



“DOES THE INSTALLATION OF A WATER PUMP AFFECT THE QUALITY OF LIFE OF VILLAGERS IN NORTHERN MALAWI?”

A FIELD RESEARCH STUDY



Kerstin Rieger - riegerk@tcd.ie
TCD/UCD Masters in Development Practice

Sheridan, Helen; Holm, Rochelle;
28th November 2014



MALAWI

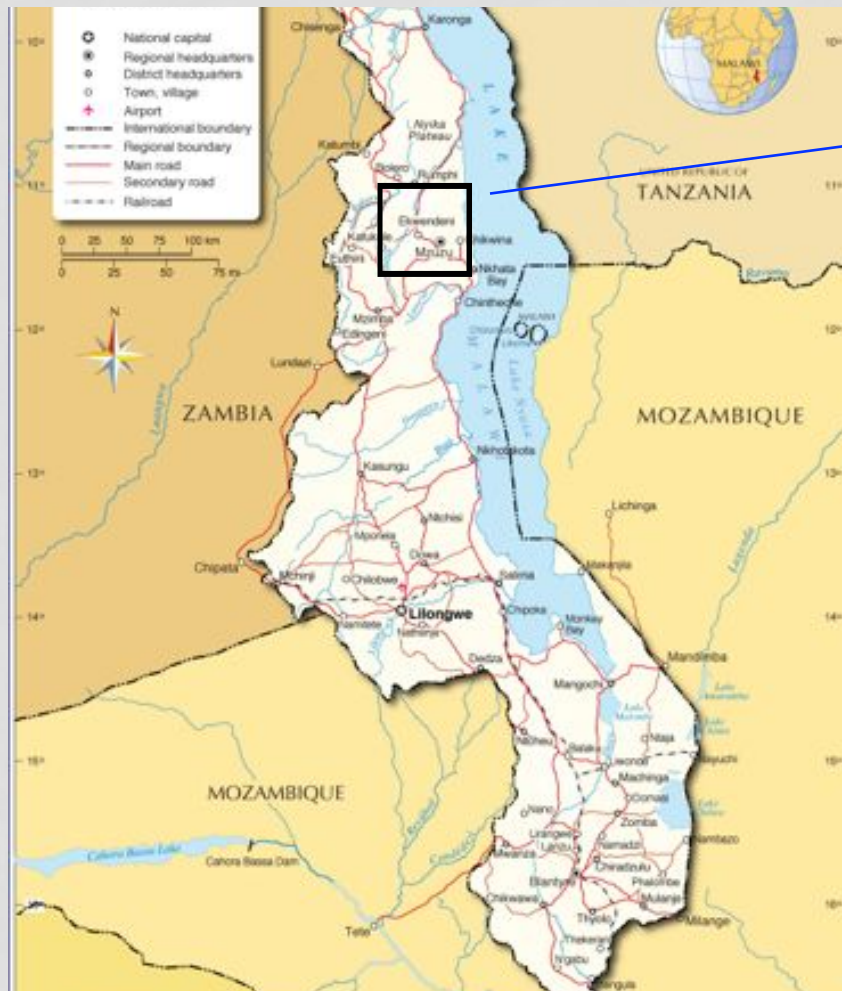


- HDI of Malawi: 174
- 40% of hand pumps are non-functional
- Population: 16.4 million - 83.9% rural
- 80% unimproved sanitation facilities in rural areas
- 80% income dependable on renewable natural resources



Tavalisi 'stamping maize'

RESEARCH OVERVIEW



Study Area

- Northern Malawi
- 8 rural villages

Study Period

- May – August 2014

METHODOLOGY

- **Quantitative**
 - Face to Face interviews
 - Coliform water testing
- **Qualitative**
 - Focus Groups
 - Field observations



COMPARATIVE STUDIES

Sample Size: 210 households

- 105 treatment group
- 105 control group



Data collection:

- 5 weeks
- 1650 km driven
- 1 translator hired

ETHICAL APPROVAL

Obtained from

- National Commission of Science & Technology in Lilongwe/Malawi



Mercy's thumbprint



Salford's signature

OBJECTIVE



Source: (United Nation Development Programme, 2014)

- To analyse possible **impacts** water pumps place on shallow hand dug wells for the **community**.
- To recommend **interventions** to expand or improve services to **enhance** the **quality of life** of people in the villages.
- To investigate other **challenges** towards securing clean drinking water, which are **interlinked**: **Education, Health, Economics, Sanitation & Hygiene, Water scarcity, Water pollution and Climate change**.

