

# Water Regulation and Pricing

*RSA EXPERIENCE*

Presenter: Avril Halstead | Chief Director, National Treasury | 26 June 2014



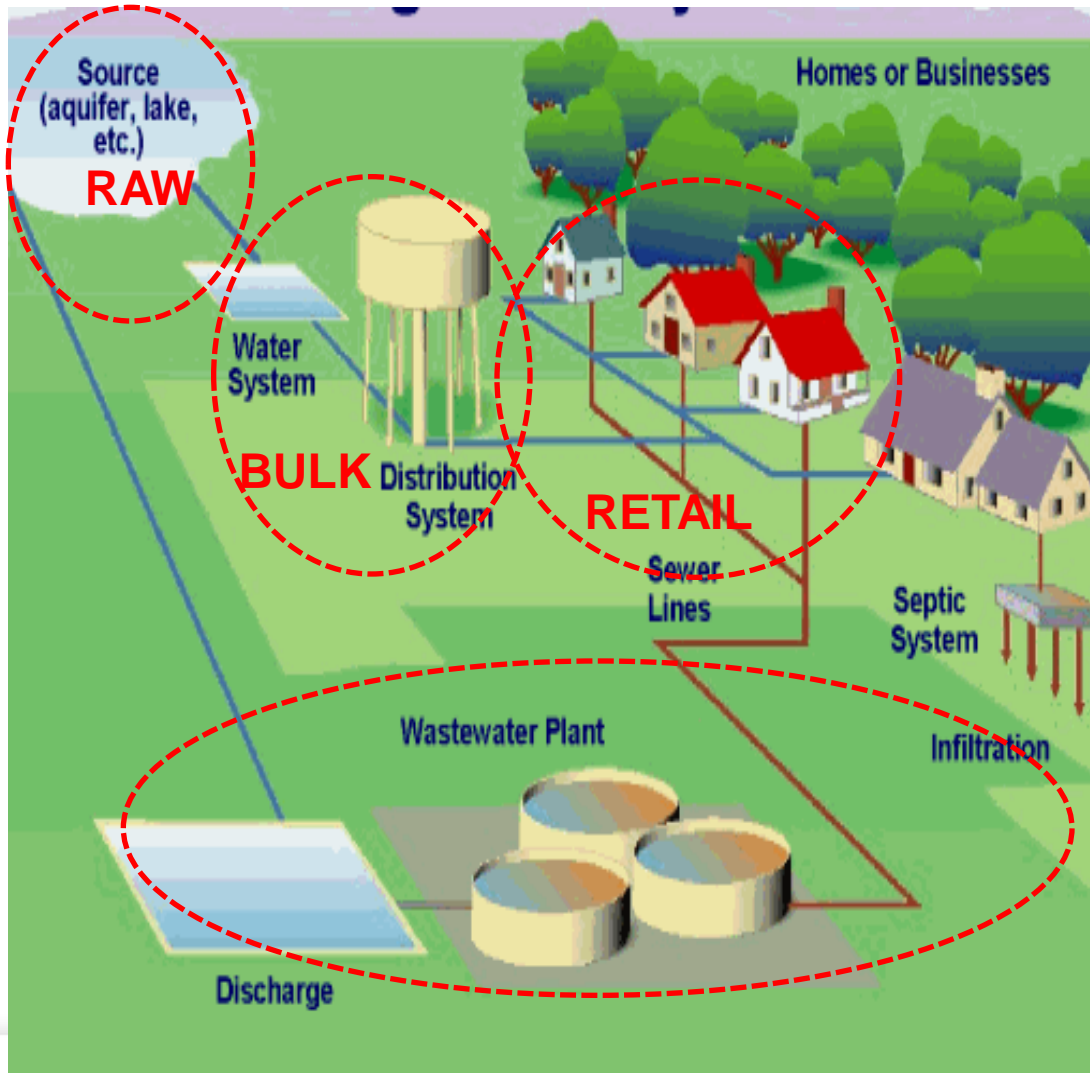
**national treasury**

Department:  
National Treasury  
REPUBLIC OF SOUTH AFRICA

# Outline

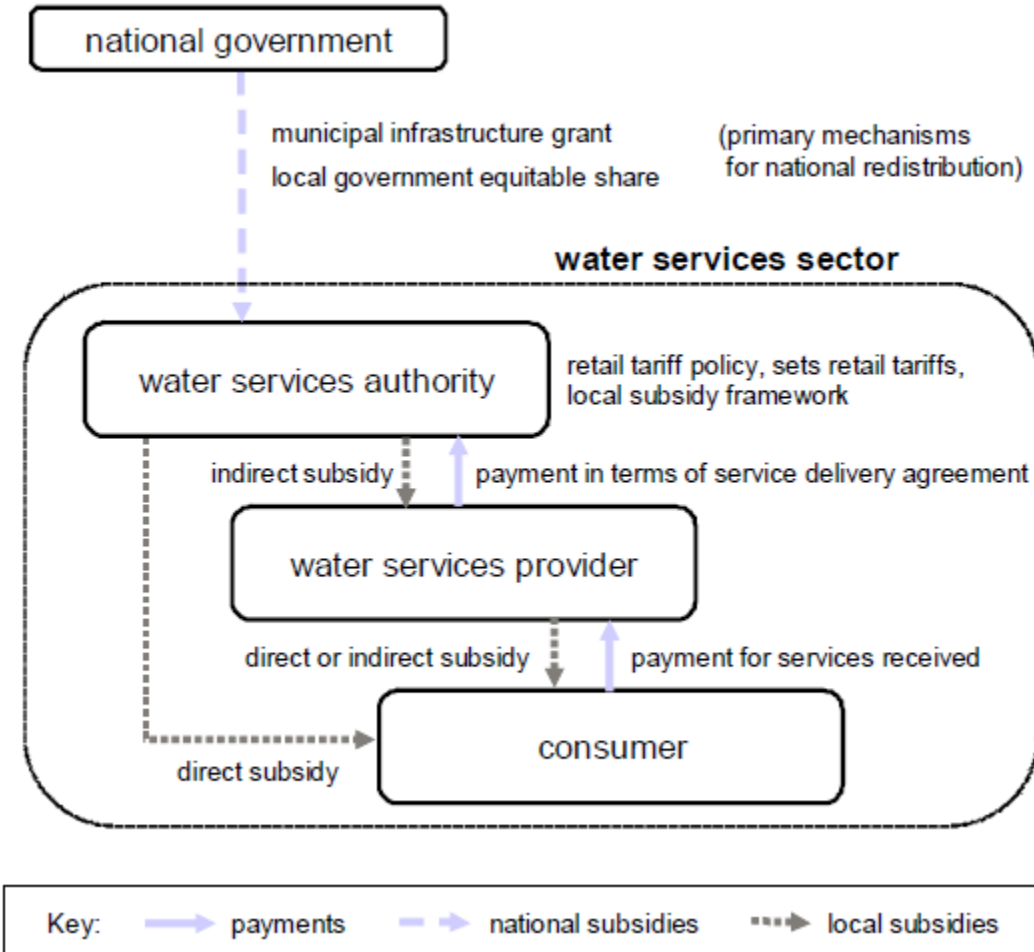
- Water Sector Value Chain
- Financial framework
- Framework for economic regulation
- Pricing framework
- Recommendations
- Concluding remarks

# Water Sector Value Chain



- The water sector value chain consists 3 main stages:
  - Water resources management – this relates to raw or untreated water
  - Bulk water services; and
  - Retail water services.

# Financial framework (1/3)



Main redistributive mechanisms in the water sector:

- Subsidies for infrastructure investment for basic municipal services are provided by national government through the municipal infrastructure grant (MIG) as well as various other capital grants.
- Subsidies for operating costs provided through local government equitable share as well as various other temporary grants

# Financial framework (2/3) - transfers available for water and sanitation in 2013/14

## USDG

**R9 billion**

(mainly for providing serviced land  
- including water and sanitation)

**Municipal  
Water  
Infrastructure  
Grant**

**R603 million**

**Water  
Services  
Operating  
Subsidy**

**R560 million**

## MIG

**R14.4 billion**

(over R7 billion for water and  
sanitation)

