

## IRRIGATION CARTOGRAPHIC UNITS (ICU) IN THE EBRO RIVER BASIN IN ARAGÓN V.2.0.0

### GENERAL INFORMATION

#### 1. Title of Dataset:

Irrigation Cartographic Units (ICU) in the Ebro River Basin in Aragón

#### 2. Authors:

M.A. Lorenzo-González, E. Playán, Y. Gimeno, M. Balcells, D. Quílez A. Jiménez, J. R. López-Pardo, I. Oliván, R. Castillo, L. M. Vicente, L. Gálvez, J. A. Lax, D. Solano J. Aguaviva and N. Zapata

#### 3. Date of data collection: February 2024

#### 4. Date of data publication on repository: July 5, 2024

#### 5. Geographic location of data collection <latitude, longitude, or city/region, Country, continent as appropriate>: Aragón (Spain). Centroid: 694880; 4598424 (ETRS89 (Huso 30N)- EPSG:25830)

#### 6. Information about funding sources that supported the collection of the data (including research project reference/acronym):

This research was funded by the Department of Agriculture, Livestock and Environment of the Regional Government of Aragón and the European Agricultural Fund for Rural Development (EAFRD) of the European Union through the Rural Development Programme. The grant code is #GCP2021001800, and the grant title is “Grupo Operativo Parteneriado del Agua de la cuenca del Ebro-Aragón”.

#### 7. Recommended citation for this dataset:

M.A. Lorenzo-González, M. Balcells, E. Playán, Y. Gimeno, D. Quílez, A. Jiménez, I. Oliván, J. R. López-Pardo, R. Castillo, L. M. Vicente, L. Gálvez, J. A. Lax, D. Solano J. Aguaviva and N. Zapata, 2024; Irrigation Cartographic Units (ICU) in the Ebro River Basin in Aragón v.2. [Dataset]; <https://doi.org/10532/7135>

### SHARING/ACCESS/CONTEXT INFORMATION

#### 1. Usage Licenses/restrictions placed on the data (please indicate if different data files have different usage license):

Creative Commons Atribución-NoComercial-SinDerivadas by-nc-nd

#### 2. Links to publications/other research outputs that cite the data:

Zapata N, Playán E, Castillo R, et al (2020) A methodology to classify irrigated areas: Application to the central Ebro River Basin in Aragon (Spain). Agric Water Manage 241:. <https://doi.org/10.1016/j.agwat.2020.106365>

#### 3. Links to publications/other research outputs that use the data:

Zapata N, Playán E, Castillo R, et al (2020) A methodology to classify irrigated areas: Application to the central Ebro River Basin in Aragon (Spain). Agric Water Manage 241:. <https://doi.org/10.1016/j.agwat.2020.106365>

#### 4. Links to other publicly accessible locations of the data:

N/A

#### 5. Links/relationships to ancillary data sets:

N/A

#### 6. Was data derived from another source? If so, please add link where such work is located:

Different data sources were used: (i) Cartography of the boundaries of the Water Users` Associations limits elaborated by the General Water Users Associations (if existing); (ii) cartography of irrigated area from the Ebro River Basin Authority; (iii) Cartography of the projected expansion of the irrigated area from the Ebro River Basin Authority (Ebro Hydrological Plan 2010-2015); and (v) Water Use inventory from the Ebro River Basin Authority (<https://iber.chebro.es/geoportal/>).

## DATA & FILE OVERVIEW

### 1. File List:

Vector data for GIS: shp.- geometry data; dbf.- Associated data table a; prj.- geographic projecting system information; shx.-geometric index

### 2. Relationship between files, if important:

All the files are required to open the cartography database with GIS tools.

### 3. Additional related data collected that was not included in the current data package:

No

### 4. Are there multiple versions of the dataset? If so, please indicate where they are located:

This is the second version of the dataset. The first one remains unpublished.

## METHODOLOGICAL INFORMATION

### 1. Description of methods used for collection/generation of data:

Collection of information from different sources: Aragon Government Databases; Ebro River Basin Authority databases; Information from State Society of Agrarian Infrastructures, S.A. (SEIASA), interviews with technical staff from Water User Associations and authors' knowledge.

### 2. Methods for processing the data:

Cartography tools and Spatial Analysis Tools for QGIS.

### 3. Instrument- or software-specific information needed to interpret/reproduce the data, please indicate their location:

vector files compatible with most GIS viewers.

### 4. Standards and calibration information, if appropriate:

N/A

### 5. Environmental/experimental conditions:

N/A

### 6. Describe any quality-assurance procedures performed on the data:

Revision by all authors of the dataset.