CONSTRAINTS

- **Infrastructure**

- Public Transport
- Roads/Bridges
- Motorbike rental
- Maps

- **Time**

- Ethical clearance
- Remoteness & Accessibility

- **Funding**



FACE TO FACE INTERVIEWS



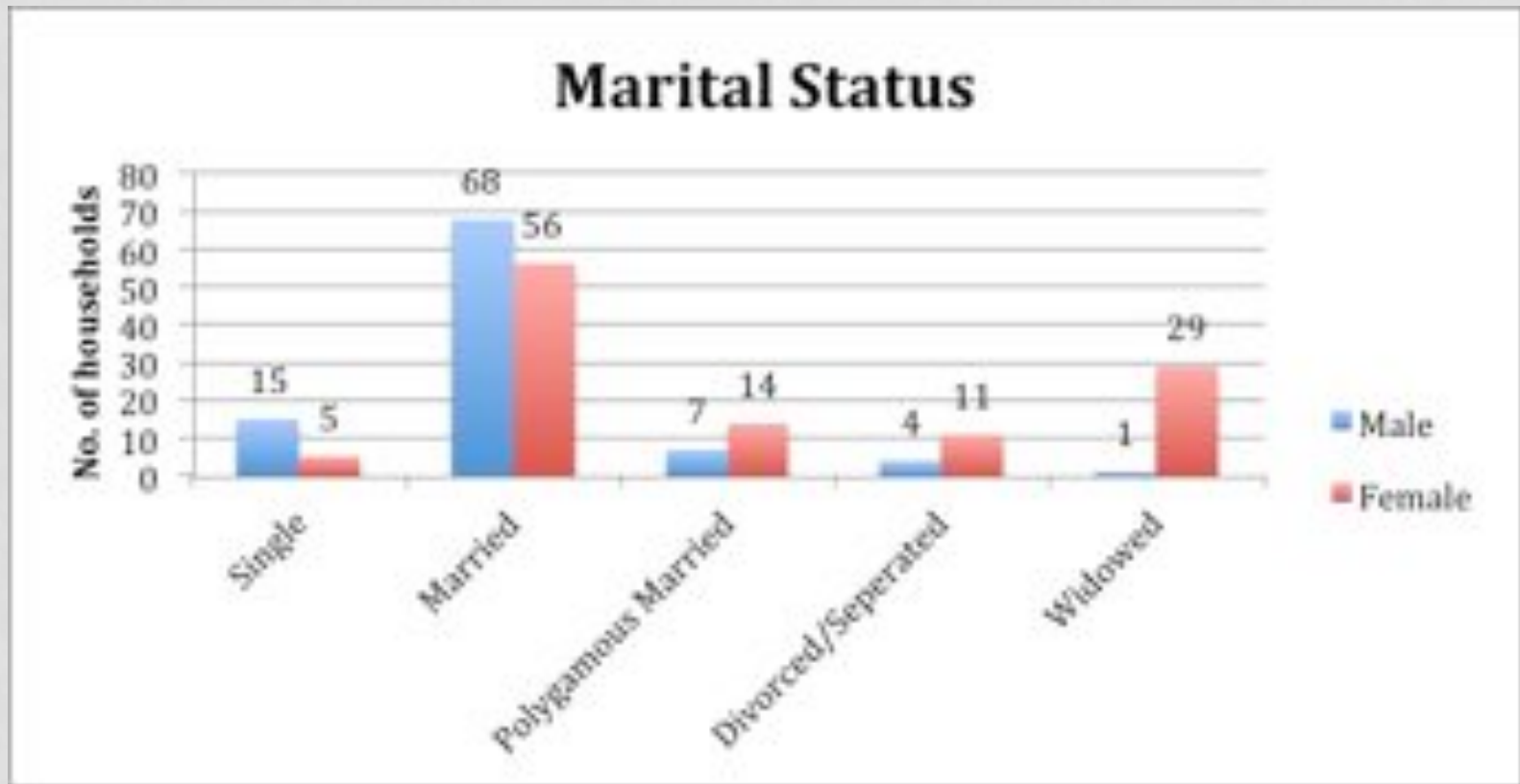