**Rural Households Infrastructure Grant**

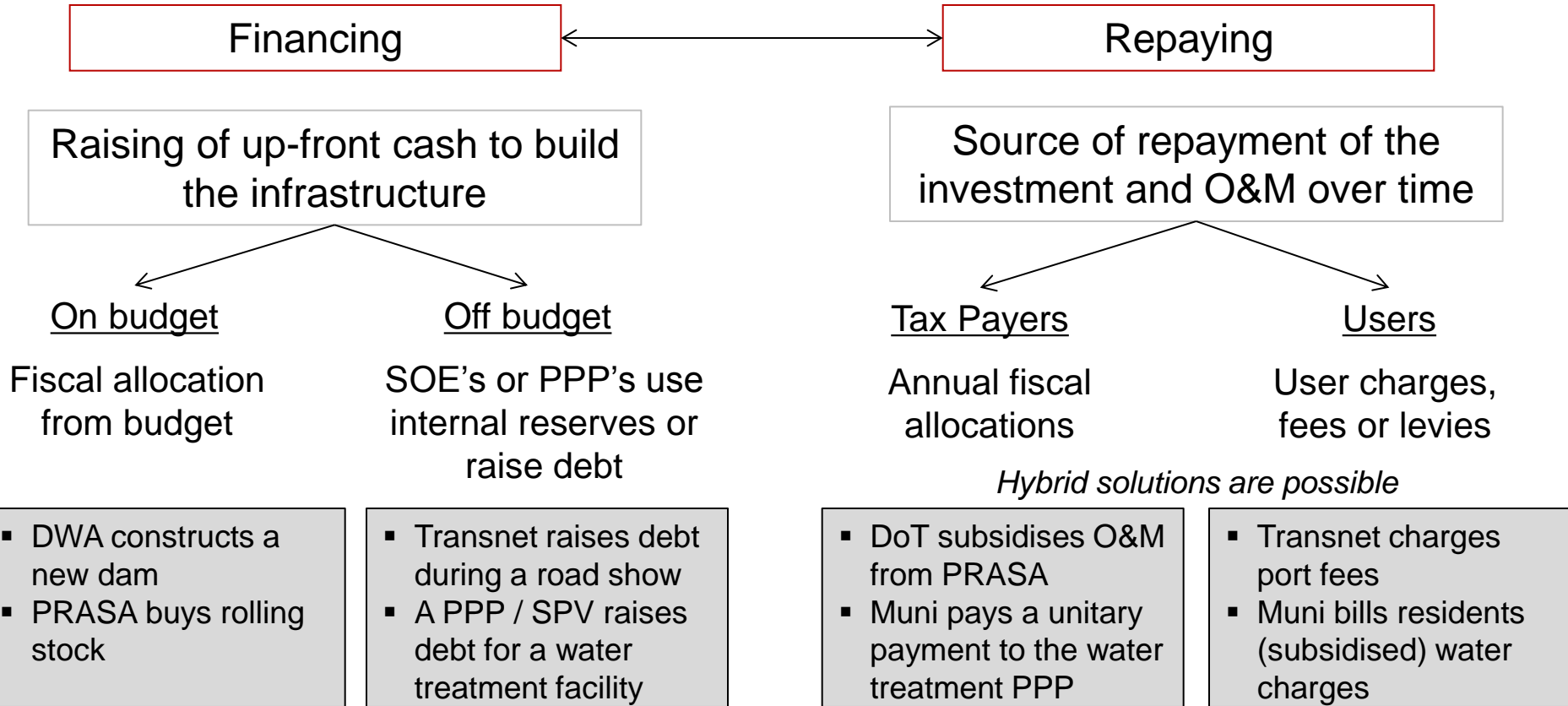
**R107 million**

**Regional Bulk Infrastructure  
Grant**

**R3.2 billion**  
(indirect grant)

**R16.1 billion** in operations and maintenance funding for  
**W&S** in the Local Government Equitable Share

# Financial framework (3/3)



*The challenge is not financing infrastructure, but repaying it!*

# Framework for economic regulation (1/2)

- Formal economic regulation of water tariffs has been absent. Self regulation evident with institutions setting *and* regulating themselves.
- The two fundamental arguments for economic regulation in the water sector are:
  - **Market failure:** The water services industry (bulk water supply and distribution) are natural monopolies in most circumstances. Natural monopolies need to be regulated to protect public interest. Monopolies tend to have few incentives to invest or operate efficiently.
  - **Public interest:** Water is a public good (arguably?) thus government is required to ensure that public interests is protected through the regulation of investment and pricing decisions.
- Historically, regulation of the water sector has focussed on the technical and environmental aspects of water services but little attention has been given to economic regulation to date.

