

Water and Environment Support

in the ENI Southern Neighbourhood region



Elaboration of non-revenue water policy for Jordan
Activity No. : N-W-JO-1

Task 3: Elaboration of the NRW Policy document

12-13 September 2023, Dead Sea Spa Resort, Sweimeh, Jordan

Workshop for main Actors to review Draft NRW Policy

Presented by: Udo KACHEL, WES Non Key Expert on NRW



Draft NRW Policy Document



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- Content

- Introduction
- National Priorities – Institutional Legal Framework
- NRW Management – Principles and Standards
- NRW Planning, Monitoring and Reporting
- Real Loss Reduction – Operation and Maintenance
- Apparent Loss Reduction - Customer Services
- Technology and Innovation
- Capacity Building and Training





NRW Strategy

Comprehensive medium/ long-term plan to reduce the NRW to 25% including the definition of needed resources and actions

Strategy is a plan of action while policy is a principle of action

NRW Policy

Definition of guiding principles helping the water sector institutions to establish organizational rules and taking logical decisions

Complementary and support to NRW strategy

Policies are designed by taking the opinion and general view of stakeholders and concerned people in the water sector regarding the NRW situation



Complementarity example



**Water and
Environment Support**
in the ENI Southern Neighbourhood region



- Key outcome in Strategy (Table 3):

Reduce the response time to repair reported leaks

- Policy statement:

Leaks to be repaired within 1 day
Companies to increase resources to achieve target

