational basis ("Awak") is often used in the villages.

Nearly 80% of farmers use hand hoes for cultivation while the rest use animal traction. Farm products are mostly sold without /or with very minimal value addition from the farmer. A wide variety of tropical, sub-tropical and temperate crops are cultivated in the district. The main food crops are finger millets, maize, sorghum, beans, cowpeas, cassava, sweet potatoes, pigeon peas and traditional vegetables. The major cash crops include cotton, tobacco, legumes, simsim, rice and vegetables.

Other agricultural activities include wild fish hunting in wetlands, fish farming (aquaculture), fruits growing e.g. pineapples, oranges, mangoes, pawpaw and bee keeping on a small scale. Post-harvest handling techniques remain weak and poorly developed. Local varieties and species of farm inputs constitute over 80% of the farmers' undertakings to meet the local taste.

Most farmers harvest less than 50% of the expected yields due to factors associated with storage, less or no application of inputs, pest and diseases, predators, wild birds and animals on the fields and unfavorable climate among others.

2.5.2 NAADS program

The GOU (MAAIF, 2000) developed Plan for the Modernization of Agriculture (PMA) in order to address the factors that undermine agricultural productivity, namely: poor husbandry (crops, livestock and natural resources), minimum use of improved inputs, limited access to technical advice and inadequate access to credit among others.

In order to operationalize a multidimensional private sector led extension and advisory services to farmers, National Agricultural Advisory Services (NAADS) - pillar number 2 of PMA program was developed.

NAADS has an administrative set up as a statutory parastatal organization with a stakeholder Board and an Executive Secretariat for day to day operations. The joint-donor/government-financed program focuses on increasing farmers' access to improved knowledge, technologies, information and associated services that would address the needs and opportunities of, mainly poor smallholder farmers.

The main NAADS principles are: client-empowerment, decentralization, efficiency drive, roles for the private sector and civil society, contractor-provider accountability, separation between extension service management and provision, diversity in funding, incentive systems and partnership development.

Among other things, NAADS was designed to achieve the objectives of; creating alternative options for financing and providing advisory and technical services appropriate for various types of farmers; shifting from public to private advisory service provision, while ensuring more decentralization to bring the control of advisory services closer to the farmers; empowering subsistence farmers to access private extension services and market information; developing private sector service capacity, professional capability and systems; and enhancing the commercialization of agriculture, including intensifying production and specialization.

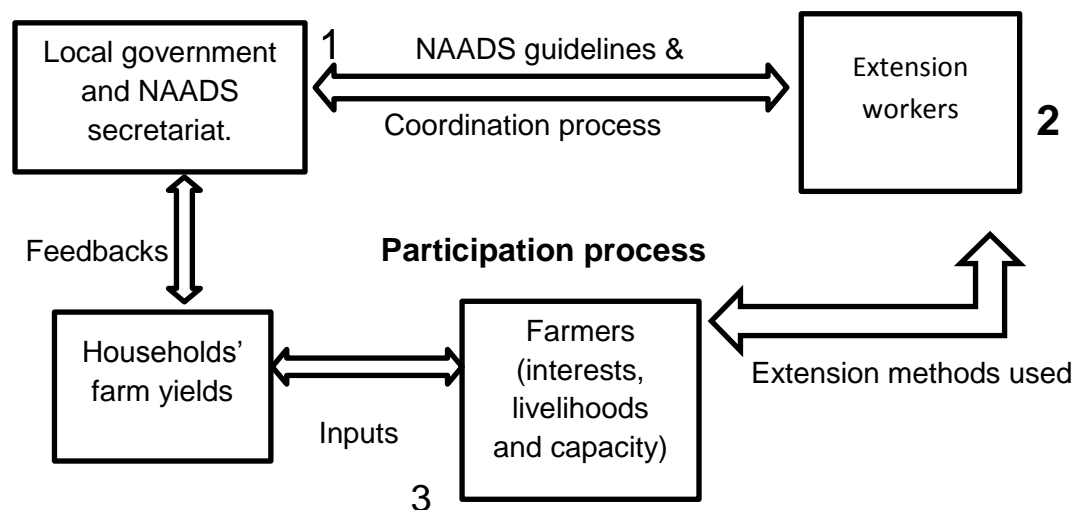
The responsibilities of public extension officers have shifted from being service providers to quality assurers, by developing quality standards, registering service providers, monitoring and evaluating the effectiveness and impact of programs, and technical auditing. Recently, NAADS guidelines have been reviewed to empower farmers to recruit their own extension staff referred to as Sub County NAADS Coordinators (MAAIF, 2010).

2.6 Research Strategy

The research involved a qualitative approach using a case study strategy on 25 respondents. The case study was adopted because the research aimed at having a deeper understanding on the views of both the farmers and district staff on the effectiveness of their participation process in NAADS projects, and how it influences the farm yields of small scale farmers.

2.6.1 Research Study frame work

Figure 3: Research study framework



Source: Author

2.6.2 Respondents

Three categories of respondents were selected for the interviews. The first category consisted of 2 district based local government staff who have been participating in the NAADS projects in the last three years. These staff included the District Production Coordinator (DPC) and the district NAADS coordinator (DNC). The DPC is the administrative head of the agricultural directorate in the district. The office oversees NAADS program and reports to the district council on policies and progress. This makes it a suitable respondent because it is involved in the planning and policy guidance to top management on NAADS. The DNC is the technical officer in charge of NAADS and reports to the DPC. The office is better placed to give relevant information to the research relating to detail activities of NAADS since it directly supervises it on a daily basis.

The second category is 2 sub county based extension workers who coordinate NAADS activities at lower local governments and are directly linked with farmers over the last three years. They interact with farmers most frequently which enable them to listen to the concerns raised by farmers relevant for providing useful data in this research.

The third category is farmers (a total of 21 selected farmers, 7 participants per group). They are primary stakeholders in NAADS program who are directly involved in actual implementation of the projects. The groups included both men and women who are currently involved in three different enterprises (cassava, sunflower and goats) under NAADS. This is because different

enterprises offer wider perspectives and experiences that different farmers' groups have gained which are useful in guiding and comparing the analysis of the research.

The three farmers' groups were randomly picked from the district list of farmers beneficiaries under NAADS in the last three years. It was done through the guidance of the DPC and farmers group leaders.

2.6.3 Data collection and tools used.

Secondary information was obtained through desk literature reviews of documents on small scale farmers' participation in projects, extension and participation and NAADS operations in Uganda and Pader district in particular.

Other documents included NAADS implementation guidelines 2010, annual review and activity reports of NAADS in the district, District and Sub County development plans, monitoring and evaluation reports from the farmers' forum and district NAADS core team. The core team consists of heads of sectors such as veterinary, crop, fisheries, forestry, entomology, cooperatives and environment.

Primary data were collected using self-administered focus group discussion, semi structured questionnaires and observation tools. Focus group discussion tool was selected because it provided an opportunity for the research to probe the answers of the respondents to obtain in-depth information. While the questionnaire was adopted to provide a quick over view of farmers' perceptions, individual households facts and their levels of satisfaction on participations in NAADS projects in the district. Observations were conducted in the fields to help correlate some pieces of information as and when required.

After pre-testing the questionnaires, the interviews were conducted for 14 days upon seeking the consents of the respondents. The local government staff were interviewed for 8 days at the district and Sub county headquarters, the farmers were interviewed for 3 days at / near their homesteads while 3 days were additionally used as a follow up period to collect some reports and documents from the district staff who were busy with other office works at the time of interviews.

In both face to face interviews, use of self-administered questions from the discussion topic lists (Annex 1) was adopted for an averagely 1 hour session per local government respondent after making an appointment.

Through the guidance of the local leaders and group chairpersons, the 17 members were randomly selected by the researcher taking into consideration gender and leadership structures. In a group of 7,5,5 participants each day, the interviews started by self-administering a brief questionnaire on each respondent. This took an average of 20 minutes upon guidance and interpretation by the researcher since nearly all respondents could read and write. This was followed by focus group discussions involving both men and women for an average of 2 hours per session per group using a topic list attached (Annex 2).

After the above session, women participants were separately withdrawn and interviewed by the researcher for averagely 15 additional minutes using specific questions from the same topic lists. One group discussion was held per group per day for a total of 3 days.

Using the income and expenditure PRA tool in the focus group discussion, farmers respondents were requested to compare different sources of incomes from enterprises under NAADS to other households' livelihood activities to gauge their level of commitment, perception and

ownership on NAADS projects. The primary data collected were recorded, sorted and edited as presented in chapter 4 for onwards analysis.

2.6.4 Data Analysis and tools used.

The questionnaires data relating to satisfactions of individuals were clustered in a table and expressed as percentages of the respondents who are highly satisfied, averagely satisfied and not satisfied at all with their levels of participations in NAADS projects in separate groups (table 1 below). Using excel software, other data were processed and presented in charts and graphs for easier interpretations.

Table 1: Clustering of responses on satisfaction parameters from the questionnaires

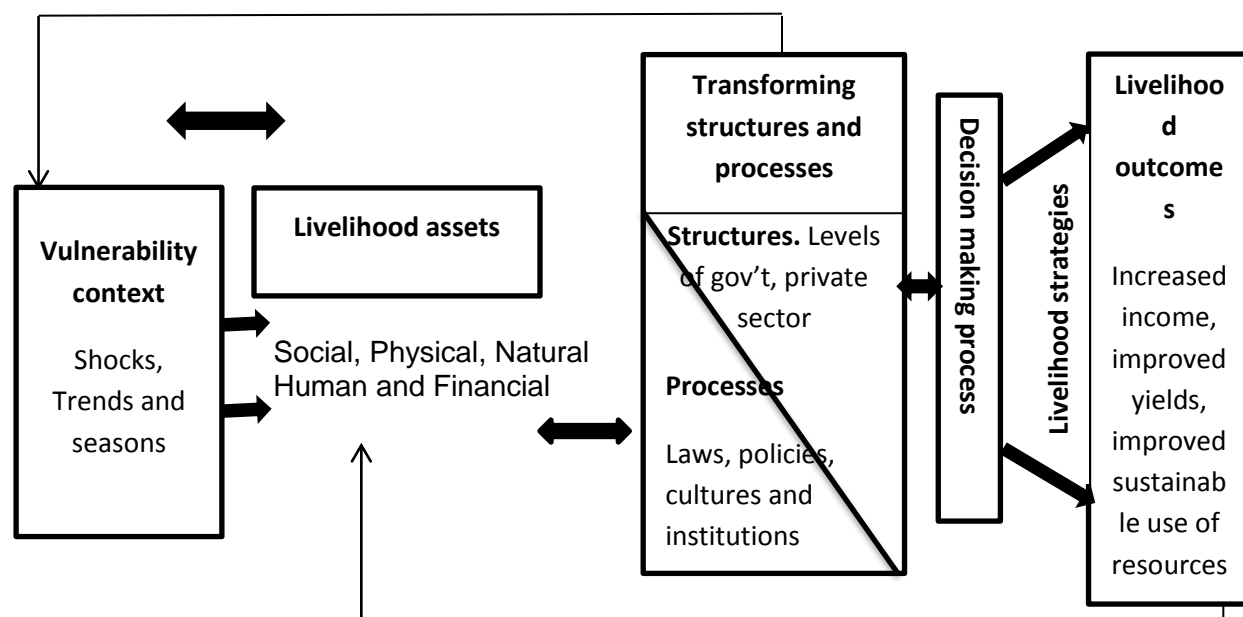
Responses Parameters	Not satisfied at all	Averagely satisfied	Satisfied	Total responses (%)
yields from NAADS fields				100
Selection of current group enterprise				100
Cooperation among group members				100

Source: Author

The rest of the information was analysed qualitatively with a descriptive summary based on the results obtained by the research. These included data from focus group discussions and discussion topic lists, frequently linked up with those from the questionnaires.

Using the sustainable livelihood frame work, farmers' capabilities and assets were analysed in relation to their participation in NAADS program. However, the analysis was not in-depth in terms of assets owned and the production process involved. Decision making component of the farming system model was incorporated into the livelihood frame work tool (modification by research) to analyse how farmers set priorities in households in relation to their participation in the program.

Figure 4: A modified DFID Sustainable Livelihood framework analysis tool



Adopted from DFID, April 1999 and modified by author.

2.6.5 Limitations/challenges of the research.

Farmers have different opinions about participation and its process. This makes it difficult for the research to come out with a solid conclusion on what farmers feel in relations to the effectiveness of their participation in the program.

The research was conducted during the period when farmers are harvesting their farm products. It was challenging to gather farmers' respondents as planned. Consequently, two of the three groups had only 5 members each instead of the planned 7 member respondents per group in the focus group discussion. However, the research believes that this didn't give much variation in the results because the interview involved two close villages with similar farming systems and fairly uniform characteristics.

