

A large, stylized graphic of a globe in shades of blue, positioned on the left side of the slide. It features curved lines representing latitude and longitude.

# **Customer Perceptions and Needs**

***For: City of Cape Town  
Water Services***

***By: ACNielsen  
June 2003***

# Structure of Presentation

## Introduction

*Background*

*Methodology*

## Key Findings

*Informal settlements*

*Residents*

*Business*

*Bulk*

## Conclusions

# Background

- 💡 Tracking survey to investigate needs and perceptions relating to water services
- 💡 The first survey was conducted in February and March 2002, with a follow-up study in March and April in 2003

# Methodology

## 👤 Residents:

- A sample of 100 residents, drawn from 25 of the largest informal areas identified, from aerial photographs supplied
- A sample of 520 (497 in 2002) residents, from a database across all household types supplied

## 👤 Businesses:

Sample of 25 (31 in 2002) out of 257 high volume users of water (those who use 100+kl per day), selected on an equi-interval basis

## 👤 Bulk:

Sample of 25 (not done in 2002) out of 98 miscellaneous consumers off the bulk pipelines (those who buy in bulk i.t.o a supply agreement), selected on an equi-interval basis from a list

👤 Personal interviews in the preferred language of respondent, using a semi-structured questionnaire - CAPI and PAPI

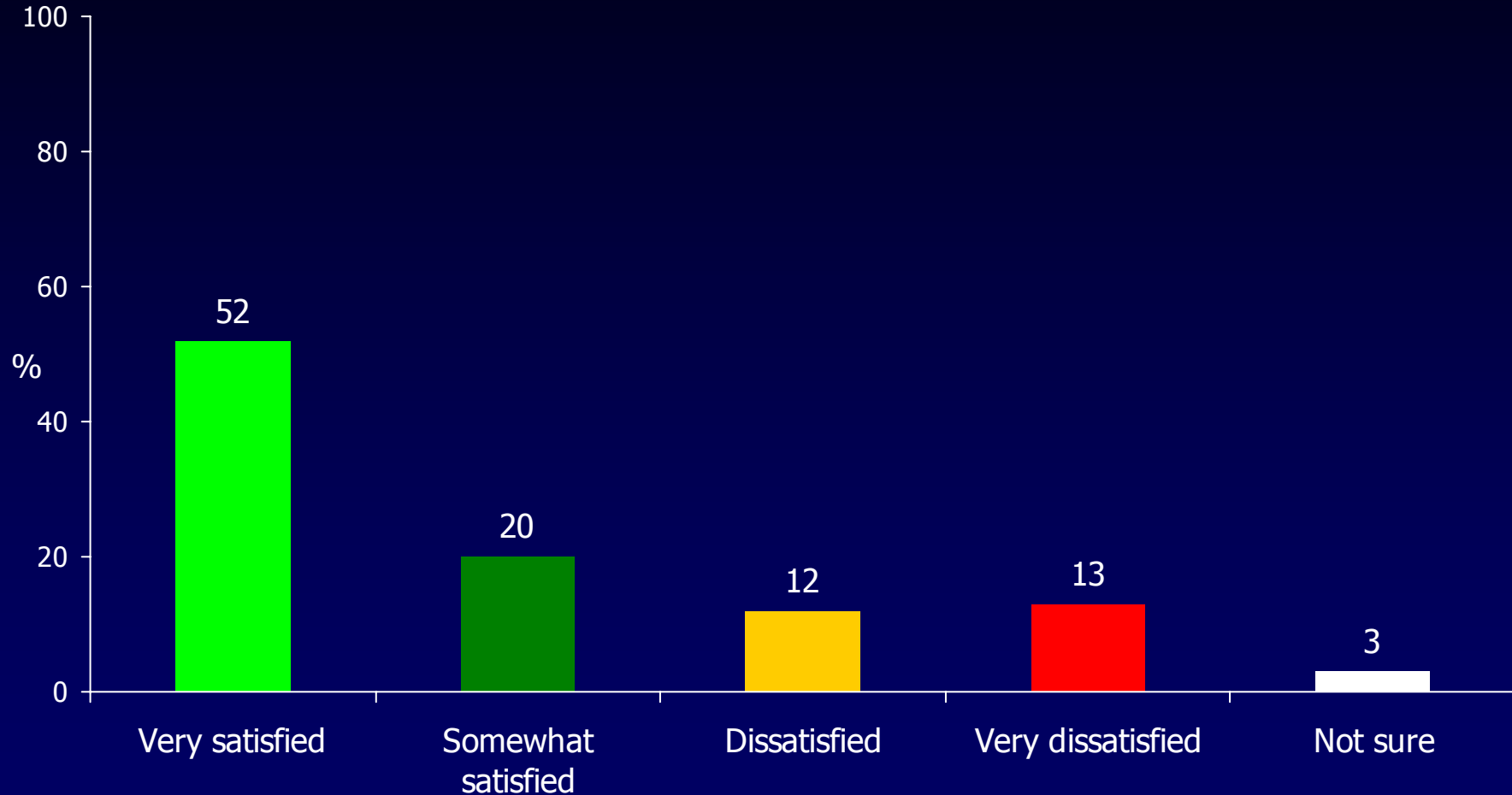
👤 Fieldwork during March - June (February and March 2002)

A stylized globe graphic in a dark blue color, featuring a grid of latitude and longitude lines. The globe is positioned on the left side of the image, partially overlapping the text.

# **Informal Settlements**

# Levels of satisfaction

Base: All informants

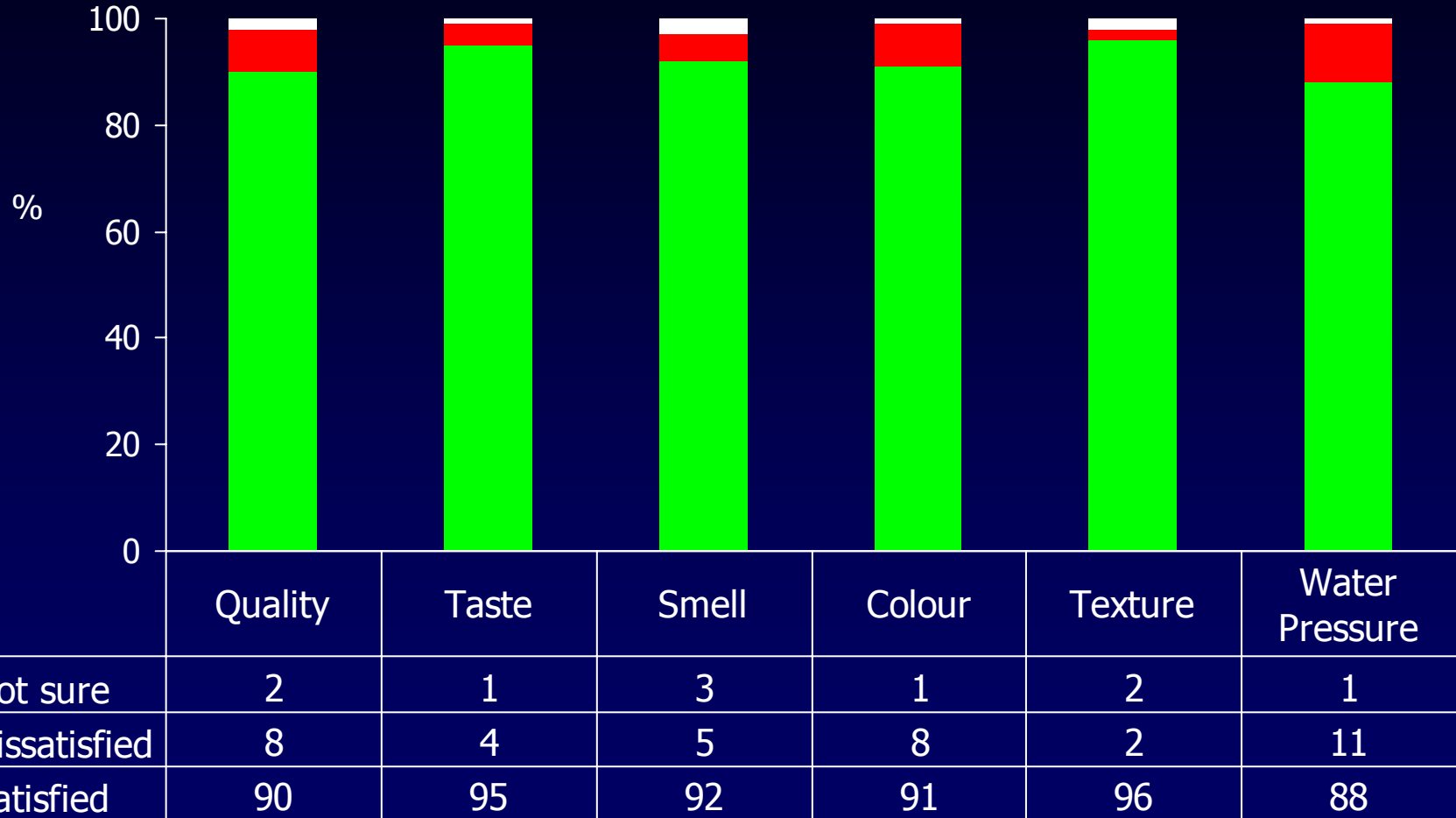


Source: Project Puddle 2003 n=100

Q.1

# Levels of satisfaction with water

Base: All informants



Source: Project Puddle 2003 n=100

Q.7

# Reasons for dissatisfaction with:

Base: All who were dissatisfied/very dissatisfied

## Quality (n=8)

Place we get water from is not healthy – also use that place for toilets

Next to rubbish bin and toilet

## Smell (n=5)

Has a bad smell

## Colour (n=8)

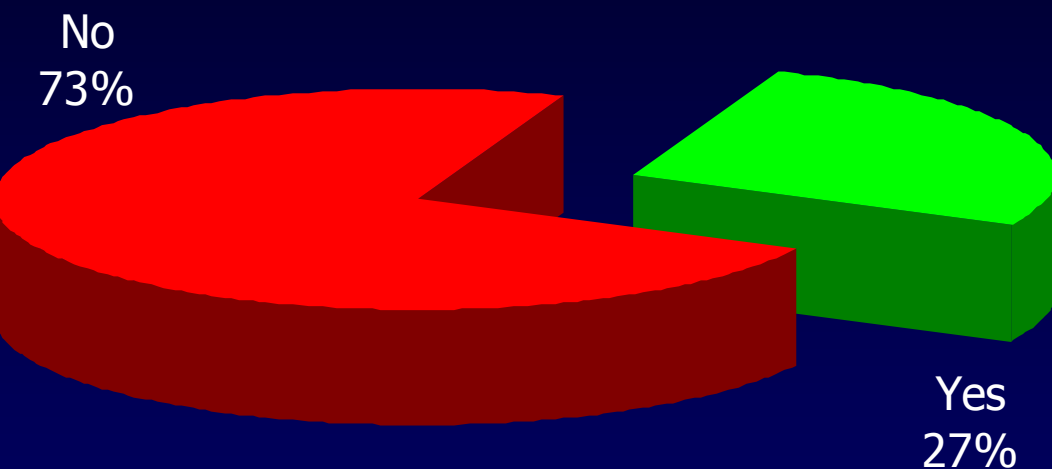
Colour not clear

## Pressure (n=11)

Comes out slow / no pressure

# Consulted when decision taken about provision of basic water and sanitation

Base: All informants



## Yes (n=27)

- Public meetings (93%)**
- Door-to-door visits (19%)**
- Councillors visits (7%)**
- Announcement through loudspeaker (4%)**
- Other (4%)**

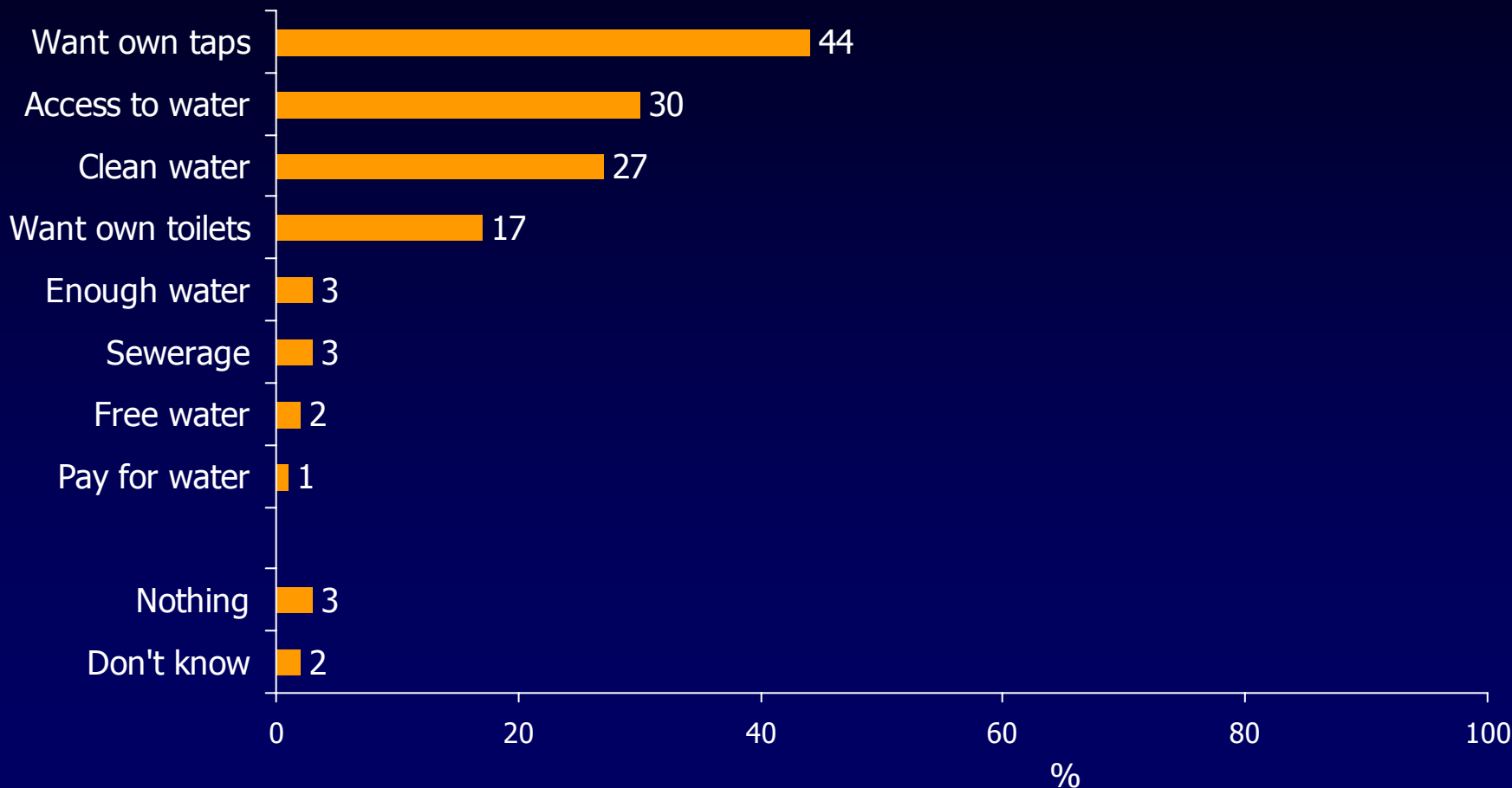
Source: Project Puddle 2003 n= 100

Q.B1,B2

# Rights as resident of Cape Town

## Water Services - spontaneous

Base: All informants



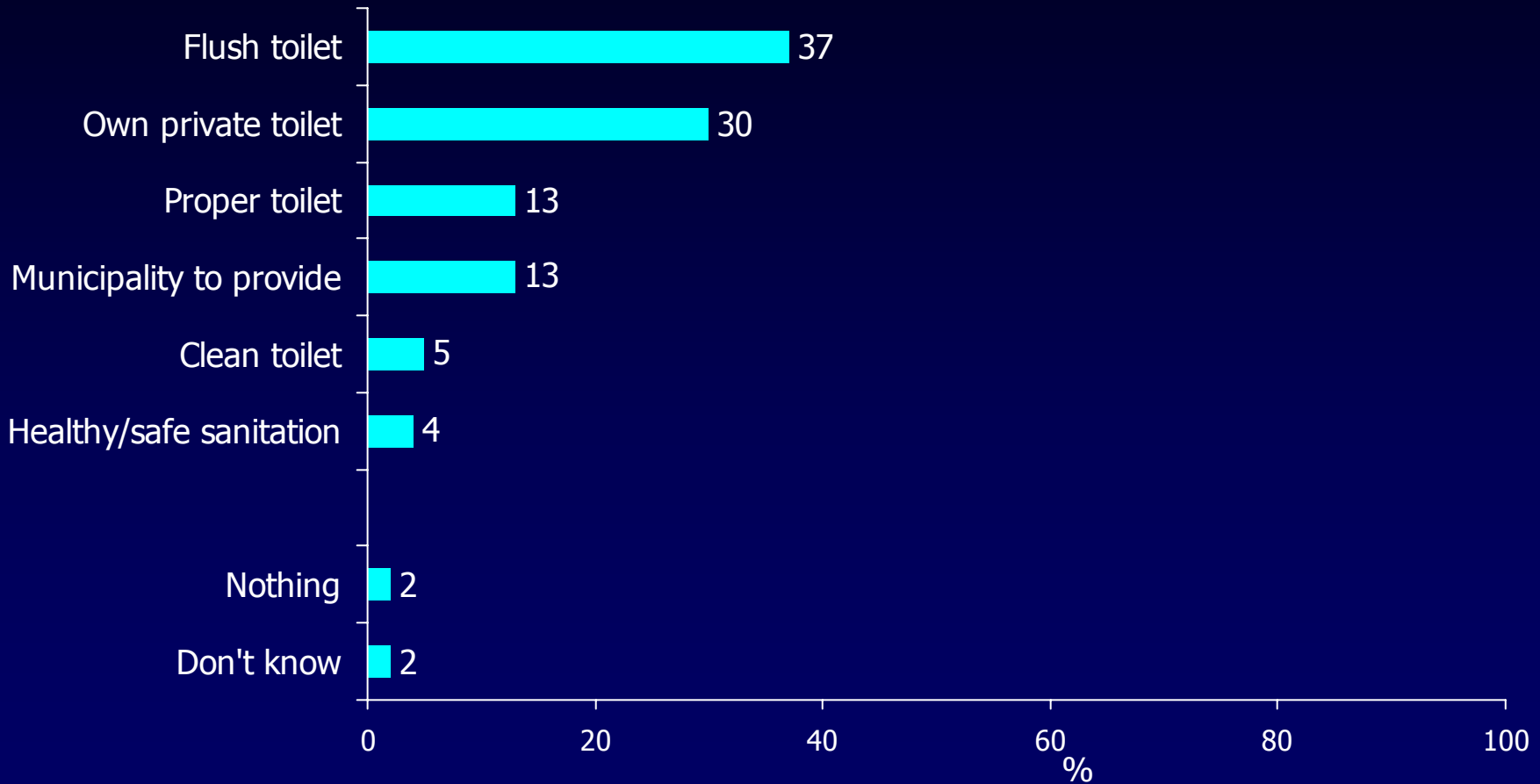
Source: Project Puddle 2003 n= 100

Q.B3

# Rights as resident of Cape Town

## Basic sanitation - spontaneous

Base: All informants



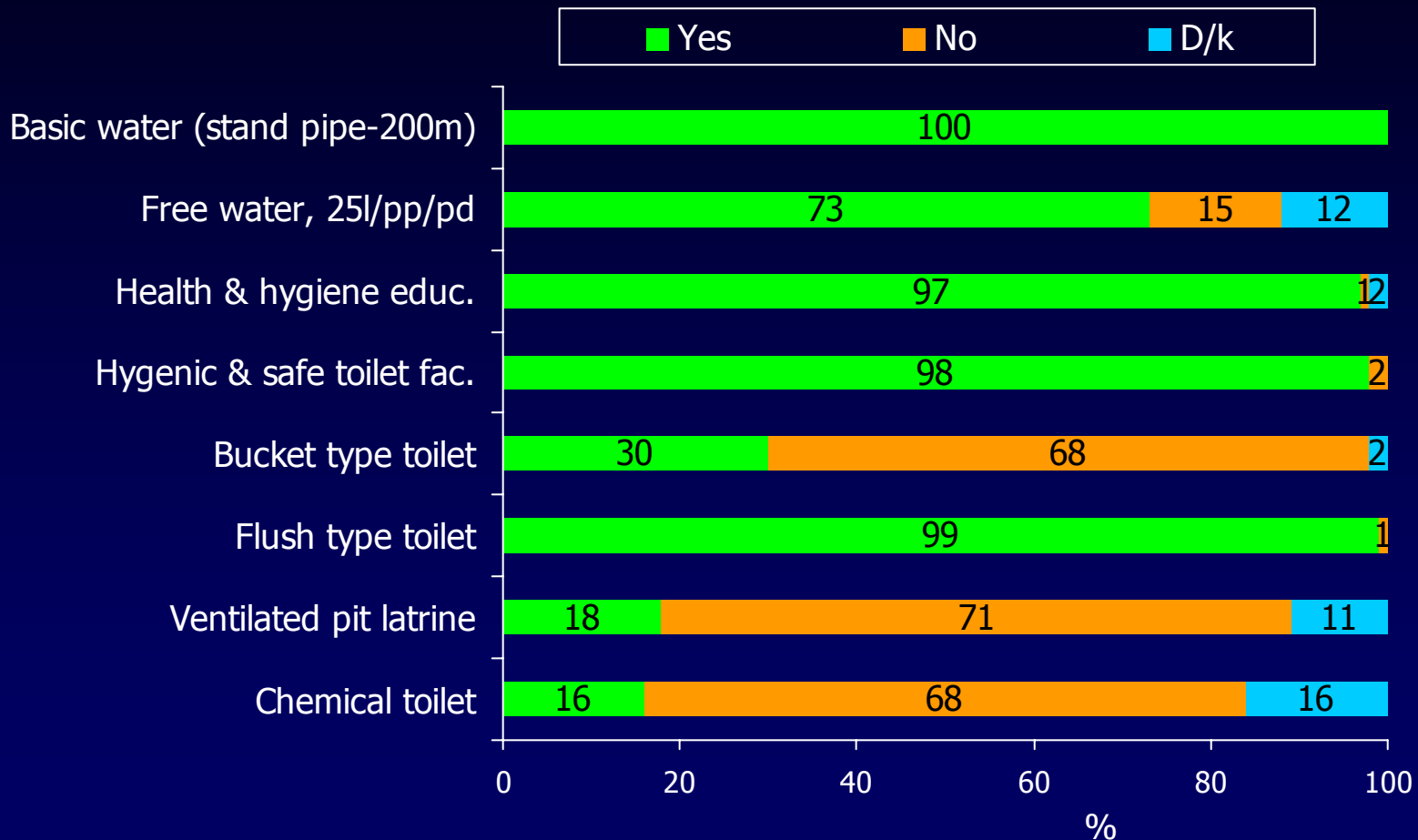
Source: Project Puddle 2003 n= 100

Q.B4

# Rights as resident of Cape Town

## Water Services - aided

Base: All informants

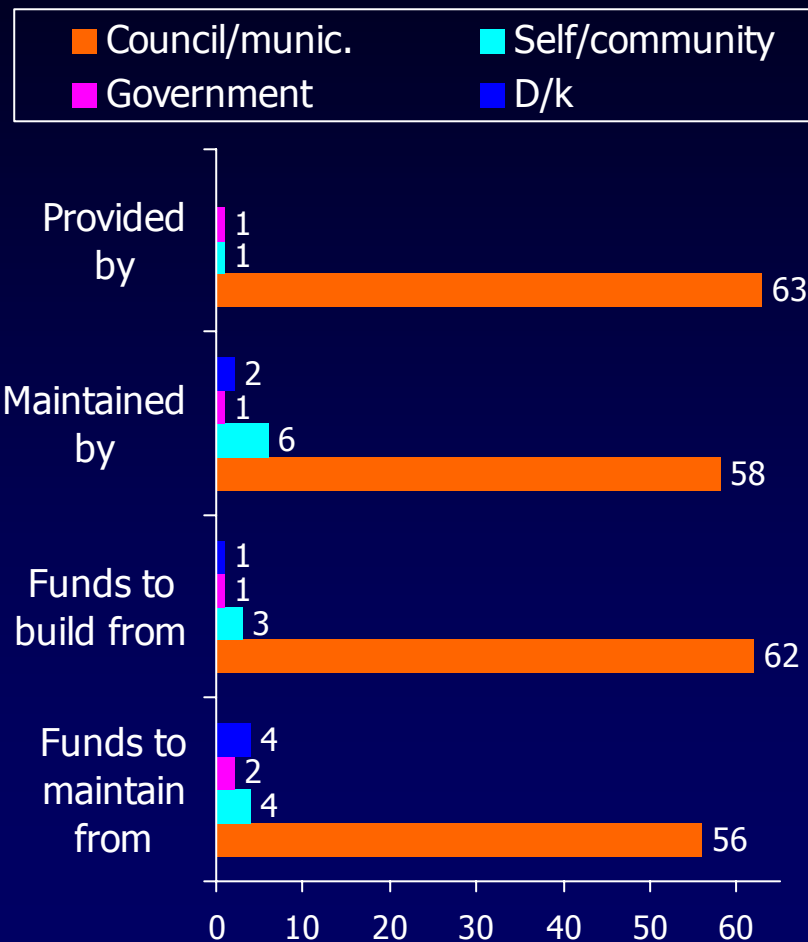
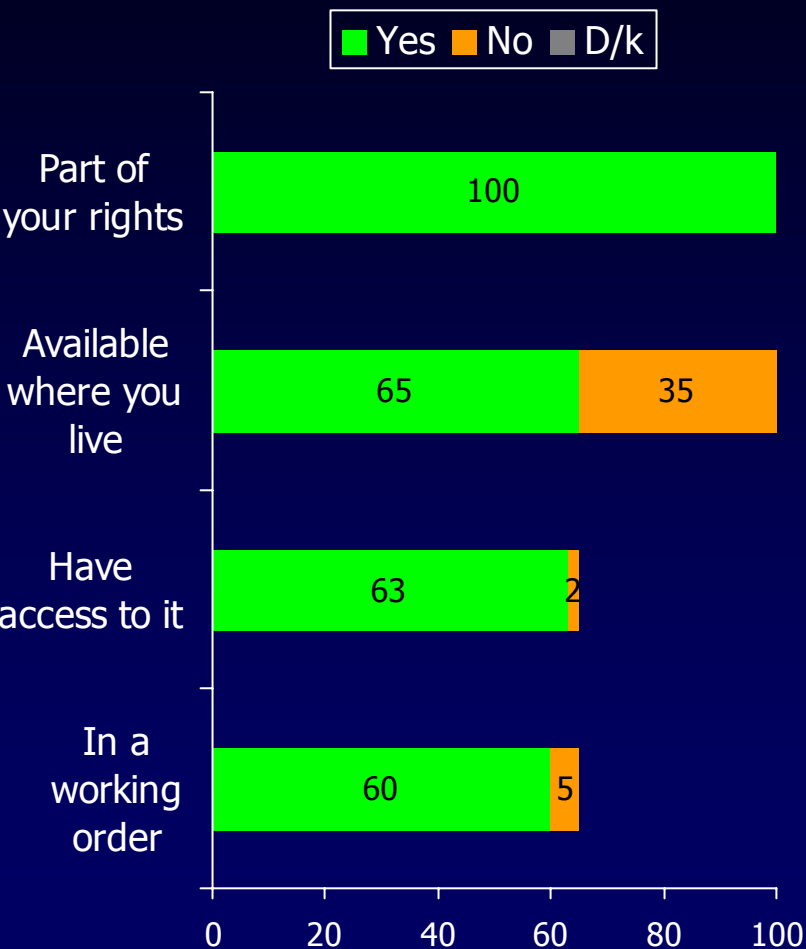


Source: Project Puddle 2003 n= 100

Q.B5

# Basic water supply (stand pipe within 200m from where you live)

Base: All informants



Source: Project Puddle 2003 n= 100

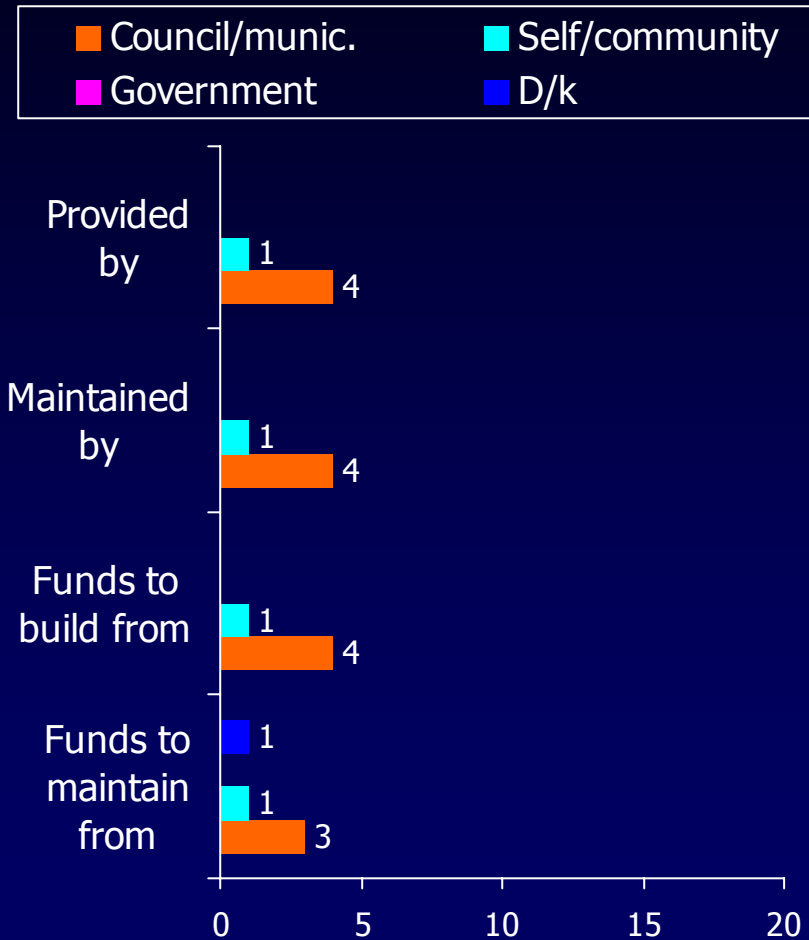


Q.B5-B12

Informal Residents

# Free Water (25 litres per person, per day)

Base: All informants

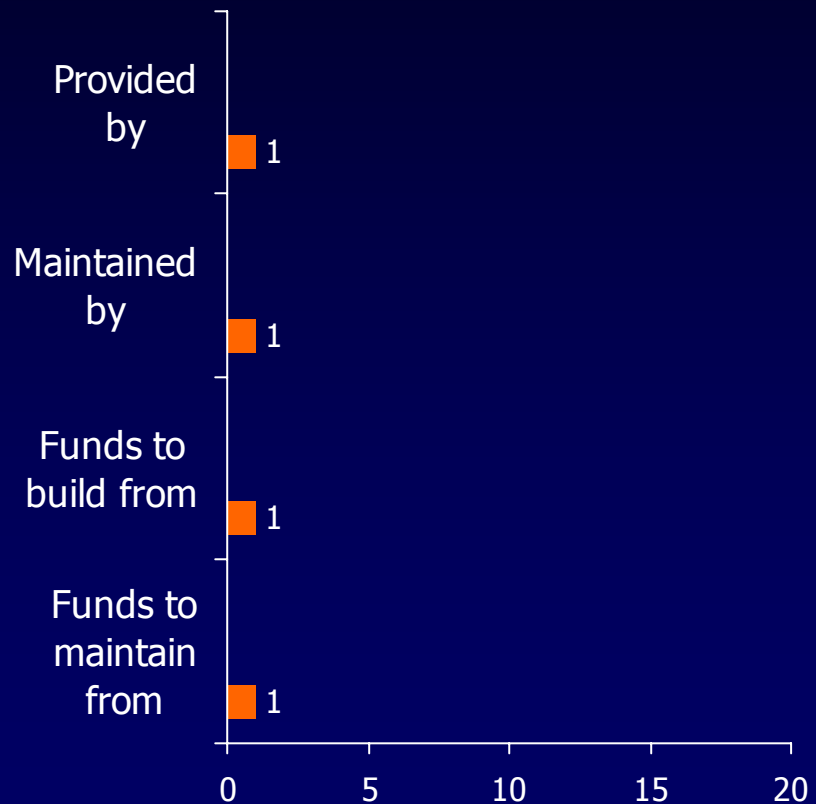
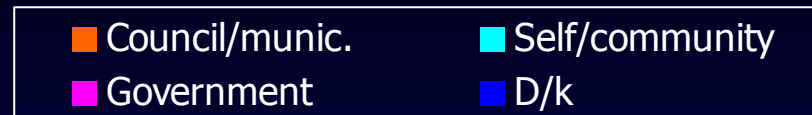
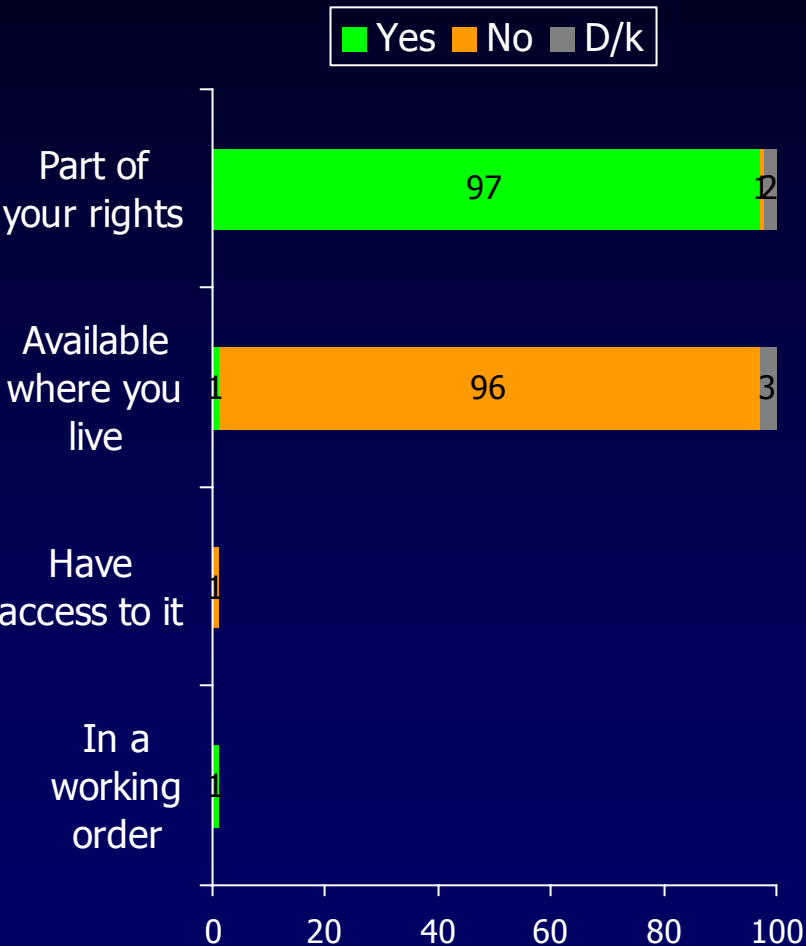


Source: Project Puddle 2003 n= 100

Q.B5-B12

# Health and hygiene education

Base: All informants



Source: Project Puddle 2003 n= 100

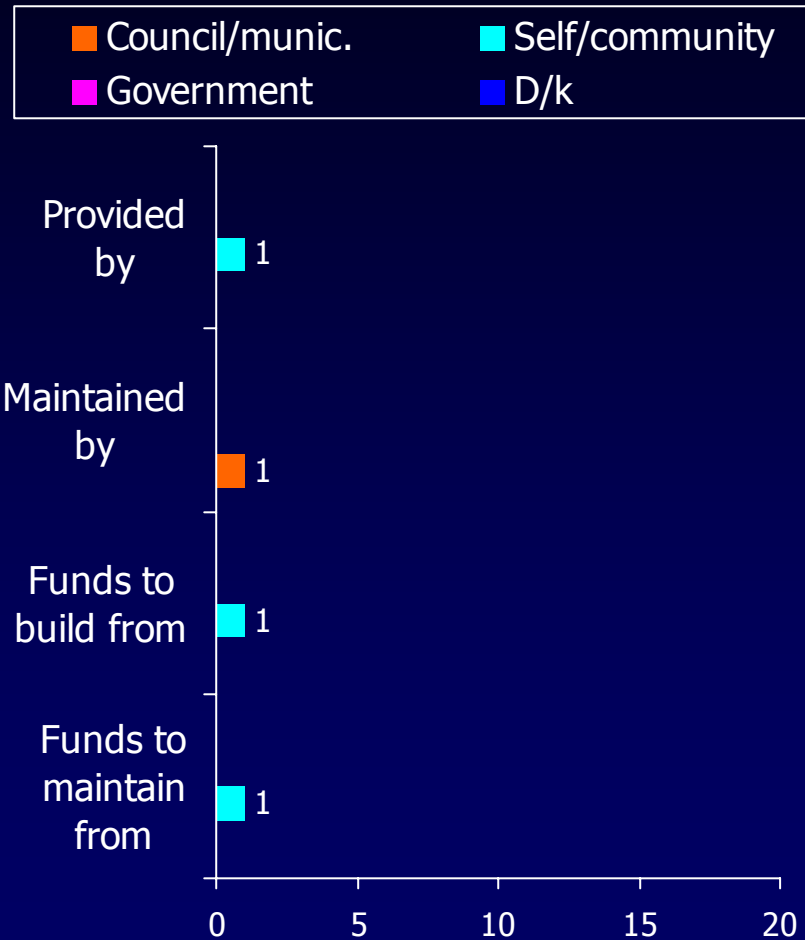


Q.B5-B12

Informal Residents

# Toilet facilities that are hygienic and safe

Base: All informants

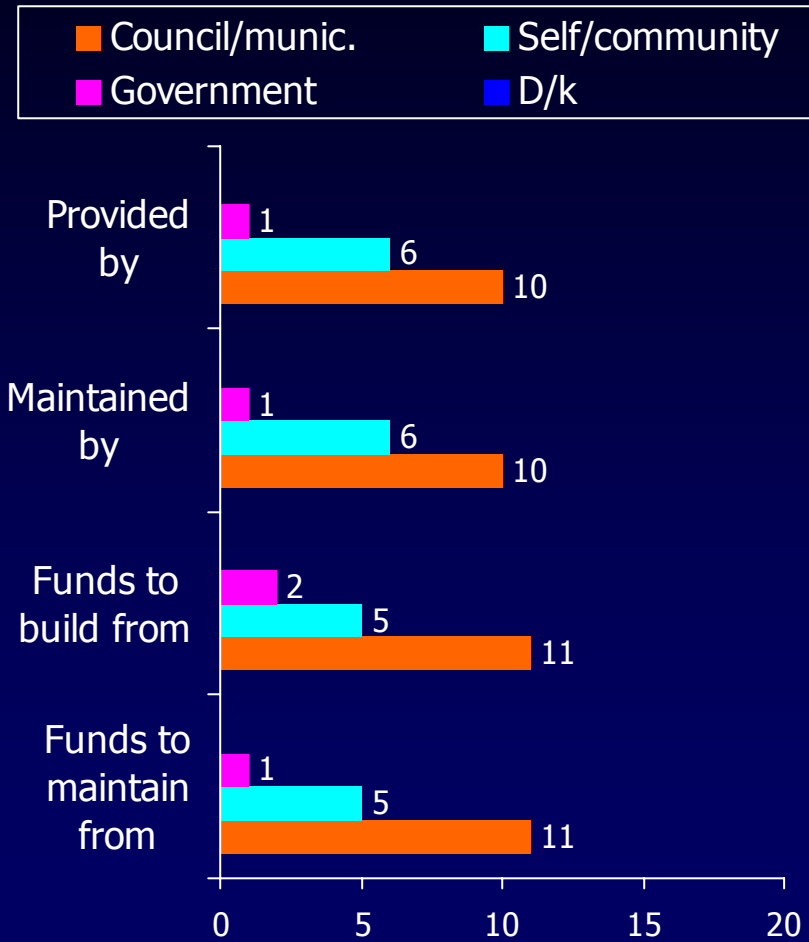
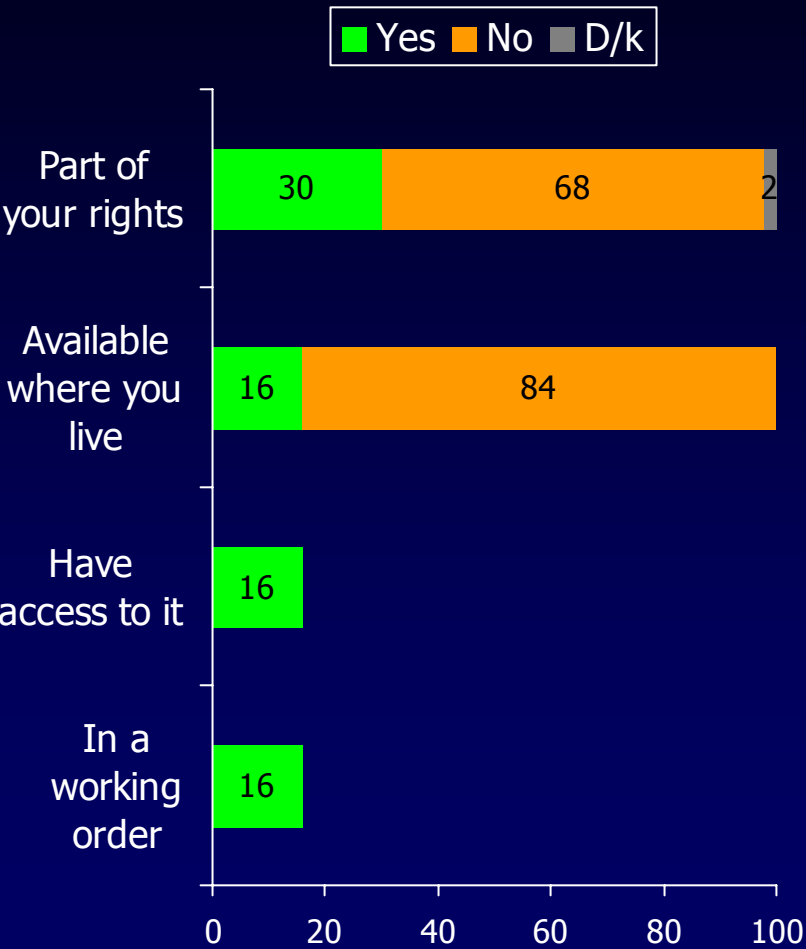