# Framework for economic regulation (2/2)

- Although DWA has opted to set up an economic regulator as an internal departmental component, National Treasury's preference would have been for an external regulator, at arms length from government as this would help to ensure **regulatory principles** of:
  - **Fair representation of key stakeholders:** The interests of all stakeholders must be adequately and fairly heard - conflict of interest is minimised.
  - **Simplicity:** the regulatory regime adopted by the regulator needs to be effective but simple to understand and implement
  - **Integrity:** The decisions of the regulator need to reflect an appropriate balance between the needs of consumers and the financial sustainability of the industry.
  - **Accountability:** The regulator should be accountable to government and to the public for its decisions.
  - **Institutional clarity:** The regulatory framework should define and identify the relevant stakeholders, their roles and relationships.
  - **Effectiveness:** Regulators can set targets for improved efficiency and better service, but such targets are meaningless if they cannot be enforced and compliance thereof must be monitored.
  - **Capacity to fulfil functions:** The effectiveness of the institutional framework will also depend critically on the capacity of institutions including the regulator to fulfil their functions.



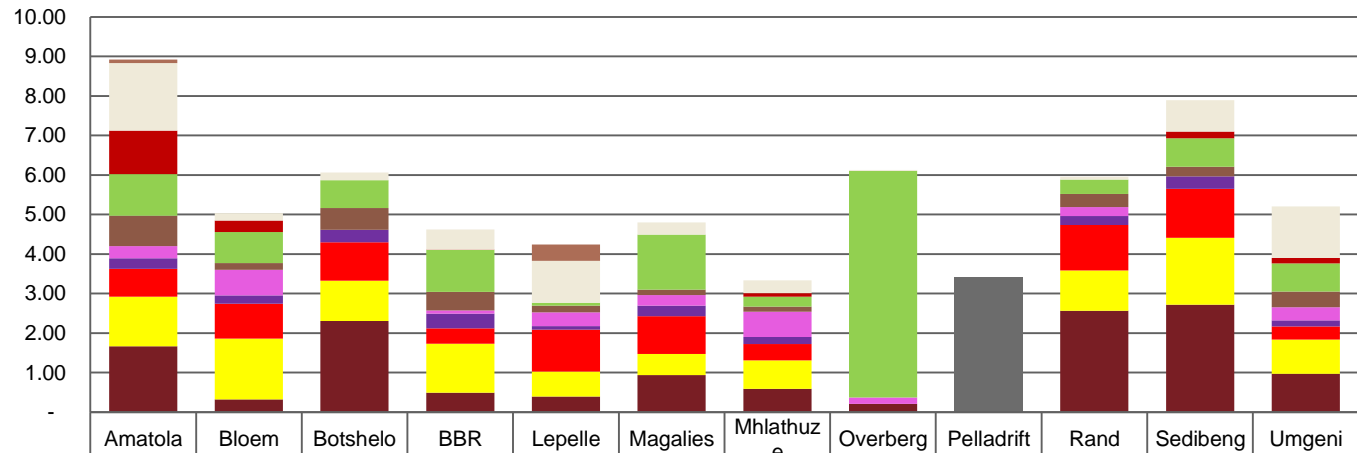
# Pricing framework (1/6)

- The final charges paid by water service end-users incorporate a number of different elements. Broadly speaking the prices involved in the water value chain are:
  - **Water resource prices**
    - apply to water supplied by government water schemes and other water management institutions which include catchment management agencies and water user associations.
    - evidence suggests that charges are still below full cost recovery
    - DWA is both price setter and regulator (for its own schemes)
  - **Bulk water tariffs**
    - prices for bulk water provided by water boards are set by water boards, and gazetted in Parliament by the Minister of Water Affairs.
    - price setting process is guided by the MFMA which stipulates consultation with local government. Water boards must also submit their proposals to National Treasury and SALGA for comments.
    - no explicit policies exist although there is a tariff setting guideline which has been developed by DWA.
    - water boards are under increasing pressure to maintain below inflation increases, whereas in reality, their own internal product inflation has consistently been above CPI.
    - it is worth noting that prices for bulk water provided by Water Services Authorities (WSAs) are not formally regulated, e.g. in the case where City of Cape Town provides Drakenstein municipality with bulk treated water.
  - **Water services tariffs (retail prices)**
    - pressure to constrain charges below inflation has resulted in final charges being progressively limited to below full cost recovery level
    - price setting is largely self regulated but principally municipalities should charge cost-reflective tariffs for the supply of water
    - local government is granted substantial own revenue raising powers in the Constitution
    - funds from national revenues are needed to fund the delivery of services to poor households through a mixture of equitable share and conditional grant funds