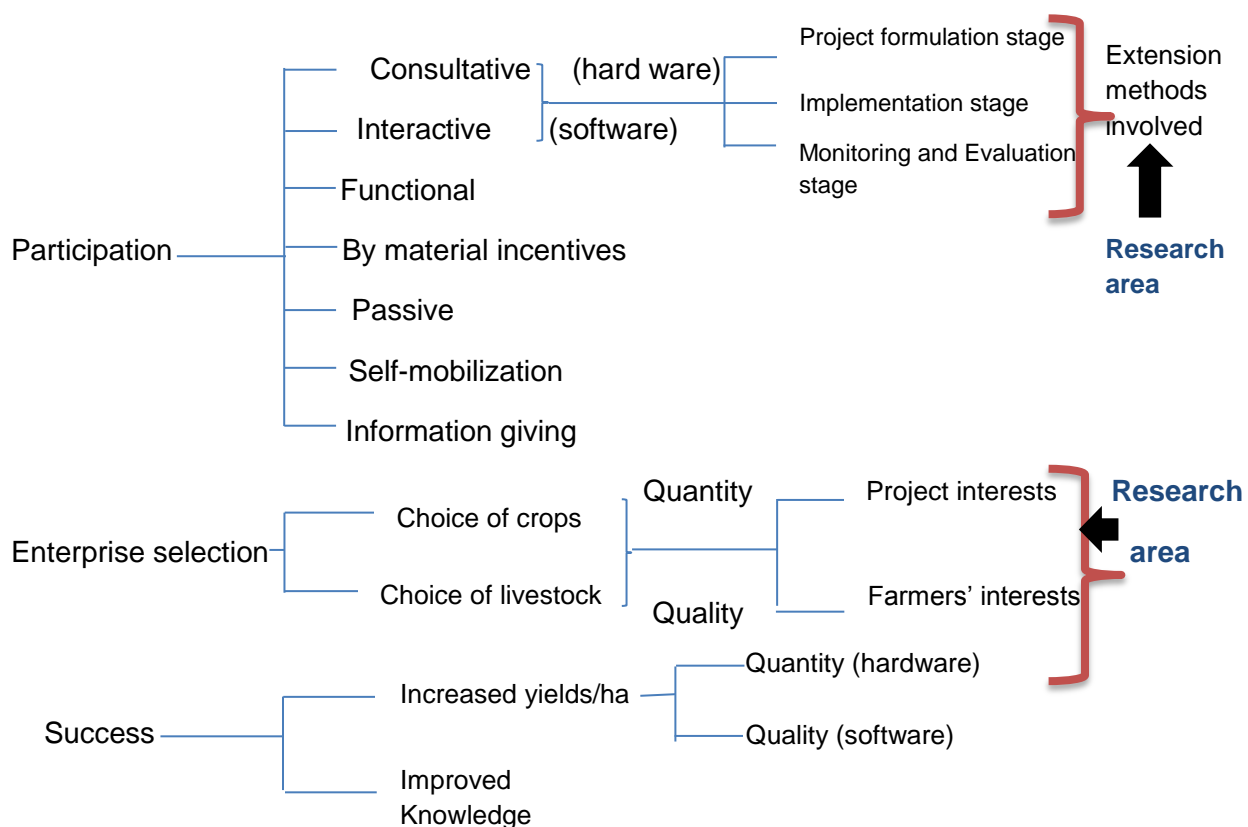
Similarly, district respondents were most of the time giving information in bits as often they are prioritizing instructions from their supervisors. This made the research to go for extra hours than planned.

CHAPTER 3: PARTICIPATION AND EXTENSION CONCEPTS

This chapter presents the review of various concepts/topics related to the participation of small scale farmers in their enterprise selection process. This will provide the foundation for the analysis of the research findings. Areas reviewed include unraveling of major research concepts, the meaning of participation, the process involved, types and level of participation, importance and challenges encountered during participation. The research also reviewed the relationship that exists between participation and extension through agricultural extension and its methods, local knowledge of the farmers, enterprise selection and extension and the social capital relationship that exists among farmers groups. Gender aspects and other off farm and non-farm activities and how they influence farmers' participation are also reviewed.

3.1 Unraveling main theoretical concepts.

Figure 5 : Unraveled theoretical concepts



Source: Author, based on literature.

3.2 The concept of participation

Many authors have defined participation to mean 'taking part' or 'involvement in', literally implying that every action is 'participation' which can mislead rural intervention strategies. Participation remains a contextual concept which can be seen from the 'eye of the beholder' and shaped by the 'hand of the power holder' (Shirley, 1994). This text looks at participation as something more than literal definition in regards of activities involved in rural development .

According to World Bank (2008), “participation is a process through which stakeholders influence and share control over developmental initiatives and the decisions and resources which affect them”. The rural small scale farmers should participate by influencing and sharing control over initiatives and decisions that affect their farm activities. Among others, they should have a say in what kind of crop or livestock is suitable for them, when they should come for meeting, where should the demonstration field be located and so forth.

As argued by Shirley (1994) ,“peoples participation in development in which the control of the project and decision-making power rests with the planners, administrators and the community elites is pseudo participation” and affects the success of most projects. This idea correlates with Linebery (1990) who noted that “a development process which involves people provides a basis not only for improvement of their material well-being but for progress in their social and cultural life”.

This research understands participation in the same context as explained by World Bank and it's on that basis that the entire document will be based.

3.2.1 Participation process

The process of participation does not necessarily involve a specific line up of steps or levels for referencing, but has some common stages which may overlap for its effectiveness (Ban Van Den and Hawkins, 1996).

The first step involves informing the stakeholders so as to provide them with balanced information to understand the problem in the community. The second level involves consultation with stakeholders with the objective of obtaining the feedback for analysis or decisions. It involves acknowledging concerns of and providing the feedback to the stakeholders on how to include their decisions. This stage ensures that stakeholders' concerns are understood at the very early stage and directly reflected in the planning, assessment, implementation and management of agreed activities.

The collaborative level encompasses working with stakeholders as partners on each aspect of the decisions, including development of solutions and identification of the preferred solutions, and lastly the empowerment level with the objective of placing the final decisions in the hands of the public or community.

3.2.2 Types and levels of participation

According to Veldhuizen, et al. (1997), Participation is found to take different forms. **Passive participation** in which people participate by being told what is going to happen or what has already happened. Here, the message flows in one direction with little opportunity for adjustments. **Participation by giving information** in which people give answers to questions already designed by researchers or project managers. In this case, they do not have the opportunity to influence proceedings as the findings are neither shared nor checked for accuracy.

Consultative participation is where people are asked to give their views; the external agents listen to their views and use it to define problem and solutions, although their views may or may not be taken in the final decisions.

Participation for material incentives exists when people participate by giving materials such as labour or land in exchange of food or money. Such people do not have a stake in decision making processes and maintaining the activities.

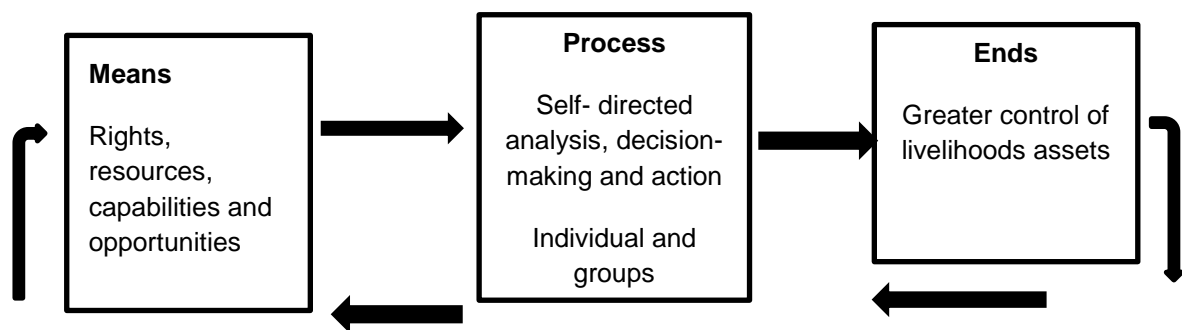
Interactive participation is where people participate in joint analysis, development of action plans and the formation of new local groups or the strengthening of existing ones. Groups take control over resources management initiatives.

While **functional participation** exists when people participate by forming groups to meet predetermined objectives related to the project. Their participation tends to occur at later stages of a project after major decisions have been made. They may become self-dependent but are initially dependent on external facilitators. From the above review, it is important to note that a combination of more than one form of participation may be used in development interventions. What is vital in this context is that the people are involved to the extent that they can influence and share control over the initiatives that affect their life for the sustainability of the interventions being introduced.

3.2.3 Importance of participation

Participation leads to empowerment where people take increased control over their lives and destiny (Kabeer, 2011 cited in Wennink, et al., 2007). Empowerment goes through a simple model as presented in the figure below.

Figure 6: The empowerment model



Adopted from Barlet, 2004

Once the means of the people are increased, it contributes to their decision to decide what to do. This makes them able to analyse themselves, make their own decisions and determine their actions. Sometimes the individual decides while in other instances it's the group that decides, in this case the question of 'who decides' is relevant in assessing the empowerment level of the farmers during participation (Wennink,etal.,2007).

When stakeholders are empowered, it helps in making informed decisions that incorporate the contributions of the members in project planning and design, and clarify to what extent the stakeholders are willing to accept or leave or live with tradeoffs necessary for the sustainability of project. This view is further correlated by Veldhuizen, et al. (1997) who argued that participation enables formal research and development institutes which normally have limited capacity, to develop a multitude of locally –specific technology adaptations and farmers' ethical concerns.

3.2.4 Obstacles to participation

According to Veldhuizen, et al. (1997), many obstacles that are often faced in promoting farmers participation include;

- Local government agencies and bureaucratic forces: Although local governments appear to support participation, they have reasons to fear participation and may seek to divert

the threat. They may accept it but take them over and give them a completely different meaning. This is further complicated during political election periods when politicians aim at winning the electorates instead of concentrating on the core of the problems faced by farmers.

- Some professional and agronomist after spending a long time in formal education have been brainwashed to believe that scientific knowledge is superior to local knowledge and therefore farmers have very little to offer. Reed (1970) cited in Chambers (1983) explained this belief further in a case of farmers from East Africa for example who knew that there was an association between rainfall and lunar phase, something that was initially denied by scientist but to be proven later. Wattassinha, et al. (2003) shares a similar view to this belief that “the attitudes of the institutions of formal education nurture a culture of regarding farmers especially the illiterate ones as “backward”.
- Many organizations (government and non-governmental) lack the flexibility and internal openness to adhere to participatory approaches. Bureaucratic and charismatic leaders who dominate the day –to –day work of their staff leaves little room for the field staff to carry out strong participation with their target groups. The more time allocated for participation has a corresponding budget increase for transport, meetings, operation and so forth that many administrators are unwilling to fund (Wattassinha, et al., 2003).
- A large proportion of the rural population especially women who form the largest share of the labour force in agricultural work face a lot of problems in the participation process. Issues such as cultural restrictions prevail and few appear in public or speak freely in meetings, their expertise and independent interests are easily ignored as ‘woman talk’, deviations from norms which may be necessary during field demonstrations may be resisted. The gender inequalities (Ellis, 2000), leaves women with little decision-making capabilities, little ownership and control which are vital ingredients of effective participation.
- The presence of minority or disadvantaged people sometimes distinguished by race, religion or ethnic group may affect their participation as the dominant group strongly resists their mobilization in group work.
- The poverty of certain categories of the rural population and their previous bad experiences on failed projects supported by other agencies may have robbed them of any hope for change, loss of self-confidence and increased lack of trusts on outsiders resulting into a “culture of silence”

3.3 Agricultural extension concept

According to Ban Van Den and Hawkins (1996), extension involves “the conscious use of communication of information to help people form sound opinions and make good decisions”. They further elaborated that making good decisions arise when the present situations does not correspond with the desired situations, which is the characteristics of most farming communities in developing world. This requires analysis of barriers that may exist among farmers such as lack of adequate knowledge and insight to recognize their problems or to select the most appropriate solution to achieve their goals. The lack of knowledge may be due to limited experience, upbringing or other cultural factors. This argument agrees in principle with The NMAF (1981), which observed that agricultural extension involves a systematic and organized communication with farmers in order to help them obtain better insight into their present and future position as farmers, choose feasible and optimum objective, identify problems and look for solutions.

Extension education has over time become important in development because the extension agent is no longer seen as an expert who has all the useful information and technical solutions. The clients own knowledge and experiences, individually or collectively are recognized as a

major resource, solutions to local problems are to be developed in partnership with the extension agent and the clients (Glary, 1999).

According to ODI (2001), extensions may look at the tangible aspect of production (seeds, agrochemical, credits) or intangible aspects (husbandry, management, forms of farmers' organization, markets). In either category, the perception of the farmer to the extension message is highly influenced by his/her local knowledge and the extension methods used by the extension agents (Ban Van Den and Hawkins, 1996).

Extension agents may also frustrate extension work as most often, they fail to target the right farmers for extension services. They may contact only well off farmers, the most influential and the most progressive ones. They associate the mixing with these people as something that add prestige to themselves and believe that the adoption is much easier there leaving the poor farmers without such qualities unattended to (NMAF, 1981).

3.3.1 Extension and Participation

Agricultural projects including group participation often did not work because the groups were not committed to the project and acted more as an extension of the government than as organizations representing beneficiaries (World Bank, 2010).

Ban Van Den and Hawkins (1996) argued further that participation and extension are complementary because farmers have crucial information necessary for planning a successful extension program. These may include their knowledge, experiences with previous technologies, their current goal and the social structure existing in their society. Farmers will also be more motivated to participate in the extension program if they share responsibilities attached to the program.