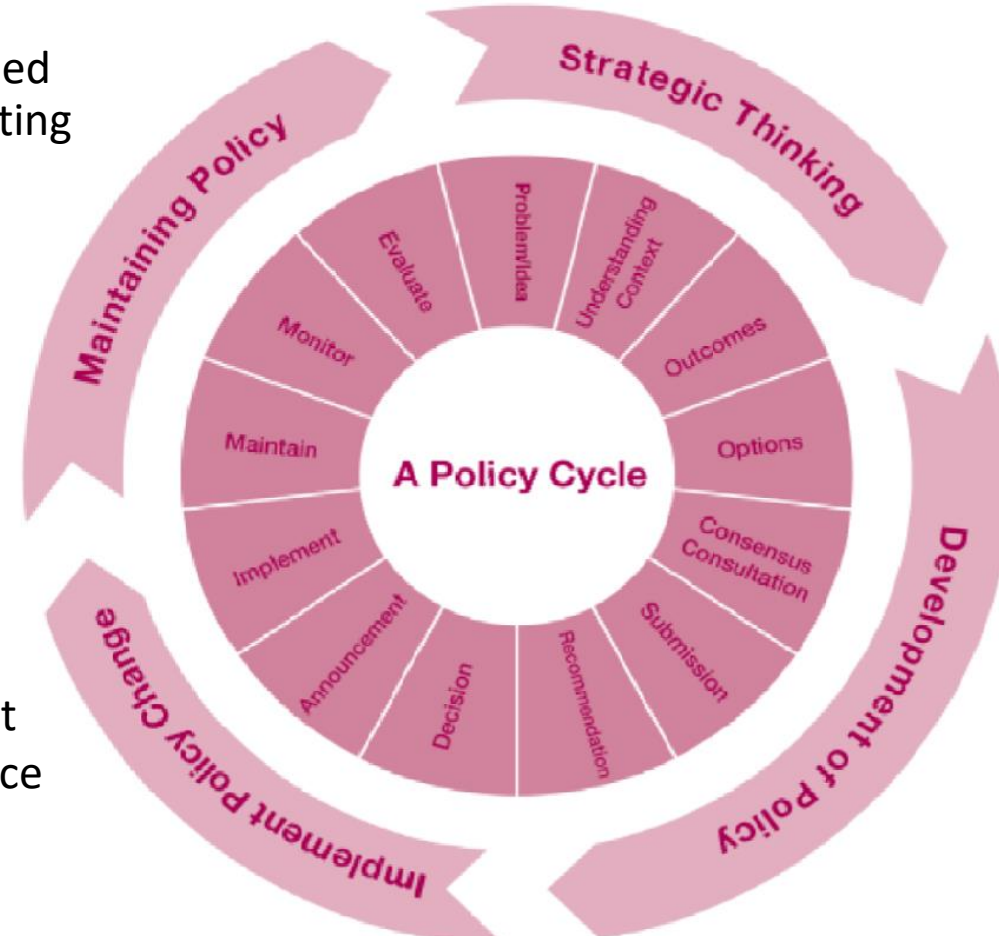


Strategy/ Policy Cycle



Water and Environment Support
in the ENI Southern Neighbourhood region

Monitoring & controlling based on real measurements, reporting on KPI's on regular basis established



NRW Strategy developed and approved in March 2022

Foundation tasks and project implementation ongoing since 2017

NRW Policy under review, approval November 2023



Introduction



Water and Environment Support
in the ENI Southern Neighbourhood region

- NRW levels persistently high
- Since 2015 , NRW reduction prioritized
- NRW Strategy developed and approved in March 2022

Governorate	# of subscribers	Supplied Water	Billed Water	NRW%
Amman	767,862	211,884,550	112,883,338	46.7%
Zarqa	191,460	61,965,837	26,408,874	57.4%
Madaba	48,297	11,343,692	5,841,452	48.5%
Balqa	97,435	44,096,990	12,457,065	71.8%
Irbid	246,275	60,047,976	36,237,135	39.7%
Mafraq	61,381	35,192,170	11,134,508	68.4%
Jerash	35,520	10,061,602	5,063,366	49.7%
Ajloun	25,670	6,840,777	3,939,299	42.4%
Karak	51,829	25,883,235	7,536,718	70.9%
Tafieleh	18,800	8,140,320	2,502,437	69.3%
M'an	27,786	16,779,137	4,400,014	73.8%
Aqaba	44,537	28,991,470	19,332,086	33.3%
Kingdom	1,616,852	521,227,756	247,736,292	52.5%

Source: WAJ and Utility Performance Monitoring Unit (UPMU)



NRW Strategy for Jordan - Targets



Water and Environment Support
in the ENI Southern Neighbourhood region

- Comprehensive Approach
- Four Pillars
 1. Institutional capacity
 2. Measurement/ Monitoring & Control
 3. Commercial Losses
 4. Physical (Real) Losses

