

# Visualising & Analysing HWISE Data Using R

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Household  
Water  
InSecurity  
Experiences



Research  
Coordination  
Network





1. Visualising and Analysing HWISE Data Using R
2. Brief Example: Kisoro, Uganda
3. Future Development



# 1. Visualising and Analysing HWISE Data Using R



Organising, analysing and visualising data can be challenging....and the most common statistical and visualisation software platforms (SPSS, Stata, Tableau, etc.) are expensive.



# 1. Visualising and Analysing HWISE Data Using R

We have developed an Open Source analyser & visualiser to make using HWISE data

**EASY!**



# 1. Visualising and Analysing HWISE Data Using R

## What Is R?

<https://www.r-project.org/about.html>

R is an OPEN SOURCE integrated suite of software for data manipulation, calculation and graphical display. It includes

- an effective data handling and storage facility,
- a large, coherent, integrated collection of intermediate tools for data analysis,
- graphical facilities for data analysis and display either on-screen or on hardcopy, and
- a well-developed, simple and effective programming language which includes conditionals, loops, user-defined recursive functions and input and output facilities.
- A global user community who are super-helpful with development of new facilities.

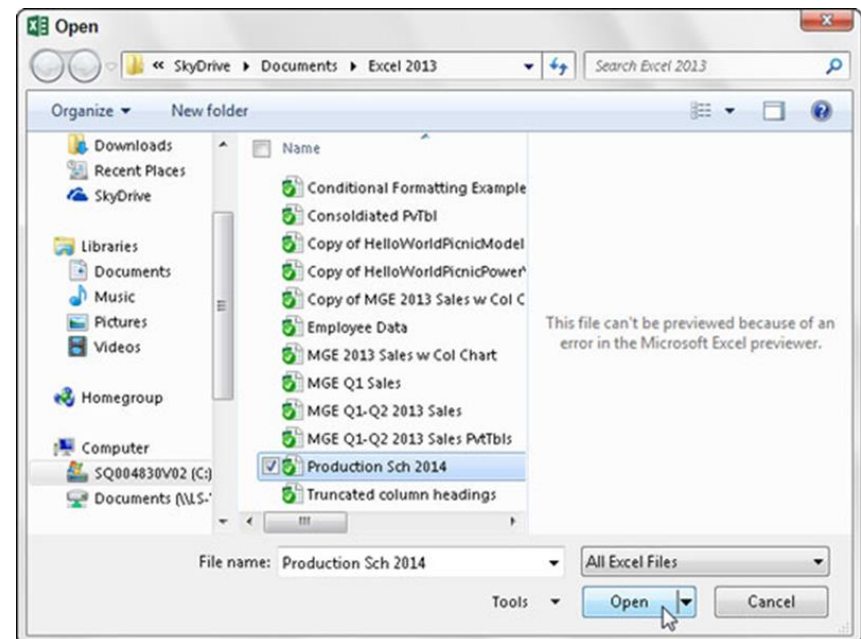
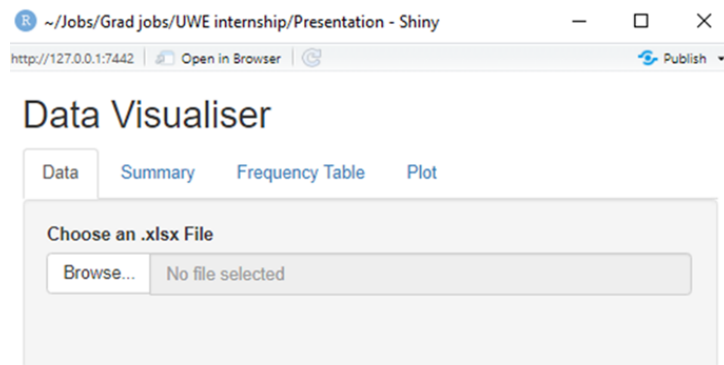




# 1. Visualising and Analysing HWISE Data Using R

## How does the R-based Analysis Programme work?

- Click 'Browse', then the file browser will pop up.
- Click your chosen Excel file and then click open.



