



SPANISH WATER MANAGEMENT SYSTEM

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POLITICAL CONTEXT IN SPAIN

STATE ADMINISTRATION

RESPONSABILITIES

- ENVIRONMENTAL WATER ISSUE → FRAME RULES
- Management water resources in basins that occupy more than an Autonomous Community

AUTONOMOUS COMMUNITIES

- Water management in Basin of their territory
- Delegated powers
- Investments to improve the management.
- Treat the waste water.

MUNICIPALITIES

- Supply drinking water to households and industries.
- Collect waste water



WATER RULES IN SPAIN

DIRECTIVES $\xrightarrow{\text{Transpose}}$ NATIONAL RULES

+

INDIVIDUAL
RULES OF
EVERY COUNTRY



STANDARDS OF
USE RULES

- Purposes and **Requirements**
- Administrative **concesión**
(75 years)

ORGANIZATION OF WATER MARKET IN SPAIN

■ WATER BASIN AUTHORITIES:

- Administrative bodies that manages the water concessions.
- Water concessions are more precisely regulated in a only document → **Basin Plan**.
- Water concessions follow a priority order:
 - When the 1st use is covered, it's started to cover the 2nd one.

ORDER OF PREFERENCE FOR USE:

1. Population supply, including industries with little water consumption located in urban areas and connected to the municipal network.
2. Irrigation and agricultural uses.
3. Hydraulic energy storage.
4. Industrial uses for production of electrical energy.
5. Aquaculture.
6. Recreational uses.
7. Navigation and water transport.
8. Other uses.

THE OTHER ADMINISTRATIONS

AUTONOMOUS COMMUNITIES

- Implement facilities to:
 - Add alternative resources (desalinization plants, facilities to collect water in case of heavy rains).
 - Adapt the WWTPs to the reusing and connect them with Irrigating Communities.
- Promote an irrigation more efficient
- Water Treatments
- Monitoring the use of the water

