EFFECT OF STAKEHOLDER ENGAGEMENT ON THE ADOPTION OF AGRICULTURAL TECHNOLOGIES BY FARMERS IN UGANDA:
A Case of SNV-TIDE Project in Isingiro District

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ABSTRACT

This study assessed how stakeholder engagement strategies used by SNV-TIDE project in planning, capacity building and resource mobilisation influenced the adoption of improved forages in Isingiro District, Southwestern Uganda. A cross sectional survey

design was adopted for the study, which covered five purposively selected SNV-TIDE project cooperatives. The data were collected from 50 active cattle farmers and three field supervisors using both a semi-structured questionnaire and an interview guide. Descriptive and inferential analysis including multiple regression techniques were employed to analyse the data. The findings revealed that stakeholder engagement in planning and capacity building contributed 35 and 14.3 percent change respectively, in the adoption of improved forages. Stakeholder engagement in planning and capacity building had a positive significant ($p<0.05$) influence on the adoption of improved forages among the SNV-TIDE project members. But stakeholder engagement in resource mobilisation had no influence ($p>0.05$) on the adoption of improved forages. Thus based on the study, it was concluded that engaging stakeholders in planning and in capacity building contributes to the adoption of improved forages. To achieve better results, therefore, stakeholder engagement strategies should put more emphasis on involving stakeholders in the project planning activities and capacity building.

Keywords*: Adoption, Capacity building, Improved forages, Resource mobilization, Stakeholders.*

1. Introduction

Governments, farmers and individuals are yearning for improved agricultural technologies and innovations to reposition farming in their national development endeavors. Adoption of agricultural technologies for improving agricultural production is a puzzling issue for researchers, practitioners, and policymakers globally (OECD, 2001). In the context of developing world where majority of the people derive their livelihood from agriculture, agricultural technologies become a more critical issue attracting attention from

the politicians, public managers and development economists (Feder *et al*., 2017). For many years, the main concern of agriculture extension was the delivery of technical expertise to farmers (Seevers & Graham, 2012).

Over the years, the approach for agriculture extension services kept evolving to involve and engage various stakeholders, and thereby take care of the complex and dynamic interests and needs of these players (Peters, 2002). This was expected to cater for the technological requirements and interests of livestock keepers. Cattle keepers, for example, should participate in a range of activities including the selection and delivery of a variety of forage species (Andy *et al*., 2008). The presumption is that full engagement of the beneficiaries promotes successful project implementation (Silvius & Schipper, 2019). Concisely, better understanding of user-centered project design practices, and greater collaboration with all stakeholders are required for successful adoption of agriculture innovations.

In Uganda, efforts to address the challenge of poor quality and quantity of forage have been made by various stakeholders including development agencies through introducing different pasture improvement technologies (Grimaud *et al.*, 2007). Since late 1980s and early 1990s, various pasture improvement interventions by government and other agencies have been undertaken. Whereas in 1995 – 1999 for example, efforts centered on both local and research stations, in 1999 to 2004 the focus was on sensitization and piloting production of improved forages in Uganda (Sabiiti *et al*., 2004). Since 2007 to date, various livestock development interventions including the East Africa Dairy Development Project as well as other agencies focused on value chain improvement in the dairy sector have been tried while engaging all stakeholders (Wambugu *et al*., 2011).

In spite the excitement and rhetoric about it, low adoption of agricultural technologies remains a critical hindrance to improved livestock productivity in Uganda. According to the Ministry of

Agriculture Animal Industry and Fisheries (MAAIF) adoption of livestock technologies is less than 20% (Feder *et al*., 2017); with adoption of improved forages carried out on a small scale (MAAIF, 2018). Despite carrying out several trials in Southwestern Uganda to demonstrate to farmers how pasture productivity could be improved by introduction of improved forages, majority of the farmers still have not adopted improved forages (Katuromunda *et al*., 2017).

At present, only 25% of the cattle keepers in Southwestern Uganda grow improved forages in their pastureland and only 5% of the cattle keepers conserve forage for feeding animals during dry season (UNDP, 2018). Extant studies done on adoption of improved forages have focused on farm and institutional specific factors including farm resource and farming systems, market-related factors, and extension services (FAO, 2017; Grimaud *et al*., 2007; MAAIF, 2018; Nkuruziza *et al*., 2016; Nsubuga, 2017; Roschinsky, 2016). As a result, there is insufficient evidence on the extent to which stakeholder engagement has influenced adoption of improved forages with particular focus on SNV-TIDE project in Isingiro District.

This study therefore examined the influence of stakeholder engagement on the adoption of improved forages in Isingiro District, Southwestern Uganda. Specifically, the study examined the influence of stakeholder engagement in planning, capacity building and resource mobilization on adoption of improved forages among SNV-TIDE cooperative society members in Isingiro District. This present study was anchored on three hypothetical predictions:

H_1: There is a positive and significant influence between stakeholder engagement in planning and the adoption of improved forages among SNV-TIDE cooperative members in Isingiro District.

