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Financing Experiences in Non Revenue Water Management

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Water Global Practice, Europe and Central Asia

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Financing for Non-Revenue Water Management
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Relevance of Non Revenue Water

- NRW seriously affects financial sustainability of utilities through lost revenues and inflated operating and capital costs.
- High NRW is a symptom of poorly run utility that does not make good use of its resources
- NRW exacerbates pressures on water resources, as potable water demands grow but water resources are getting scarcer.



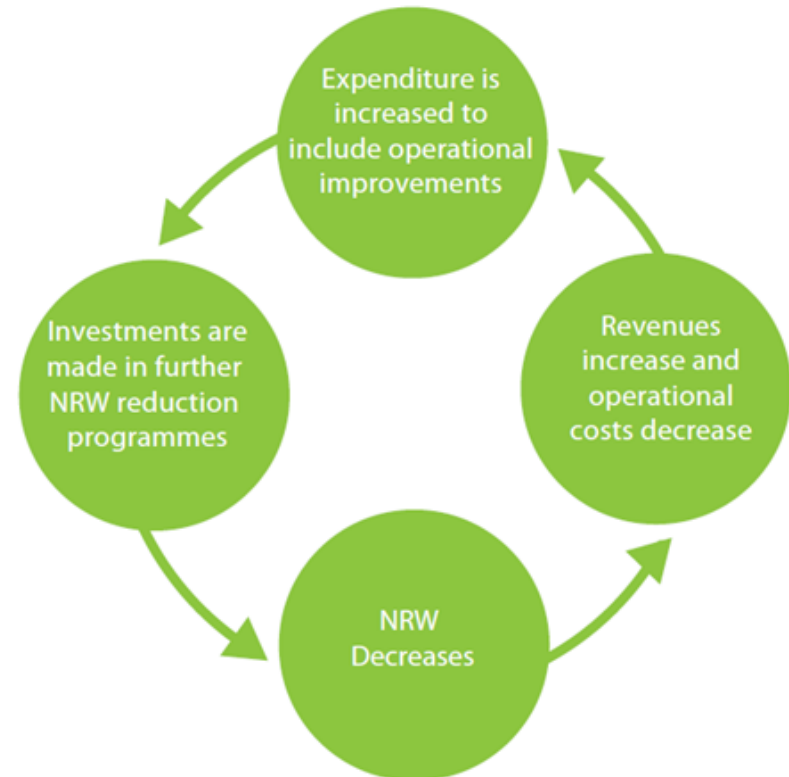
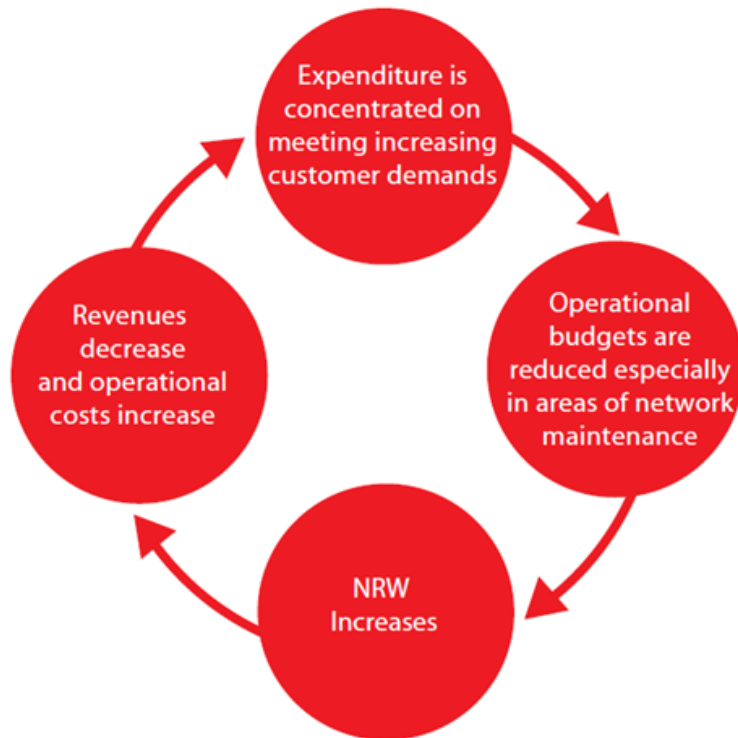
IWA Water Balance

