

# Community Water Supplies in the Kimberley

Robyn Grey-Gardner and Meg O'Mullane



Cooperative Research Centre for  
Water Quality and Treatment

# Introduction

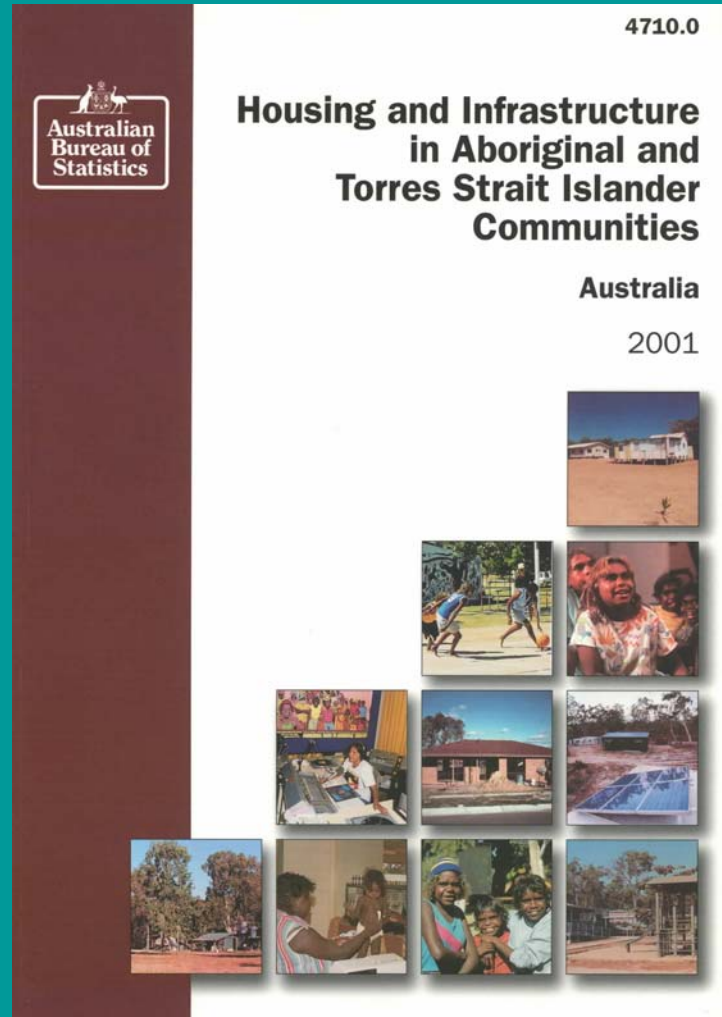
- Present the Water survey conducted in the Kimberley during December 2003 and January 2004.
- Listen to your ideas about ways to improve water supply reliability in the Kimberley.

# What we are not going to do...

- The survey is not a test to see whether people are doing their jobs
- We don't have funding for new water supply systems