3.3.2 Extension methods and Participation

a) Mass media: Radios, television, newspapers are some of the methods to send extension messages to large number of farmers. However, in less industrialized countries, accessibility provides a big challenge to the local people for several reasons. According to Ban Van Den and Hawkins (1996), most people especially women are illiterate to read the newspapers and yet they form a big labour force in rural agriculture. Newspapers are often not distributed in rural areas, and, even when available, may be too expensive for most families. In a similar way, TVs and radios are not easily accessed by the poor because they are expensive coupled with lack of power and or batteries to run them.

Messages passed by the radios or TVs may not be complete or sufficient as the editors prefer to keep them short. It may also be vulnerable to selective attention (nobody can read everything that is published), selective perception (people tend to interpret messages they disagree with), selective remembrance (nobody can remember everything they have ever heard or read), selective acceptance (people listen but may not believe the message) and selective discussion (people do not have time to talk to others on everything they read or heard). As argued by the same authors, the media appears to have little direct influence when it is time to make final decision. This is because people value the judgment of known and trusted people with whom they have discussed the issues.

b) Demonstrations: Demonstrations stimulate farmers to try the new innovations on their own. They can show causes and possible solutions to the problem without necessarily going through the technical details. Demonstration fields can be used to compare results of the traditional practices with new practices being introduced to the farmers by the extension agent (Van Den Ben and Hawkins, 1996).

Despite this advantage, adequate care needs to be taken when choosing the demonstration site in a village because it has implications on the existing social structure. Progressive and well-to-do farmers may not be supportive if the demonstration plot is placed at the farm of a poor farmer who is educated and has good contact with the extension agent. They can influence the village members to resist the participation in the demonstration.

Another challenge as explained by NMAF (1981) is that most farmers look at field demonstration results as a critic of their own management. They would therefore try to find arguments which show that the results are attributed to favourable conditions which they cannot access.

c) Group discussions: Group discussions help farmers to assimilate knowledge by giving them opportunity to ask questions to the extension worker or themselves, relate the new information with their existing information and to revise their opinions if they feel the extension worker is correct (Ban Van Den and Hawkins, 1996).

The extension worker needs to have the necessary skills to stimulate the discussions and enforce participation, appear knowledgeable as farmers consider him or her as a source of right information.

d) Individual extension method: Often also referred to as 'mutual discussions', individual or one on one extension is highly preferred by the farmers. This is because it helps in solving a unique problem, integration of information is easier and increases trust between the extension agent and the farmer. However, the costs are high due to staff time and travel, leading to only few farmers being visited, extension agent may give incorrect information because not many farmers are verifying, it's based on high level of trust and the farmer may not disclose some information to the extension agent because he/she is not sure of how it will be used (Ban Van Den and Hawkins, 1996).

3.4 Agricultural extension in Uganda

Agricultural extension was introduced in Uganda by the colonial government in the late 18th century. Since that time, the extension approach has gone through a number of changes (Semana, 1999). This had consequences on the level and methodologies of farmers' participation in the extension process.

Between 1898-1907, extension was characterized by commodity approach in which cash crops such as cotton, coffee, tobacco were being promoted by the colonial leaders. Farmers had very little or no voice in the decision making process that affected them. From 1920-1956, agricultural extension was carried out through the chiefs. This was the period when a lot of emphases were put on extension to support the protectorate run by the British due to ready market in Britain. The chiefs were assisted by a few expatriate field officers and African instructors in the extension work. The extension concentrated on distributing planting materials of major cash crops and simple message on how they should be grown. Farmers were forced to grow some specific crops and follow some practices through formulation of bye-laws. The extension approach was 'coercion' other than education.

From 1956-1963, extension was done through 'progressive farmers' in anticipation of multiplier effects to the neighboring farmers. The approach faced challenges in selecting who should be a demonstration/progressive farmer affecting the participation of other farmers in the extension work.

From 1964-1972, extension was becoming professional through training and use of appropriate methods. The concept of helping farmers to help themselves was introduced through education by support from USAID. 1972-1980 was considered as a 'non-directional phase' (dormant) characterized by civil war that disrupted the extension work.

From 1981-1991, 'recovery in the extension' process begun although there were parallel extension services in the ministry of agriculture and those in the NGOs which led to duplication, conflict and confusion. This led to the unification of extension approaches under a single command and one Ministry of Agriculture, Animal Industry and Fisheries (MAAIF).

1992-1997 showed agricultural 'extension education reforms' implemented through decentralization, liberalization, privatization, restructuring and retrenchment radical programs. The district took over extension although they lacked resources to maintain the extension workers. The extension workers lost moral in their services and most farmers were unable to access the services. Farmers developed bad perceptions about extension workers and affected their adoption of new innovations and technologies.

However the government begun on more participatory policies to improve farmers' participations through village level participation and introduction of Plan for Modernization of Agriculture (PMA). 1998 to 2002 shows a period of transforming agricultural extension from the public sector approach to the private sector led approach introduced by NAADS program. NAADS aimed at developing a demand-driven, client oriented and farmer led agricultural service delivery system particularly targeting the poor and the women (MAAIF, 2000).

3.5 Farmers' local knowledge and participation

Farmers have been doing their own research for long and with or without support from the funding agencies, farmers will continue to do so (Grant, et al., 1999). The transfer of technology model in the 1960s had the belief that farmers are ignorant, only the scientists had the useful information to deliver to farmers through the extension workers (Chambers, 1994). This greatly affected the participation of the farmers in most of their development projects because they were regarded as passive recipient of knowledge and can adopt or not adopt the message.

Although most development programs appear to reverse these arguments, the spirit has continued in most rural development projects (Grant, et al., 1999). However, the local knowledge of farmers cannot be underestimated in development interventions. Farmers in East Africa for example knew that there was an association between rainfall and lunar phase, something that was initially denied by scientists but to be proven later (Reed, 1970 cited in Chambers, 1994). This studies revealed that farmers understand their environment and observe natural phenomenon better.

Local farmers using their existing knowledge have a better idea on rainfall period compared to malfunctioning meteorological units in developing world. This has a bearing on the choice of their agricultural practices. The local knowledge of farmers is not just a collection of facts as most development thinkers believe; it's a package of culture, social and agro ecological situations that exist around farmers. It is highly dependent on the power relation that exists among farmers which all contribute to the level of participation on a particular project (Grant, et al., 1999).

As summarized by Jiggins, et al. (1997),

Farmers are also researchers, teachers and consultants. We can and must learn from them before we teach and advise them. Traditional indigenous knowledge, therefore,

together with what can be learned from the research and extension must be the key to a situation based on extension.

3.6. Enterprise Selection and extension

Many thinkers had the perception that farmers are not entrepreneurs and business people. However, farmers wish to produce enough food or fiber to eat and sell so that they can make money too (Pretty, et al., 2011). This thinking needs to be promoted in an attempt to modernize and commercialize agriculture in developing countries.

According to MAAIF (2000), enterprise selection refers to a better choice of either crop or livestock at a given time that the farmers prefer for their farm. While making this preference, farmers consider a number of issues ranging from profitability, marketability, ease of production and contributions to their households food security. However, as observed by Haverkort, et al. (1991), farmers also consider their own criteria such as the area needed to produce the selected enterprise, the economic benefits, the risk factors involved and the social acceptability (commensurate to the level of skills they currently have).

3.7 Groups' social capital and participation

Social capital is used to describe the importance of social relationship in cultural and economic life (Pretty, et al., 2011). It includes issues to do with trust and solidarity that exist among group members, reciprocity and exchanges that builds good relationships and contributes towards collective and mutually beneficial outputs.

Ellis (2000) argues that the norms and behaviors that are often described in the farmers' group constitution encourage collective action for the common good. Group members should have the trust to invest their energy knowing that others would also do so.

According to Pretty and Hall (2008) cited in Pretty, et al. (2011), three types of social capital exist for groups sustainability; the bonding social capital which refers to ability to work positively with those closest to us and share similar values; binding social capital which refers to working effectively with those who have dissimilar values and goals and the linking social capital that refers to ability of the group to engage with those in authority either to influence their policies or garner resources.

Farmers' groups need to possess the skills, confidence and relationships to interact in all the three types of social capitals (World Bank, 2010). This can result into a rewarding relationship between themselves and or with the government staff guiding them. Farmers' participation in technology development and participatory approach to their development programs has emerged as a response to such new thinking.

3.8 Gender and participation process

The significance of women's participation in agricultural production in developing countries has been appreciated for long time (Boserup, 1970 cited in Ellis, 2000). In Uganda, for example, women constitute 75% of agricultural producers (World Bank, et al., 2009 p2). Women also work in non-farm activities to supplement household resources. This double workday often means delegating domestic responsibilities to younger females in the household while boys get opportunity to go for studies among others. This has been found to make Ugandan women historically vulnerable when it comes to participating on rural development agenda (UNDP, 2007).

However, efforts must be taken to promote women participation in decision making process if agricultural productivity is to be realized in developing countries. Veldhuizen, et al. (1997)

suggests the following as appropriate efforts; schedule meetings and demonstrations during women's free(iest.) time in the day or evening, locate meetings and demonstrations where they are convenient for women to attend e.g. near homesteads, arrange meetings and other events at places accessible to and in a way appealing to women, hold training at the time of the year when they have least work, provide transport to training/meeting centers, provide separate residence for women farmers, provide child care facilities, break courses into modules that women can attend in a short time among others.

The authors further elaborated that management team should include both male and female members capable of selecting both male and female informants. Where women are shy to express themselves, opportunity should be given to them to talk alone in their female groups so that their concerns can be integrated in the participation processes. They can as well do better in their own groups for improved households incomes.

As observed by World Bank (2010), regardless of location, when women are organized into groups, their production enhanced, and the sales of their products increased to nearby towns and cities, their strategic role in helping increase household income grows significantly'. In addition, as women farmers organize into producer groups, they begin to share a broad range of information, from basic nutrition to health, hygiene, and family planning, and to different types of technical and economic knowledge that can help increase family income.

3.9 Off farm and non- farm activities

According to Ellis (2000), "off farm activities in farmers' households typically refer to activities carried out by the households in another farm outside their own". The corresponding incomes include wage or exchange labour payments in kind such as harvest share systems. It may also include other non-wage incomes obtained from natural resources such as sales of fire wood, charcoal, house building materials, wild plants and so forth. While non-farm includes activities outside agriculture such as rural wage, salary employments, petty business (brewing, handcrafts, bricks making, etc.), rental income such as lease on land or property, pensions on retires, urban to rural remittances or international remittances from relatives.

Reardon, (1997) cited in Ellis (2000) in his research found out that, on average, livelihoods diversification in sub Saharan African households constitutes 40% own farm production, 18% off farm activities and 42% non-farm activities. Bryceson, (2000) attributes this diversification to the effects of structural adjustment program in Africa and the demise of the marketing boards that would help in marketing own farm productions. Ellis (2000), however has a contrary opinion and argued that structural adjustments and market liberalization in Africa instead promoted income earning opportunities that gave way for the need for diversification to earn incomes.

Small holder households are diversifying their livelihood strategies and increasing the shares of non-farm income that they earn (Reardon, et al., 1998, Carney, 1998). As further elaborated by the researchers, rural farmers and landless workers typically earn more than half their total household income from non-farm sources. Such diversification could reflect worsening impoverishment and desperation as land becomes increasingly scarce, or it could reflect increasing prosperity, as rural workers are attracted into higher paying nonfarm jobs instead of agricultural activities.

Although some non-farm activities such as formal jobs (teaching, motorized transport like motorcycles which require some capital, social or political contacts to start), majority do not require a lot of formal qualifications to operate. For e.g. manual laboring, petty trading, food preparation and brewing, gathering wood, water, fodder for sale, tailoring, clothes-mending and

knitting, hand crafts, charcoal making, and so forth attract majority of poor people in the community (Wiggins, et al.,2001).Unfortunately, many of these activities yield low returns to the farmers compared to farming. Farmers continue to do these works giving an interpretation of the challenges of the low agricultural productivity which may be associated to poor tools, low adoption or high competition for those jobs due to scarcity over cultivatable land.

CHAPTER 4: RESULTS AND FINDINGS

This chapter presents the findings of the research in relation to the research questions administered. The findings include what NAADS guidelines indicate on farmers' participation, the stakeholders involved in its coordination and criteria for enterprise selections (research question 1). It also brings out how farmers are mobilised to participate in the program as well as the extension methods being used (Research question 2). Other livelihood strategies in farmers' households and farmers' views on ownership of NAADS projects are presented (research questions 2, 3 and 5). Result on how gender influence female farmers' participation in the program is also presented (research questions 2-5).

4.1 Implementation criteria and farmers' participation

The 2010 implementation guidelines structurally provides for four institutions under which farmers participate in the NAADS program i.e. the national farmers forum, the district farmers forum, the sub county farmers forum and village farmers groups. The national farmers' forum is made of farmers representatives from every district in Uganda expected to present the voices of their respective farmers on the progress of NAADS from different parts of the country. The district and sub county farmers' fora have representatives elected from every Sub County and parishes respectively.

