Benchmarking of Utilities for Performance Improvement

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CONTEXT

Most public utilities not operating efficiently in Africa

- High Unaccounted for Water (NRW)
- Low Cost recovery
- Low Tarrif levels
- High staff per 1000 connections
- Availability of supply

Context cont'd

Problem of capacity to deliver…….

- Decades of public investment
- Poor sector and institutional arrangement choices
- Many public sector management issues
  - Problems of financial viability
  - Accountability
  - Autonomy
  - Lack of regulatory framework
  - Institutional organisation of water service delivery

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Performance Indicators and Benchmarking

"*Benchmarking is the search for industry best practices that lead to superior performance.*"

- Robert C. Camp

It is understood as the process for identification, understanding and adaptation of remarkable practices and processes of other organizations to help the improvement of its own performance

BENCHMARKING has been used as a tool by the water sector industry over the last twenty years

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CONCEPTS OF BM FOR Utility

- Better service quality
- Higher resources productivity
- Higher satisfaction by Consumers
- Higher general return for the company
- Environment improvement
- Basically higher operational efficiency

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The BENCHMARKING Process Requires:

- **Humility** to accept that there may be other Companies with a better performance but under similar socio-economic environment
- **Wisdom** to learn the changes that may arise from comparison
- **Ambition** to introduce the necessary actions
- **Effectiveness** to accomplish the programmed goals

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Benchmarking initiatives

Global and other REgions:

- **IWA**
- **IBNET**
- ***South Asia Utility data book***
- ***Benchmarking of utilities in Brazil***

Regional

- Water Utility Partnership –Performance Indicators and Benchmarking Project

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IWA Benchmarking initiative

The objectives of the initiative was to:

- develop generally accepted procedures and methodologies able to provide decision makers with an overall perception of the utility performance as a sound basis for making strategic choices.
- Clear definition of a reference framework for Performance Indicators and Benchmarking methodologies, as well as adequate models of aggregation that fit the basic needs of the key types of user.

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IWA's motivation

- Demand from IWA members for guidelines on Performance Indicators

  – the definition of a common reference for PI that fits the basic common needs of the key types of users in the Water Industry

- Main target users: the **utilities** themselves.

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Output

A standardised PI language, covering:

- syntax (structure)
- morphology/semantics (vocabulary and definitions)
- etymology (from data to PI)

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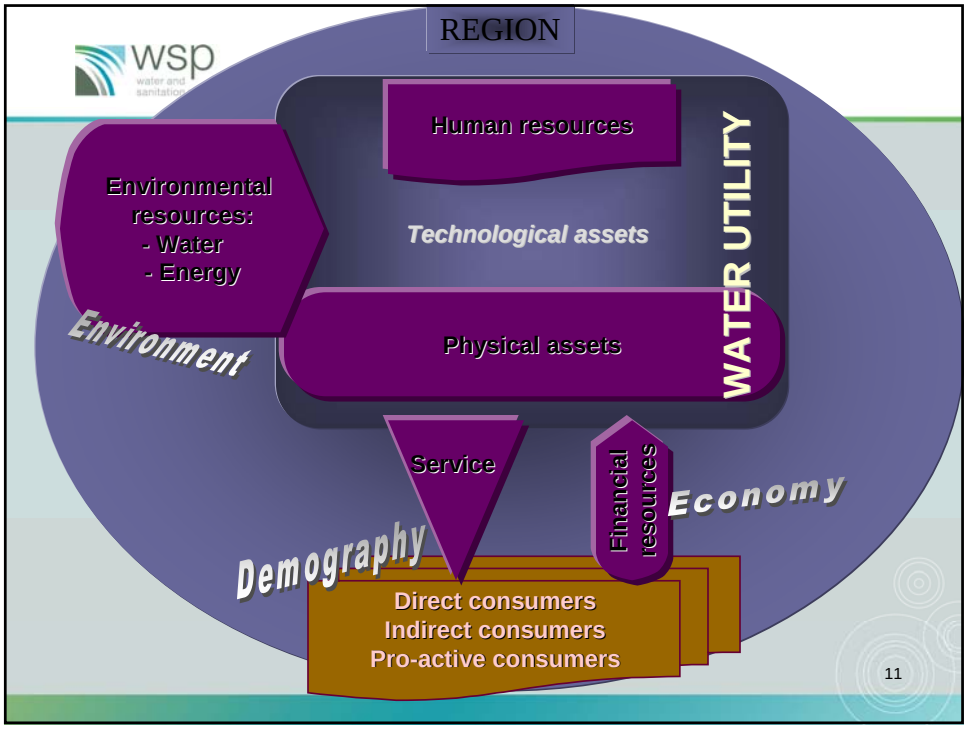

