

# Harnessing Municipal Strategic Self Assessment to Aid Municipal Management and Decision Making Regarding Effective Water Services Revenue

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- Municipal Strategic Self Assessment (MuSSA)
- Non Revenue Water (NRW)
- Problem Statement
- Analysis of MuSSA Data
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- Recommendations
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# Background

- South Africa
  - Positive
    - Growing economy
    - Increased urbanization
    - Increased demand for water infrastructure
  - Negative
    - Ageing infrastructure
    - Severe lack of skills
    - Political interference

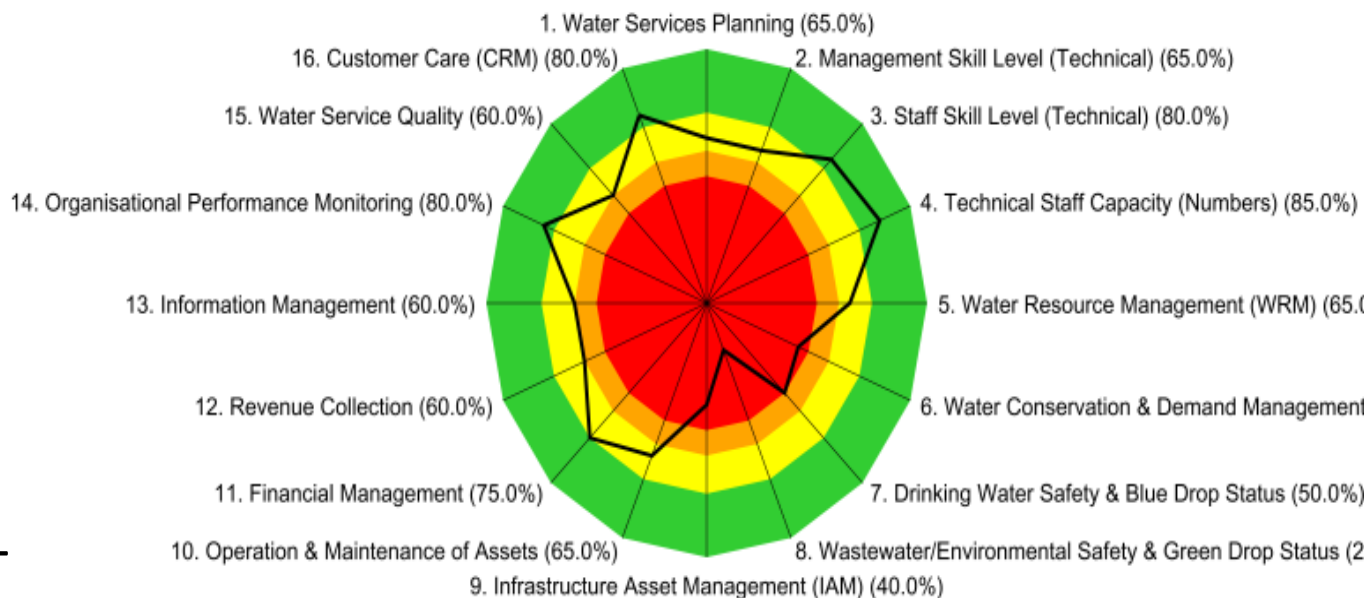
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# Municipal Strategic Self Assessment (MuSSA)

- Assess overall business health
- 16 key business attribute areas
- 5 clear questions
- Vulnerability indication
- 95% participation from WSA's in 2011

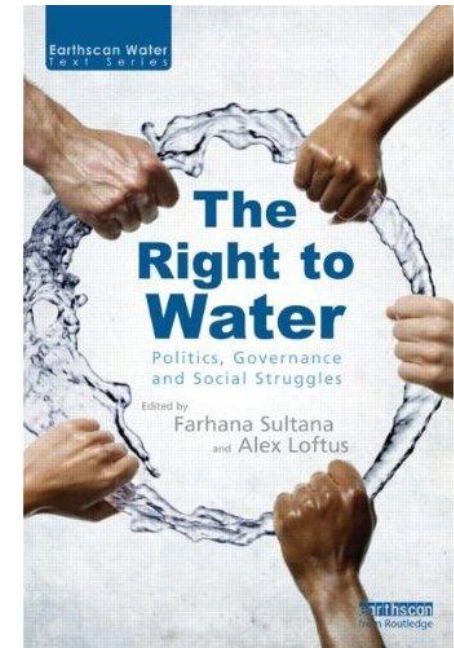
Municipal Strategic Self-Assessment of Water Services (MuSSA)

