



NCWR for a Water Resilient Europe

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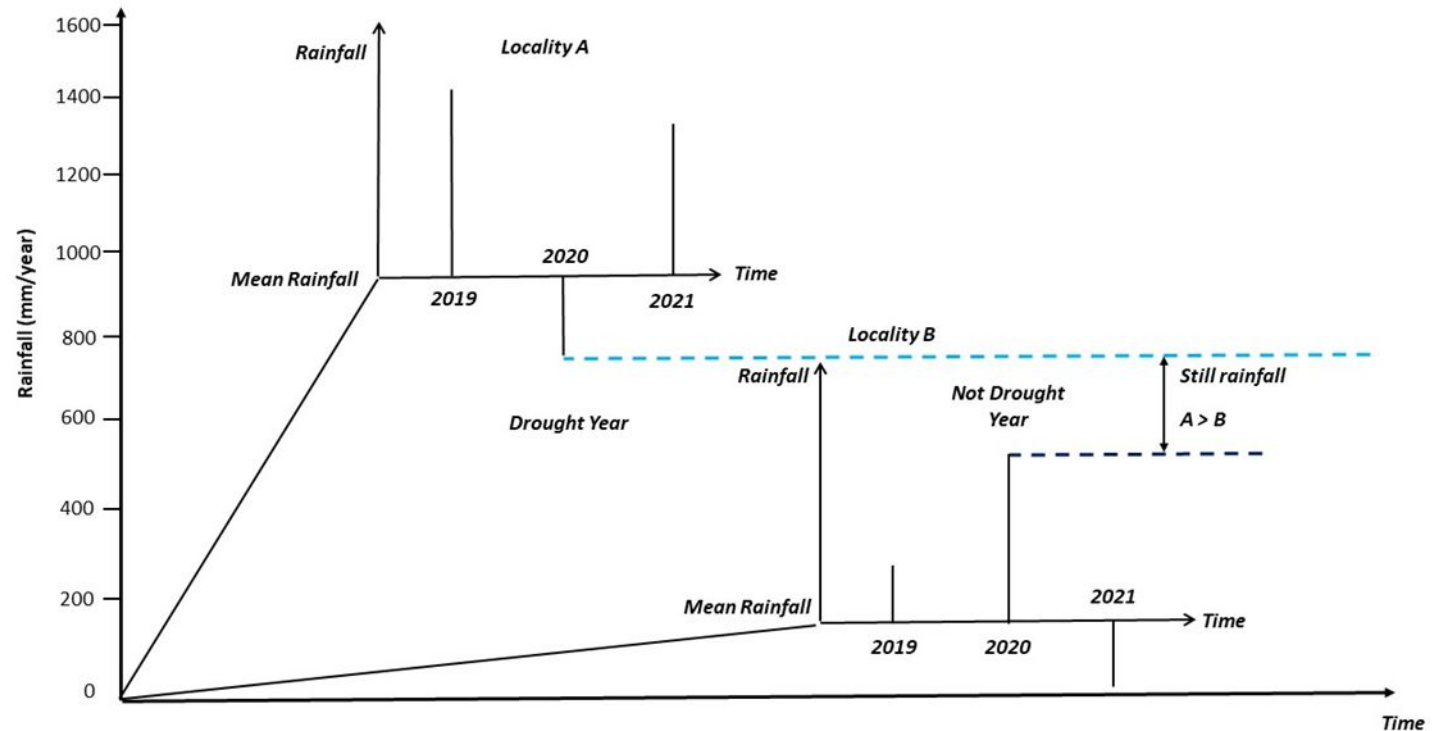
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The Unavailability Perspective

Drought is defined as a negative variation from the mean annual rainfall.

But the mean annual rainfall is “relative” – and depends on the climatic conditions prevailing in different locations.