# 1. Visualising and Analysing HWISE Data Using R

## How does the HWISE Analyser/Visualiser Work?

http://127.0.0.1:7442 Open in Browser Publish

### Data Visualiser

Data Summary Frequency Table Plot

Choose an .xlsx File

Browse... HWISE\_KisoroUganda\_RawData\_TO\_30July2019\_

Upload complete

Choose a sheet:

Dictionary

Variable Category	Variable Name	Variable Label	Variable Type	Value Labels
Screening	sq1a	Do you understand what we have explained to you?	NA	0=No 1=Yes
NA	sq2	Do you understand that nobody except the study team will know what you tell us?	NA	0=No 1=Yes
NA	sq3	Do you understand that you can stop your participation at any time?	NA	0=No 1=Yes
NA	sq4	Do you have any questions that you want to ask before we start?	NA	0=No 1=Yes
NA	sq5	Do you agree to participate in this survey?	Categorical	0=No 1=Yes
NA	sq6	Are you 16 years of age or older?	Categorical	0=No 1=Yes
NA	sq7	Would you consider yourself knowledgeable about water acquisition and use within your household?	Categorical	0=No 1=Yes
NA	sq8	If no, who is most knowledgeable about water acquisition and use within your household? Who should I talk to?	String/text	NA
Sociodemography	sd1	Role in household: What is your relationship to the head of your household?	Categorical	1=Self 2=Spouse/partner 3=Adult Child 4=Other