Interview

with

Lameck

93 years old

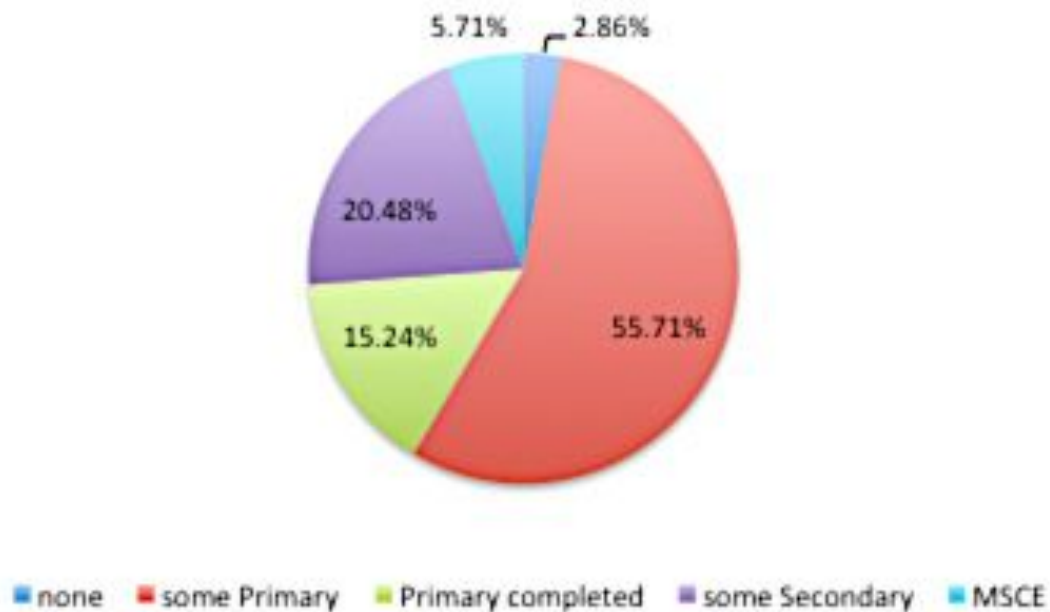
DEMOGRAPHIC STATS



Staggering numbers of female widows

EDUCATION

Education split in %

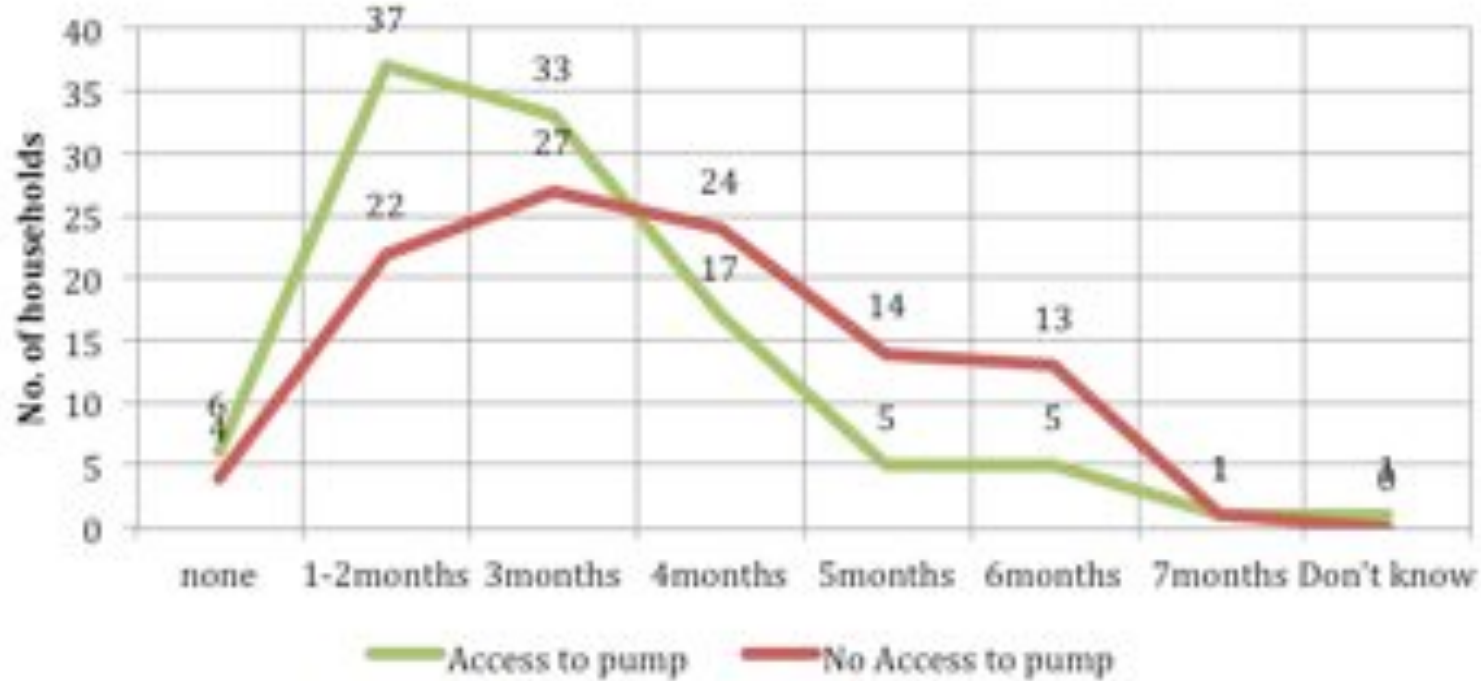


