

# Water security

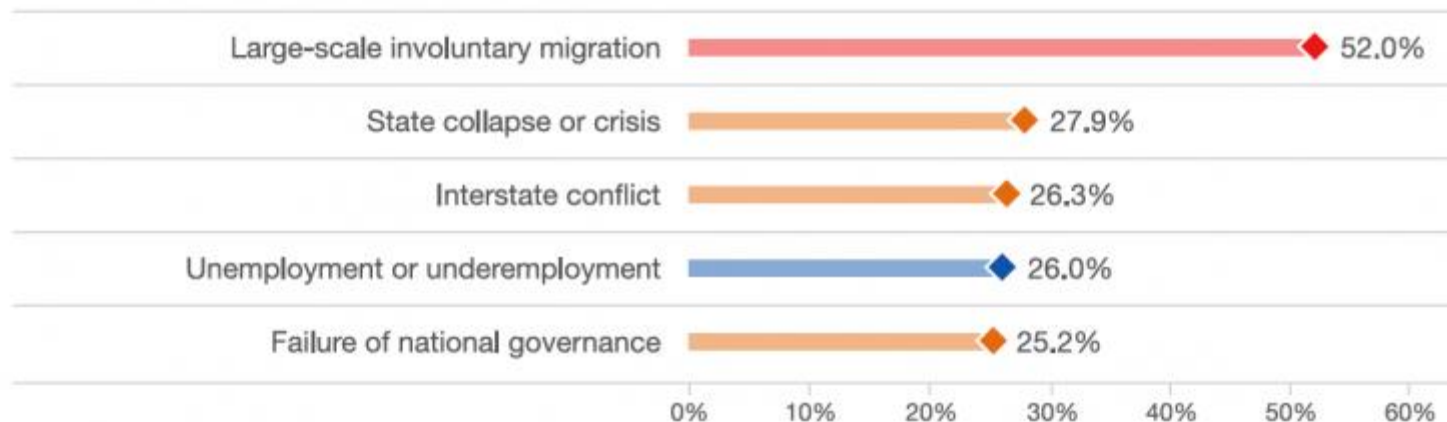
Can undergraduate research with small-scale NGOs make a difference?

How big a risk is the issue of global water security?

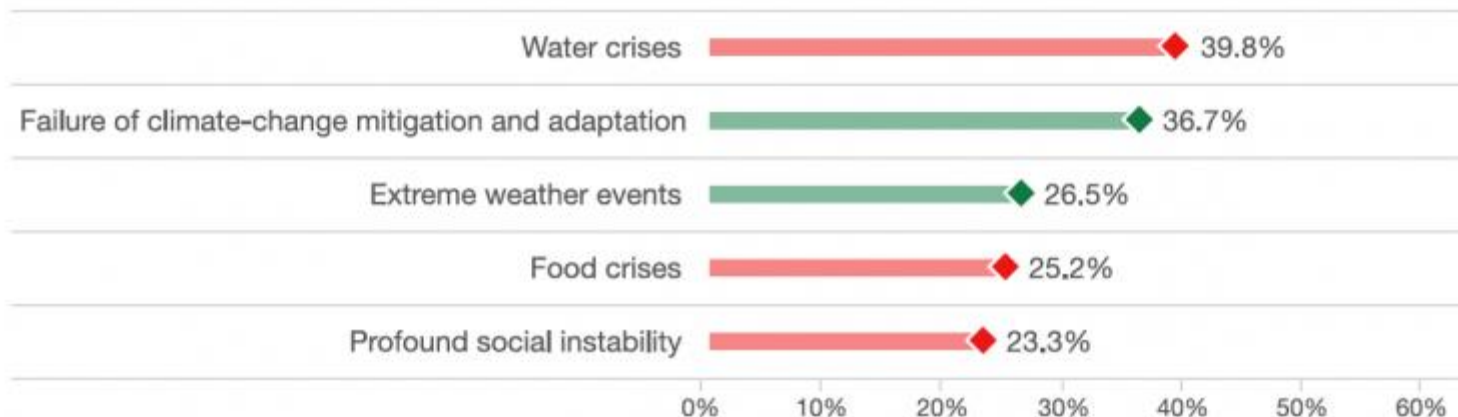
# The Global Risks of Highest Concern, 2016

Percent of participants mentioning the respective risk to be of high concern for the time frame of 18 months or 10 years, respectively. Participants could name up to five risks in each time frame. In each category, the risks are sorted by the total sum of mentions.