H_2: There is a positive and significant influence between stakeholder engagement in capacity building and adoption

of improved forages among SNV-TIDE cooperative members in Isingiro District.

H_3: There is a positive and significant influence between stakeholder engagement in resource mobilization and adoption of improved forages among SNV-TIDE cooperative members in Isingiro District.

2. Literature Review

2.1 Stakeholder engagement

The key concepts in the study are stakeholder engagement and adoption of improved forages simply put, stakeholders as individuals or groups that have a stake in the organization. Hewlett (1997) provides a broader definition of stakeholders as people or institutions that are interested in the successful design, implementation, and sustainability of a project. However, the above definitions center on the organization and yet the concept of stakeholders goes beyond organizations. The more inclusive description of stakeholders by Freeman (1984) to the effect that a stakeholder is any person or a group of people who can affect or can be affected by the accomplishments or objectives of a project.

The manifestation of "can affect or can be affected by" takes care of all individuals such as farmers who are outside the organization and groups such as local leaders, who may be stakeholders of a project, when the firm does not consider them as such. By extension, stakeholder engagement in this study was understood as the different communication responsibilities that must be performed by a facilitator to involve all stakeholders (Bourne, 2016). Some stakeholders influence project performance by providing or not providing funds, social support, or other resources, while others decide to be saboteurs or demonstrators or resist against authorities. Stakeholder engagement was

operationalized as engagement in planning, capacity building and resource mobilization.

2.2 Adoption

Rogers (1995) defines adoption as a mental process a person goes through after getting information about new technology until the time, he/she implements the technology. Sträub (2020) asserts that adoption does not refer to just taking a decision to accept a technology but the degree to which a technology is put in practice. While the first definition of adoption emphasizes decision making over time the second definition of adoption focuses on the amount of a new technology put into practice. Feder *et al*., 2017 contends that for new technologies which are divisible like improved forages the intensity of adoption can be quantified at both farmer's level for a certain period based on the extent or part of farm area using the technology and equivalent measures may well be used at the cumulative level for a given region.

However, a comprehensive definition of distinguishing between adoption at farm level and regional level was adopted from (Feder *et al*., 2017). Final adoption at farm level is defined as the amount of a new technologies used from the time a farmer has known about the new technology while regional adoption is defined as a quantity of a technology used by a given community or within a certain population. Using a quantifiable definition enabled the study to measure adoption of improved forages in terms of the type of improved species grown, acreage under improved forages and amount of improved forages preserved as hay or silage.

2.3 Theoretical review

To understand the influence of stakeholder engagement on adoption of improved forages, the study was guided by Stakeholder Theory authored by Freeman (1984). The theory postulates that considering stakeholder interests is important in change processes and focuses

on searching for proactive ways for effective change process in relation to its surroundings (Brønn & Brønn, 2003). Contextual factors exist among both the internal and external stakeholders. Hence, Freeman (1984) cautioned that managers need to consider all those persons that can affect or are affected by the project. Stakeholder theory involves setting guidelines to follow, while designing a project plan. It also involves procedures agreed upon by the communities' involvement to succeed. Stakeholder theory offers a variety of viewpoints and potentials and inclines around the concept of impartiality, fairness and influence on the mode stakeholders exercise ethical influence over the enterprises which at the end may affect the overall performance of the project.

For all its wide appeal to both scholars and practitioners, the theory is not without criticisms. Basing on its simplicity and generalizability, some scholars submit that the notion remains vague (Plard *et al*., 2019).

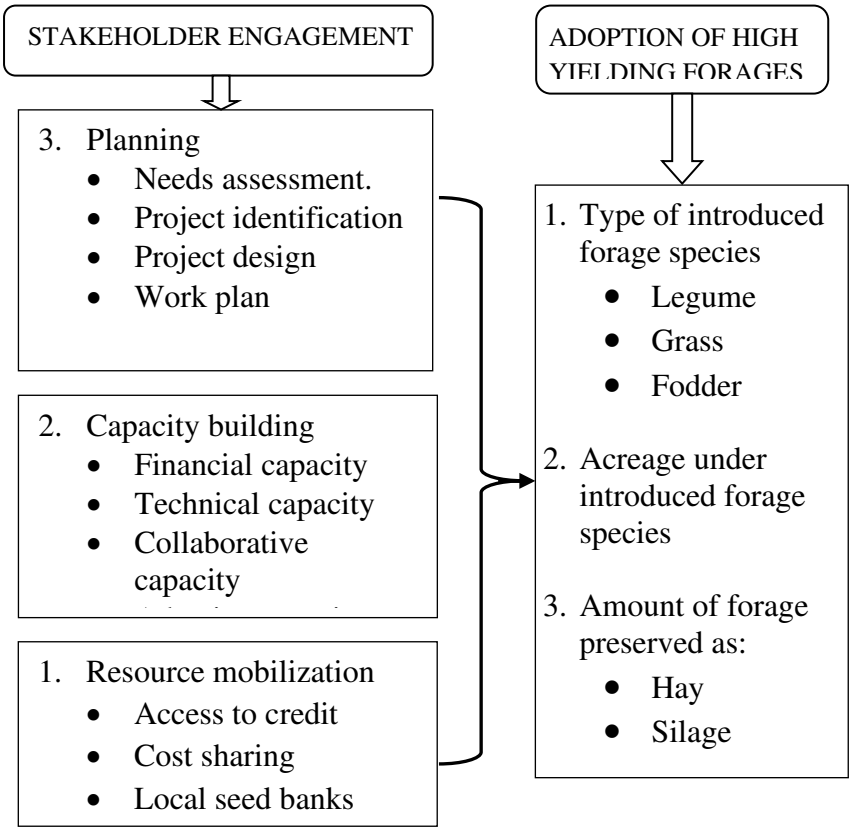
The foregoing is in respect with defining stakeholder as any group or individual who can affect or be affected by the organizational objectives. This definition of "whom can be affected by the project implies social and ethical implications that extend management responsibility to the entire society as well as legitimizing any social actor concerned with organizational objectives.