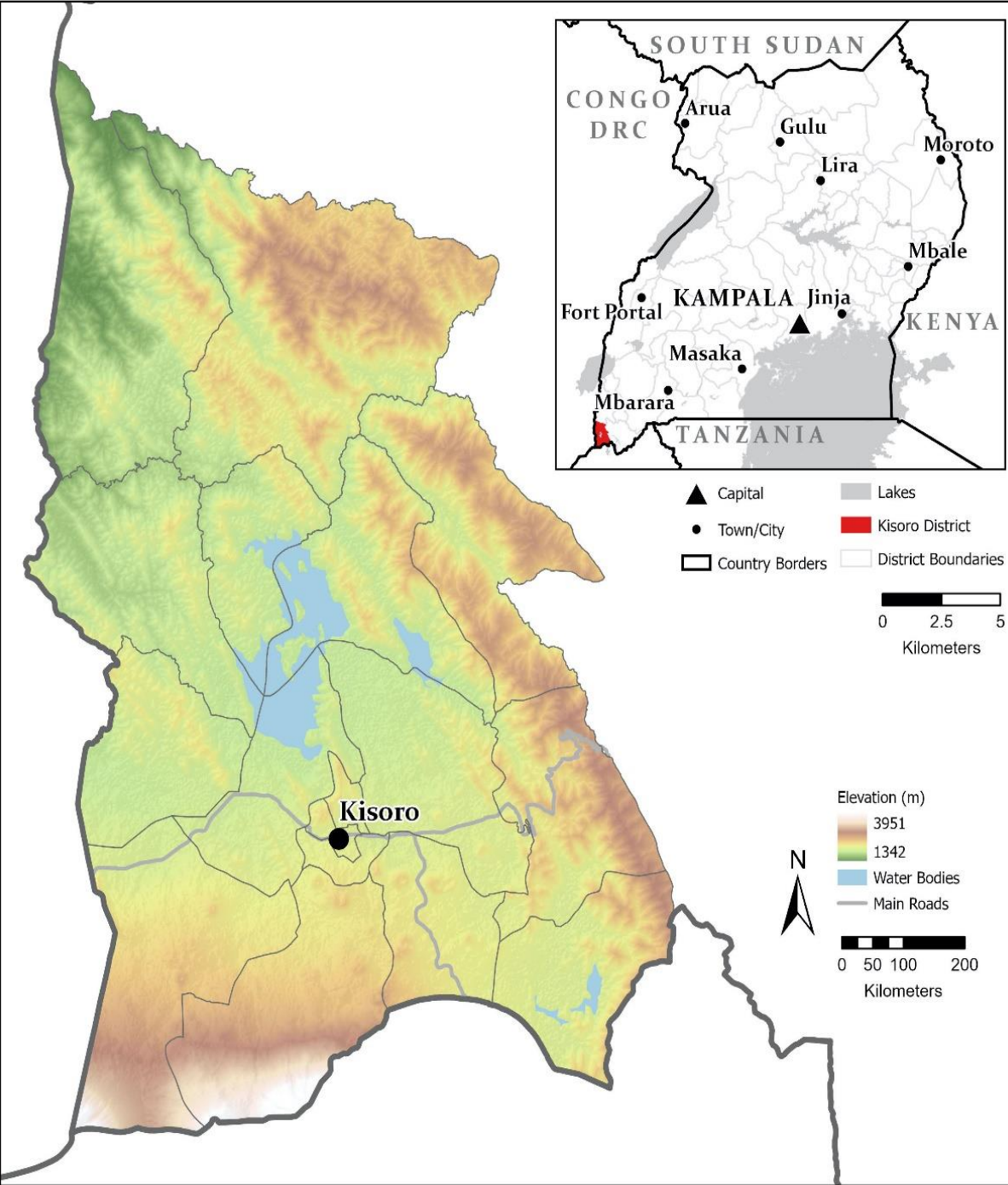
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