Structure of the final document

Introduction

Definition diagrams
- water balance
- water losses
- utility functions
- financial definitions

Performance indicators
- Water resources indicators
- Personnel indicators
- Physical indicators
- Operational indicators
- Quality of service
- Financial indicators

Context information
- **Utility profile**
- **System profile**
- **Region profile**

Glossary

Input data definition and processing rules

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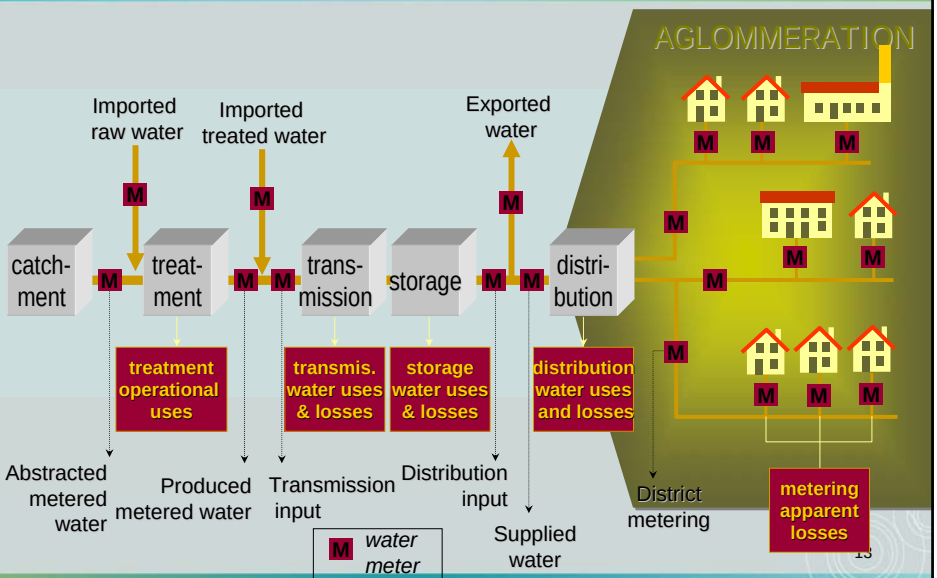
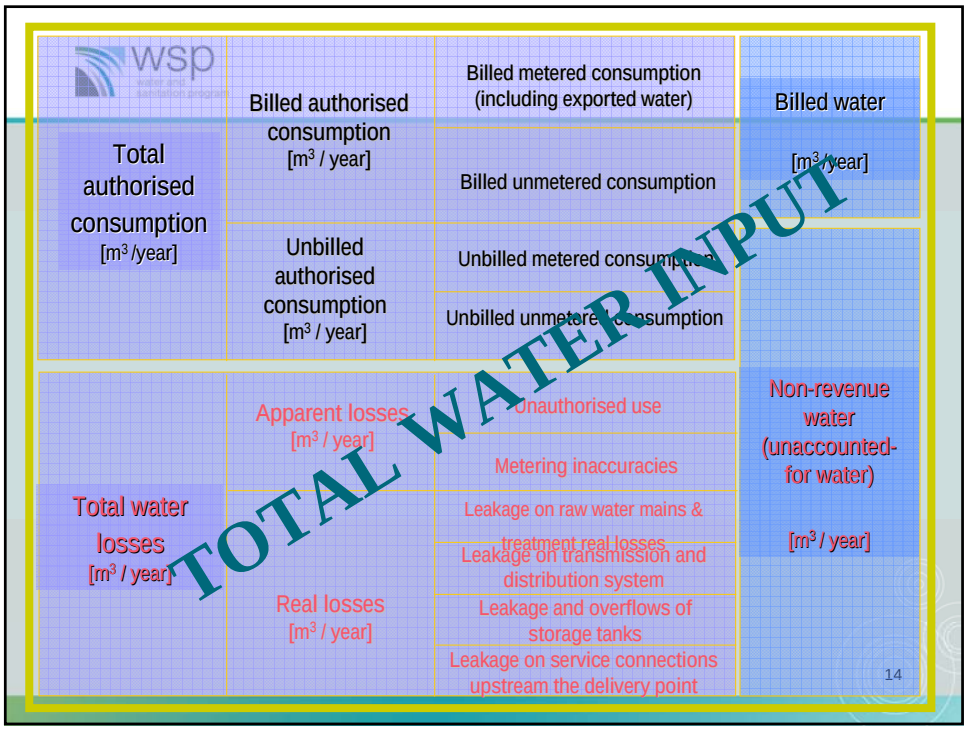
Definition of water balance terms





