Trade-offs related to groundwater/freshwater resources in Andalusia

Strategies to address social, ecological and economic trade-offs in regional bioeconomy development

MARINA BARQUERO LEÓN

CORPORACIÓN TECNOLÓGICA DE ANDALUCÍA (CTA)

31st October 2024

THE CASE OF THE ANDALUSIA REGION

SCALE UP
community-driven
bioeconomy development

❖ The management of water resources in Spain is based on the European Water Framework Directive (Directive 2000/60/EC). The transposition of this Directive was carried out through Law 62/2003.

❖ To carry out the evaluation of the capacity of surface water and groundwater bodies potentially relevant to the region of Andalusia, the data collected in the Third River Basin Management Plan (2022-2027) of the Guadalquivir River Basin District (RBD) [1]:

State	Bodies in Good Condition		Bodies in Bad Condition	
	No.	%	No.	%
Quantitative State	54	63%	32	37%
Chemical state	62	72%	24	28%
Global State	41	48%	45	52%

Table 3. Overall Status of the groundwater bodies. Guadalquivir River Basin District

THE CASE OF THE ANDALUSIA REGION

Key Points:

- **Agricultural productivity and sustainable water use.**
  - Agriculture accounts for about 80% of water use in Andalusia, putting significant pressure on water resources [2].
  - Groundwater resources are substantial but often overexploited [3]:
    - Estimated at 34,524 hm3/year, representing 31% of total runoff
    - Many aquifers are in poor quantitative status due to overabstraction
    - Cost recovery rates for water services are around 80-87%, falling short of full recovery [2].
- **Economic development and ecosystem conservation**
  - Only 62% of surface and 48% of groundwater bodies are in good status.
  - Ecosystems like Doñana wetlands and Guadalquivir estuary are threatened.
- **Short-term water needs and long-term resource sustainability.**
  - Water scarcity is a critical issue in Andalusia.

Fuente: Observatorio de la Sequía del portal de Protección Civil de Puente Genil.

[2] *Environmental tax Policy Review of Andalusia*. (2023b). https://doi.org/10.1787/fe6d8b45-en

[3] Fornés, J. M., López-Gunn, E., & Villarroya, F. (2021). Water in Spain: paradigm changes in water policy. *Hydrological Sciences Journal*, 1–11. https://doi.org/10.1080/02626667.2021.1918697
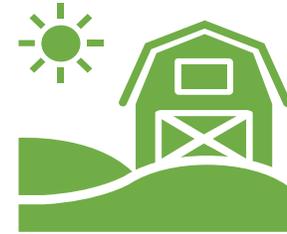
Strategic lines and necessary measures

Improved water pricing to reflect true costs and promote conservation.

Better metering and monitoring of groundwater use.

Increased focus on water reuse and efficiency in agriculture.

Wastewater reuse.

Proposed strategies

CESUR. Long-term strategic plan to meet the water needs of the agro-industrial, agricultural, industrial, tourism and urban supply sectors in Andalusia [4].

Spanish Government. Groundwater Action Plan 2023 – 2030 [5].

Financial Sector. Budget line for the digitisation of water use monitoring.

[4] *Diagnostico-sobre-las-necesidades-de-agua-en-andalucia.pdf*. (n.d.). Retrieved 30 October 2024, from https://www.cesur.org.es/assets/diagnostico-sobre-las-necesidades-de-agua-en-andalucia.pdf

[5] https://www.miteco.gob.es/es/agua/participacion-publica/plan_accion_aguas_subterraneas_2023_2030.html

THANK YOU