System Input Volume	Authorised Consumption	Billed Authorised Consumption	Billed Water Exported	Revenue Water	
			Billed Metered Consumption		
			Billed Unmetered Consumption		
	Water Losses	Unbilled Authorised Consumption	Unbilled Authorised Consumption	Unbilled Metered Consumption	Non Revenue Water
				Unbilled Unmetered Consumption	
		Apparent Losses	Apparent Losses	Unauthorised Consumption	
				Customer Meter Inaccuracies	
		Real Losses	Real Losses	Leakage on Transmission and Distribution Mains	
				Leakage and Overflows at Storage Tanks	
				Leakage on Service Connections up to point of Customer Meter	

Source: IWA

Importance of measurements to design a NRW reduction strategy

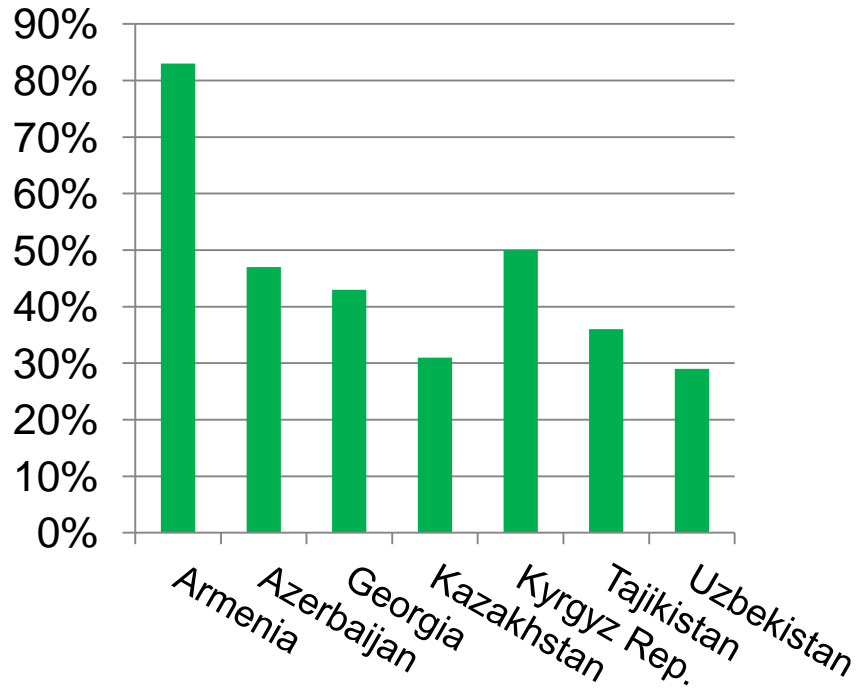
Vicious and the virtuous circles of NRW



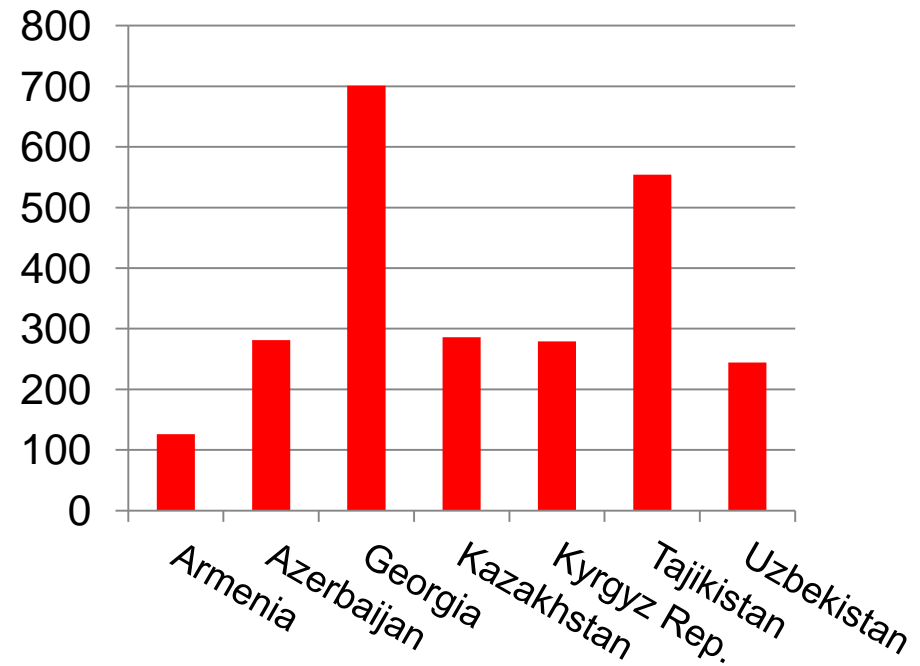
Source: Farley, 2008, *The Manager's Handbook to Non Revenue Water*