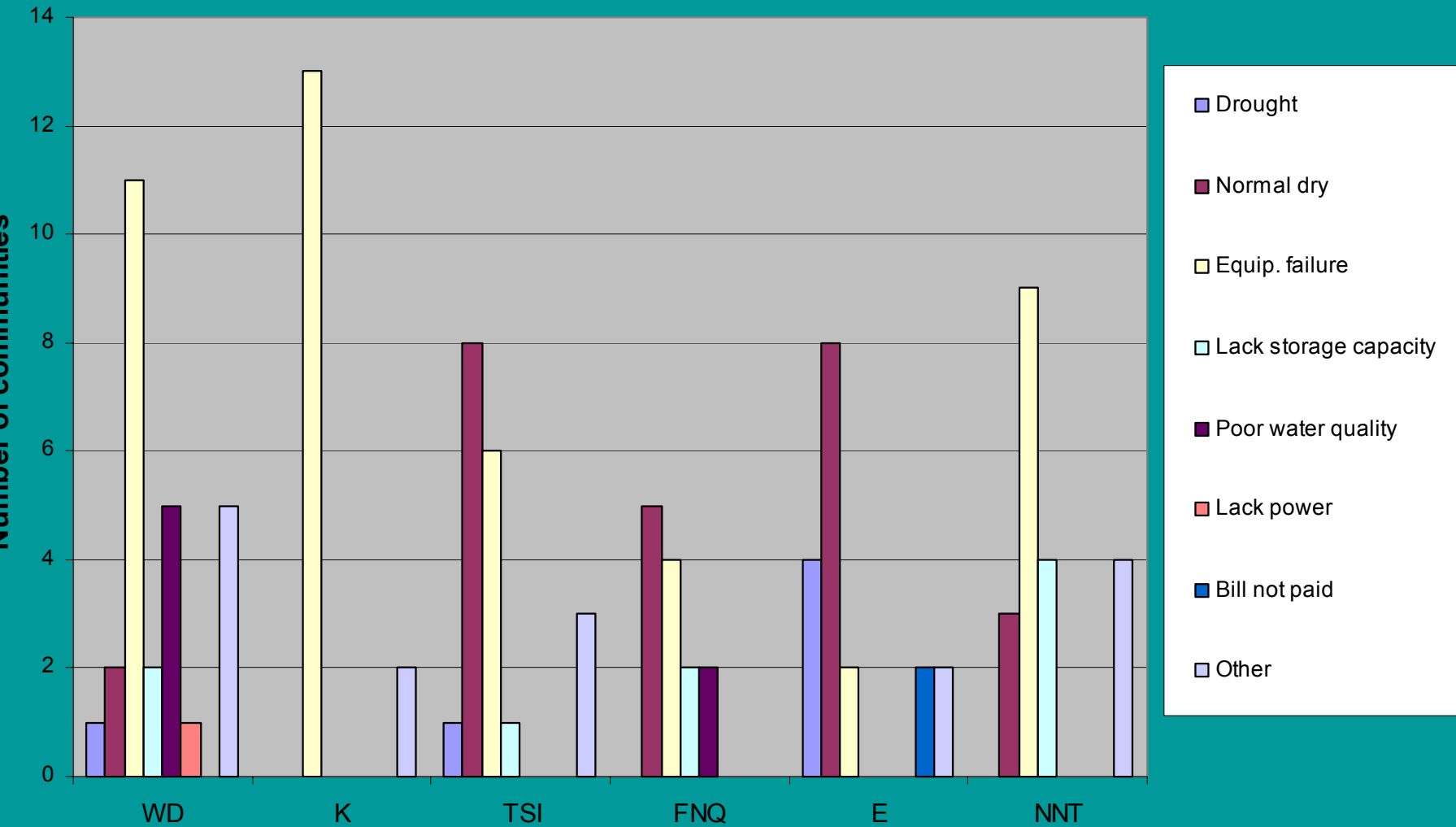
# Background

Communities in the Kimberley have more problems with water restrictions caused by equipment failure than anywhere else in Australia.