The largest institution is the farmers' groups consisting of between 20-40 members per group whose formation is preceded by stakeholder and community mobilisation carried out by the group promoter (an employee recruited by NAADS). The group promoter (minimum qualification of primary school leaver) is required to further develop the capacity of each farmers' group in areas such as writing a group constitution, awareness on NAADS, importance of working in groups, group leadership and roles. There are 2 group promoters per sub county handling over 500 groups in a sub county.

Each new group being formed/existing group must meet the requirements such as; having common farming interest. This could mean growing a similar crop or rearing a particular category of livestock. The group must also have a leadership structure; have a distinct physical location; have set rules and procedures, evidence of membership (membership roll) and have held meeting(s) evidenced by minutes. The group must register annually with the NAADS sub county office upon payment of a fee which is treated as co funding by farmers to the project.

Field interviews indicated that over 90% of the respondent farmers are satisfied with how they form their groups. One farmer in one of the groups from Ajali parish expressed his satisfaction by saying "I have the freedom to select on my own who I should join or join me in a group without any outside influence from NAADS". A few other farmers however indicated their feelings that some members do influence them to be in group as they are their relatives although they are not comfortable with them.

4.1.1 Criteria in enterprise selection

The implementation guidelines provide that farmers should choose the kind of enterprise on their own meant to receive support from NAADS. The process is however guided by criteria such as marketability, higher yields and ease of production of the enterprise. After mobilisation by the group promoter and extension workers, farmers assemble in one place and come out with enterprises they believe can receive support from NAADS. This process is guided by the NAADS employee who will be pushing for the interests of the program. The selected enterprises are then forwarded to the parish level for another vetting process before funding.

Figure 7: Goats enterprise respondents



Source: Author

Field interviews show that nearly 60% of the farmers respondents were not satisfied with the selection process of enterprises they are currently involved in under NAADS. Farmers who are keeping goats enterprises are not satisfied with the improved goat species being imposed on them by NAADS. A farmer from Ajali parish indicated his discontent that “the goats are not used to life here, they are so difficult to feed and taking care of and two of mine are currently very sick”. Goats’ farmers during focus group discussion further said that during delivery, NAADS does not give accompanied chemicals for them to treat the animals delivered.

The NAADS extension workers on the other hand have a contrary view. A veterinary extension worker based in Lukole Sub County upon interview had his views that;

NAADS aims at increasing household incomes of the farmers and the improved goats have better yields than the local types that some farmers continuously demand. Farmers can buy the chemicals on their own but the main problem is that the chemicals are not accessible within the district.

Along the enterprise selection process, farmers expressed their concerns that the biggest problem that affect their participation is at the parish levels where each parish is expected to come out with 3 or 4 enterprises out of the very many enterprises each village generates (one parish where the interview was conducted has over 50 groups, meaning more than 50 enterprises initially generated). This is where they begin to loose ownership of the project because what they have chosen are sometimes dropped out at the parish levels.

Table 2: Current enterprises per Sub County

District/co unty	Sub county/Town Council	Enterprise 1	Enterpris e	Enterprise 3	Enterprise 4
Agago	Adilang	Local goats	Oxen	Cassava cuttings	Groundnuts
	Patongo	Soya beans	Beans	Oxen	Local goats
	Kotomor	Oxen	Beans	Soya beans	Simsim
	Lira Palwo	Local goats	Groundnut s	Piggery	Beans
	Lamiyo	Local goats/boar goats	Sunflower	Groundnuts	Fish farming
	Arum	Local goats	Oxen	Local cows	Soya beans
	Omot	Local goats	Local cows	Groundnuts	Beans
	Lokole	Local goats	Groundnut s	Simsim	Beans
	Parabongo	Oxen	Groundnut s	Beans	Sunflower
	Wol	Oxen	Groundnut s	Sunflower	Beans
	Paimol	Sunflower	Local goats	Groundnuts	Beans
	Omiya Pachwa	Groundnuts	Local goats	Sunflower	Hand hoes
	Lapono	Groundnuts	Local cows	Hand hoes	Axes
	Kalongo Town Council	Groundnuts	Oxen	Sunflower	Ox ploughs
	Patongo Town Council	Soya beans	Beans	Oxen/local goats	Cassava
	Agago Town Council	Not yet done			

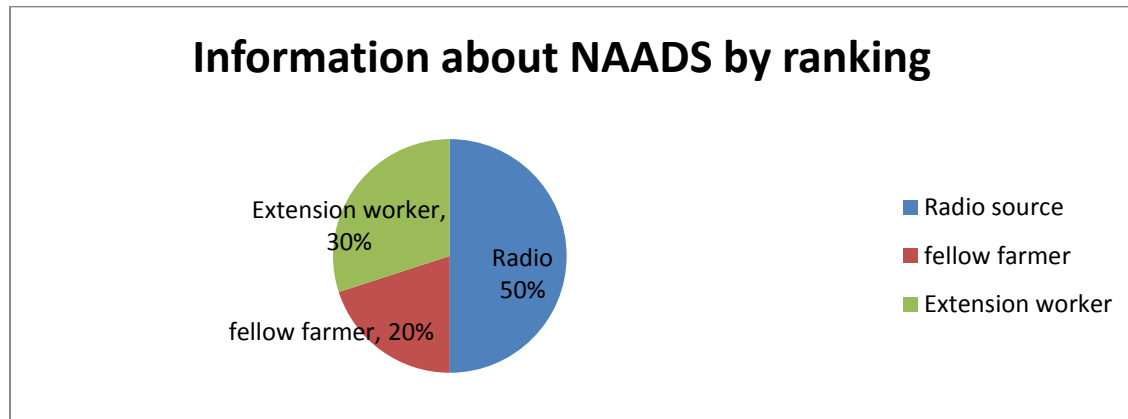
Source: Lukole Sub county NAADS report

As indicated in table 2 above, local goats and food crops dominate the enterprises, while cash crops are of least interest to farmers.

4.2 Extension methods and participation.

When farmers' respondents were asked in the questionnaires to rank from which sources they receive NAADS information, the data obtained was processed into a chart shown in fig. 8 below.

Figure 8: NAADS information sources to farmers



Source .Author

During focus group discussion, farmers further argued that radio messages are so brief and you cannot again ask the questions for clarifications. When they get opportunity, the airtime is expensive for them to pay from their mobile phones.

According to one of the interviewed extension worker, NAADS is distorting the extension systems because it facilitates extension only on selected enterprises and neglect other crops being grown by the farmers (mainly food crops). Fish farming was cited by the extension workers as an enterprise that does not surface at the parish levels because of the labour involved in digging the fish ponds (less labour, marketability and high yields are among the criteria for selecting an enterprise under NAADS).

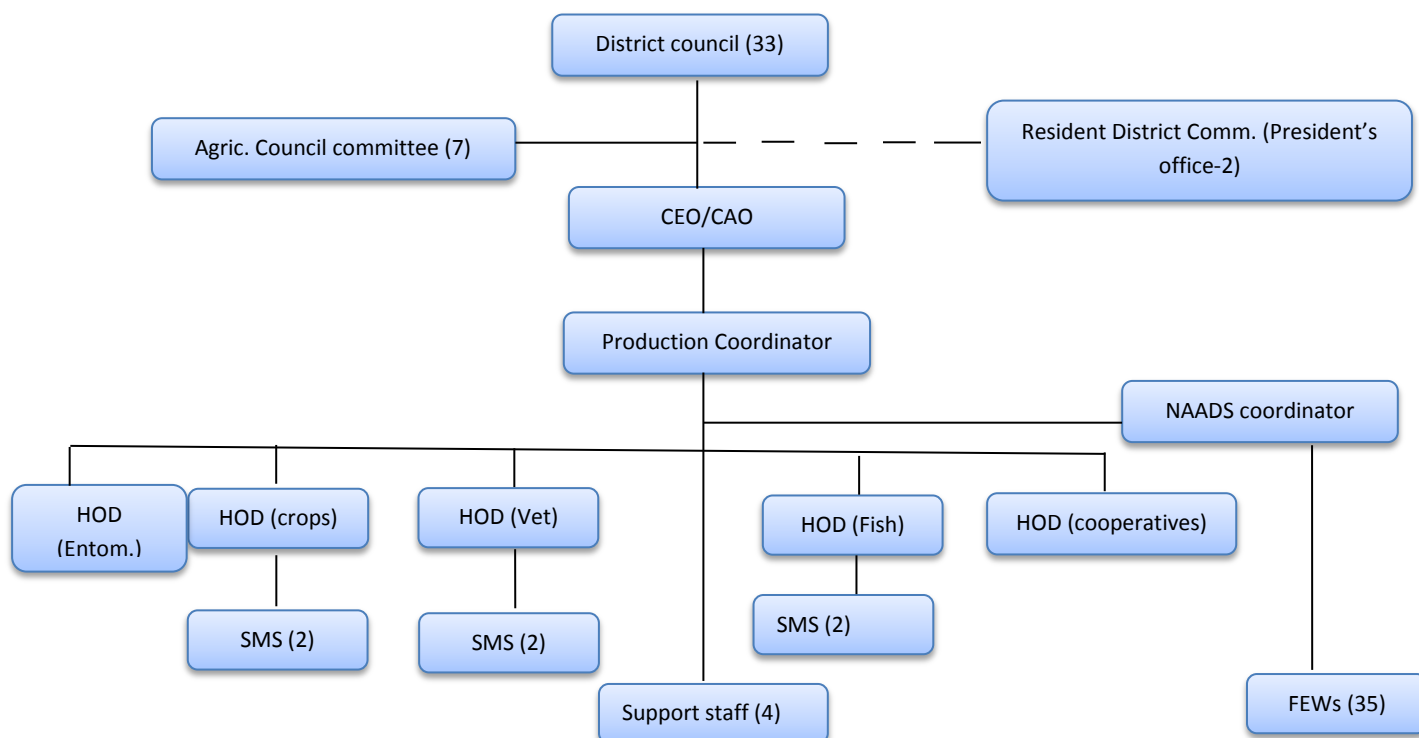
Extension workers accept that NAADS is giving them motorcycles but does not allocate a corresponding adequate amount of funds for the operations. An example (NAADS indicative planning figures of 2011/2012 budget) was where NAADS has provided a budget line of 900 million Uganda shillings (approx. 300,000 euros) for farm inputs against 4 million Uganda shillings (approx. 1,400 euros), equivalent to 0.004% of the budget for operations including fuel.

As was noted by extension workers, the NAADS secretariat continues to provide new implementation guidelines every year for the last three years, the latest being 2010 while the 2011 guideline is expected soon following the Presidents message a few months ago.

Extension workers further said that they do get information and concerns raised by farmers but because they are working under supervision and guidelines, it is difficult to tell farmers when and how their concerns can be handled by the top management. This affects their own participation in the program because they have minimal authority in their work in the fields.

4.2.1 Extension coordination and farmers participation.

Figure 9: Organogram of Production directorate



Source: Pader district production office.

The organogram of the directorate is a tall structure; decisions are made at the strategic apex (council) and flows down wards across 4-5 levels before reaching farmers as shown by hierarchy structural lines.

Coordination at district is done by NAADS coordinator (DNC). The DNC is expected to report to the District production coordinator (DPC) who is an administrative head of the agricultural directorate where NAADS program is housed. Areas of reports include monthly field reports, quarterly financial reports of the projects implemented/being implemented. However, it was established in this research that the DNC reports financial issues directly to the chief executive (CAO) at the district and the NAADS secretariat at the national level. It was further revealed that the monthly reports may be given to the DPC office if the DNC feels like because there is nothing to compel the officer to do so although the district council (highest authority in the district) expects the DPC to update them on the general progress of NAADS.

NAADS activities at the sub county are coordinated by the Sub County NAADS coordinators (SNC), an agricultural extension worker recruited and paid for by the sub county farmers' forum. The SCNs are assisted in the extension work by Agricultural Advisory Service Providers (AASPs) who have similar qualifications (table 4.1 and 4.2 in annex 4).

4.2.2 Staffing and inputs

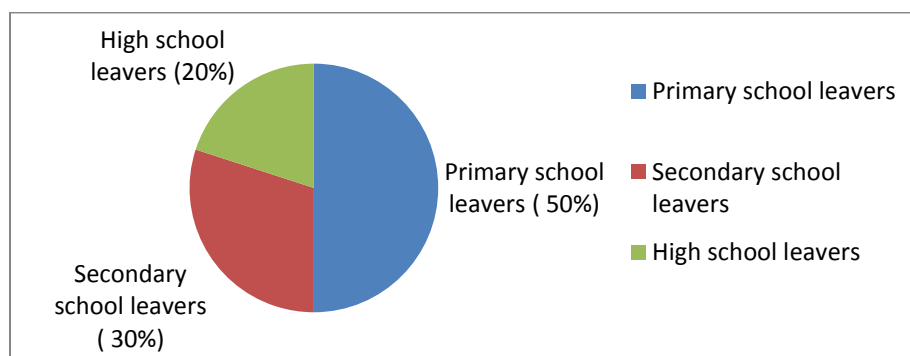
The Staff of the Production department include a total of 35 staff out of which 31 have qualifications in agricultural related disciplines. The other 4 staff includes an accountant and support staff. Funds for activities are got from the central government normally referred to as conditional grants for undertaking projects and unconditional grants for salaries of the

employees. Out of the total sector annual budget, less than 10% comes from the local government internally generated revenues. The directorate has four motor vehicles and 16 motorcycles with averagely fair running conditions although most times close to 30% may be grounded due to poor maintenance by the extension workers. One metrological unit exists but is nonfunctional. There are 4 computers and their accessories with limited internet services. One office block houses seven departments with a conference room for trainings purposes.

