Committee on Agriculture and Rural Development
Committee on the Environment, Public Health and Food Safety
Joint Public hearing on “Sustainable management of water resources in agriculture”
Tuesday 25 April 2023, 09:00-11:30 Brussels

Panel 1 Managing agriculture's impact on water resources - policy directions and CAP opportunities

Key elements for a successful groundwater management model for agriculture

Based on the case of La Mancha Oriental. Spain

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Water management in agriculture for food production:

One of the key achievements of the human history against famine

- Substantial **increment of crop production** per area, up to 5 times in arid and semiarid environments
- **Food security**: main mechanisms against severe drought episodes
- **Job and prosperity**, directly and through the associated industry and services
- Essential to **fix rural population**

Cons:

- **Intensive use of the water** resources
- Difficulties for **governance and management** -> illegal water uses
- Overexploitation and **decreasing trends of groundwater** levels
- Intensive use of fertilisers and pesticides -> **water pollution**

Managing agriculture's impact on water resources:
Water management in Mancha Oriental. Jucar River Basin, Spain

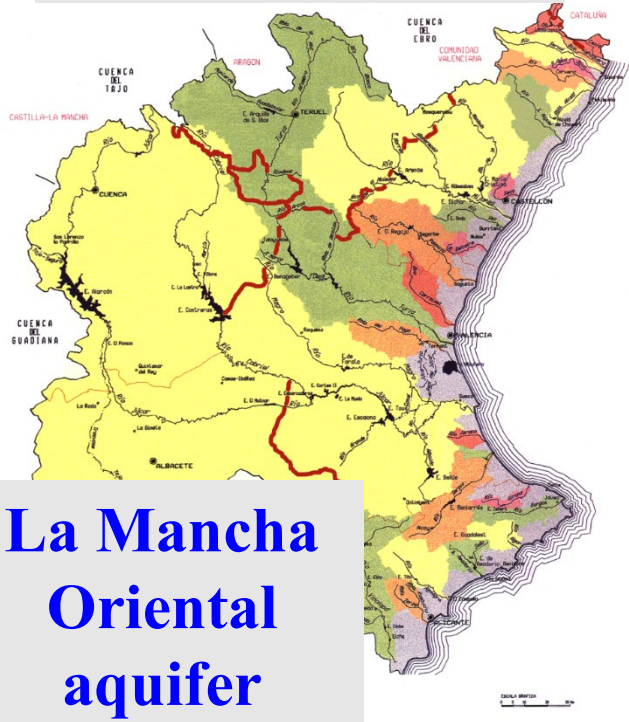
Júcar river basin

Key data

- 120.000 ha of irrigated land (2022)
- 12.000 farmers
- 10.000 groundwater weels
- 275.000 hab.
- Semiarid conditions (350 mm/year)
- Irrigation represents 20-30% of GDM (main pillar of local economy), fix population and stimulates associated industries (agroindustry,…)

Multiple presures:

- ➢ Inbalance of water abstraction and recharge (90% of water used for irrigation)
- ➢ Competency between regions (Valencia, Turia, Albufera, Vinalopó …)
- ➢ Additional environmental impacts due to decreasing groundwater levels

