

Faculty of Engineering
Applied Gender in Irrigation and
Agricultural Technology Learning Program

Report by:

Student leaders:-

1. Obina Patrick
2. Nakivumbi Victoria
3. Twesigye Gerald

The program was conducted from February to July, 2018

Supervised and mentored by:

1. Ms. Julia Jordan
2. Ms. Nakabuye Hope Njuki
3. Ms. Nabunya Victo

ABSTRACT

The Applied Gender in Irrigation and Agricultural Technology Learning Program was a learning program with a keen interest to investigate the effect of gender sensitivity towards the success of irrigation and other Agricultural technology projects. The objectives of this program were being achieved through a series of workshops and field visits made to specific sites of target.

This learning program was conducted from February to July 2018. Themes of discussion were prepared from time to time in accordance with the objectives to be achieved.

The participants were students at Busitema campus-Busitema University and a few other stakeholders in specific sites visited which include; Lwasso Irrigation demonstration site - Mbale, Tonnet Engineering solutions Kampala and Kyekkide demonstration site - Jinja.

The facilitators were student leaders and these were; Obina Patrick, Nakivumbi Victoria, Twesigye Gerald and the stakeholders met at sites visited.

The field trips were organized and selection of places for the trip was based on the theme of the prior workshop held and the views that emanate from the discussions held.

The reflection from the trip participants reveals their discovery of so many new concepts about gender and they appreciated so much the field facilitators for accepting to respond to their questions and sparing their valuable time to traverse with them throughout the entire field. They similarly had so many ideas they shared with the facilitators with respect to gender and agricultural development.

Through workshops organized for fellow students, it was discovered that they realized the necessity of gender equality. This revealed itself when a participant inquired why gender sensitivity could it be applied at clubs and association leadership levels and further promised that they would advocate for it at such clubs and associations such that both ladies and gentlemen take up various leadership positions equally.

Dedication

Gratitude to the sponsors, all participants in various activities of the learning program, Supervisor/mentors of the learning program, University administration for accepting the activities to be conducted without any inconveniences, authorities we interacted with at the various sites we visited and above all Almighty God for master guidance and safe journey mercies we received during the various field trips.

Acknowledgements

Without the unreserved help, valuable guidance, patience and dedication of supervisors/mentors, we would not have achieved that far.

Thus we honorably acknowledge the inputs of Ms. Julia Jordan, Ms. Nakabuye Njuki Hope, Ms. Nabunya Victo, Madam Aida at Lwasso, Mr. Joseph at Tonnet Engineering solutions, Mr. Odongo Anthony at Kyekkide , Mr. Abraham Salomon just to mention but a few.

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CHAPTER ONE

1.0 Background of the learning program.

The Applied Gender in Irrigation and Agricultural Technology Learning Program was a learning program with a keen interest to investigate the effect of gender sensitivity towards the success of irrigation and other Agricultural technology projects. The objectives of this program were being achieved through a series of workshops and field visits made to specific sites of target.

This learning program was conducted from February to July 2018. Themes of discussion were prepared from time to time in accordance with the objectives to be achieved.

1.1 Objectives of the learning program.

- To seek advocacy for gender justice in agricultural technology design.
- To investigate gender impacts in the success of irrigation and other Agricultural technology projects.
- To find out the need and how to integrate gender and agricultural technology further at Busitema University.
- To create awareness among students about gender sensitivity in order to develop a gender sensitive Engineering work force.
- To acquaint participants (students) with analytical thinking and data collection skills.
- To explore issues of gender in agriculture, and especially technology design.

1.2 Structure of the learning program.

The learning program had a well-structured leadership with mentorship and guidance of supervisors from University of California-Davis and Busitema University. On the structure were student leaders who were responsible for organizing and implementing learning activities for fellow students. Student Leaders took a big role as facilitators and even teachers in this program.

The **figure 1 below** shows the structure of the program.