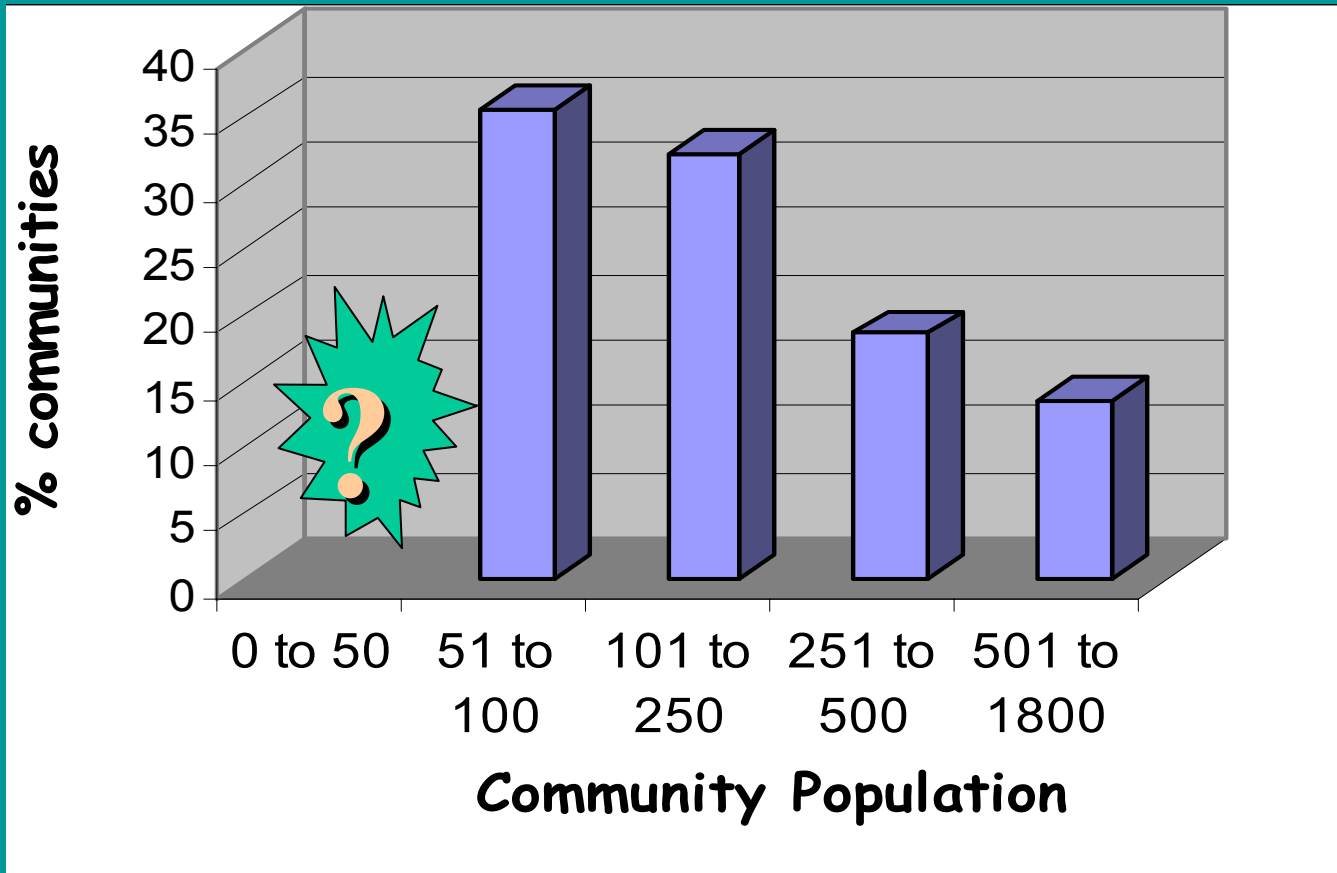


# Reason for Restriction by Region

(community size >50)