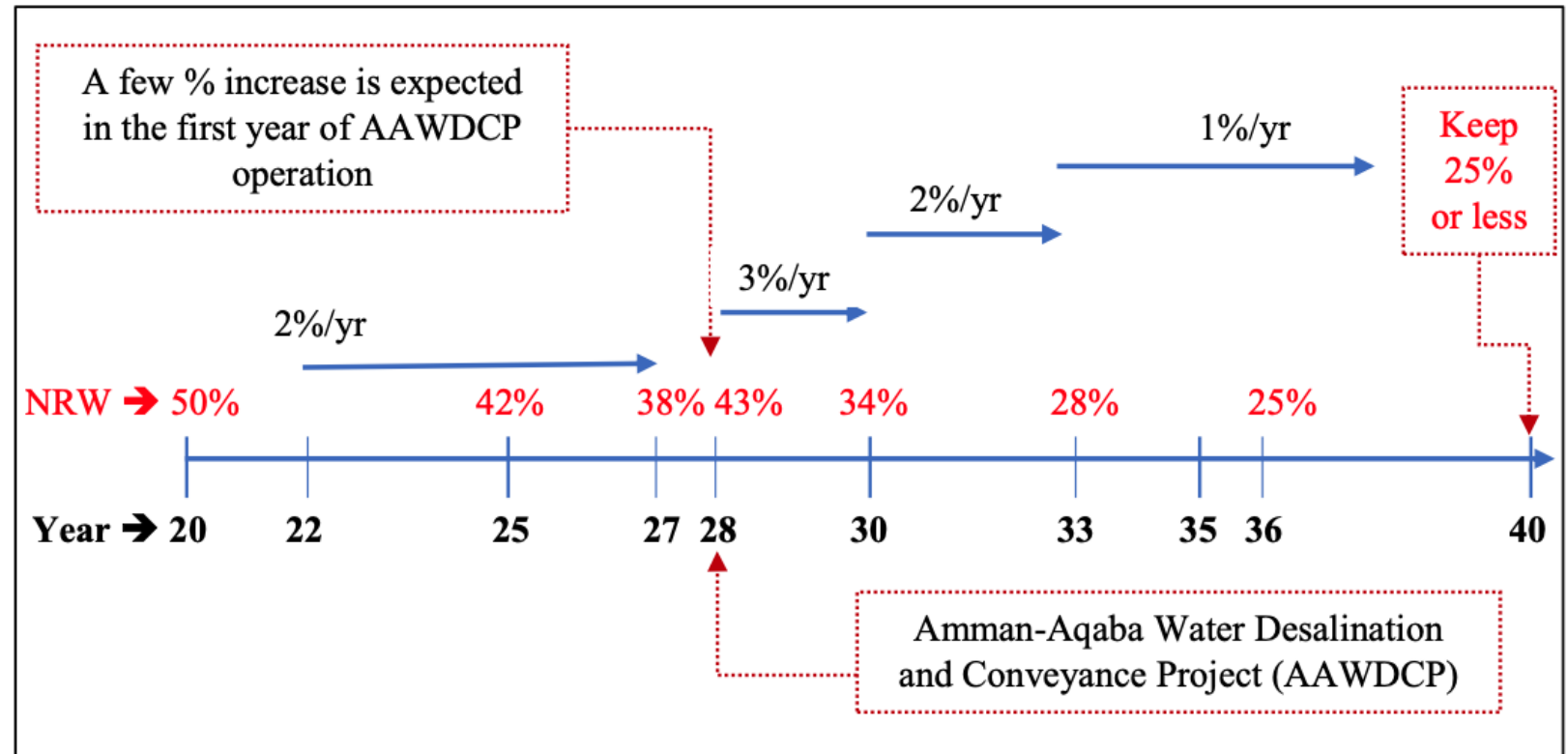


Figure 2: NRW national targets and timeline by 2040



National NRW Strategy for Jordan



Water and Environment Support
in the ENI Southern Neighbourhood region

Table 5: Summary of capital investment per utility per pillar in JD 1000

Period: 2022 - 2040

Total Investment:

JOD 1.27 billion

Utility \ Pillar	Institutional capacity	Measurement, monitoring and control	Commercial losses	Physical losses	Total
	YWC	737	9,423	43,903	353,035
Amman	947	3,140	59,561	245,263	308,910
Zarqa	693	2,903	23,219	103,733	130,547
Madaba	613	1,138	4,218	67,056	73,024
Balqa	650	2,940	10,170	116,627	130,387
Karak	650	4,158	6,777	80,731	92,317
Tafleh	617	1,305	2,259	43,204	47,384
Ma'an	622	3,637	3,171	59,324	66,754
AW	561	1,271	3,456	10,499	15,787
Jordan	6,089	29,914	156,734	1,079,471	1,272,209

Source: National Non-Revenue Water Strategy for Jordan's Water Sector (2022 – 2040)