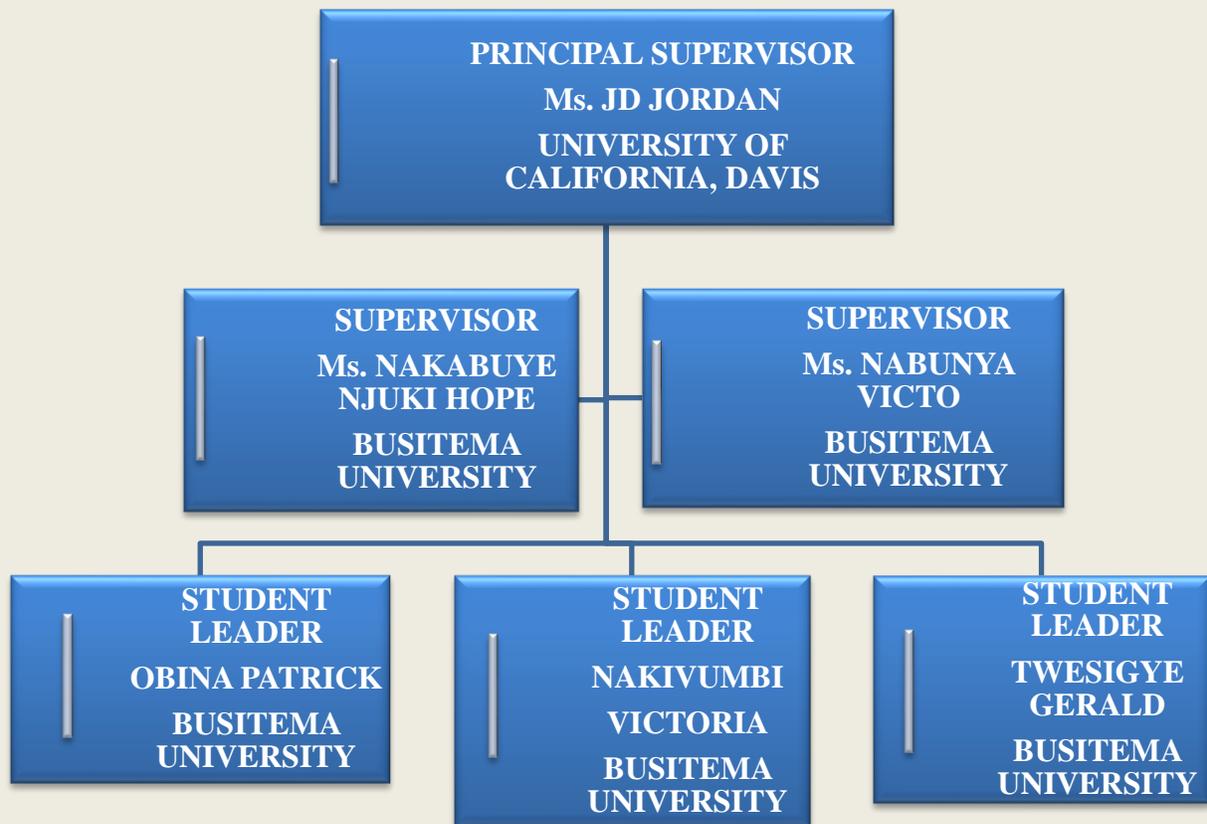


Figure 1: The organizational structure of the learning program

CHAPTER TWO

2.0 Activities

2.1 The first gender workshop held on 8th march 2018

2.1.1 The theme of the workshop.

“Does gender equality matter in Agricultural innovation and technology?”

The participants were students at Busitema campus-Busitema University.

The facilitators were student leaders and these were; Obina Patrick, Nakivumbi Victoria and Twesigye Gerald.

2.1.2 The objectives of the workshop

Together with participants we desired to achieve the following by the end of the workshop:

1. understanding key terms on the theme that is Gender, Gender equality, innovation and technology
2. identification of existing innovations and technologies in Agriculture
3. identifying gender inequality practices that affect Agriculture
4. understanding the role of women in Agricultural technology and development

2.1.3 How the objectives were planned to seek achievement

An agenda was developed to guide the workshop, below is the agenda prepared.

2.1.3.1 Agenda

1. *Opening Prayer*
2. *Introduction of Members. (10 minutes)*
3. *ICE BREAKER (Who is a woman to you? Who is a man to you?) (7 minutes)*
4. *Introduction about the Learning Program.(10 minutes)*
5. *Group Discussions (20 minutes)*
6. *Refreshments*
7. *ICE BREAKER (Are you sunrise, daylight, twilight or night? Please share why you picked your of day?) (7 minutes)*
8. *Presentation by each group (10 minutes each group)*
9. *Remarks, Comments, and Conclusion (10 minutes)*
10. *Closing Prayer*

The key terms in the theme were defined, ice breaker (No. 3) was further used to draw participant's attention towards the theme and thereafter the remaining three objectives (2, 3 and 4) were distributed to grouped participants to brainstorm their views.