# Pricing framework (2/6)

- **Prices vary due to differences in underlying cost structures.** This is expected because the cost of supply water varies depending on local and regional conditions.
- To what extent do cost structures vary due to differing efficiencies?
- An example is the variance in bulk water tariff costs

2014/15 Water Board Tariff breakdown R/kl



Bad debts	0.09	-	-	-	0.41	-	-	-	-	-	-	-
No data								-	3.42			
Capital and/or Surplus Portion	1.71	0.19	0.19	0.51	1.06	0.31	0.32	0.03	-	0.07	0.80	1.30
Finance Expense	1.10	0.29	-	0.00	-	-	0.08	-	-	-	0.17	0.13
Other costs	1.06	0.79	0.70	1.06	0.07	1.39	0.26	5.74	-	0.37	0.72	0.71
Repairs & Maintenance	0.77	0.17	0.55	0.48	0.17	0.14	0.13	-	-	0.33	0.25	0.40
Depreciation & Amortisation	0.31	0.65	-	0.08	0.35	0.27	0.64	0.16	-	0.23	-	0.34
Chemicals	0.27	0.21	0.32	0.37	0.08	0.26	0.18	-	-	0.22	0.31	0.15
Energy	0.70	0.89	0.97	0.39	1.06	0.95	0.41	-	-	1.15	1.24	0.33
Staff Costs	1.26	1.54	1.02	1.24	0.63	0.54	0.72	-	-	1.02	1.70	0.87
Raw Water	1.66	0.32	2.30	0.49	0.39	0.93	0.59	0.21	-	2.57	2.71	0.97

# Pricing framework (3/6)

- In terms of raw water pricing, DWA's current raw water pricing strategy includes price caps and exemptions to the **irrigation sector**.
- This is **one** contributing factor to the Department's under recovery of expenses for operating, maintaining and refurbishing water sector assets across the country.
- In 2011, National Treasury briefly researched the implications of removing water price caps and exemptions and possible recommendations to feed in to DWA's review of the Water Pricing Strategy.

# Pricing framework (4/6)

## International experience:

- Pricing water for irrigation is closely related to political economy and historical development of the agricultural sector.
- Whilst the concept of full cost recovery is endorsed there is no clear international practice as to what this means for irrigation with regards to water resource management charges and capital portion of infrastructure charges.

# Pricing framework (5/6)

- Historical political imperatives and poor planning means we have infrastructure today that is not economically viable and would not be rebuilt. Thus using replacement values as an indicator of asset value may be inappropriate as these are sunk costs.
- Historically infrastructure developed for white commercial farmers. These schemes frequently have lower capital costs compared to newer schemes developed for domestic, industrial users and schemes in previously underdeveloped areas.
- There is little coherence in the approach to funding and subsidising irrigation infrastructure. Both DWA and DoAgriculture have responsibility for management and financing of irrigation infrastructure.
- Poor maintenance, insufficient refurbishment and inadequate ring-fencing of budgets has led to a significant national refurbishment backlog, placing additional pressure on current budgets.

# Pricing framework (6/6)

## Consequences in the current system:

- There is under-billing of actual costs due to tariff capping, however the under-recovery is uneven across the country
- While all of the under-billing is related to the cap (on annual increases), the reasons and implication differ between regions
- At some future date there will not be enough funding for refurbishment which will mean that schemes will either not be properly maintained and fall apart or government will have to intervene and refurbish them at a cost to the state.