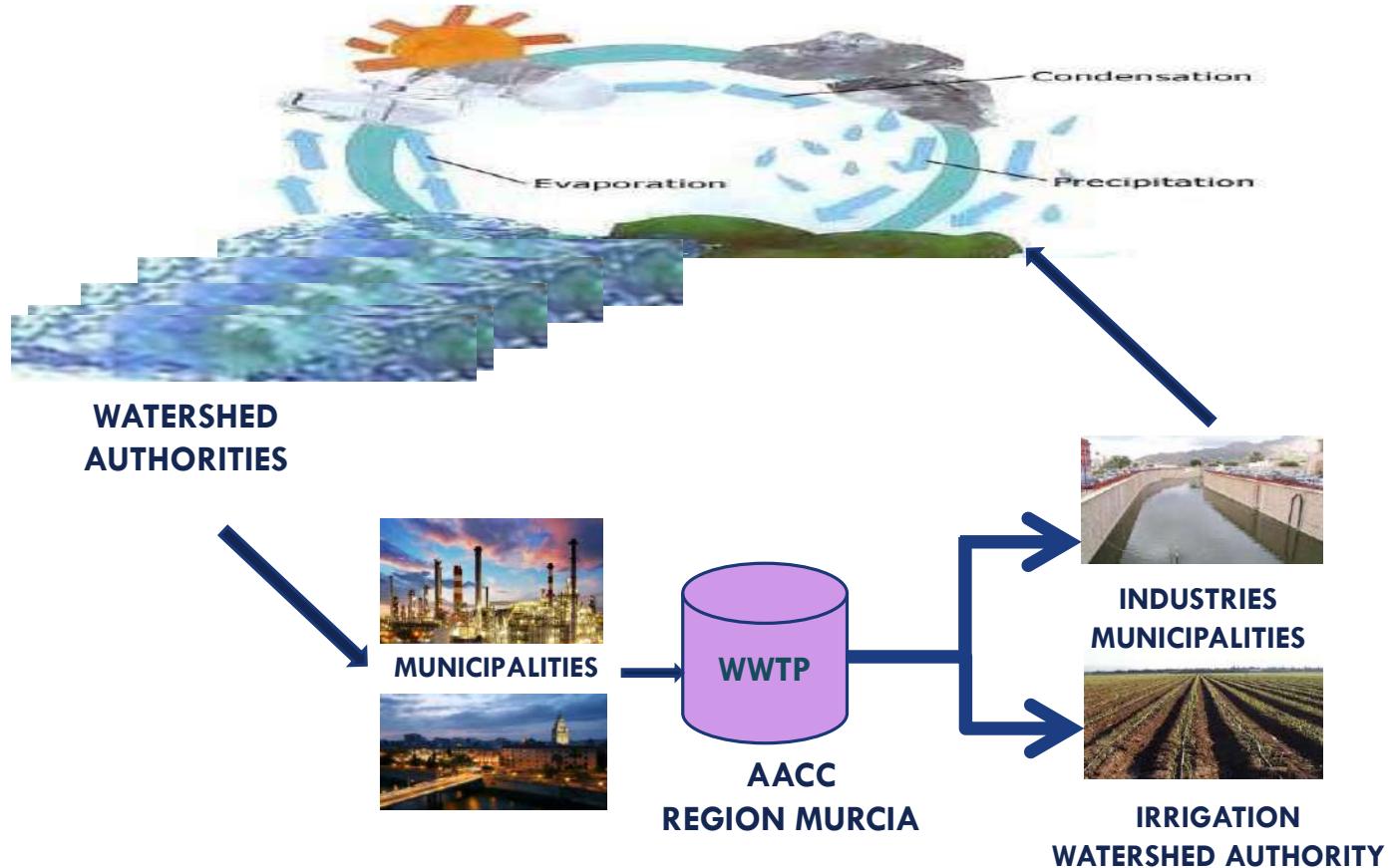
MUNICIPALITIES

- Supply the water to the households and the urban industries.
- Collect the waste water and to send to the WWTPs for its treatment.

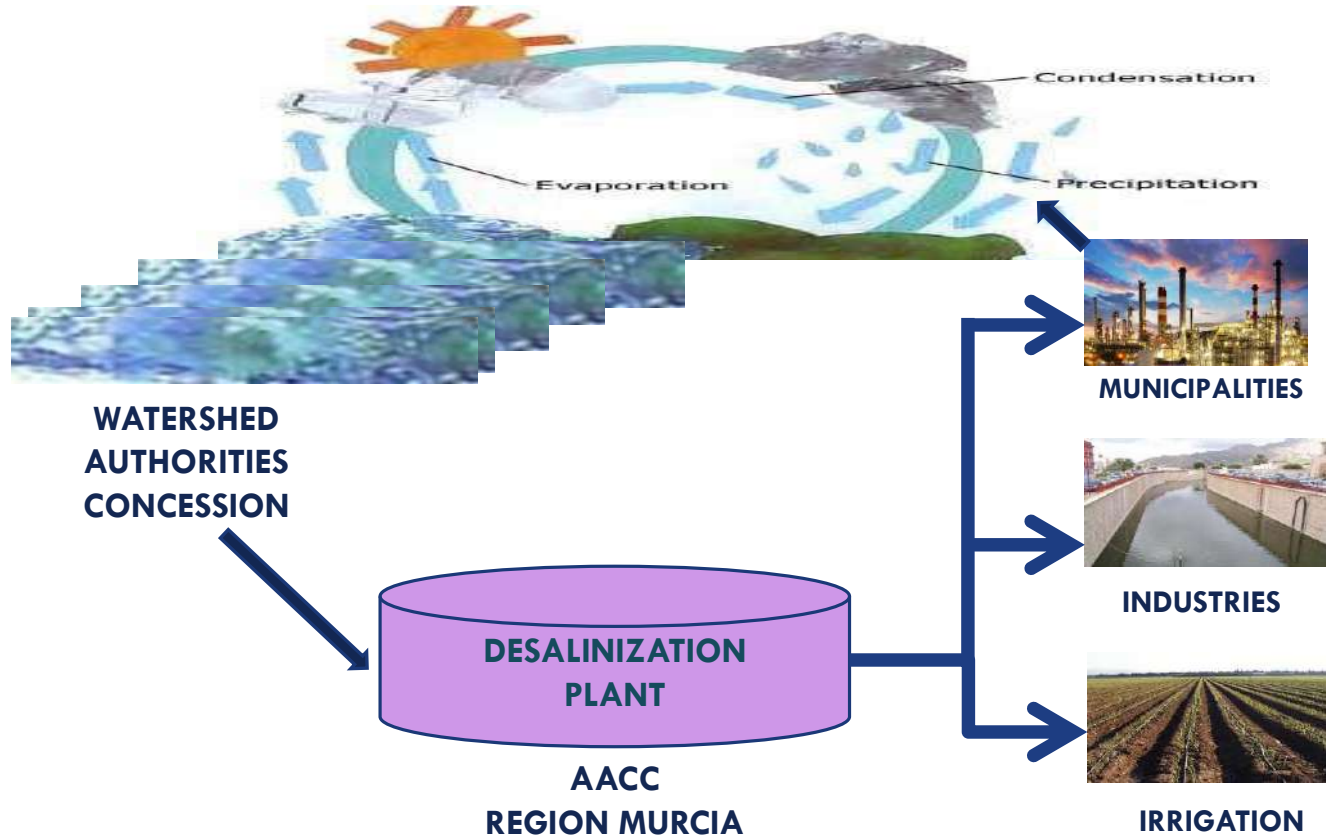
Type of Water management:

1. Direct
2. Though Qualified companies
3. Public procurements

WATER REUSING GOVERNANCE CYCLE

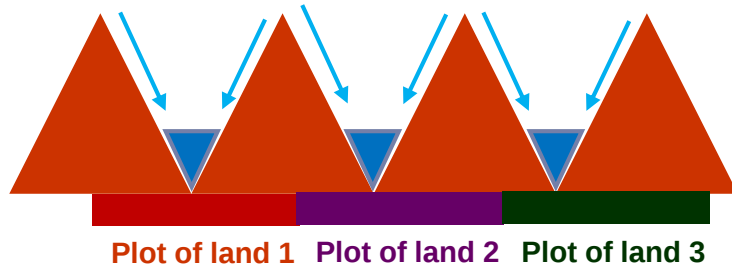


DESALINATED WATER GOVERNANCE CYCLE



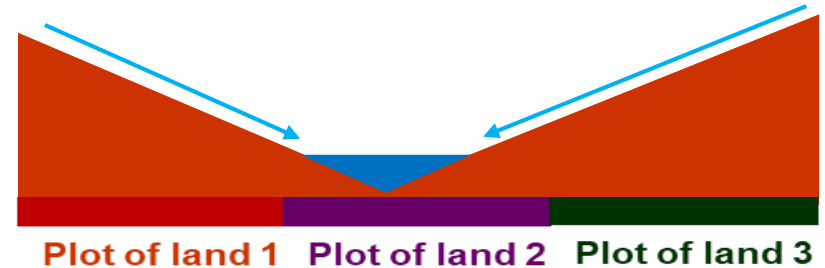
HARVESTING WATER OR DRAINAGE WATER

WATER COLLECTED IN THE OWN PLOT OF LANDS



- No need concession to take advantage of that rainwater.
- It's the same case for Greenhouses

WATER COLLECTED IN A MICROBASIN



- It needed concession of Basin Authority
- It's the same for the drainage water, that it's collected underground

WATER MANAGEMENT IN MURCIA REGION

AVAILABLE WATER RESOURCES

Conventional water resources

- Surface water (≈ 50 %)
- Groundwater (≈ 15 %)

External

- From external basins (≈ 20 %)

Non-conventional water resources

- Desalinated water (≈ 10 %)
- Reused water (<8 %)
- Rainwater harvesting (<2 %)

WATER DEMANDS

- Agriculture + Deficit (82 %)

- Industrial (8 %), Households (6 %), and Ecological (3 %)

WORKS TO COLLECT RAINWATER

- **Water General Directorate is investing in those facilities to collect rainwater:**
 - Storm Tanks
 - Separative Networks: To separate rainwaters of waste water, using grid Systems, collectors ...
 - The point is to avoid the 1st dirty rainwater reaches the vulnerable bodies.
 - Ponds for collecting rainwaters
 - SUDS (Sustainable Urban Drainage System)
- For users, they have an easier administrative procedure to get the concession, because it's considered reclaimed water.

Our experience summary

Improve the resilience

Water scarcity

- Complement the needs with alternative resources or others
- Guarantee the Urban Supply

Water excess (Flash floodings)

- Invest in facilities to collect harvesting rain:
 - Protect Urban areas
 - Protect Water Bodies
 - Use it like a resource



Thank you!