■ 0 - 50% (Very High Risk)   
 ■ 50 - 60% (High Risk)   
 ■ 60 - 75% (Moderate Risk)   
 ■ 75 - 100% (Low Risk)



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# Non Revenue Water (NRW)



# IWA Water Balance

•System input

•Authorised consumption

•Billed consumption

•Revenue water

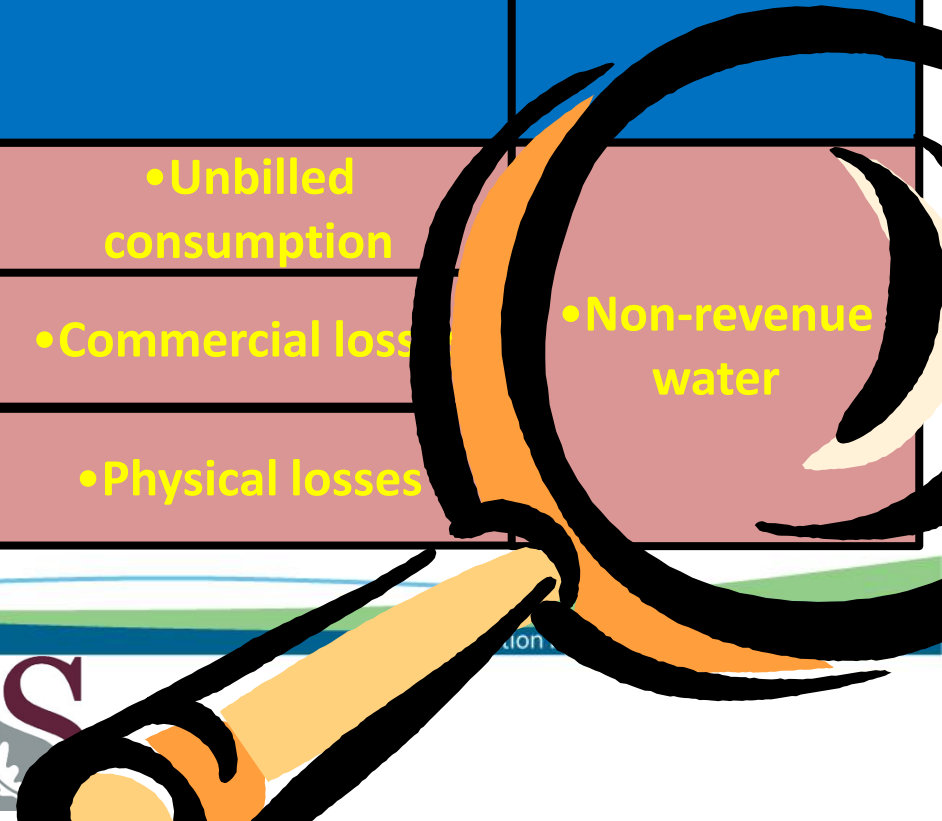
•Unbilled consumption

•Commercial losses

•Non-revenue water

•Water loss

•Physical losses



# Problem Statement

- Reduce NRW to improve revenue collection
  - Challenges
    - Basic human rights
    - Limited resources
  - What do we need to focus on?
    - 16 key business attributes
    - Key contributors