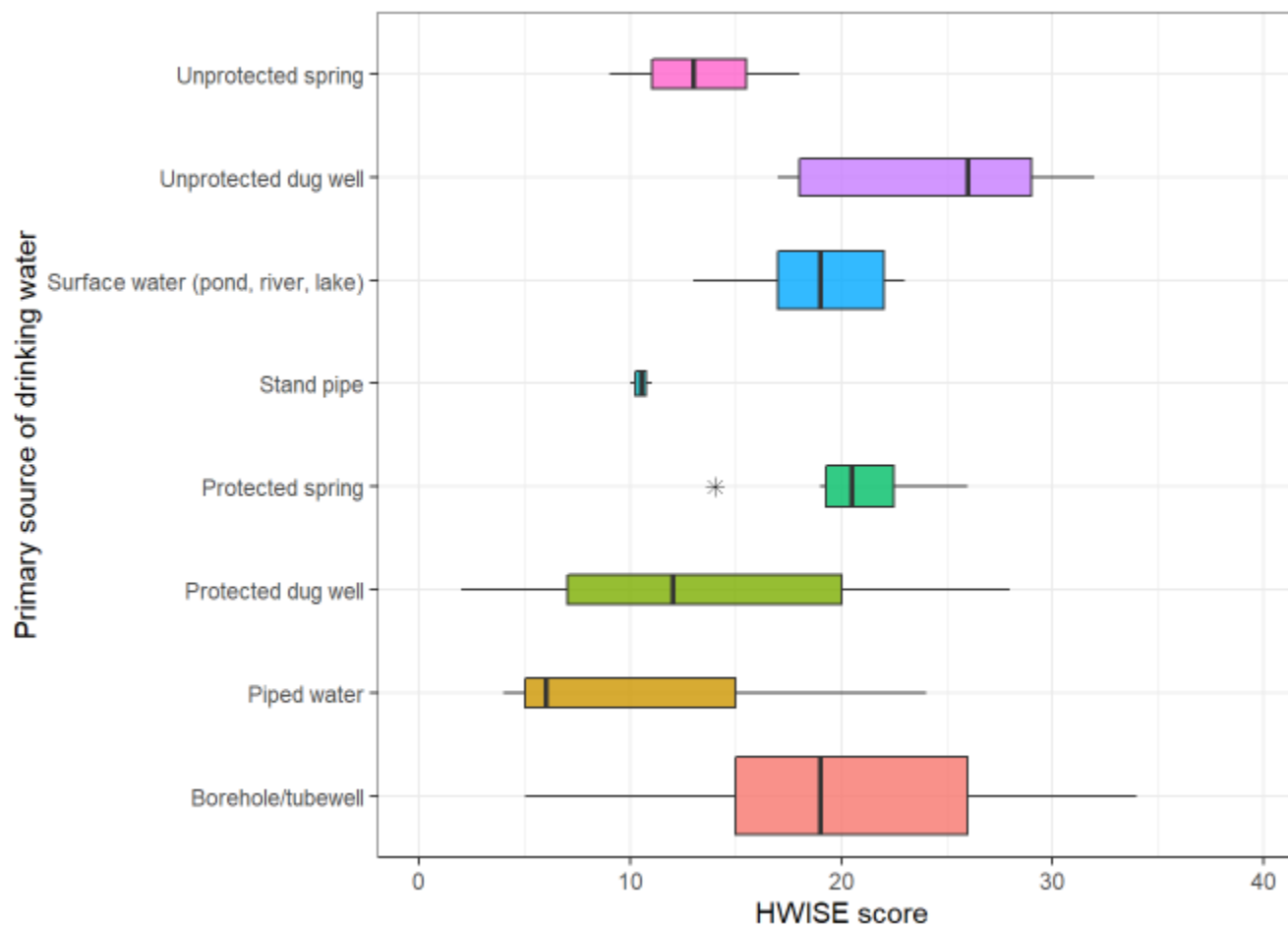