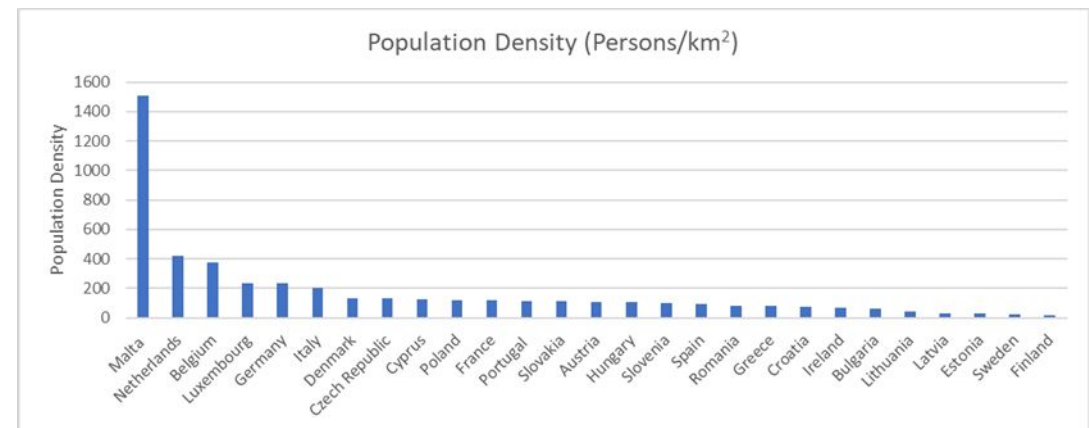
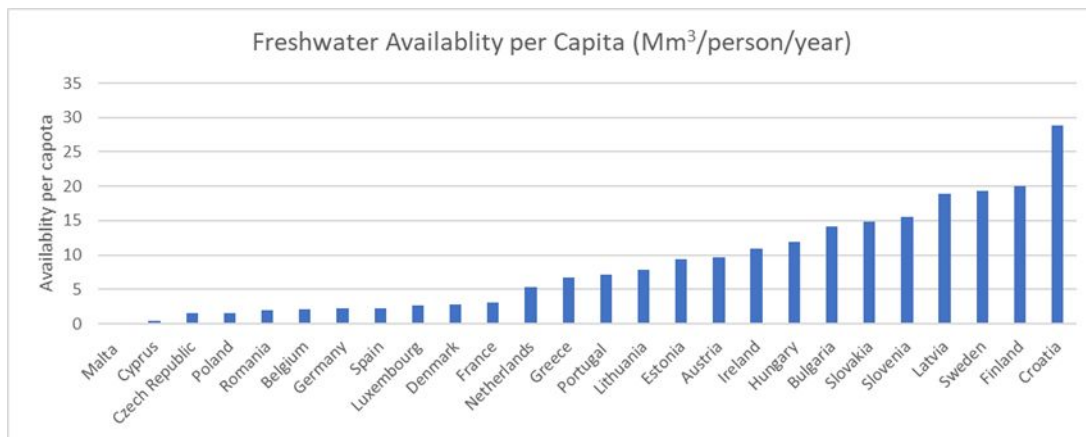
Therefore the “relativity of drought” should also be considered – extending the context of “drought” to “aridity” – chronic lack of water resources.



Context - Malta

- Climate: semi-arid with dry, hot summers and mild, wet winters.
- Geomorphology: small island, precludes the development of economically exploitable surface waters.
- Demography: the highest population density in the EU.

Low availability of Natural Water Resources, but high Specific Water Demand.