The critique above notwithstanding, the Stakeholder theory was still deemed fit for this study. From the context of pasture improvement program by SNV-TIDE project, the theory informed this study from the view point that stakeholders' behavior in terms of adoption of improved forages is influenced by motivations resulting from their engagement in planning for their interests, capacity building and cost sharing the needed resources (Figure 1).

This is true in the sense that stakeholder engagement in planning, capacity building (taking care of members' identity, skills and experiences) and resource mobilization influence the stakeholders' behavior by motivating them to adopt improved

forages in terms of different types of improved forages grown, increasing land acreage under improved forages and practicing different methods of utilizing improved forages as shown in Figure 1 below.

Fig. 1. Conceptual framework illustrating the influence of stakeholder engagement on adoption of improved forages.



3. Materials and Methods

3.1 Research Design

The study adopted a cross sectional research design to enable undertaking the study within one point at a time and to gather information from a relatively large number of respondents (Sekaran, 2003). The research design employed both qualitative and quantitative approaches to conduct the study. The methodological triangulation enables either approach to compliment the other by comparing the variety of information to carry out this study exhaustively (Amin, 2005). Whereas qualitative approach enabled in depth investigation of the problem capturing respondent's views, feelings, knowledge and opinions, quantitative approach captured quantifiable responses thereby enabling generalization of findings (ibid).

3.2 Population and Sampling

The study population was generated from SNV-Tide project in Isingiro District. The population categories included ninety-five (95) cattle keepers selected from the members of the five cooperatives societies formed by SNV-TIDE project in Isingiro District. However, the target population for the study was only eighty (80) dairy farmers randomly selected based on their active membership from five (5) cooperatives and purposive selection of five (5) SNV-TIDE project field supervisors. Overall, the target population for the study was eighty-five (85). From this, the sample size was 70 determined using statistical tables by (Krejcie & Morgan, 1970).

3.3 Data collection methods and instruments

The study used both the questionnaire survey and interview guide methods of data collection. A semi structured questionnaire that was used consisted of a series of questions and for the purpose collecting information from respondents (Amin, 2005). The semi-structured questionnaire with both closed and open-ended questions was administered to targeted cattle keepers and because they were widely scattered over a wide area, the use of a questionnaire helped to collect data quickly and cheaply. Closed ended questions used had a five-point Likert scale with 1- Strongly Disagree, 2- Disagree, 3- Not sure 4- Agree and 5- Strongly Agree

An interview guide on the other hand as a qualitative tool of collecting data was used by asking respondents questions as a follow up or probing and prompting their answers (Kothari, 2004). The study prepared a semi structured interview guide that was used to engage respondents in the interview with key stakeholders that included local leaders and SNV-TIDE project field staff in Isingiro District. SNV-TIDE project field workers and local leaders were in position to provide key information that helped to exhaust the study.

3.4 Data Analysis

Quantitative data was analysed by using descriptive statistics such as frequencies, means, and standard deviation for each of the items in the questionnaire. Data were first processed by editing, coding, and entered in SPSS version 16.0. A correlation technique based on Pearson's coefficient (+ or -) was employed to ascertain the direction of the relationship between variables under study. Pearson correlation coefficient was preferred because it analyses variables that are expressed in figures. In order to fulfil the sufficient condition, a multiple linear regression model was used to determine the magnitude of influence of independent variables on

the dependent variable (Amin, 2005). The multiple linear regression is as follows:

$$Y_i = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e \quad \text{---------- (1)}$$

Whereby Y_i is the level of adoption of improved forages regarded as the dependent variable, X_1 is the stakeholder engagement in planning, X_2 is the stakeholder engagement in capacity building and X_3 is the stakeholder engagement in resource mobilization, $b_{0\ is}$ the constant value, b_1, b_2 and b_3 are the estimated regression coefficient and error term *e* that captures other factors that influence adoption of improved forages.

