

**22 October 2013**  
(Update at 17:30 h)

**Survey on the use of water in the agricultural sector**  
Year 2011

**The amount of irrigation water used in the agricultural sector in 2011 increases 1.4% as compared with the previous year**

Water use in farms reached 16,344 cubic hectometres in the year 2011, indicating an increase of 1.4% as compared with the previous year.

By irrigation technique, the amount of water in techniques applied to crops via localised or trickle techniques decreased 5.2%, while in gravity techniques increased 4.1%. In contrast, water in sprinkler increased 5.6%.

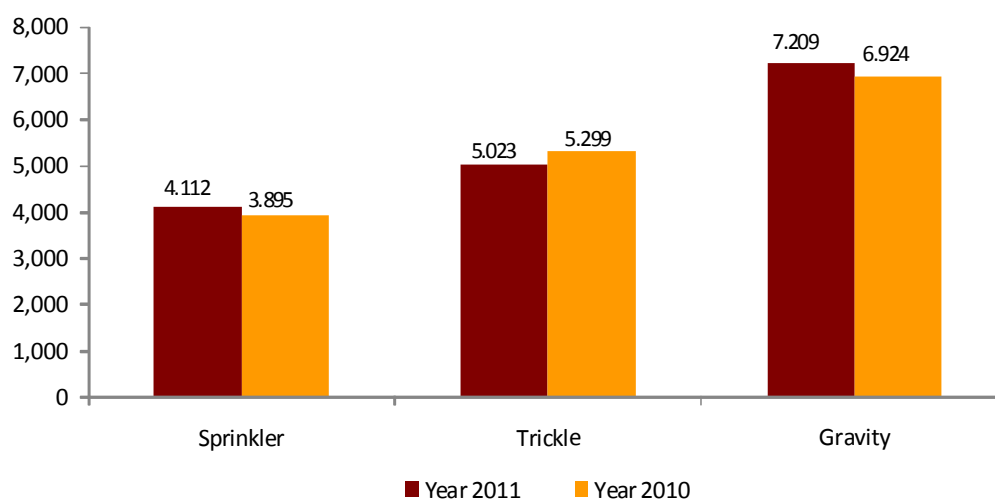
**Use of irrigation water by irrigation technique**

Unit: thousands of m3

|                                | Year 2011         | Percentage of the total | Percentage variation compared with 2010 |
|--------------------------------|-------------------|-------------------------|---|
| <b>By irrigation technique</b> |                   |                         |   |
| Sprinkler                      | 4,112,211         | 25.2                    | 5.6                                     |
| Trickle                        | 5,023,018         | 30.7                    | -5.2                                    |
| Gravity                        | 7,208,870         | 44.1                    | 4.1                                     |
| <b>Total</b>                   | <b>16,344,099</b> | <b>100</b>              | <b>1.4</b>                              |

**Use of irrigation water by irrigation technique**

(in cubic hectometres)



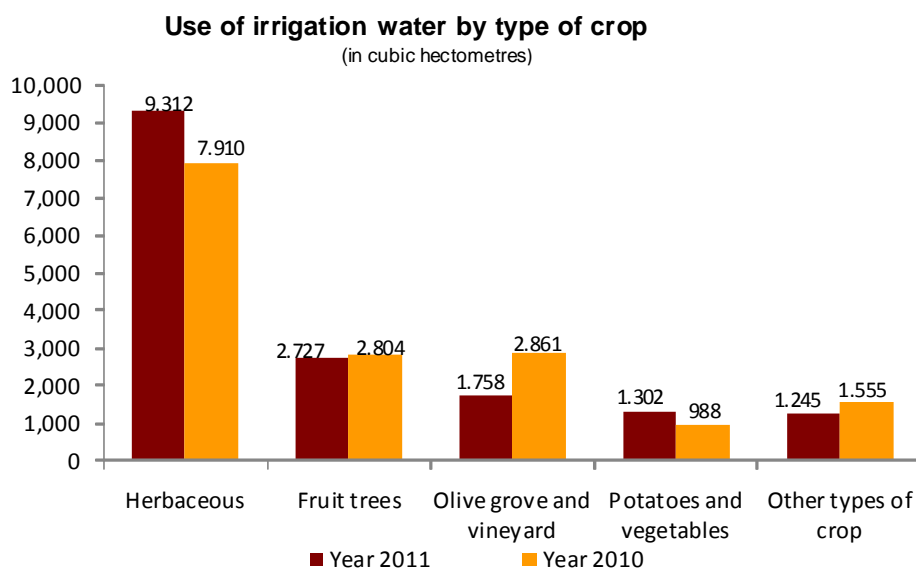
By type of crop, *herbaceous* crops (cereals, leguminous plants, rice, corn and fodder crops), representing 56.9% of the total amount of irrigation water used in the agricultural sector, increased their water use by 17.7%.