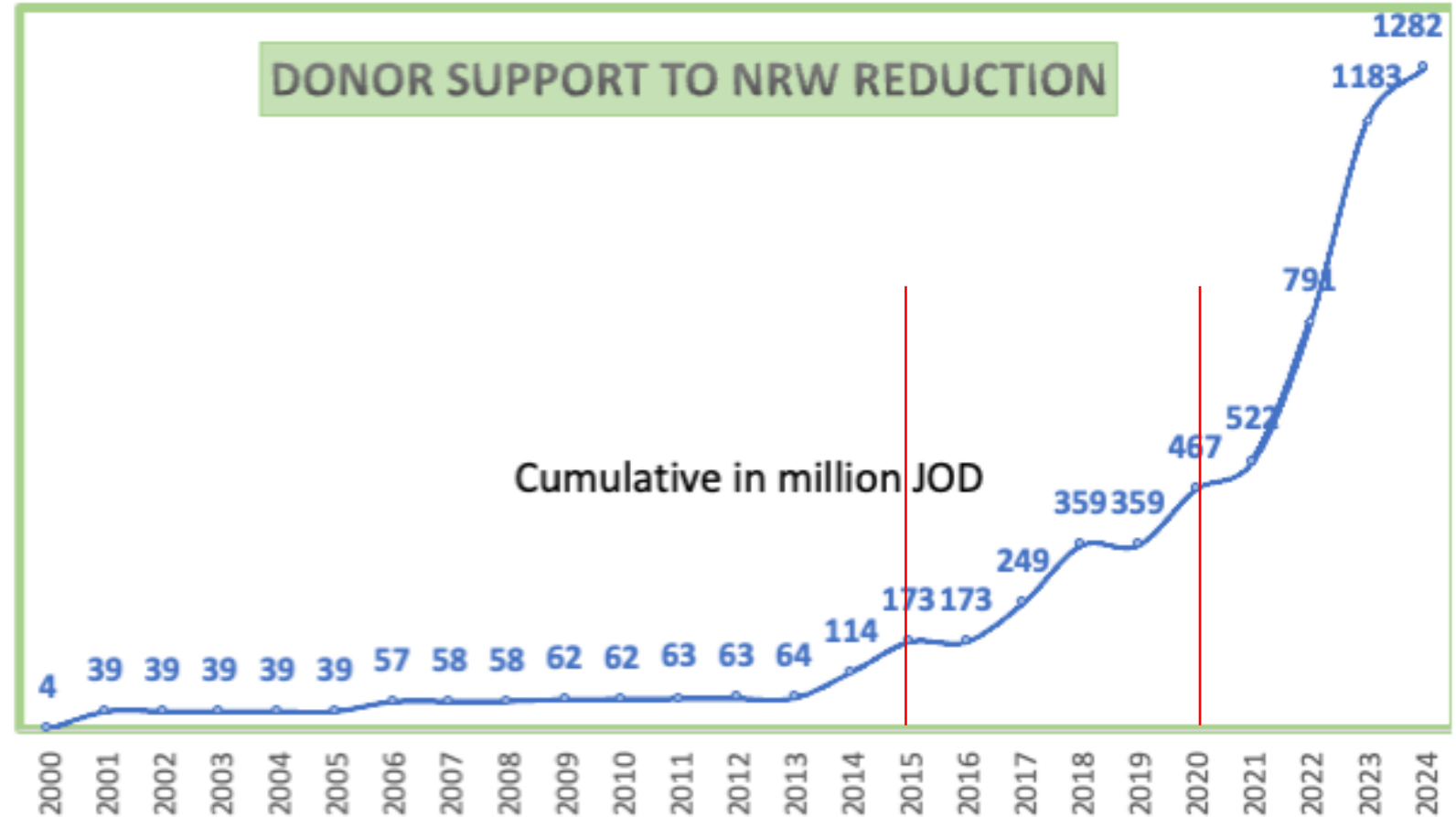


Donor Support to NRW Reduction



Water and Environment Support
in the ENI Southern Neighbourhood region

- NRW top priority
- Gained momentum after 2015
- Boost from 2020 onwards
- Sustainability