Qualitative data were analyzed using content and thematic analysis, this involved transcribing audio data that were saved on phone into handwritten transcripts and then reading and re-reading the transcripts looking for similarities and differences to find out themes and to develop categories. To avoid leaving out anything of importance related to the study objectives, paragraphs with similar topics, themes, or categories were coded with an appropriate word in the margin. Using highlighter pens with different colors, bits with different themes were marked in paragraphs, sentences, or phrases. This increased objectivity and reduced the risk of only selecting bits that conform to researcher's preconceptions.

4. Results and Discussion

4.1 Findings on adoption of improved forages

In this study, adoption of improved forages was measured using three (3) dimensions of: type of introduced forage species, acreage under introduced forages and amount of introduced forage preserved as hay or silage. For all item statements were

administered to respondents to establish the extent to which they agreed with them.

The responses were measured on a five-point Likert scale ranging from 5 = strongly agree (SA), 4 = agree (A), 3 = neutral (N), 2 = disagree (D) and 1 = strongly disagree (SD). Additionally, descriptive statistics as a technique of analysis was used with mean and standard deviation, where the mean value greater than 3 indicates an agreement by respondents, the mean value of 3 shows neutrality of respondents, while the mean value less than 3 indicates disagreement by respondents.

On the other hand, a standard deviation of close to 1.0 shows agreement, while a standard deviation of close to 0 (zero) indicates disagreement by respondents. In this study, strongly agree and agree were grouped to mean agree and strongly disagree and disagree to mean disagree.

An item-by-item analysis of the results in Table 1 indicated that for all the six items asked on the adoption of improved forages in the questionnaire for respondents, the mean values were above 3, while four items had standard deviation above 0.5 and only two items had standard deviation below 0.5.

Table 1. The adoption of improved forages among the SNV-TIDE project cooperative members

Item	Responses of adopters of improved forages	SD	D	N	A	SA	Mean	SD
		1	2	3	4	5		
1.	I have increased my grazing land under high yield forages	–		1 (2%)	11 (22%)	37 (74%)	4.72	0.497
2.	I have grown more high yield legume forages	–	1 (2%)	–	11 (22%)	38 (76%)	4.72	0.573

3.	I have grown more high yield grass forages	–	3 (6%)	–	14 (28%)	33 (96%)	4.54	0.778
4.	I have grown more high yield fodder forages	–	2 (4%)	–	14 (28%)	34 (68%)	4.60	0.700
5.	I now preserve forage as hay	1 (2%)	3 (6%)	–	13 (26%)	33(66%)	4.48	0.931
6.	I now preserve forage as silage	9 (18%)	10 (20%)	–	4 (8%)	27 (54%)	3.60	0.239

Source: Primary data 2021

This means that all participants agreed to have been facilitated by SNV-TIDE project to grow improved forages on their grazing lands. These findings reveal that most of the responses given were in agreement with the item statement that they increased their grazing land under improved forages (mean = 4.72 and SD = 0.497), had grown more improved legume forages (mean = 4.72 and SD = 0.573), had grown more improved pasture grasses (mean = 4.54 and SD = 0.778) while others had grown more improved fodder forages (mean = 4.60 and SD = 0.700). The implication from these findings is that SNV-TIDE project had assisted most of the cooperative members to grow improved forages. Relatedly, during the interview with one of the field extension workers for the selected cooperatives in Masha sub-county had this to say:

SNV provided cooperative members with seeds for improved forages including legumes like Sun hemp and Calliandra; fodder grass species like Napier grass, Panicum spp, Brachiaria spp and Rhodes grass; and fertilizers among others.

The findings in the verbatim imply that SNV-TIDE project cooperative members were facilitated with free planting materials of improved forages legume, fodder grasses and grass pastures as

well as fertilizers for growing improved forages. Another field extension worker in Kabuyanda sub-county said that:

One to three (1-3) lead farmers are selected from each cooperative and facilitated to grow improved forages and because farmers are trained not to be selfish, when improved forages produce seeds, other farmers freely get planting seeds from lead farmers.

This clearly indicates that accessibility for planting materials for improved forages was made easy and free of charge for the cooperative members which promoted growing of improved forages.

The findings in Table 1 indicate that 66% of the respondents strongly agreed that they preserved forage in form of hay (Mean= 4.48). The mean of 4.48 and standard deviation of 0.931 implies that most of the respondents preserved pasture as hay. These findings were supported by one of the field supervisors in Endizi sub-county who noted that:

Cooperative members were trained on how to harvest forage that is abundant during rainy season, dry it and tie it in bales. Most farmers were also facilitated to construct sheds for preserving pasture in form of hay. In addition to forage farmers preserve crop remains like sorghum and maize stalk and remains of other crops like beans and peelings that are dried properly and fed to animals during time of scarcity of feeds especially during drought season.

The above findings imply that cooperative members were facilitated to preserve improved forages available during rainy season for use in dry season.

The findings in Table 1 further indicate that 18 % of the respondents strongly disagreed, 20 % disagreed, 8% of the respondents agreed and 54% of the respondents strongly agreed that they preserved forage in form of silage (Mean = 3.60 and SD = 0.239). The mean of 3.60 and standard deviation of 0.239 imply that those who preserve forages as silage were few. This finding

was further explained by one of the field supervisors in Kabuyanda sub-county who noted that.