# Communities affected by equipment failure (CHINS 1999)

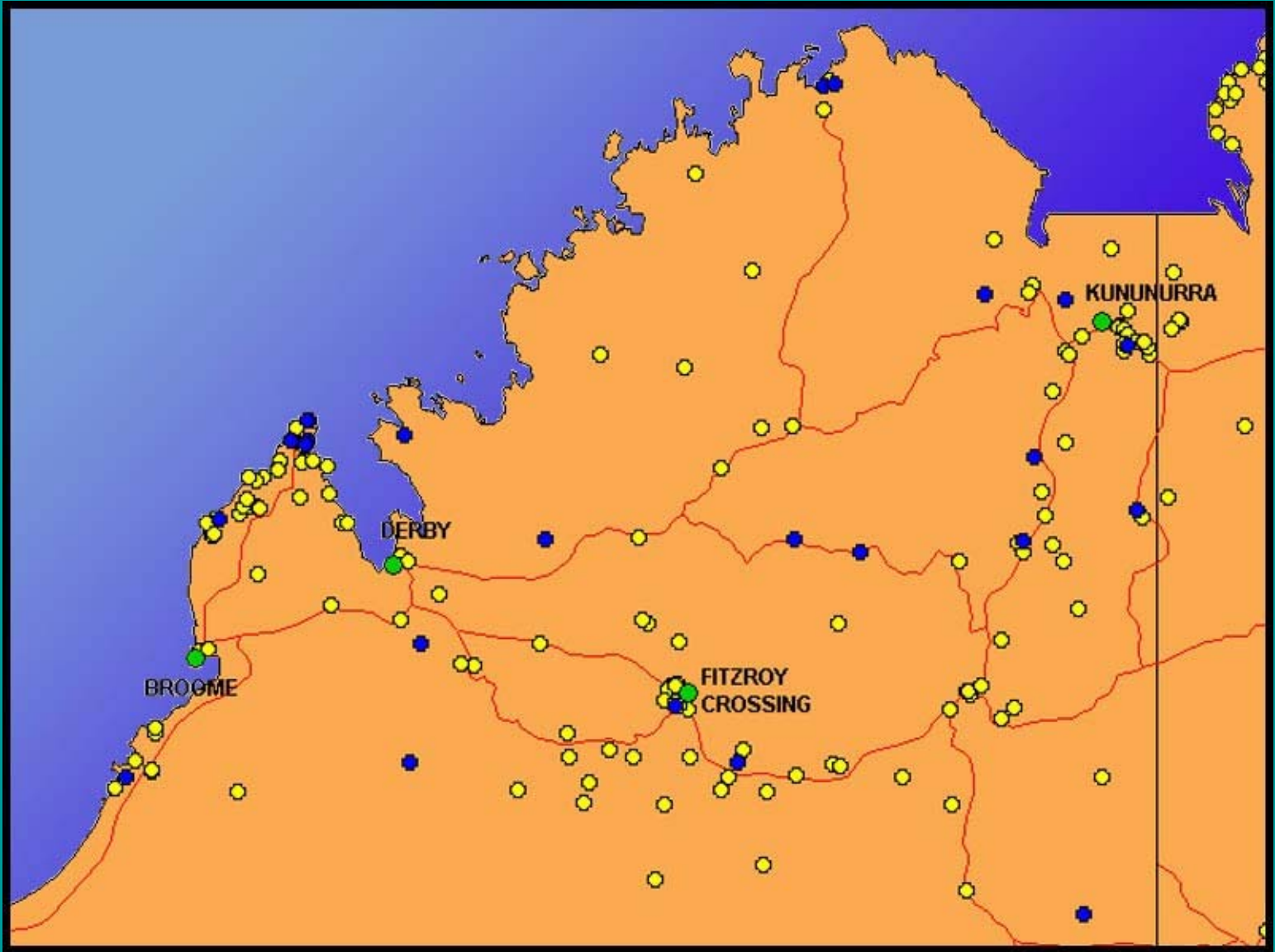


# The Survey

We surveyed a total of 23 small remote communities across the ATSIC regions of Wunan, Malarabah and Kullari.

**This is 18% of communities that had:**

- A population of less than 50,
- An independent water supply (not on town supply)
- Did not have a service agreement with RAESP contractors (other than CAT)