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# Analysis of MuSSA Data

- Correlations among MuSSA questions
- Statistics



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# Analysis Results

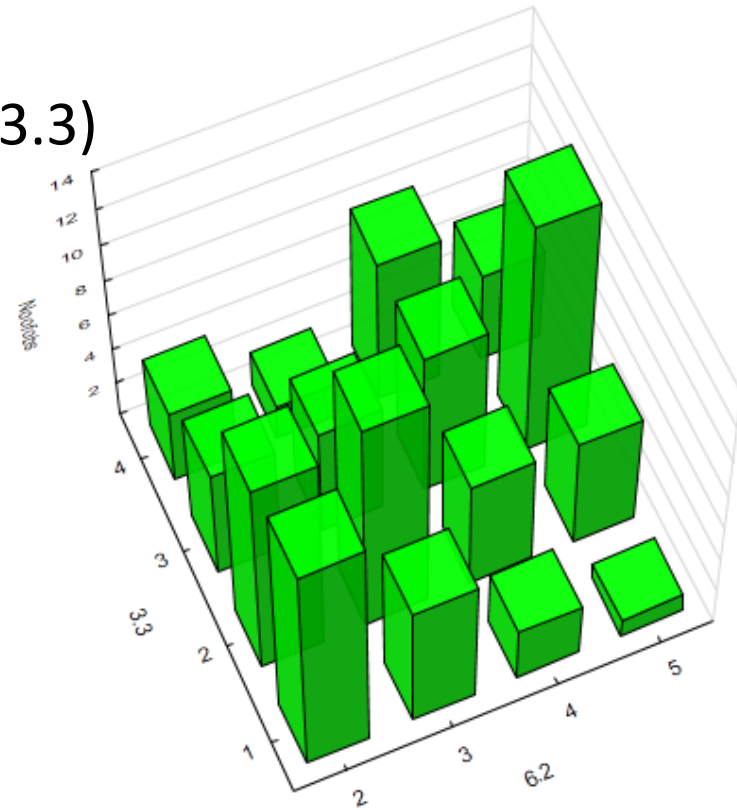
- MuSSA vs. NRW
  - Q. (6.2) What is the % unaccounted for water?
- 7 Attribute areas contributing
  - 3 to be discussed
- 6 Attribute areas Influenced
  - 1 to be discussed
- Strong relation
- At least 1 of the 5 questions
- P – Value (99% significance)

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# Analysis Results (NRW Contributors)

- Staff skill level (Technical)
  - Network O&M staff skill/experience (3.3)
- <75% skilled staff
  - No skill = Big losses!
  - Don't know or 30 - 40% losses
- >75% skilled/experienced
  - Improvement
  - 65% have < 30% NRW
- **At least 75% skilled staff!!**

Q. (6.2) vs Q. (3.3)



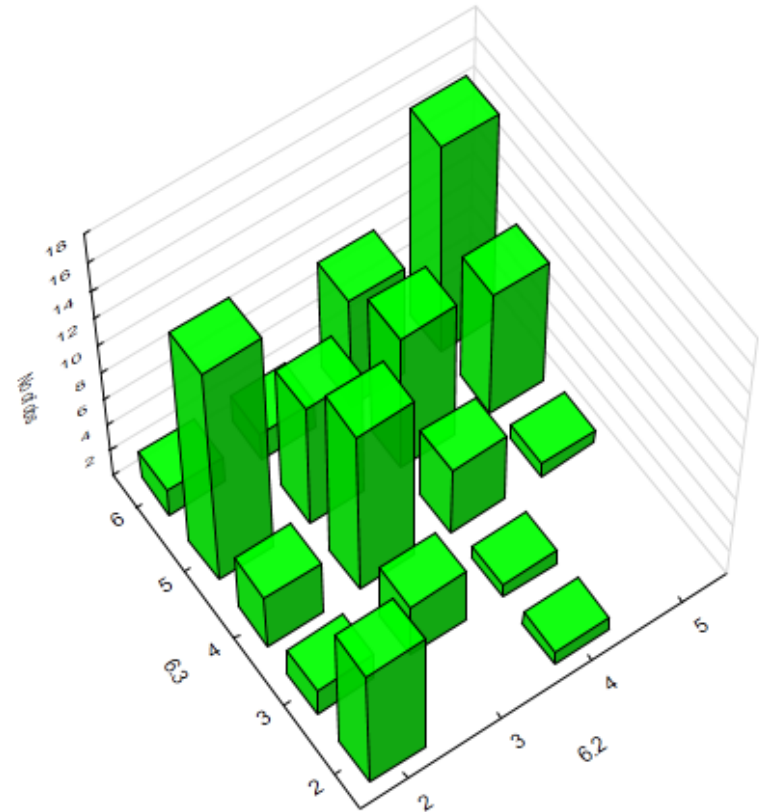
Q. (6.2)		Q. (3.3)	
Score	Response	Score	Response
5	Less than 20%	4	Yes, All (i.e. 100%)
4	Less than 30%	3	Most (i.e. >75%)
3	Less than 40%	2	Some (i.e. > 50%)
2	Don't know	1	< 50%/None/Don't know

# Analysis Results (NRW Contributors)

- WCDM
  - Connections metered & billed (6.3)
- No metering & billing
  - Why?
- 75-98% metered & billed
  - Lack of commitment
- >98% metered & billed
  - Improvement
  - Champion