### 7. People involved with sample collection, processing, analysis and/or submission, please specify using CREDIT roles <https://casrai.org/credit/>

M.A. Lorenzo-González - Conceptualization, data curation, project administration and validation

M. Balcells - Data curation and validation

E. Playán - Conceptualization, data curation and validation

Y. Gimeno - Funding acquisition, conceptualization and validation

D. Quílez - Project administration and validation

A. Jiménez - Funding acquisition, conceptualization and validation

J. R. López-Pardo - Conceptualization and validation

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**8. Author contact information:**

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**DATA-SPECIFIC INFORMATION:**

**1. Number of variables:** 29

**2. Number of cases/rows:** 1143

**3. Variable List:**

- IDE\_CCRR: irrigation cartographic unit (ICU) identification code.
- CCRR: name of the ICU (inherited from the name of the Water User Association, the farmer, the farming company or the municipality)
- SISTEMA: large irrigated area to which the ICU belongs, derived from a large canal or a sub-basin
- SUBSISTEMA: minor irrigation canal supplying water to the ICU
- GRAN SISTEMA: Large irrigation system: General Water User Association (1) or other type (0)
- PARTICULAR: ICU water management by Water User Association (0) or by farmer/company (1)
- Sup\_ha: ICU total area (ha)
- Sup\_Unizar: Irrigated plot area within the ICU (ha), obtained by the authors from irrigation cartography data
- Sup\_PAC22: Irrigated plot area within the ICU (ha), obtained from the GIS for Agricultural Plots (SIGPAC) in 2022
- Sup\_PAC15: Irrigated plot area within the ICU (ha), obtained from the GIS for Agricultural Plots (SIGPAC) in 2015
- Orig\_Agua: water source: *Su*- surface; *Po*- groundwater.
- Fte\_Energ: Energy source for irrigation: *De*- Gravity; *Bo*- pumping; *BoDe*- mix
- Reg\_Parc: on-farm irrigation method: *Nun*- surface; *Pre*- pressurized; *Mx*- mix
- Escasez: water scarcity for irrigation: *Ve*- occasional; *Pe*- permanent
- Parcela: land tenure of the irrigated plots: *Dis*- disaggregated; *Con*- concentrated
- Cultivo: Crop productive orientation : *Ce*- field crops; *Ci*- intensive crops
- RedNat2000: environmental protection figure: *Na*- included in Nature 2000 protected areas; *No*- not included
- Socioecono: socioeconomic level: *Pu*- High; *Mo*- moderate; *Re*- Low
- GENERO: aggregated name of the variables related to the physical aspects of the ICU (see Zapata et al., 2020)
- ESPECIE: aggregated name of the ICU external properties (see Zapata et al., 2020)
- Mun>Sup: Name of the main municipality of the ICU
- COMARCA: Aragon county
- Paten\_II: data elaborated by two different funding programs. Rural Development Program 2021 #GCP2021001800-Partenariado del Agua del Ebro Aragón (1) or Rural Development Program 2017 #GGI2017E03200 Grupo Operativo Partenariado del Agua de la Cuenca del Ebro-Aragón (0)
- Orig\_Data: (i) information source:
  - (i) *Comunidad General* - Cartography elaborated by the General Users Associations;
  - (ii) *CHE 2004*- cartography of irrigation surface from the Ebro River Basin Authority;
  - (iii) *Ampliaciones CHE*- Cartography of the expansion of irrigated area from Ebro River Basin Authority (Ebro Hydrological Plan 2010-2015);

- (iv) *Nomenclator IDE Aragón*- Nomenclator from Spatial Data Infrastructure of Aragón;
- (v) *IGN 25000*- Geo-referenced National Topographic Maps at 1:25 000 scale from National Centre for Geographic Information;
- (vi) *Registro CHE*- Water use inventory (Registro de aguas) from the Ebro River Basin Authority;
- (vii) *Reg-Unizar*- Water User Association list and the authors' irrigation cartography data;
- (viii) *Pag Web*- Water User Associations website and other internet information;
- (ix) *IPA*- groundwater inventory (Inventario de puntos de agua) from the Ebro River Basin Authority

- **Ámbito:** geographic location: "*Monte*" (*interfluvial area*) or "*Ribera*" (riparian area)
- **ZonaClima:** climatic area: "*Templada*" (temperate) or "*Semiárida*" semiarid.
- **Clase\_2000:** Classification regarding irrigation modernization in 2003:
  - "*RAT*" is translated as RDT (Temperate Riparian Areas)
  - "*RAS*" is translated as RDS (Semiarid Riparian Areas)
  - "*RAC*" is translated as RDC (Riparian, Centralized Open Channel Systems)
  - "*RTD*" is translated as RPD (Riparian, Pressurized Systems Managed on-Demand)
  - "*MAN*" is translated as IDN (Traditional Areas of Large Irrigation Systems)
  - "*MTE*" is translated as IPE (Modern Areas with Pumping and High Energy Cost)
  - "*MTN*" is translated as IPG (Modern Areas with Gravity Pressure or Moderate Energy Cost (Renewable Energy))
  - "*MTC*" is translated as IPC (Centralized Pressurized systems)
- **Clase\_2023:** Classification regarding irrigation modernization in 2023
  - Same classification as above.

**4. Missing data codes:**

*Null*

**5. Specialized formats or other abbreviations used:**

N/A

**6. Dictionaries/codebooks used:**

N/A

**7. Controlled vocabularies/ontologies used:**

N/A