## For the next 18 months



## For the next 10 years



# The Global Risks Report 2016

## Top 10 risks in terms of Likelihood

- 1 Large-scale involuntary migration
- 2 Extreme weather events
- 3 Failure of climate-change mitigation and adaptation
- 4 Interstate conflict
- 5 Natural catastrophes
- 6 Failure of national governance
- 7 Unemployment or underemployment
- 8 Data fraud or theft
- 9 Water crises
- 10 Illicit trade

## Top 10 risks in terms of Impact

- 1 Failure of climate-change mitigation and adaptation
- 2 Weapons of mass destruction
- 3 Water crises
- 4 Large-scale involuntary migration
- 5 Energy price shock
- 6 Biodiversity loss and ecosystem collapse
- 7 Fiscal crises
- 8 Spread of infectious diseases
- 9 Asset bubble
- 10 Profound social instability

## Categories

-  Economic
-  Environmental
-  Geopolitical
-  Societal
-  Technological

Read more: [wef.ch/risks2016](http://wef.ch/risks2016) #risks2016

What aspect of water security will I be dealing with?

# Sustainable development goals



And the **governance** of water resources  
In the context of Uganda



## Goal 6. Ensure availability and sustainable management of water and sanitation for all

- 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- Plus 4 more
- Plus
- 6.b Support and strengthen **the participation of local communities** in improving water and sanitation management
- [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

# Further issues

- 768 million people still lack access to potable water.
- Sub-Saharan Africa the numbers without access to potable water increased by 63 million between 1990 and 2011.
- **Reference** WHO/UNICEF (2013) Joint Monitoring Programme (JMP) for Water Supply and Sanitation. [www.wssinfo.org/](http://www.wssinfo.org/)



# Did Uganda reach the Millennium Development Goal on improving access to water and sanitation by 2015?

- Yes access to water
- No sanitation

Would you expect a country with these statistics would have achieved the target?

- In a population of approximately 36 million, only 1.5 million have access to piped water.