• **Management commitment!!**

Q. (6.2) vs Q. (6.3)

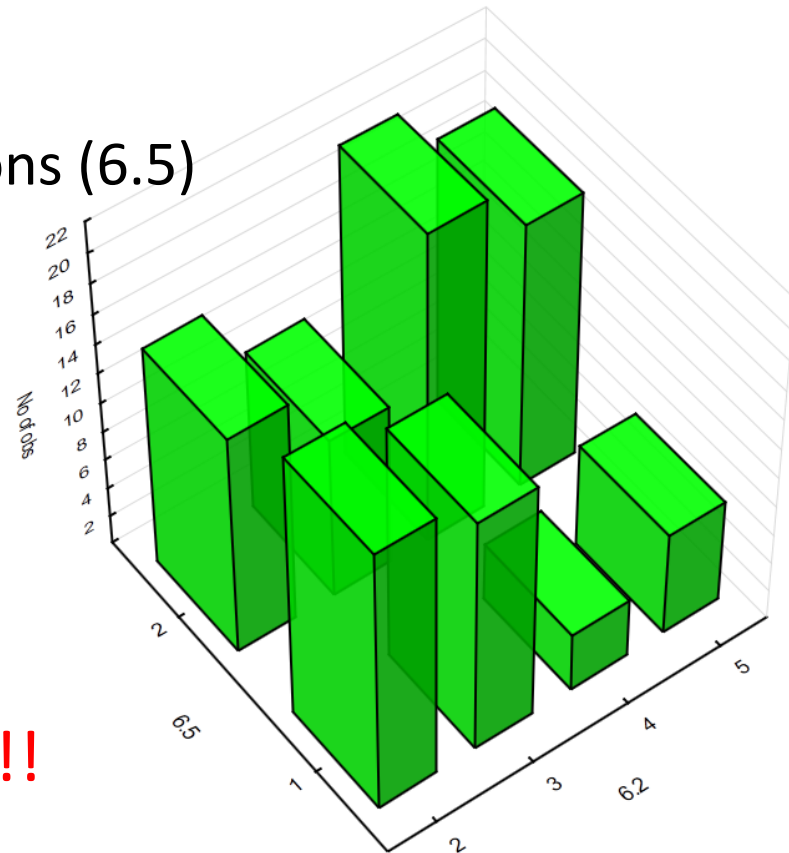


Q. (6.2)		Q. (6.3)	
Score	Response	Score	Response
5	Less than 20%	6	>98%
4	Less than 30%	5	75 - 98%
3	Less than 40%	4	50 - 75%
2	Don't know	3	<50%
		2	No metering/Don't know

# Analysis Results (NRW Contributors)

Q. (6.2) vs Q. (6.5)

- WCDM
  - Monitor & remove illegal connections (6.5)
- No monitoring & removal
  - 35% - Don't know
  - 45% - 30 - 40% NRW
- Monitoring & removal
  - 65% - < 30% NRW
- **Monitor & remove reduces NRW!!**