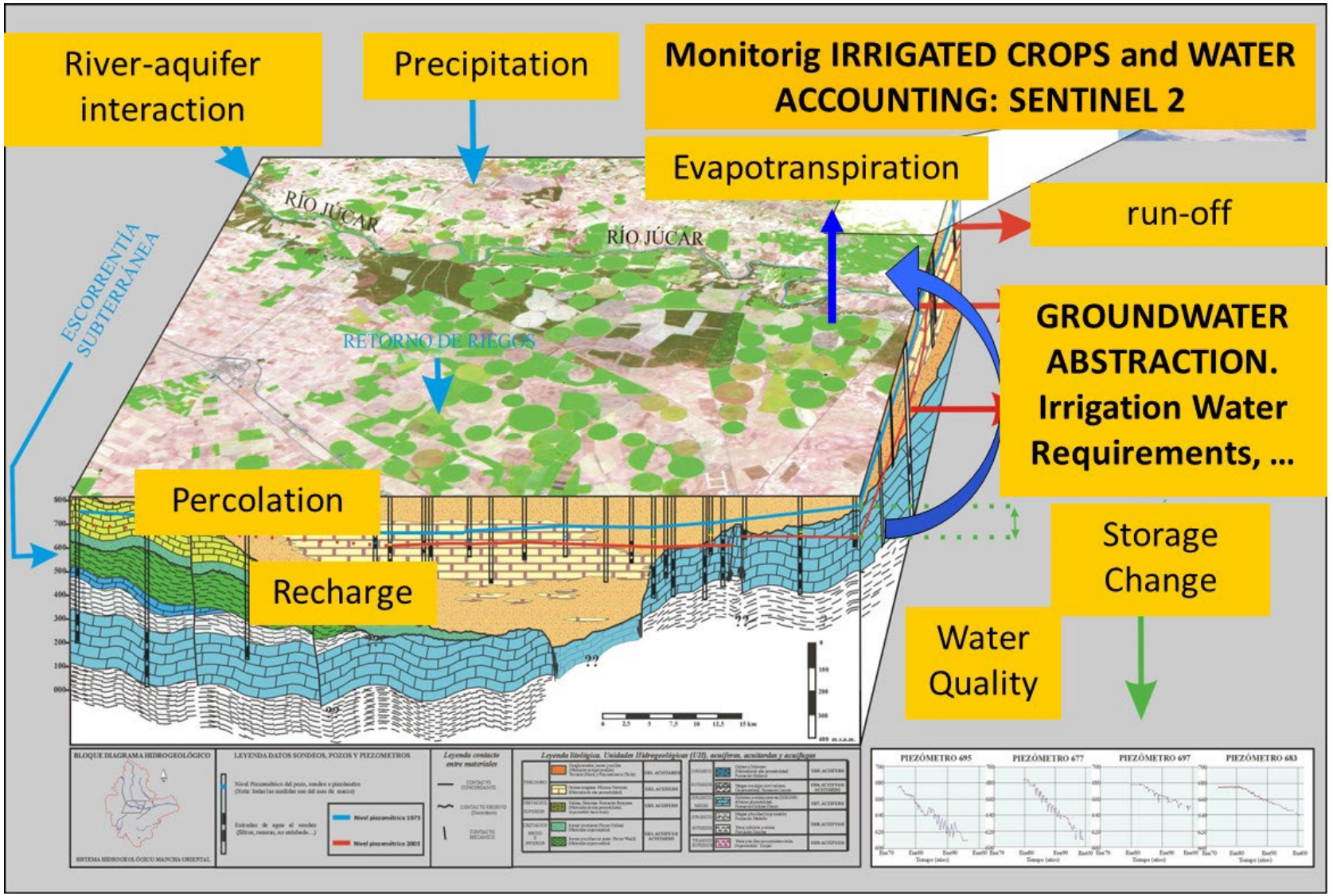


La Mancha Oriental aquifer

Managing agriculture's impact on water resources:
Water management in the Mancha Oriental: A success case

The water management model implemented in La Mancha Oriental **has proven to be effective:**

- Compliance with the Annual Exploitation Plan through identification of irrigated areas and estimation of water abstraction: **In La Mancha Oriental there are no irrigated areas without water rights**
- Groundwater extraction was stabilized.
- An acceptable level of farm income is maintained.