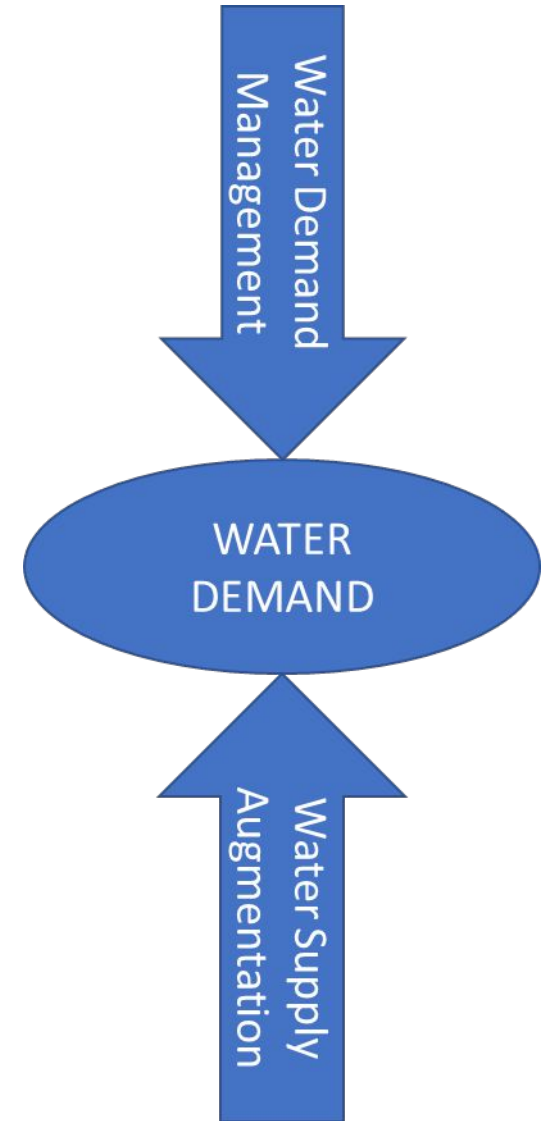


Policy Perspective

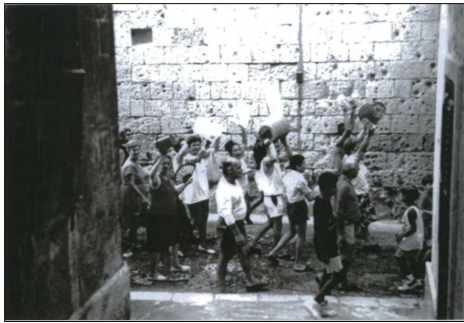
Under these circumstances, development of a water management framework needs to start with acknowledging reality.

Even if water demands are kept at highly efficient levels, there is insufficient natural freshwater resources to sustainably meet national demand.