4.3 Household characteristics and participation

The questionnaires results from the farmers provided data about their educational levels as processed in the figure below.

Figure 10: The educational levels of farmers' respondents.



Source: Author

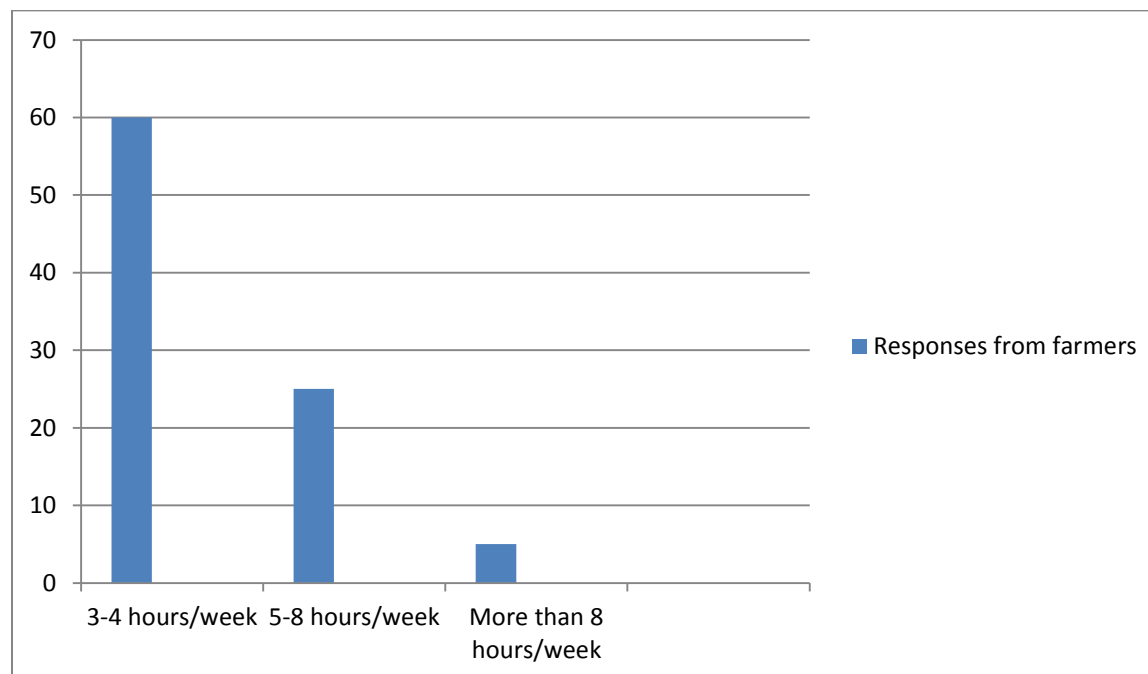
The main point presented in the above table is that more than half of the farmers interviewed are primary school leavers, while the other half has both ordinary level secondary education and high school qualifications. In terms of household size, over 90% have over 5 members in each household.

Majority of the respondents (83%) have less than one hectare under NAADS with three quarters averagely satisfied with the income from the fields while the rest are not satisfied at all. Those who are not satisfied at all were mainly goats' farmers and the averagely satisfied ones belong to cassava and sunflower enterprises.

4.4 Ownership of NAADS projects

When farmers were asked in the questionnaires to indicate the hours they spend in NAADS field per week, the chart below was processes from the responses.

Figure 11: Responses (%) on time allocated to NAADS fields per week



Source: Author

As indicated above, majority of the beneficiaries dedicate few hours to work in NAADS fields out of approximately 30 hours they can work in household enterprises a week. In the focus group discussions, farmers believe that NAADS fields do not belong to them and they therefore spend more hours on activities outside NAADS. One respondent of Ajali parish belonging to sunflower group enterprise expressed his views by saying “why should NAADS follow the fields with sign board if it’s not theirs”. Another respondent belonging to the same group further said “every time government calls us about NAADS, they say this is a government program.....”

Few respondents however had different feelings from their colleagues and reasoned that government should follow up what they have done for accountability purpose which necessitates a sign board.

4.4.1 Other household livelihoods

Other than NAADS, farmers’ households are involved in other farming enterprises such as beans, maize, sorghum, cattle rearing, simsim, etc. Majority (40%) are growing beans and sorghum as the main food crops. More than half of the respondents are involved in beer brewing as a non-farm activity followed by paid manual labour.

Using the income and expenditure PRA tool analysis tool, majority agreed that most income is got from other farm activities compared to that under NAADS. This is followed by local beer brewing, NAADS and manual labour as summarized in the table 4 below.

Table 3: Different sources of households' income

S/No	Enterprises sources in Households	Respondents (%) on how the income sources were ranked.
1	Household farming(outside NAADS)	35
2	Local beer brewing	24
3	NAADS	21
4	Paid manual labour	20

Source: Author

Farming activities outside NAADS provide more incomes while paid manual provides least incomes in the households. Financial incomes in the households cannot be saved and expenditures are made as and when the money is realized.

Hopefully, farmers agree that NAADS may later on over take other sources of incomes if government addresses some of the loop holes especially in the livestock enterprises.

Figure 12: Farmers using PRA income and expenditure tool analysis on income sources



Source: Author

Most enterprises supported under NAADS are revolving among group members. Farmers argued that laziness comes in if you are not among the first lot in the group to benefit. The first lots are seen as lucky and most of them become lazy after they have benefited from the enterprises.

4.5 Gender and participation

NAADS guidelines provide for women mainstreaming in all stages of the program. For example, at least a third of all the executive positions in the NAADS structures such as farmers' forum executives and procurement committees are reserved for women. Women are found in groups together with men who may be relatives or not within a village. The extension worker or other employee under NAADS mobilises them together with men to participate in NAADS projects activities such as meetings, trainings and field demonstrations.

The women groups interviewed said that most times they feel uncomfortable to contribute in the presence of men as they often dominate the discussions. They claim the main reason is associated to culture.

Women believe that the meetings should be organized in the afternoon hours and preferably over the weekends. They noted that in the morning hours, they have a lot of household activities such as preparing lunch for the family and they cannot attend the meetings. Men don't help them in most domestic activities so they have an advantage in attending the meetings. "The week end is better because the children who are studying in the nearby schools are back at home and can help with households' chores", quoted one of the women from cassava farmers' group during focus group discussion in the absence of men.

Women feel more comfortable to participate in enterprises linked to food security in the households than those associated with income, although they take a bigger responsibility on other non-farm sources of incomes at the households.

CHAPTER 5: DISCUSSIONS AND ANALYSIS

This chapter provides an understanding of the results obtained from the field research in chapter 4 in relation to the effectiveness of farmers' participation in NAADS program in Pader district. It starts by analyzing the farmers in terms of their capabilities, assets and how they make decisions to join NAADS program. This is facilitated by the use of sustainable livelihood frame work analysis tool modified with provisions of the farming systems model. The extension methods and how these methods are coordinated for effective participation in NAADS program are analyzed, Farmers views in relation to their ownership over NAADS projects, other household activities and how they influence participation in NAADS project, gender influence on farmers' participation, enterprise selection process, and group behaviors are all analyzed based on field results and literatures. The presentations are structured in order of the sub research questions administered.

5.1 Farmers and NAADS participation criteria.

The implementation guidelines ably provide for the representation of farmers in the decision making processes in NAADS program. The fact that farmers can elect their own representatives at the various levels to present their views to various government institutions, form their own groups, procure their own inputs among others provides an opportunity for effective participation in the program. However, the assets owned by farmers and the gender inequality contribute to the initial decision making process whether or not to join NAADS program. According to DDP (2010), decisions are mainly made by men because they have control over most valuable assets that they inherit from the parents (father to son scenario). This has implications on whether women can make independent decisions to join NAADS although the program guidelines provides so. This observation supports the findings from UNDP (2007) that Ugandan women are historically vulnerable when it comes to participating on rural development agenda due to their low decision making power. Therefore, providing guidelines to incorporate women in NAADS program does not necessarily translates into women effectively participating in NAADS program.

Progressive farmers who join NAADS group have more influence in decisions because they are seen as sources of rescue in times of crisis and few would want to conflict with them, a similar observation made by NMAF (1981). This means that although farmers are free to form groups, the economic disparity that exists among the members may affect the participation of others against provisions in the guidelines. The question of whether some particular groups of farmers belong to a similar economic category (minimal disparity) so as to form a group needs to be properly assessed as it could not be handled by this research project.

In terms of assets, the accessibility to land that farming households traditionally have through customary ownerships facilitates their participation in NAADS program. The interview results showed that all respondents had at least a hectare under NAADS farms (sec 4.3). This is important because it is used as an in-kind contribution by the farmers to the NAADS project. As was noted from the DDP (2010), the loamy soil in the district is fertile and suitable for agricultural production. The land is not yet completely exhausted partially due to the 21 years of LRA rebellion that forced farmers to stay in camps. This gave opportunity for the land to regain its fertility as most people could only cultivate near the camps in addition to depending on food aids from humanitarian organisations such as WFP and FAO. As a result; farmers are using less or no fertilizer in their fields. This situations, however appears temporal and the use of fertilizers and other inputs such as high yielding varieties should be promoted by the project for better yields.

Most farmers are not able to utilise adequately their land due to the kinds of tools being used (they cultivate an average of one hectare per household per season). According to DPP (2010), more than three quarters use hand hoe for cultivation. The output of this tool is low and does not effectively address yields and incomes as is being anticipated by NAADS project. This observation is further supported by the district food security assessment reports of 2010 which indicated that farmers harvest less than 50% of what is expected from their fields (FAO, 2010). This has implications on the effectiveness of farmers' participation in the projects, NAADS inclusive.

Electricity, one of the main physical asset in the area was recently connected to most trading centers in the district (DPP, 2010). This is expected to facilitate the agricultural production through services such as mills, haulers, and other value addition processes. However, most farmers are not able to connect electricity to their houses due to the high costs involved and the high risks of fire outbreaks on the grass thatched houses they own. This has implication in marketing of farmers products as most of them are sold in raw form without/with little value addition. Although NAADS would like to emphasize the marketability component of farmers' products, it is yet difficult at this stage for farmers to sell competitive products that can fetch reasonable incomes in the households which presents negative consequences on their participation in the program.

Other physical assets such as roads remain in bad shape and they are difficult to access during rainy seasons by the farmers and traders. Farmers incur a lot of transport costs and possible delays in their farming calendar as they travel to look for inputs. On the other hand, few traders who access the farmers are likely to charge exorbitant prices on what they sell to farmers or very little offer to farmers' products to mitigate the costs encountered. This is likely to affect farmers' participation and contribute negatively to the effectiveness of NAADS project.

Under social capital, field results indicated that nearly all respondents are satisfied with the current group in which they are members under NAADS. This shows that the relationships that exist among farmers groups are favorable for their participation in NAADS program leading to collective and mutual benefits. Since members are mainly from the same village and majority could be relatives, members have the trust to invest their energy knowing that others would also do so. As explained by Pretty, et al. (2011), the higher bonding social capital facilitates working positively among those closer to themselves and share similar values. Some of the groups have existing historical relationships such as dance groups ("orak"), annual money collection group ("Akiba") which have recently registered as NAADS groups. This has a positive bearing on the effectiveness of their participation in NAADS program that should be maintained for better yields. This notwithstanding, group members need to be further sensitised on rights and responsibilities related to inputs that are shared on rotational basis since others become lazy after their groups have benefited as was revealed.

The presence of group constitutions that tame the norms and behaviors of members encourage the effective participations among groups, a similar observation made by Ellis (2000). As was indicated, the low qualification requirements to be a group promoter may mean less knowledge in the subject matter. If farmers are not properly guided by a competent trainer, the possibility of having distorted information remains very high and can affect the effectiveness of the projects. On a positive note, the level of education among the majority of members fall within same bracket meaning that their degree of reasoning and interpretations can easily be understood and appreciated by the group individuals.

Farmers' level of education still remains low as the overall literacy level in the district stands at only 39% (DDP, 2010). As noted by Chambers (1994), the low education level (sec 4.3, fig 10)

does not mean that those farmers' local knowledge should be underestimated as is often done by a few extension agents. The research established that farmers for example could argue, based on their local experience that the improved goats being supplied to them could neither meet their interest nor survive in their local environment. This strengthens further the need to incorporate farmers' local knowledge into the planning process other than the academic research information mostly disseminated from the elites (pretty et al., 2010). This observation is further supported by Glary (1999) who argued that the clients' (farmers) own knowledge and experiences, individually or collectively are recognized as a major resource and solutions to local problems should be developed in partnership with the extension agent and the clients/farmers.

This evidence indicates that although NAADS wish to promote the farming of improved and high yielding varieties of crops and species of animals intended for increased households' incomes, farmers appear to have their own interest in the local types of inputs which should be concurrently recognised to facilitate their effective participation in the program.