# Recommendations

## Principles to guide water pricing:

- **Transparency:** the need for users to know what they are paying for and how the price was determined. It is key for successful subsidisation- knowing what you are subsidising and for whom. Transparency calls for a clear policy; simple calculation; and defensible charges.
- **Coherence:** and consistency between the different charges, in applying the charges and implementing the policy.
- **Predictability:** to be able to project prices with relative certainty provides stability to users, allows for better planning, multi-year charge determination.
- **Financial Sustainability:** cost recovery, subsidisation, financial management, **NWRIA??**
- **Affordability:** business viability, political imperatives (e.g. water for resource poor farmers). Where water is unaffordable for some users at a given charge, either economic imperatives should drive a change in water use to a higher value crop or broader socio-political imperatives may indicate that a subsidy is required. Affordability should not constrain the prices relating to cost recovery but rather be addressed through a transparent and coherent subsidy regime.
- **Efficiency:** of water use, economic and financial resources. Can be driven by regulatory mechanisms, water markets, and institutional efficiency.

# Concluding remarks

- National Treasury aims to promote economic development, good governance, social progress and rising living standards through accountable, economic, efficient, equitable and sustainable management of South Africa's public finance.
- In terms of raw water pricing, the pricing strategy is seen as a process that evolves over time and aims at achieving, in a coherent manner the efficient and cost effective allocation of water, and also taking into account equity and fairness in the allocation mechanism and the long term sustainability of the natural environment.



# Thank you



# ADDITIONAL SLIDES

# Overview of other water services conditional grants (1 of 2)

- The **Municipal Infrastructure Grant** includes R7.1 billion for water and sanitation. The formula used to allocate these funds has been updated with backlog data from the 2011 Census, so more funds will go to areas with larger backlogs. (Grant administered by the Department of Cooperative Governance)
- The **Urban Settlements Development Grant** funds informal settlement upgrading, this includes provision of an integrated set of services including water and sanitation. (Grant administered by the Department of Human Settlements)
- The **Rural Households Infrastructure Grant** has been rescheduled as a direct transfer to municipalities. This will create better alignment between the construction and maintenance of infrastructure, as well as strengthen community consultation. This change should improve the performance of the grant. (Grant administered by the Department of Human Settlements)

# Overview of other water services conditional grants (2 of 2)

- The **Water Services Operating Subsidy** funds water service authorities currently or previously managed directly by the Department of Water Affairs. The Department is to submit a report on the grant's performance since inception to National Treasury by 29 June 2013.
- The **Regional Bulk Infrastructure Grant** is an indirect grant through which the department builds bulk distribution infrastructure on behalf of municipalities. The performance and structure of this grant will be considered as part of a wider review of local government infrastructure grants.

# Types of water related charges

- Infrastructure management (tariff regime)
  - Capital
  - Operation & maintenance
- Water resources management (user charge)
  - Policy & national strategic functions
  - Local operational functions
- Behaviour management (directed tax/levy)
  - efficiency (pricing/disincentive)
  - discharge (externalities/polluter pays)

# Additional slides

- Infrastructure charge components

Operation and Maintenance charge	To cover the direct and indirect costs associated with administering, operating and maintaining the scheme	Estimated through the annual budget process	Increases are capped at CPI plus 10%. 2012/13 shortfall estimated at R180 mil
Depreciation Charge	To cover typical refurbishment costs	Estimated on a straight line basis on the depreciable portion of the current asset value over its total useful life.	Increases are capped at CPI plus 10%. 2012/13 shortfall estimated at R100 mil
Return on Assets	To cover the social opportunity cost of capital to government for publicly funded infrastructure, to be used for augmentation planning studies, new schemes or betterments of existing schemes for social purposes or dam safety	Estimated as a percentage of the depreciated replacement value (currently 4%)	Not charged to Agriculture

# Additional slides

- Water resources management charge components
- WRM charge applies to consumptive use, stream flow reduction activities (forestry) and also waste discharge related users. The principle is for all users who benefit from the functions are paying, ensuring there is no cross-subsidisation between different users.

WRM Charge	To recover direct governance related costs of WRM	Users are charged a unit charge per function from which they benefit by the volume: urban-industrial users typically attract charges on their monitored use and irrigation attracting charges based on their registered use.	Increases are capped at CPI plus 1.5c/m <sup>3</sup> .  Estimated shortfall at R90 million per annum (assumptions unclear though).
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