Although most of the cooperative members were trying to preserve forages as silage other farmers preferred preserving forages as hay because silage making is more tiresome and needs capital to buy the required ingredients such as molasses.

These findings imply that farmers find it easier and cheap to preserve forage in form of hay compared to silage that needs a lot of labor and capital.

4.2 Stakeholder engagement in planning and adoption of improved forages

This study set out to find out to establish how stakeholder engagement in planning influences adoption of improved forages. Stakeholder engagement in planning plays an important role in the success and management of project implementation. The dimensions of stakeholder engagement in planning included needs assessment, project identification, project design and work plan. Respondents were asked whether they strongly agree (SA), agree (A), neutral (N), disagree (D) or strongly disagree (SD) using a five-point Likert scale. Additionally, descriptive statistics technique was used with mean and standard deviation.

The findings presented in Table 2 indicated that majority of the respondents agreed that they participated in sharing their views before project implementation (Mean = 4.76 and SD = 0.431). The findings indicated that 76% of the respondents strongly agreed, while 24% were in agreement with the statement. The mean of 4.76 and standard deviation of 0.431 imply that most of respondents agreed that indeed members were given time to share their views before project implementation.

Table 2. Stakeholder engagement in the planning project activities

Item	Stakeholder engagement in planning project activities	SD	D	N	A	SA	Mean	SD
		1	2	3	4	5		
1.	Sharing views before project implementation	–	–	–	12 (24%)	38 (76%)	4.76	0.431
2.	Participating in needs assessment	–	–	–	6 (12%)	44 (88%)	4.88	0.328
3.	Members interests in the project considered	–	–	–	8 (16%)	42 (84%)	4.84	0.370
4.	Participation in designing project activities	–	–	3 (6%)	7 (14%)	40 (80%)	4.74	0.418
5.	Participation in assigning members roles and responsibilities	–	–	–	11 (22%)	39 (78%)	4.80	0.451
6.	Participation in election of project committees	–	–	1 (2%)	8 (16%)	41 (82%)	4.74	0.564

Source: Primary data 2021

This finding was further confirmed by one of the project field supervisors from Masha sub-county, who had this to say:

Before introducing any innovation, interactive meetings were held to ensure that the innovation is fully discussed, and farmers' views related to the innovation are respected in the implementation of the innovation.

The above verbatim implies that SNV project innovations identification was done collectively with thorough consultations with all stakeholders and innovation were identified based on the needs and interests of stakeholders.

The findings in Table 2 further indicate that that 12 % of the respondents agreed and 88 % strongly agreed that their needs were adequately taken care of while planning for the project implementation (Mean= 4.88 and SD = 0.328). The findings also indicate that 16 % of the respondents agreed and 84 % strongly agreed that their interests were considered while planning for the project (mean 4.84 and SD = 0.370). Both the mean and standard deviation for needs and interests respectively imply that most of respondents agreed that indeed their needs and interests were adequately addressed while planning for the project activities. This finding is further confirmed by one of the project field supervisors Endizi sub county, who had this to say:

The project team carries out needs assessment using a participatory approach which helps the project team to take care of cooperative members' needs and interests as a basis for all the innovations introduced through the project. When it's found out that members need training arrangements are made to make sure that farmers are trained before an innovation is implemented.

She further added that even individual needs and interests are taken care of. For instance, farmers with no land that could be used for growing improved pastures were advised to plant such pastures along trenches in their banana plantation or planting them as hedge around their land or home steads.

The above verbatim implies that cooperative members were involved in needs assessment and the project was properly communicated to farmers before it was implemented.

The findings in Table 2 that that 6% of the respondents were undecided, 14 % of the respondents agreed and 80 % strongly agreed that they took part in designing project activities while planning for the project implementation (Mean = 4.74 and SD = 0.564). The findings of the study indicate that 22 % of the respondents agreed and 78 % were strongly agreed that they participate in assigning roles and responsibilities to members while planning for the project implementation (mean 4.80 and SD = 0.451). The mean and standard deviation for designing project activities and assigning roles and responsibilities to members respectively imply that most of respondents agreed that they take part in designing project activities and assigning roles and responsibilities to members while planning for the project. This finding is further confirmed by one of the project field supervisors, who had this to say:

The findings in Table 2 that 2% of the respondents were undecided, 16 % of the respondents agreed and 82 % strongly agreed that they fully participated in election of their project committees for managing project implementation (Mean= 4.74 and SD = 0.564). This finding is further confirmed by one of the project field supervisors Endizi sub county, who had this to say:

Cooperative members are allowed to elect committee members themselves and the committee members manage most of the project activities with the supervision of the SNV field supervisors.

The above verbatim implies that cooperative members were actively involved in the day-to-day management of their cooperatives.

4.3 Stakeholder engagement in capacity building and adoption of improved forages

This study set out to find how stakeholder engagement in capacity building influenced adoption of improved forages. The

dimensions under stakeholder engagement in capacity building included financial capacity, technical capacity, collaborative capacity and adaptive capacity. Respondents were asked whether they strongly agree, agree, neutral, disagree or strongly disagree using a 5- Likert scale where 5= strongly agree, 4= agree, 3= neutral, 2= disagree and 1=strongly disagree.