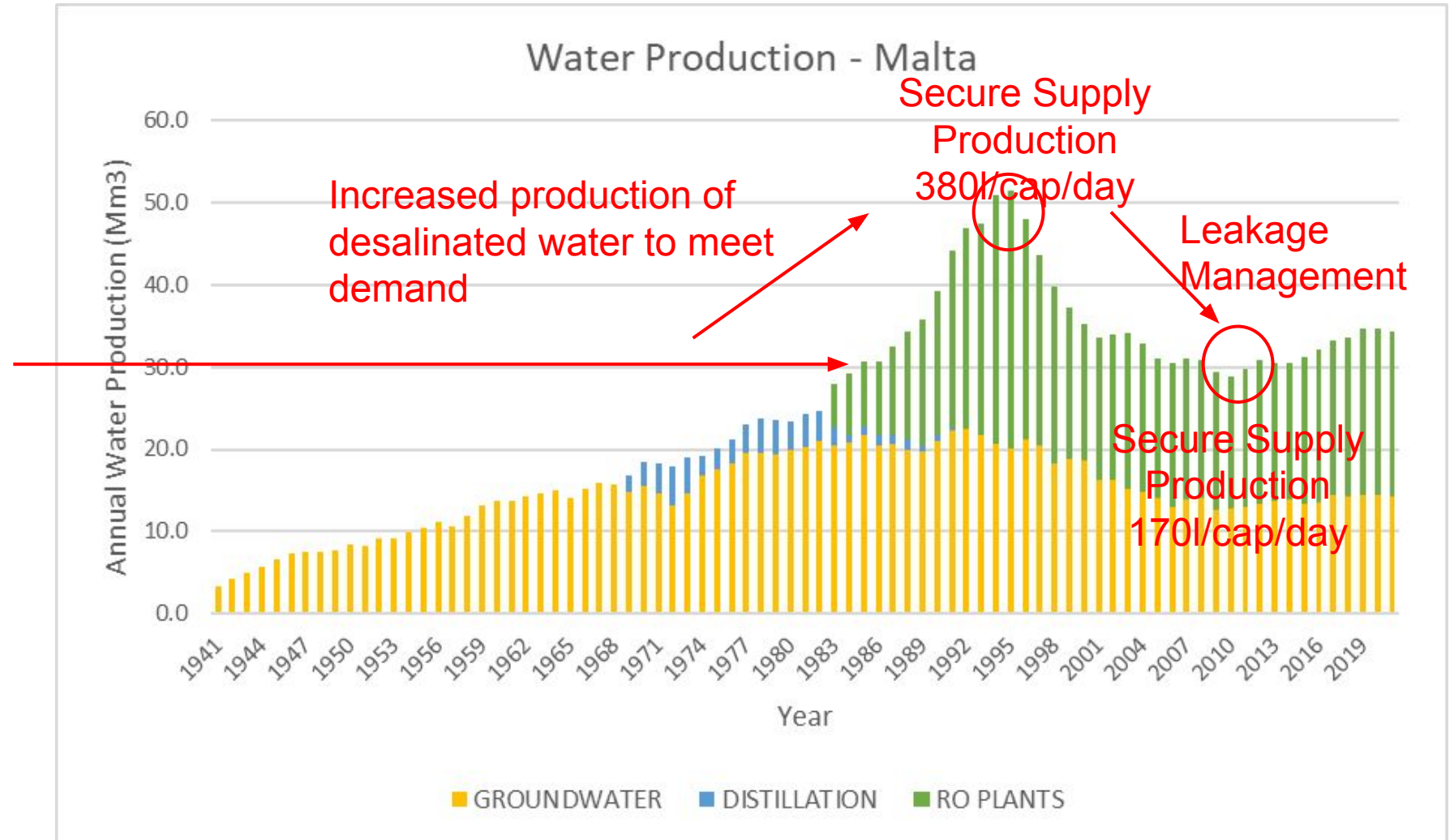
Malta's water management framework is based on a two-pronged strategy to achieve water security: meeting water demand through the conjunctive use of water supply augmentation and water demand management measures, in an increasingly sustainable manner.



Policy Impact



Street Protests
due
to water rationing



Mainstreaming NCWR

Under the context of water scarcity, factors such as:

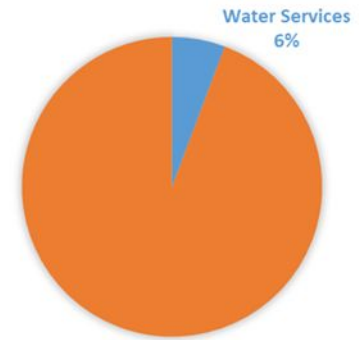
- Supply Diversification (Non Conventional Water Resources)
- Water Efficiency (National and User Level)
- Energy Efficiency

gain increasing importance in the water management framework.

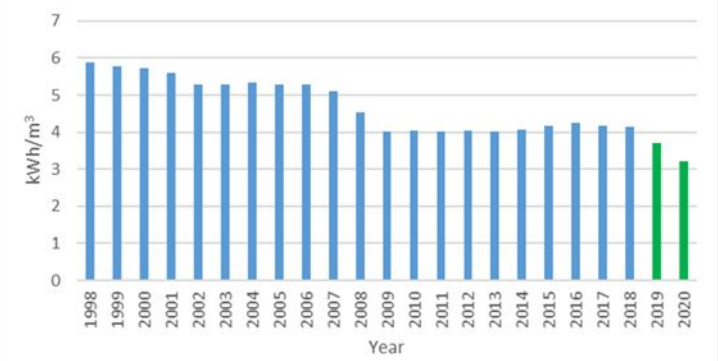
Increasing consideration of energy use within the whole water services cycle:

- Optimising energy use in water production (sea-water desalination)
- Leakage management (energy savings from lower production needs)
- Reduction of frictional losses in distribution networks
- Avoiding sea-water infiltration in sewers
- Protection of the quality of wastewaters
- Optimising energy use in wastewater treatment