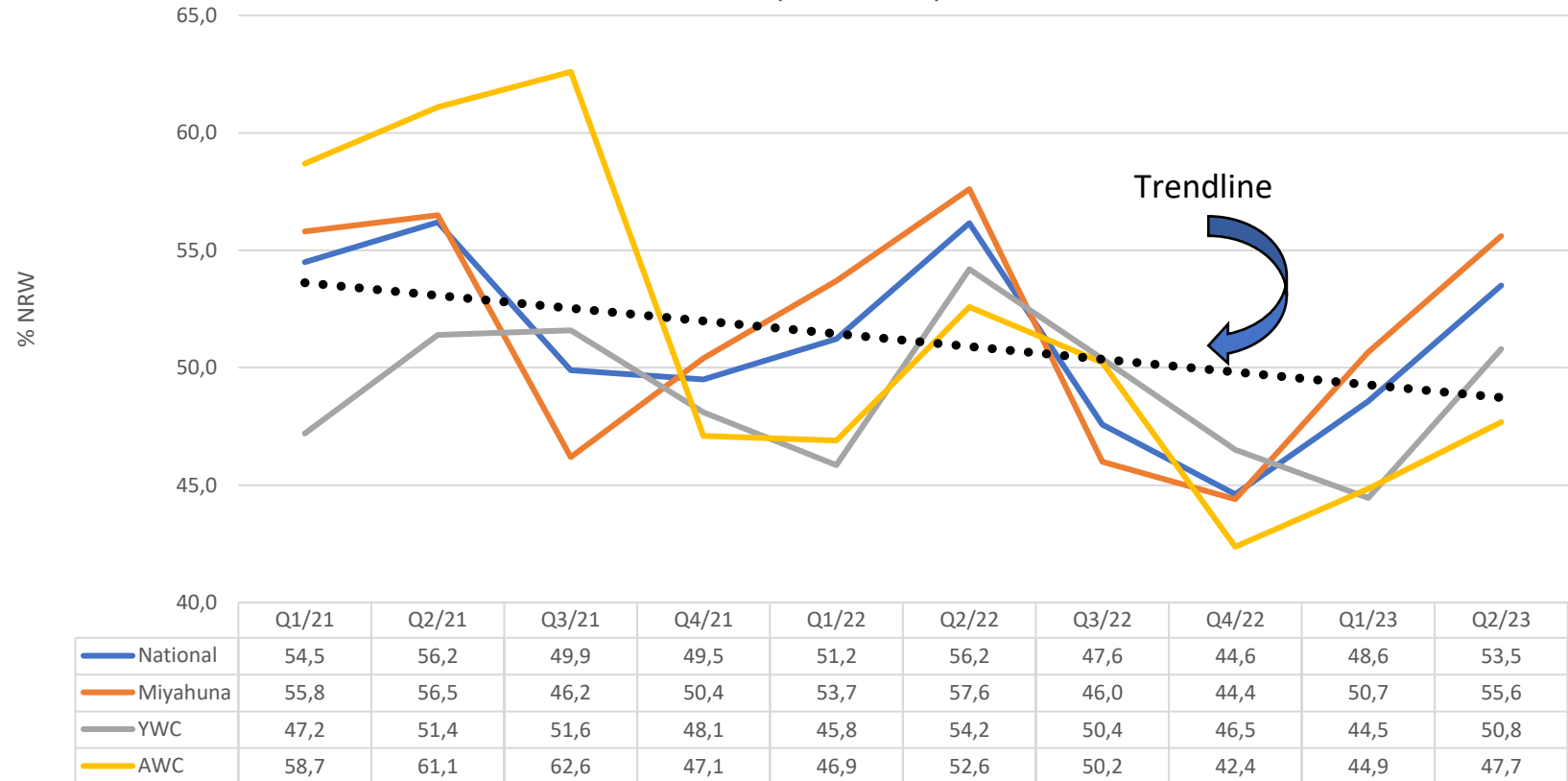
NRW Reduction 2021 - 2023



Water and Environment Support
in the ENI Southern Neighbourhood region

- Despite seasonal fluctuations downward trend maintained
- Target of 2% in reference year achieved (actual 3.1%)

NRW Values Q1/2021 - Q2/ 2023



Source: Central NRW Unit



Questions



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- On which target groups the NRW policy should concentrate?
- Can a policy binding all stakeholders to comply with its statements?
- Will the NRW policy guide and support the implementation of the NRW strategy?
- Can we identify missing elements?