Additionally, descriptive statistics as a technique of analysis was used. The descriptive results are shown in the Table 3 below.

An item-by-item analysis of the results in Table 3 above indicated that all the 7-items of stakeholder engagement in capacity building asked in the questionnaire for respondents to answer yielded means above 3.

This thus statistically means that all participants generally agreed to have taken part in stakeholder capacity building activities of the project.

Table 3. Stakeholder engagement in the capacity building

Item	Stakeholder engagement in capacity building	SD	D	N	A	SA	Mean	SD
		1	2	3	4	5		
1.	Trained in identifying improved forages	–	–	3 (6%)	16 (32%)	31 (62%)	4.74	0.456
2.	Trained in pasture establishment agronomic skills	–	–	1 (2%)	17 (34%)	32 (64%)	4.56	0.611
3.	Adequate training on forage harvesting and preservation	–	–	1 (2%)	10 (20%)	39 (78%)	4.62	0.530
4.	Taking part in establishment of a demo plot of improved forages	–	–	1 (2%)	8 (16%)	41 (82%)	4.76	0.476
5.	Trained in marketing improved forages	–	1 (2%)	2 (4%)	8 (16%)	39 (78%)	4.80	0.452

6.	Trained on how to feed animals on improved forages	–	–	3 (6%)	7 (14%)	40 (80%)	4.70	0.647
7.	Trained on monitoring and evaluation of pasture production and preservation	–	1 (2%)	–	9 (18%)	40 (80%)	4.76	0.555

Source: Primary data 2021

These finding reveal that the most respondents agreed with the statement that they were trained in identification of improved forages (mean = 4.74 and SD = 0.456), trained in pasture establishment agronomic skills (mean = 4.56 and SD = 0.611), got adequate training on forage harvesting and preservation (mean = 4.62 and SD = 0.530), took part in establishment of a demonstration plot for improved forages (mean = 4.76 and SD = 0.476), trained in marketing of improved forages (mean = 4.80), trained in how to feed animals on improved forages (mean = 4.70 and SD = 0.647) and those who trained on monitoring and evaluation of pasture production and preservation had mean of 4.76 and SD of 0.555.

The findings from the interviews with project field supervisors concurred with the questionnaire findings as all the three interviewees narrated on how the project sponsored workshop trainings at local level, district, and regional level for farmers, as one project field supervisor note that.

The findings in Table 3 indicate that that 6% of the respondents were undecided, 32 % of the respondents agreed and 62 % strongly agreed that they trained in identifying improved forages forage species through SNV project (Mean= 4.74 and SD = 0.456). The mean of 4.74 and 4.80 for identification of improved forages and agronomic skills for pasture management respectively imply that most of respondents agreed that they took part in the training for

identification of improved forages and agronomic activities for growing pasture through SNV project. These findings were further confirmed by one of the project field supervisors in Masha sub-county, who noted that.

Cooperative members are periodically taken to model farms like Mbarara Zonal Agriculture Research Development (MBAZARD), Mutanonga farm and Nsangano farm in Kashari for 2 to 6 days training workshops. These farms are selected by SNV management for training because they are modernized and grow improved forages which enables farmers to learn practically while seeing and touching everything taught to them

The above verbatim statements suggest that SNV-TIDE project endeavours to train cooperative members through exposure to modern farms which is done through field trips and this help to change their attitudes towards improved forages.

Additionally, the findings further indicate that 2 % of the respondents were undecided, 16% agreed and 82 % strongly agreed that they participated in establishment demonstration plots for improved pasture management facilitated by SNV project (mean 4.76 and SD = 0.476). The mean of 4.76 and standard deviation of 0.476 for establishment of demonstration plots implies that most of respondents agreed that they took part in the training for establishment of demonstration plot through SNV project. These findings were further confirmed by one of the project field supervisors in Kabuyanda sub-county, who noted that:

For every cooperative a demonstration plots had been established which is used in training farmers on pasture management activities. Cooperative members had themselves selected a day in a month for meeting at the demonstration plot and carry out the necessary agronomic activities as they learn.

The above verbatim statements suggest cooperative members were provided with continuous learning opportunities through active participation in management of demonstration plots.

The findings in table 3 further indicate that that 2% of the respondents were undecided, 20 % of the respondents agreed and 78 % strongly agreed that they were trained in modern techniques for pasture harvesting and preservation through SNV project (Mean= 4.62 and SD = 0.530). The findings further indicate that 6 % of the respondents were undecided, 14% agreed and 80 % strongly agreed that they participated in trainings for feeding animals on improved forages f through SNV project (mean 4.70 and SD = 0.647). Additionally, one of the field workers in Endizi sub-county noted that:

Cooperative members are trained on how harvest forages for feeding, reducing moisture content using a drying rack and how chop forages and feed their cows on adlib feeds thus cows have to eat throughout the day as well as at night for farmers to get a lot of milk from those cows.