Comparison between treatment and control group revealed no difference

ECONOMICS

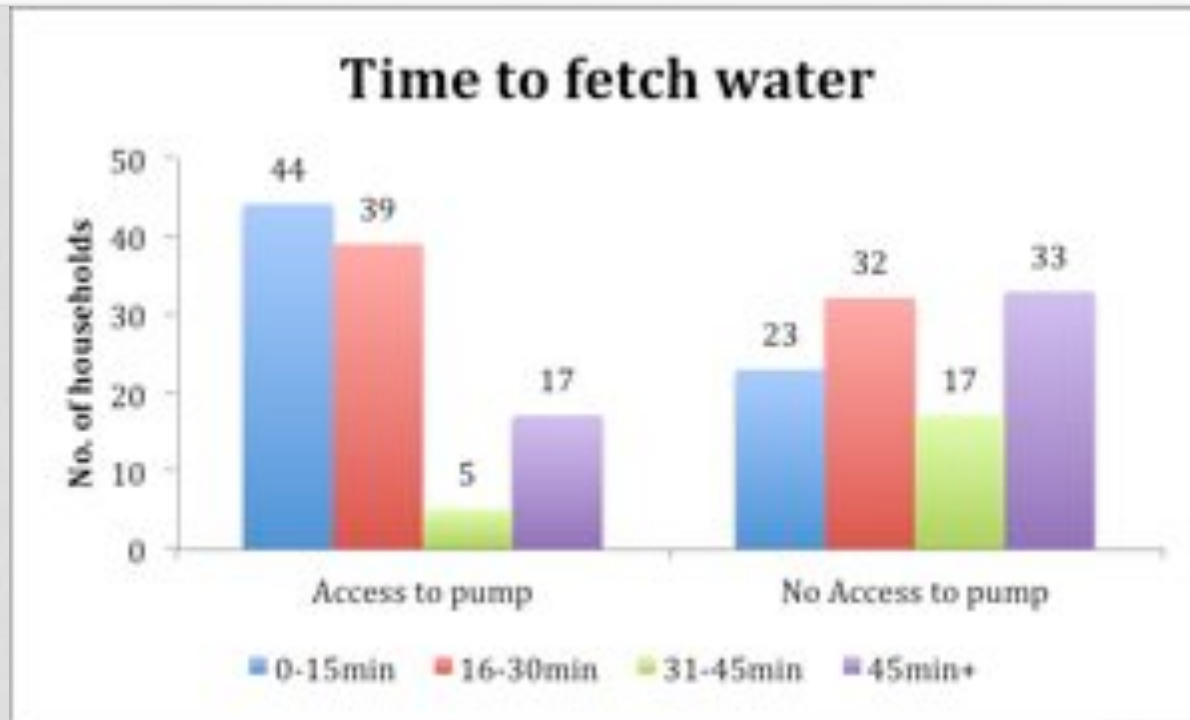


Food shortage per annum



Less food shortages for the treatment groups

WATER SOURCE