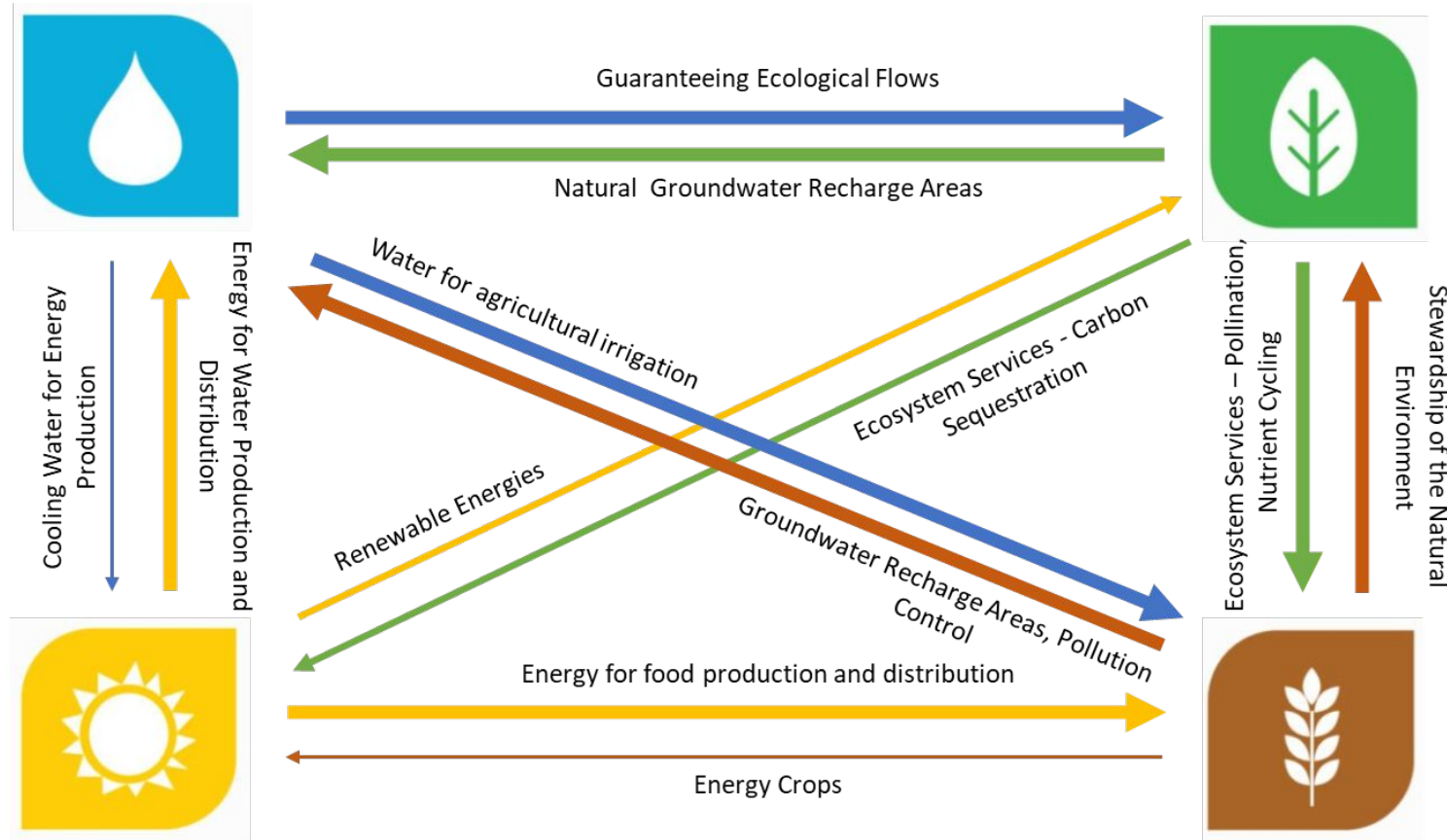
ENERGY DEMAND - WATER SERVICES



SPECIFIC POWER - DESALINATION



WEFE NEXUS



Increased need of comprehensive water policies – linking up with other sectors

RETOUCH NEXUS

REsilienT water gOvernance Under
climate CHange within the WEF
NEXUS



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Monitor **water governance*** by providing a set of Nexus-smart indicators that reflect **multi-actor*** and **cross-sectoral*** interactions



Present and advocate more **integrated***, Nexus-based, climate-resilient water governance systems.