## Kisoro District, Uganda

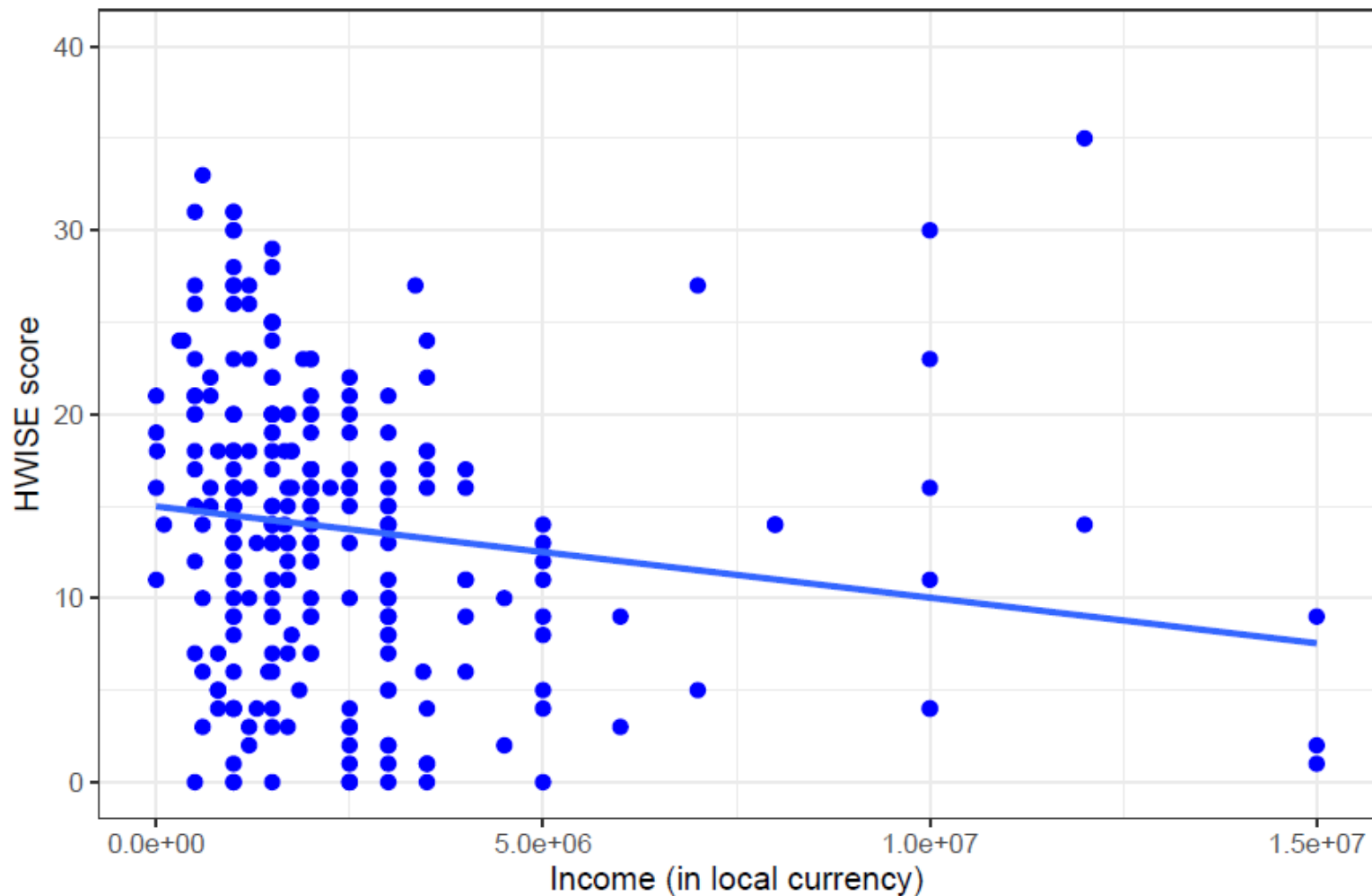


# HWISE Score vs Primary Source of Drinking Water



# HWISE score vs. income

HWISE Score =  $14.986 - 4.9574e-07 * \text{Income (in local currency)}$  adjusted Rsq = 2.0201% p = 0.0





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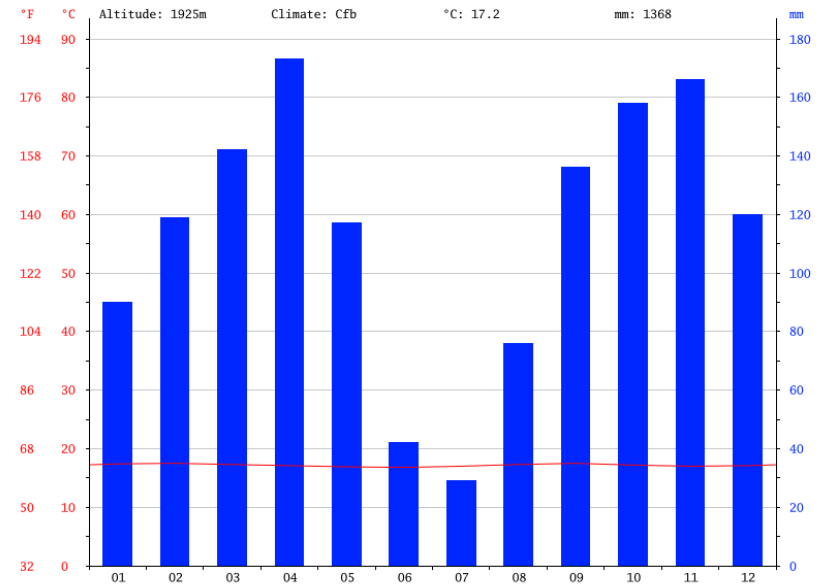
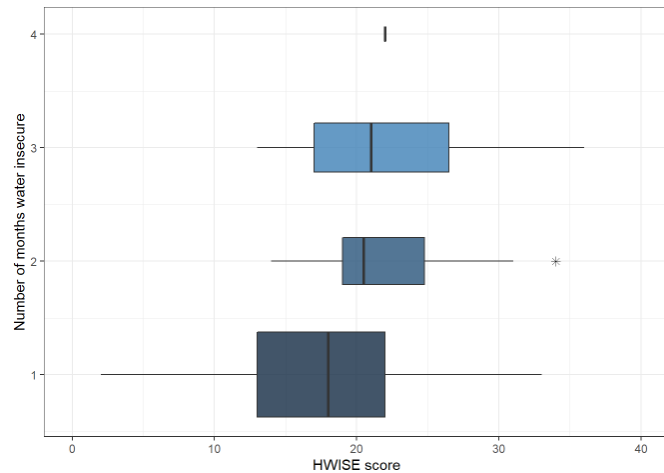
### 3. Future Development

- Automating data cleaning and loading
- Edits to the summary statistics tables and plots to make them more aesthetic.
- Developing linkages with meteorological and hydrological datasets





# Validation of HWISE against other datasets





# ***Thank-you!***

[www.watersecuritynetwork.org](http://www.watersecuritynetwork.org)  
[www.twitter.com/water\\_network](https://www.twitter.com/water_network)

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For more information, see: [www.lrfoundation.org.uk](http://www.lrfoundation.org.uk)