2.1.3.2 Gender

Gender is socially constructed roles, behaviors, activities, and attribute that a given society considers appropriate for men and women while Sex is what is biologically assigned to an individual.

2.1.3.3 What Innovation is.

The process of translating an idea or invention into a good or service that creates value whether small or big is innovating.

To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need.

Some illustrative examples of innovations



Figure 2: A solar powered drill (on the left) and a reversible chair (on the right)

2.1.3.4 The output of the group discussion

The participants in their respective groups scrutinized the questions randomly distributed to them and generated a number of views as enumerated below.

2.1.3.5 Existing innovations and technologies in Agriculture in participant's communities and major users (operators) of the innovation

- Tractors, mainly operated by men with the reason that its operation requires a lot of energy and females often encounter discouragement from community members.
- Ox –plough; mainly operated by the male, this is due to its energy requirement and vibrations experienced during its operation.

- Groundnut grinders and pasting machine often operated by women; reasoned out as its operation is easy and convenient with minimal energy requirement once one has the experience.
- Power saws; mainly operated by male; the reason is that its work environment is often not friendly; it is too noisy and requires good physique to overcome its vibrations during operation.
- Irrigation pumps; often operated by the male; the reason is that it requires sufficient energy to start it and some females often get scared of its starting sound.
- Winnowers; mostly operated by females since its energy requirement is minimal.
- And many others

The discussions were in randomly established groups and later views were shared by all the members as one member represents the group to explain their views; see pictures below.



Figure 3: Participants discussing in groups



Figure 4: Different group representatives explaining their views to the participants in the house.

2.1.3.6 The general observations

- The turn up was overwhelming
- Every participant was so eager to contribute, this was so encouraging and particularly we learnt a lot from their opinions.
- Every participant was so happy to have come as each had a sip and received a ball-pen for writing.
- We feel more workshops and field visits should be organized so that the individuals can explore more about gender and I think our next workshop could investigate the features on designs determine its adoption in for example a farming community. This hit our understanding by the responses we received on the main question. **“Does gender equality matter in Agricultural innovation and technology?”**

2.2 Field trip to Lwasso irrigation demonstration site in Mbale

This trip was held on Saturday 24th March 2018 to Lwasso Irrigation Demonstration site in Mbale District. The target key informants were farmers and their leaders at the site.

The theme for the trip was **“investigating how the existing technology works and its impacts on Agriculture and Gender as a whole in the community”**

2.2.1 The objectives of the trip

- To identify the technology and find out how long the technology has existed.
- To find out the potential users of the technology with respect to men, women, girls or boys.
- To investigate the adoption rate for the period of the technology existence

- To reveal comparative production rates during period of technology existence and before.
- To find out ease of faults identification on the technology in case of failure.
- To find out which gender dominates problem fixing operation and why?
- To investigate income rationing between couples after production.

2.2.2 How the objectives were planned to be achieved

The scope of the objectives was prepared in question form such that the participants ask interactively while at the site. The following were the proposed questions;

2.2.3 Proposed questions of study

1. Investigators observe and identify the system. Investigators ask?,
2. How long has the technology existed?
3. Who are the potential users of the technology?, (men, women, boys or girls)
4. What impression do the female users of the technology get from other members of the community particularly non-users?
5. Is the user adoption increasing or decreasing in respect to the male and female users?, why?
6. Does the technology require some level of literacy to operate?
7. What is their comparative view in regard to production between when the technology existed and before?
8. Is there any realistic change in the incomes of the users of the technology?
9. In case of any failure in the system, do the users find a lot of hardship in identifying the error or correcting the error?
10. During problem fixing, which gender dominates the operation? (male or female users) or they have to seek an expert to fix the problem?
11. In a situation that a couple works together, who takes the output from the technology or are the outputs shared equally?
12. What impression do the potential users of the technology get from surrounding communities that have no access to the technology?

NB: The questions were distributed to all the participants to guide the conversation to be held with the key informants while noting their response.

2.2.4 The achievements from the Lwasso field trip

The participants identified the existing technology as a sprinkler irrigation system powered by gravity. It was revealed by one of key informants that the technology was introduced to their

community in 2015 by the Horticulture Irrigation Project (HIP) under the mandate of Mr. Abraham Salomon.