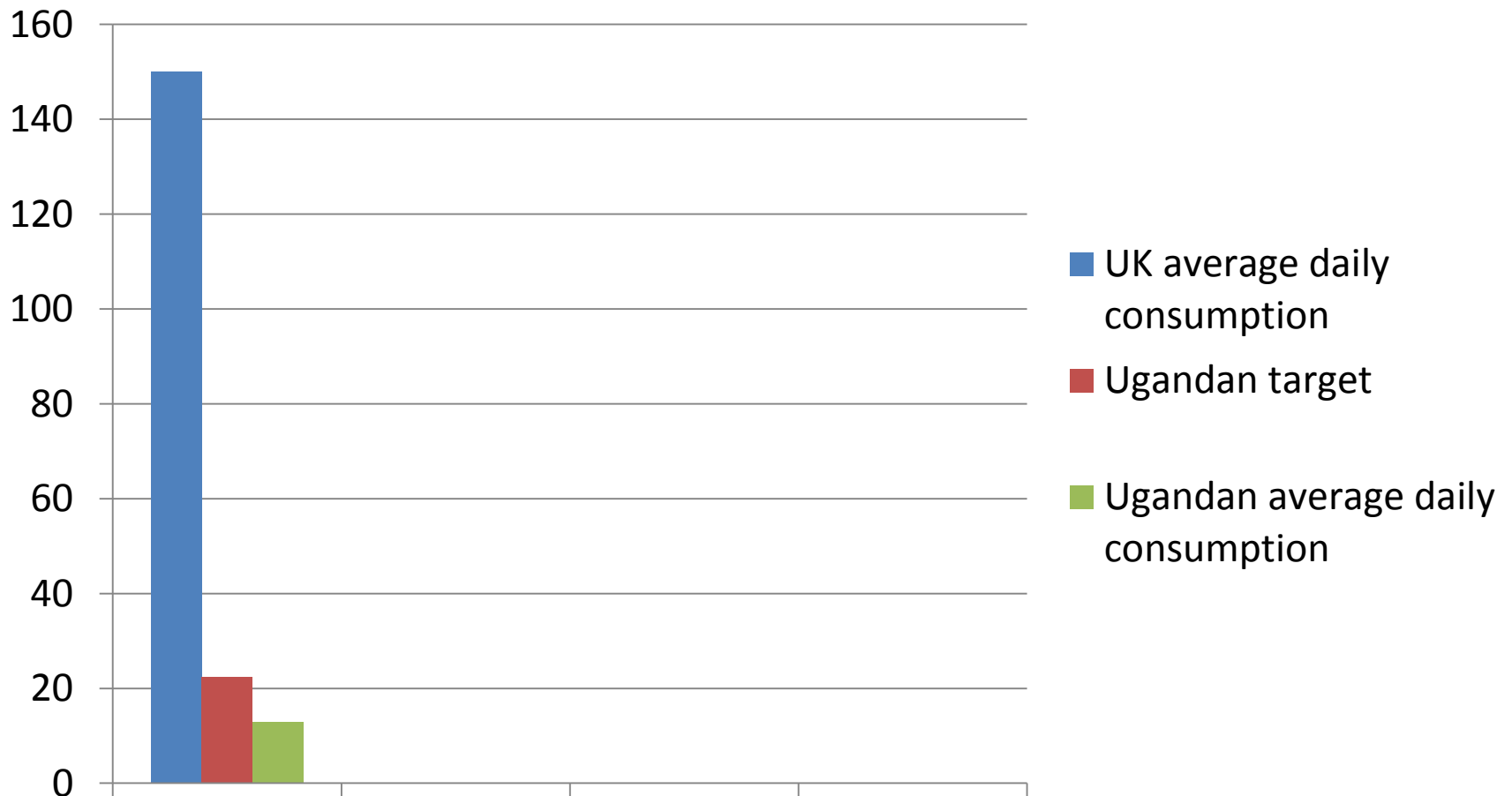
# What access means

- Access to an improved water source, defined by the MDGs as “reasonable access to an adequate amount of water from an improved source”
- Reasonable access is internationally defined as 1 km in rural areas and 0.2 km in urban areas.

This is how most water is brought into rural and peri-urban Ugandan homes



# Comparing the consumption of water in the UK and Uganda litres/capita



Water Footprint Network. National Water Footprints: United Kingdom.

[www.waterfootprint.org/?page=files/UnitedKingdom](http://www.waterfootprint.org/?page=files/UnitedKingdom)

# Water quality

- The quality of water was not taken into account by the MDGs in terms of access to water.
- Uganda's national standards of water quality indicators fall short of international indicators.
- Total iron content has a 79 per cent compliance rate with national guidelines but a 45 per cent rate with higher World Health Organization guidelines.
- The *E.coli* compliance rate is 97 per cent, compliance with national guideline, but only meets 63 per cent of WHO guidelines.

# Why does access to clean water matter?

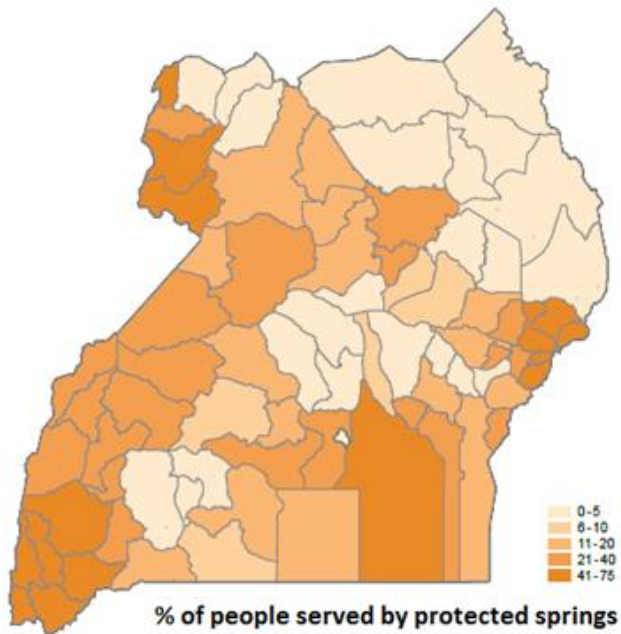
- About 80% of all illnesses in the Global South caused by consumption of poor water.
- Poor access to water impacts more on women and children
- African rural women spend average 26% of their time collecting water.
- Poor access to water undermines other MDGs and SDGs
- [http://wedc.lboro.ac.uk/resources/booklets/BK004\\_WCS\\_A5\\_Pages.pdf](http://wedc.lboro.ac.uk/resources/booklets/BK004_WCS_A5_Pages.pdf)

Uganda: 20,000 children die annually due to diarrhoea.