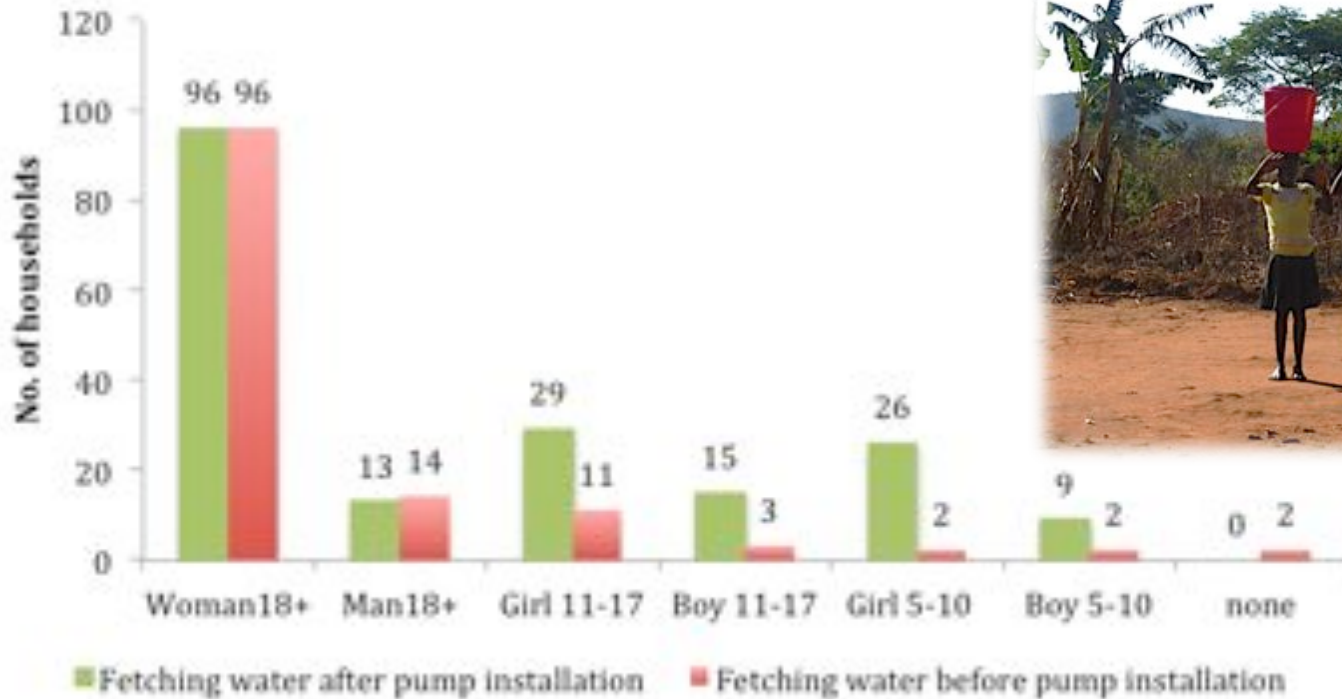


Treatment group spend less time to fetch water



WATER SOURCE

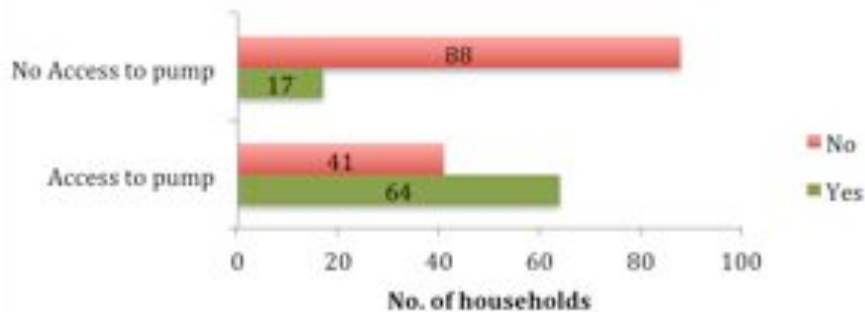
Who fetches water before/after pump installation?



No of girls and boys fetching water increased!