Number of PI proposed

	High Level	Intermed. Level	Lower Level	
Water resources indicators	2	0	0	2
Personnel indicators	1	4	10	15
Physical indicators	0	5	8	13
Operational indicators	8	13	16	37
Quality of service indicators	8	19	3	30
Financial indicators	7	15	16	38
	26	56	53	135

High level PI

- Water resources indicators *(2 PI)*
  - Efficiency of water resources use *(%)*
  - Resources availability ratio *(%)*
- Personnel indicators *(1 PI)*
  - Employees per connection *(No./1000 connections)*
- Physical indicators *(0 PI)*

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High level PI *(cont.)*

- Operational indicators *(8 PI)*
  - Mains rehabilitation *(% per year)*
  - Total water losses *(l/connection/day)*
    - *real losses per service connection (l/connection/day)*
    - *apparent losses per service connection (l/connection/day)*
  - Mains failures *(No./100 km/year)*
  - Service connection failures *(No./1000 connections/ year)*
  - Water quality - Samples tested *(No. /10^6 m^3/year)*

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High level PI (cont.)

- Quality of service indicators *(8 PI)*
  - Buildings supply coverage *(%)*
  - Public taps and standpipes
    - distance to households *(m)*
    - quantity of water consumed *(%)*
  - Continuity of supply *(%)*
  - Water interruptions *(%)*
  - Quality of supplied water *(%)*
  - Service complaints *(complaints/connection/year)*
  - Billing complaints *(complaints/connection/year)*

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High level PI (cont.)

- Financial indicators *(7 PI)*
  - Average water charges for direct consumption *(US$/m³)*
  - Average water charges for exported water *(US$/m³)*
  - Total cost coverage ratio *(-)*
  - Operating cost ratio *(-)*
  - Contribution of internal sources to investment *(%)*
  - Current ratio *(-)*
  - Non-revenue water *(%)*