Source: Project Puddle 2003 n= 100

Q.B5-B12

# Bucket type toilet

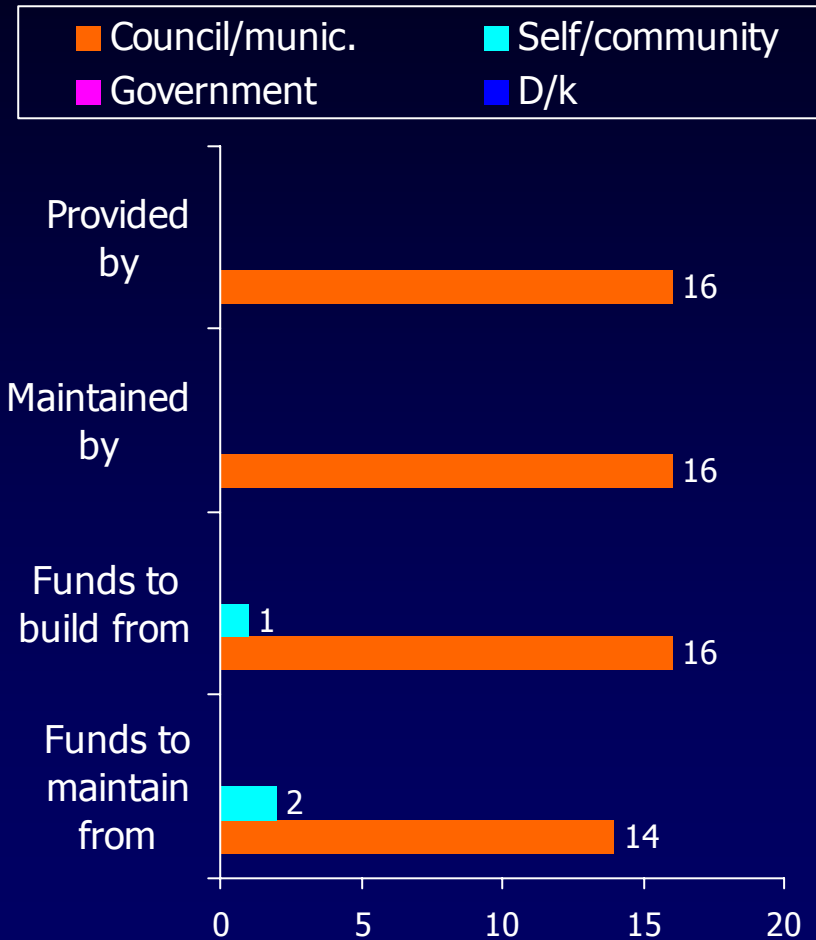
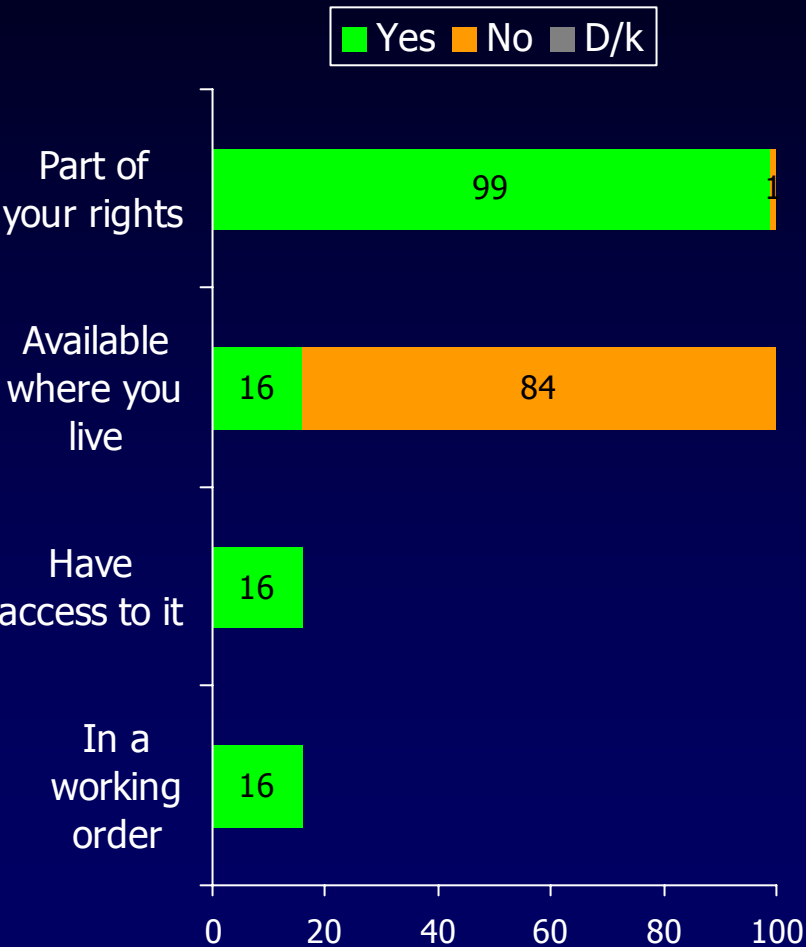
Base: All informants



Source: Project Puddle 2003 n= 100

# Flush type toilet

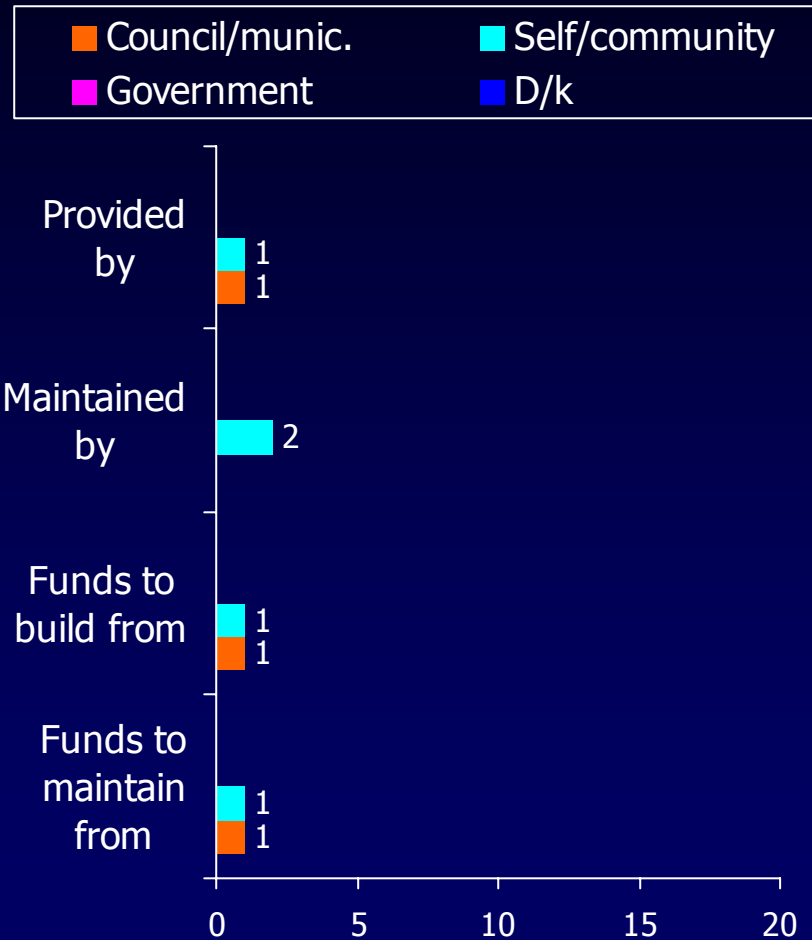
Base: All informant



Source: Project Puddle 2003 n= 100

# Ventilated pit latrine

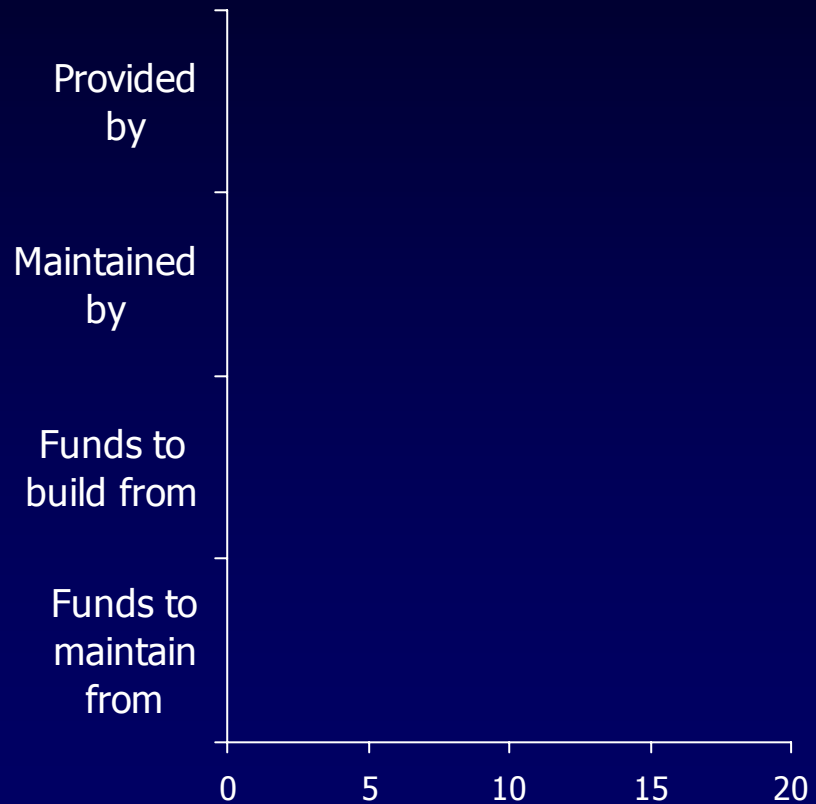
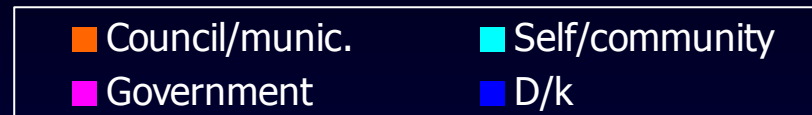
Base: All informants



Source: Project Puddle 2003 n= 100

# Chemical toilet

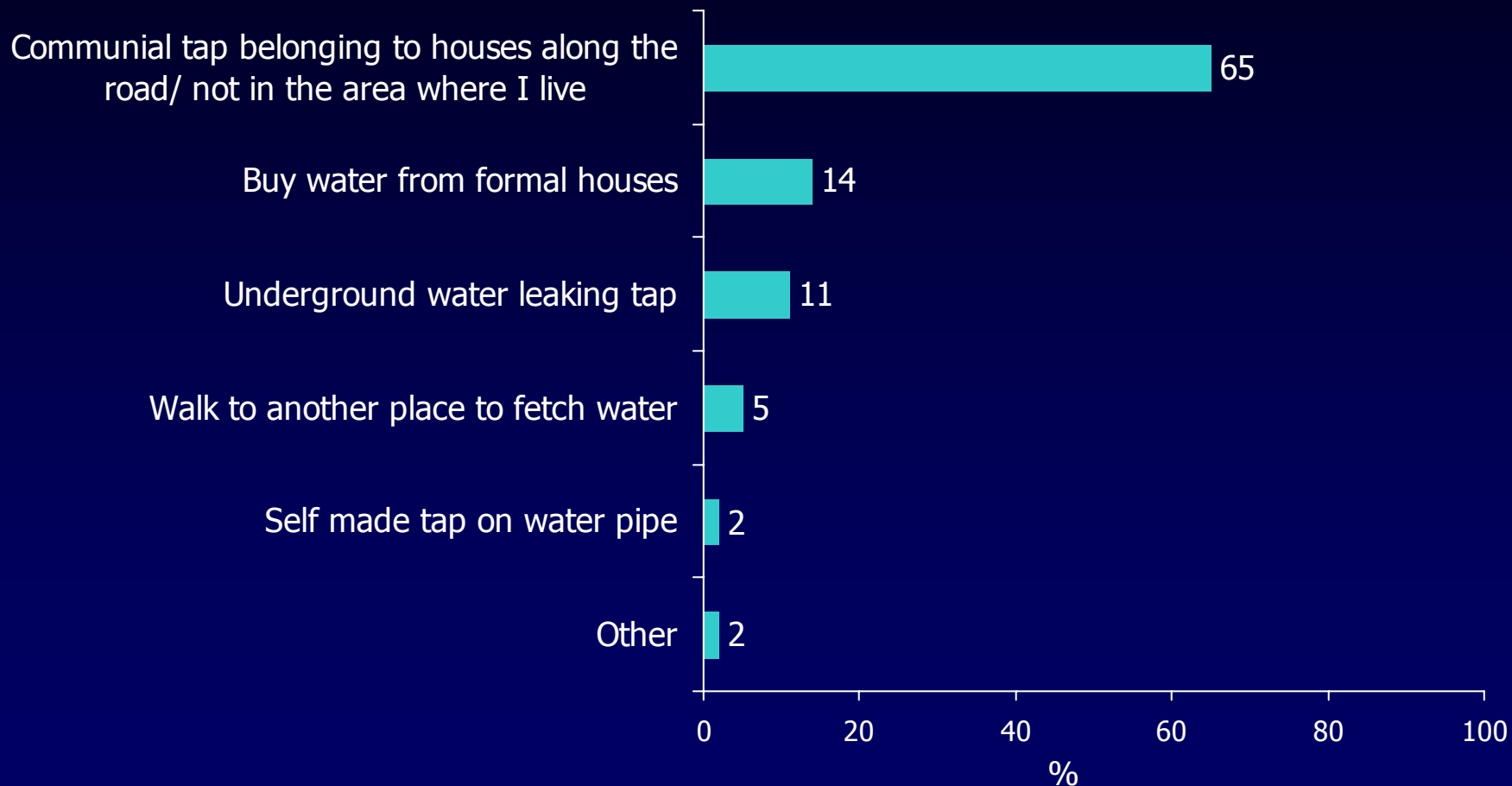
Base: All informants



Source: Project Puddle 2003 n= 100

# What is used, when there is no access to basic water supply

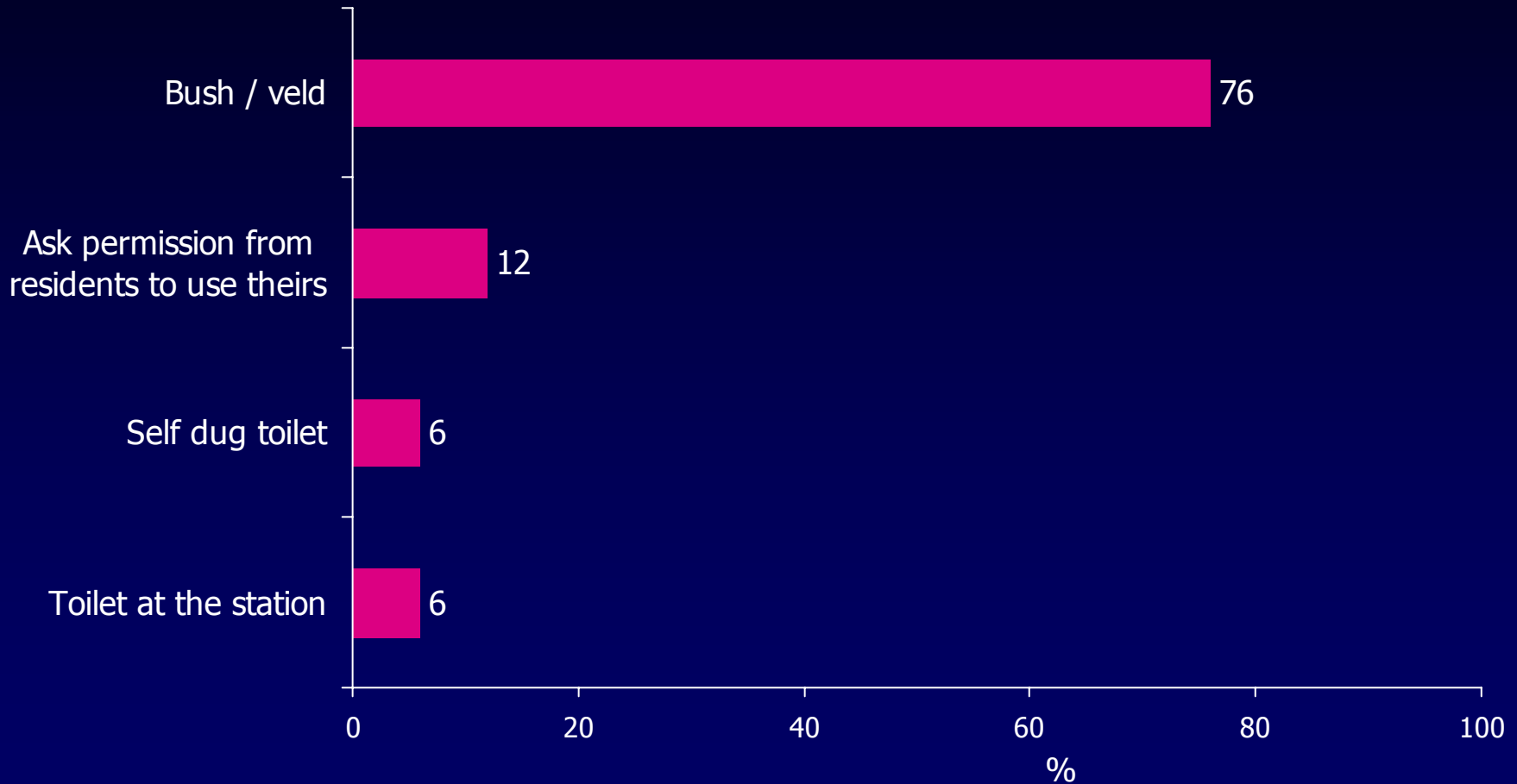
Base: All informants who do not have access



