Automatic Irrigation System

111. Mbeya

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Introduction:

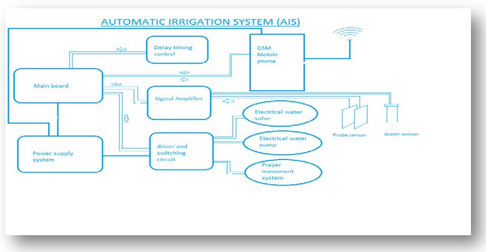
Agriculture irrigation have been practiced for along period of time in Mbeya city but it is faced by lack of enough knowledge about the use of technology in irrigation.

The study was conducted by Young Scientist from Mbeya secondary School since October 2014 up to June 2015 and the data was collected from agricultural officers , farmers and professionals.

Data was collected from 78 people in different areas where agriculture activities are conducted through interview and direct observations. This study aimed to provide the solution on irrigation system that will save a lot of time and improve efficiency. At the end o this study we are going to design the system called Autimatic Irrigation System (AIS) that will solve problems concerning agriculture irrigation.

Method:

MATERIALS: Mobile phone(any), NE555 timer chip, ULN 2003 Darlington pair, Power supply, Light emitting diodes(LED), Mechanical switches and relays, Circuit board (puff board), Plastic pipes , Tanks and valves, DC motor 12v, Solar panel (10 watt) and its 12v dry cell battery.



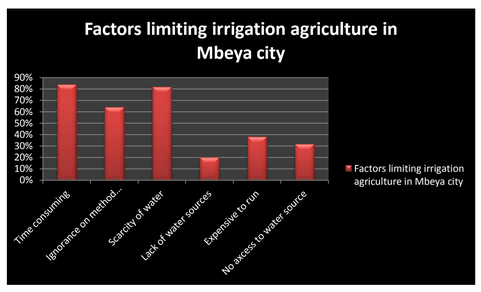
Results:

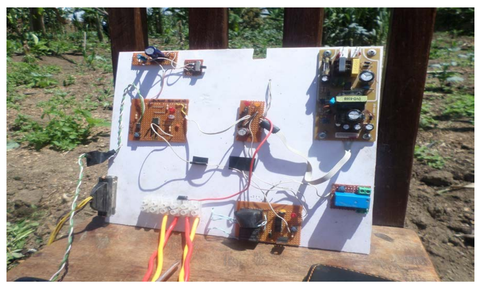
Based on data collected it shows that most of farmers in Mbeya urban and peri-urban areas practices seasonal agriculture which depends on rain water and only minority practicing manual irrigation system which require more time and man power. As a result most of farmers in Mbeya city are practicing small scale agriculture due to that factor. The findings of this study based on direct observation and interview given to respondents obtained , The results as analyzed bellow: During our study we experience that in the dry season only few o people are engaged in agriculture activities because rain water that could be used to irrigate their farms is not available . Our project was intended to generate information on the availabilty of water sources .

A total of 9 areas in Mbeya city were involved in hortculture activities are conducted in small scale where visited to assess availabilty of water sources as in table 1 below.

	STUDY AREA	WATER SOURCE
1.	Ilolo	- Domestic sewage water - River water - Spring water
1.	Rwanda prison	- Domestic sewage water - Ground water - Tap water
1.	Nzovwe	- River water - Tape water
1.	Utengule	- River water - Spring water
1.	Halengo	- River water - Tap water
1.	Itende	- Sewage water - River water - Tap water
1.	Swaya	- Spring water - River water
1.	Uyole	- River water - Spring water - Tap water
1.	Nzoho	- Spring water -River water

A total of 78 farmers from different location in Mbeya city were interviewed on the knowledge , altitude and practice to agriculture irrigation during dry season. 100% of respondents were aware of crop irrigation during dry season but only 33% were found engaged in agriculture irrigation as shown in table 2 below.





Conclusions

This study came up with a solution which will solve major problem associated with manual agriculture irrigation which is Automatic Irrigation System (AIS) .

Automatic irrigation system is the system which saves time used for irrigation since irrigation can be done without physical involvement of the farmers on the field , thus most farmers will be able to engage themselves in other economic activities.

The system can work in all methods of irrigation, thus the farmer will choose the type of system according to his or her demands and what kind of crops does he or she have.

References

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Acknowledgments

Our study was made successful due to excellent assistance which we received from our supervisor Mr. Mumello . L . who actively encouraged us and provided guidance in each stage during the study we express our sincere thanks to Mr. Sharon Martin and Mrs. Bi-mkola who assisted us in writing and analyzing data collected during our study . We express our sincere thanks to agricultural officers Mr. Kamwela and Mrs. Shija and farmers who gave us information concerning irrigation system.

Were also greatly indebited to Mbeya High School administrators headministress Magret Haule and Mr Nombo for all assistance they gave us during our study ,