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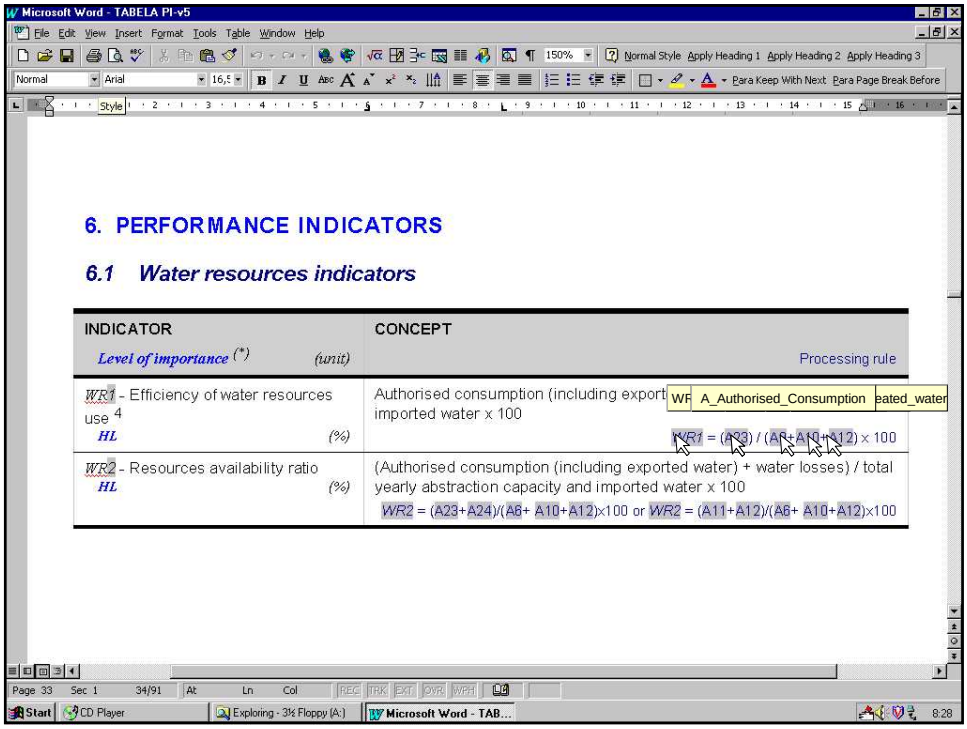
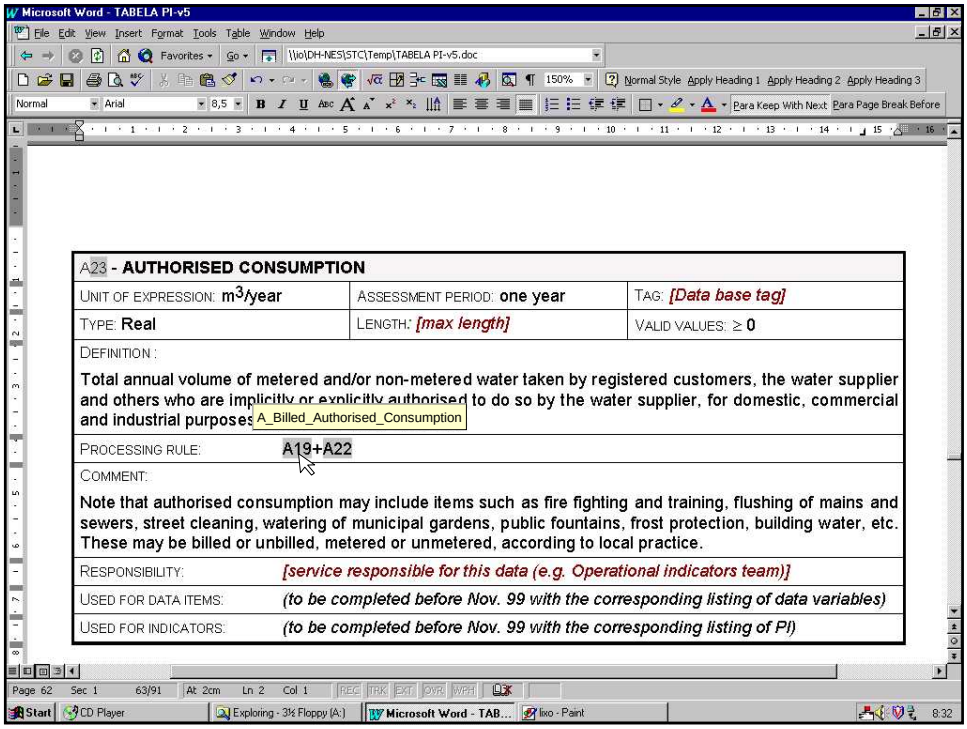
The output was in word files. Demonstration given below