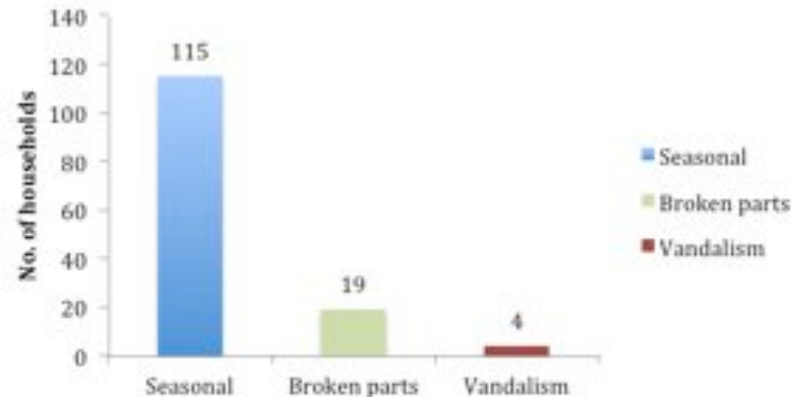
WATER SCARCITY

Water availability - 365 days per year?



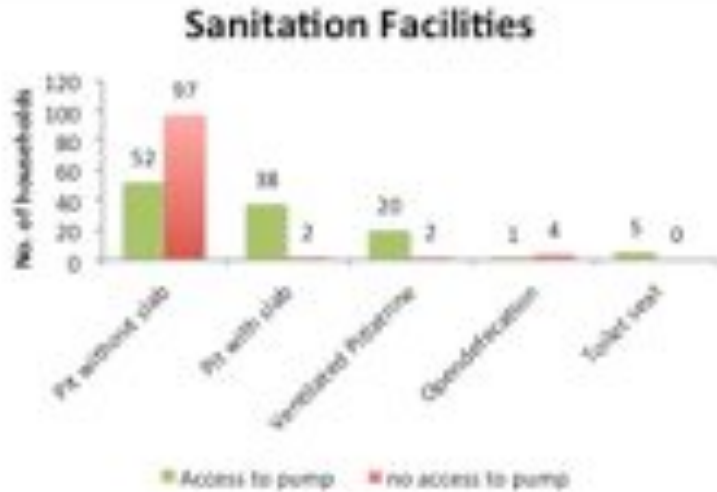
- Treatment group faces less water scarcity

Reason for water shortage

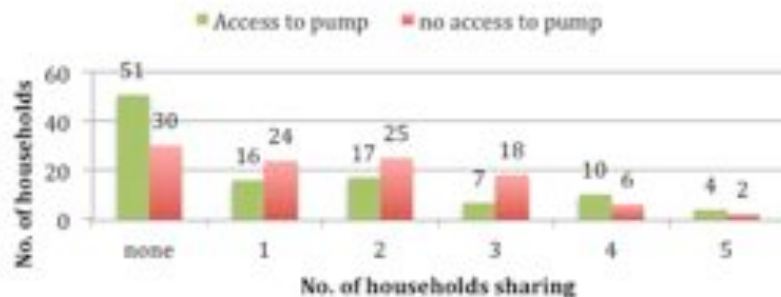


- 16% of the treatment group faces seasonal shortages
- 22% Broken parts/Vandalism