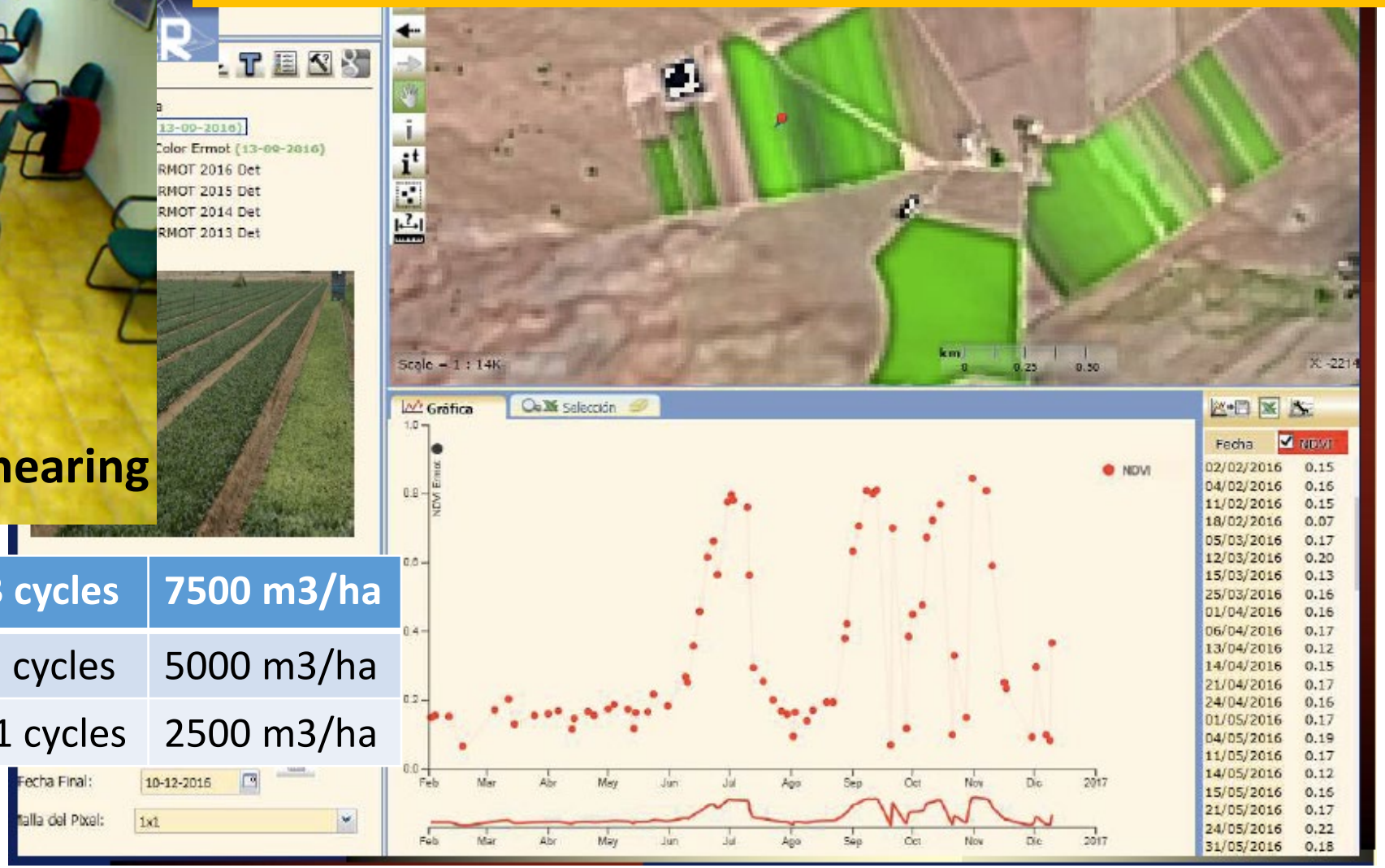


Enforcement of Annual Exploitation Plan.