Source: Project Puddle 2003 n= 37

# What is used, when there is no access to toilet facilities

Base: All informants who do not have access

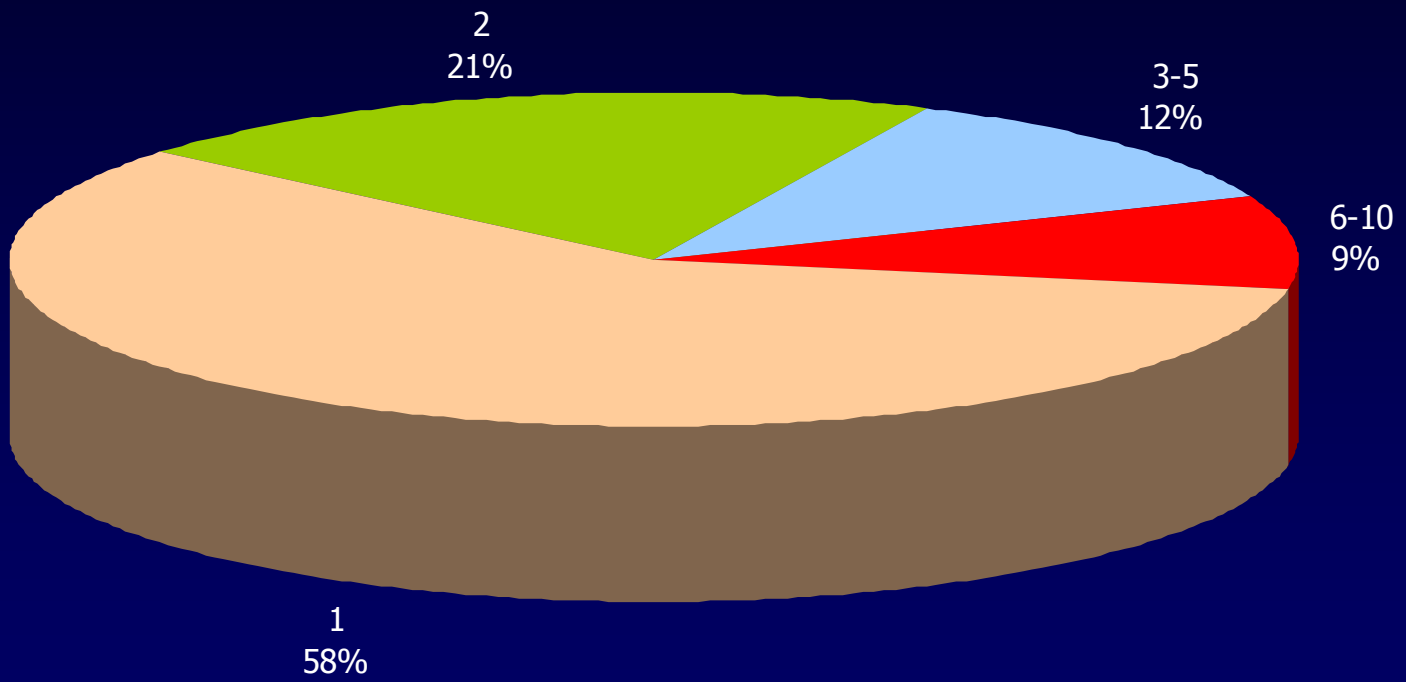


Source: Project Puddle 2003 n= 66

Q.B13

# Number of families who have access to the same toilet facilities

Base: All informants who have access

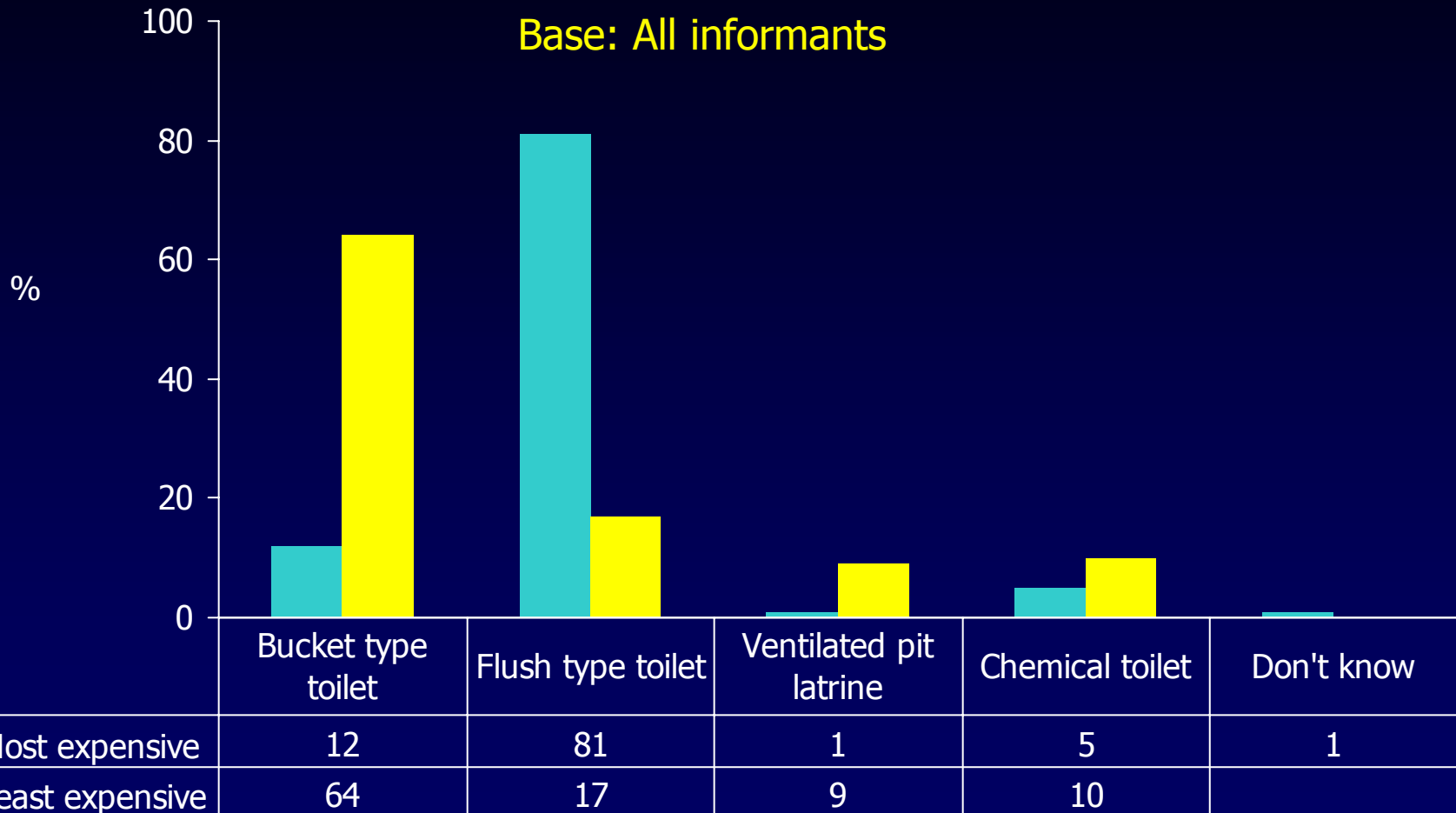


Source: Project Puddle 2003 n= 34

Q.B14

# Perceptions re cost to maintain toilet facilities

Base: All informants

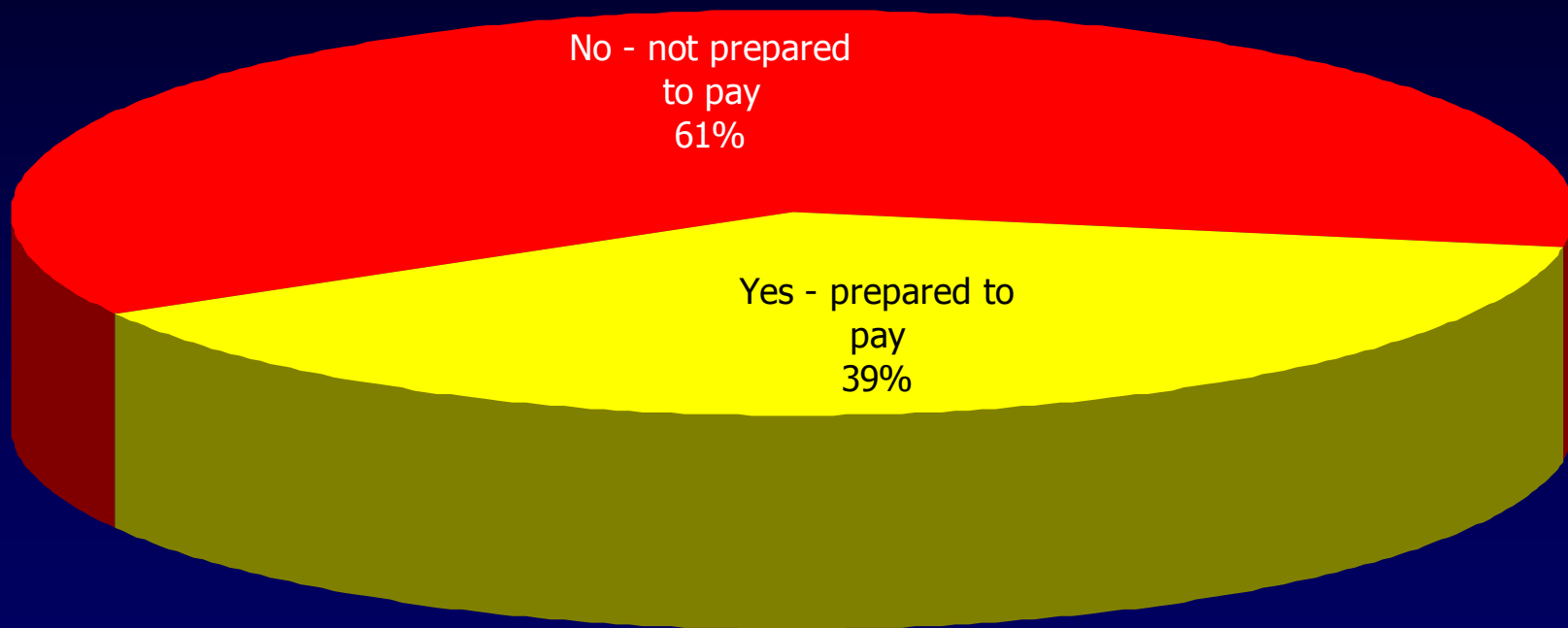


Source: Project Puddle 2003 n=100

Q.B15-B16

# Willingness to pay money for access to higher level of toilet facility

Base: All informants



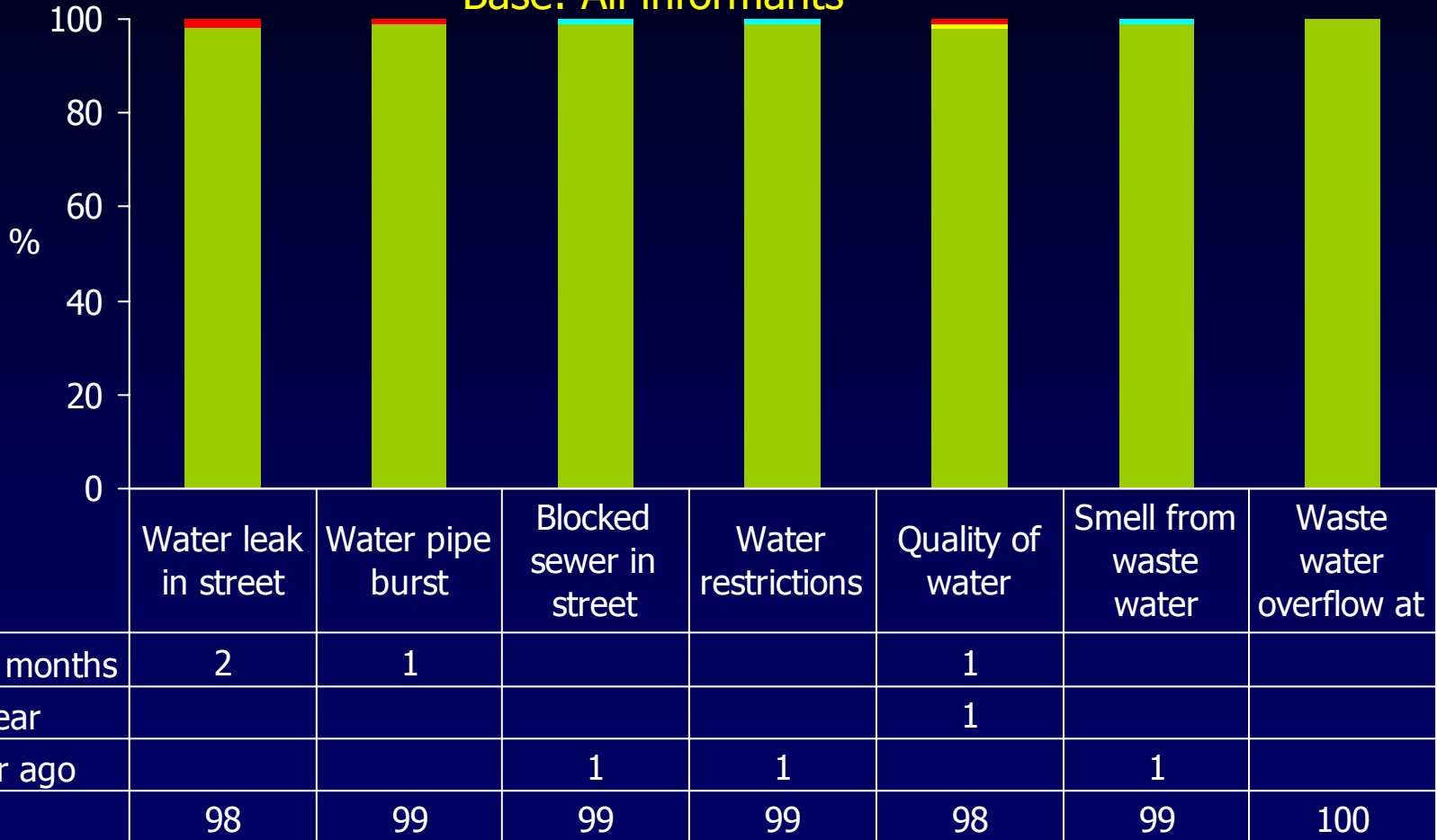
Source: Project Puddle 2003 n= 100

Q.B17

# History of dealings with Municipality

*To report / enquire about ...*

Base: All informants

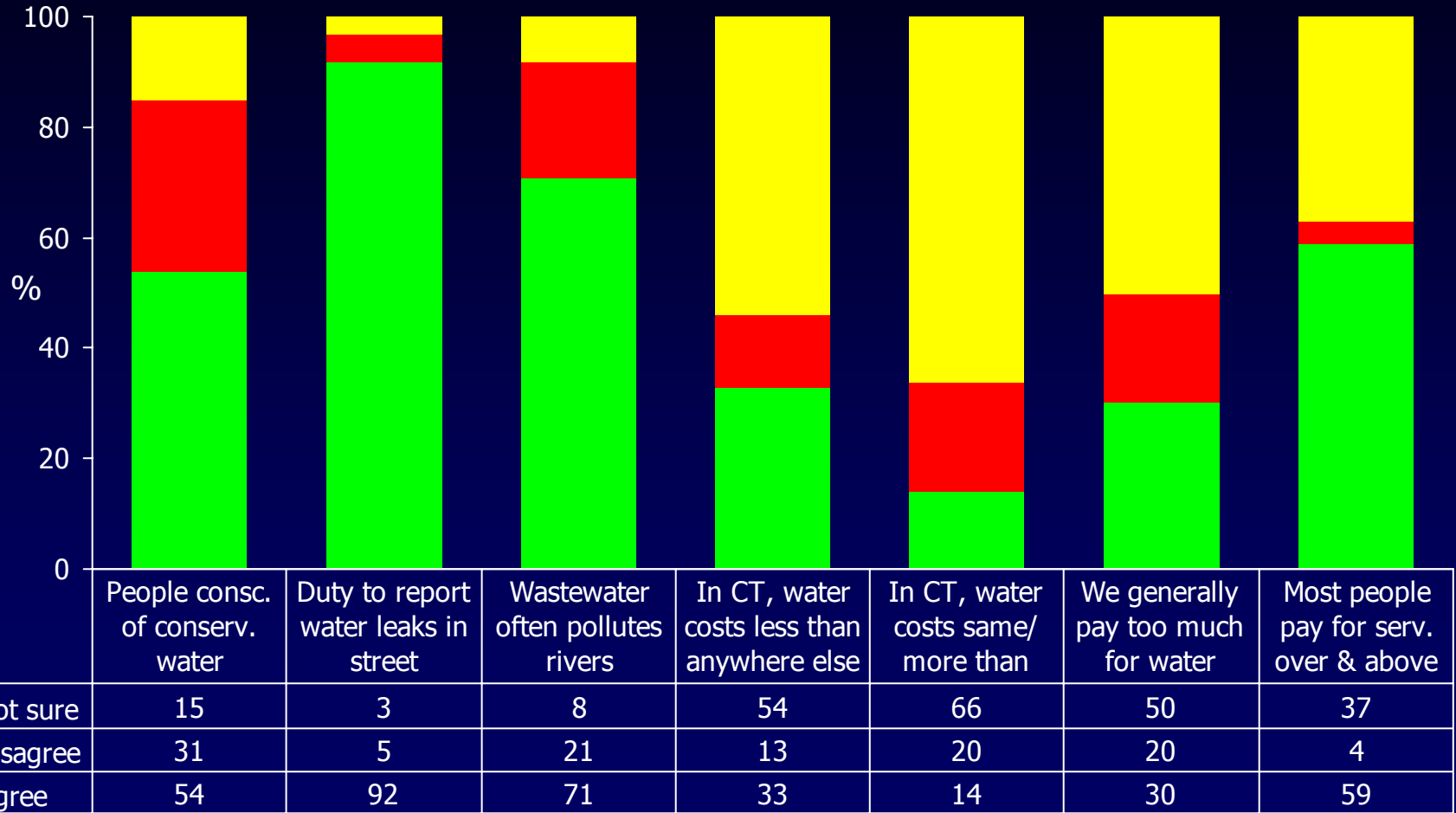


Source: Project Puddle 2003 n=100

Q.11

# Extent of agreement with statements

Base: All informants

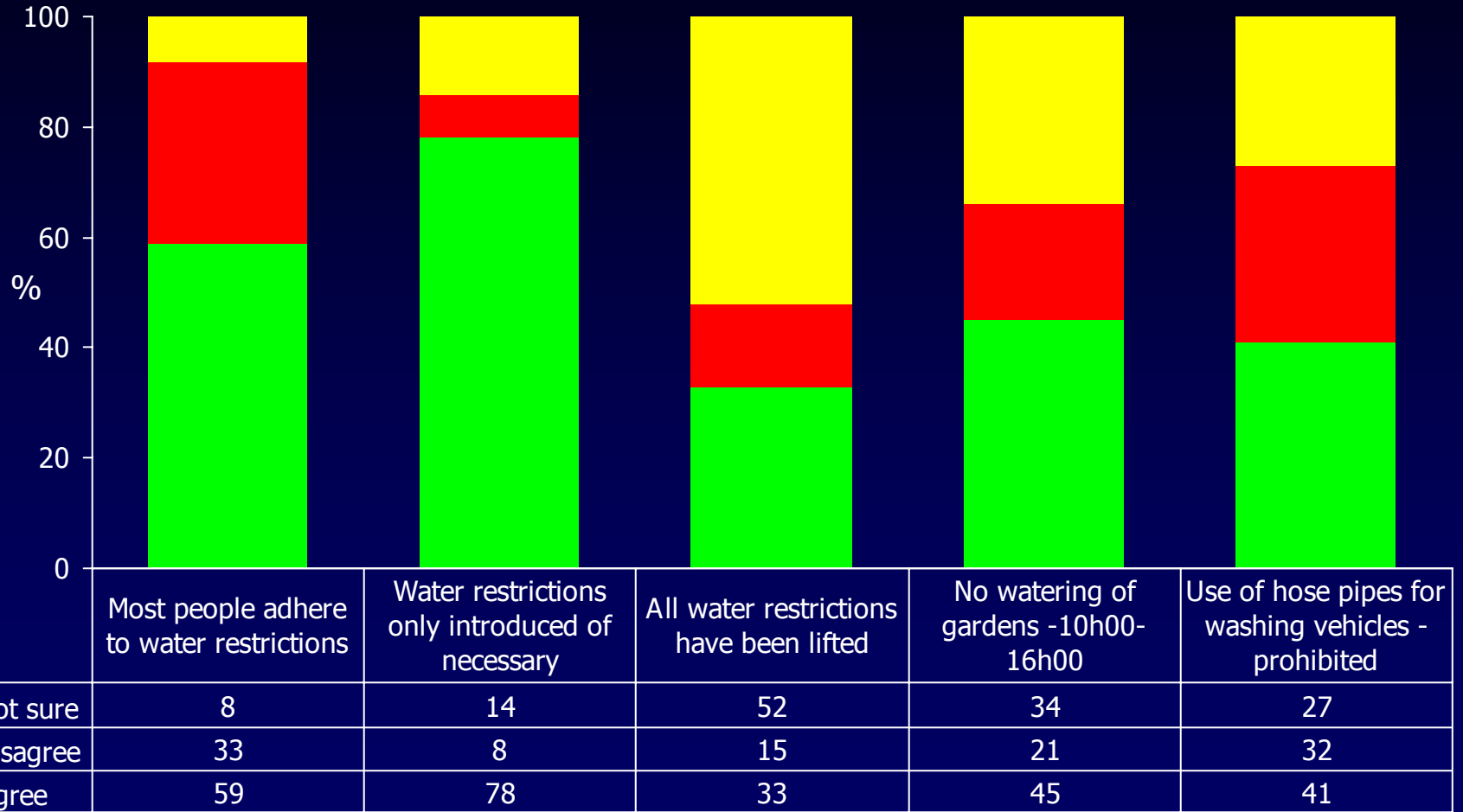


Source: Project Puddle 2003 n= 100

Q.10

# Extent of agreement with statements

Base: All informants

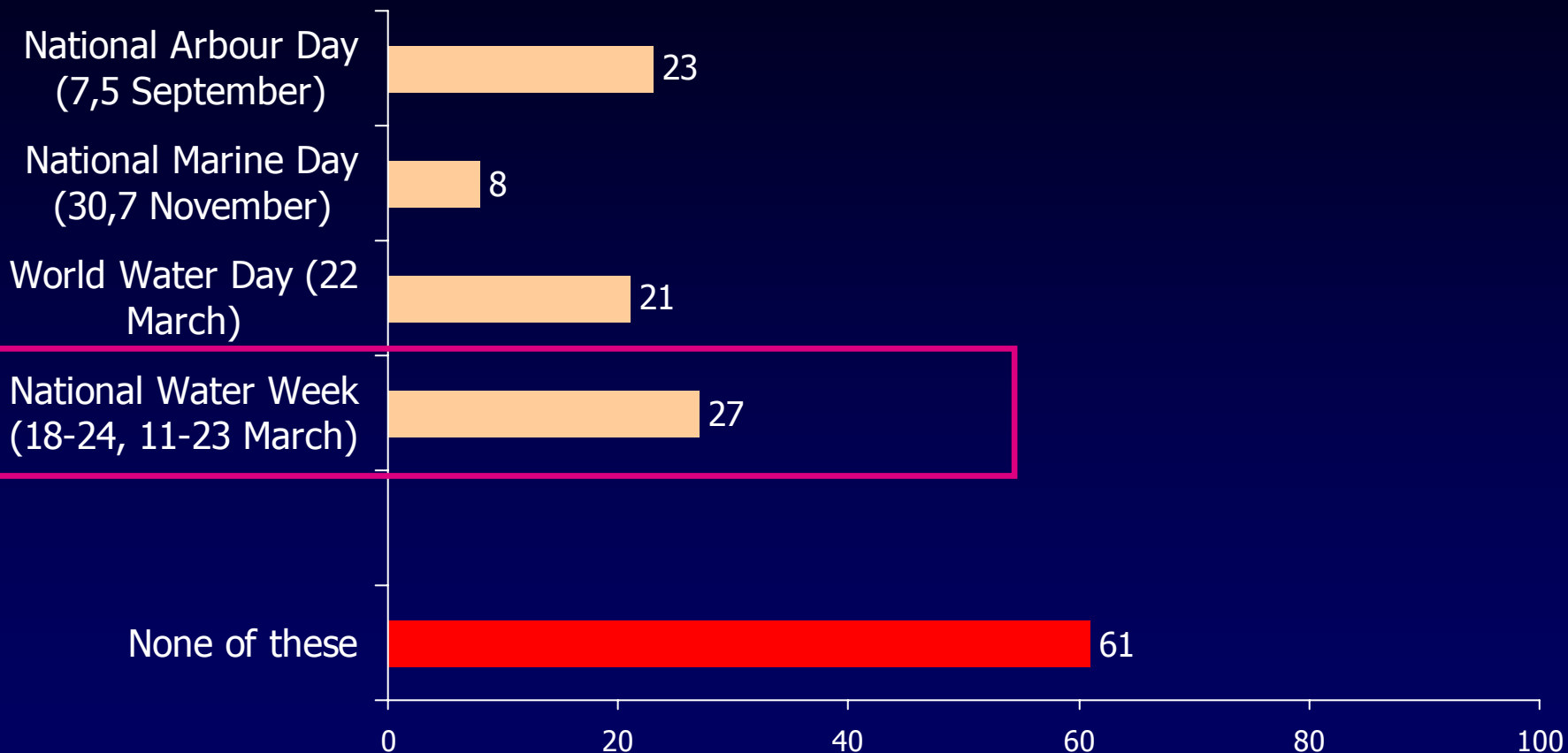


Source: Project Puddle 2003 n=100

Q.10b

# Awareness of Environmental Initiatives

Base: All informants



Source: Project Puddle 2003 n=100

%

Q.13

# Stories/rumours heard about water or the provision of water in the City of Cape Town

Base: All informants

**35% heard something**

**Don't waste water (21%)**

**More taps in our area (5%)**

**A shortage of water (3%)**

**6000l free water per household / Water restrictions /**

**Bills too high - meters often not clear, just estimated -**

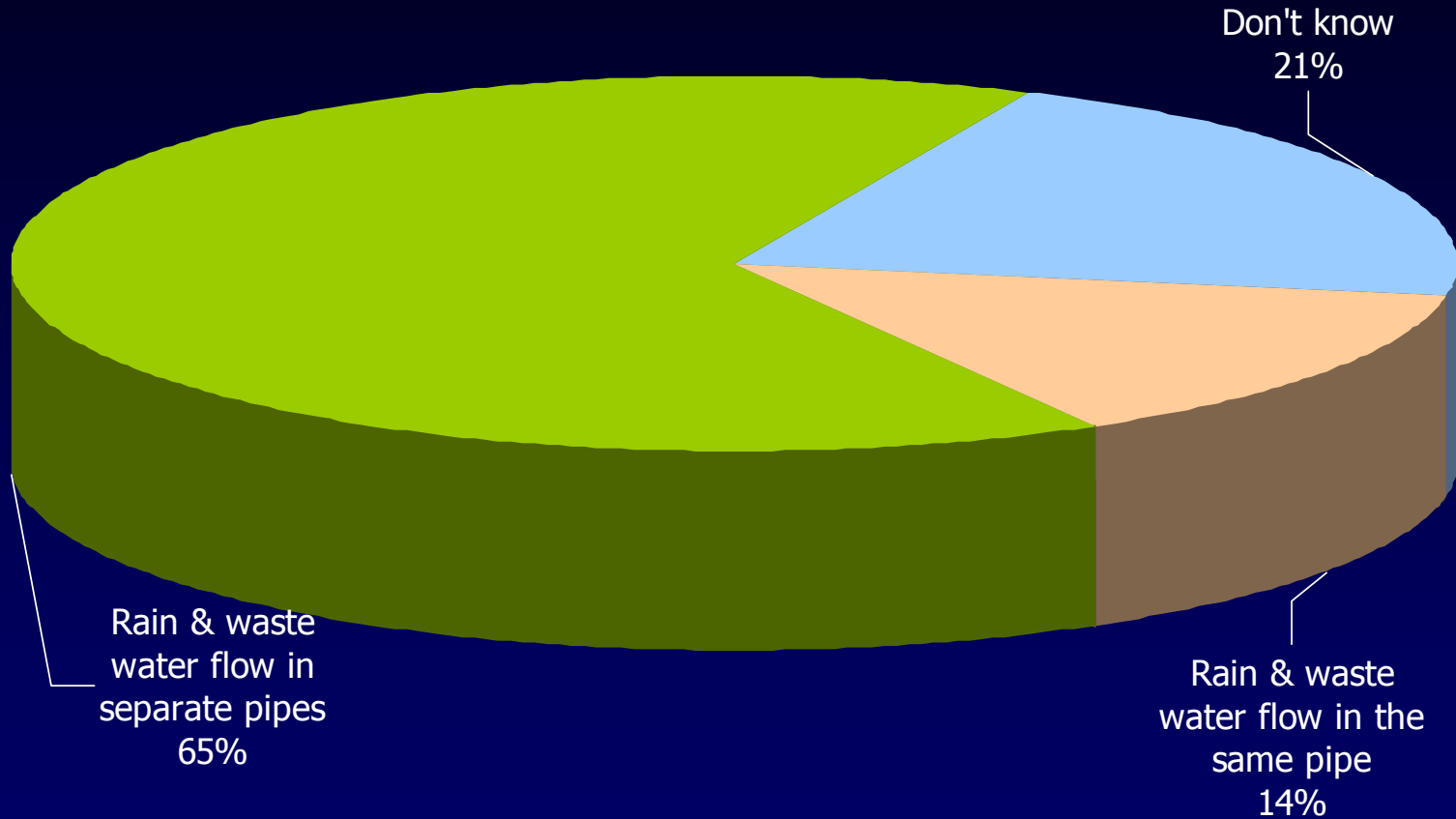
**(1% each)**

Source: Project Puddle 2003 n=100

Q.14

# Rain water and waste water flow

Base: All informants

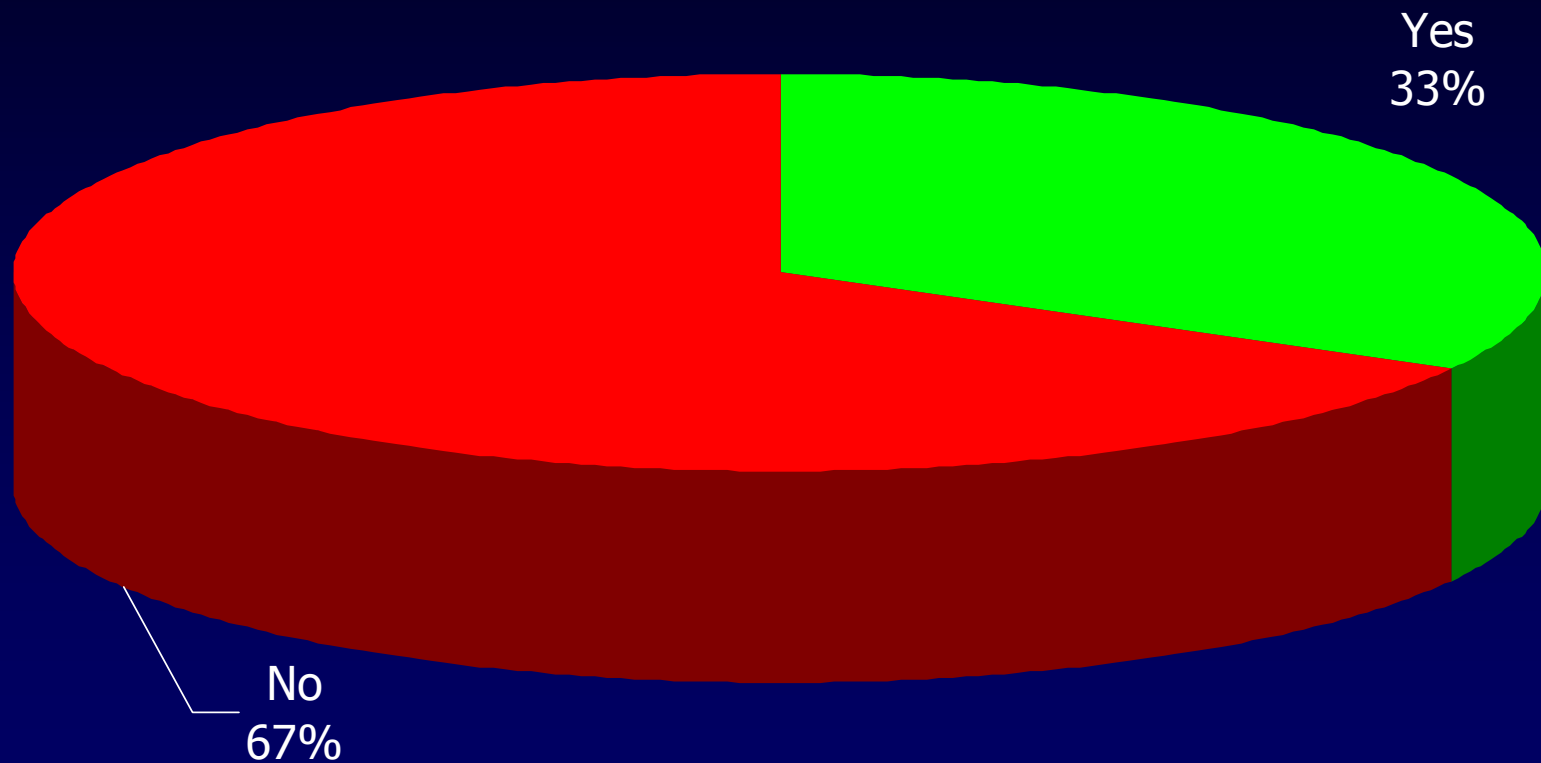


Source: Project Puddle 2003 n= 100

Q.17

# Behaviour changed in past year specifically to conserve water

Base: All informants

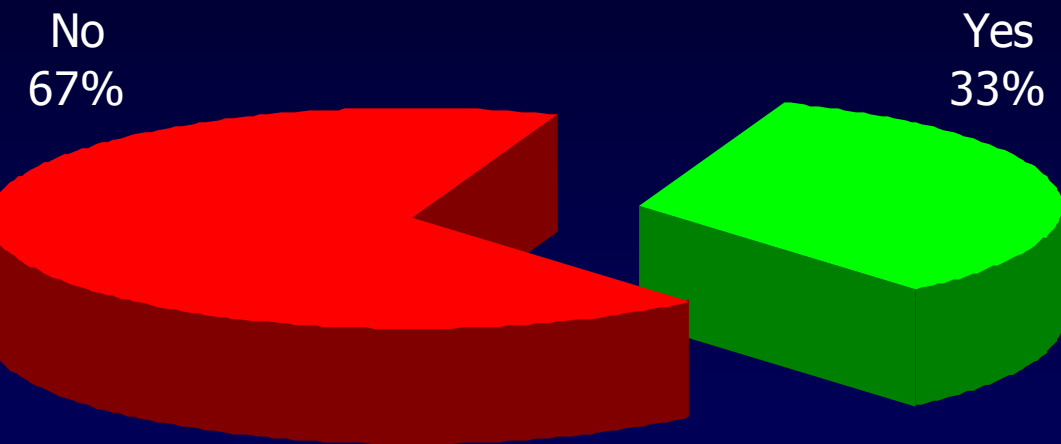


Source: Project Puddle 2003 n= 100

Q.18

# Reason for changing behaviour to conserve water

Base: All informants who changed behaviour



Yes (n=33)

**Had to adhere to water restrictions**

**Information provided by government on water conservation**

**Greater awareness to save water**

**Had to use less, price increased**

Source: Project Puddle 2003 n= 100

Q.18, 19

# Conclusions

Residents in informal settlements are generally satisfied with the quality of the drinking water

Only a third claim that they have been consulted when decisions were taken about the provision of basic water and sanitation

On a spontaneous level, 44% of residents in informal areas believe that it is their right to have an own tap, whilst 37% regard a flush toilet as part of their rights

# Conclusions

Very few residents in informal areas believe that they have access to 25 litres of free water per day (5%) and even fewer (1%) have access to health and hygiene education

When there is no access to basic toilet facilities, informal residents use the bush / veld - it is alarming that this happens in the majority of households in informal areas

Residents in informal areas have indicated that they are prepared to pay for a higher level of toilet facility



# Residents

# Levels of satisfaction

Base: All informants

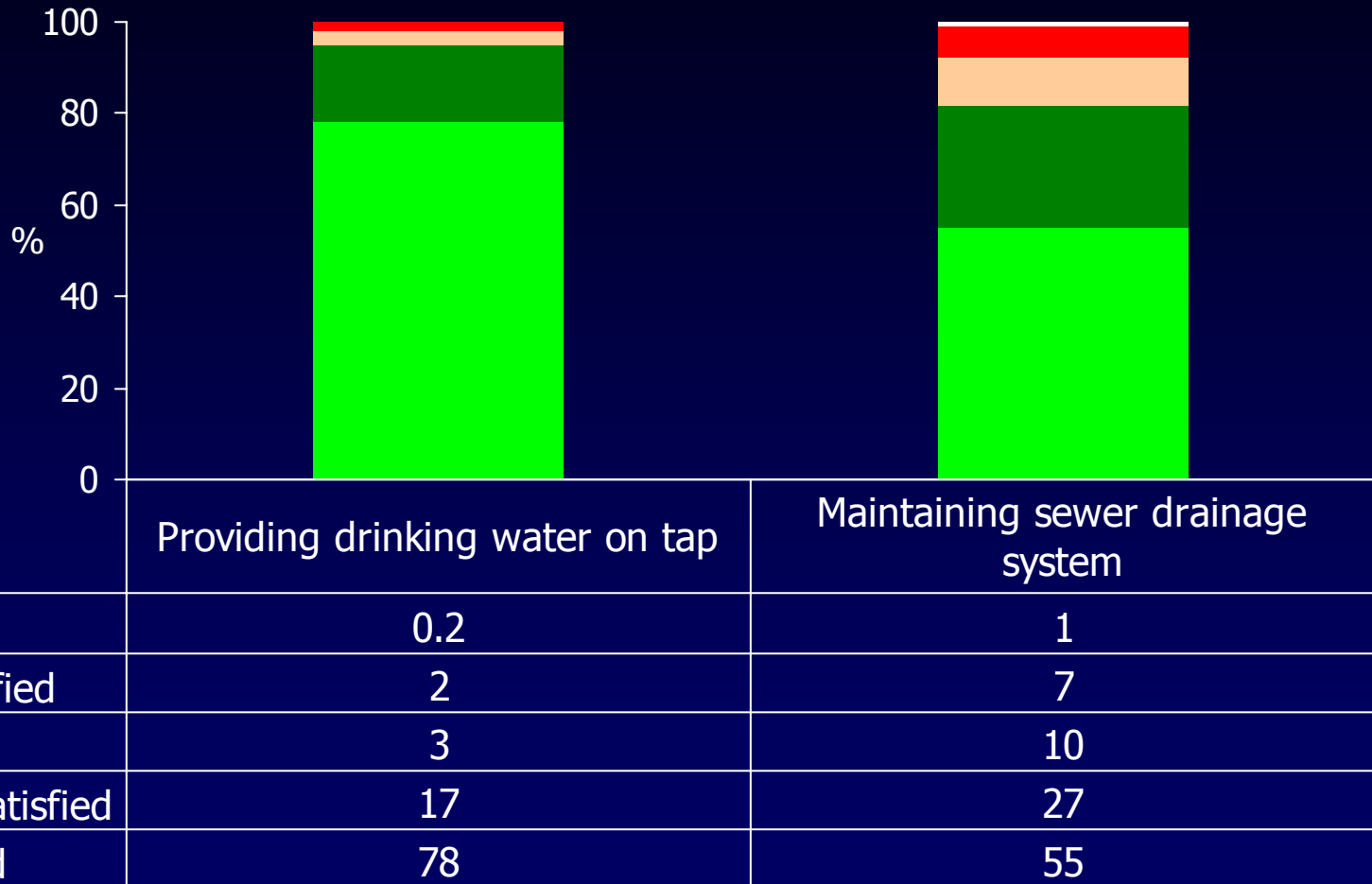


Source: Project Puddle 2002, 2003 n=497, 520

Q.1

# Levels of satisfaction

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public



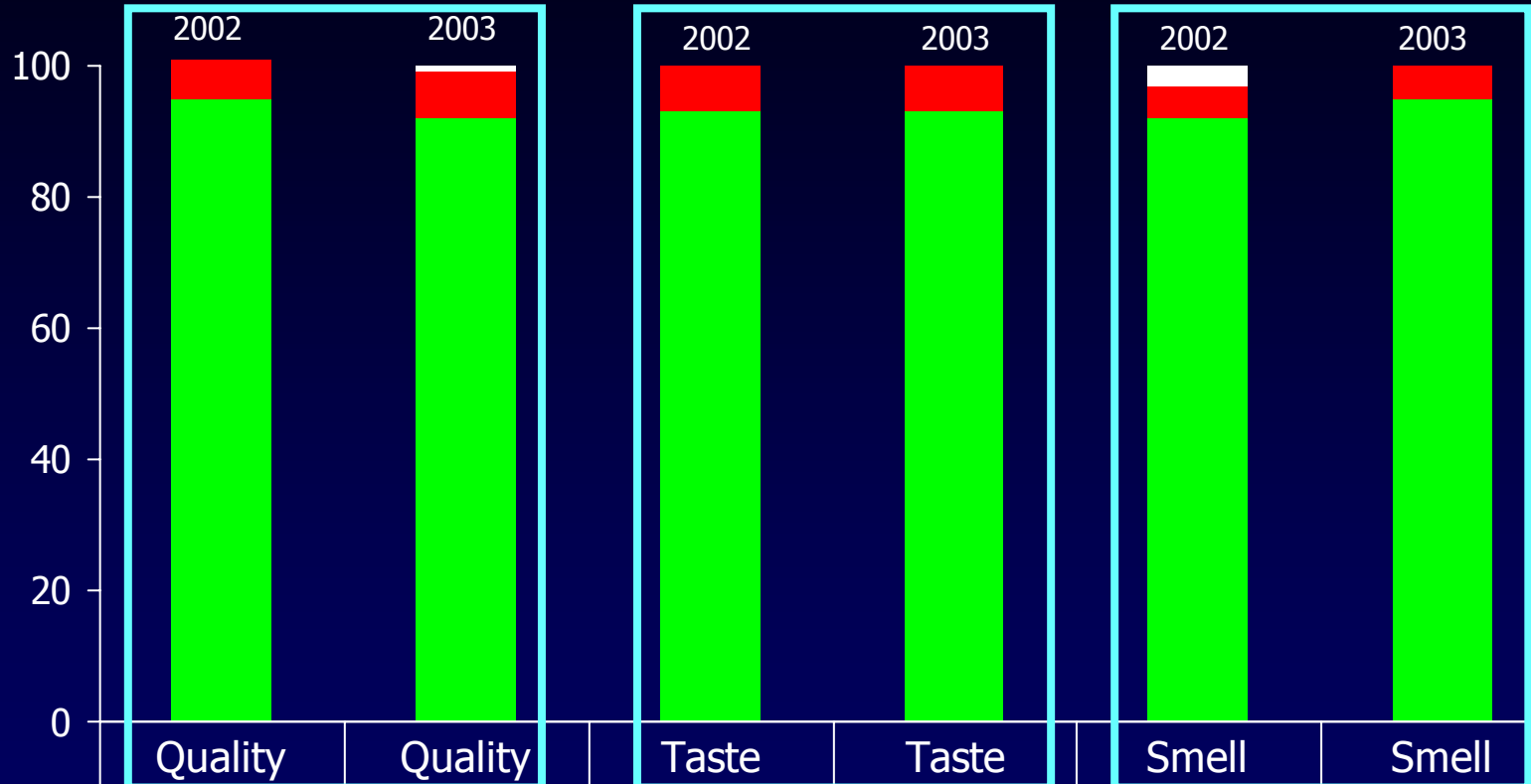
Source: Project Puddle 2003 n= 416

Q.2,3

# Levels of satisfaction with water

Base: All informants

In 2003  
"very  
satisfied"  
levels  
improved  
to 73%



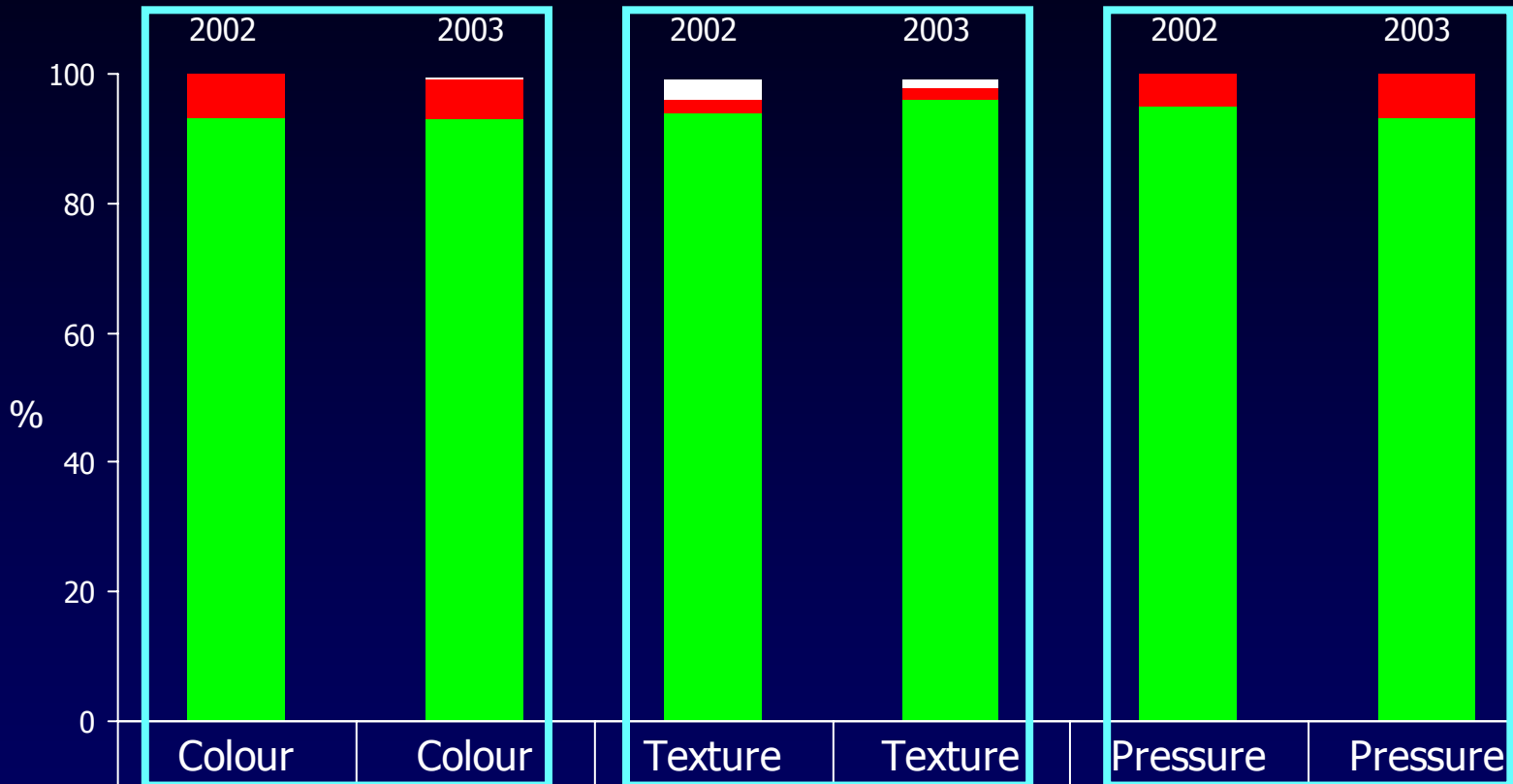
■ Not sure	0.2	1	0.4	0.4	3	1
■ Dissatisfied	6	7	7	7	5	5
■ Satisfied	95	92	93	93	92	95

Source: Project Puddle 2002, 2003 n=497, 520

Q.7

# Levels of satisfaction with water

Base: All informants



■ Not sure	0.3	0.4	3	1	0.2	0.2
■ Dissatisfied	7	6	2	2	5	7
■ Satisfied	93	93	94	96	95	93