Design economically and financially sustainable cross-sectoral, **multi-level*** Nexus-based water systems



Promote and implement more transparent and inclusive water governance through innovative **engagement mechanisms***



Endorse upscalable and desirable Nexus-based water governance practices and **institutional settings***

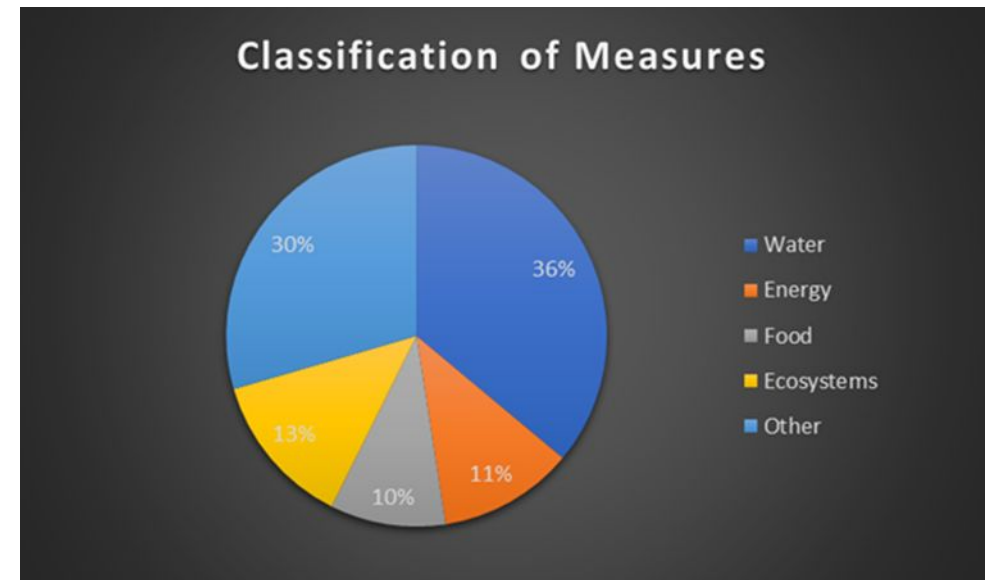
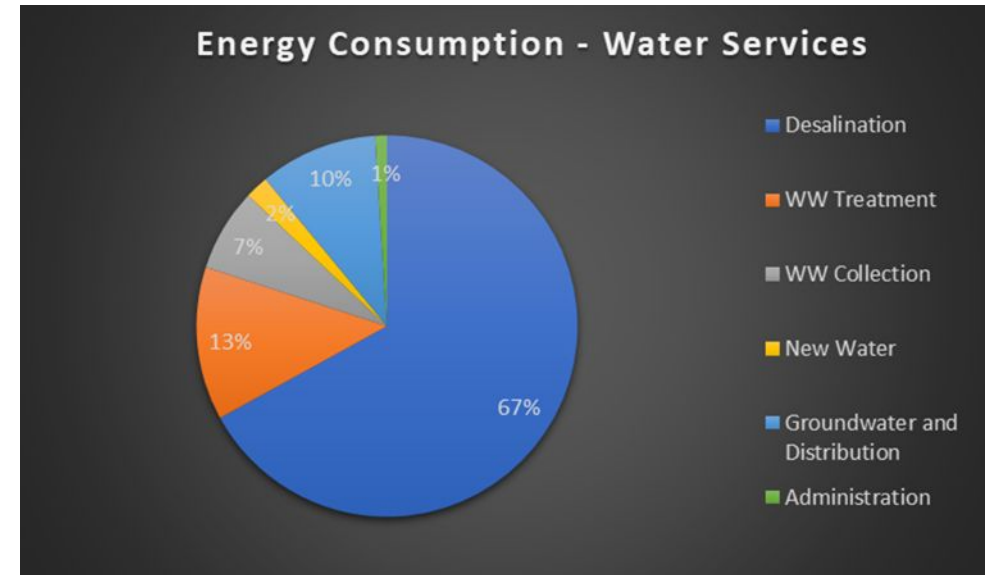
Application - RBMPs

Energy plays an important role in the future planning of water resource management, in particular to ensure financial sustainability and lower environmental impacts.