Supply side

To stop the mining of the already over-pumped groundwater resources two major projects have been initiated and will be implemented within the coming 5-10 years:

- Aqaba-Amman Conveyance and Desalination Project
- Prosperity Pipeline

With the present level of NRW these projects are financially not feasible and require similar inputs on the demand side.

Demand side

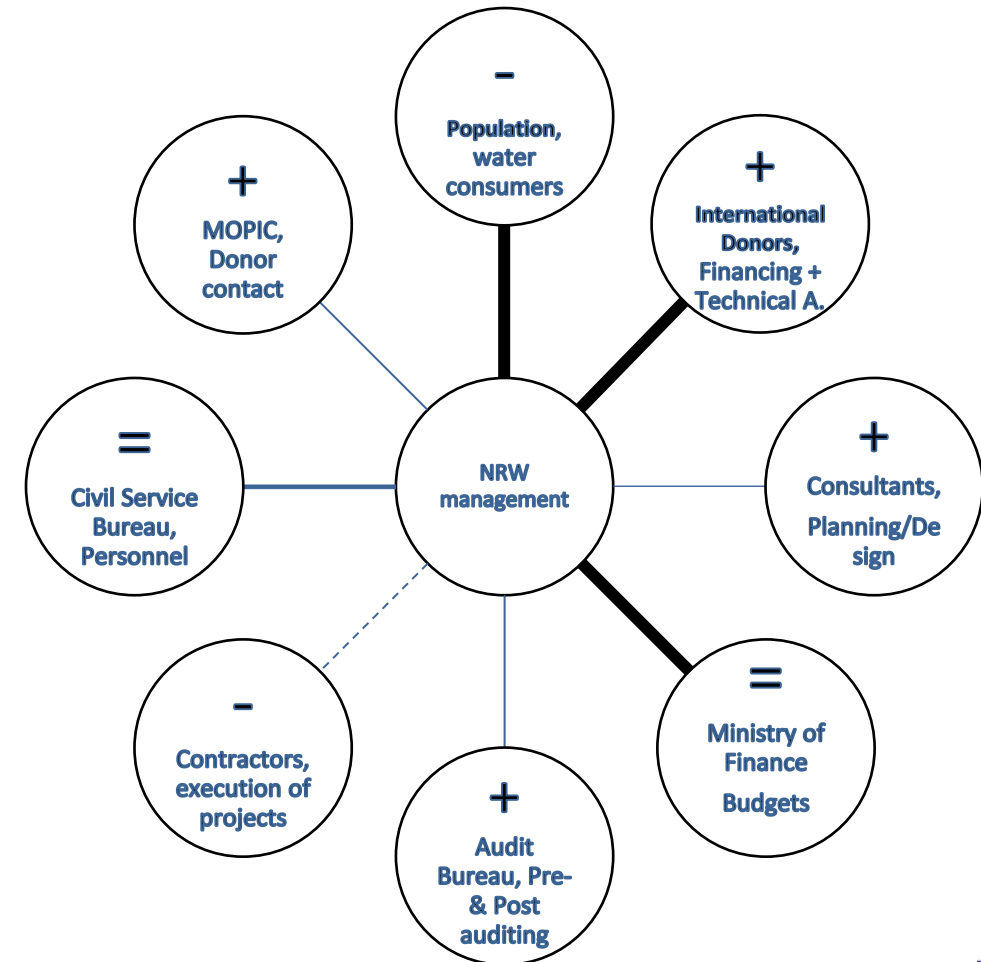
- Reduce the present NRW level to 25% or lower
- Introduce a comprehensive and sustainable NRW management to maintain acceptable levels of NRW in the long run.