SANITATION FACILITIES



No. of other households using the same sanitation facility

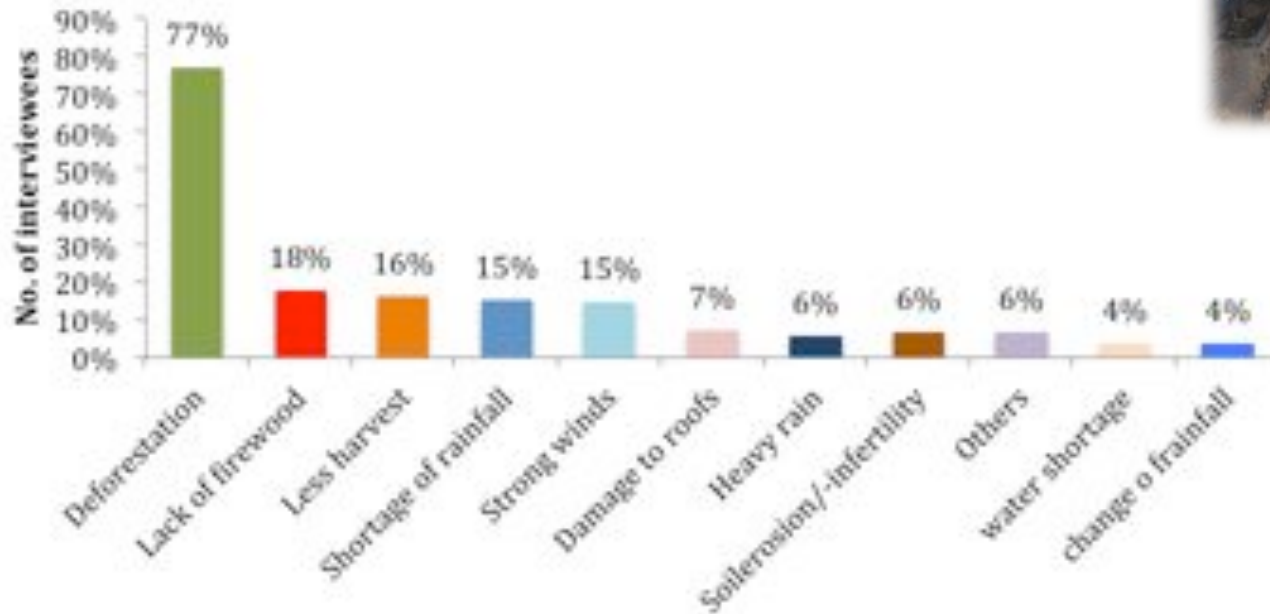


- 55% use improved sanitation facilities
- 52% are sharing toilets
- 9 people on average share one toilet

WHAT ENVIRONMENTAL ISSUES EXIST IN YOUR VILLAGE AT THE MOMENT?



Environmental Issues 2014



77% of households mentioned deforestation

CLIMATE CHANGE

- **84% of all households stated a change of rainfall**
- **81% of them describe more rainfall**



Pit Latrine with slab

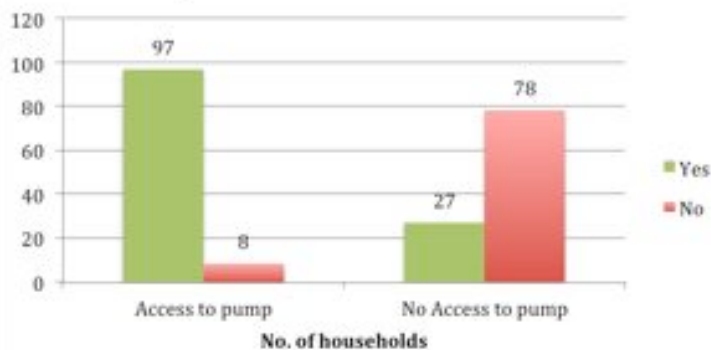


Pit Latrine without slab

WATER POLLUTION



Perception of "Is the water safe?"



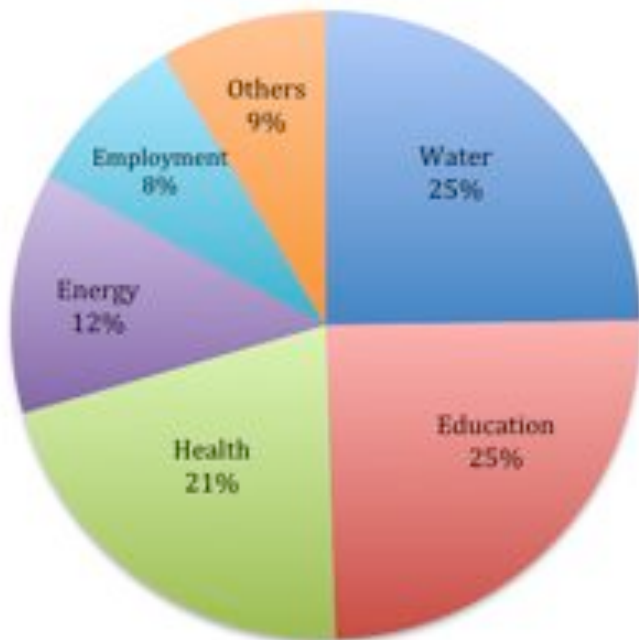
Bacteriological Water Quality Test Results

Village	pump	Coliform/100 ml	WHO standard
Yesaya Moyo	W4Z	2048	0
Makula	W4Z	1928	0
Kachasu	no	1672	0
Ngoti Ngwira	no	1512	0
Mlokota Tupa	no	1152	0
Moffat	AfriDev	1128	0
Bandawe	no	512	0
Isaak	W4Z	488	0
Isaak	CCAP	344	0

- 92% of the treatment group perceived water as safe
- Water quality tests showed extremely high amounts of coliform!