➢ Irrigation Jury for sanctioning exceeding authorized water abstraction

The irrigation jury holds a hearing

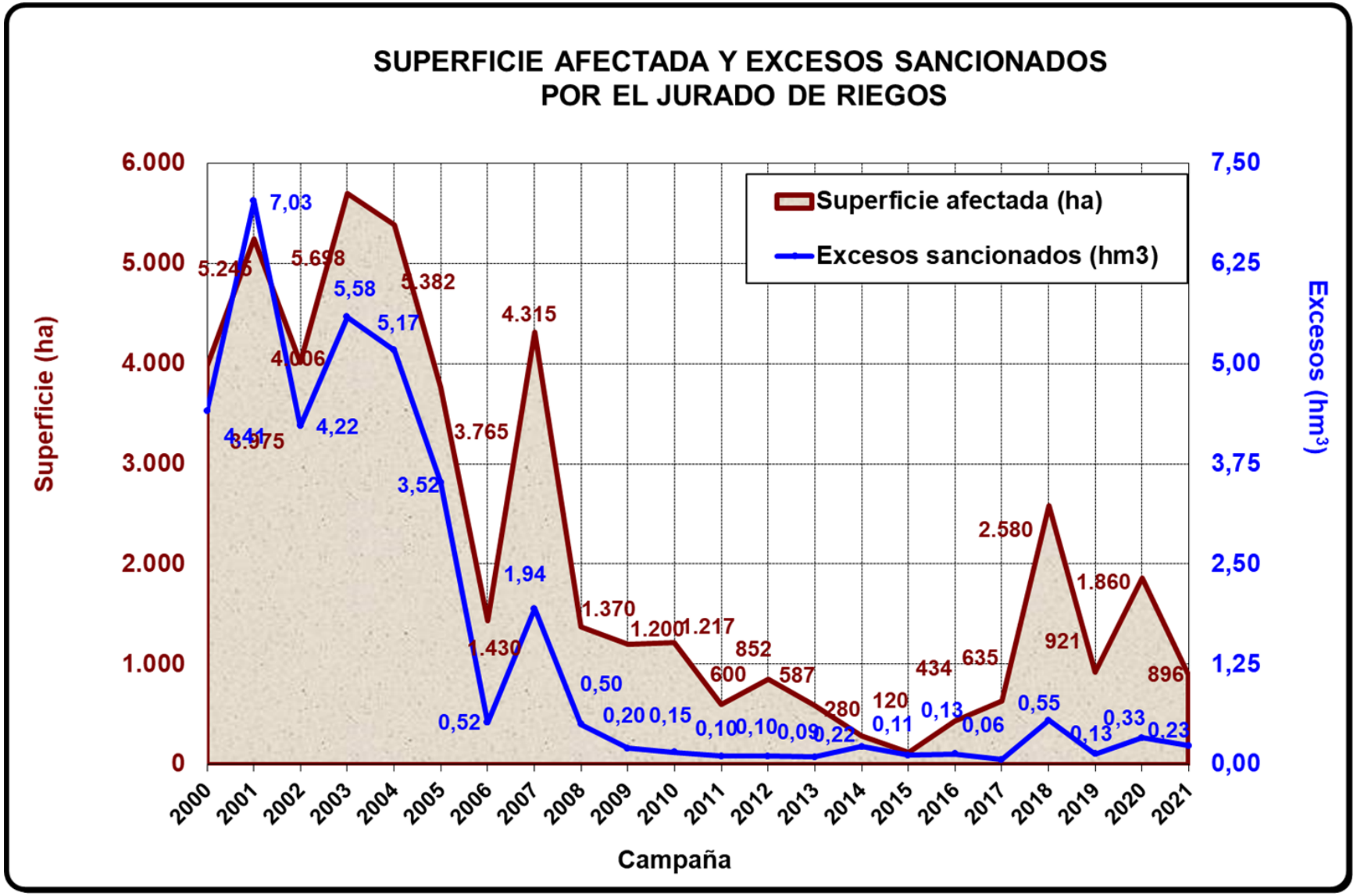
EVIDENCE FOR IRRIGATION JURY: TIME SERIES OF SENTINEL2