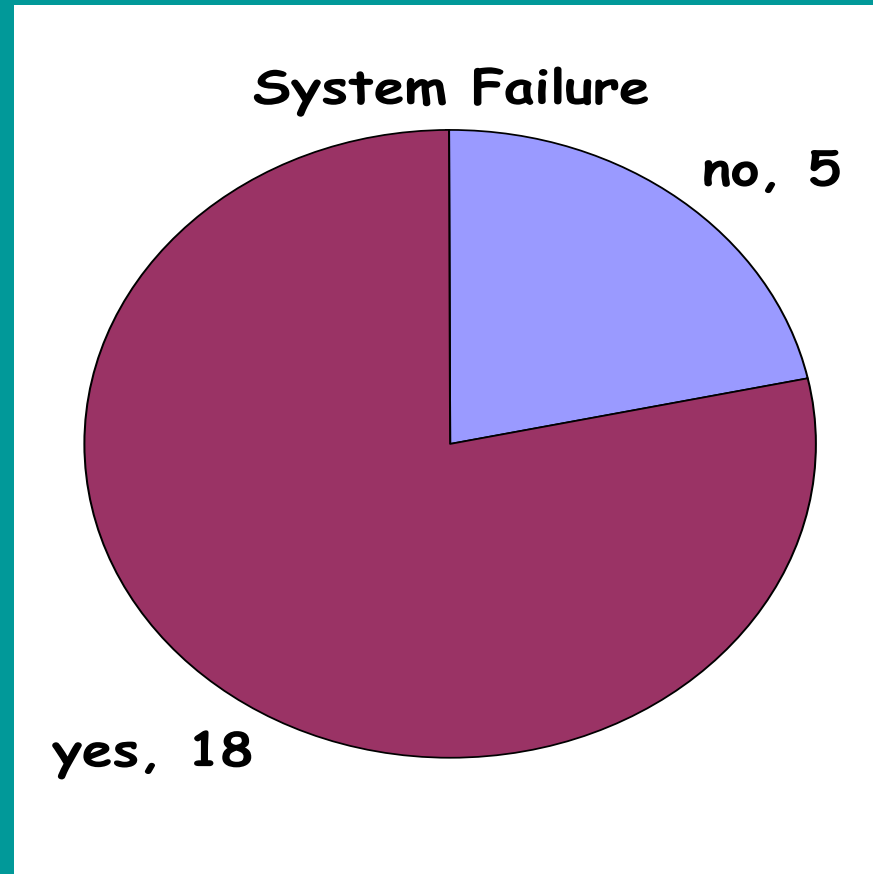




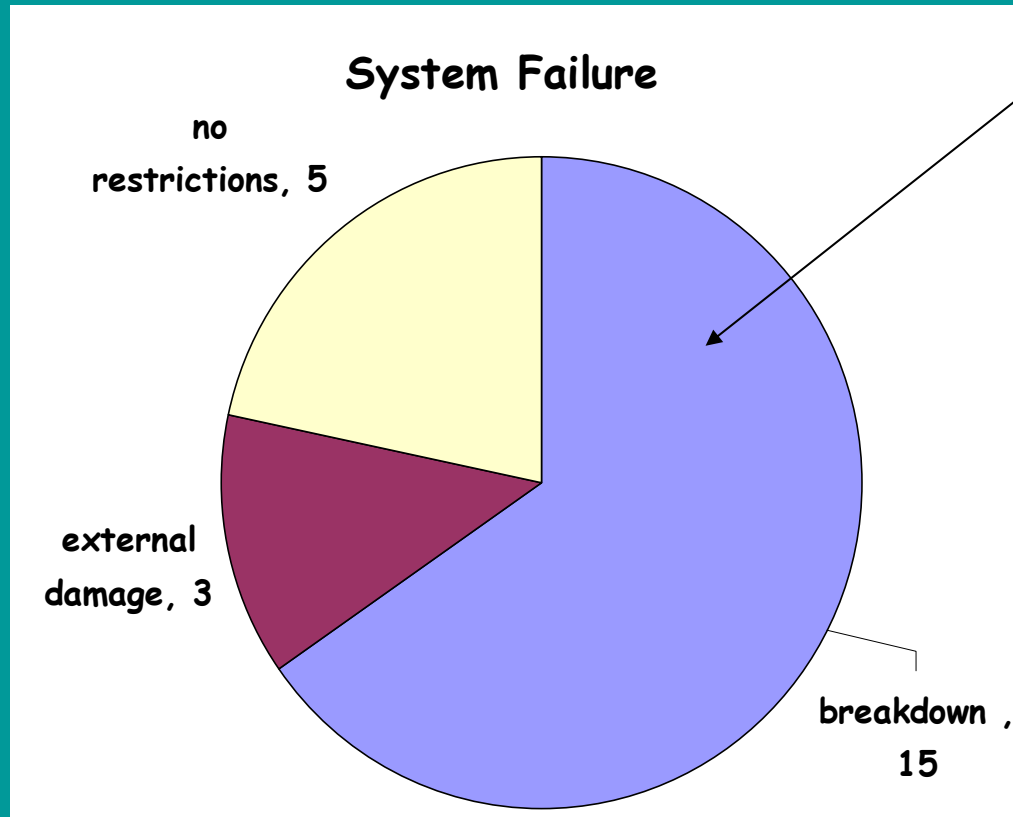
# System failure

System failure is when a component of the water system stops working properly.