Microsoft Word - TABELA PI-v5
6. PERFORMANCE INDICATORS
6.1 Water resources indicators
INDICATOR
Level of importance (*) (unit)
CONCEPT
Processing rule
WR1 - Efficiency of water resources use 4
HL (%)
Authorised consumption (including exported water) / water input (including imported water x 100
WR1 = (A23) / (A8+A10+A12) x 100
WR2 - Resources availability ratio
HL (%)
(Authorised consumption (including exported water) + water losses) / total yearly abstraction capacity and imported water x 100
WR2 = (A23+A24)/(A8+ A10+A12)x100 or WR2 = (A11+A12)/(A8+ A10+A12)x100


Microsoft Word - TABELA PI-v5
A23 - AUTHORISED CONSUMPTION
UNIT OF EXPRESSION: m3/year
ASSESSMENT PERIOD: one year
TAG: [Data base tag]
TYPE: Real
LENGTH: [max length]
VALID VALUES: ≥ 0
DEFINITION :
Total annual volume of metered and/or non-metered water taken by registered customers, the water supplier and others who are implicitly or explicitly authorised to do so by the water supplier, for domestic, commercial and industrial purposes
A_Billed_Authorised_Consumption
PROCESSING RULE: A19+A22
COMMENT:
Note that authorised consumption may include items such as fire fighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains, frost protection, building water, etc. These may be billed or unbilled, metered or unmetered, according to local practice.
RESPONSIBILITY: [service responsible for this data (e.g. Operational indicators team)]
USED FOR DATA ITEMS: (to be completed before Nov. 99 with the corresponding listing of data variables)
USED FOR INDICATORS: (to be completed before Nov. 99 with the corresponding listing of PI)

International Benchmarking Network (IBNET)

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WUP –SERVICE PROVIDER BENCHMARKING NETWORK (SPBNET)

- Improvement of data collection and analysis of utilities in Africa
- Provide a management tool for self evaluation for the operators,
- benchmarking for utilities with similar operating environments,
- Promoting experience sharing between the utilities and documenting and sharing information on emerging best practices and lessons on water supply and sanitation

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Project organisation and implementation

- Project funded by DfID, implemented by WUP with assistance from WRc as Benchmarking advisors
- Project Manager (Consultant) assisted by 7 Regional Consultants –interface with utilities
- Regional Consultants workshop
- Consultation workshops for Development of questionnaire, clear understanding of all the questions e.t.c.

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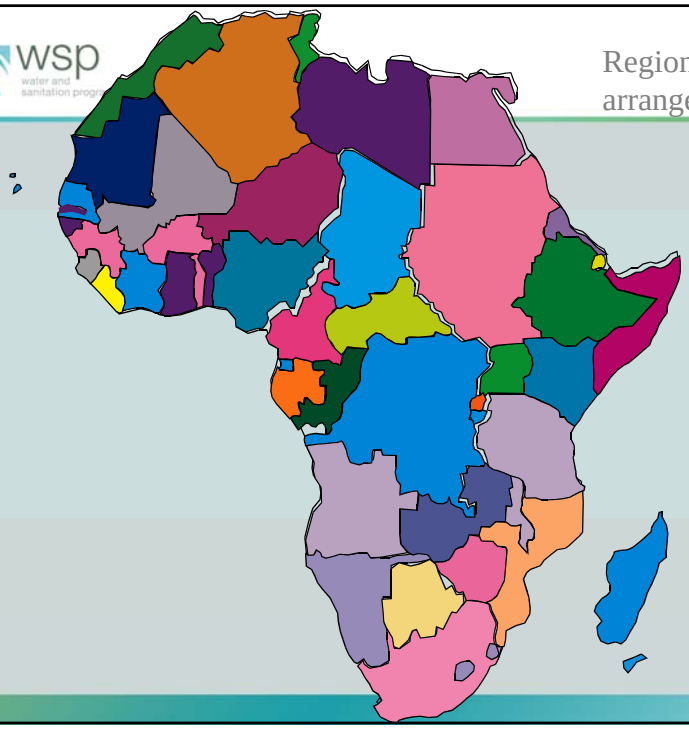
Regional arrangements