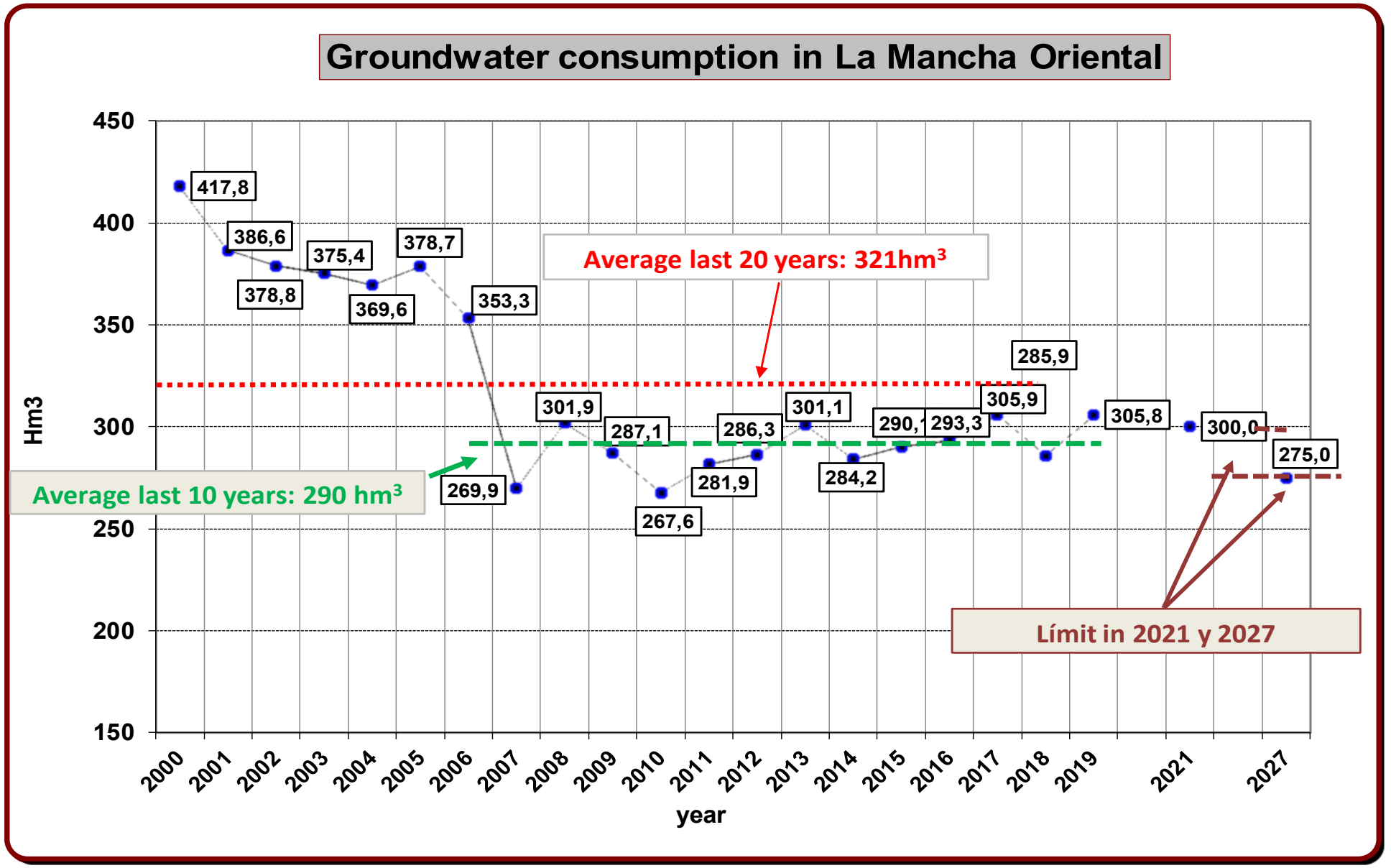
Lettuce 3 cycles	7500 m3/ha
Lettuce 2 cycles	5000 m3/ha
Lettuce, 1 cycles	2500 m3/ha

Enforcement of Annual Exploitation Plan.

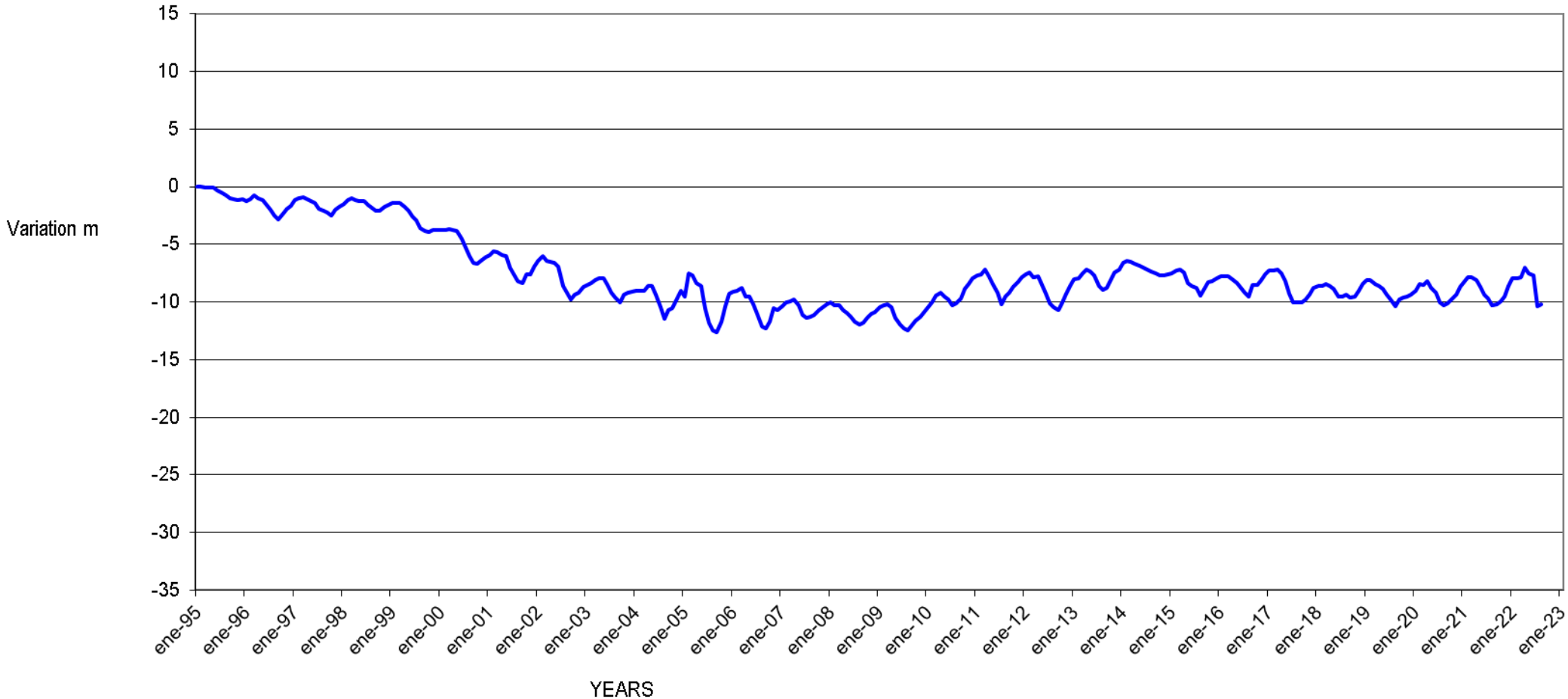
➢ Irrigation Jury for sanctioning exceeding authorized water abstraction