According to the informant, the project was to benefit an established group of farmers and potentially the group comprised of 12 determined women referred to as the Cluster level Association (CLA). However, some men joined to work with them and they are further training young boys and girls as well. Here Gender depicts itself, bravo to this community. Furthermore this technology has had a great rise in adoption revealed by a set of other users that joined the CLA, who are referred to as a self-help group. They are a group that uses the technology to improve their household wellbeing without involving themselves in research done by the CLA.

With regard to marketing their produce, it was asserted that at the field, first priority is given to buyers who are their own group members who then retail them at the Mbale central market. This helps them to be secure of better prices unlike non-Association members who would cheat the field (garden) sellers.

In situations where a couple works together, incomes are shared equally but each of them is obliged to a compulsory saving. This portrayed a good practice of gender equality.

With respect to operation of the technology, it is indiscriminate of gender and also the members appointed one male and one female member (gender equality practice) who foresee the operation and maintenance of the technology. They often go for on-site training to gain skill for maintaining their own system. All members contribute periodic charges for that purpose.

2.2.5 Impacts

1. During typical dry seasons initially women would spend a lot of time irrigating using basins or troughs and would get so tired thus unable to fulfill some marital affairs hence chaos could emerge from such but this has been minimized since with existing technology little time is spent irrigating and thus reduced fatigue.
2. Production levels increased highly and similarly income levels, thus the group members got motivated to initiate savings group through which they make weekly savings. It was further revealed that the top leadership of this savings group is basically women, when asked why? They revealed that men are never trust worthy with money; this is a clear outlook of gender role in this community. Through this compulsory savings, the women can afford income to cater for emergencies such as health and also pay fees for their children.
3. The existence of the technology has paved a way for other services to be extended to the community for example Adult Literacy Program to aid the members again some English reading

and writing skills. Infrastructural development was similarly boasted by this technological existence.

This gender trip answered practically the questions that we had in our first gender workshop which included;

- **“What is the role of women in agricultural technology and development?”** and
- **“Does gender equality matter in Agricultural development?”**

These questions got satisfying answers when participants discovered that the potential users of the technology were women and perhaps because no one boo them as they work with the technology hence yielding further developments in the community.

The reflection from the trip participants reveals their discovery of so many new concepts about gender and they appreciated so much the field facilitators for accepting to respond to their questions and sparing their valuable time to traverse with them throughout the entire field. They similarly had so many ideas they shared with the facilitators with respect to gender and agricultural development. The figures below show sessions interaction with the Lwasso site leaders.



Figure 5: Madam Aida responds to participant’s questions



Figure 6: Participants investigating how the reservoir is connected to supply the sprinklers by gravity at Lwasso Irrigation demonstration site



Figure 7: Participants posing for a group photo with Aida (holding a blue book) the chief facilitator of the day at Lwasso

2.3 Second workshop

This workshop was held on 16/04/2018 at Busitema University main hall. The participants were Busitema University students who were informed through posters and various students' whatsapp. The facilitators were the student leaders.

The theme was: **“What is the influence of gender in adoption of mechanization designs?”**

The discussion was conducted in two phases i.e.

2.3.1 Introduction of the theme

The student leaders organized a power point presentation which discussed the following;

2.3.1.1 Mechanization:

The application of Engineering principles and technology in agricultural production, storage and processing to do a job in a better way to improve productivity.

2.3.1.2 Engineering Design:

Is the creation of new and better machines and improving the existing ones.

2.3.1.3 Adoption:

This is the acceptance of a newly introduced technology.

2.3.1.3 Relevance of Mechanization

- Reduces drudgery in farm work.
- There is increased output per human hour.
- Improved or increased timeliness of field operations.
- Increased indirect employment opportunities.
- Maximizes yields by improving field operations.
- Increased economic returns to the farmers
- Reduces spoilage, and loss of produce during harvesting and post-harvest

2.3.1.4 Examples of Existing World Machines.

To further aid understanding of the theme by the participants, video clips showing some machines operated by women were displayed to the participants.

2.3.1.5 Gender friendly tools and Equipment.

These were machines that are so much adopted and used by women. The pictures below show some of such machines around the world that were used to take deep insight into the theme.