Policy statement 1



- National priorities will be guiding the overall NRW management and shall be incorporated/ reflected in the business planning of each respective utility company.
- Need to be reflected in the stakeholder discussions and planning, in particular with the Ministry of Finance, the Ministry of Planning and International Cooperation and the respective international funding agencies.



Institutional Framework



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

Disturbing Question:

Despite rising investments and activities over the past 20 years, why the NRW remains at high levels around 50% ?

Facts:

- NRW is a highly complex problem, involving all business units and a composite performance indicator for the whole water utility
- Difficult to manage in a highly bureaucratic and rigid institutional framework
- Circumstances beyond the control of the water sector keeping water sector in permanent crisis mode
- Traditional investments supply-side oriented, NRW of secondary importance



Institutional Framework NRW management



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- The MWI will adopt the most efficient and effective means for optimizing the NRW management. The NRW reduction from the present unsustainable high levels requires a systemic approach and strengthening/ adjustment of the existing institutional arrangements.
- Strengthening of the institutional capacity is a key pillar for the successful implementation of the NRW strategy
- Central NRW unit in MWI will be assigned with coordination of NRW projects and monitoring the performance of NRW reduction, in close cooperation with the NRW units in each respective utility company and WAJ
- Major donor funded NRW projects will be managed by the **PMD**; whereas the implementation of projects will be the responsibility of the utility companies.



Role of NRW Units



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- Sustainable NRW management will be secured by **NRW units** in the utility companies. Each company need to report the status of NRW quarterly; from 2024 onwards on monthly basis.
- The role of the NRW units need to be defined, clear responsibilities and tasks to be assigned by WAJ and the management in the public companies.
- The widespread perception that these units are responsible for the reduction of NRW is misleading as the business units like commercial, maintenance & repair and operations are the real drivers of NRW reduction.