Source: Project Puddle 2002, 2003 n=497, 520

Q.7

# Reasons for dissatisfaction with:

Base: All who were dissatisfied/very dissatisfied

## Quality (n=29)

Tastes bad  
Has chemicals in  
Colour/ not clear

## Taste (n=34)

Tastes bad  
Has chemicals in

## Smell (n=21)

Has a bad smell  
Has chlorine in

## Colour (n=28)

Colour not clear

## Texture (n=14)

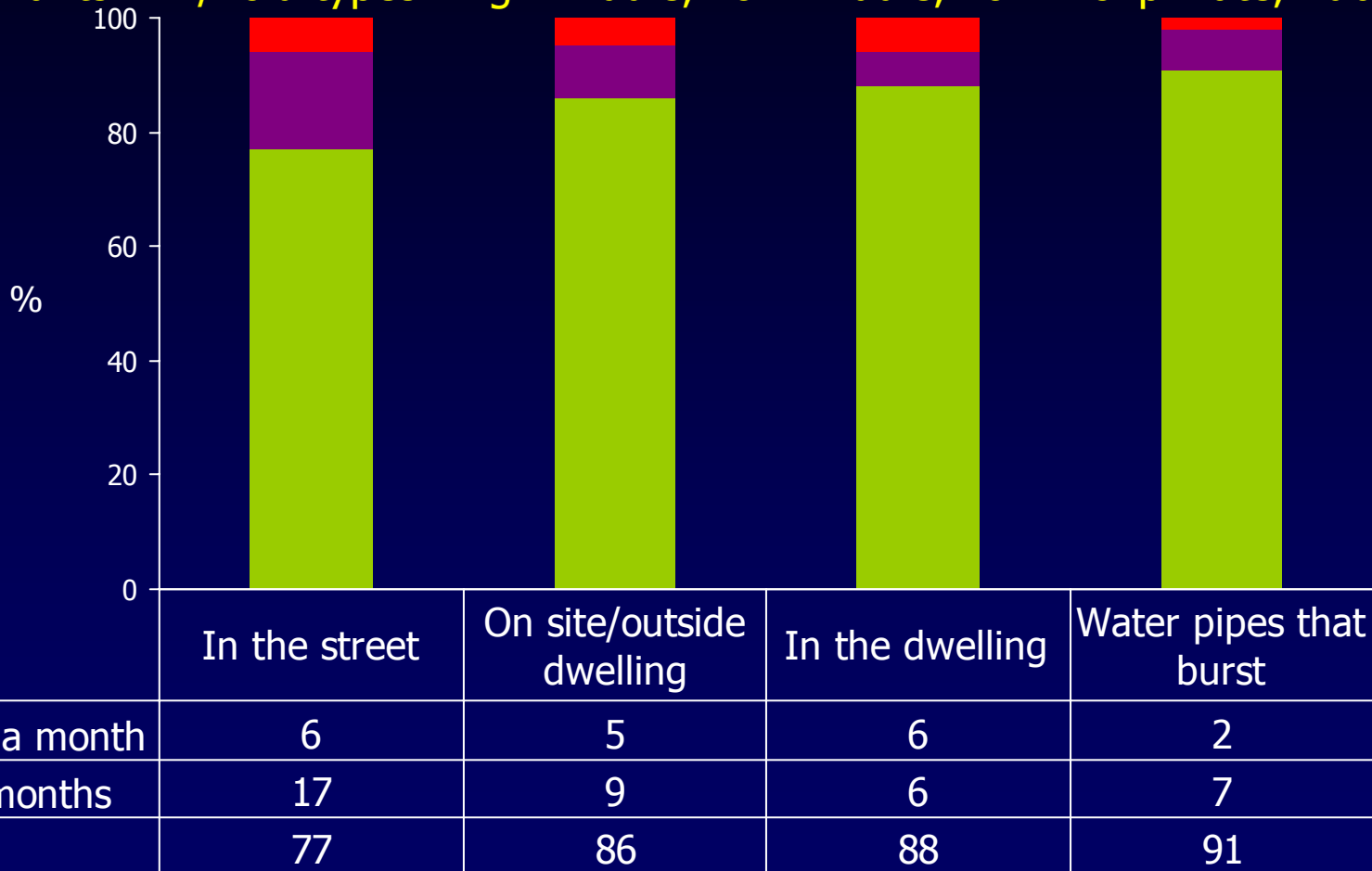
Water is hard  
Has chemicals in

## Pressure (n=35)

Comes out slow /  
no pressure  
Water bursts out

# Frequency of experiencing problems with water leakages

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public

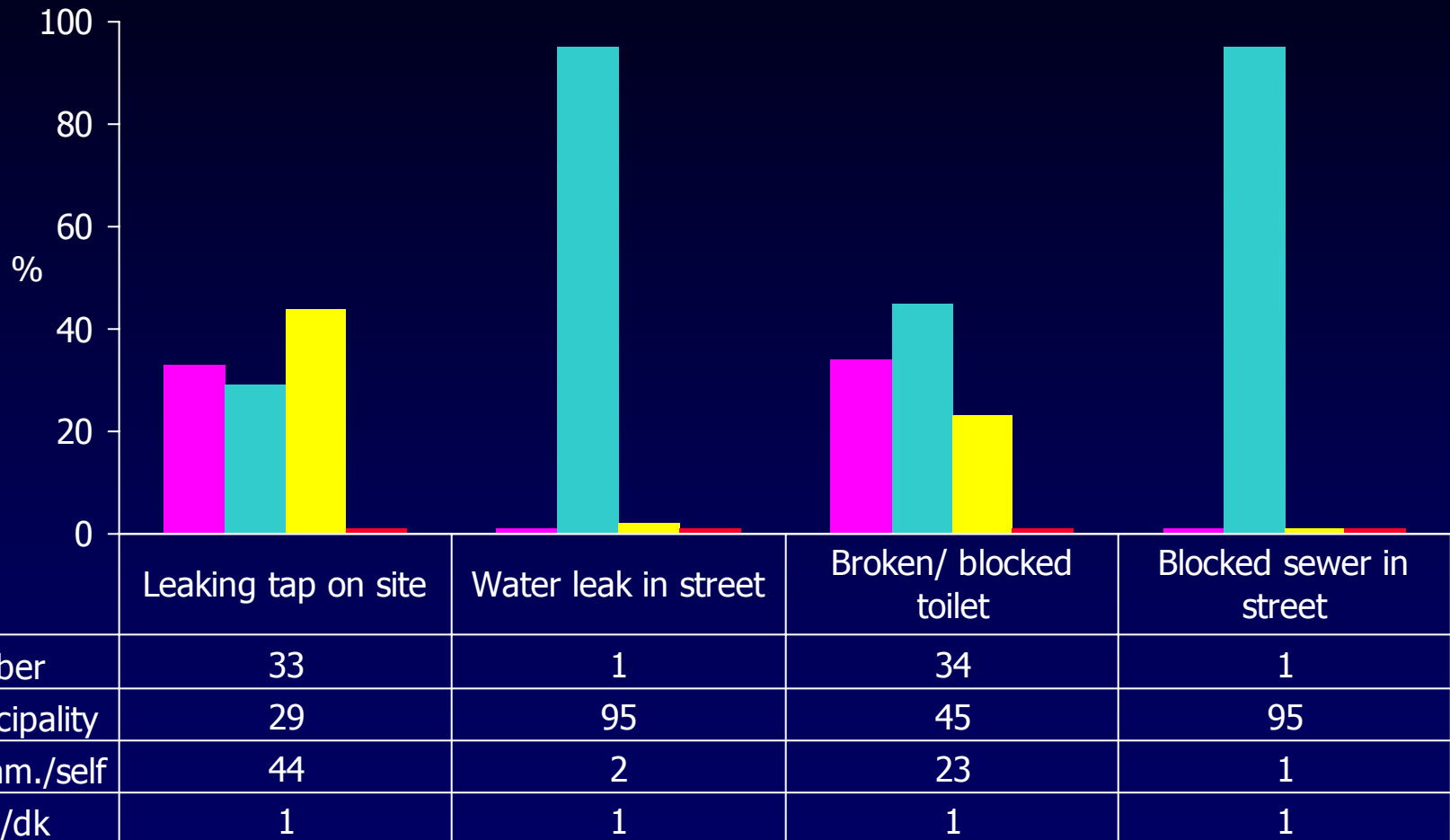


Source: Project Puddle 2003 n=416

Q.4,5

# Dealing with problems

Base: All informants

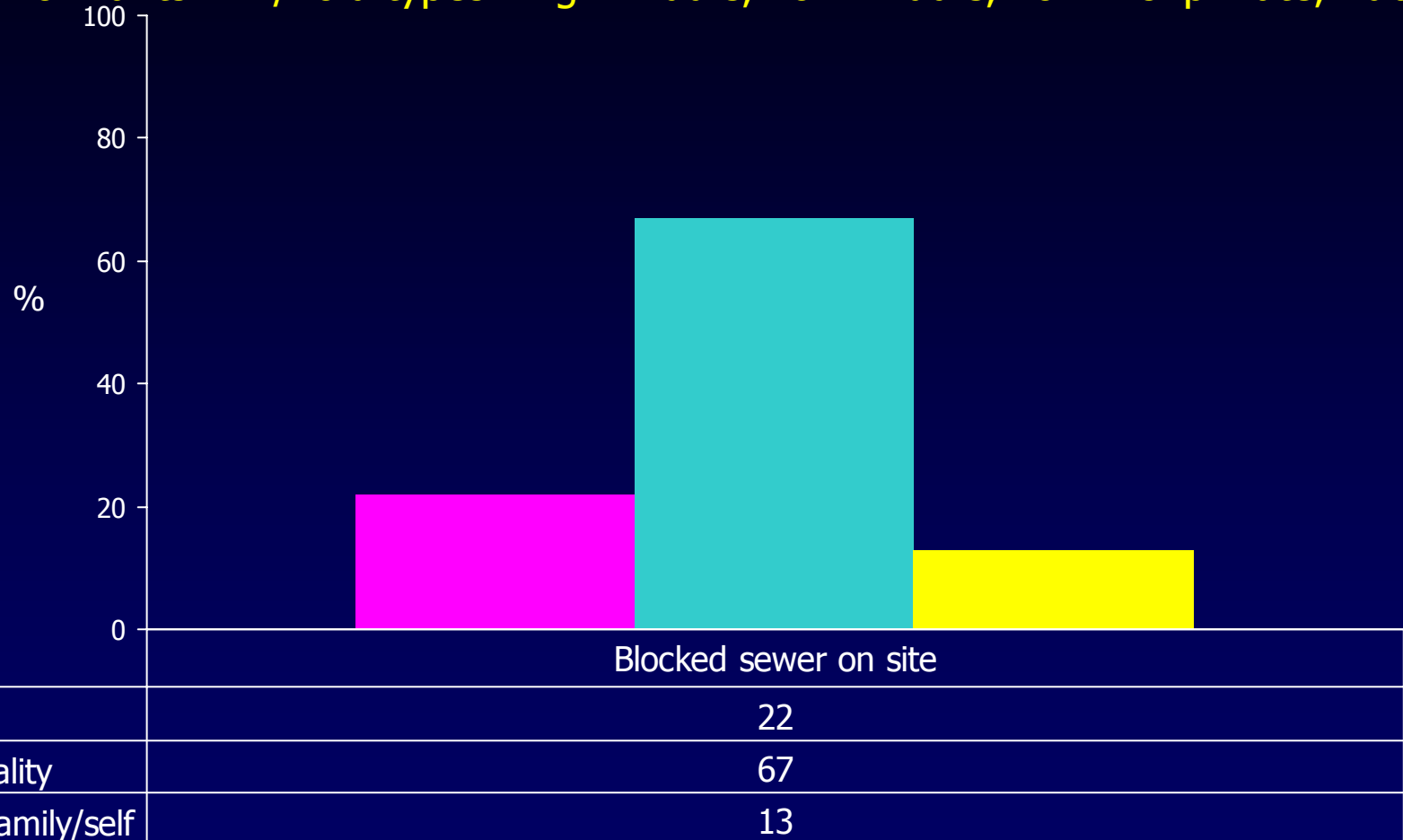


Source: Project Puddle 2003 n=520

Q.6

# Dealing with problems

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public



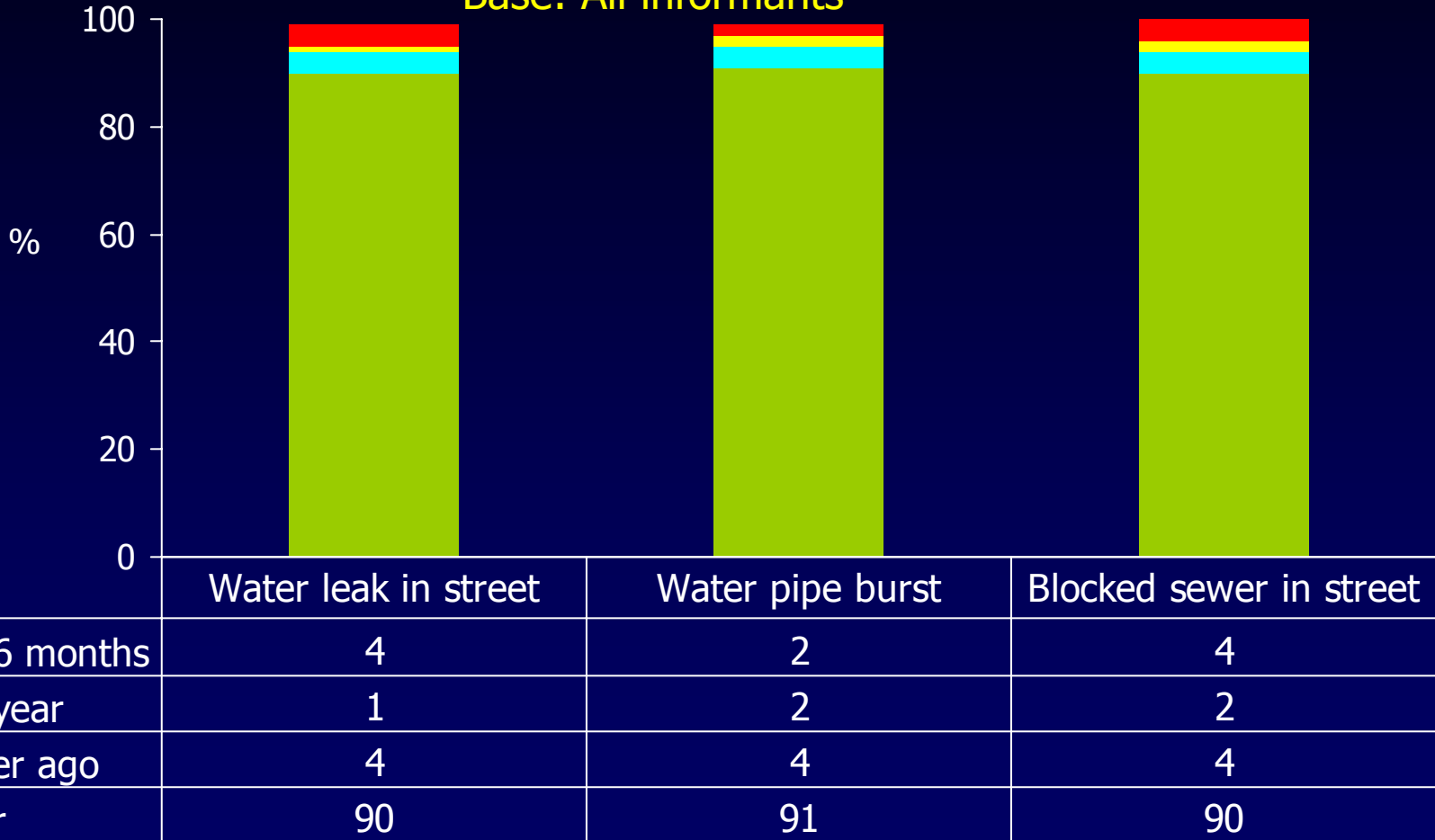
Source: Project Puddle 2003 n=416

Q.6

# History of dealings with Municipality

*To report a ...*

Base: All informants



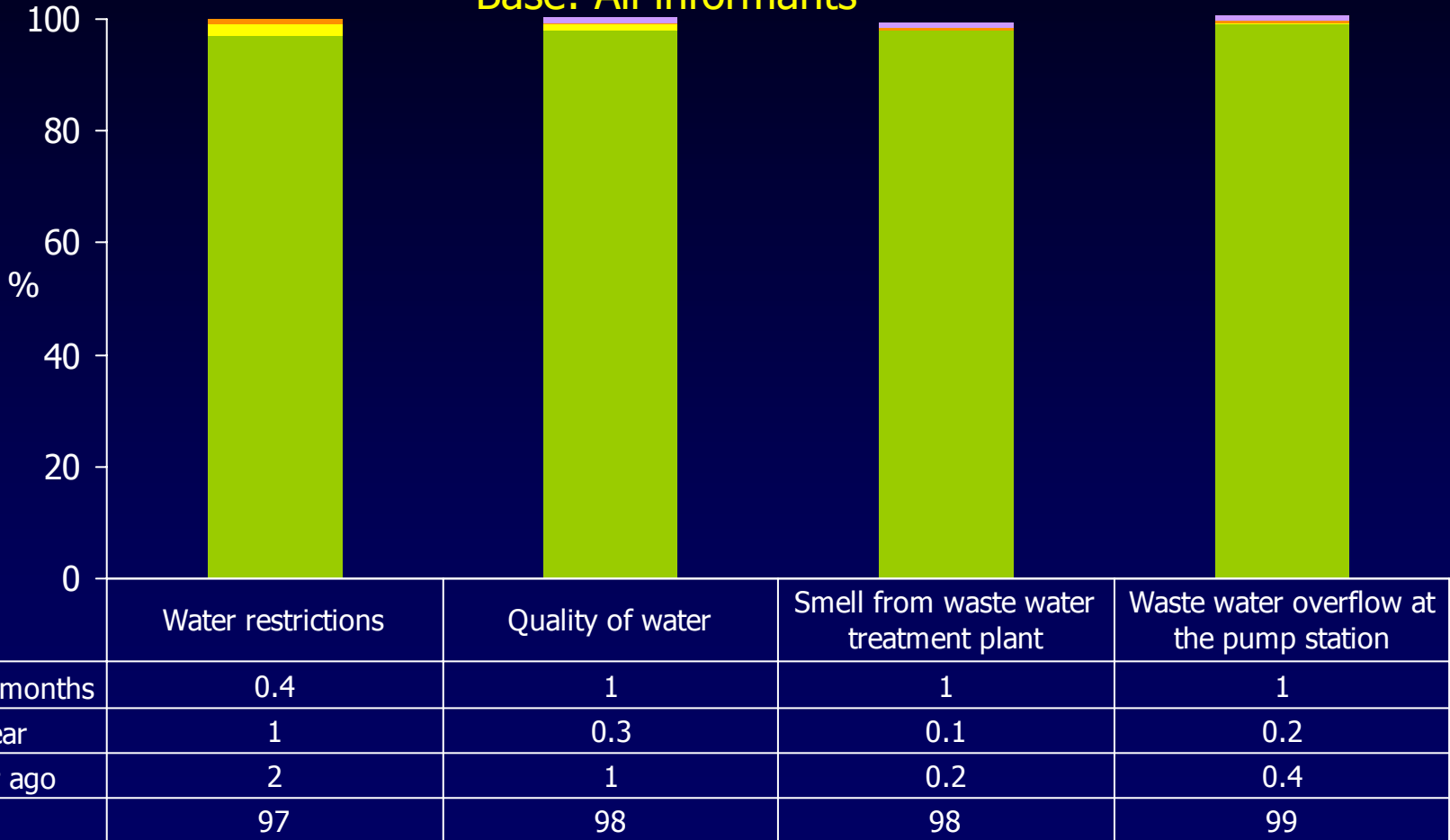
Source: Project Puddle 2003 n=520

Q.11

# History of dealings with Municipality

## *To enquire about ...*

Base: All informants



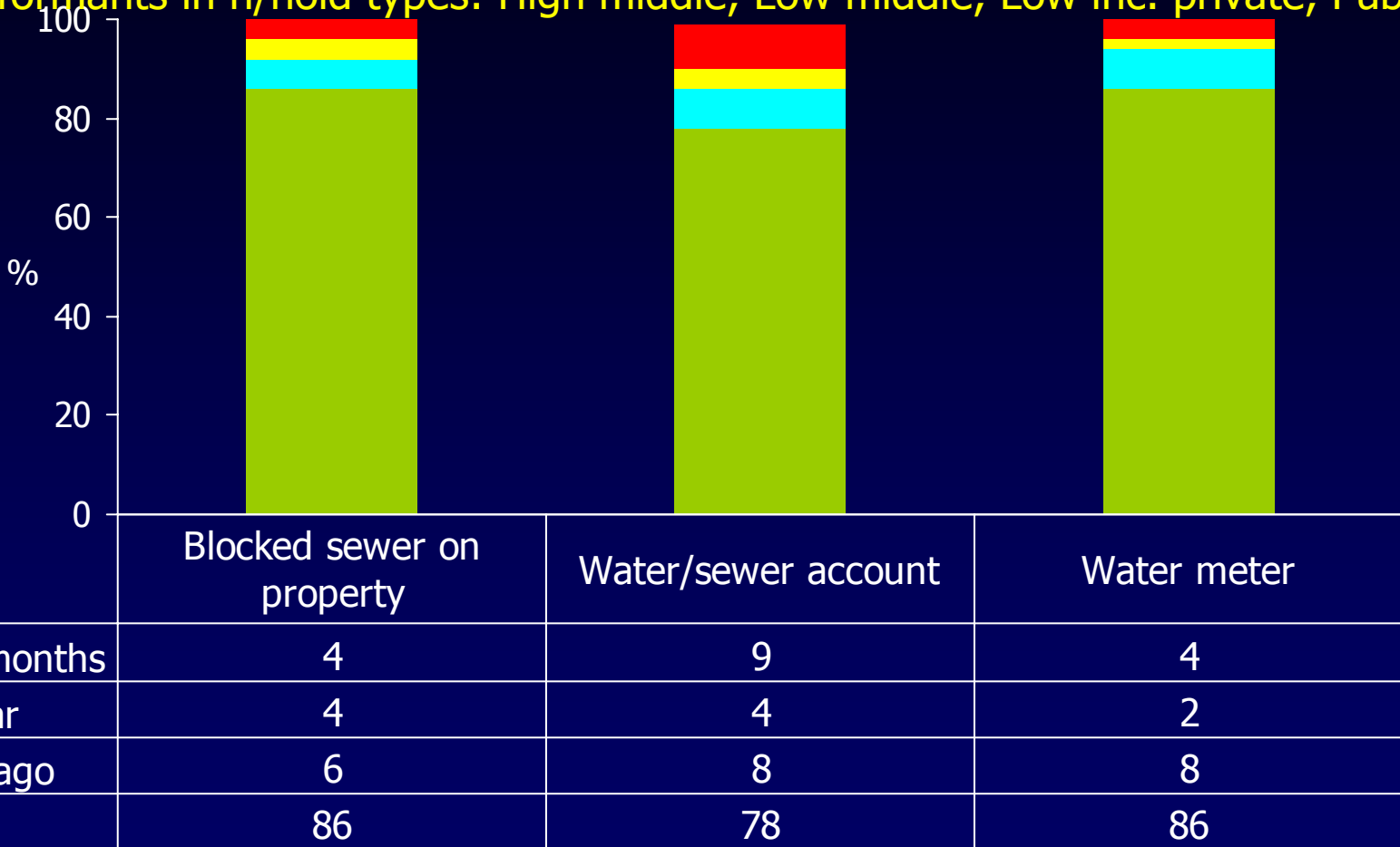
Source: Project Puddle 2003 n=520

Q.11

# History of dealings with Municipality

## *To report /enquire about ...*

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public

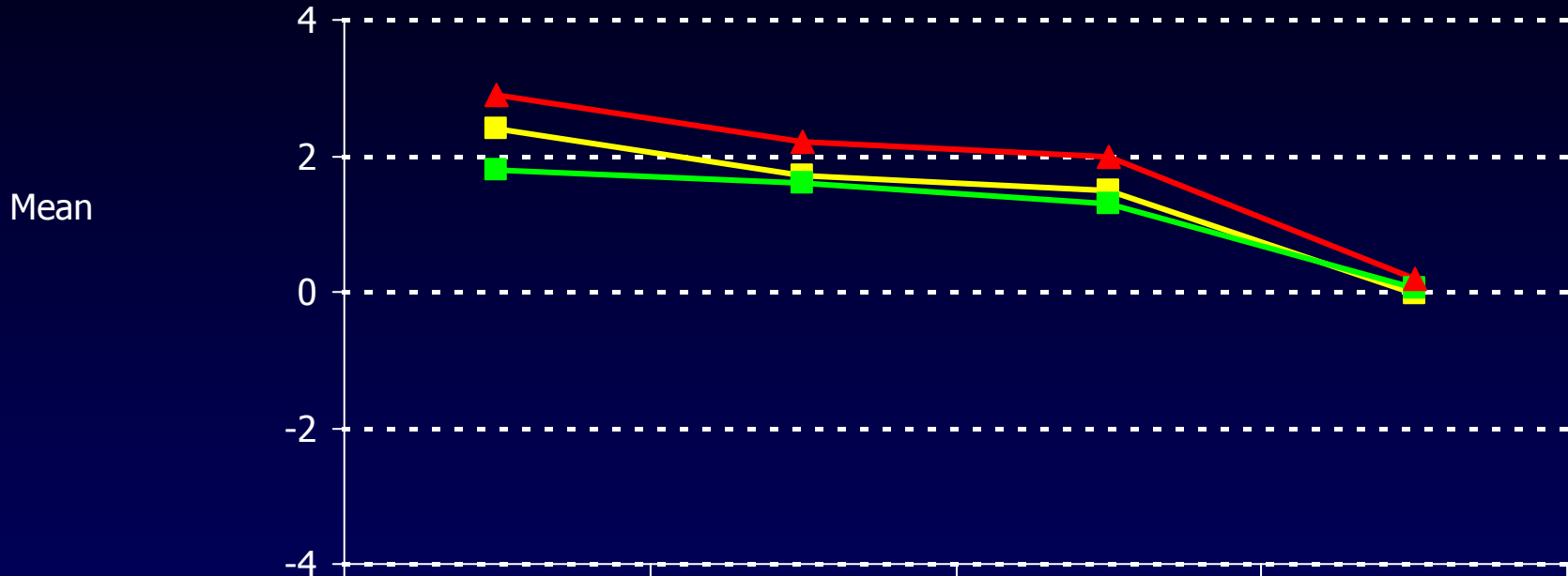


Source: Project Puddle 2003 n=416

Q.11

# When reporting...

Base: All informants



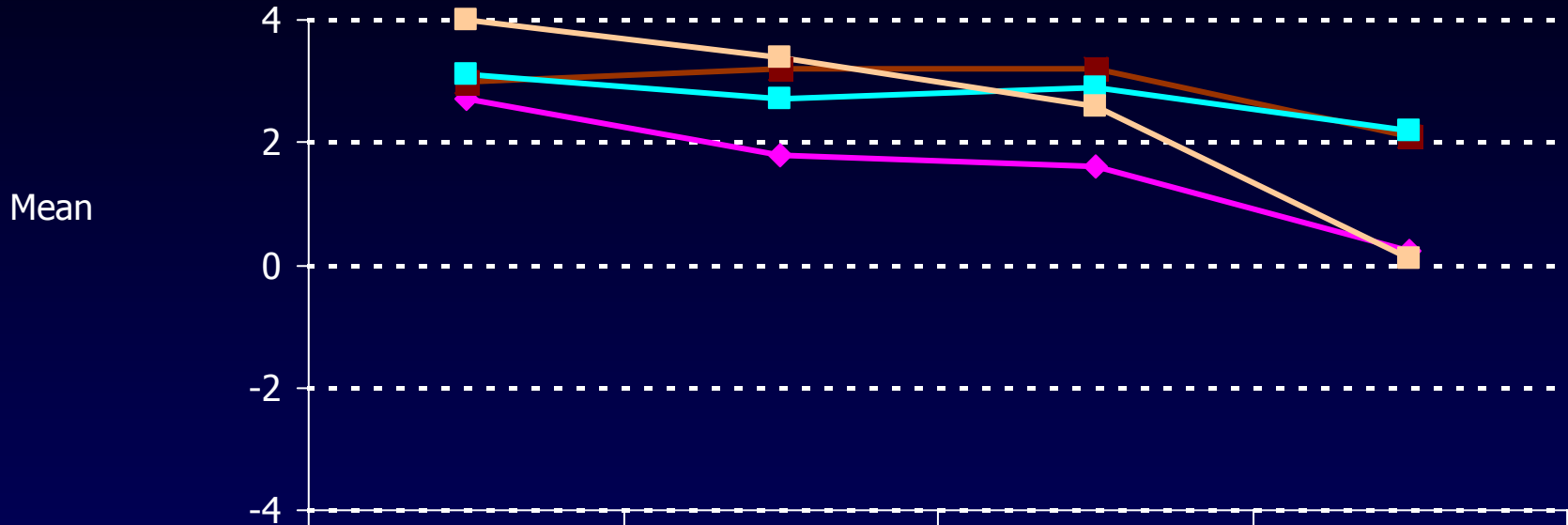
	Treated in a professional and courteous manner	Imm. directed to person who could see to my needs	Problem resolved in reasonable time	Followed up with me to find out if problem sorted
Water leak in street	2.4	1.7	1.5	-0.02
Water pipe burst	1.8	1.6	1.3	0.05
Blocked sewer in str.	2.9	2.2	2	0.2

Source: Project Puddle 2003 n=49, 47, 54

Q.12

# When enquiring...

Base: All informants



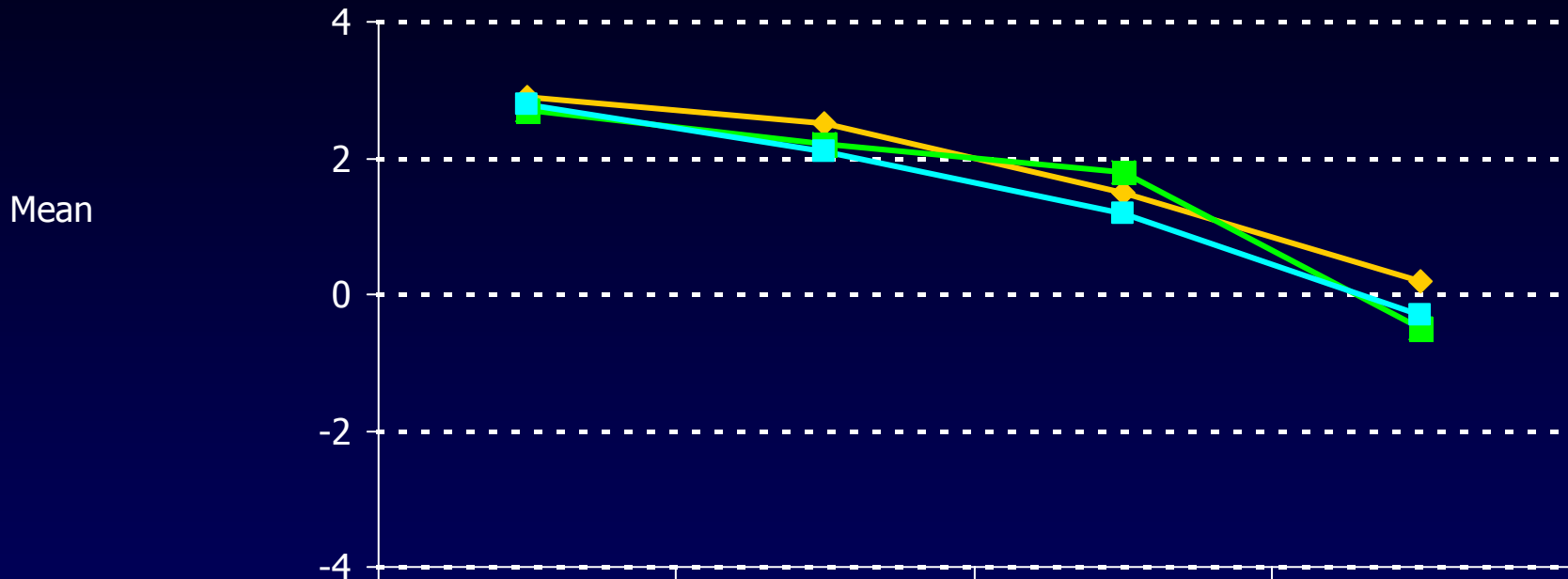
	Treated in a professional and courteous manner	Imm. directed to person who could see to my needs	Problem resolved in reasonable time	Followed up with me to find out if problem sorted out
◆ Water restrictions	2.7	1.8	1.6	0.22
■ Quality of water	3	3.2	3.2	2.1
■ Smell from t/plant	3.1	2.7	2.9	2.2
■ Overflow pump st.	4	3.4	2.6	0.1

Source: Project Puddle 2003 n=18, 11 9, 6

Q.12

# When reporting/enquiring...

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public



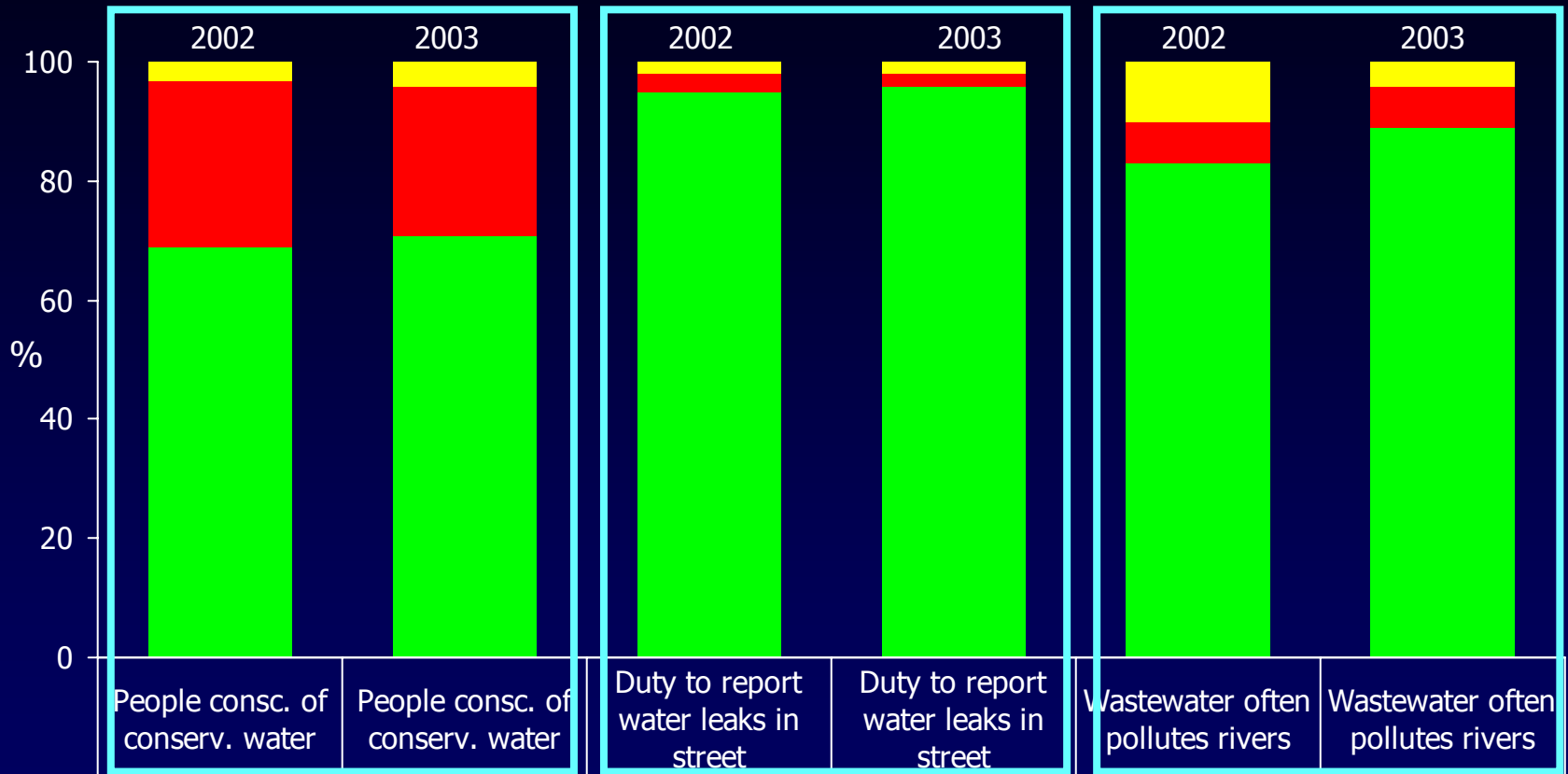
	Treated in a professional and courteous	Imm. directed to person who could see to my needs	Problem resolved in reasonable time	Followed up with me to find out if problem sorted
Blocked sewer in prop.	2.9	2.5	1.5	0.2
Water/sewer account	2.7	2.2	1.8	-0.5
Water meter	2.8	2.1	1.2	-0.3

Source: Project Puddle 2003 n=55, 94, 55

Q.12

# Extent of agreement with statements

Base: All informants



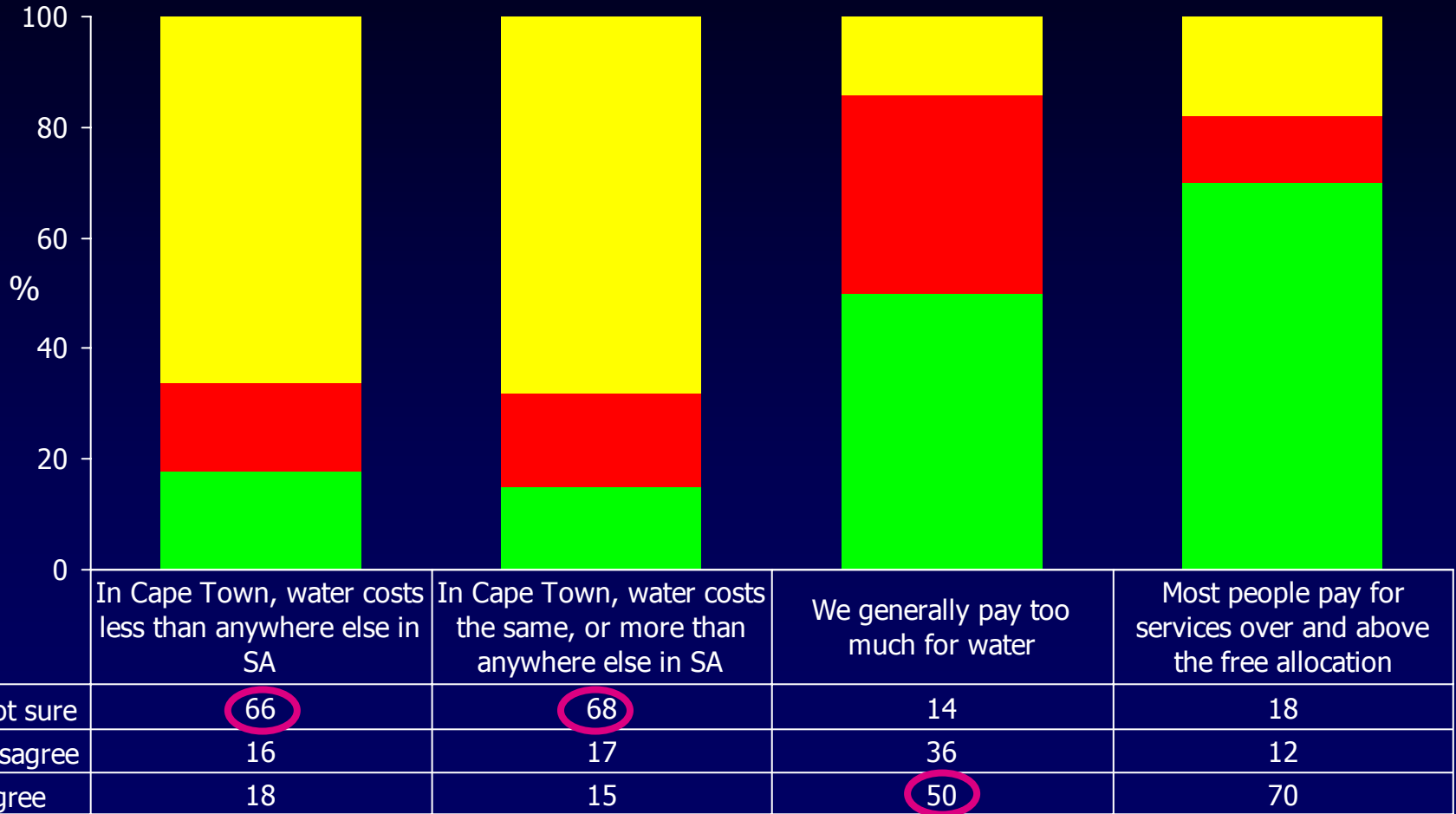
■ Not sure	3	4	2	2	10	4
■ Disagree	28	25	3	2	7	7
■ Agree	69	71	95	96	83	89