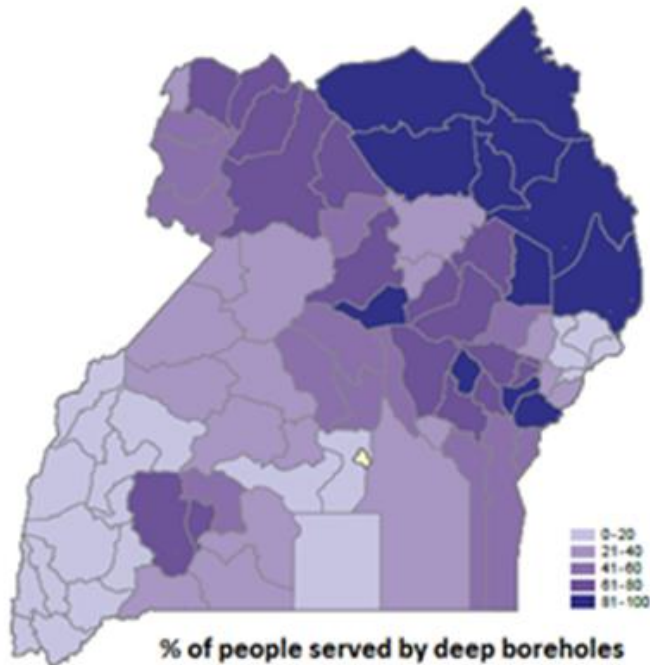
How do people access water in rural  
Uganda?



# 1. Protected springs



## 2. Deep boreholes

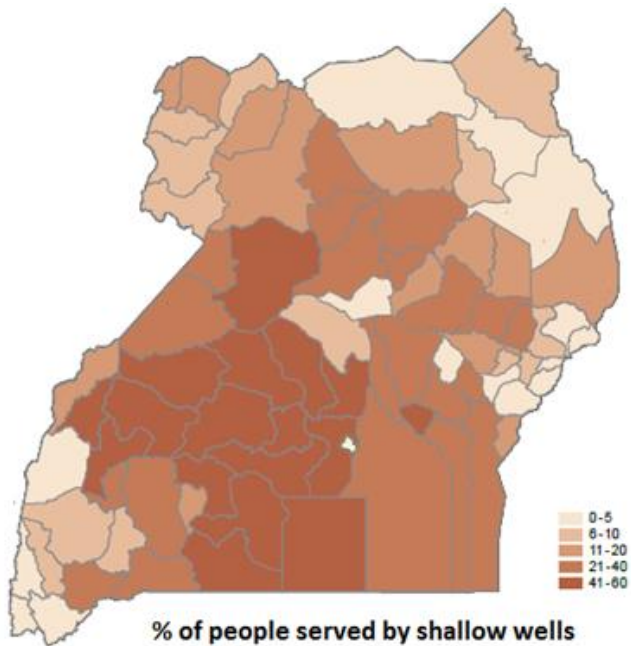


*Produced by: Directorate of Water Development, Ministry of Water & Environment, 2010*