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Development of questionnaire

- Questionnaire defines the data available and forms the basis upon which utilities can benchmark one with another
- Balance what is desirable with what is achievable in terms of data and information sought
- Also balance between broadening the questionnaire to include a wider range of issues and maintaining an elemental simplicity
- Make use of existing performance indictors and definitions where this is possible rather than “re-inventing the wheel”
- Considered the works done by WUP, AsDB, IWA, World Bank (IBNET-Kit), UNHABITAT-WAC, SAAWU

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Data analysis

- Received questionnaire responses from 110 utilities but 112 questionnaires. 108 provided for water and 12 Sanitation
- Out of the 112 Questionnaires received, 32 Full questionnaire and 80 water only

Year	Questionnaires
1998	3
1999	30
2000	67
2001	12

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Performance Indicators

- **Utility Profile** –functions undertaken, ownership, institutional arrangements e.t.c.
- **Demand management** –Service coverage, consumption, availability of water
- **Operations** –losses, quality, costs, staffing
- **Revenue** –tariffs, cost recovery, assets
- **Balance sheet** –liquidity ratios

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Dissemination of results

- Hard copy report
- CD containing the report and analysis of results
- Information is also be posted on the internet (http://www.wupafrica.org/spbnet/angl/index.html)
- Confidential 2 page reports
- 4 dissemination workshops held

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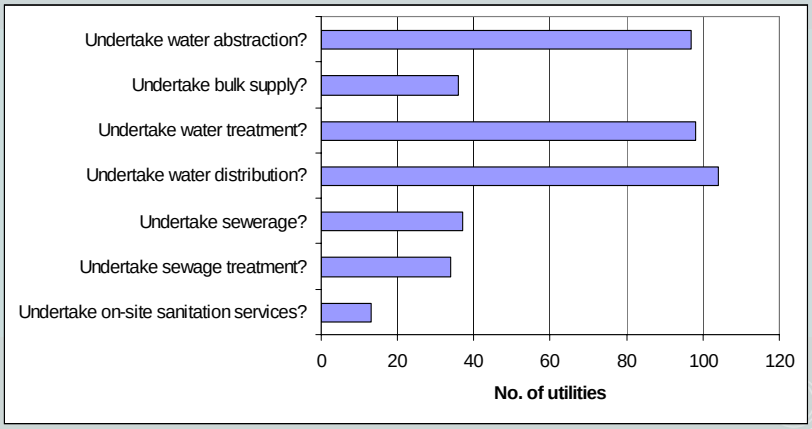
Functions of the utilities



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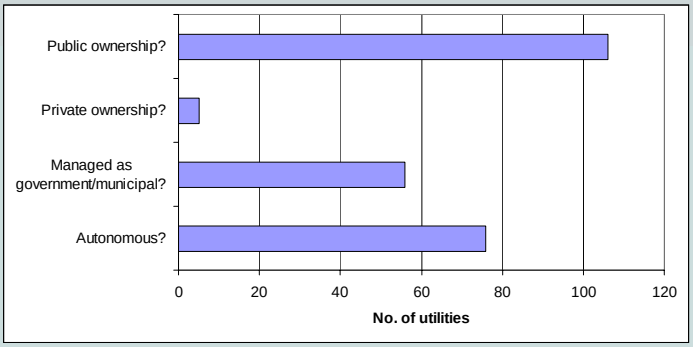
Ownership and management of utilities



Almost all utilities are publicly owned, most automous and about half are managed as part of Government or municipal services

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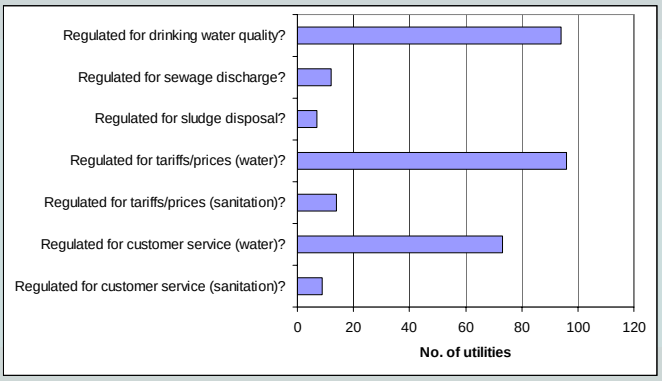
Regulation of the Utilities