Source: Project Puddle 2002, 2003 n=497, 520

Q.10

# Extent of agreement with statements

Base: All informants

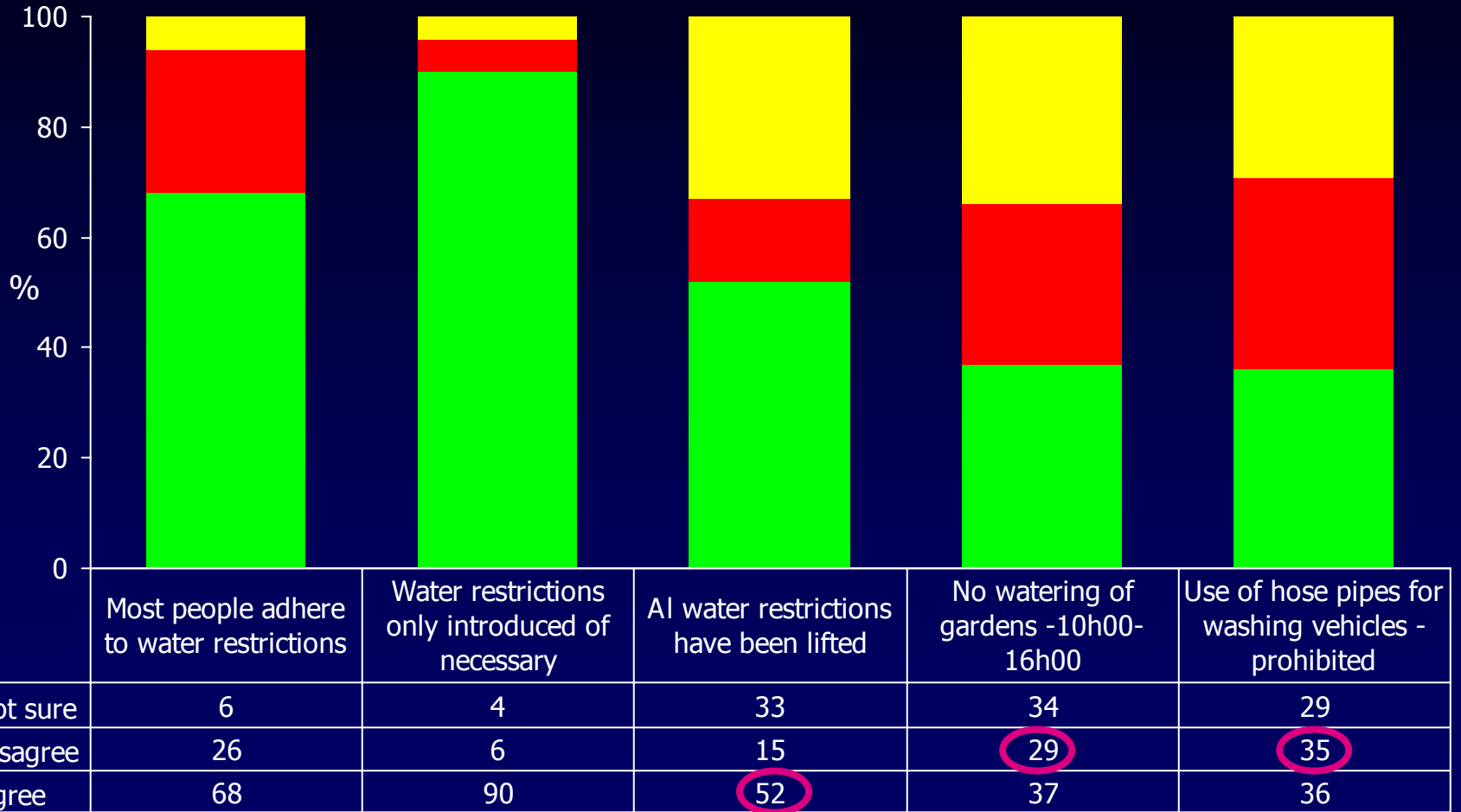


Source: Project Puddle 2003 n=520

Q.10

# Extent of agreement with statements

Base: All informants

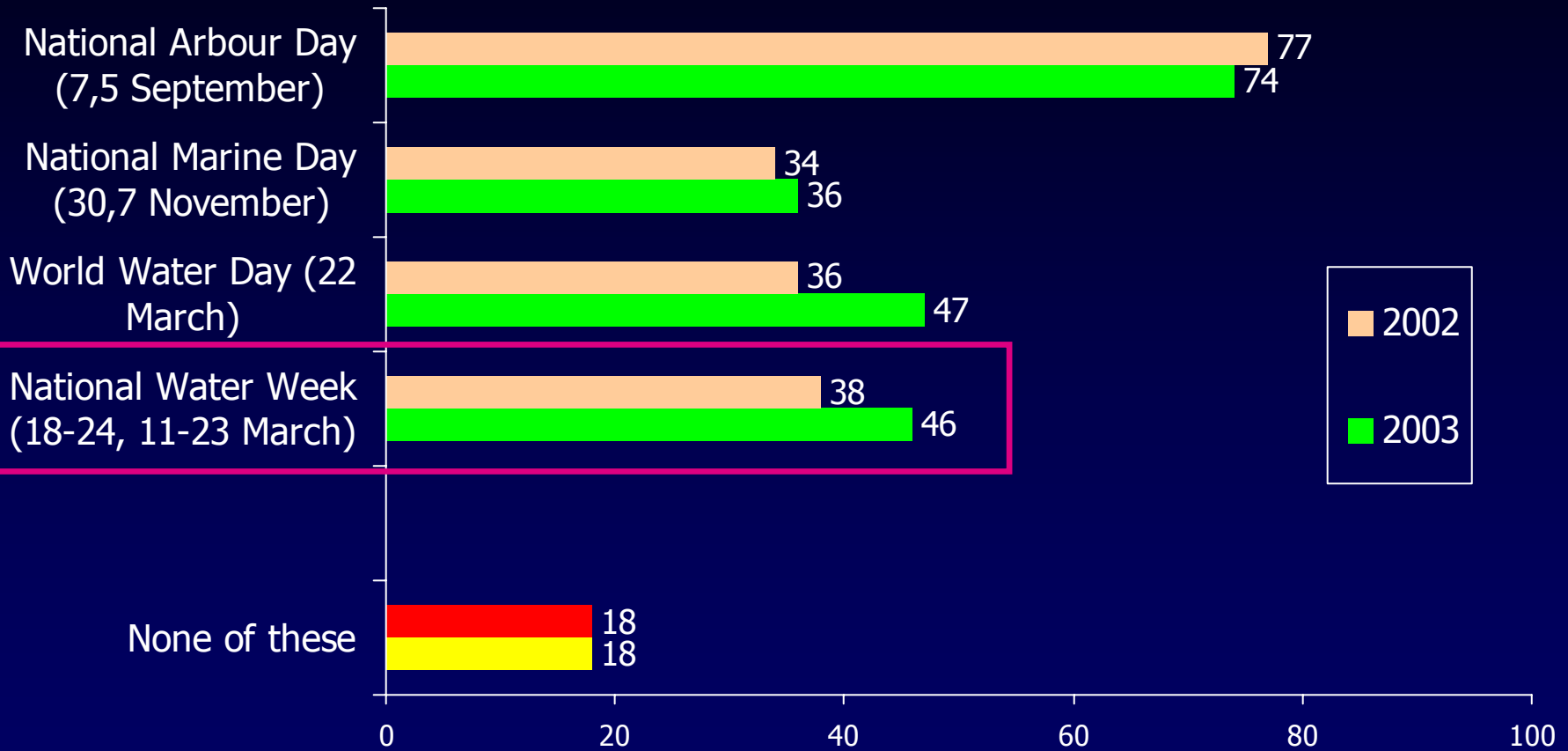


Source: Project Puddle 2003 n=520

Q.10b

# Awareness of Environmental Initiatives

Base: All informants



Source: Project Puddle 2002, 2003 n=497, 520

%

Q.13



# Stories/rumours heard about water or the provision of water in the City of Cape Town

Base: All informants

**38% heard something (41% in 2002)**

**Don't waste water (13%)**

**Pre-paid water in the future (5%)**

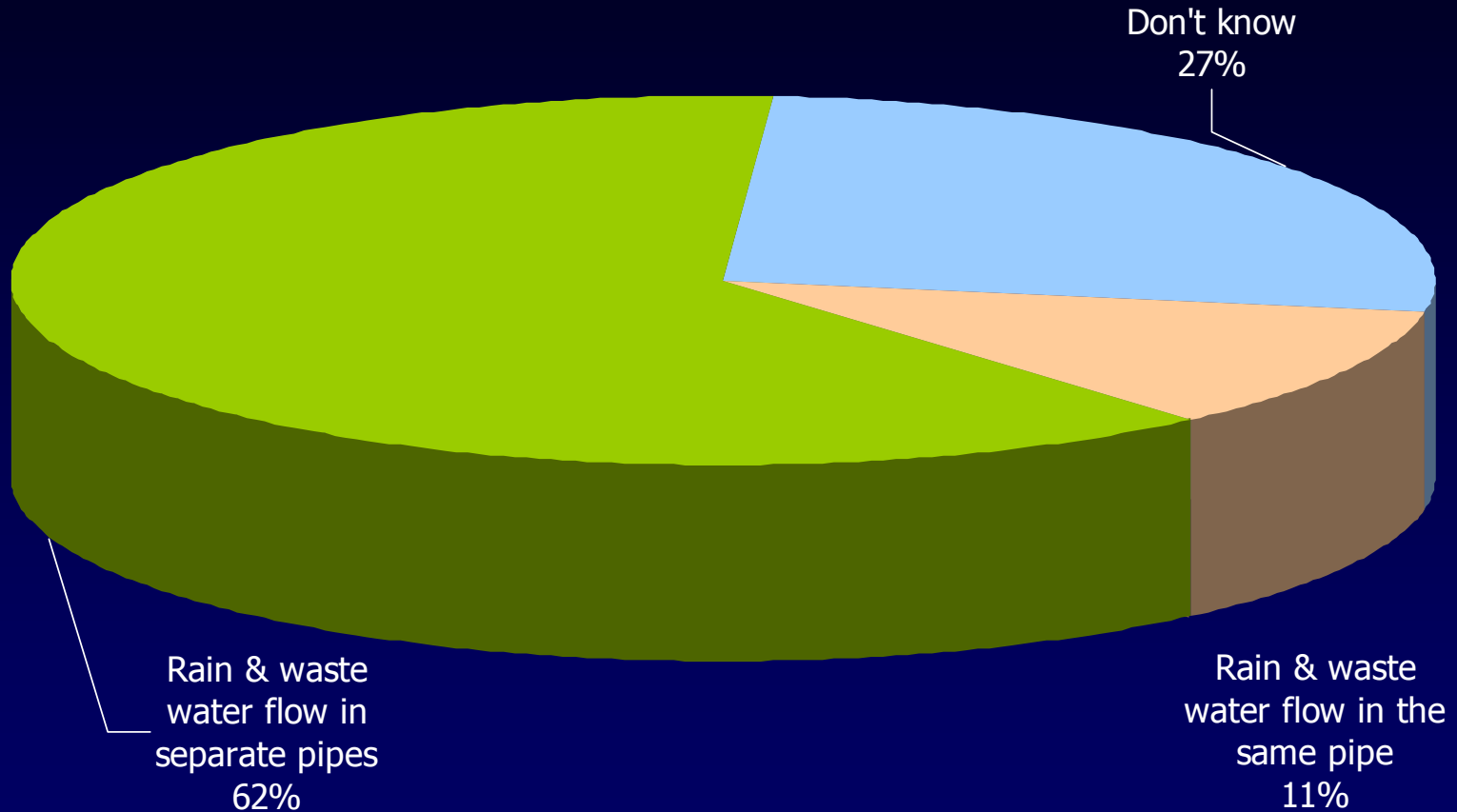
**There is a shortage of water (4%)**

**Impure/dirty water containing chlorine/flouride (4%)**

**New dam (2%)**

# Rain water and waste water flow

Base: All informants

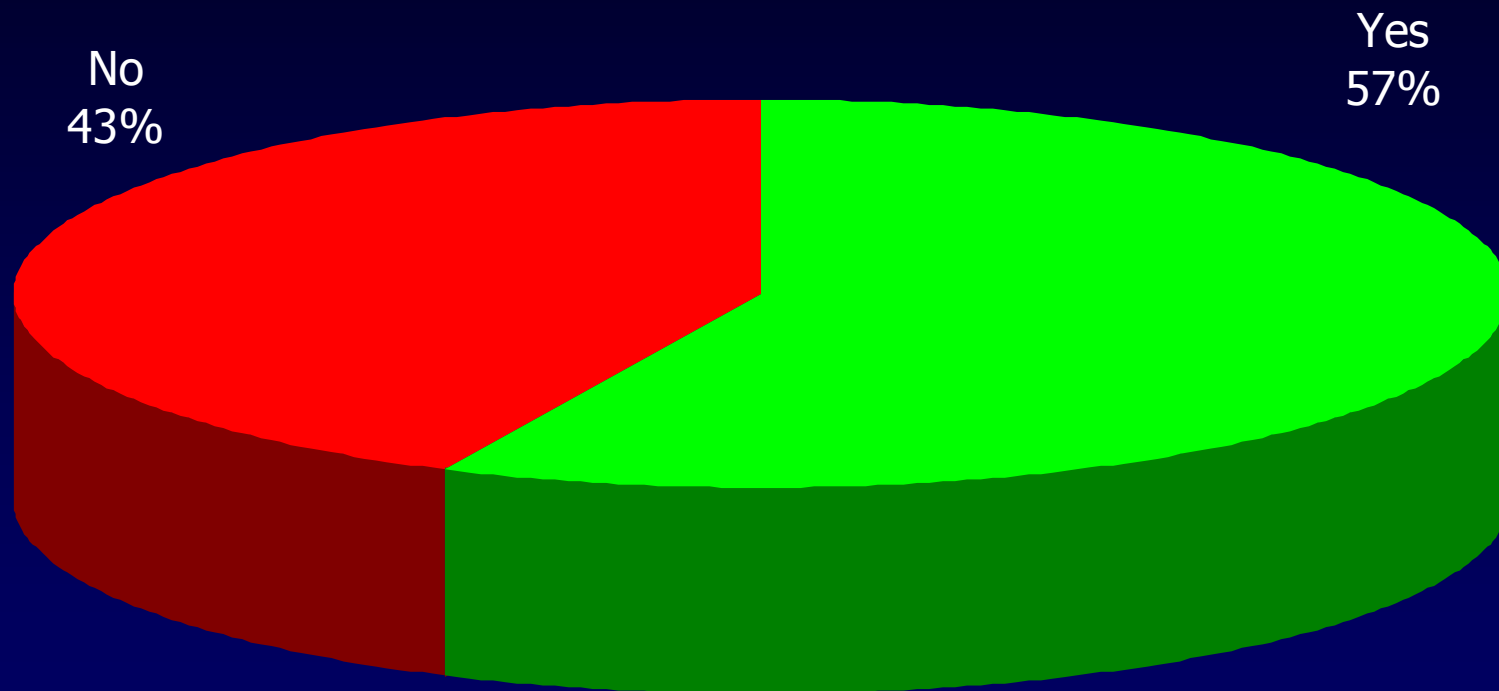


Source: Project Puddle 2003 n= 520

Q.17

# Behaviour changed in past year specifically to conserve water

Base: All informants



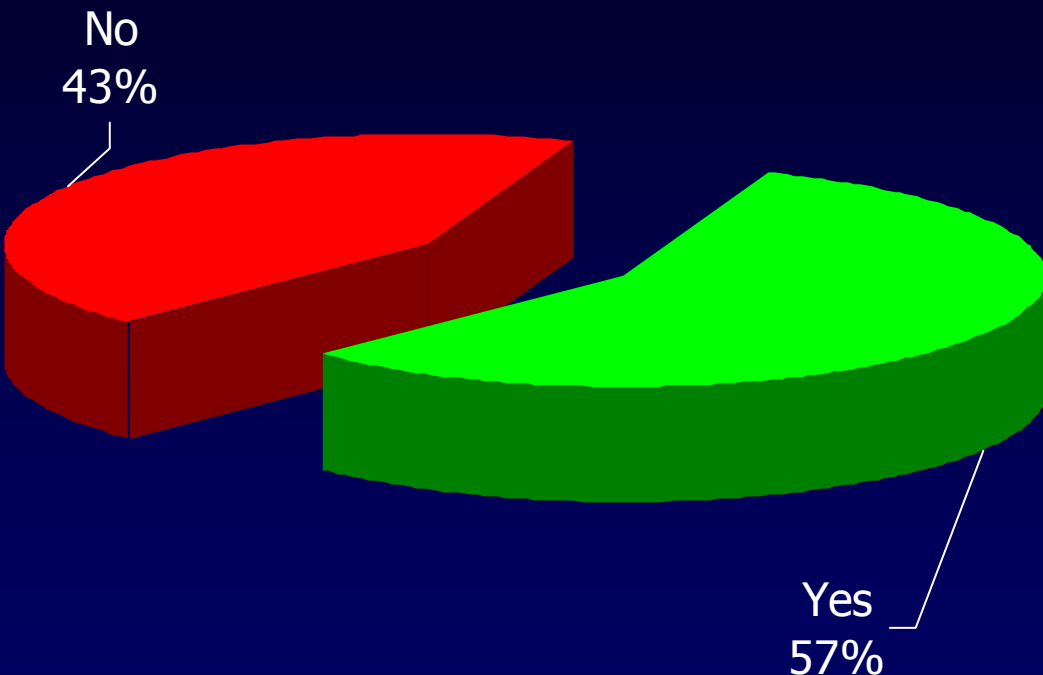
Source: Project Puddle 2003 n= 520

Q.18

Residents

# Reason for changing behaviour to conserve water

Base: All informants who changed behaviour



## Yes (n=291)

**Had to use less, price of services increased (41%)**

**Had to adhere to water restrictions (32%)**

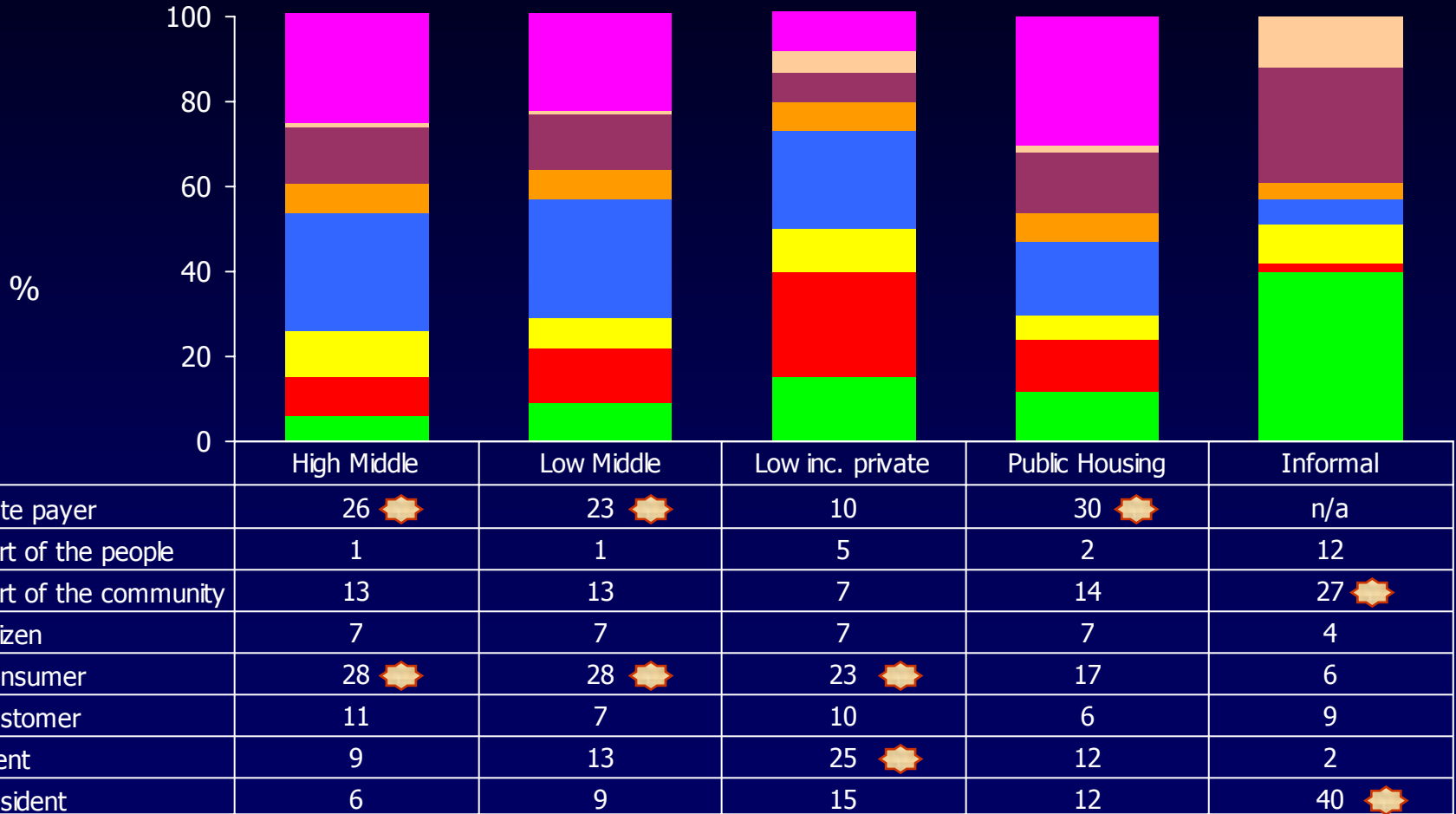
**Information provided by government on water conservation (20%)**

**Greater awareness to save water / greater responsibility to the environment (8%)**

Source: Project Puddle 2003 n= 520

# Relationship between user and supplier

Base: All informants

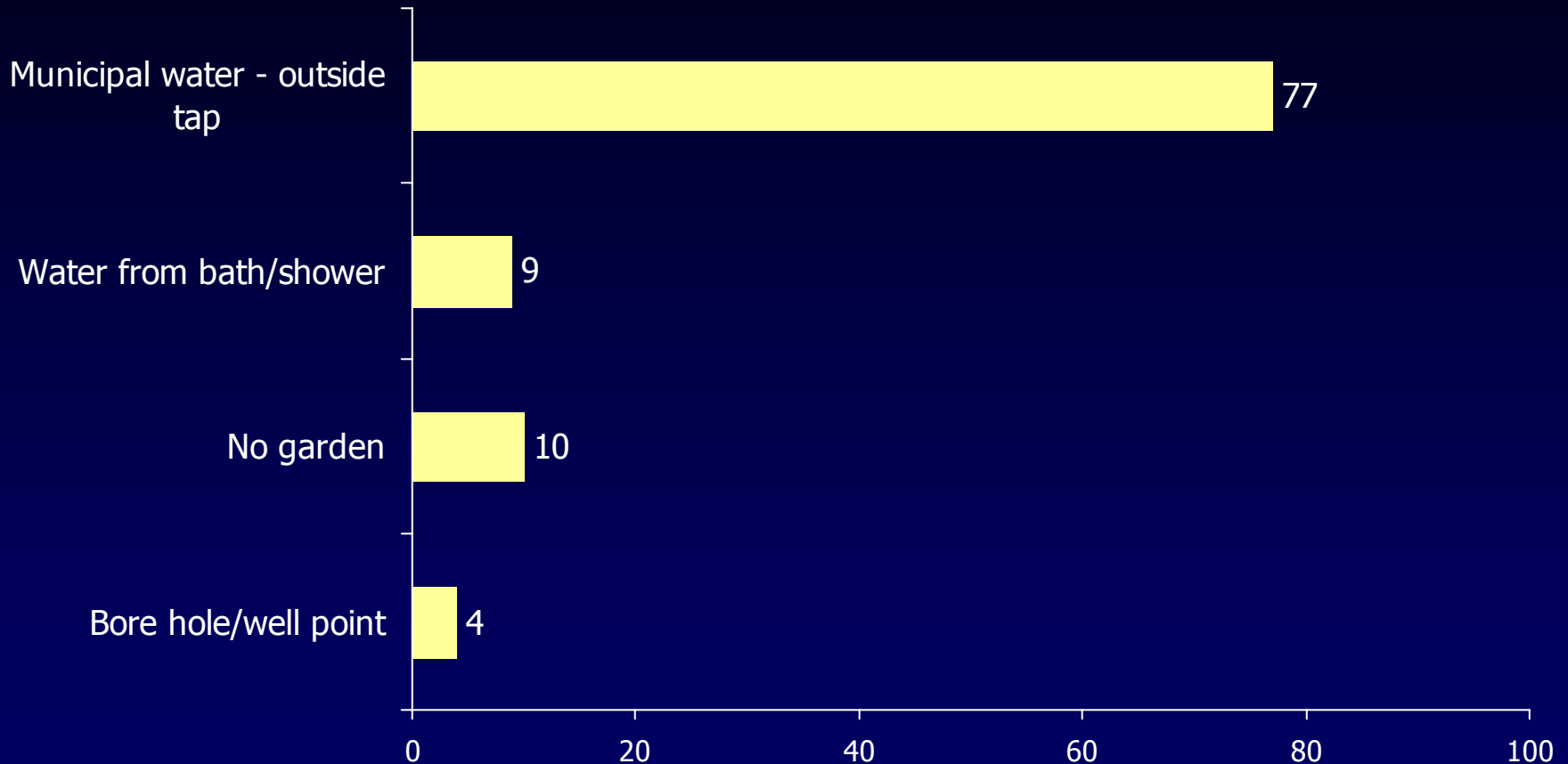


Source: Project Puddle 2002, 2003 n=497, 416 (informal 104; very informal 100)

Q.25

# Source of water for the garden

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public



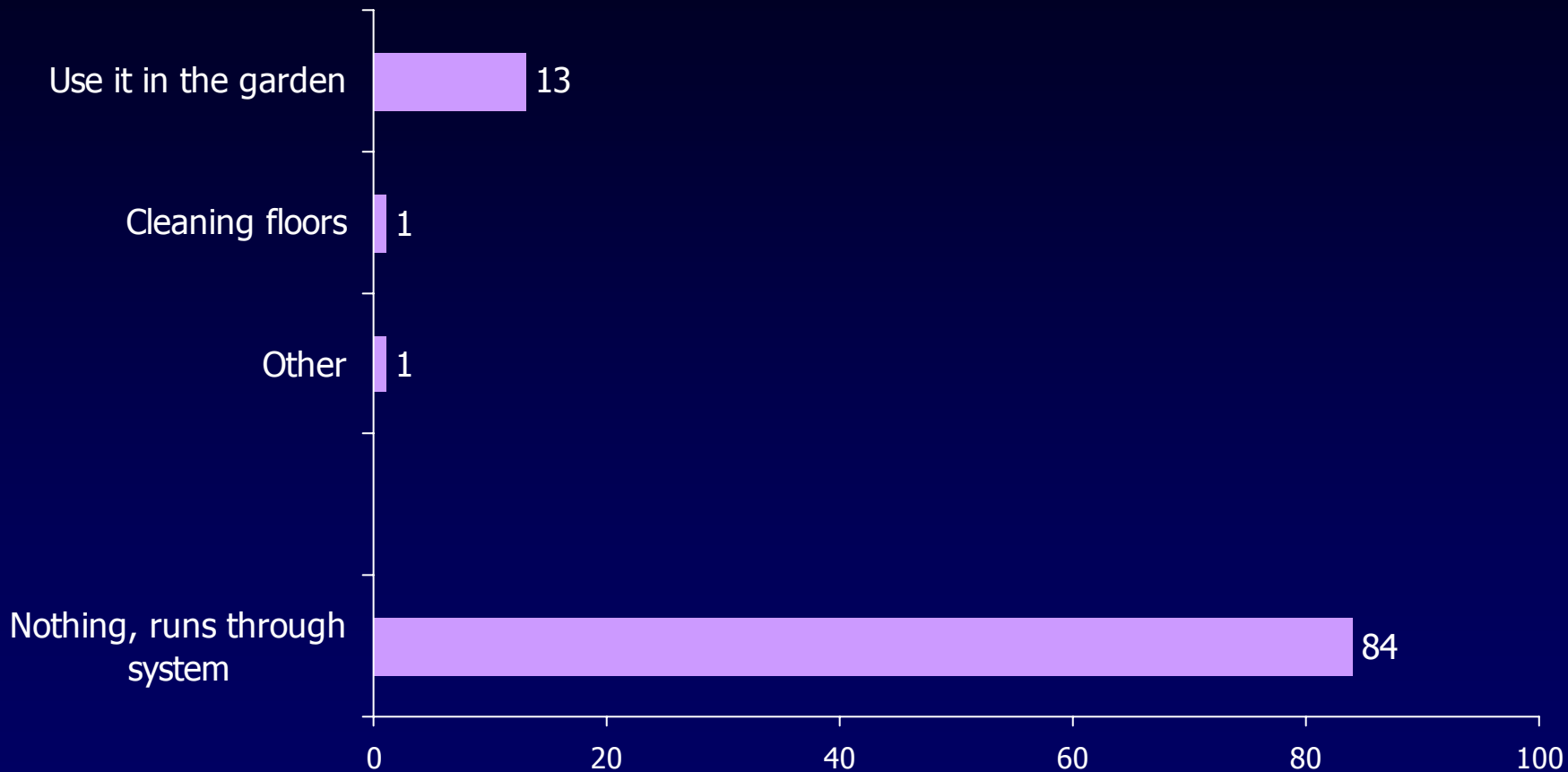
Source: Project Puddle 2003 n= 416

%

Q.9

# Washing water after use

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public



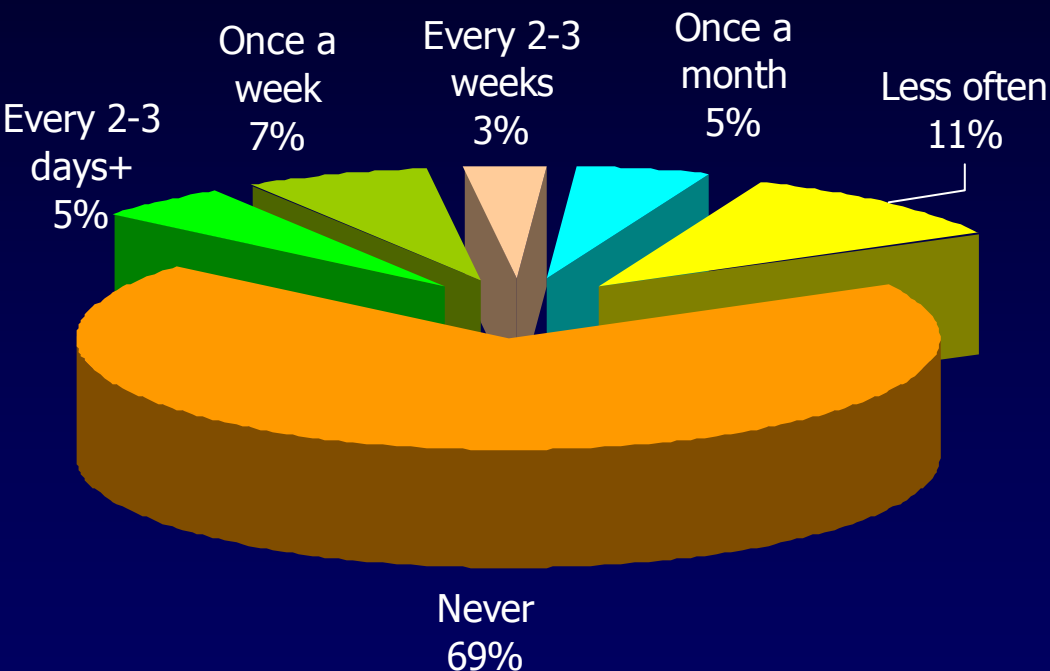
Source: Project Puddle 2003 n= 416



# Bottled water - frequency and reason for buying

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public

Ever bought (n=227)



**Believe it is purer / cleaner  
than tap water (39%)**

**Prefer the taste of water to  
cold drink / other  
beverages (30%)**

**Believe it is the best thirst  
quencher (8%)**

**See everyone drinks bottled  
water these days (4%)**

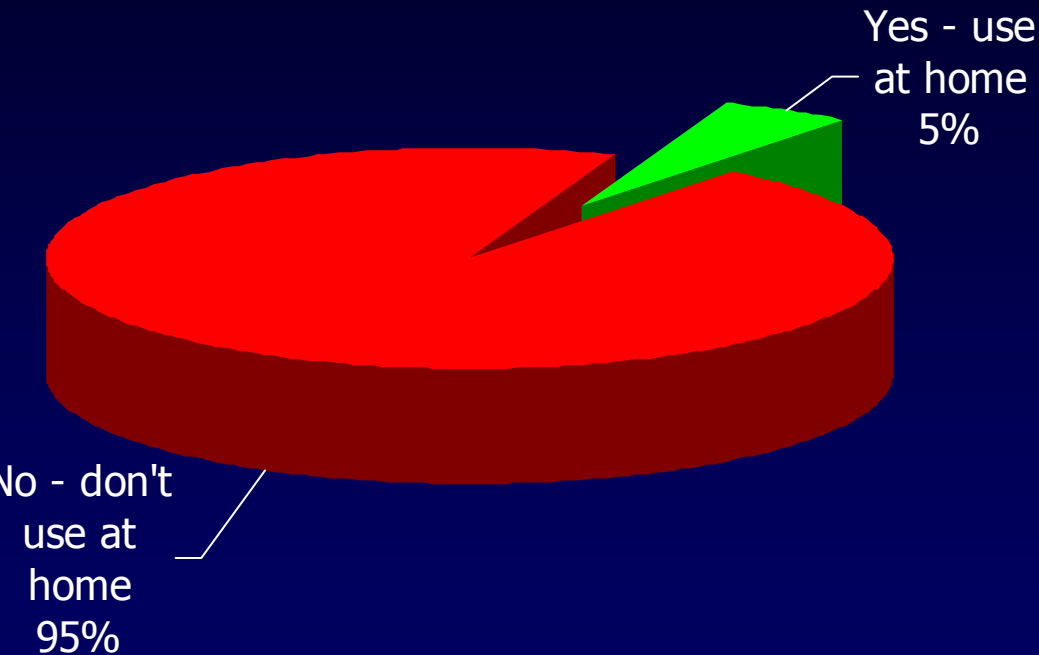
**Want to lose / control  
weight (3%)**

Q.21, 22

Source: Project Puddle 2003 n= 416

# Reason for using a water purifier at home

Base: All informants in h/hold types: High middle, Low middle, Low inc. private, Public



Yes (n=21)

To purify the water

To taste better

For health reasons

Source: Project Puddle 2003 n= 416

# Importance Ratings and Satisfaction

Respondents were asked to rank each service  
on a scale from 1 to 100 ....

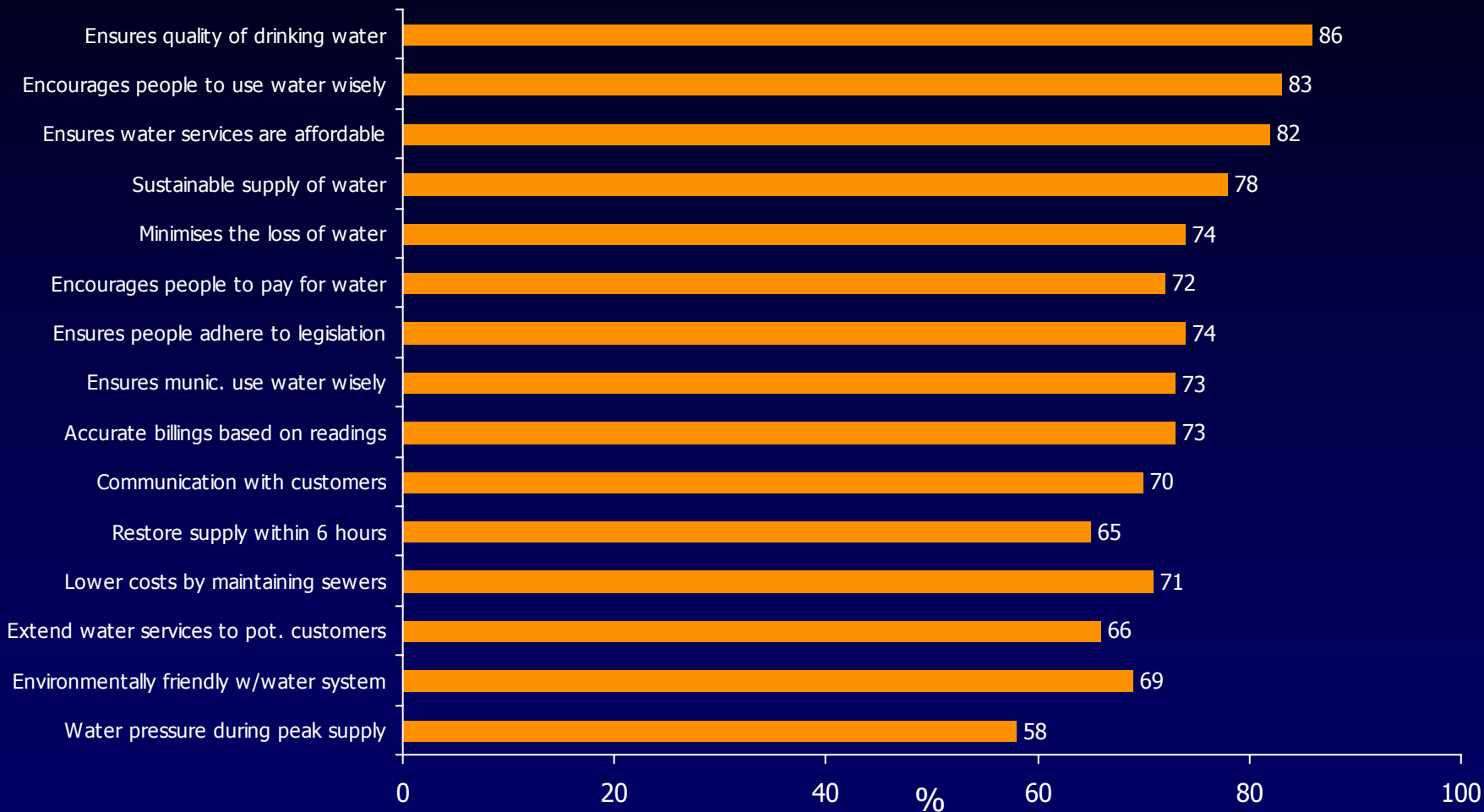
*importance measure*

It is important to note that the ratings refer to  
*relative importance*

A lower score indicates that the service is  
*less important* relative to others and not  
necessarily that it is *unimportant*

# Relative Importance

Base: All informants



Source: Project Puddle 2003 n=520

Q.15



# Importance Ratings and Satisfaction

Each service was then rated on a scale  
from -4 (very dissatisfied) to  
+4 (very satisfied) ...

*average rating across all services*

# Importance Ratings and Satisfaction

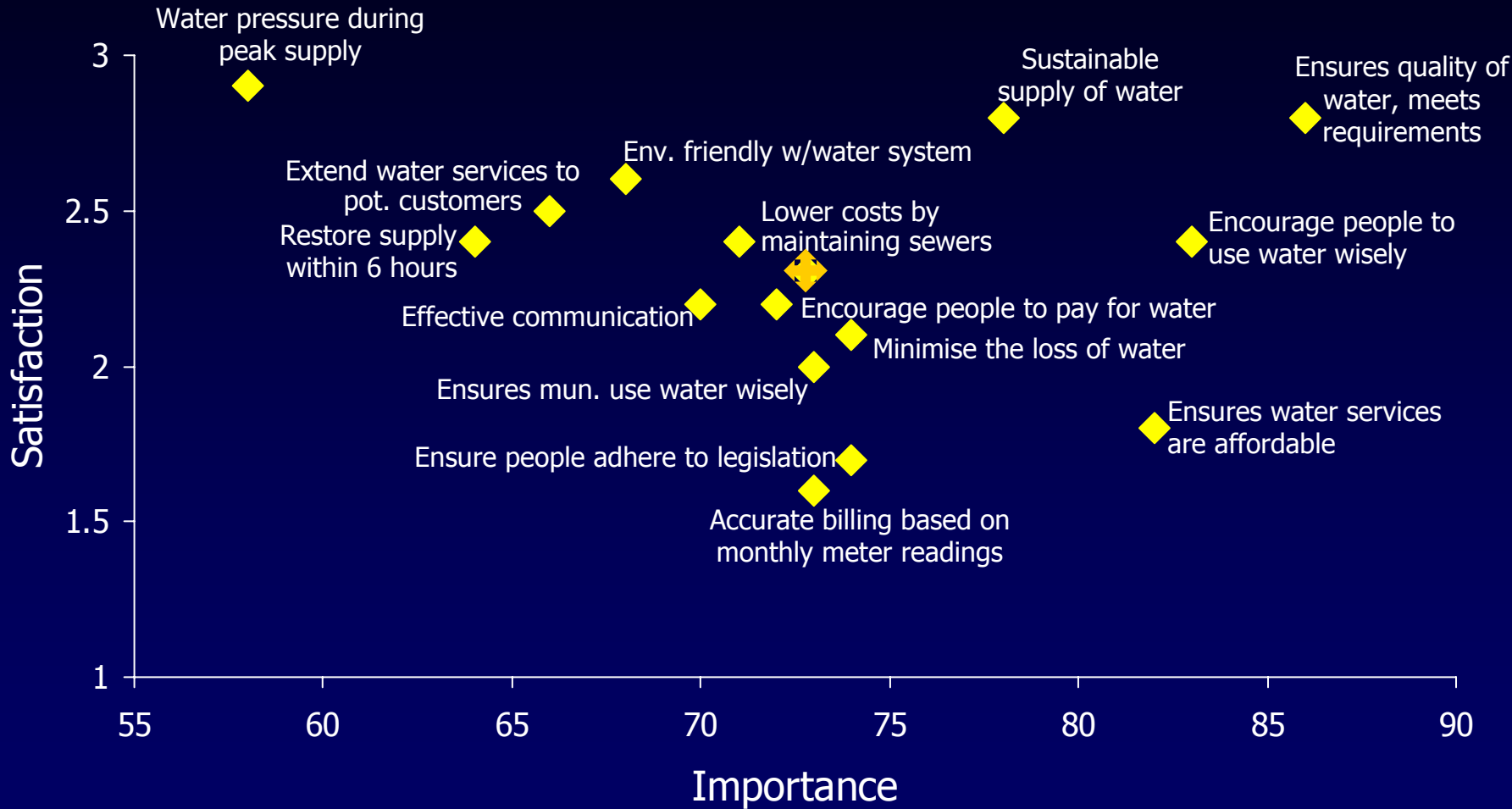
Results were analysed using *Gap analysis*  
(satisfaction rating v.s. importance rating for each service)

**This indicates:**

areas of strength, priorities for improvement and areas  
of lower priority or over investment

# Services

Base: All informants



Source: Project Puddle 2003 n=520

# GAP Analysis

S  
a  
t  
i  
s  
f  
a  
c  
t  
i  
o  
n

**Low Importance**  
**High Satisfaction**  
*(Scale down?)*

**High Importance**  
**High Satisfaction**  
*(Maintain)*

**Low Importance**  
**Low Satisfaction**  
*(Other service options)*

**High Importance**  
**Low Satisfaction**  
*(Priorities for improvement)*

Importance

# GAP Analysis - Residents

## **Low Importance, High Satisfaction**

- Ensures adequate water pressure during peak supply
- Ensures environmentally friendly waste water systems
- Extends water services as rapidly as possible to potential customers
- Ensures lower costs by maintaining sewers
- Restore supply within 6 hours after an unplanned interruption

## **High Importance, High Satisfaction**

- Ensures the quality of water meets drinking water requirements
- Encourages the public to use water wisely
- Ensures a sustainable supply of water for future generations

## **Low Importance, Low Satisfaction**

- Ensures courteous, effective and efficient communication with customers
- Encourage people to pay for water services

## **High Importance, Low Satisfaction**

- Ensures that water services are affordable
- Minimises the loss of water
- Ensures that people adhere to legislation regulating the use/misuse of water
- Ensures that the municipality uses water wisely
- Provide informative, accurate billings based on monthly meter readings

Source: Project Puddle 2003 n=520

Importance

# Conclusions

Residents are satisfied with the performance of the municipality in providing water services

Some of the residents in higher income groups have concerns about water quality, this group is more likely than the rest to buy bottled water

Overall however, there are very few problems with the issues relating to water, with 90%+ of all residents "somewhat" or "very satisfied" with the 'quality', 'taste', 'smell', 'colour', 'texture' and 'water pressure'.