Figure 8: Figure: Some examples of women friendly innovations

2.3.2 Group discussions.

These questions helped us understand the gender aspects in communities and the discussion helped us get solutions for them. These questions were;

- From your communities, depict available machines/designs and reveal main operators with respect to male or female.
- Identify operations; explain why they are done by a certain gender.
- Identify features on a design/machine that are likely inhibit adoption by a certain category of gender
- Identify what considerations you would take when innovating a machine/design to improve parity in gender adoption.

2.3.2.1 The workshop discussion outcomes.

This workshop was organized specifically to scrutinize the influence of gender in adoption of Agricultural Mechanization designs. The designs and machines that were discussed about by the participants included all agricultural machines (tractors, planters, weeders, power saws, ox ploughs, winnowers (mostly used by women), ground nuts maize shellers, and cereal crops threshers, milking machines, hammer mills, manually operated water pumps and mechanical

sprayers and implements (mound board ploughs) that are used in all agricultural operations including processing machines.

All the machines that we looked at are the ones that are commonly used by farmers in the eastern region of Uganda. In our discussion we could site the main operator(s) for each machine and this was governed by the kind of operation the machine does so that a man or woman operates it and it was revealed that it is the men mostly that operate them.

We went ahead and discussed the various design features (ergonomics) that inhibit adoption of these machines and which gender is affected by such a design for example;

- Weigh (ladies like light equipment),
- Height of machines (women prefer working while seated),
- Operating levers especially for a tractor (some are hard and women like smooth things),
- Operating speeds (women fear high speeds),
- Starting mechanisms for these machines like hand cranking of engine driven machines which require a lot of energy,
- Noise,
- Temperature (ladies need quiet and cool places but men can persevere with hard situations),
- Climatic conditions
- Machine environments, the shape of the control component at times do not favour some gender.

All those limit machine adoption by either men or women. While as women look at designs in order to use a machine, men mostly look at the efficiency of the machine in order to adopt it since they prefer doing work quickly.



Figure 9: Participants during a group discussion session

2.3.2.2 Lessons learned

- A large number of female workers and children work on the farm unwillingly due to shortage of power. From the human stand point, it is not desirable that such an arduous duty should be taken from children and females. A child must go to school and woman must devote time for managing home affairs to make life pleasant if machines are used.
- The Advantages of mechanized agriculture for example Reduces drudgery in farm work, there is increased output, reduces spoilage, and loss of produce during harvesting and post-harvest, among others
- Need for farm mechanization for example proper utilization of basic inputs like water, seeds and fertilizers is possible only when proper equipment are used, There are certain operations which are rather difficult to be performed by human labour, among others)

2.4 Educational visit to Tonnet Engineering solution Kampala (U)

This trip took place on 19/04/2018 under the, Theme: **“Investigating on relative gender participation in production and adoption of different agricultural machinery designs”**.

It comprised of a group of 15 students including the leaders. This trip field trip to Tonnet Engineering solution was conducted to discover how Engineering designers and fabricators incorporate the issues discussed in the second workshop in their designers and also the response they get from their clients regarding the innovations.

2.4.1 Introduction.

TONNET is a privately owned company that started in 1995 and it deals with designing and fabricating agricultural machines which are even exported. Some of the machines that they deal in include; planters, dryers, forage choppers, hullers, threshers, de-stoners, cleaning machines for grains, feed mixers among others. Some of these machines are motorized, engine driven while others are manually operated. They don't deal in agricultural implements.

In our investigations, we used sample question from where we were able to make our conclusions on the various gender issues that arise during design and adoption of machines. The sample questions included the following:

- Who are the main operators on the different production tools in this company?
- Do customers have an influence on the designs of the machines?
- According to the facilitator's response, do you think the designs require some level of literacy to operate?
- What are some of the features on such machines that limit the use to a specific gender?
- Do you think there is preference of operators in respect to gender? YES / NO
If Yes WHY? Are there any considerations followed during the design of machine in reference to user gender? Identity some.
- What is one thing you have learned today?
- Did you learn anything surprising?

This investigation was inform of a questionnaire and sampling some machines and analyzing how gender is considered during design and fabrication of such machines.

Basing on our theme, the investigation revealed that gender equality does not exist during the design and fabrication of agricultural machine due to some factors listed below.