5.1.1 Enterprise selection criteria and farmers' participation

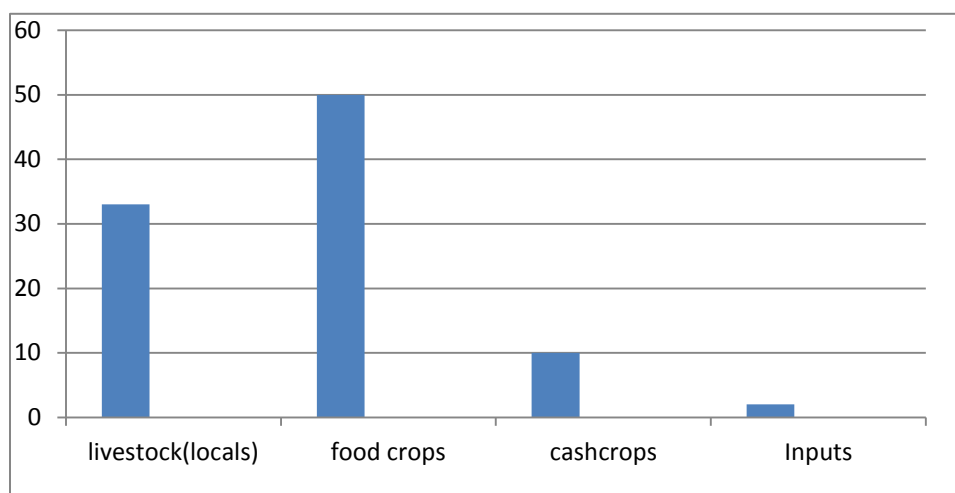
As presented in chapter 4, Sec 4.1.1, more than half of the respondent farmers are not satisfied with how their group came out with the current enterprise being supported by NAADS. Just like in any other project group, farmers normally tend to have a lot of priorities which cannot be met by the available resources in the program. This notwithstanding, NAADS put a lot of emphasis on the marketability criteria but the farmers are looking at whether the enterprise can be farmed in the local area.

Whereas marketability is important, the capacity of the local farmers to keep the enterprises being promoted remains under developed. Referring still to the goats for e.g are distributed without accompanied chemicals for treatment and yet they are highly vulnerable to the harsh situations in the farmers' homesteads. Farmers do not have the financial capacity to adequately provide for inputs meant for the improved goats to thrive well. The veterinary extension worker had a different opinion that "the chemicals could be afforded by the farmers but they are not being sold in the district". Whether the farmer is able to afford the chemicals if they were in the district or not remains debatable considering the current poverty level where approximately 67% of the community lives below the poverty line (DDP, 2010)

As the population increases (district fertility rate of 7 children per woman) cited in DDP (2010), the scarcity of land for farming begins to take root among the criteria for enterprise selection. Haverkort, et al., (1991) reasoned in support that farmers consider the area needed to produce the selected enterprise, the economic benefits, the risk factors involved and the social acceptability (commensurate to the level of skills the farmers currently have). This concept appears to be missing in the minds of stakeholders involved in guiding farmers during enterprise selection. Farmers may accept an enterprise because other group members have agreed and yet the land to farm the enterprise is not adequate. There is need to consider the availability of land among the criteria for enterprise selection although it appears that stakeholders take it for granted.

The research established that only 3 to 4 enterprises are accepted at parish level for onward submission to the sub county to be considered by NAADS. Arriving at 3 or 4 enterprises out of many poses a lot of challenge and criticism and the participating farmers are likely to lose interest if their enterprise is dropped off the selection process. Every village could be allowed to come out with some maximum number of enterprises because a village shares a lot in common unlike parish. This could also mean cutting down the budget but the farmers would accept to roll their projects in the next financial year while owning the projects of their choice.

Figure 13: Enterprise selections for new financial year 2011/2012 (%).



Source: NAADS 4th quarter 2010/2011 Financial year report, Pader district.

As shown in the chart above, food crops dominate among the enterprises selected followed by local livestock. As also argued by Pretty, et al., (2011), farmers wish to produce enough food or fibre to eat and later sell the surplus to earn household incomes. Farmers have also chosen to go for the local breeds which suit the conditions of their area than the improved ones. This further supports the idea that the criteria set by NAADS may need to be reviewed for effective participation of the farmers since they are the primary stakeholders who know where to invest their energy most.

5.2 Extension methods and participation

In terms of information sources to facilitate farmers' mobilization and participation in NAADS, radio messages were found to be the main source followed by extension worker and a fellow farmer. Radios are cheap and affordable even as low as 10,000 Ug shs (approximately 3 Euros) and majority of farmers can afford. Most information is in the local language which is understood by all the inhabitants (same tribes). In some instances, farmers listen to radios while working together in their village rotational labour groups facilitating accessibility. This means the use of radios for mobilisation is still a viable method because it reaches majority of farmers, a similar observation made by Van den Ben (1996). However, farmers reasoning that radio messages are so brief and most times expensive for them to follow up on phones calls for modifications on the radio program being used by NAADS.

Extension workers lagged behind radio in terms of information sources about NAADS. This could mean that the way extension workers present themselves/carry out their work during advisory services may not be appropriate. Among other possible explanations is the fact that two extension service providers responsible for over 500 groups in a sub county can present a lot of challenge in effectively reaching the beneficiaries. Most of the times, farmers cannot meet them even if there is pressing need for extension advice. Other reason such as dominance of male extension agents (annexes 4 & 5) has a bearing on the way messages are relayed to female farmers who form nearly 50% of each NAADS group.

Extension workers agree that although NAADS is providing them with motorcycles, the program does not allocate a corresponding adequate amount of funds for the operations. As presented in

section 4.2 of the previous chapter, only 0.004% of the total budget is provided for operational budget, fuel inclusive. This has greatly limited the movement of the extension workers while meeting farmers groups. As noted by NMAF (1981), difficulties in accessing most farmers may make extension workers to meet only progressive farmers, those near the roads or well off ones. The implication of these actions is that most farmers who lack such qualities but are interested in NAADS projects will be left unattended to eventually affecting their participation.

As established under the inputs of the department, NAADS funds are conditional grant facilitating extensions only on selected enterprises under the program. But the farmers are growing other food crops outside NAADS which still require extension advice. Since these farmers are not specialized yet, the inability of having a broader extension approach could negatively affect farmers' yields and food security in the households. In addition, not all farmers have joined NAADS program which means they are entitled to extension services from their government. The absence of other reliable and sufficient sources of funds generated locally that can be used to facilitate extension to other enterprises can be one of the possible explanations. As reflected in SDP (2010), inadequate local revenue is reflected as a problem in sub county local governments in support of this view. By proceeding in this way, the original extension approach where a farmer should be advised adequately in various enterprises at the homestead is getting distorted as was mentioned by one extension worker which affect participation in NAADS program.

The research established that NAADS secretariat continues to provide new implementation guidelines every year for the last three years. Frequent changes make extension workers to become less consistent in their messages and can easily affect the perceptions of the farmers while participating in the projects. Farmers and other stakeholders are less confident because the program may change anytime and would dedicate less effort than necessary. Although changes in program design may be as a result of complaints from other stakeholders, too frequent changes imply inadequate preparations during policy formulations and design which has a bearing on how beneficiaries participate in the program.

5.2.1 Coordination of farmers' extension

The NAADS implementation guideline provides that the District NAADS coordinator (DNC) is supervised by the Production Coordinator (DPC), an administrative head of the agricultural sector. However, as was indicated, the DNC reports directly to the NAADS secretariat on financial matters by passing the DPC. This means that the DPC has power but with limited control. Lack of adequate control from the head of directorate who participates in policy formulations with the political leaders affects the smooth running of the NAADS program. The DPC cannot competently report on financial matters which are key components of decision making process in the district council if the office is not well furnished with relevant financial updates. The DPC seems to be looking at NAADS project as just an annex to other main programs in the department contrary to the provisions of the guidelines. With that practice, farmers' views are either tabled before policy makers without technical backing or without emphasis from the departmental head. The final implication is that the level of participation of farmers is reduced because their views are not taken into consideration as soon as they expect.

It was also noted that the DNC is paid higher salary than the DPC by a margin of over 200,000 Ug shs (approximately 70 euros) monthly. This research understands that supervising an employee with a higher salary is a little difficult in the traditional civil service job except in very few cases. The DNC is less obliged to pay attentions to the instructions of the DPC who unfortunately appraises her performances during contracts renewal. Although most contract works within same specifications bracket are paid highly than civil service job in Uganda, the

reporting procedures follows hierarchy laid down for effective monitoring and supervision. By bypassing the DPC as is being done by the DNC shows a gap in NAADS management at the district level eventually affecting the effectiveness of the program.

A study of the organogram of the directorate shows a tall structure (fig 8). In the structure, farmers' views pass through 4-5 levels before they reach the DPC for tabling before the policy makers. As explained by Minstberg (Rolinson, 2008), this very much resembles a machine bureaucracy where procedures, rules and standards dominate the day to day operations and can cause delays in decision making. At the end, this does not only mean possibility of information distortions along the chain but also untimely responses from strategic apex on whatever is brought to their attention. Since agricultural activities are weather dependent, timely responses on farmers concerns remain vital for increased yields in NAADS projects and can affect their participation.

The sub county NAADS coordinators are recruited to help prepare work plans (technical and financial specifications), supervising and reporting on NAADS progress to the Sub County authorities (MAAIF, 2010). Analysis of table 4.1 and 4.2 (annex 4) indicates that more than three quarters of both SNCs and AASPs have qualifications at the level of a diploma suitable for extension services to the farmers. The AASPs are recruited to carry out advisory services which could equally be done by SNCs meaning additional spending in the overheads and salaries. It is not worth for the SNCs to only be paid to prepare work plans and reports at the sub county. Work plans are prepared for some period of time in a few days, meaning that in the rest of the month, the SNC can do extension works. In order to improve the logistics required for NAADS operations therefore, either SNCs or ASSPs should be relieved of their duties since they possess nearly the same qualifications. The savings could be used to strengthen operational cost and salary increment and other motivation measures for the program workers which can improve accessibility of farmers to extension services and participation in the program.

5.3 Ownership of NAADS projects and other household livelihoods

As established in chapter 4, section 4.4, more than half of the respondents spend less than 4-5 hours, once or twice a week on NAADS fields while the majority of the respondents believe that they do not own NAADS fields/projects. The government continues to put sign boards on NAADS fields that belong to farmer beneficiaries with the objective of facilitating follow up by higher authorities. However, this is being misinterpreted by the farmers in the program who believe that those fields belong to the government despite the fact that the fields are in their own land at the homesteads.

This raises the questions of sensitisation because some of the farmers may not be aware that they are actually part of the same government. It is possible that people putting the sign posts may not have accompanied them with appropriate information package that cements ownerships from farmers' beneficiaries. It's an indication of less empowerment that farmers have over the project they are involved in. This arguments correlates with the observation that participation is important because it leads to empowerment of people to take increased control over their lives and destiny necessary for the sustainability of their project (Kabeer, 2001 cited in Wennink, et al., 2007).The implications are that farmers who believe that they do not own NAADS fields will spend most of their valuable time in other enterprises in the households since they have adequate control over those enterprises.

The ownership on NAADS project by the participating farmers is also influenced by the corresponding benefits that farmers get from the project. The research discovered that NAADS contributes only 20% to the total households' incomes of the participating farmers (table 4).Any person with sound reasoning will put more efforts on enterprises that bring more incomes in the

households. This practice has negative consequences on the participation of farmers in NAADS in relations to the yields anticipated.

Majority of the farmers in that parish are growing beans and sorghum which are main food crops while more than half of the respondents are involved in other non-farm activities. By concentrating more on food crops means that farmers are yet to appreciate the NAADS objective of selecting an enterprise based on marketability as is the current key criteria of enterprise selection. Food crops cannot be undermined from the view point of participating farmers in most agricultural programs. Much as government may want currency inflow in the country as a result of exports, local farmers are interested in what they can eat first. A compromise should therefore be reached where both enterprises (food and cash crops) are supported concurrently if farmers are to balance their participation efforts in the programs.

Farmers have diversified their household activities (other non-farm activities) to protect them from shocks that arise from failure of a single enterprise over the past years. Reardson (1997) cited in Franc Ellis(2000) in his research found out that, on average, livelihoods diversification in sub Saharan Africa households constitutes 40% own farm production, 18% off farm activities and 42% non-farm activities. Ellis, (2000) opined that diversification of farmers' enterprises is attributed to structural adjustments and market liberalization in Africa which promoted income earning opportunities for the farmers although Reardson (1997) presents a contrary opinion towards this. The research established that in addition to manual labour work, majority of farmers are involved in local beer brewing to produce the local drinks because the market is readily available within the community. The inputs (cassava, sorghum, millet) required to brew the beer are cheap and easily available. The process takes shorter time (3 weeks) compared to a minimum of 3 months in NAADS field and does not require a lot of technical knowledge which easily match the low education level of the respondents in the study area. On the other hand, as land becomes scarce, some farmers easily opt for non-farm activities. In addition, as farm yields continue to be low (FAO,2010) in the district, majority of poor farmers are forced to go for these activities even though the income got from them are not very high but the risk level is comparatively low. This is also a manifestation of the challenges in agricultural activities in the study area such as poor tools, limited access to inputs, pests and diseases, poor infrastructures among others which affect their participation in the program.