# Conclusions

Overall, very few residents have had dealings with the municipality. Those that had dealings were in most instances satisfied with the service received, however as was shown in 2002, residents indicated that there “is no follow-up to ensure that the problem has been sorted out”

# Conclusions

Residents of Cape Town are not well aware of the fact that water in Cape Town costs less than anywhere else in South Africa - an opportunity to communicate this as 1 in 2 residents feel we generally pay too much for water

Awareness of National Water Week has increased from the 2002 measure - positive

Residents who claim to have changed their behaviour to conserve water has done so mainly for economic reasons

Some spontaneous mentions from residents re the re-use of their washing water, could provide input to the Water Demand Management pamphlet

# Conclusions

The priorities for improvement should be:

**Ensures that water services are affordable**

**Minimises the loss of water**

**Ensures that people adhere to legislation regulating the use/misuse of water**

**Ensures that the municipality uses water wisely**

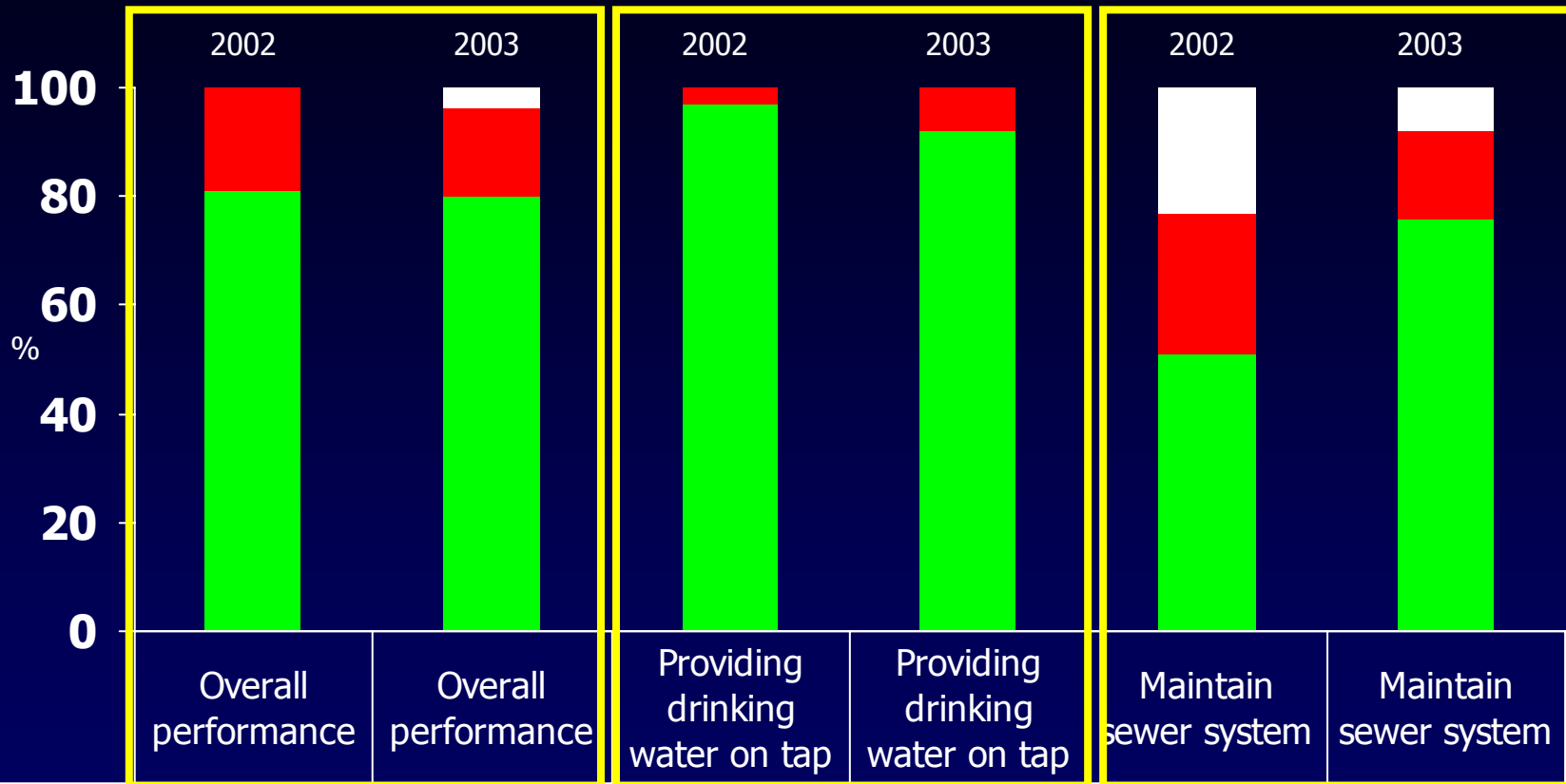
**Provide informative, accurate billings based on monthly meter readings**



**Business**

# Levels of satisfaction

Base: All informants



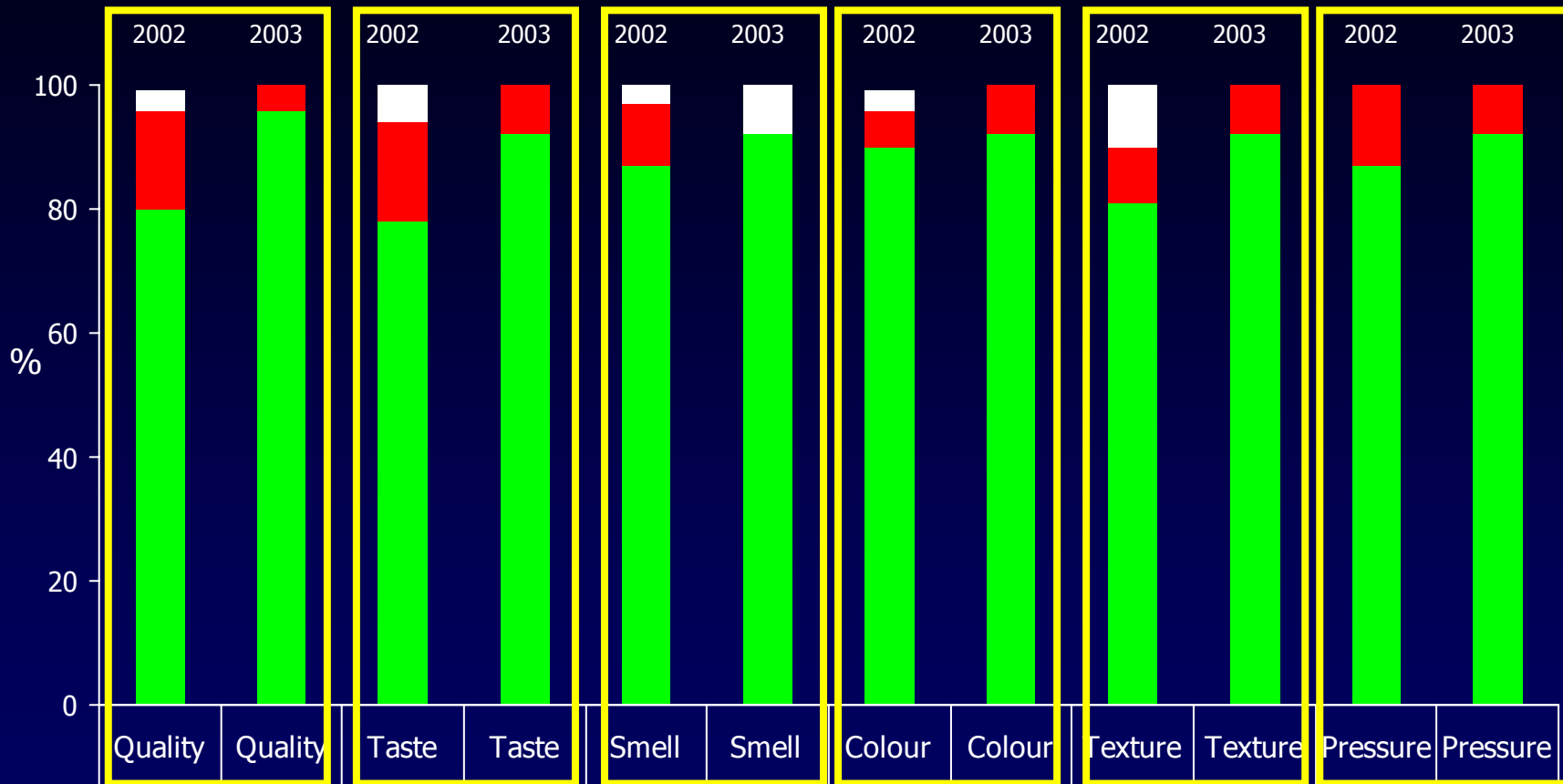
■ Not sure		4			23	8
■ Dissatisfied	19	16	3	8	26	16
■ Satisfied	81	80	97	92	51	76

Source: Project Puddle 2002, 2003 n=31, 25

Q.1,2,3

# Levels of satisfaction with water

Base: All informants



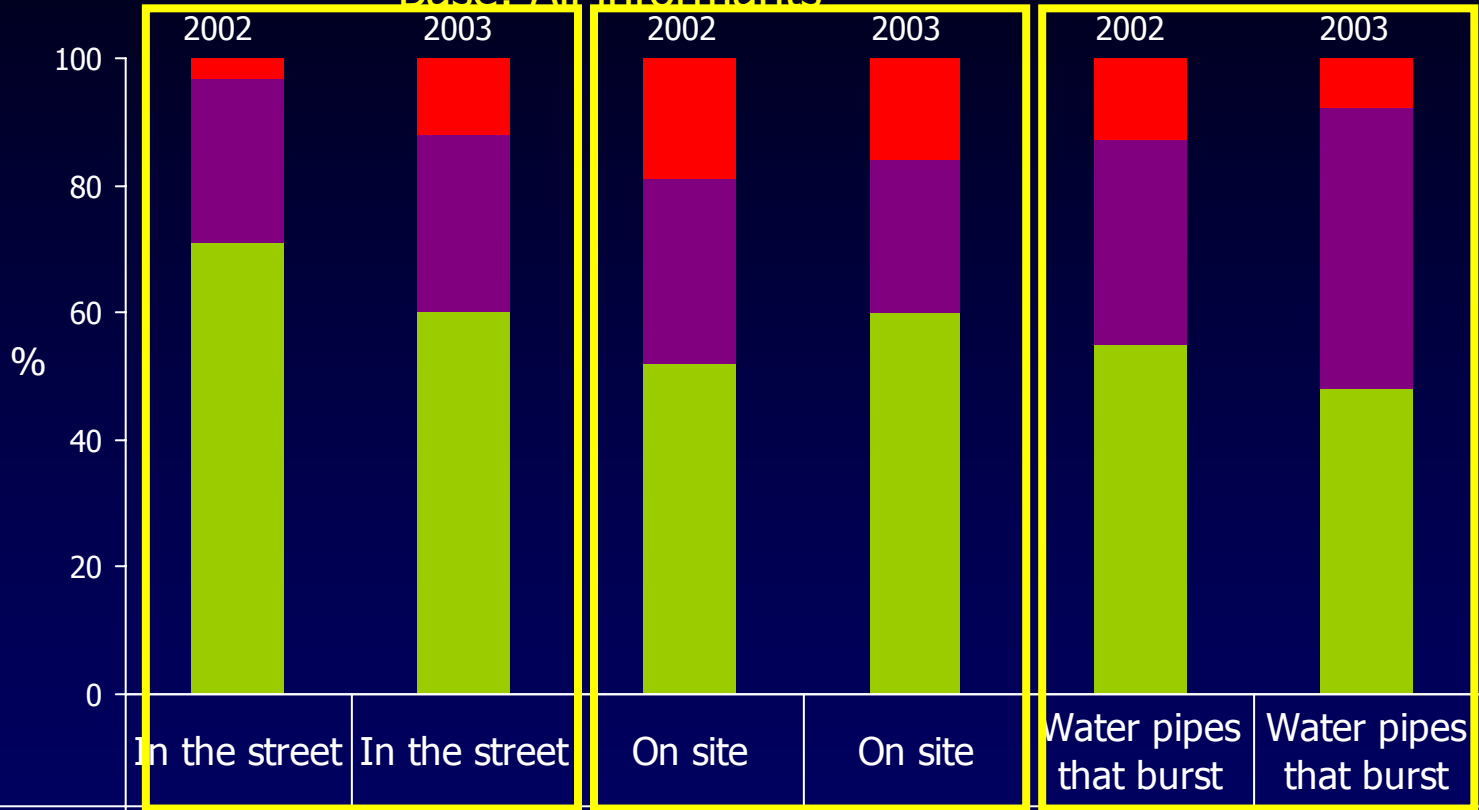
■ D/k	3		6		3	8	3		10				3		6		3	8	3		10			
■ Dissat.	16	4	16	8	10		6	8	9	8	13	8	16	4	16	8	10		6	8	9	8	13	8
■ Satisf.	80	96	78	92	87	92	90	92	81	92	87	92	80	96	78	92	87	92	90	92	81	92	87	92

Source: Project Puddle 2002, 2003 n=31, 25

Q.7

# Frequency of experiencing problems with water leakages

Base: All informants



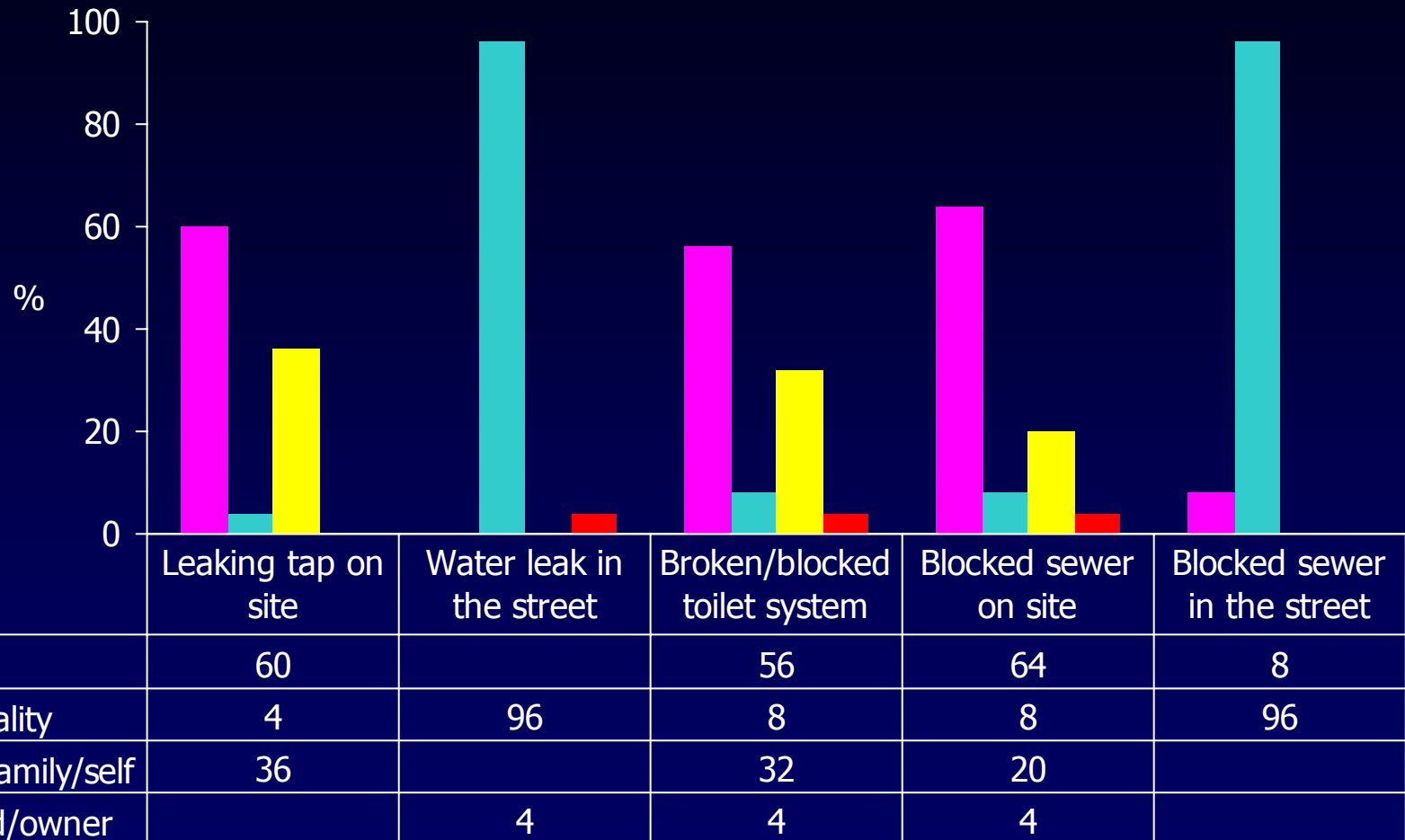
Up to once a month	3	12	19	16	13	8
Every few months	26	28	29	24	32	44
Never	71	60	52	60	55	48

Source: Project Puddle 2002, 2003 n=31, 25

Q.4,5

# Dealing with problems

Base: All informants



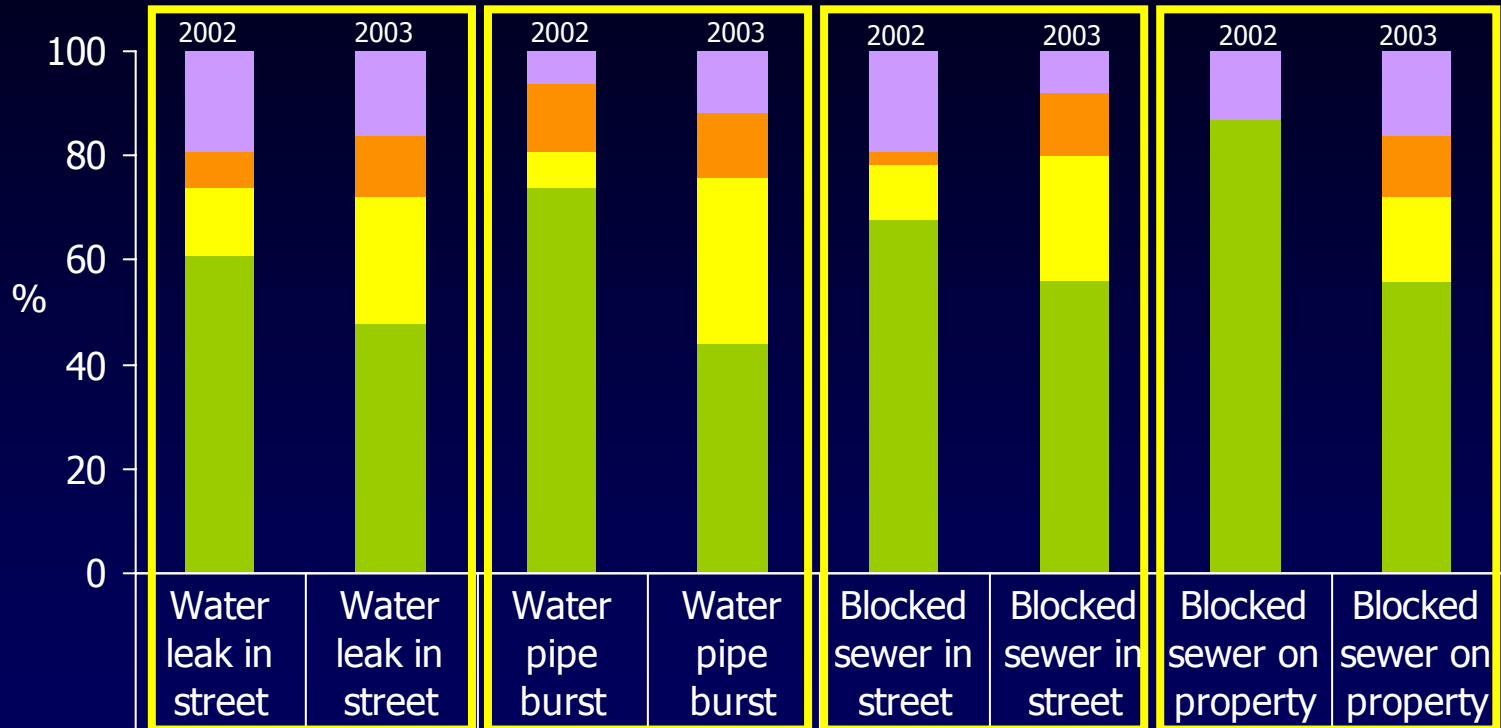
Source: Project Puddle 2003 n=25

Q.6

# Dealings with Municipality

*To report a ...*

Base: All informants



■ Past 6 months	19	16	6	12	19	8	13	16
■ Past year	7	12	13	12	3	12		12
■ Longer ago (1+ yr)	13	24	7	32	10	24		16
■ Never	61	48	74	44	68	56	87	56

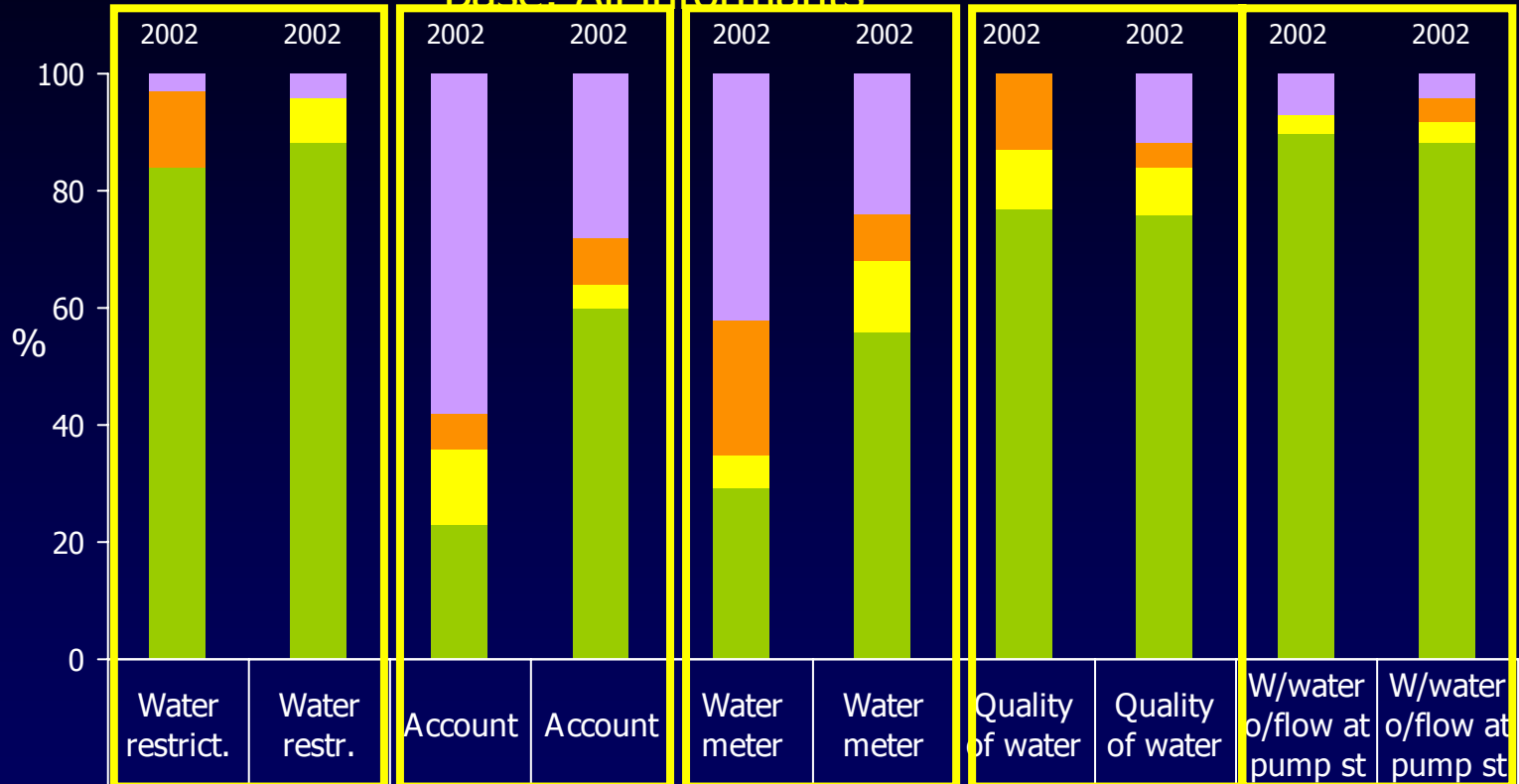
Source: Project Puddle 2002, 2003 n=31, 25

Q.11

# Dealings with Municipality

*To enquire about ...*

Base: All informants



	Water restrict.	Water restr.	Account	Account	Water meter	Water meter	Quality of water	Quality of water	W/water o/flow at pump st	W/water o/flow at pump st
■ Past 6 months	3	4	58	28	42	24		12	7	4
■ Past year	13		6	8	23	8	13	4		4
■ Longer ago (1+ yr)		8	13	4	6	12	10	8	3	4
■ Never	84	88	23	60	29	56	77	76	90	88

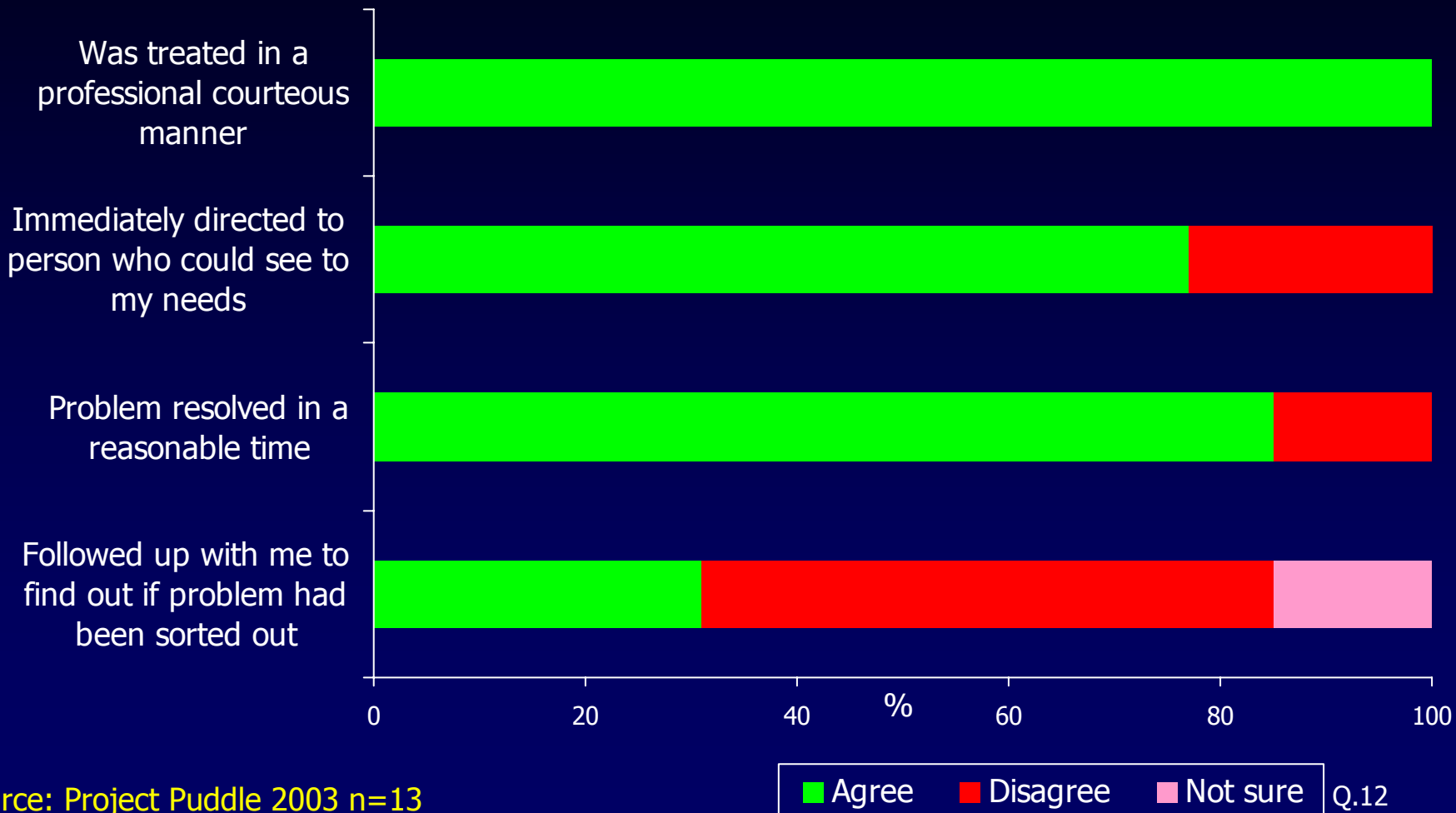
Source: Project Puddle 2002, 2003 n=31, 25

Q.11

# When reporting ...

## *Water leak in the street*

Base: All who reported ...

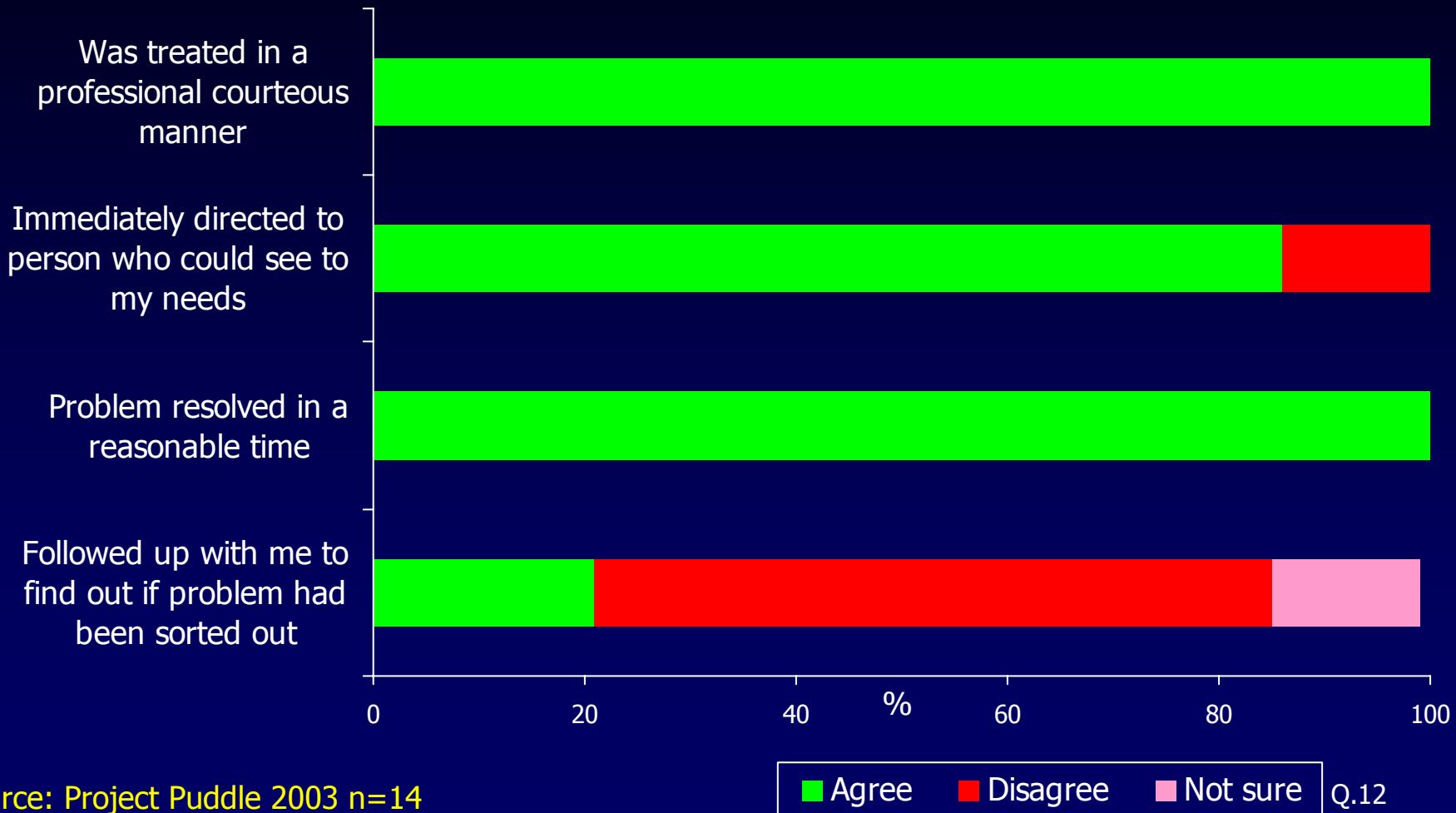


Source: Project Puddle 2003 n=13

# When reporting ...

## *Water pipe burst*

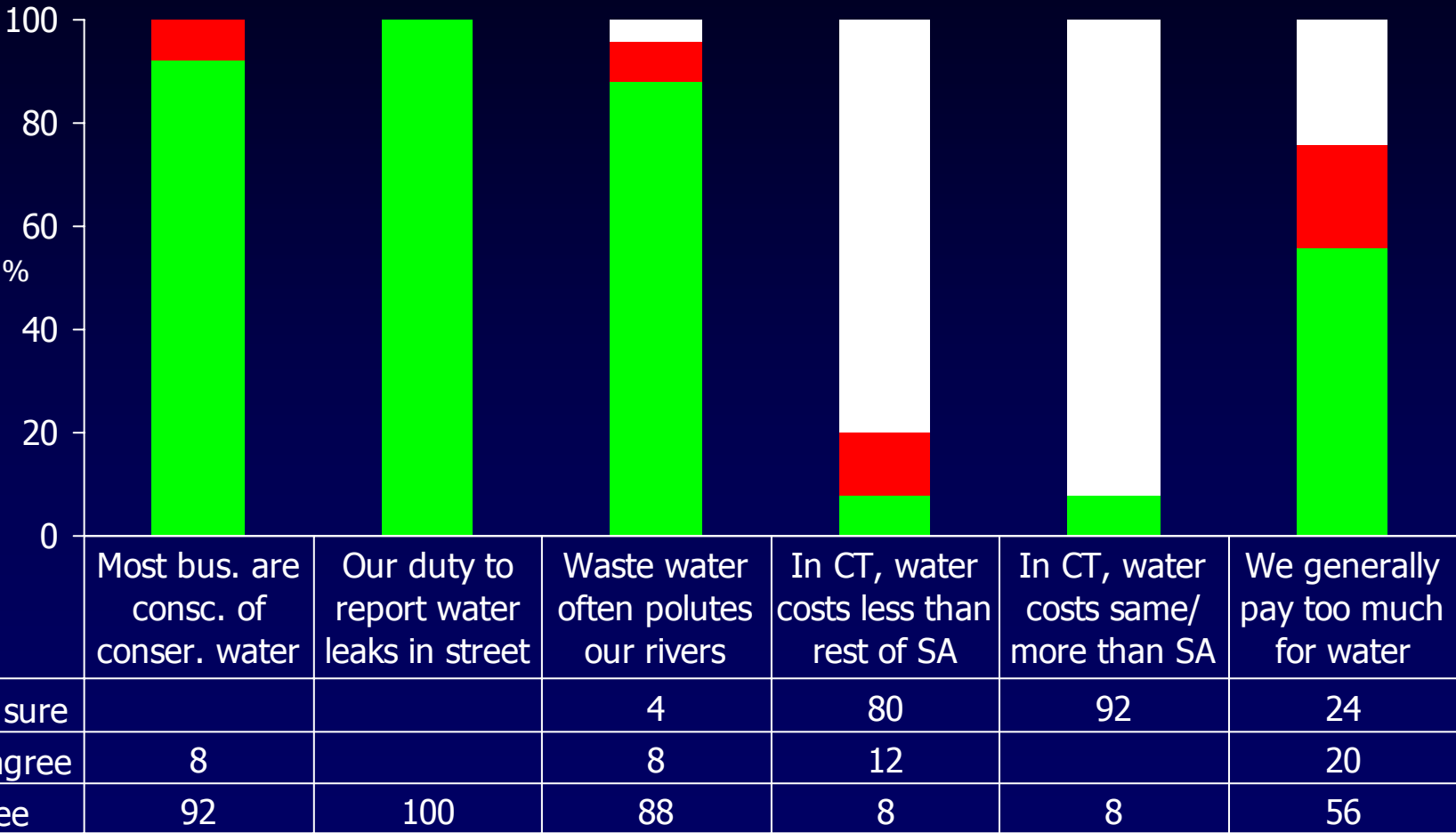
Base: All who reported ...



Source: Project Puddle 2003 n=14

# Perceptions

Base: All informants

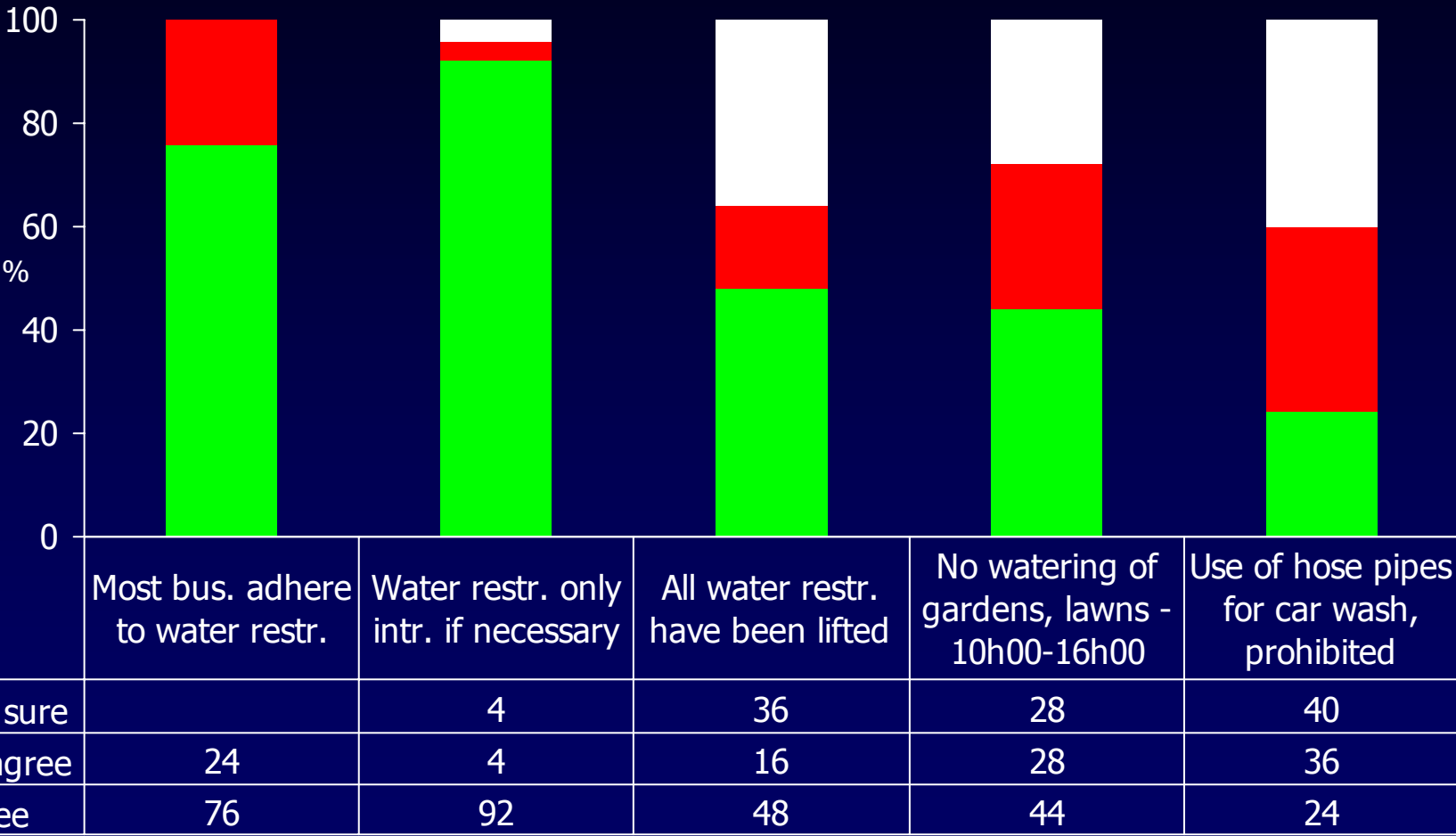


Source: Project Puddle 2003 n=25

Q.10

# Perceptions

Base: All informants

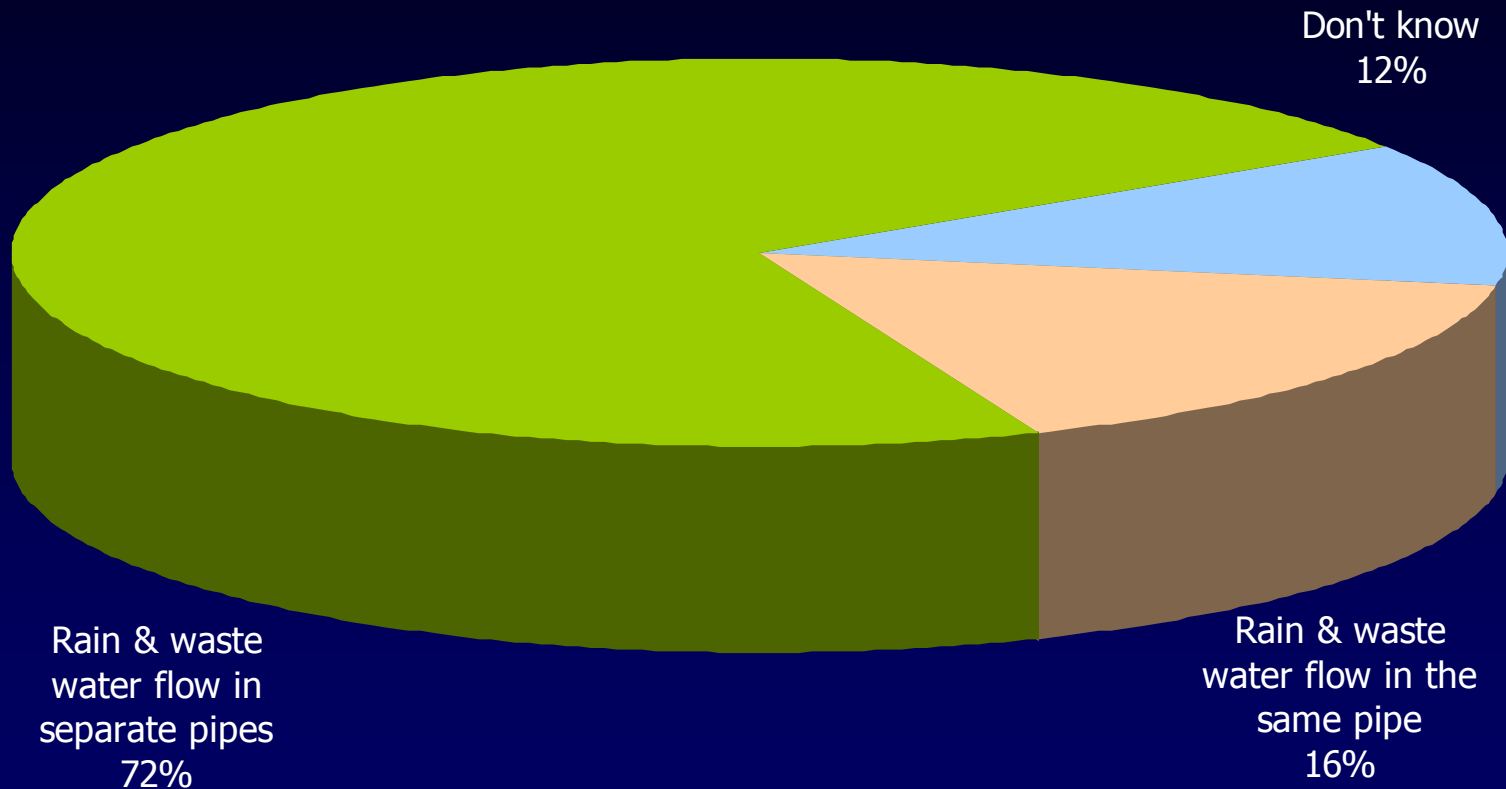


Source: Project Puddle 2003 n=25

Q.10b

# Rain water and waste water flow

Base: All informants

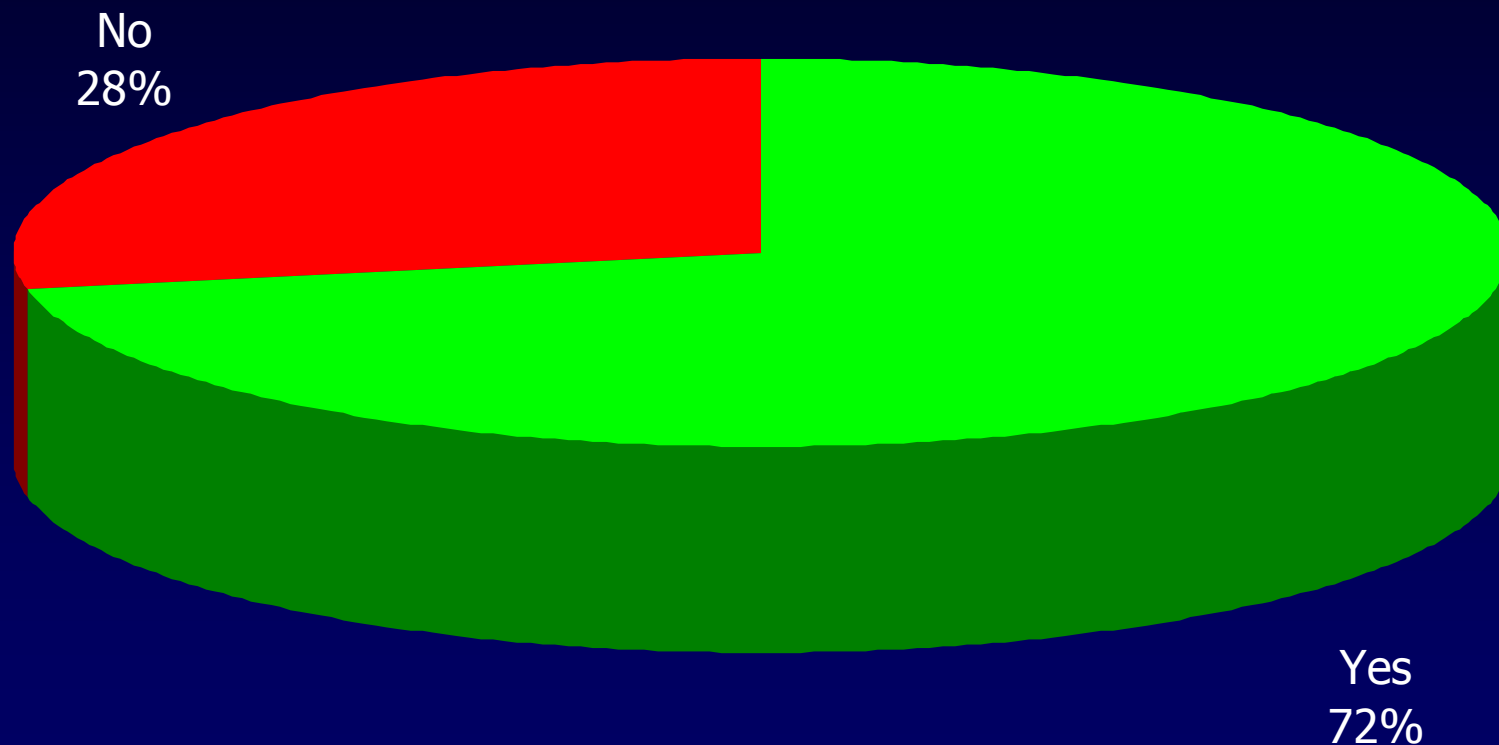


Source: Project Puddle 2003 n=25

Q.16

# Behaviour changed in past year specifically to conserve water

Base: All informants

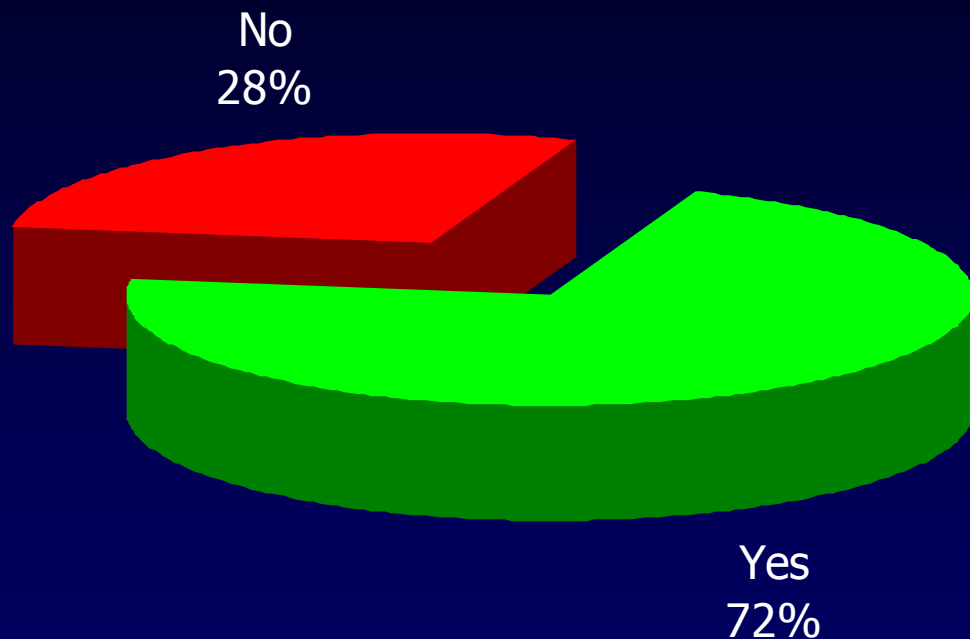


Source: Project Puddle 2003 n=25

# Reason for changing behaviour to conserve water

Base: All informants who changed behaviour

Yes (n=18)