- Some tools used are heavy and their operational conditions for example high speeds do not favour ladies for example a hand grinder and cutting machine.
- Welding and cutting operations performed during machine fabrication cannot be handled by ladies.
- Most of the operations are done in a standing position of which ladies prefer working while seated.
- Some operations are so tiresome and they need endurance which is sometimes hard for ladies.

However when it comes to adoption, it's the females who are faster than men, this was based on the instructors words that it's the women who mostly order for machine in that company.

As per the workshop manager, he mentioned some factors that hinder adoption which were,

- Machine operation conditions,
- Starting mechanism of some machines cannot be done by ladies like hand started engines
- Height of some machines, energy/power requirement especially for manually operated machines do not favour ladies
- Machines that are simple to operate and those that do simple work are adopted by females While as men adopt heavy machines.

After our investigations and follow up after the trip it was conclude that;

- Ladies like light and simple machines that can't make them tired.
- However much it was found out that it's only men who were employed in this company, still women can do such work, because the instructor said women were once employed in the company and after improving their lives they left.
- Ladies also play a big role in machine design because the ladies in this company do the work of designing machines using software



Figure 10: Participants interacting with chief facilitator at Tonnet Engineering solution

2.4.2 How gender sensitive innovation adoption may be accelerated

In our own opinion, the following should be done to accelerate machine adoption and gender equality;

- **Relative Advantage;** How much more superior the new idea or practice is Compared with what is currently being used.
- **Compatibility;** is how well an innovation fits with farmers' socio-economic, cultural and environmental situation.
- **The complexity.** If the innovation is too difficult to use people are more likely not to adopt it. Also if it is too complex to understand or appreciate farmers might understand it in the first and they are likely to reject it
- **Trial ability;** If a user has a hard time using and trying an innovation this Individual will be less likely to adopt it.

2.4.3 Possible adoption processes that should be followed to enhance adoption

- **Awareness;** A person should first be aware of a new innovation be he/she takes any step in adoption.
- **Interest/ persuasion stage.** A person should also develop interest on the new machine.

- **Evaluation.** Here a person should weigh the pro and con of the new machine and comparisons/ relative advantage between the machine and their old production methods
- **Trial.** Here the person tries to use the machine.
- **Adoption.** After the above steps then the person will eventually adopt the machine.

2.5 Field trip to Kyekkide Irrigation demonstration site

Date of the field trip was Monday 21st May 2018 and was to Kyekkide Irrigation Demonstration site in Jinja-Uganda.

The target key informants were Farmers and other group leaders

The theme of the trip was *“investigating irrigation technologies introduced at the site, relative gender adoption and impacts”*.

2.5.1 The objectives of the trip

- To investigate irrigation technology introduced and used by the community.
- To understand the perception of men and women in this community regarding introduced technologies.
- To investigate the most adopted technology by male or female
- To investigate other available agricultural technologies and relative adoption by males and females
- To find out the impact of the available technologies on social-economic life of men and women in the community.

2.5.2 The field trip site description

Kyekkide is an irrigation demonstration site located along Jinja-Bujagali hydro-power highway. It has a 60 member farmer group through which the various technologies are disseminated, 43 of the members are women while 17 are men. Joining the group is open to any one as long as one is willing to pay membership fee.

2.5.3 The key informants’ response

According to Mr. Odongo Anthony, farmers have gotten exposure to various irrigation technologies which include; sprinkler involving use of rain gun, impact sprinklers, and they also innovated sprinkler application approach which was termed ‘Adhola’, a name assigned due to the tribe of the innovator. Other irrigation techniques being used are, furrow and border. The most taken up technology is sprinkler and in

particular the Adhola approach. This is the most preferred by the female farmers with the reason that it is not sophisticated and hence easy to connect and disconnect. Below is a picture of the “Adhola” nozzle.



Figure 11: Participants check out and compare the Adhola innovation (on the left) to an impact sprinkler (on the right) as they wonder the ingenuity of these farmers.

Nevertheless some farmers particularly some youth and children remained resistant to cope up with new technologies. See figures below:



Figure 12: The charcoal cooler for vegetables (on the left) and on the right is the charcoal cooler in use at the site

Apart from irrigation technologies, the members have also adopted post-harvest handling for their vegetables witnessed by an established charcoal cooler in which freshly harvested kale had been preserved.