78% of communities had system failure



# Why did it fail?



## Equipment broke down

Survey responses about causes:

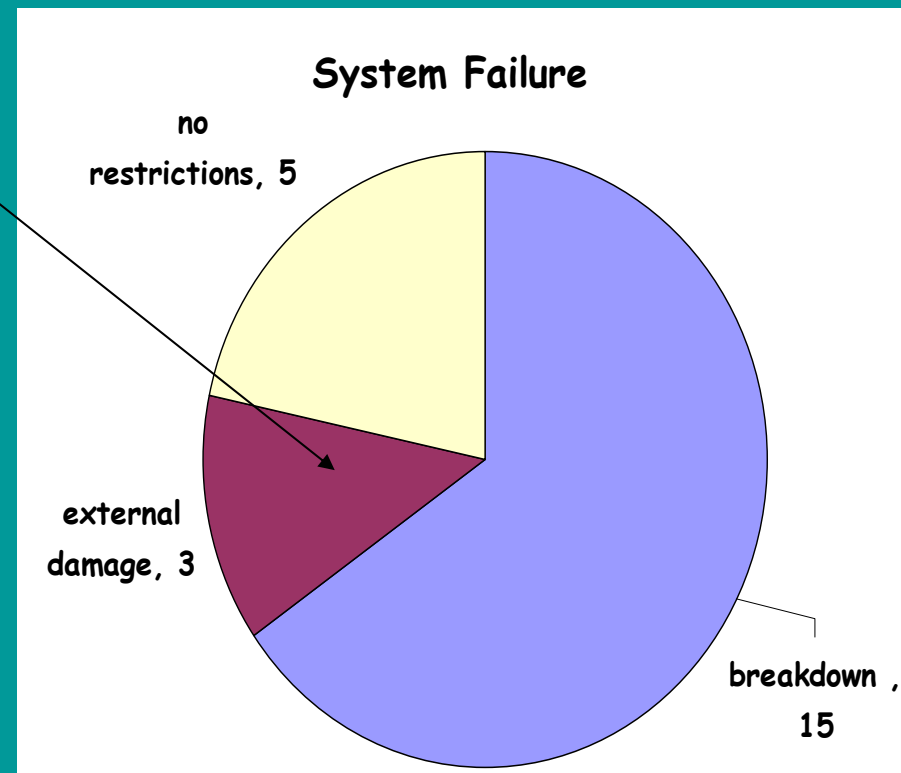
- “Something to do with the safety valve switch”
- “Generator broke – don’t know why”
- “Bore’s too old”
- “Pump installed too high up”