The findings above indicate that SNV project has facilitated cooperative members to acquire some skill and knowledge in forage preservation. The findings in table 3 further indicate that that 2% of the respondents were disagreed, 18 % of the respondents agreed and 80 % strongly agreed that they were trained in monitoring and preservation pastures through SNV project (Mean= 4.76 and SD = 0.555). The mean of 4.76 and standard deviation of and 0.555 implies that most of respondents agreed that they took part in the training monitoring and preservation of improved forages through SNV project. These findings were further confirmed by one of the project field supervisors from Endizi sub-county, who noted that:

The one of the objectives of SNV project was to train dairy farmers in the six pillars of pasture management namely, pasture establishment and management, pasture harvesting techniques,

pasture preservation methods, feeding infrastructure, paddocking and water supply.

The above narrative further reveals that cooperative members are equipped with the appropriate knowledge, skills and attitude related to improving feeding of their cows for high production results.

4.4 The influence of stakeholder engagement in planning, capacity building and resource mobilization on the adoption of improved forages

In order to ascertain the contribution of stakeholder engagement in planning, capacity building and resource mobilization on the adoption of improved forages, a hierarchical regression analysis was performed (Table 4).

Table 4. Model Summary

Model	R	R-Square	Adjusted R-Square	S.E. of the estimate	Change statistics				
					R-Square change	F-Change	df 1	df 2	Sig. F-Change
1	0.591[a]	0.350	0.336	0.533	**0.350**	25.830	1	48	<.0001
2	0.702[b]	0.493	0.471	0.476	**0.143**	13.257	1	47	0.001
3	0.702[c]	0.493	**0.460**	0.481	<.0001	0.008	1	46	0.931

Key: a = Predictors: (Constant), planning
b = Predictors: (Constant), planning, capacity building
c = RECS Predictors: (Constant), planning capacity building, resource mobilization

Source: Primary data 2021

Results in Table 4 indicate that the three variables (planning, capacity building and resource mobilization) explain 46.0% (Adjusted R Square = 0.460) of the adoption of improved forages implying that the remaining 54.0% was due to other factors not considered in this study. However, in terms of individual contributions to the adoption of improved forages the SNV-TIDE project cooperative members, stakeholder engagement in planning contributed 35.0% (R Square change = 0.350) (Model 1), while the engagement in capacity building contributed 14.3% (R Square change = 0.143) (Model 2) (Table 4). Thus, stakeholder engagement in planning explains much of the variations in the adoption of improved forages among the SNV-TIDE project cooperative members, followed by engagement in capacity building, while stakeholder in resource mobilization did not contribute anything (Table 4).

Table 5. Coefficient matrix of variables influencing the adoption of improved forages

Model	Unstandardized coefficients		Standardized coefficients	t-Stat	Signif.	Collinearity Statistics	
	β	SE	Beta			Tolerance	VIF
Constant	-2.646	1.430	-	-1.851	0.071	-	-
Stakeholder engagement in planning	0.799	0.342	0.324	2.340	0.024	0.576	1.737
Stakeholder engagement in capacity building	0.716	0.311	0.475	2.302	0.026	0.259	3.859
Stakeholder engagement in resource mobilization	-0.023	0.258	-0.015	-0.088	0.931	0.365	2.742

Source: Primary data 2021

The study hypothesis that stakeholder engagement in planning has a positive and significant influence on the adoption of improved forages among the SNV-TIDE cooperative members in Isingiro District was examined and verified. Based on the results in Table 5, we failed to reject the hypothesis that stakeholder engagement in planning has a positive and significant influence on the adoption of improved forages at 5 percent level ($p<0.05$).

The result in Table 5 implies that for a one unit change in stakeholder engagement in planning would improve adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District by 0.799 holding other factors constant. The results further show that stakeholder engagement in planning is a significant predictor of adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District at 5 percent level ($\beta = 0.799$, $p=0.024$).

The study hypothesis that stakeholder engagement in capacity building has a positive and significant influence on the adoption of improved forages among SNV-TIDE cooperative members in Isingiro District was also examined and verified. Based on the results in Table 5, we failed to reject the hypothesis that stakeholder engagement in capacity building has a positive and significant influence on adoption of improved forages at 5 percent level. Table 5 indicates that for a unit change in stakeholder engagement in capacity building would improve adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District by 0.716 holding other factors constant. The results in Table 5 further show that stakeholder engagement in capacity building is a significant predictor of adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District ($\beta = 0.716$, $p= 0.026$).

The study hypothesis that stakeholder engagement in resource mobilization has a positive and significant influence on the adoption of improved forages among SNV-TIDE cooperative members in Isingiro District was further examined and verified.

Based on the results in Table 5, we reject the hypothesis that stakeholder engagement in resource mobilization capacity building has a significant positive influence on adoption of improved forages at 5 percent level. Results in Table 5, show stakeholder engagement in resource mobilization has a negative and insignificant influence on adoption of improved forages suggesting that for any change in stakeholder engagement in resource mobilization would negatively affect the adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District, since the p-value is greater than the acceptable level of significance at 5 % (β = -0.23, p=0.931).