➢ Groundwater abstraction stabilized.



Evolution of the water level in the wells in La Mancha Oriental
1995-2022



Managing agriculture's impact on water resources

Key elements

- Tech tools and best scientific knowledge for full enforcement of the Annual Exploitation Plan:
  - **Identification and Monitoring of irrigated areas**
  - **Determination of Water Applied for Irrigation,** at right scales
- **Well stablished Water Rights, l**inked to a delimited land
- **Proporcionate sanctions in case of infractions** (additional benefits if the sanction include water returns)

***Technology is not enough*:**

Co-governance of self-organized farmers with water authority is required

Proper **administration and management structures**

Political will

Managing agriculture's impact on water resources
Policy options (I)

Implementation and enforcement of the existing legislation.

- The Mancha Oriental groundwater management demonstrates the relevant principles, mechanisms and objectives of the existing legislation can be implemented successfully.

- Co-governance schemes between self-organized farmers and water authorities should be reinforced through changes in the current water legislation.

Contribution of subsidies (CAP payments, investments, …)

- Well stablished water rights, linked to a delimited land, should be mandatory in a transparent way.

- Support and investment for better administrative structures of the irrigation associations in charge of water management, in cooperation with the water authorities

Managing agriculture's impact on water resources
Policy options (II)

Farming advisory services

- Improving water efficiency and avoiding water pollution would require the inclusion of **water and nutrient management advice within the minimum requirements of Farm Advisory Services** under the CAP.

Use of the best scientific and tech knowledge

- Determination of applied water for irrigation is a key point and it requires implementing of hybrid systems working jointly with **remote sensing, flowmeters and agronomic knowledge.**
- **Knowledge about the links between agriculture activities and water bodies status should be improved-**
- The **EU space program** (COPERNICUS & GALILEO) demonstrated a great ability for the operational **monitoring of irrigated areas** and for their water accounting.

The author expresses his gratitude for the multiple contributions of people and institutions that make up this presentation. Explicitly mention:

- **Junta Central de Regantes de la Mancha Orienta, JCRMO *Central Irrigation Board of Eastern La Mancha***
- **Confederación Hidrográfica del Júcar. MITECO *Júcar River Basin Authority***
- **AgriSat**

For more than 25 years, the Júcar River Basin Authority, the Central Irrigation Board of Eastern La Mancha, the University of Castilla La Mancha, and currently AgriSat, have worked together within the framework of the ERMOT project, to assign water rights and for the monitoring of irrigated areas using remote sensing techniques.

GOBIERNO DE ESPAÑA
MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA Y EL RETO DEMOGRÁFICO

Confederación Hidrográfica del Júcar, O.A.

agriSat Iberia, S.L.

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