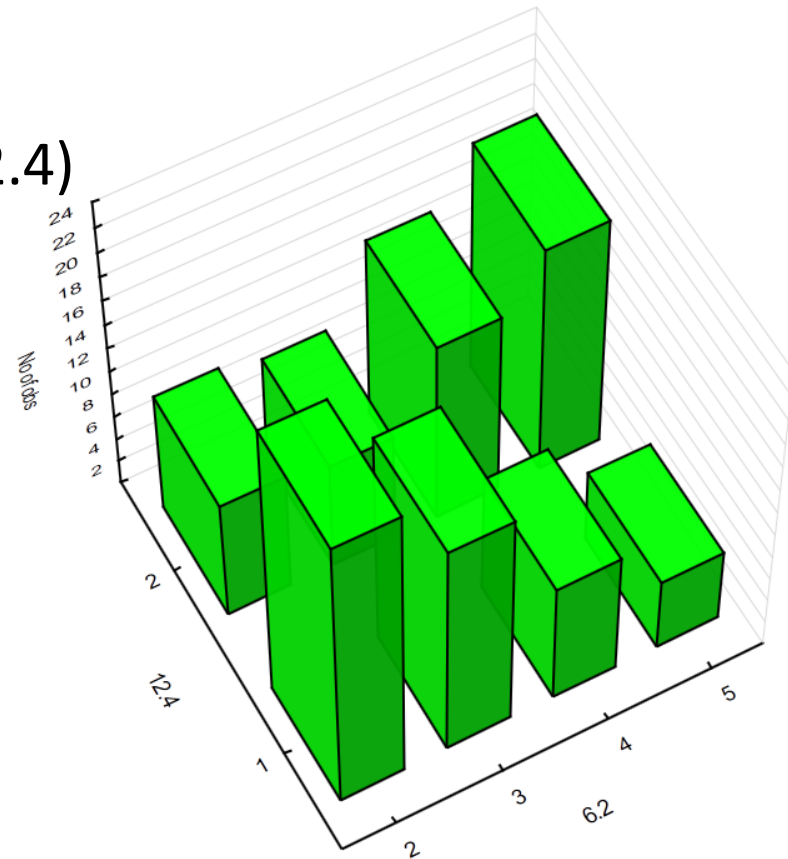


Q. (6.2)		Q. (6.5)	
Score	Response	Score	Response
5	Less than 20%	2	Yes, strongly agree
4	Less than 30%	1	No, disagree/Don't know
3	Less than 40%		
2	Don't know		

# Analysis Results (Influenced by NRW)

Q. (6.2) vs Q. (12.4)

- Revenue collection
  - Is revenue collection acceptable (12.4)
- NRW %: > 30%
  - Don't know – 70% unacceptable
  - 30 to 40% - 67% unacceptable
- NRW %: < 30%
  - 20 to 30% - 60% acceptable
  - 0 to 20% - 76% acceptable
- **Reduce NRW below 30%!!**

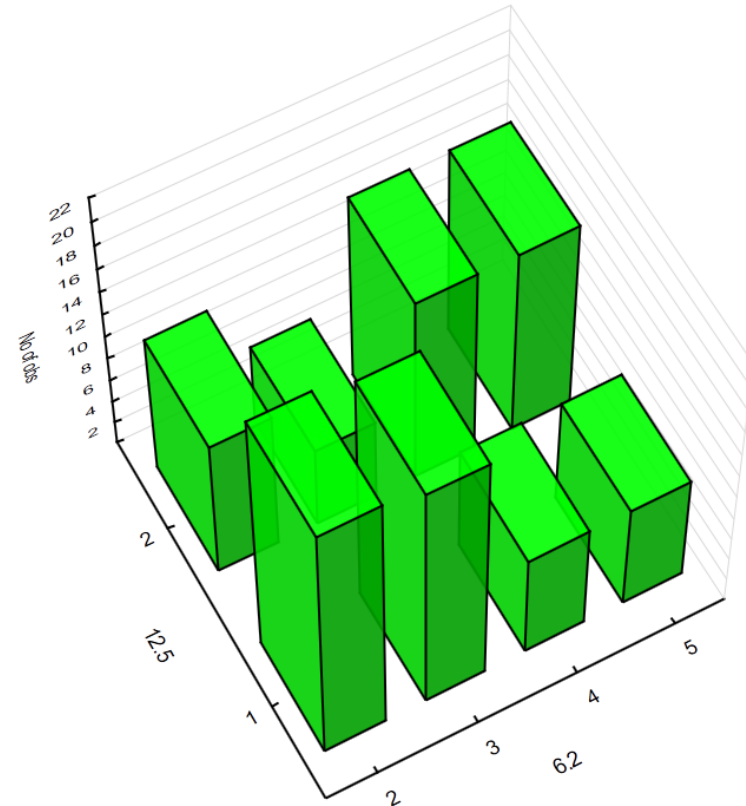


Q. (6.2)		Q. (12.4)	
Score	Response	Score	Response
5	Less than 20%	2	Yes, strongly agree
4	Less than 30%	1	No, disagree/Don't know
3	Less than 40%		
2	Don't know		

# Analysis Results (Influenced by NRW)

Q. (6.2) vs Q. (12.5)

- Revenue collection
  - Cash reserve build up (12.5)
- NRW %: > 30%
  - Don't know - 63.6% No reserves
  - 30 to 40% - 74.1% No reserves
- NRW %: < 30%
  - 20 to 30% - 64% Sustainable
  - 0 to 20% - 64% Sustainable
- **Reduce NRW below 30%!!**



Q. (6.2)		Q. (12.5)	
Score	Response	Score	Response
5	Less than 20%	2	Yes, strongly agree
4	Less than 30%	1	No, disagree/Don't know
3	Less than 40%		
2	Don't know		

# Conclusion

- When does NRW become “acceptable/sustainable”?
  - Revenue collection
  - Financial stability
- NRW contributors
  - Repair staff
    - Skill & experience
  - Metering (Measuring)
    - Benchmark
    - Billing
  - Management of illegal connections
    - Monitor and act/remove

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# Recommendation

- Become a CHA
- Take action
- Ownership /Pr  
  - Municipal sta
  - Community
- Persevere!!!!!!



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# The End

- Thank you for your time!
- Questions?

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