5.4 Gender and participation.

Women participation in NAADS is ably provided for by the implementation guidelines as presented in chapter 4.4 of this document. Although women are being mobilised together with men in NAADS activities, majority are not comfortable with the arrangement and are not willing to talk freely during NAADS activities. The inability of women to talk in the presence of men could be associated with low level of education among women in the district (DDP, 2010). This is further contributed to by some extension workers who may try to explain concepts in English with little translation in the local languages and women easily fall victims during interpretations. As supported by Veldhuizen, et al. (1997) who stated that, "women are shy to express themselves and opportunity should be given to them to talk alone in their female groups so that their concerns can be integrated in the participation processes".

The gender analysis of the extension workers in the district (Annex 4 tables 4.1 & 4.2) indicates that there are less than 10% of female extension workers in the program. This is likely to have implications on how women farmers participate in the extension activities under the program as there are issues that are better understood by a fellow woman extension worker e.g. pregnancy and participation among others.

Appropriate efforts must therefore be put in place to address the participation of women in their projects. Efforts such as scheduling and arranging meetings at places accessible to and in a way appealing to women, holding training at the time of the year when they have least work, breaking courses into modules that women can attend in a short time among others should be promoted to improve women's participation (Veldhuizen, et al., 1997).

As revealed in the research in support of the above, women feel that meetings be organised in the afternoon hours and preferably over the weekends. In the morning hours, they have a lot of household activities such as preparing lunch, washing clothes (it's common for the rain to come in the afternoon hours and clothes cannot dry easily). Men on the other hand avoid most of these household activities because they culturally believe that the activities are for women alone. Although women expressed that the weekends are better, their proposal does not match with the working program of the extension workers. Extension workers work from Monday to Friday and are not paid for additional work they may do over the weekends. The implications are that women continue to miss participating effectively in the program which calls for additional attention in the designs of local program schedules.

Women feel more comfortable to participate in enterprises linked to food security in the households than those associated with income although they take a bigger responsibility on other non-farm sources of incomes at the households. This is because most times, men are not at home and women remain solely answerable to the children on issues related to food. This makes them put more efforts in enterprises related to food crops to guarantee food supply to the children. Women have also developed expertise in growing food crops inherited over times. Historically, food crops were seen as those to be grown by women and are still embedded in their thinking and should be considered by NAADS project during the planning stage of enterprise selection.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.0 Conclusion

The conclusions and recommendations are guided by the research frame work presented in fig.3 in which key research areas and stakeholders involved in NAADS program are presented for the problem study.

The findings and analysis of the research have to a greater extent contributed to answering the research questions that enabled this research to achieve its objective. However, NAADS as a program is implemented countrywide whereas this research was only conducted in one parish in one district. Therefore, it is difficult to generalise the findings from the opinions of only 21 respondents in this research to have solid conclusions and recommendations about the effectiveness of farmers' participation in the program throughout the country.

6.1 General conclusion (main research question)

NAADS is a joint GOU/Donor funded agricultural program aimed at improving productivity and households' incomes of the rural poor farmers in Uganda. Although the design of the program is good, it focus seems to be geared towards market oriented production. This was found to be a little inconsistent with the priorities of farmers' beneficiaries who feel that food crops are of priority to their households. As a result, NAADS contributes approximately 20% of the total incomes/yields in households of participating farmers which is a manifestation of ineffective participation in the program.

6.1.1 NAADS implementation and coordination criteria (Research question 1)

Farmers participate in NAADS program while in a legally registered groups of between 20-30 members (both men and women) who share similar interests. The groups are allowed to select enterprises to receive supports from NAADS following the guidelines developed by NAADS secretariat. Some of the criteria in the selection include marketability, high yields, less labour and so forth. However, farmers had in addition their own criteria in which the local breeds of goats which survive easily in their local environment is of priority to them

NAADS implementation guidelines have been changing over the last three years as a result of complains registered by the stakeholders. This makes farmers and other stakeholders not certain of its future and shows a high degree of lack of adequate preparations during initial project formulations.

A number of stakeholders are involved in NAADS program; the national farmers forum, the district farmers forum, the sub county farmers forum and village farmers groups. Their activities are coordinated by technocrats based at both district and sub county levels. Although this coordination structure is already established, there are few cases of poor reporting procedures especially at the district level between the DPC and DNC and duplication of roles between SNC and AASPs at the sub county levels. When the DPC is not furnished with the reports related to farmers concerns, decision makers take time to address the concerns which affect participation of farmers.

6.1.2 Extension and coordination methods (Research question 2)

Extension workers recruited to carry out advisory services to farmers are concentrating mainly on enterprises that are under NAADS. However, farmers are growing other crops which require additional advice from the government. This is affecting the original extension approach that

embraces even farmers outside NAADS which is causing disgruntling among some section of the farmers for their effective participation in NAADS.

Extension workers face problems when it comes to their own participation in the NAADS program. Most often, the managers provide schedules and roles they are expected to perform and give them very minimal opportunity to integrate feedbacks they get from farmers to improve effectiveness of their (extension workers) participation. New additions or amendments in the extension process may require additional funds against the interests of the managers as work plans are approved for a period of one year.

Extension workers lagged behind radio in terms of information sources about NAADS. This could mean that the way extension workers present themselves/carry out their work during advisory services may not be appropriate. Among other possible explanations is the fact that two extension service providers responsible for over 500 groups in a sub county can present a lot of challenge in effectively reaching the beneficiaries.

The structural organogram of NAADS program is quite long and bureaucratic. Farmers' views therefore take long before it can be addressed at the strategic level in the district. In addition, possibility of information distortions is eminent and if any response is to be made, then it will be late to solve the problems. This is worsened by the fact that agricultural activities are highly dependent on weather and seasons which need timely responses to identified problems.

Based on field interviews from farmers, Internal factors that were mentioned to have likely possibilities in hindering participation were cases of inadequate transparencies, procurement problems, coordination problems, gap in information sharing, resource mismanagement by some stakeholders, inconsistencies in carrying out some activities and self-interests that appeared to be above the program goal.

There also exist external factors beyond the program control such as weather effect, lack of appropriate market, weak infrastructure development and pests and diseases. This calls for investment in a multisectoral way to collectively address the success of NAADS program.

On the positive sides, methods of group formation and development were satisfactory. There were also fairly adequate funds for the inputs, opportunity for learning process, and involvement of stakeholders in enterprise selections received positive feed backs from the stakeholders. Payments for the workers under NAADS were comparatively fair to those of traditional civil servants. However; this is affecting the respect and command since these NAADS workers report to and are supervised by the low paid traditional civil servants.

6.1.3 Ownership on NAADS project by farmers (Research question 3 and 4)

More than three quarters of farmers still believe that they do not completely own NAADS projects which affect their participation. Their arguments are based on the fact that government continues to follow up their NAADS plots using sign boards although the government believes it's purposely for follow up by higher authorities. This shows a gap in the packaging of appropriate information during installations of the boards and needs further sensitisation of farmers to make them aware that they are actually part of the same government.

Majority of NAADS beneficiaries are involved in other non-farm activities such as local beer brewing, paid manual labour and petty trades e.g. in charcoals. This is because they put less effort in the NAADS field compared to other activities. They believe that they completely own those other enterprises outside NAADS and most of them are food crops for consumption. As a

result, the benefits from NAADS projects contribute less in households (approximately 20% of the total incomes/yields)

One of the major challenge that face livestock enterprises in NAADS project is chemical for treatment of the animals. As reported by farmers, they cannot treat the animals at the very beginning due to the high costs of chemicals involved. The goats are improved breeds which require adequate attention beyond the capacity of most beneficiaries. The environment in the homesteads of the farmers does not fit easily with the goats. Although this remains a challenge, other stakeholders explained that the absence of animal drug shops in the vicinity is the main cause. Farmers cannot easily afford the costs of travelling for over 200kms to access these chemicals from neighboring cities.

6.1.4 Participation of women in the program (Research questions 2-5)

Women participation in NAADS program is ably provided for by the implementation guidelines. However, women reported lack of adequate opportunities for them to express themselves in the presence of men. The kinds of mobilization methods in which women are put together with men in all fora during extension services contribute to their low participation.

Women in their own group expressed their opinions that NAADS meetings be conducted in the afternoons and possibly over weekends. This is because in the morning hours, they are busy with households' cores and weekends are better because the children are back from school and can help them as they attend meetings.

6.1.5 The success of the approach in increasing and improving yields (Research question 5)

Farmers' capabilities to utilize the available assets owned or have access to remain low and wanting. Among others, the literacy level in the district stands at 39% with 67% of the population considered to be poor. With these challenges at hand, the level and quality of participation in NAADS project can easily be compromised. A combined effort ought to be pursued in other sectors such as education, works and infrastructure development, health and community awareness promotion on rights and responsibilities so that farmers are socially and economically empowered to participate in development interventions, NAADS inclusive.

In consideration of the views obtained by the research above, majority of the NAADS projects do not present the right technologies for the beneficiaries. Enterprises such as improved goats and cash crops (fig 13) appear to be outside the main interests of the farmers participating in NAADS projects. This is caused by among others, inadequate opportunity on information sharing between the local governments on what the NAADS guidelines say against what farmers feel is appropriate and relevant for their situations for effective participation.

6.2 Recommendations to NAADS policy makers (NAADS secretariat and local government.

6.2.1 General recommendations (main research question)

- NAADS program and the way it's designed presents a promising way of improving farm yields in the households of farmers which should further be promoted. This is due to the fact that it promotes use of private extension approach which is managed and owned by the farmers themselves. This similar approach to extension has been practiced in developed countries such as Europe among others and found to produce tangible results. However there seems to be little participation of farmers in decision making

process when it comes to selecting farm enterprise. The research therefore recommends to NAADS to look into the local interests of the farmers to ensure that they (farmers) put more efforts needed for effective participation in the program instead of imposing on them improved breeds/inputs that are more market oriented.

6.2.2 Recommendations to improve extension and coordination methods (Research sub questions 1 and 2)

- In order to improve the coordination of farmers' participation in NAADS, the research recommends a modification in the implementation guidelines. This could be done in the reporting format to include the inputs of the DPC before the reports are forwarded by DNC to higher authorities. This will contribute to the effective supervision of the program at the district.
- It was established that the organogram under which NAADS program operates is quite long. The long structure contributes to delays in responses before farmers' issues can be addressed at the strategic level of leadership. Untimely responses in agricultural concerns raised by farmers affect farmers field success since most activities are weather determined therefore undermining their effective participation. The research recommends to NAADS to look into possibilities of reviewing the organogram under which NAADS is being managed
- Based on the findings, there is duplication of roles and responsibilities between the Sub County NAADS Coordinators (SNC) and the Agricultural Advisory Service Providers (AASPs) based at sub counties. Both SNCS and AASPS who have similar qualifications are involved in the extension services which could be handled by one category. The SNCs are only drawing work plans and reports which appears inadequate tasks for the whole month. The research recommends to NAADS to consider laying off one category to save expenditures in the overheads and salaries. This will help in having adequate resources for the extensions to reach the farmers which were reported as being inadequate.
- To improve and restore farmers trust on the extension workers, NAADS could consider developing their capacity by trainings them in packages such as communication skills, group mobilization skills and other cross cutting issues such as HIV/AIDs, environment and Gender. This process could be accompanied with logistical supports such as transport, adequate fuel for field work and adequate routine field supervision by higher authorities.
- The research also recommends to NAADS to provide opportunity to extension workers to be motivated and become flexible with their extension work to improve their participation process. This can include motivations in terms of recognition, adequate logistics and opportunity for their views to be considered while in the planning process of the NAADS program.
- Since most farmers prefer to use radios because it's faster in disseminating information about NAADS, the research recommends to NAADS to develop a radio program over some time intervals in which farmers have opportunity to relay their concerns.

6.2.3 Recommendations to improve farmers' ownership of the program (Research sub questions 3 and 4)

- As was established, the local government continues to put sign boards in farmers' plots for purposes of follow up by higher authorities. This was found to be discouraging farmers from owning the projects. The research recommends to local government to modify the writings on the boards. One such modification could appear like 'XX' farmers' group, supported by NAADS" compared to the current ones like "Pader district local government, 'XX' NAADS group". During installation of the boards and other follow up visits, appropriate messages could be packaged and delivered to enforce and improve farmers' degree of ownership on the projects. The option of contacting the group leaders and the village based extension workers can also be used as a way of follow up by higher authorities.
- The local government can look into possibilities of sensitizing farmers so that they can believe that they are actually part of the same government and it's their program. This requires efforts from every stakeholder with similar key information about NAADS in any of their visits to or interactions with farmers to avoid misinterpretations. The message should be incorporated early in the extension messages and other mobilisation program by stakeholders.
- As was established among farmers priorities in coming up with enterprises, the district population is increasing and the scarcity of land slowly becomes unavoidable. Consequently, other farmers opt for other non-farm activities such as local beer brewing, charcoal sales, petty trades, etc. as was established. The research recommends to NAADS to take into consideration in its planning process for enterprise selection the options of supporting farmers in these other livelihood to have a multidimensional approach to improving farm yields and increasing household incomes.
- Enterprise selection can be done at the village level and the outcome taken for funding as a village priority instead of further selection at parish level in which some enterprises are dropped off. When farmers realize that what they selected is funded, it restores their sense of ownership and improves on their participation in the program. This may have a corresponding reduction in the budget received by every village under NAADS. However, farmers can roll over program of their choice to the next financial year for additional funding while pursuing their interest.
- The research recommends to NAADS in conjunction with local government to address the problem of animal drugs and chemicals to treat the livestock delivered under the program. Initiatives can be taken by the local government to promote private sector interventions in the fields of animal drugs sales in the district.