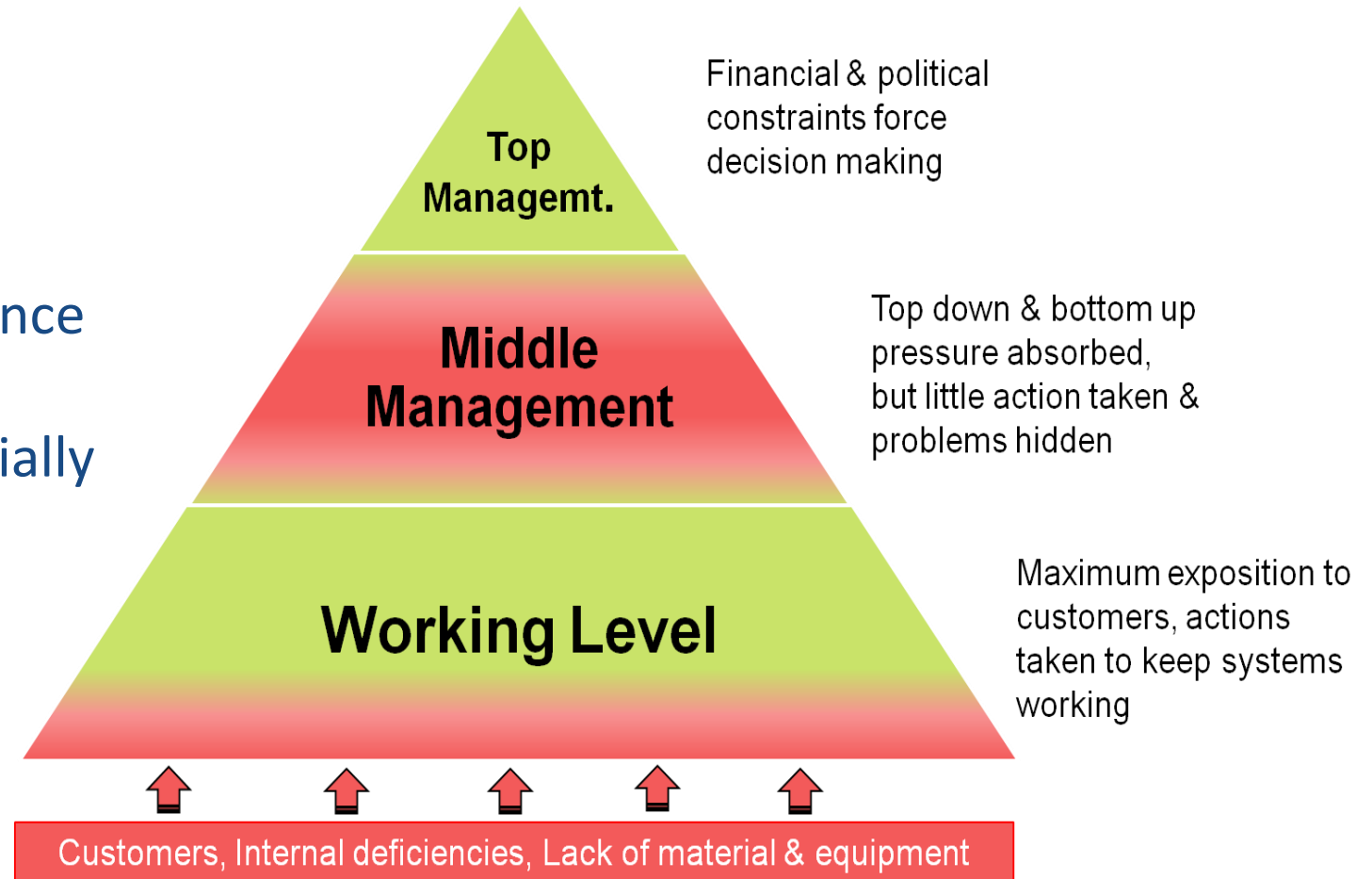


Change Management



Water and Environment Support
in the ENI Southern Neighbourhood region

- Capacity building needed to improve professional experience in NRW
- NRW units only partially established



Legal Framework



Water and Environment Support
in the ENI Southern Neighbourhood region

Entity	Legal status
Ministry of water and Irrigation	Overall water sector policies and legislation, formulation of policies and strategies for water sector, communication with funding agencies, Overall coordination of NRW initiative
Water Authority of Jordan	Established under Water Authority Law No. 18 of 1988, <i>as amended</i> Owner of assets in public companies, operating bulk supply systems, through PMD managing NRW related Worldbank/ EIB projects, no operational responsibilities in distribution networks
Public Utility Companies Miyahuna, YWC, AW	Established under the Companies Law of Jordan, No. 22 of 1997 as retail or distribution companies. Managing all water supply and wastewater systems in its service areas, controlled by Management Boards.
International Funding Agencies	Loans and grants provide to GoJ, sub-lending via MoF to MWI, WAJ. USAID grants directly to Utility Companies (FARA)



Integrated NRW Management



Water and Environment Support
in the ENI Southern Neighbourhood region

- NRW reduction permanent and continuous business operation.
- Systemic and comprehensive approach will prevent ad hoc decision making and increases transparency
- Communication among business units to be improved
 - ✓ ICT, ERP, GIS, CIS



Other priorities



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- Precedence of apparent loss reduction above cost-intensive rehabilitation and restructuring, addressing the most critical issues on priority basis,
- The operational units for distribution networks to be made responsible for real loss reduction, establishment of a reliable data base etc.
- State of the art applications to be introduced in the National Complaints Centre to improve the quality of no-water and leak complaints and increase the speed of leak repairs in the maintenance divisions. This will encourage the public to report problems in the distribution network and will help operations to adjust the intermittent supply schedules.





**Water and
Environment Support**
in the ENI Southern Neighbourhood region

Thank you for your attention!