Both NRW and wasteful demands contribute to inefficient water usage and inflated costs

High Non-Revenue Water (%)



Excessive Unit Demands (liter/capita/day)



Why do utilities struggle with NRW reduction?

- Not understanding the problem (magnitude, sources, costs,..)
- Lack of capacity (staff, data strategy)
- Inadequate infrastructure funding (pipes, meters,..)
- Lack of management commitment
- Weak enabling environment and performance incentives

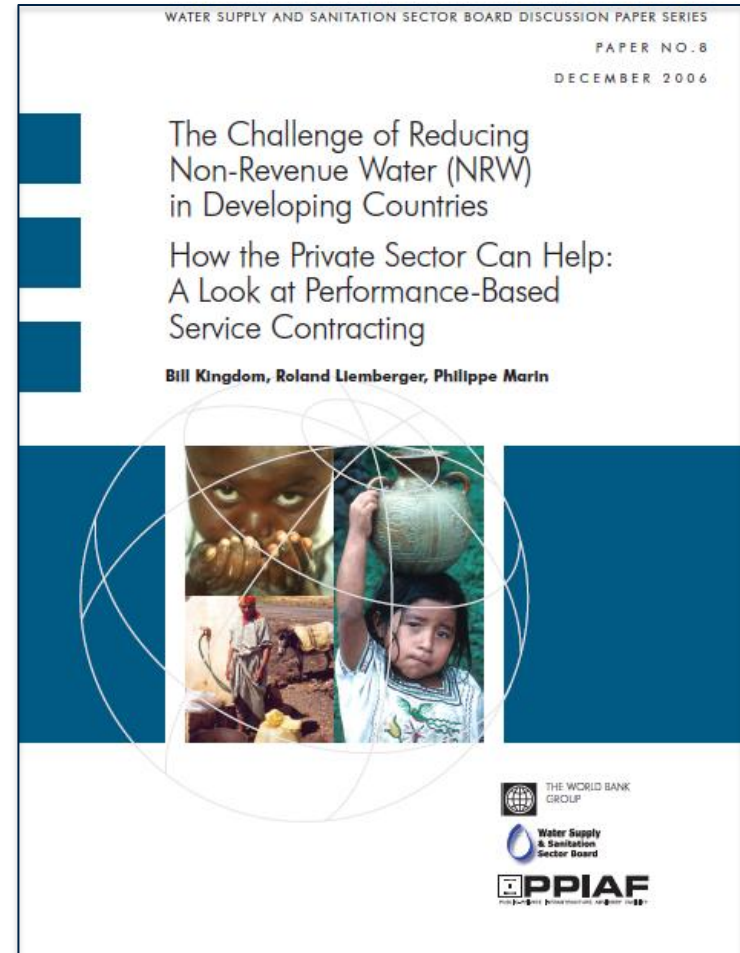


Limited regional experience in NRW reduction

Project	Scope	Results	Observations
Uzbekistan - Bukhara & Samarkand Water Supply (2003-2010)	\$40m, with 3-year Service Contract	<ul style="list-style-type: none"> Improved safety, reliability and quality of service. Marginal reduction in water losses & energy inefficiencies. NRW gains linked to improved customer registration and billing Partial meter coverage 	<ul style="list-style-type: none"> Ineffective PPP Priority to service safety continuity investments. No NRW strategy, data uncertainties. Rated <i>Moderately Unsatisfactory</i>
Tajikistan - Dushanbe Water Supply (2002-2011 including additional financing)	\$25m, with 3-year Service Contract	<ul style="list-style-type: none"> Improved reliability and quality of service. Marginal reductions in water losses & energy inefficiencies. No metering Improved collections 	<ul style="list-style-type: none"> Ineffective PPP Priority to service safety/continuity investments. No NRW strategy, data uncertainties Rated <i>Moderately Unsatisfactory</i>