5. General Discussion

5.1 The influence of stakeholder engagement in planning on the adoption of improved forages among the SNV-TIDE project cooperative members in Isingiro District

The study results indicated that stakeholder engagement in planning was a significant contributor to adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District at 5 percent level. The findings of this study are in agreement with those Johnson and Christensen (2008) whose study found out that stakeholder engagement in planning promoted successful project implementation.

Furthermore, similar findings were reported by Olusanya *et al*. (2012) study in Nigeria who found out a significant influence of effective stakeholder engagement in planning on project performance. These findings seem to demonstrate that stakeholder engagement in planning before project implementation enhance the project to achieve its goals.

Relatedly, Mintzberg (2004) argues that successful project implementation depends on the needs and interests of stakeholders

who are the true foot soldiers of project implementation. Stakeholder theory articulates that considering stakeholder interests is important in change process and focuses on searching for proactive ways for effective change process in relation to its surroundings (Brønn and Brønn, 2003). Understanding stakeholders' needs and interests requires emphasis on openness, collaboration, equity, trust and continuous involvement. In order to attain this, there is need for adapting of changing needs and interests of stakeholders attainable under good project team leadership that generates clear communication to the stakeholders.

Furthermore, the findings of the study also showed general contentedness with the level of their involvement in planning for all the innovations and activities before their implementation. This was evident in the qualitative data collected where one key informant confirmed that before introducing any innovation interactive meetings were held to ensure that the innovation was fully discussed and training about it took place.

Therefore, the findings seem to indicate that the level of stakeholder engagement in planning depends on and is greatly influenced by the decisions made by stakeholder themselves. This is because through decision making, managers get a better sense of what stakeholders intend to accomplish and the best way of doing so and becomes easy for the organization such as SNV to focus on needs and interests of their stakeholders which increases chances of project implementation (Obi & Agwu, 2017).

This assertion was further supported by James (2000), who noted that stakeholder engagement in planning is seen as a particular kind of decision making that addresses the needs and interests of stakeholders. He further posits that planning is not a single event with a clear beginning and end. Systematic efforts are thus needed to carry out stakeholder engagement in planning in project management.

5.2 The influence of stakeholder engagement in capacity building on adoption of improved forages

The findings of the study indicate a positive and significant relationship between stakeholder engagement and adoption of improved forages among SNV-TIDE project cooperative members ($\beta = .716$, $p = .026$). This means that improvements in the elements of stakeholder engagement in capacity building such as financial capacity, technical capacity, collaborative capacity and adaptive capacity is associated with a significant relationship with adoption of improved forages among SNV-TIDE project cooperative members in Isingiro District.

Stakeholder engagement in capacity building consists of a process of developing knowledge, skills and operational capacity of stakeholders so that they may achieve their project objectives. Angeles and Gurstein (2000) argue that the goal for using participatory learning in capacity building is not only human resource development, but a larger capacity building program with the following components. Peters (2002) noted that one form of stakeholder engagement in capacity building as training which according to him it equips stakeholders with leadership skill, builds civic capacity and promotes learning through mutual relationship and identifying, deliberating about the project, as well as acting on important public issues and problems.

These studies concluded that high quality of human capital resources can lead to increased levels of successful project implementation, accumulation and knowledge sharing as well as enhanced workforce flexibility and efficiency (Evans and Davis, 2005; Felin *et al*., 2009).

Similarly, Nkuruziza *et al*. (2016) contend that divergent flow of information among stakeholders done in an open and relaxed environment helps in reaching consensus democratically as the basis for social learning and capacity building. Participatory learning process facilitates stakeholders to discuss their varying

interests, values and opinions leading to capacity building. This study has therefore demonstrated that stakeholder engagement through training and development has an influence on the overall adoption of improved forages among SNV-TIDE project cooperative members. The findings from this study therefore suggest that an increase in the acquisition of the skills and knowledge acquired during training and development stakeholders can lead to an increased adoption of improved forages among SNV-TIDE project cooperative members.

6. Conclusion

Based on the study findings, stakeholder engagement in planning played a vital role in SNV-TIDE project in terms of needs assessment, project identification, project design and work plan. The findings indicated that a positive and significant influence of stakeholder engagement in planning and capacity building on adoption of improved forages.

The study concludes that in order for a project like SNV-TIDE project to enhance its performance it should engage stakeholders in planning project activities whilst strengthening the capacity building of stakeholders through financial, technical, collaborative and adaptive capacity to improve on efficiency and productivity of the stakeholders, this translates into improved adoption of improved forages among SNV-TIDE project cooperative members.

Based on the findings of the study, the study recommends SNV top management to invest more funds in stakeholder engagement in planning compared to the other strategies for stakeholder engagement. The findings call for improvements on strategies used in stakeholder engagement in the area of capacity building by using farmer field schools (FFS) approach to enable farmers learn from each other, because farmers learn much better from their peers, the

approach facilitates faster adoption of improved forages and hence high yields.

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