Any gender has equal opportunity to contribute or introduce new ideas. However some men in the society are believed to despise ideas contributed by women as not good unless such a woman is educated or is from a learned family.

In the initial stages, women did not like to operate the system but after subsequent training, a number of women are able and willing to operate the system without seeking any help from the men.

Most women prefer working together and helping each other in their fields compared to working with their husbands with the reason that men often deny them income after selling the produce or give them a very small share.

Couples working together with the technology allocate themselves activities according to the strength requirement.

2.5.4 Impacts

- i. Reduced dependence on rainfall, continuous production, and improved income of the members.
- ii. Ability of women and children to produce their own and sell by themselves reduced domestic violence that would arise due failure of men support all the financial needs of the family.
- iii. The existence of the technology has paved a way for other services to be extended to the community for example post-harvest handling techniques, training to the women on various aspects including savings.
- iv. New crops with ready and better markets for example French beans.

2.5.5 The surprise

Since then in this community exists men who believe that ideas contributed by non-learned women cannot work for them so they ignore.

The women are more united and work together compared to men witnessed by the big number of women in the group compared to just a few men in the group. Below is a figure showing woman helping a friend to harvest her French beans



Figure 13: A woman helping a friend to harvest her French beans

2.5.6 The comments of the participants

Having traversed through all the farmer fields and listened to the various farmers' perception regarding the available technology, the participants had the following views;

They were delighted to witness both men and women embracing the various technologies they would get to know and in particular the design of their fields according to how it is recommended to them

They advised and encouraged the members to commercialize production of a few selected vegetables so that they can be in position to acquire bigger and better market prices particularly in the processing industries and overcome the challenge of fluctuating markets and prices



Figure 14: Participants traversing and interacting with farmers at their various field headed by Mr. Odongo Anthony the Kyekkide farmers' group chairperson

2.6 The third workshop

2.6.1 Theme:

“Of what importance is gender sensitivity in Engineering innovations?”

2.6.2 Venue:

Busitema University main hall-Busitema Campus

2.6.3 Participants:

The students at Busitema campus particularly those in their recess training.

2.6.4 Facilitators:

The student leaders i.e. Obina Patrick, Nakivumbi Victoria and Twesigye Gerald.

2.6.5 The objectives of the workshop

- To understand the contribution of women, men, boys and girls in the development of innovations
- To find out women and men may equally be fully engaged in innovation planning, decision making and adoption of innovations.
- To investigate the effects of gender segregation in development of technologies.

2.6.6 How the objectives were achieved

- Key words on the theme were defined and gender illustrative pictures used to further trigger participants’ understanding of the theme.
- Three groups were created and objectives distributed to the groups for discussion in form of questions.

2.6.7 The workshop questions for group discussion

1. Basing on knowledge from innovations in our respective communities, list contributions made by the female and male towards the success of such innovations
2. As a gender equality promoting team, what strategies will you employ to ensure both men and women are fully involved in any project planning, decision making ,design and implementation
3. List both negative and positive impacts that gender segregation may have on innovation development in our communities

2.6.8 The participant’s views

2.6.8.1 Views on contribution of men, women, boys and girls in innovation success

- ✓ Men provide necessary workforce where strength is necessary during implementation.
- ✓ Men do the craft work

- ✓ Women are patient and take up innovations quickly till benefits are realized
- ✓ Most men are opinion leaders during decision making
- ✓ Women carry out sensitization as they often socialize after their household chores.

2.6.8.2 Views on the strategies to employ to ensure both men and women are fully engaged in innovation planning, decision making, design and implementation.

- ✓ Proper sensitization
- ✓ Team working with both men and women
- ✓ Equal sharing of benefits
- ✓ Not taking into consideration traditional beliefs
- ✓ Respect any view from any gender
- ✓ In community dominated by illiterates, use a language that is understood by all categories of participants involved.
- ✓ All every gender to suggest features comfortable for them on any innovation.
- ✓ Holding planning or decision making meetings at the time most comfortable both men and women.

2.6.8.3 Views on the positive and negative impacts of gender segregation on innovation development

I. Positive impacts

- ✓ Improved efficiency due to division of tasks by capability and interest.
- ✓ Improved quality and quantity of work
- ✓ Time saving especially when specific gender is used for a specific task
- ✓ Continuity of production especially when specific workstations requiring specialized skills are served by people who will continuously be available unlike in situations where mandatory maternity leave may be issued resulting in a gap hard to fill.