Armenia – Yerevan Water and Wastewater (2005-2011)	\$20m, with 10-year lease contract	<ul style="list-style-type: none"> Achieved most performance objectives, incl. reliability, quality of service, energy efficiency Limited NRW gain from 86.3% to 82.6%. 	<ul style="list-style-type: none"> Successful PPP Good knowledge transfer Strong government commitment to sector reform Rated <i>Moderately Satisfactory</i>

Potential for private sector expert assistance

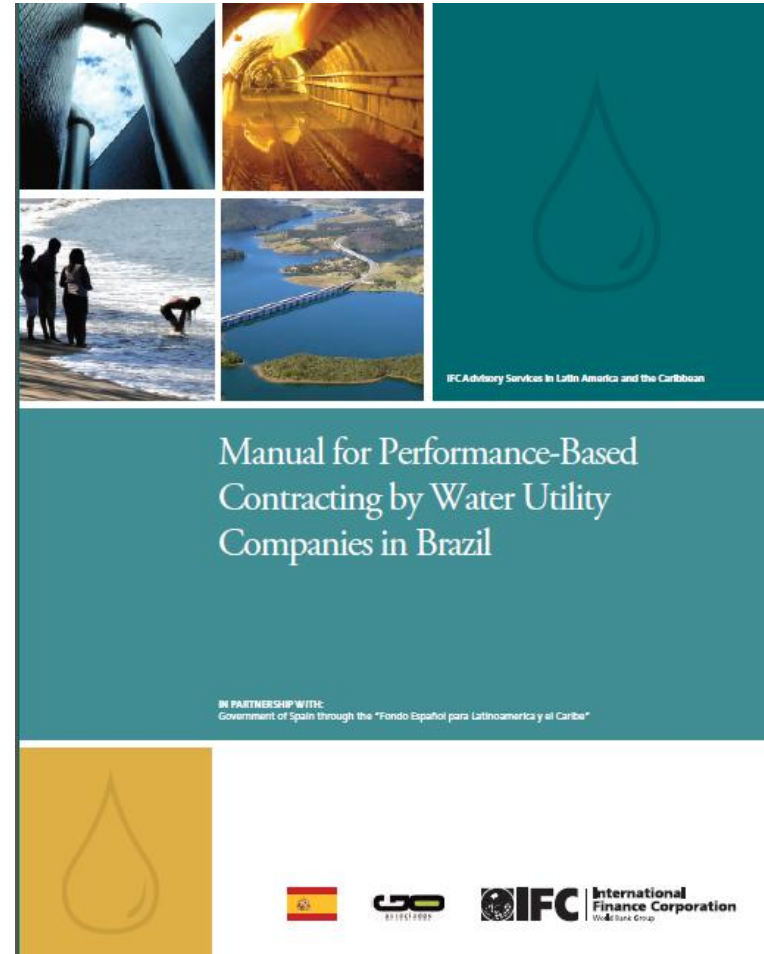
- Classic Public-Private Partnership approaches (Concessions, leases, management contract)
- Outsourcing of specific NRW reduction tasks (leak detection & reduction, meter program, cadastre, customer database upgrade,..)
- Performance-based contracts



Best practice: Recife and Victoria (Brazil)

“Manual for Performance-Based Contracting by Water Utility Companies in Brazil” (World Bank/IFC)

- Strategies for partnerships either between public companies or between public and private companies
- Roadmaps for NRW and Energy Efficiency strategies
- Guidelines on performance contracts with respect to: NRW reduction and Energy Efficiency





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