### 3. Shallow wells



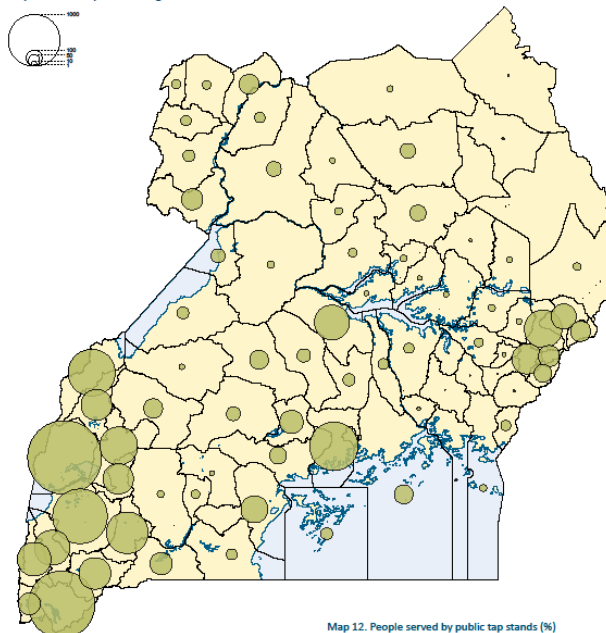
Produced by: Directorate of Water Development, Ministry of Water & Environment, 2010



# Public tap stands

NATIONAL REPORT

Map 11. Public Tap stands in Uganda



Map 12. People served by public tap stands (%)

Public tap stand in Lira District



Produced by: Directorate of Water Development, Ministry of Water & Environment, 2010

# Rainwater harvesting tanks



High quality RWH tank supplied by ACORD: An NGO working with rural communities in Mbarara District, SW Uganda



Simpler home made RWH tank

# What has been happening to access to water in Uganda?

- June 2012 access to improved water within 1 km in rural areas was 64 per cent, a decline of 1 per cent compared to 2011.
- In urban areas access increased from 66 per cent in 2011 to 69 per cent in 2012.
- Target: 90 per cent

# How important is water in Government expenditure?

- Water and Environment: 2006-07: 5.6%
- 2013-14: 2.8%

# What percentage of the sources work properly?

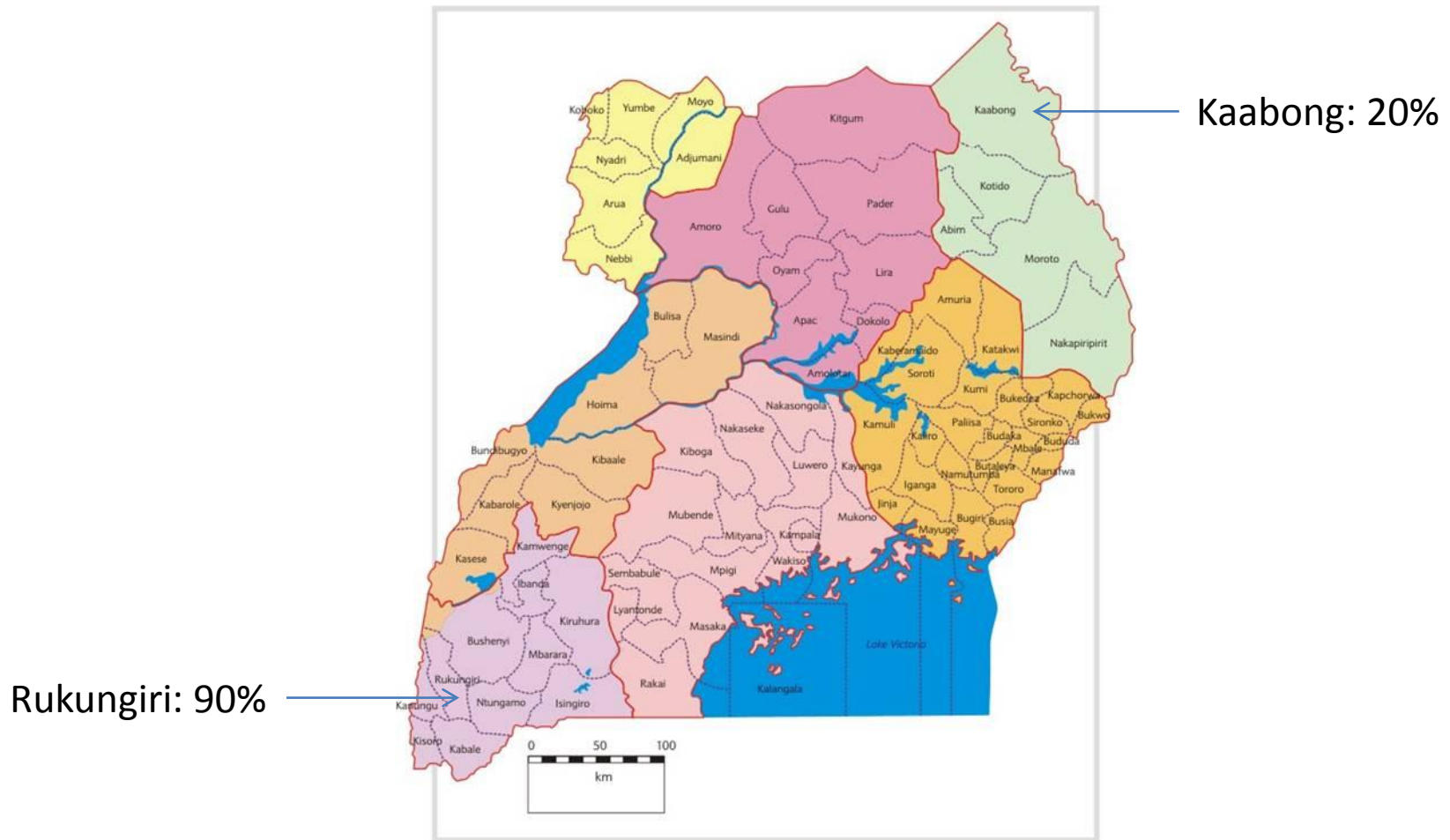
- 82–86 per cent for deep wells and protected springs
- 74 per cent shallow wells