6.2.4 Recommendations to improve on women participation (Research questions 2-5)

- In order to improve on women participation in the program, the research recommends to NAADS to give women an opportunity to share their feelings separately in their own groups during extension. After a general extension process involving men, women can be separately withdrawn from the group and allowed an opportunity to express their feelings about the program.

- A consideration can be made to often plan extension schedules over the weekend and afternoon hours so as to give women time to get assistance from children at home over the weekends or adequate time to do households chores in the morning hours as was found to be their wish.

6.2.5 Recommendations to strengthen the success of current approach on improving yields (Research question 5)

- The assets and capabilities of the farmers show that the success of NAADS is highly dependent on other interventions in other sectors such as works and transport, education, health and community and other social development. The research recommends to NAADS to have NAADS project implemented in partnership with other programs for collective positive results to improve the quality and levels of farmers' participation in the projects for improved yields. For example, during the budget frame work paper conference, a parish where farmers yields are good should have a complementary budget for the road that leads farmers to the market for their produce ,a similar planning approach for their health services and so forth.
- Since the current NAADS approach is more on market oriented production as well as offering inappropriate technologies to the farmers, the approach could be modified to incorporate food security enterprises and local inputs that suit the capacity of the farmers. This calls for a review in the selection criteria for enterprise selections that allow farmers to present their interests easily.

References

- AEAG, 2000. Agricultural Economics Association of Georgia [pdf]. *Journal of Agribusiness* 22, 1 (Spring 2004):17S29. Available online at <<http://www.jab.uga.edu/Library/S04-02>>. (Accessed 10, March, 2011).
- Ban Van Den.A.W and Hawkins.H.S, 1996. Agricultural extension, 2nd Edition. Blackwell, Science Oxford, UK.
- Chambers, R., 1994a. The Origin of Participatory Rural Appraisal. *World development*
- DDP, 2010. District development Plan .Five year rolling development plan 2010/2014.
- Ellis,F., 2000. Rural Livelihoods and Diversity in Developing countries
- FAO, 1984. Agricultural extension. Reference manual, 2nd edition
- FAO, 2010. Famine and Early Warning Systems Network. Food security outlook in Uganda [pdf]. Available online at <www.fews.net/FoodInsecurityScale> (Accessed 22 Dec 2010)
- Glary, L., 1999. Extension Communication and Management, fourth edition. naya Prokash 206 Bidhan Sirani Calcutta 700 006.
- Grant, F, Ian and Sear, C., (eds), 1999. Decision tools for sustainable development, chathan, UK: Resources Institute.
- Jiggins, J., 1997. Inaugural Lecture: Science, Society and Survival Uppsala.
- MAAIF, (2000). Ministry of Agriculture Animal Industry and Fisheries, Uganda. National Agricultural Advisory services Programme (NAADS): Master document of the NAADS task force and joint Donor groups.
- MAAIF, 2010. Ministry of Agriculture, Animal Industries and Fisheries. NAADS implementation guidelines 2010.
- NMAF, 1981 .Netherlands Ministry of Agriculture and Fisheries. Agricultural Compendium for Rural Development in the Tropics and Subtropics.
- ODI, 2001. Oversea Development Institute. Extension, Poverty and Vulnerability: Working paper 144
- Pretty, J.N., Guiji, J., Thomson & Scoones I., 1995. Participatory Learning and Action. *A trainers' guide*. International Institute for Environmental Development (IIED). London.
- Pretty, J, et al., 2011. Sustainable intensification of increasing sustainability in African food and agricultural systems. *International journal of agricultural sustainability*. Vol 9 issue 1.
- Rollinson, D., 2008. Organisational behaviors and analysis. An integrated approach, 4th edition, prentice hall.
- Semana, 1999. Agricultural Extension Services at Crossroads: Present dilemma and possible solutions for future in Uganda. Department of Agricultural Extension and

Education, Makerere University. Available at <<http://codesria.org/IMG/pdf/Semana.pdf>> (Accessed 2 June, 2011)

Shirley, A., 1994. Participatory Communication. Working for change and development. SAGE publications.

UBOS, 2010. Uganda Bureau of Statistics. Demographic statistics. Available online at www.ubos.org/ug.(accessed 17th January 2011)

UNDP Country report, 2007. Gender and women empowerment in Uganda. Available at [://www.undp.or.ug/whatwedo/22](http://www.undp.or.ug/whatwedo/22) (Accessed on 3 June 2011)

Veldhuizen , A,W., Bayer., Zeeuw,H,De., 1997. Developing technology with farmers. Trainers guide for participatory learning, ETC Netherlands

Wennink, et al., 2007 .Access of the poor to agricultural services. The role of farmers' organizations in social inclusion

Wetasinha,C., Van Veldhuizen.,L,Bayer,A,W., 2003. Advancing Participatory Technology Development. Case studies on integration into agricultural research, extension and education. International institute of rural reconstruction ETC Eco culture.

Wiggins, S., McKenzie, V., Lin, I., Ire, X., Thirtle, C., 2001. Relationship between changes in agricultural productivity and the incidence of poverty in developing countries DFID report no.7946 27/02/2001, T.H.Huxley School of Environment, Earth Sciences and Engineering Imperial College of Science, Technology and Medicine, London, SW 7.

World Bank, 2003. Empowering Rural Producer Organizations within the World Bank Initiatives: A Capitalization Study. Uganda Country Case Study [Pdf]. Available online at <<http://siteresources.worldbank.org/extsocialdevelopment/Resources/244362-1170428243464/3408356-1170428261889/3408359-1170428299570/Uganda-En.pdf?resourceurlname=Uganda-En.pdf>> (Accessed 12 January 2011).

World Bank, 2008. The World Bank participation source book. Democracy and participation. Available online < <http://www.socialinnovationexchange.org/node/504>> (Accessed 30th May 2011)

World Bank, 2010. Agricultural and rural development discussion paper no 45. Strengthening agricultural extension and advisory system [Pdf]. Available online on <http://siteresources.worldbank.org/INTARD/Resources/Stren_combined_web.pdf> (Accessed 4th June 2011).

World Bank., FAO., IFAD., 2009. Agriculture and Rural Development. Gender in Agriculture. [Pdf]. Available Online at <<http://www.ifad.org/gender/pub/sourcebook/gal.pdf>> (Accessed 21st, April 2011)

Appendices

Annex1: Topic lists for district staff and extension workers

1. Implementation criteria on farmers' participations in NAADS program.
 - a) group formation criteria
 - b) enterprise selection criteria
2. Extension and coordination methods used by NAADS
 - a) How are farmers' mobilised/coordinated to participate in NAADS
 - b) The roles of extension workers in the field in relations to NAADS
 - c) Logistics and any other assignments given to them by supervisors
 - d) How enterprise selection is being carried out in the last three years vis -a-vis NAADS guidelines
 - e) Challenges and success reports
 - f) Knowledge of gender roles in farmers' households in relations to their participation in NAADS projects.
3. What could be done differently and or maintained in participation process under NAADS to strengthen NAADS approach?

Annex 2: Topic lists for farmers' respondents

1. How farmers get information for participation in NAADS projects
2. How they have been selecting enterprise in the last three years
3. Challenges faced by group when selecting enterprise
4. Other non-farm and off farm activities farmers are engaged in and their contributions(yields/incomes) to households (farmers use PRA income and expenditure analysis tool to compare with NAADS)
5. Gender roles in households and how they affect participation in NAADS project.
6. Farmers relationships and interests in relation to group work/participations in projects.
7. How farmers feel about their ownerships/interests on NAADS projects identified.
8. Challenges faced by farmers in their participation and possible solutions/what can be done differently.

Annex 3: research questionnaires

GENERAL INFORMATION

Name of respondent: ----- (You are free not to write your name)

Sex of respondent: M ☐ F ☐

Sub county: ...To be filled by Researcher

Village:To be filled by Researcher

HOUSEHOLD INFORMATION

Questions

1. a) What is your level of education?

Answers (tick within the box)

Primary school leaver	Ordinary school leaver	High school leaver and above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) How many household members do you have?

1-3 members	4-5 members	5 members and above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c). What is your farm size (in hectares)- under NAADS enterprise?

1 hectare and below	2-3 hectares	4 hectares and above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d). How much time do you spend in the NAADS - field compared to other household fields?

3-4 hours a week	5-8 hours a week	More than 8 hours a week
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

e) Are you satisfied with the income/yield- you get from this farm enterprise?

Not satisfied at all	Averagely satisfied	satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. INVOLVEMENT IN NAADS

- a). From which of the following sources are you getting NAADS information?

Radio	Extension worker	Fellow farmer	Others(specify)

- b). Which source(s) do you rank best?

Answer by inserting 1 for best, 2 second best., etc

Radio	Extension worker	Fellow farmer	Others(specify)

3. ENTERPRISE SELECTION AND NAADS SUPPORTS

- a) What farm enterprise is your group currently engaged in?

Continue ticking in the box

Goats	Sunflower	Cassava

- b). Are you satisfied with how the group selected this enterprise?

Not satisfied at all	Averagely satisfied	Satisfied

- c). Are you satisfied with the cooperation level in your existing group?

Not satisfied	Averagely satisfied	Satisfied

- e) How do you rate the assistance given to you by NAADS?

Not good/irrelevant	Fair/inadequate	Good/adequate	Very good/very relevant

4. ACTIVITIES OUTSIDE NAADS

- a) Which of the following crops/animals is your household engaged in?

Indicate by 1 as priority, 2 for second priority, 3 third, etc

Beans	sorghum	Cattle rearing	pigs	Other(specify)

- b). Which of the following non-farm activities are/is your household involved in?

Local beer brewing	Manual labor	Small scale shops	Charcoal burning

- c). Which of the above activities are you satisfied with its income to households

Indicate by ranking 1, 2, 3 ... etc

Local beer brewing	Manual labor	Small scale shops	Charcoal burning

Annex 4

Table 4.1 List of Sub County NAADS Coordinators (SNC) in Agago County (new district)

S/No	NAME	STATION OF WORK	QUALIFICATION
1.	Lamuno Doreen	Patongo T/Council	Bachelor Degree in Agriculture
2.	Okidi John	Patongo S/cty	Bachelor Degree in Wood Science
3.	Ochan Charles	Lokole S/cty	Degree in Fisheries/Aquaculture
4.	Owiny Michael Jackson	Lamiyo S/cty	Diploma in Agriculture
5.	Olweny James	Parabongo S/cty	Diploma in Animal Science/Husbandry
6.	Olum Andrew Livingston	Kalongo T/Council	Diploma in Agriculture
7.	Ochaya Single Ricky	Lira Palwo S/cty	Diploma in Animal Science/Husbandry
8.	Oryem Edward Basil	Wol S/cty	Diploma in Agriculture
9.	Odera Alfred	Adilang S/cty	Degree in Wood Science
10.	Okwera Robert Kenny	Omot S/cty	Diploma in Animal Science/Husbandry
11.	Abollomoobene Francis	Paimol S/cty	Diploma in Agriculture
12.	Okello Vincent	Arum S/cty	Diploma in Agriculture
13.	Ogena Francis	Lapono S/cty	Diploma in Fisheries/Aquaculture
14.	Olwoch John Bosco	Omiya Pachwa S/cty	Diploma in Agriculture
15.	Otto Denis	Kotomor S/cty	Diploma in Agriculture

Table 4.2 List of Agricultural Advisory Service Providers (AASPs)

S/No	NAME	STATION OF WORK	QUALIFICATION
1.	Komakech Boniface	Omiya Pachwa S/cty	Diploma in Agriculture(Crop)
2.	Komakech Stephen	Arum S/cty	Degree in Agriculture(Crop)
3.	Oryema Bosco	Lokole S/cty	Certificate in Agriculture(Crop)
4.	Rackara Dickens	Parabongo S/cty	Certificate in Agriculture(Crop)
5.	Okino Nicholas	Kotomor S/cty	Diploma in Agriculture(Crop)
6.	Opiyo Geoffrey	Patongo S/cty	Diploma in Agriculture(Crop)
7.	Opio Abura K. Innocent	Adilang	Certificate in Agriculture(Crop)
8.	Lacanmatwal Moses	Wol	Diploma in Agriculture(Crop)
9.	Olwa Johnsson	Omot	Diploma in Agriculture(Crop)
10.	Komakech Denis	Patongo T/Council	Certificate in Agriculture(Crop)
11.	Oola Christopher	Lira Palwo S/cty	Diploma in Agriculture(Crop)
12.	Alanyo Dorine	Kalongo T/Council	Diploma in Agriculture(Crop)
13.	Ouma Paul	Lapono S/cty	Diploma in Agriculture(Crop)
14.	Okidi Terencio	Paimol S/cty	Certificate in Agriculture(Crop)
15.	Pule Walter	Lamiyo S/cty	Diploma in Agriculture(Crop)