II. Negative impacts

- ✓ Morale degeneration
- ✓ Misunderstandings may arise especially when female is at superior position than the male subordinate
- ✓ Denial of opportunity for experience development for the other party not given chance
- ✓ Humiliation
- ✓ Low self-esteem for the segregated party.
- ✓ Some very important qualities may be left out by segregation of gender involved in an innovation.

CHAPTER THREE

3.0 Experiences and lessons learnt from the program

3.1 New concepts, knowledge and skills gained

According to the participants, realizing gender equality will not totally be achieved since during creation, gender inequality revealed itself by God giving a woman only one rib out of the number given to man. However many gender equality promoting advocates are currently empowering women and the participants believe that a time shall come when women shall be above men in all aspects and gender inequality shall totally be unachieved.

But what is most important is that opportunities are well-shared and all gender is bold and courageous enough to have equal involvement especially with the elite class. This alone is a big indicator of the degree of attainment of gender equality

3.2 Relationship with other people involved in the program

We student leaders had a very intimate relationship amongst ourselves and with all participants, supervisors (mentors), and all other stakeholders in all the various fields we visited. Indeed it was due to such a good relationship that all activities succeeded.

3.3 Problems/challenges experienced

It is traditional that no achievement comes hardly without experiencing any challenges so similarly we had a few minor challenges we experienced as listed below;

- Due to niceness of discussion by the participants, we would often fail to work within our programmed time during workshops and similarly during field trips but anyway it was a challenge that taught us lessons technically that participants were interested in understanding gender issues.
- Sometimes the projector would display faintly our presentation and video clips that introduce the participants to the theme.
- Sometimes during workshops, we were also challenged by the delayed arrival of participants. This would force the program to push beyond scheduled time which was frustrating to participants who would arrive in time.

3.4 Major benefits derived from the learning program

Through workshops and field trips held, participants just like us student leaders were able to;

- ✓ Develop creative and analytical thinking
- ✓ Develop a good team working spirit especially with different stakeholders
- ✓ Acquire deep insights of gender sensitivity in Agricultural innovation development particularly in the real practical world.
- ✓ Field trips particularly to Lwasso and Kyekkide Irrigation demonstration sites revealed how important it was to engage both men and women in their project. We noted relative contribution of different gender sets towards the development of innovation and relative impact on their livelihood as females and males.
- ✓ The trips also enabled us to acquire new friends outside University environment.

CHAPTER FOUR

4.0 Conclusions and Recommendations

4.1 Conclusions

- The objectives of this learning program were successfully accomplished despite the busy schedules we had and the strict time limit.
- Through workshops organized for fellow students, it was discovered that they realized the necessity of gender equality. This revealed itself when a participant inquired why gender sensitivity could it be applied at clubs and association leadership levels and further promised that they would advocate for it at such clubs and associations such that both ladies and gentlemen take up various leadership positions equally.
- To our own development, serving as student leaders in this learning program enabled us to develop better tactics of interacting and presenting sensitive points to a community of people of different caliber without offending any party.

4.2 Recommendation

- ✓ Gender applies to all sectors and possibly this learning program would need to generalize it such that it looks at gender sensitivity in all academic programs of Busitema University i.e. Agro-processing Engineering technology, water resources Engineering, computer Engineering technology, Textile Engineering among others instead of restricting it to Irrigation and Agricultural Technology only.
- ✓ The topic of gender and agricultural technology may be integrated further at Busitema University by forming a club that can carries on activities the learning program has been undertaking. Through such a club, the university may be triggered to finance some activities or other well-wishers and concerned gender advocating organisations may as well get interest to support the club once positive outcomes can be realised.
- ✓ In addition, at second year, students of Agricultural Mechanisation and Irrigation Engineering study gender in Agriculture as a course unit, a deeper insight into the course unit could be sought by applying the approach this learning program had been using in order to realise more positive outcomes on the course unit.

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APPENDICES.



Appendix 1: Are we gender sensitive? Yes we are and we are the chief advocates for gender equality (student leaders)



Appendix 2: Mr. Joseph your hospitality lured us to pose for a group photo with you, long live Tonnet Engineering solutions as long you are gender equality advocates



Appendix 3: We did not come to leave some stones unturned, thanks for accepting to answer our questions and concerns, Tonnet Management.