**Information provided by government on water conservation**

**Had to use less, price of services increased**

**Had to adhere to water restrictions**

**Greater awareness to save water / greater responsibility to the environment**

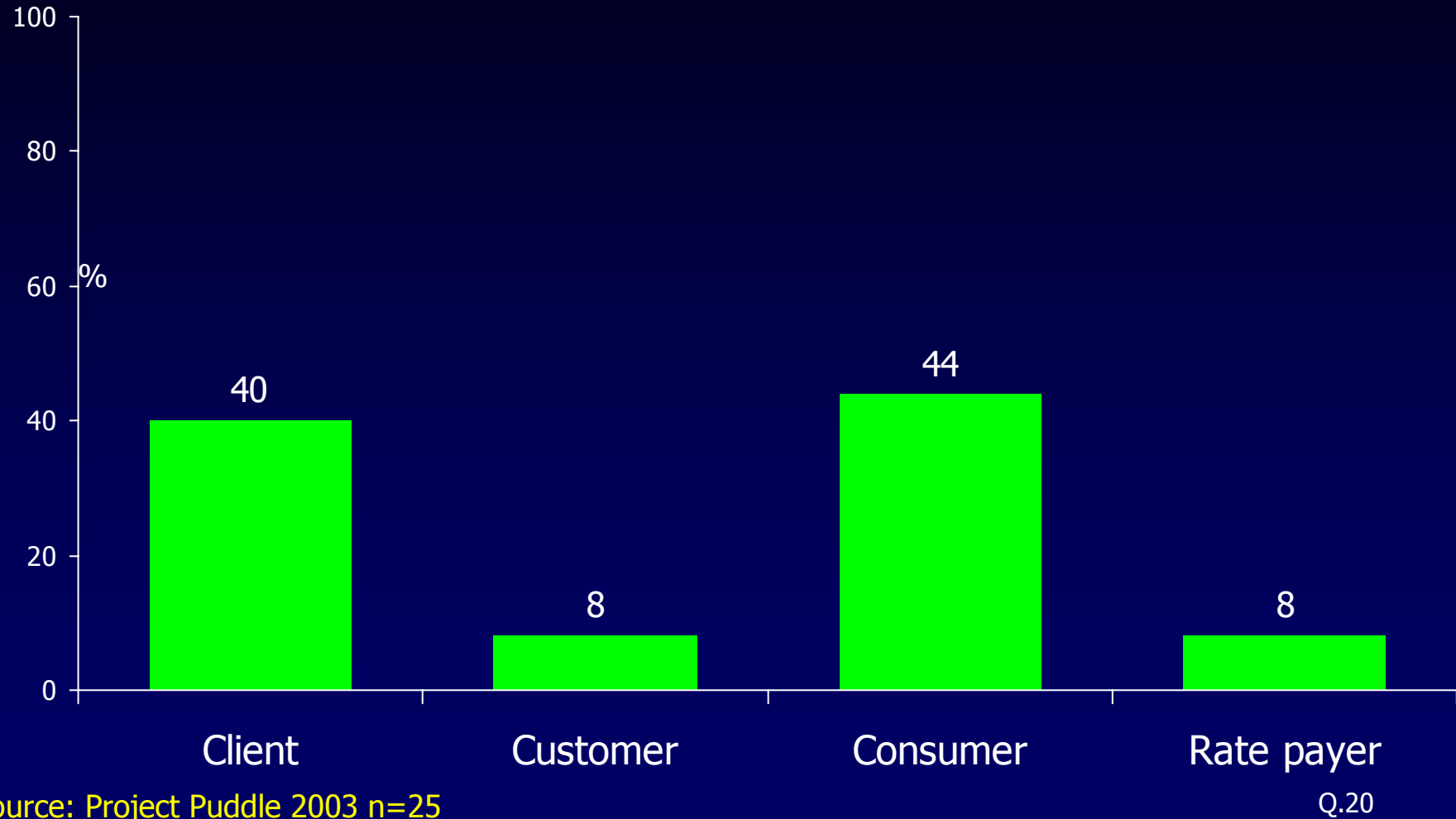
**Greater recovery of waste water**

Q.17, 18

Source: Project Puddle 2003 n=25

# Relationship between user and supplier

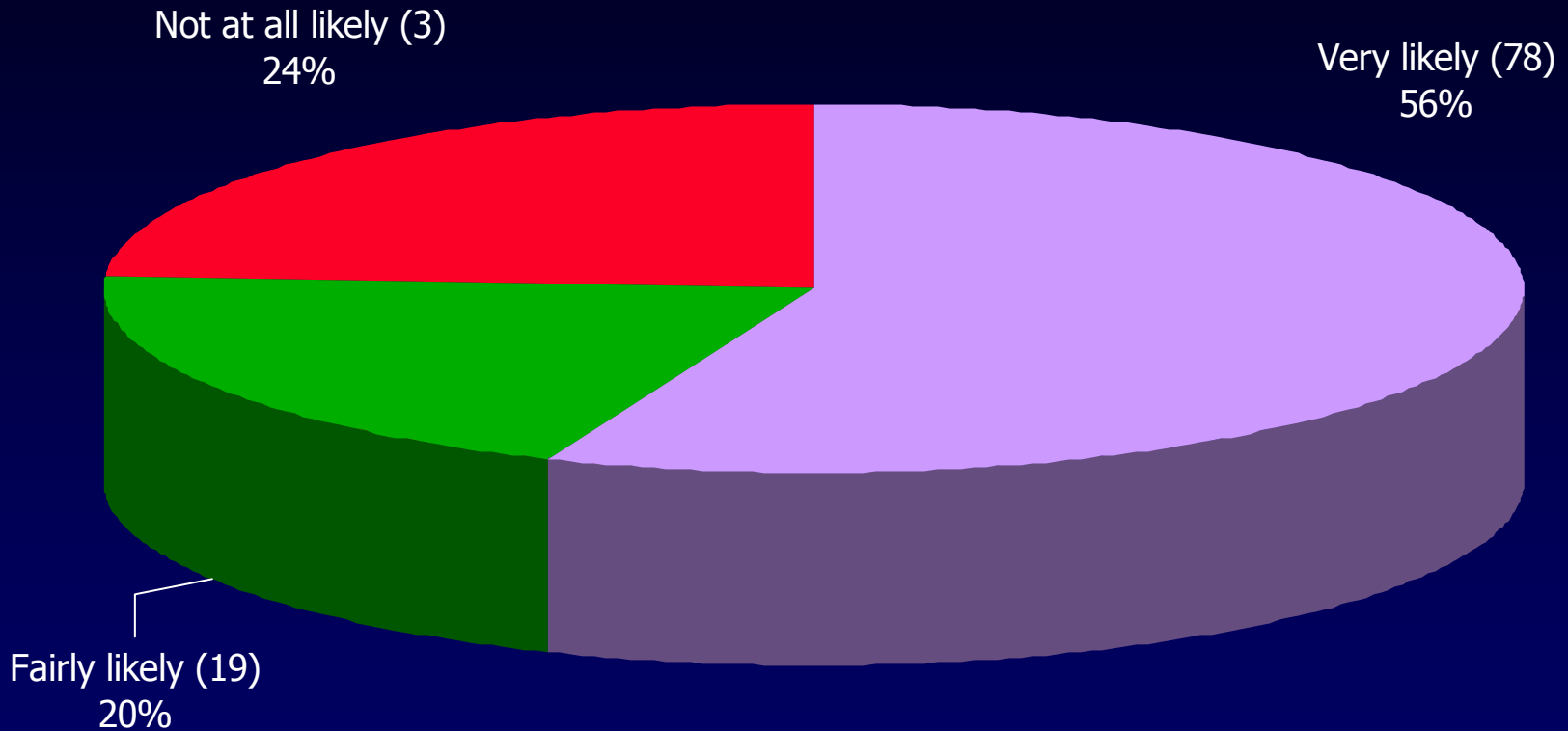
Base: All informants



Source: Project Puddle 2003 n=25

# Likelihood of using treated Waste Water for non-drinking at 50% of the price

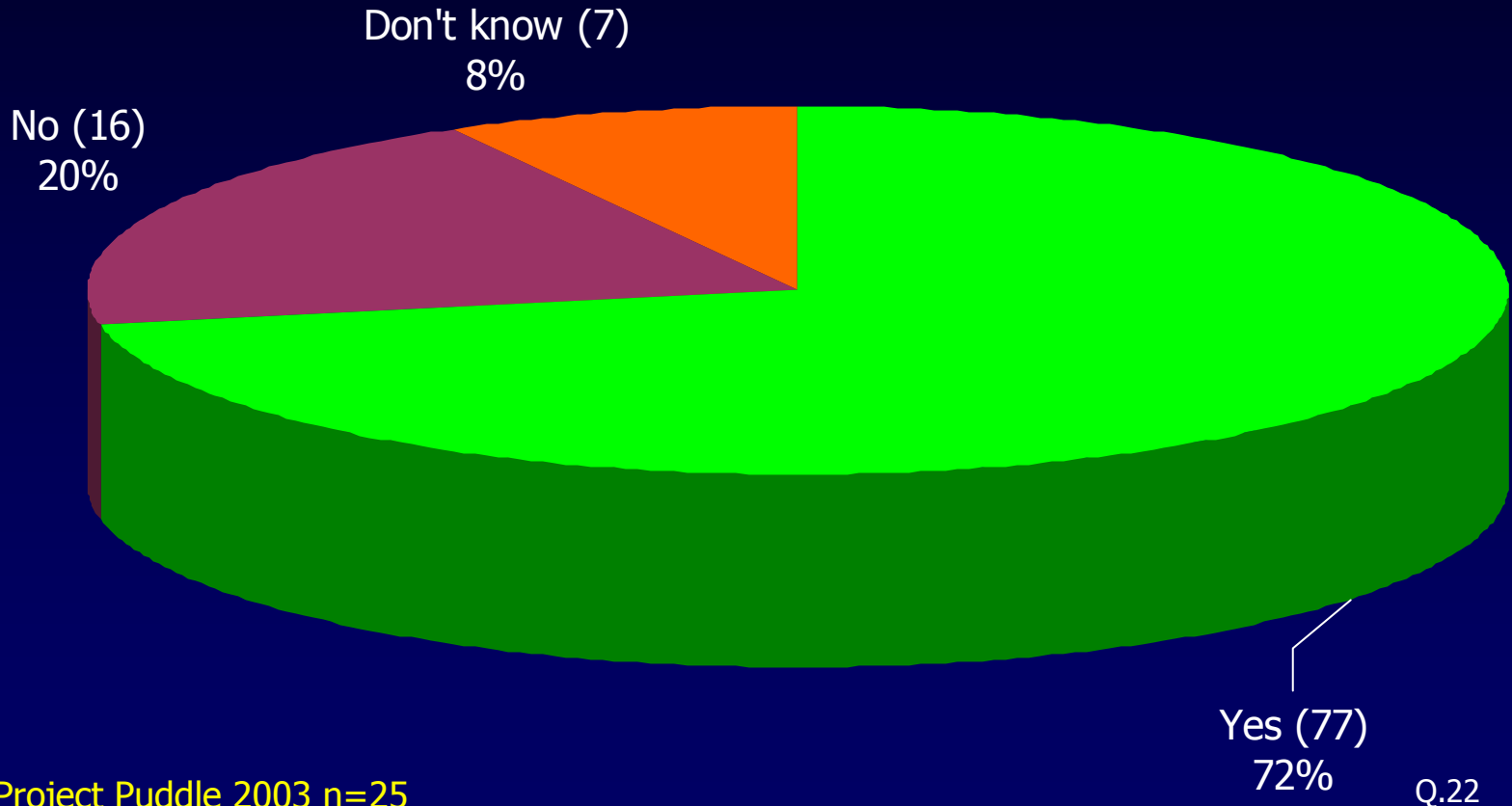
Base: All informants



Source: Project Puddle 2003 n=25

# Would a rising tariff scale encourage businesses to use water more efficiently?

Base: All informants

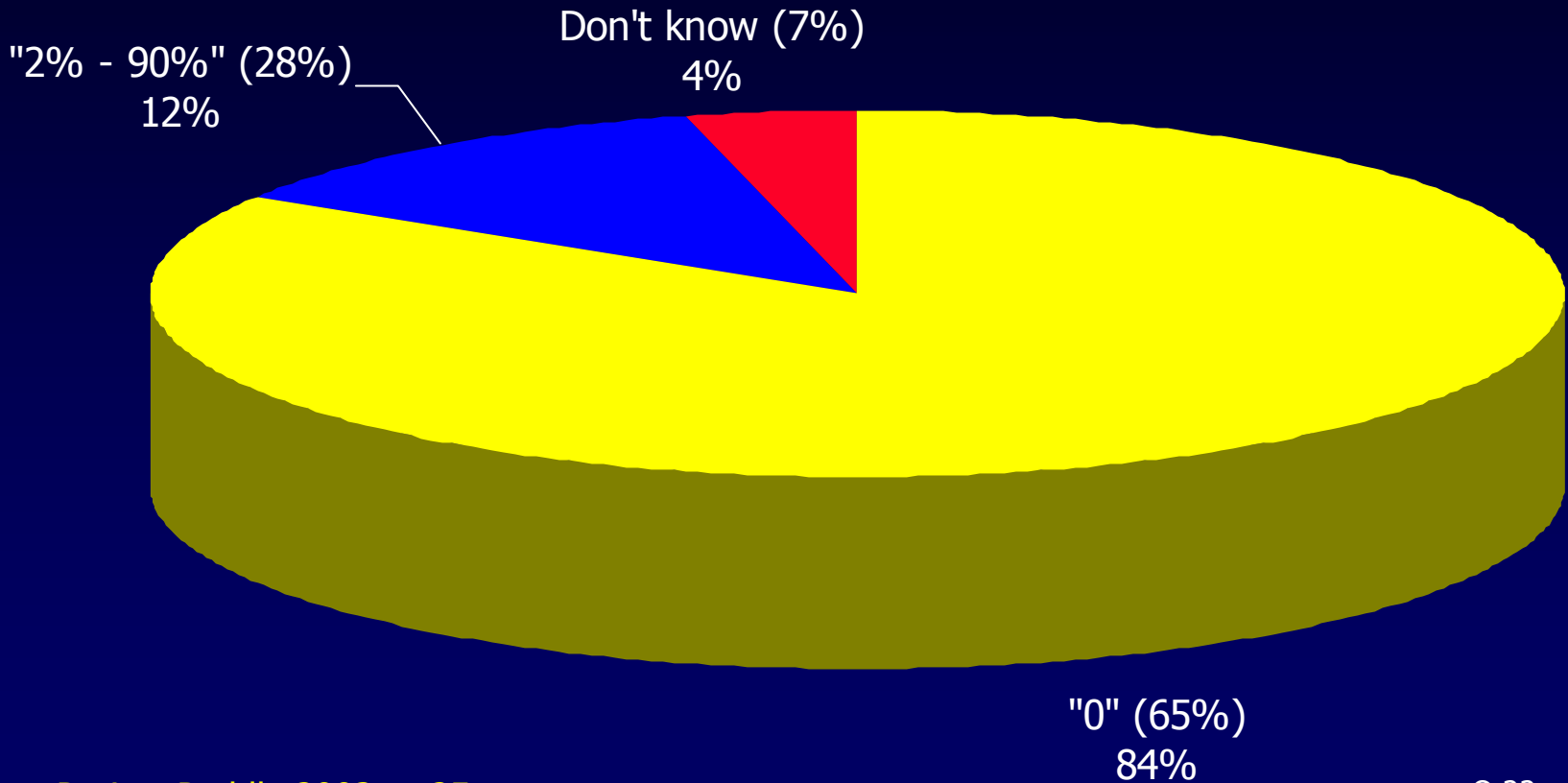


Source: Project Puddle 2003 n=25



# Percentage of water that businesses recycles

Base: All informants



Source: Project Puddle 2003 n=25

A stylized graphic of a globe in shades of blue, positioned on the left side of the slide. It features a circular outline and several curved lines representing latitude and longitude.

**Miscellaneous  
consumers off the  
bulk pipelines**

# Satisfaction with providing drinking water

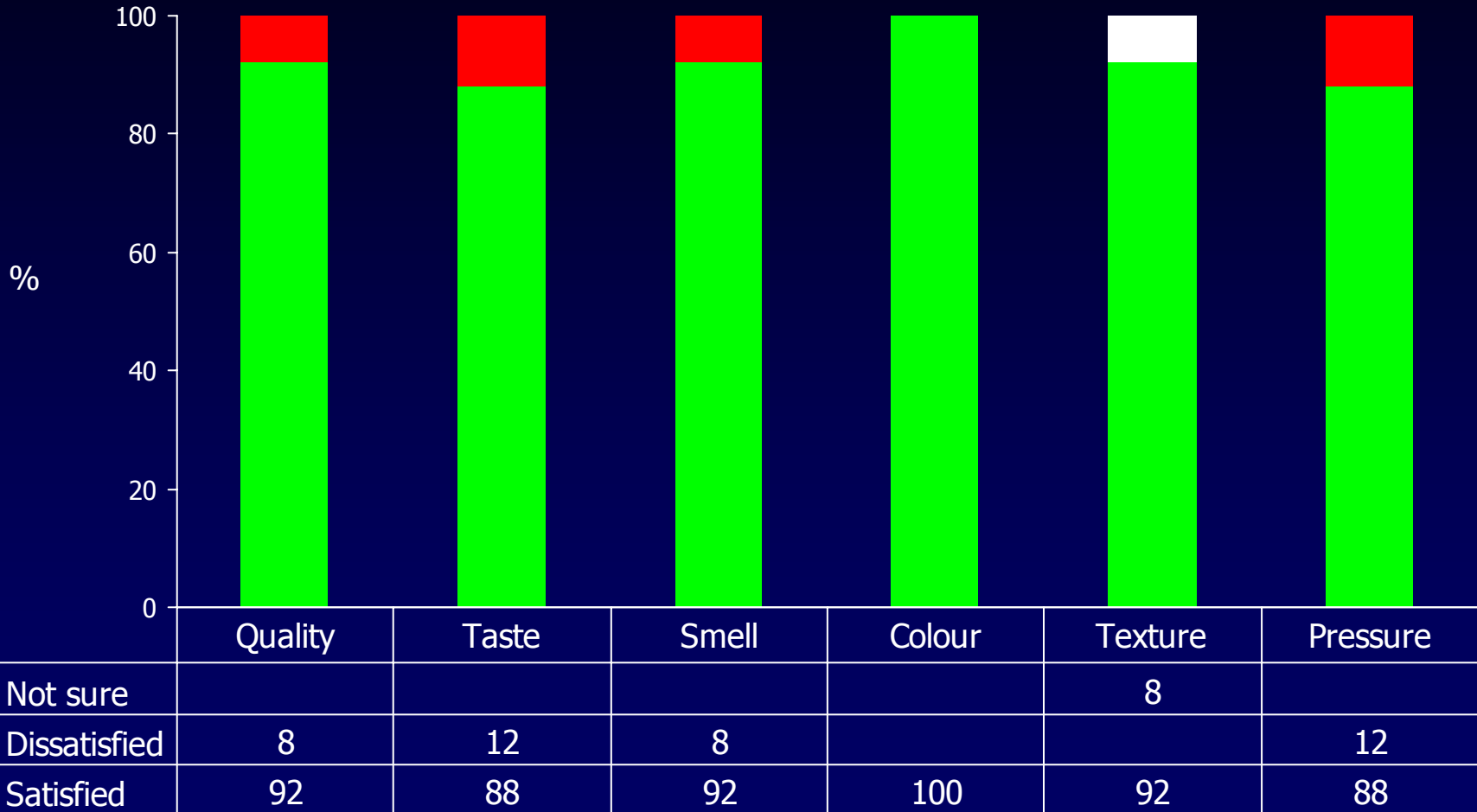
Base: All informants



Source: Project Puddle 2003 n=25

# Levels of satisfaction with water

Base: All informants

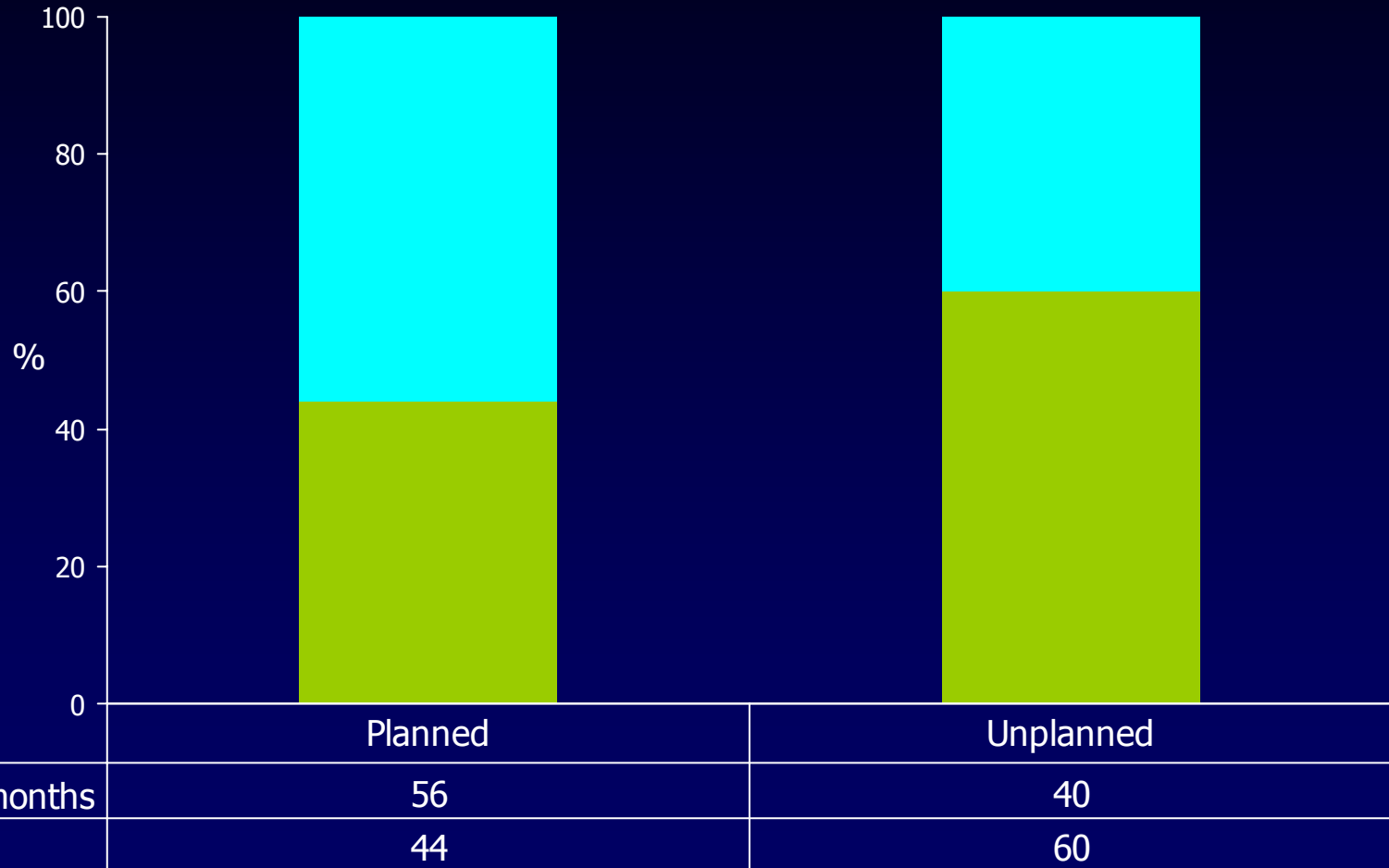


Source: Project Puddle 2003 n=25

Q.7

# Frequency of experiencing interruptions with water supply

Base: All informants

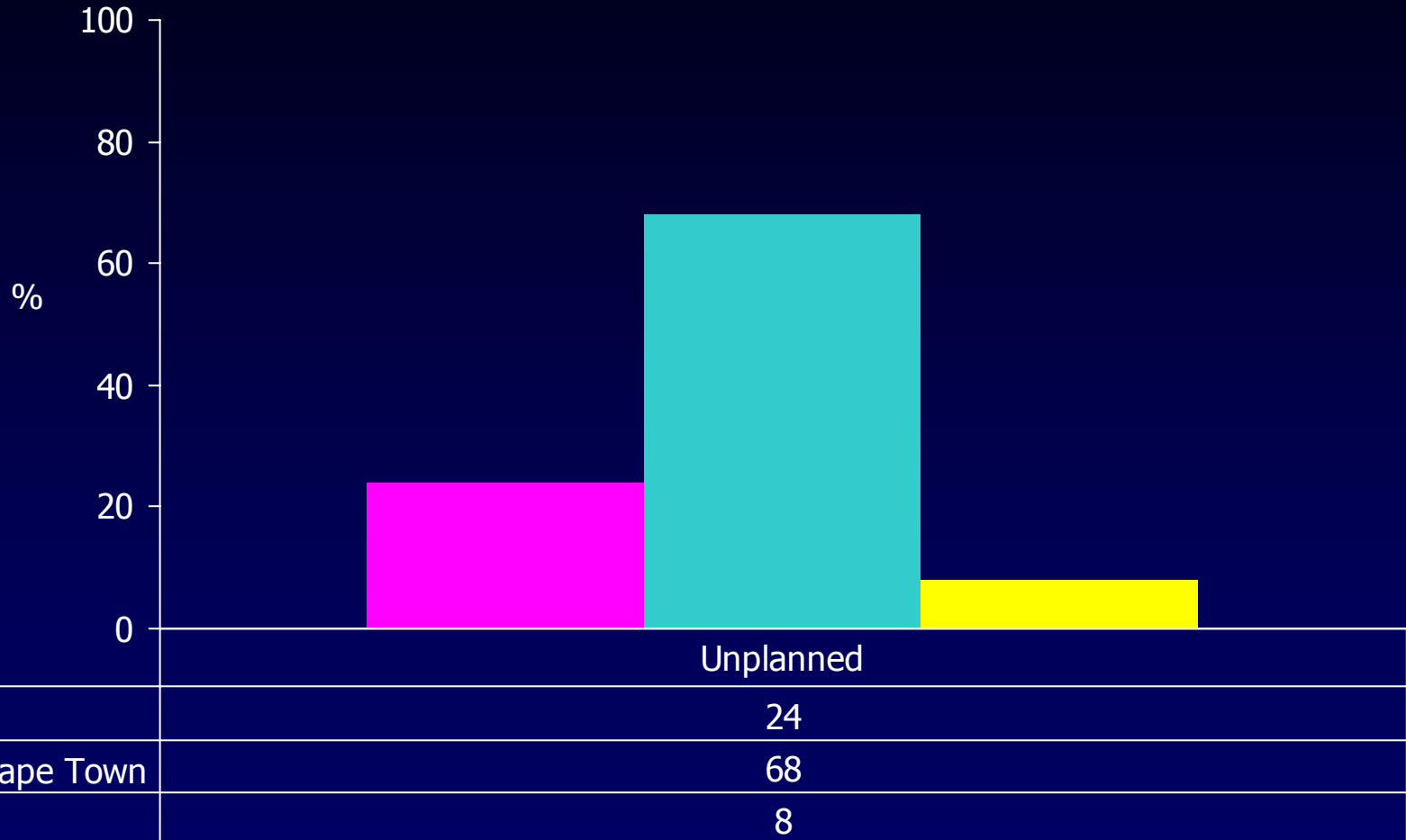


Source: Project Puddle 2003 n=25

Q.4,5

# Dealing with unplanned interruption

Base: All informants

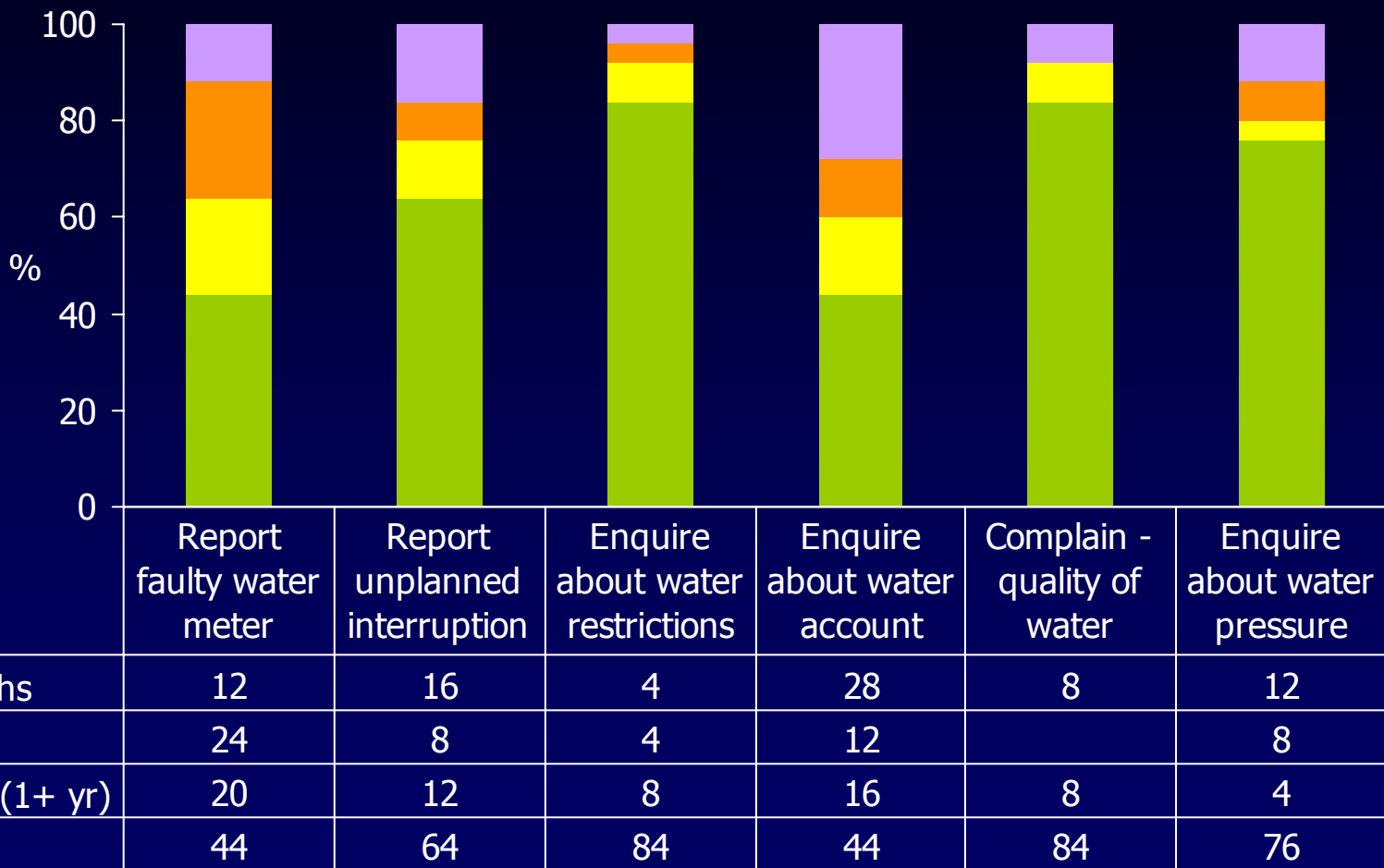


Source: Project Puddle 2003 n=25

Q.6

# Dealings with Municipality

Base: All informants



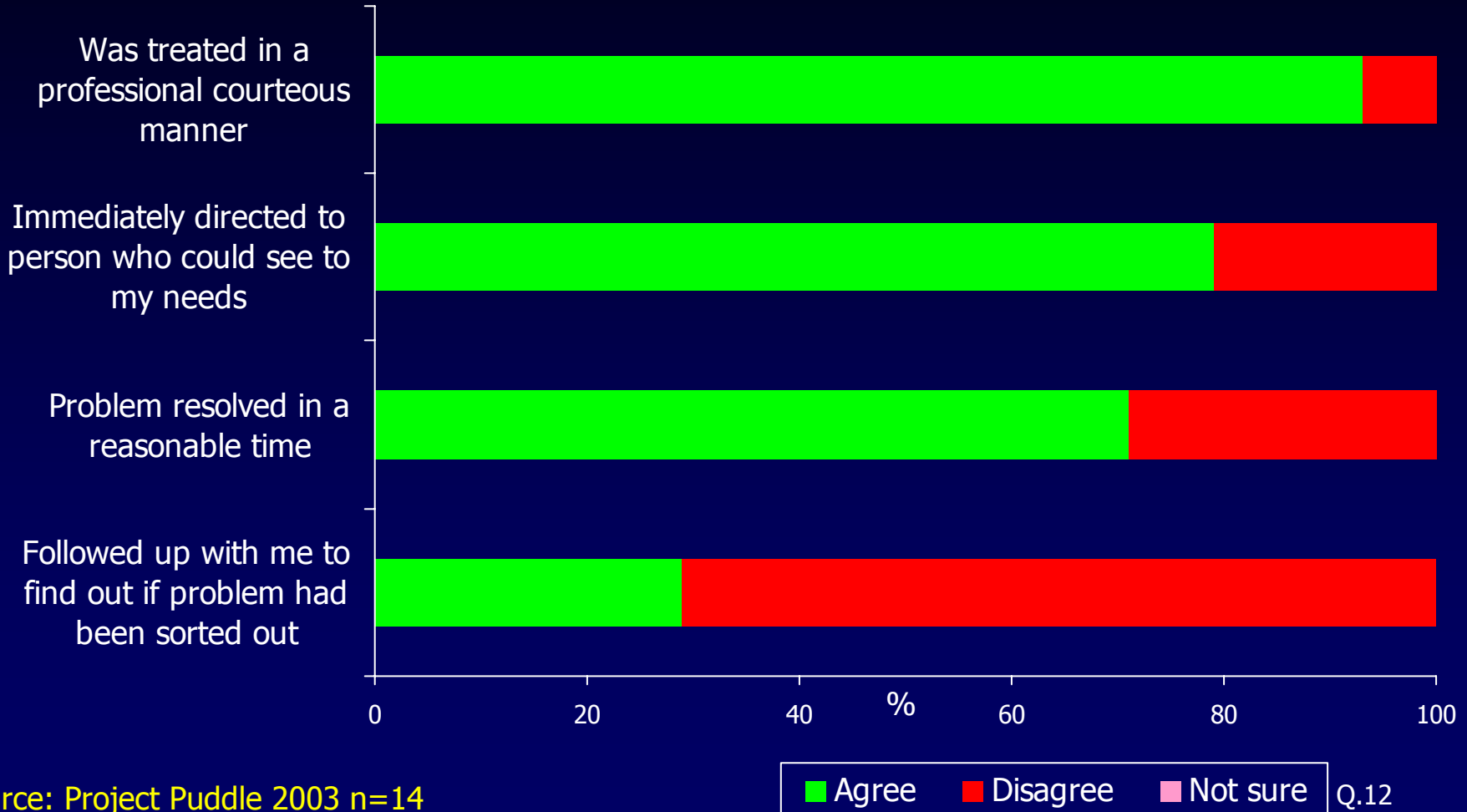
Source: Project Puddle 2003 n=25

Q.11

# When reporting ...

## *Faulty water meter*

Base: All who reported ...