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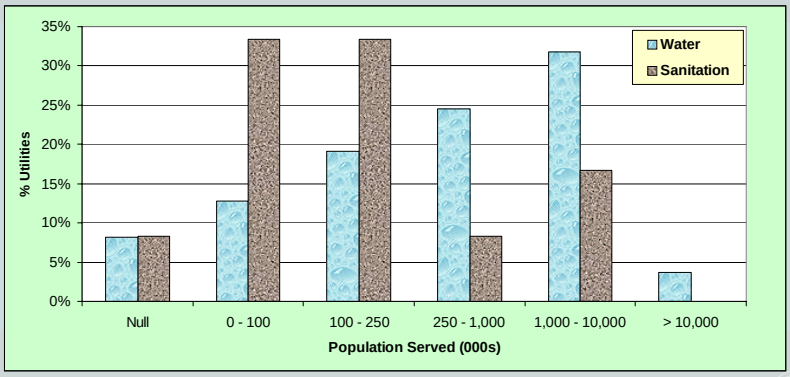
Population served by the utilities



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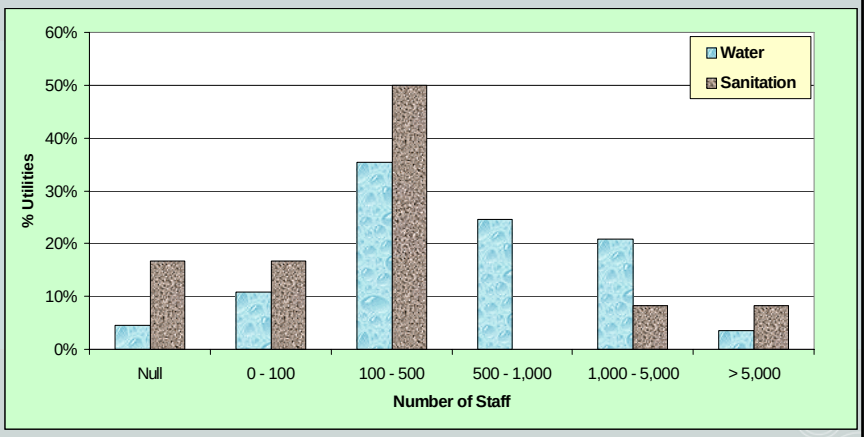
Number of staff employed



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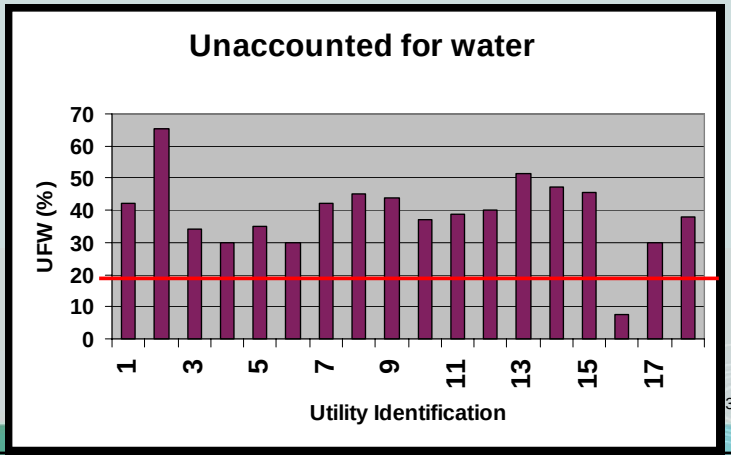
Problem of capacity to deliver…