# What else affects water sources?

- 17 per cent of the sources are low yielding
- 10 per cent are vandalised.
- 8 per cent have limited functionality due to poor water quality.
- Technical breakdowns account for 43 per cent of non-functionality; an inability to afford worn-out parts is the major factor.

# Geographical differences in access to safe drinking water



# Ugandan Water Policy

- 1999 Water Act
- Aims
  1. To decentralise water resource management to the user level
  2. Reduce the direct role of the state in the management of water resources.

# Key management structure

- Water User Committees (WUCs)
- Membership drawn from the beneficiaries of the water supply
- WUCs should ensure the maintenance of the water system by collecting revenue from users.

# A Water User Committee in liaison with the National Association of Professional Environmentalists



# What did the Government expect from WUCs?

- The community would be empowered to act as a self-governing group
- The reliance on the government for funds or services would be reduced.

# What happened in practice?

- Only 10 per cent of WUCs from the three districts that participated in the research met regularly.
- Many WUCs that were visited during the research had met only once since they were established over a decade ago,
- One sheet of paper displaying their very first meeting was the only record of any activity during that period.
- WUCs were faced with abuse and physical attack from community members when attempting to collect funds
- The majority of community members refused to contribute.

# Why were WUCs functioning poorly?

- Internal mismanagement
- Corruption
- External pressure



# Key factor that contributed to poorly functioning WUCs

- WUCs and the wider communities in which they were located had very little understanding of their rights and responsibilities as set out in the 1999 Act.
- ie they didn't know what they:
- Could do or
- Should do
- To manage their local water supply

# Key outcome from the research

- Bilingual handbook for WUCs



# 5 sections

- Section 1: Summary of people's rights to water and sanitation,
- Section 2: Describes the roles and responsibilities of the community with respect to water and sanitation
- Section 3: Provides each of the six members of the WUCs with a clear explanation of their individual roles and responsibilities
- Section 4: Provides timetabled activities for WUC members and a checklist for the WUC to check the sanitary state of the environment, general tips for maintaining good levels of household and community sanitation and health.
- Section 5: Basic communication skills for dealing with members of the community.

# Impacts of the handbook

- On the community
  - (i) Improved management of sites
  - (ii) Improved collection of financial contributions
  - (iii) Improved attendance at meetings
  - (iv) Improved record keeping
  - (v) Better co-ordination with local district officers
  - (vi) Improved trust between community members and WUC officials
  - (vii) But lack of good baseline survey makes impacts difficult to quantify.

# References

- Mcloughlin, O. Kazooba, F. and Terry, A. (2014) Helping to improve community-led management of water resources in Uganda, *Journal of the Institute of Environmental Science*, October 2014
- Water Footprint Network. *National Water Footprints: United Kingdom*. [www.waterfootprint.org/?page=files/UnitedKingdom](http://www.waterfootprint.org/?page=files/UnitedKingdom) (Accessed 1 August 2016).