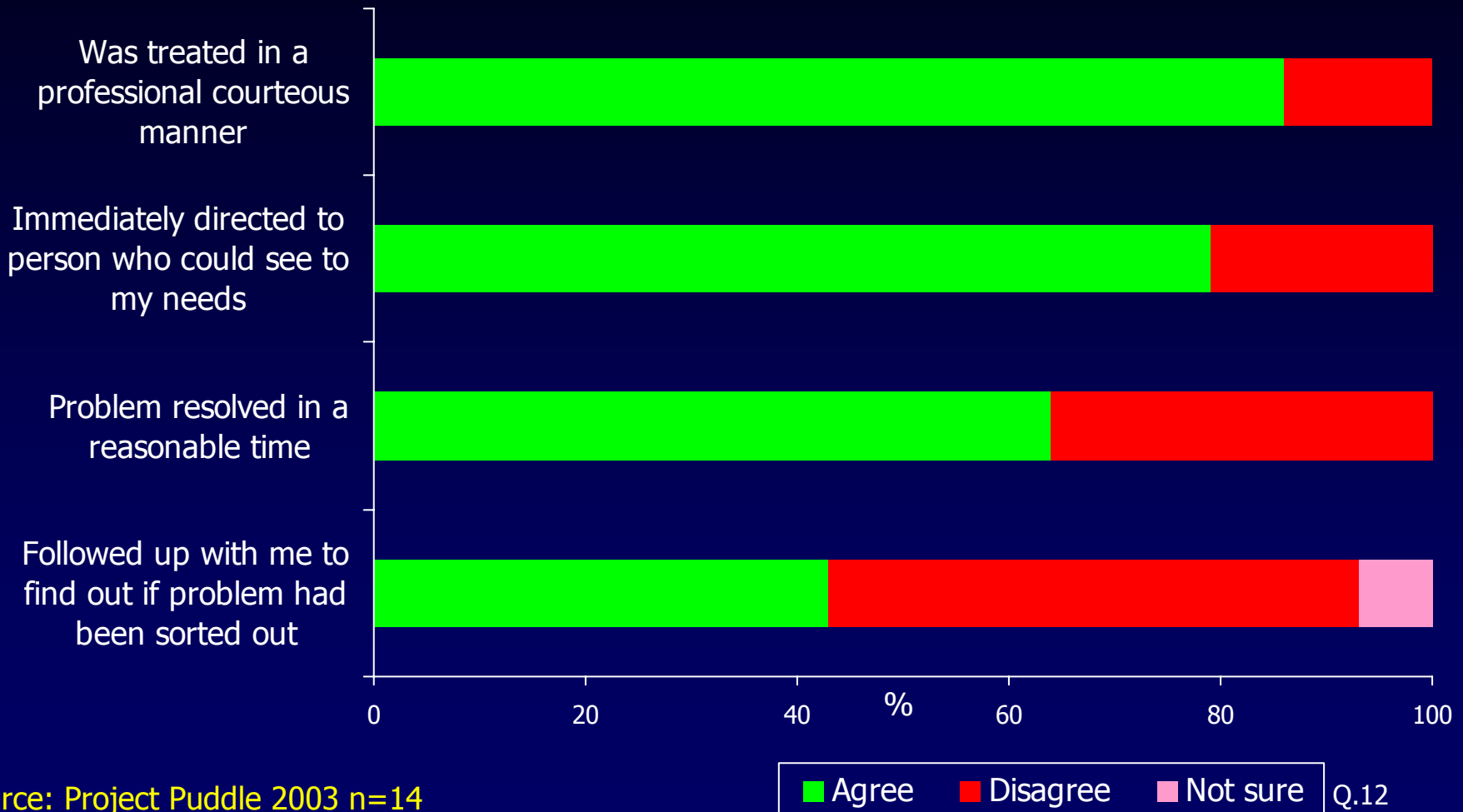


Source: Project Puddle 2003 n=14

# When enquiring ...

## *About water account*

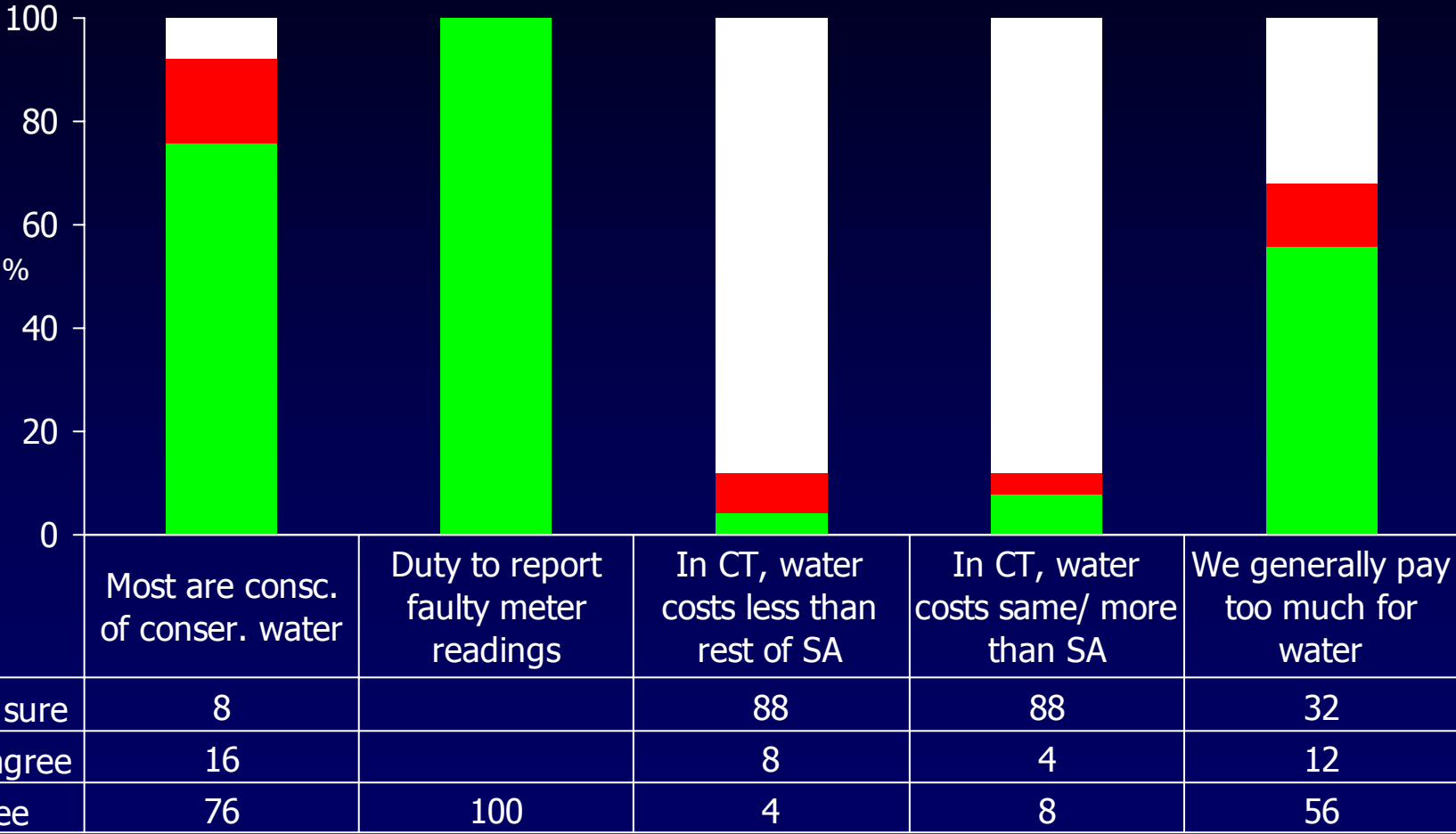
Base: All who reported ...



Source: Project Puddle 2003 n=14

# Perceptions

Base: All informants

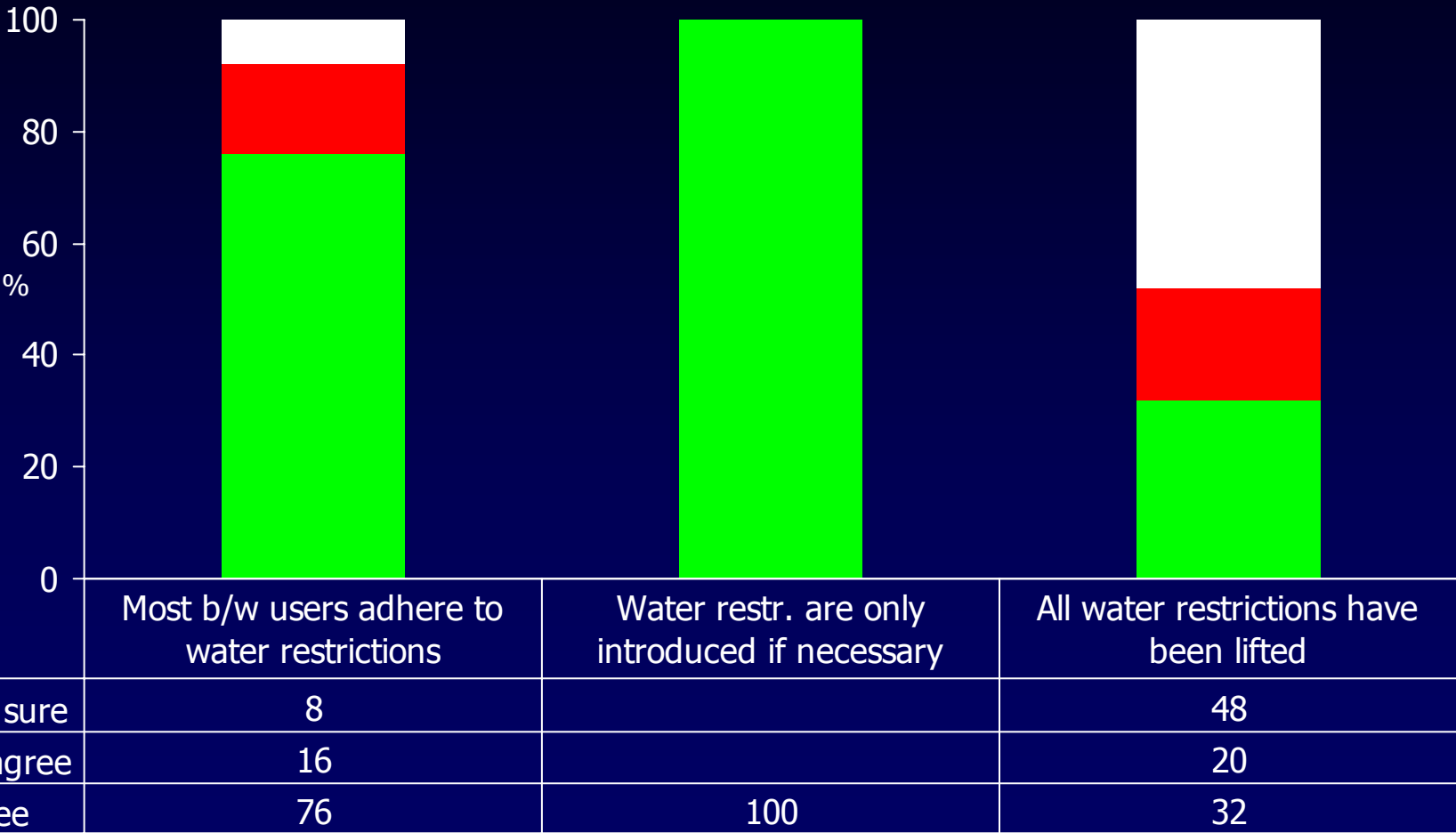


Source: Project Puddle 2003 n=25

Q.10

# Perceptions

Base: All informants

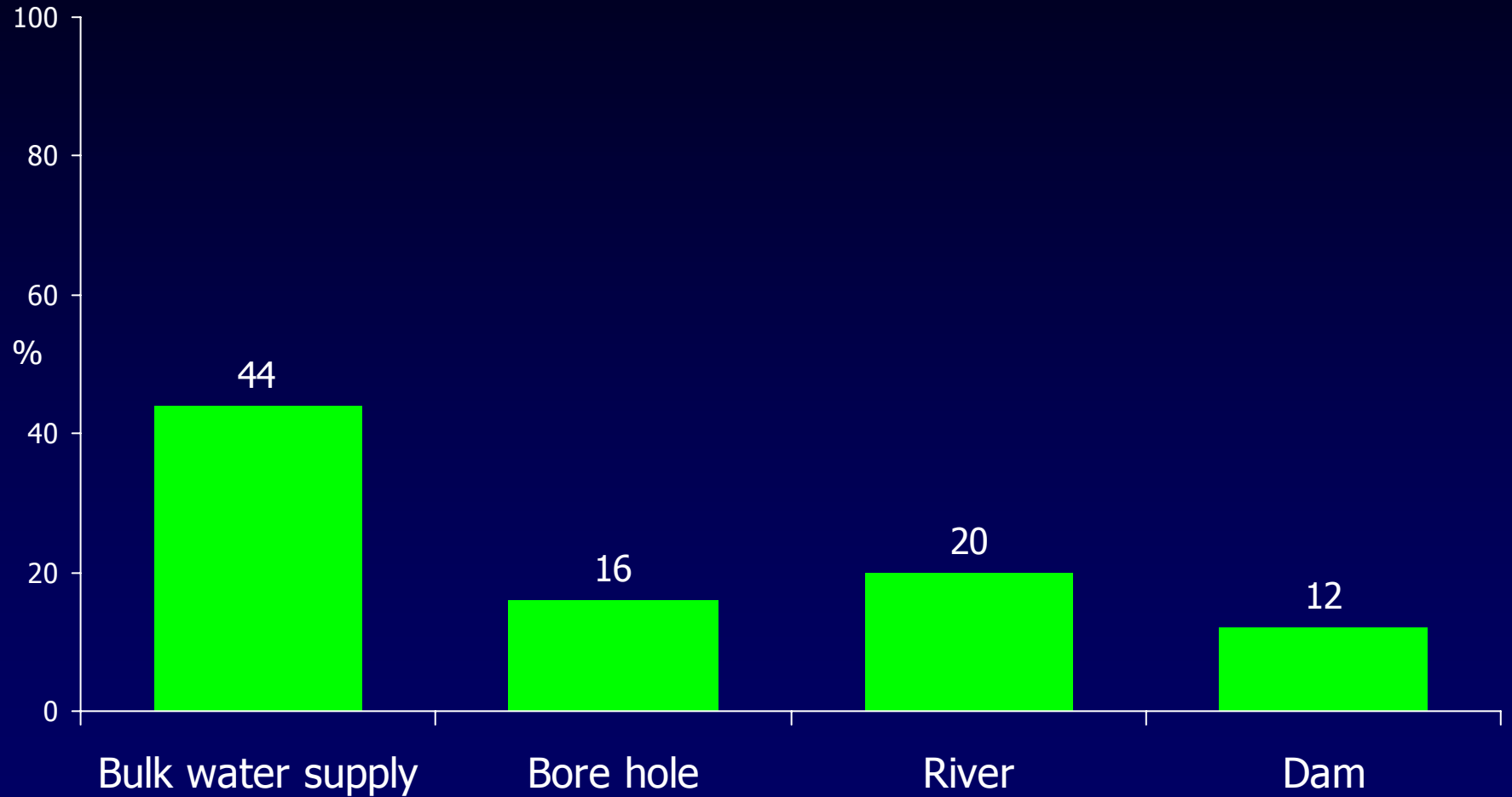


Source: Project Puddle 2003 n=25

Q.10b

# Used for irrigation

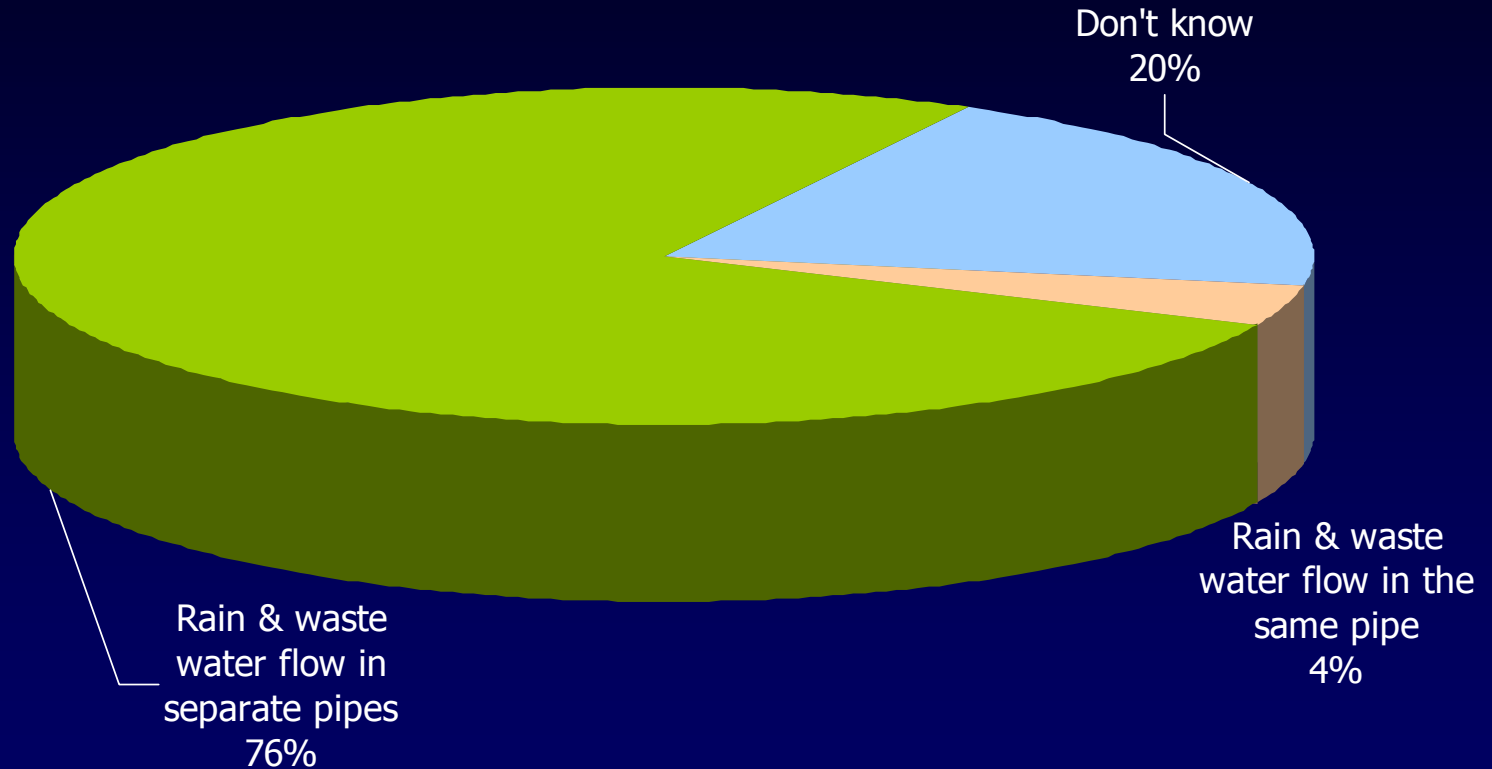
Base: All informants



Source: Project Puddle 2003 n=25

# Rain water and waste water flow

Base: All informants

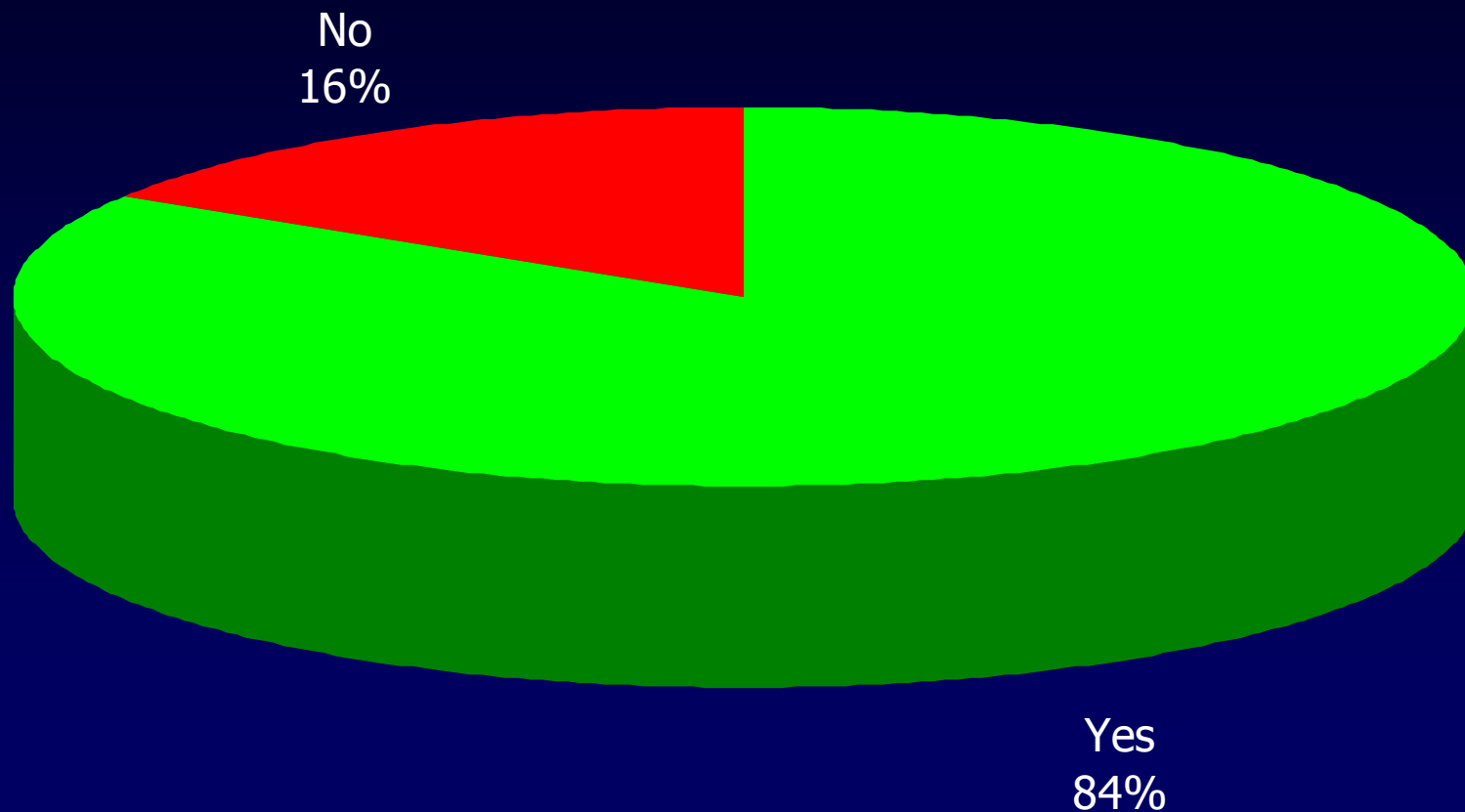


Source: Project Puddle 2003 n=25

Q.16

# Behaviour changed in past year specifically to conserve water

Base: All informants



Source: Project Puddle 2003 n=25

# Reason for changing behaviour to conserve water

Base: All informants who changed behaviour

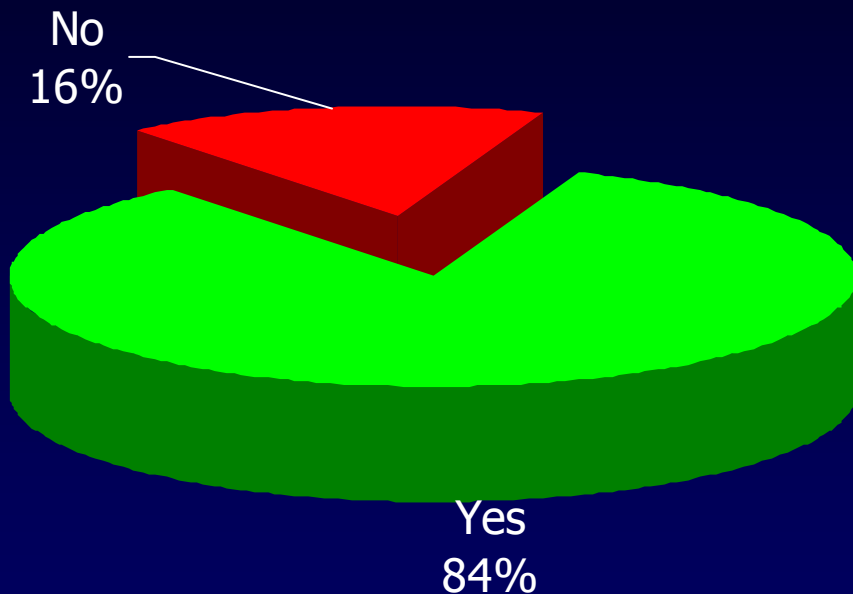
Yes (n=21)

**Had to adhere to water restrictions**

**Had to use less, price of services increased**

**Greater awareness to save water / greater responsibility to the environment**

**Information provided by government on water conservation**

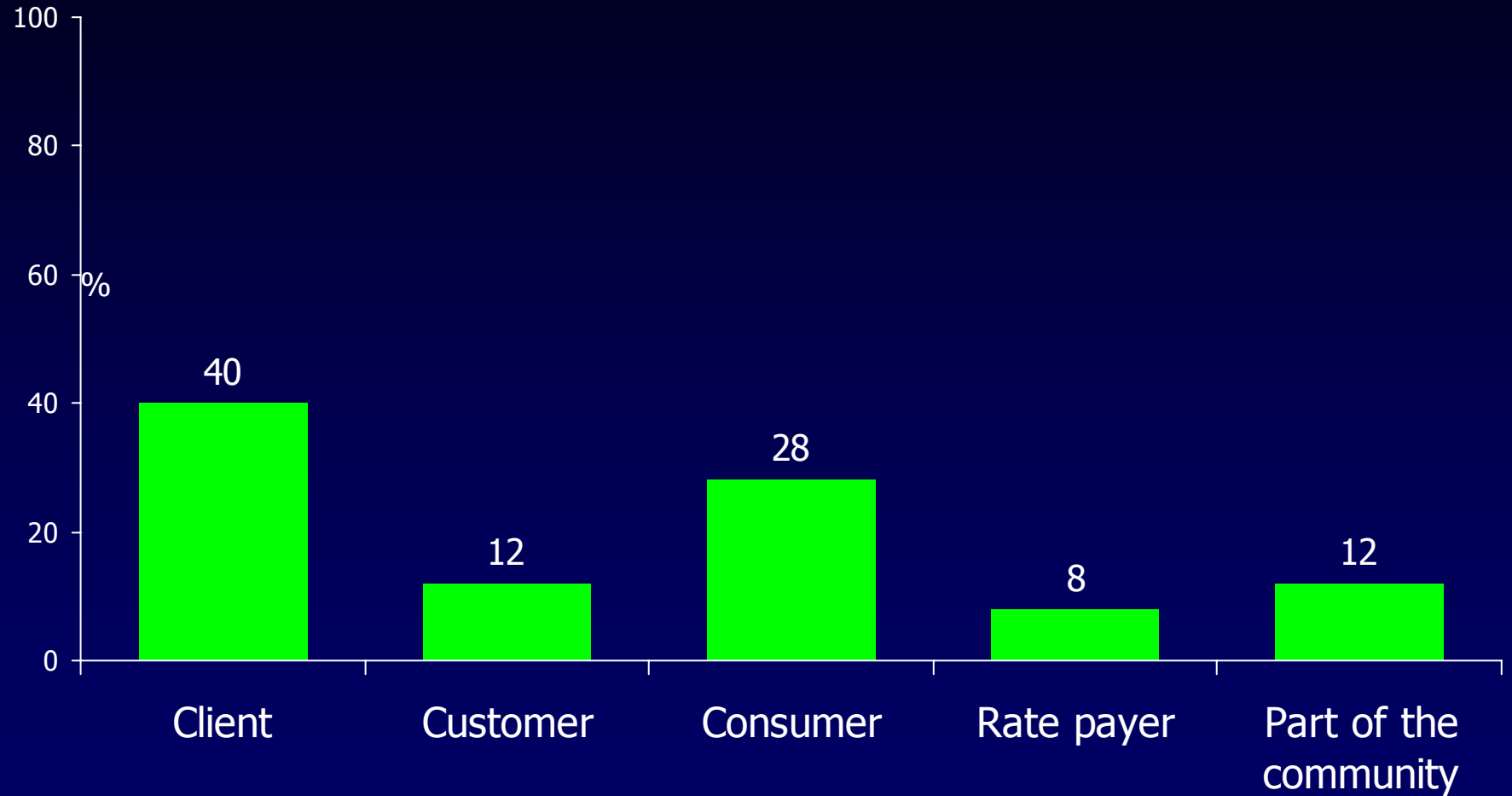


Source: Project Puddle 2003 n=25

Q.17, 18

# Relationship between user and supplier

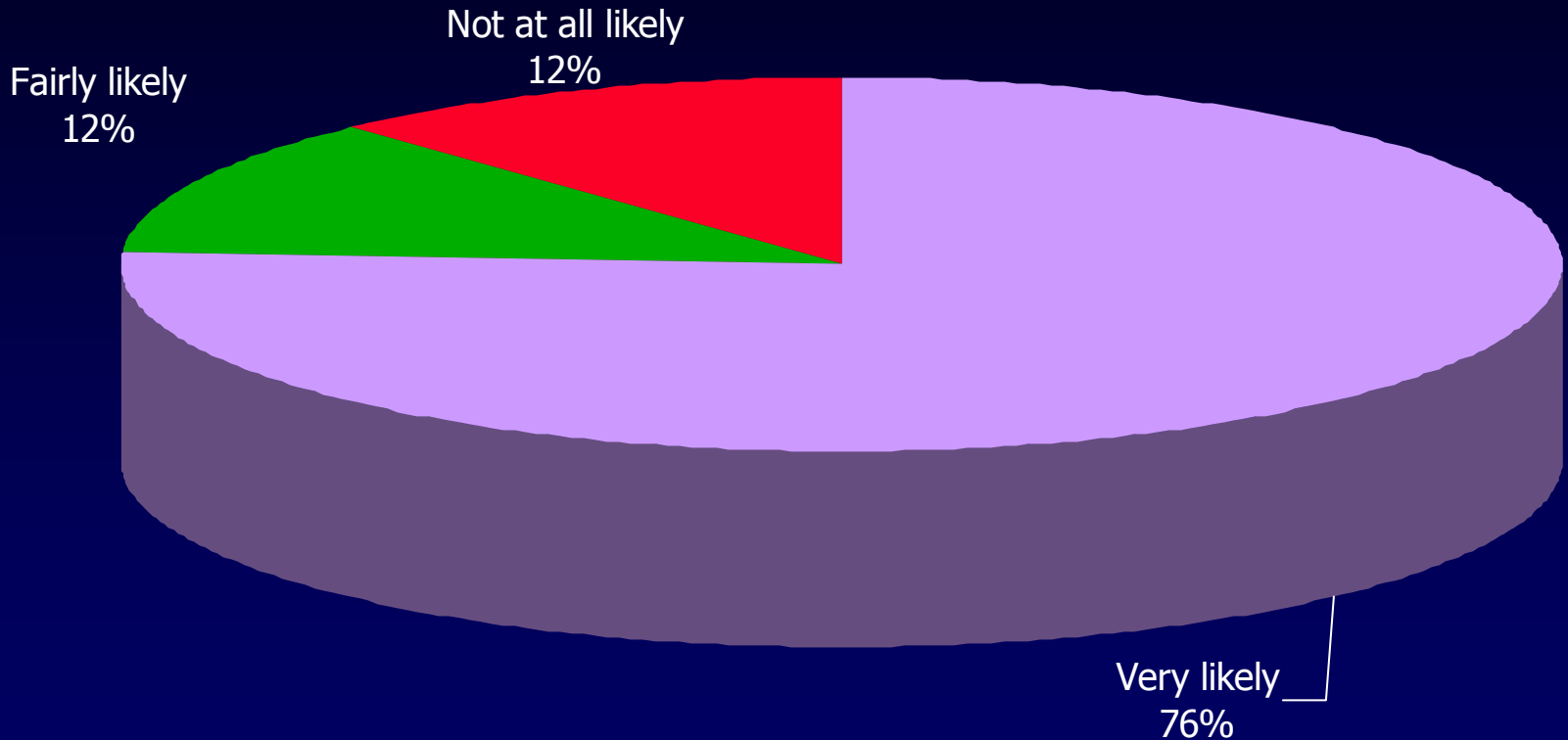
Base: All informants



Source: Project Puddle 2003 n=25

# Likelihood of using treated Waste Water for non-drinking at 50% of the price

Base: All informants

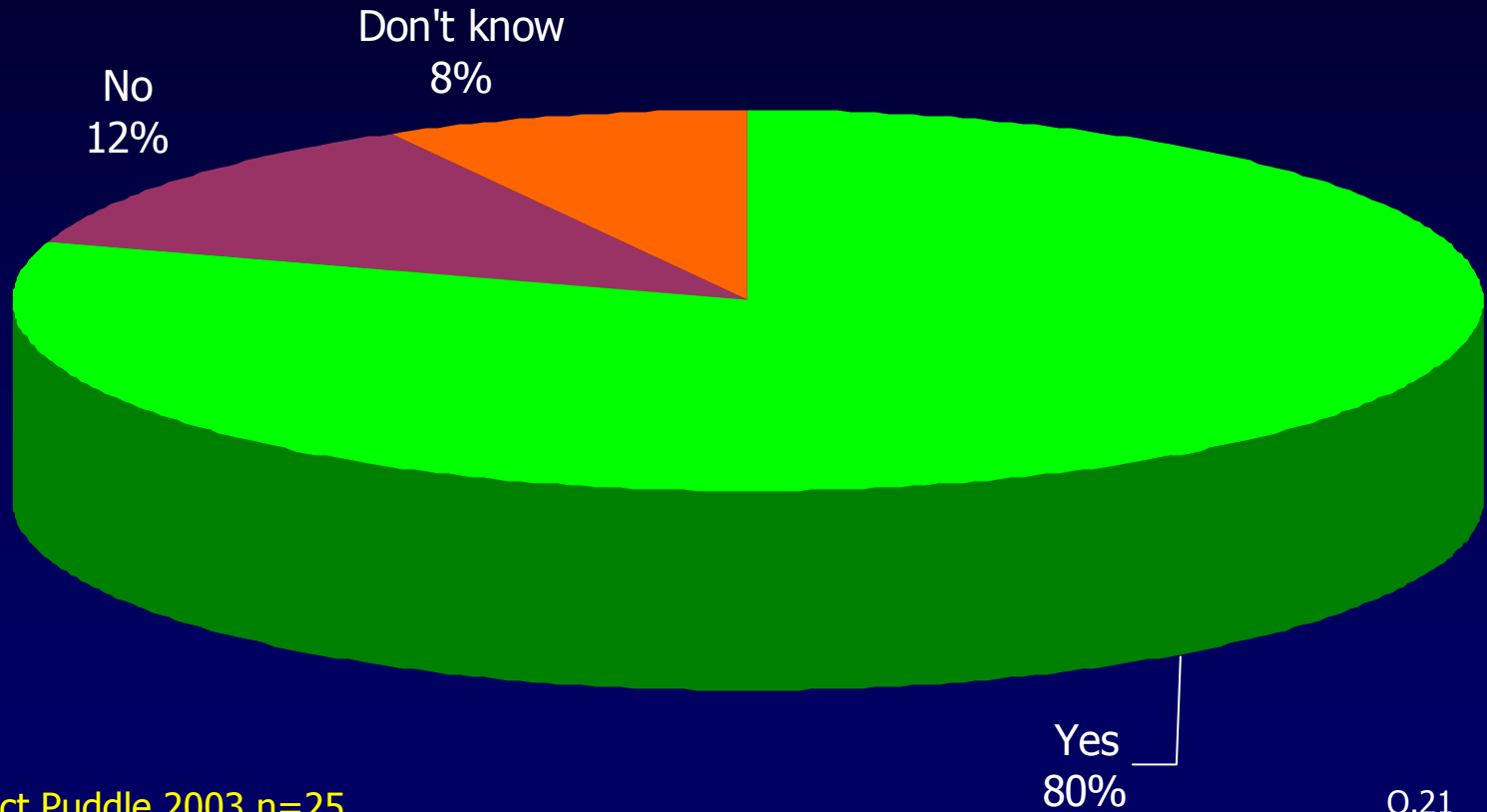


Source: Project Puddle 2003 n=25

Q.22

# Would a rising tariff scale encourage miscellaneous consumers off the bulk pipelines to use water more efficiently?

Base: All informants



Source: Project Puddle 2003 n=25

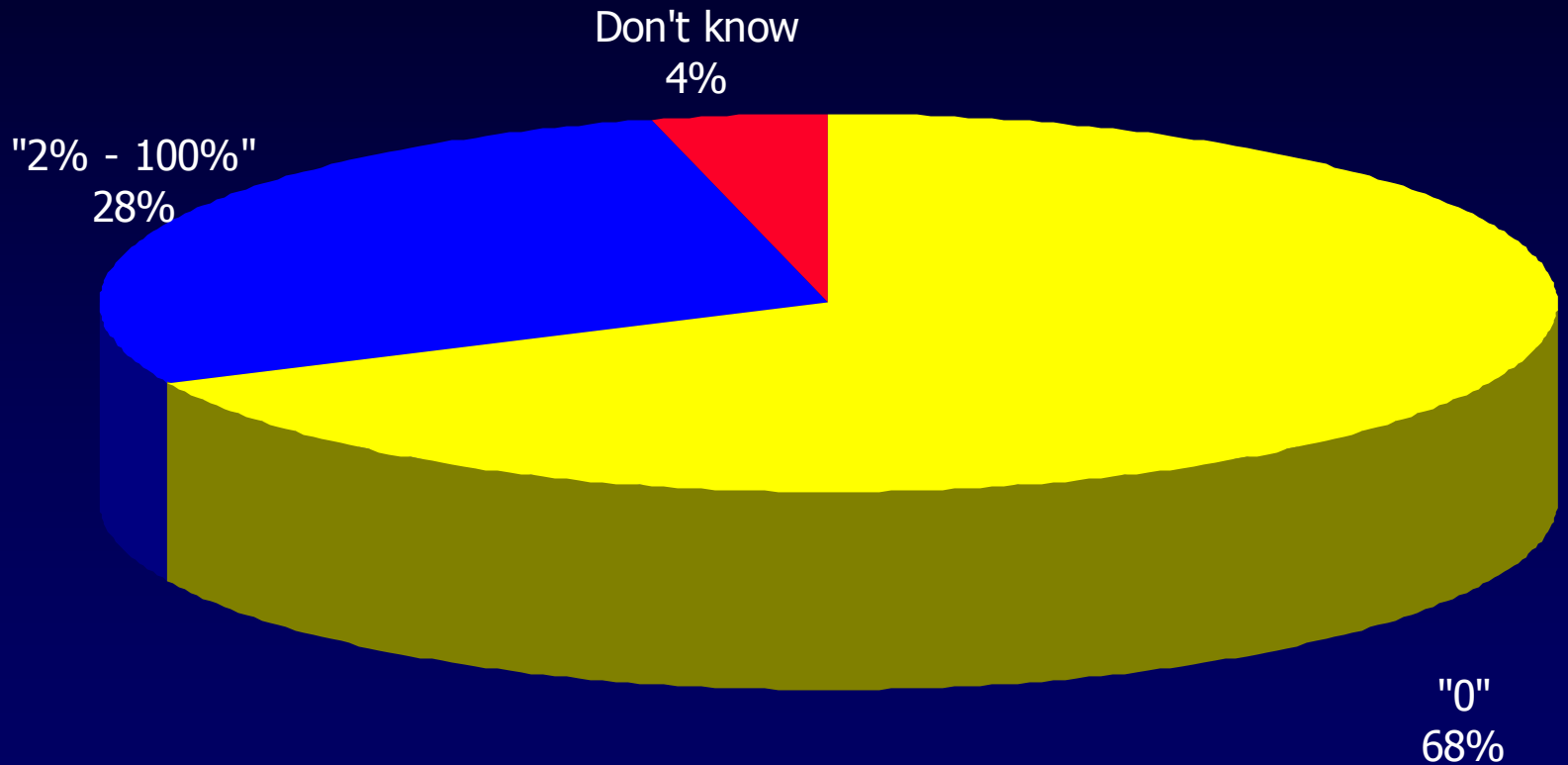
Yes  
80%

Q.21

Bulk

# Percentage of water that miscellaneous consumers off the bulk pipelines recycle

Base: All informants



Source: Project Puddle 2003 n=25

Q.22



**Thank You**