General (*UFW*) for sample utilities in East Africa



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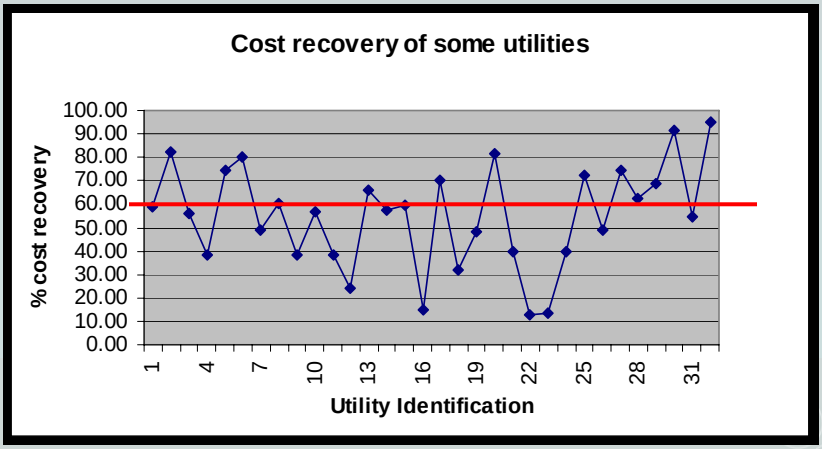
Low cost recovery……..



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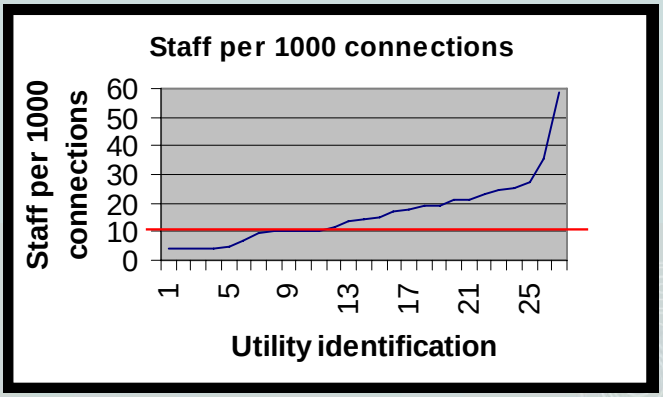
LABOUR ISSUES

- Many public utilities overstaffed more than 7 per 1000 connection.



Sustainability of the project Funding

- How much value does SPBNET add to utilities capabilities? –How do we motivate utilities?
- Funding is Key Issue
- Budget for undertaking this exercise and by who?

Possible options

- External –request Donors and others
- Subscriptions from national organisations or utilities to WUP
- WUP partially commercializes
- Identify key utilities that would help WUP steer the project

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Ownership

- How can we create a Sense of ownership and belonging to be built in (Donor, WOP or utilities)
- Issue of Effective Demand comes into consideration
- Should participation be obligatory (no supporting legislation)

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Publication of data

- Publicity of data (web site, publication e.t.c)
- How do we ensure enthusiasm of participation
- Public accountability could create difficulties to utilities leading to loss of enthusiasm
- Current participant's views on publicity issues should be sought.
- Is it acceptable for outputs to be made available on the Internet?
- Can we compare operations between utilities of similar nature I.e. size, ownership structure e.t.c.

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Frequency of provision of information

- Annual
- Optional submission of data that is available
- Annual submission of certain data that may be requested

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Capacity building

- What kind of capacity building elements should be there (training, competition on performance e.t.c)
- Exchange of information
- Such exchanges are more likely to be Sub-REGIONAL.
- The practicalities of best practice exchange will have to be reviewed
- Hold regional workshops but on annual basis?

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ORGANISATION

- Should we have a central processing centre hosted by the Secretariat of WOP
- Involvement of Regional Consultants/utilities in regions willing to coordinate collection of data
- Encourage national organisations to establish their own exercise (Govt Dept, Regulator, use of World Bank start up kit)
- Links with other PI initiatives should be explored for organizational support (i.e. South African initiative, Tanzania)
- Encourage national water sector initiatives and be affiliated to SPBNET.Africa (i.e Nigeria).

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THANK YOU

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