Energy efficiency can be applied at various operational levels:

Water production, Water distribution, Wastewater collection, Wastewater treatment

Indirect measures (ex. through water demand management) also present important opportunities to optimise energy use in water management.

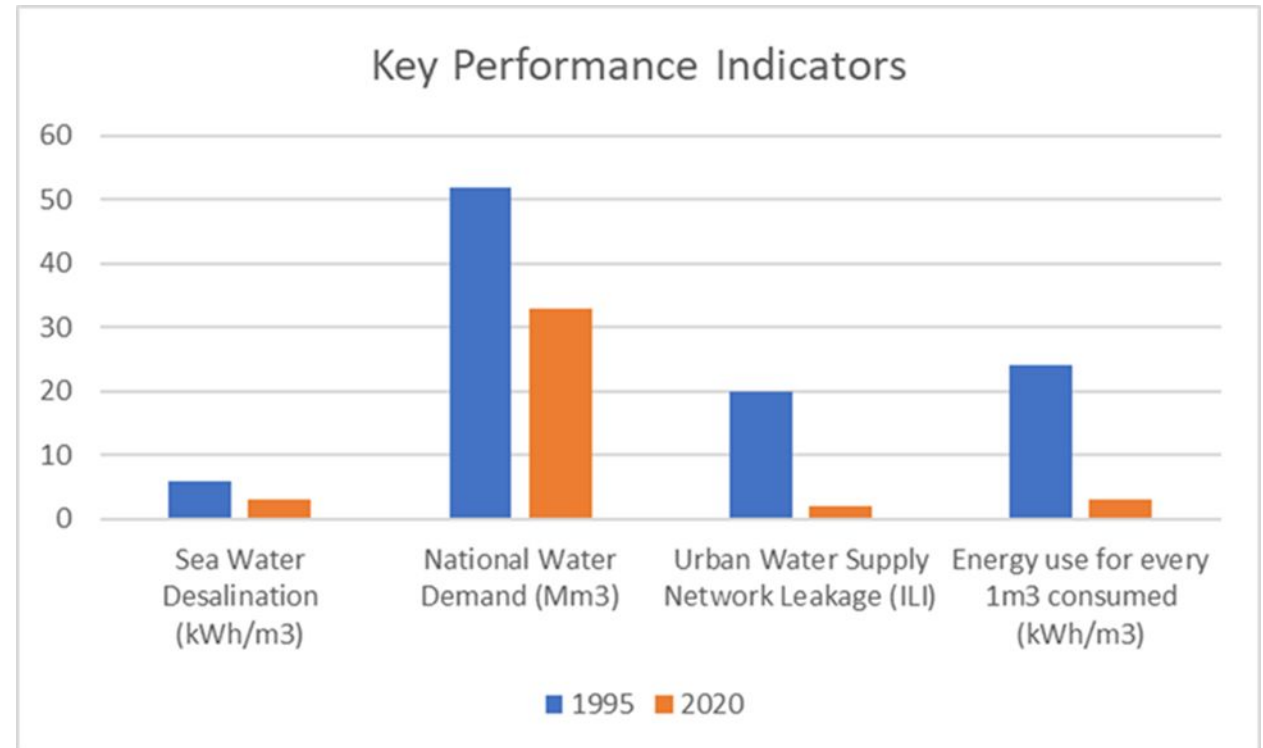


Conclusion

Malta's experience – transformation of water management through the application of NCWR:

Significant reduction in the national water demand through increased efficiency in water use.

Improved operations leading to a significant reduction in the energy requirements for water services provision.





Thank-you for your attention

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