# Causes of other water supply problems

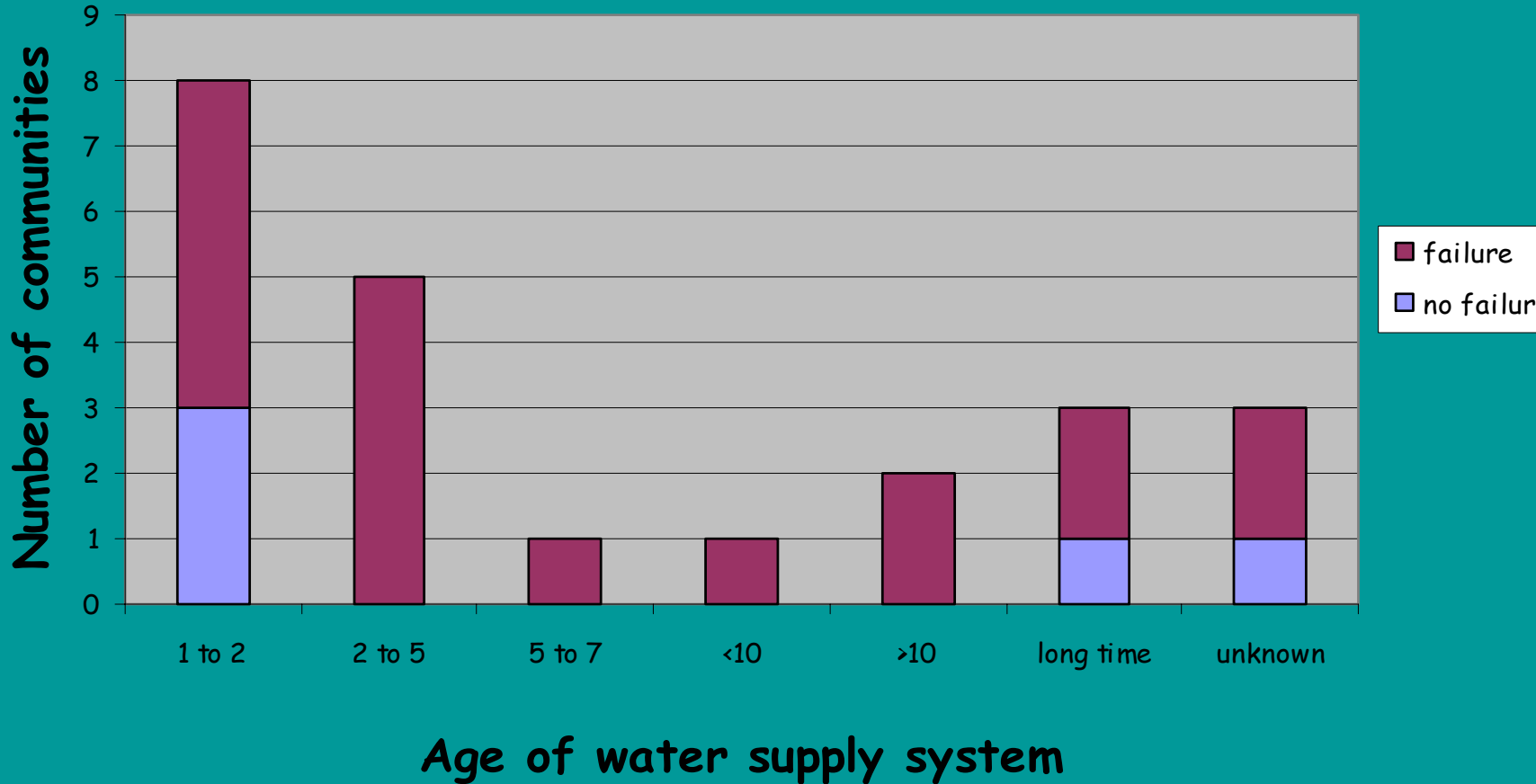
## External damage

Survey responses:

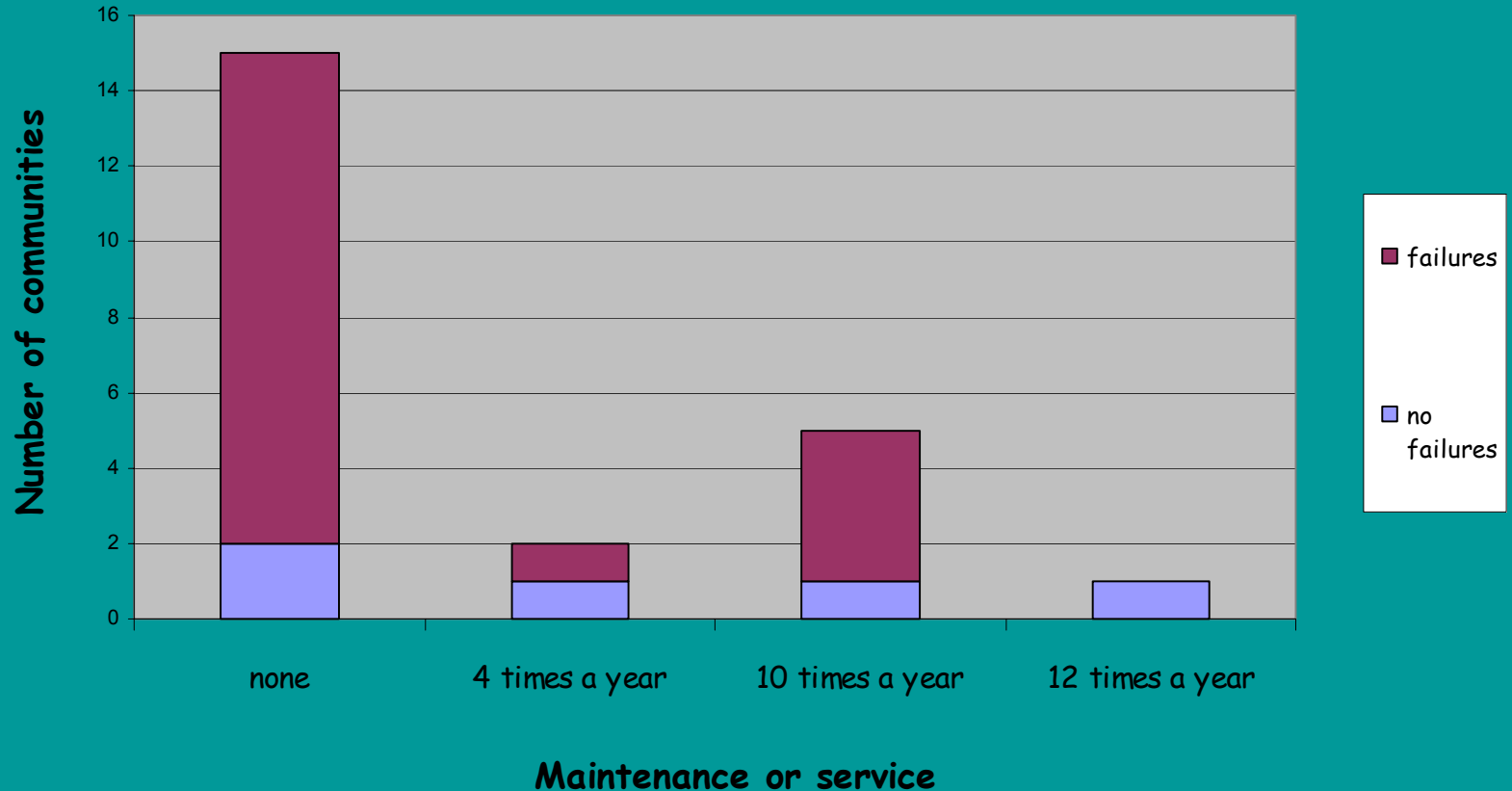
- Animals destroyed pipes
- Theft of equipment
- Cyclone damage



# Age of systems



# How maintenance affects system failure



# Analysis

- **The rate of equipment failure is high**
- **The water supply issues and causes are extremely variable**
- **Community members know how to operate and complete minor repairs to their water supply system. More complex repairs required the services of a contractor**
- **Breakdowns happened to both new and old systems**

# Observations

- **Response times to repair breakdowns vary (half a day to 3 weeks)**
- **The community member-servicer relationship could be strengthened**
- **Communities without service agreements have systems waiting to breakdown**
- **Many communities would benefit from operational training and knowledge about installation and repairs**

# Interventions and support to improve system reliability

## Our Suggestions:

### Better Information

- Central database on water supply systems
- When a new system is installed or replaced, develop individual community information plans

### Training

- A training course established in the basics of groundwater and maintaining water supplies from bore to tap



# Interventions and support to improve system reliability

## Lessons Learnt pack

- Sharing information about what has worked (and what hasn't)

## Mobile technical support

- CAT service to broaden to include checking systems and providing basic advice and support to small communities

## More analysis?

- Is this analysis useful? Should CAT seek greater understanding and continue similar research?