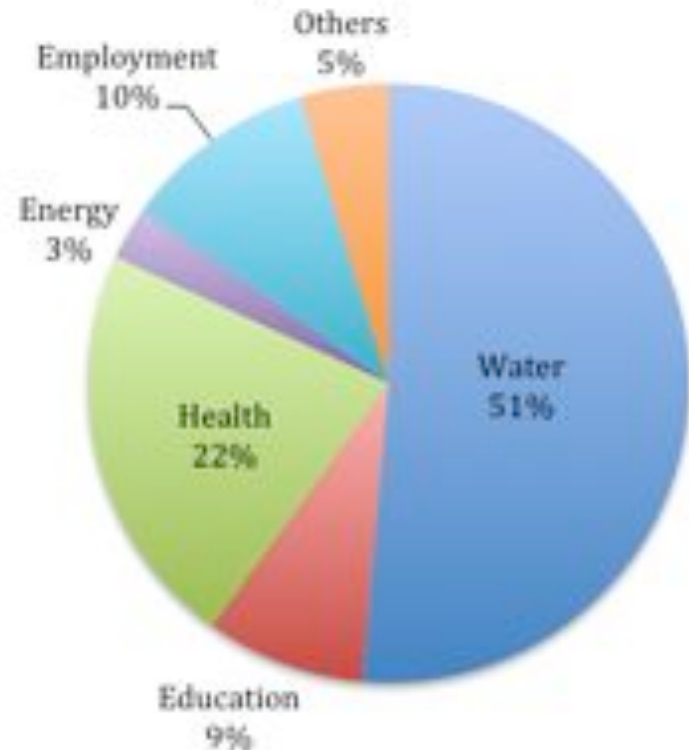
BIGGEST CHALLENGE FOR THE COMMUNITY IN THE NEXT 3 YEARS

Pump access



- Water
- Education

No pump access



- Water
- Health

RECOMMENDATIONS

- Implementation of **water quality tests**
- **Sustainable** water pump **maintenance** systems
- Increased **well depth** – if necessary through **drilling**

- Empowerment through **Adult Education & Training**
 - Water treatment
 - Disease prevention
 - Deforestation prevention
 - Climate Change adaption
 - New skills for job opportunities
 - Tree planting initiatives

CONCLUSION

- Access to a water pump **can** enhance the **quality of life** of people in the village.
- The following factors play a major role:
 - **Sufficient maintenance**
 - Regular **water testing & treatment**
- **Empowerment, Adult Education and Training** will **enable** people to live a more **sustainable life**.

THANK YOU



Dr. Helen Sheridan, Dr. Rochelle Holm, Dr. Susan Murphy, Given Nyasulu, Florence Harawa, Chrissy Zimba, Sindosie Kumwenda, Sindosie Kumwenda, Phillipina Mpakiza, Francisco Vitsitsi, Eléonore Dupré, Aaron Mhango, Jim McGill, all villager and Wells for Zoe Team.

REFERENCES

Project, N. O. (1998-2014). *One World - Nations Online*. From Countries of the World: <http://www.nationsonline.org/maps/malawi-political-map.jpg> Accessed 02.09.2014

RWSN. (2014). *Smart Handpumps*. From <http://www.rural-water-supply.net/en/resources/details/588> Accessed 02.09.2014

UNDP. (2014). United Nation Development Programme. From <http://hdr.undp.org/en/data> Accessed 24.08.2014

United Nation Development Programme. (2014). Millenium Develoment Goals. From http://www.undp.org/content/undp/en/home/mdgoverview/mdg_goals/mdg7/ Accessed 24.08.2014

WHO/Unicef. (2014). From http://www.wssinfo.org/fileadmin/user_upload/resources/JMP-report2014Table_Final.pdf Accessed 01.09.2014

Yaron, G., Mangani, R., Mlava, J., Kambewa, P., Makungwa, S., Mtethiwa, A., et al. (2011). *Economic Valuation of Sustainable Natural Resource Use in Malawi*. Lilongwe: UNDP.