Conversely, water use in *olive groves* and *vineyards* registered the greatest decrease, 38.5% below that registered the previous year, representing 10.8% of the volume of irrigation water used in 2011.

## Use of irrigation water by type of crop

Unit: thousands of m3

|                          | Year 2011         | Percentage of the total | Percentage variation compared with 2010 |
|--------------------------|-------------------|-------------------------|---|
| <b>By type of crop</b>   |                   |                         |   |
| Herbaceous               | 9,311,642         | 56.9                    | 17.7                                    |
| Fruit trees              | 2,727,167         | 16.7                    | -2.7                                    |
| Olive grove and vineyard | 1,758,458         | 10.8                    | -38.5                                   |
| Potatoes and vegetables  | 1,301,967         | 8.0                     | 31.8                                    |
| Other types of crop      | 1,244,865         | 7.6                     | -19.9                                   |
| <b>Total</b>             | <b>16,344,099</b> | <b>100</b>              | <b>1.4</b>                              |



## Results by Autonomous Community

The Autonomous Communities that increased the most the volume of irrigation water in 2011 were Extremadura (20.9%), Cataluña (13.8%) and Región de Murcia (13.2%).

Conversely, the Autonomous Communities that decreased the most the volume of irrigation water were Comunitat Valenciana (-14.2%), Castilla-La Mancha (-13.2%) and Andalucía (-4.4%).

## Amount of irrigation water by Autonomous Community

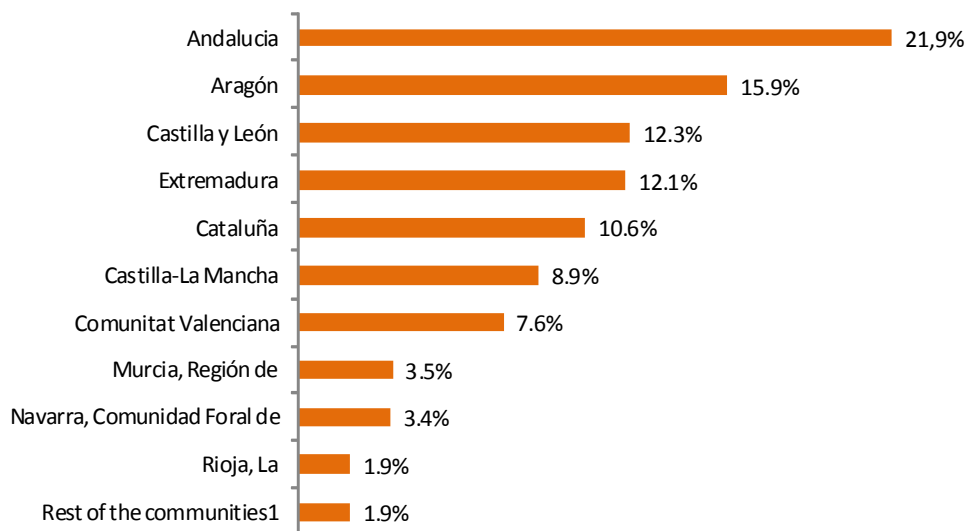
Unit: thousands of m3

|                                      | Year 2011         | Percentage of total | Percentage variation compared with 2010 |
|--------------------------------------|-------------------|---------------------|---|
| Andalucía                            | 3,592,829         | 21.9                | -4.4                                    |
| Aragón                               | 2,598,519         | 15.9                | 8.9                                     |
| Castilla y León                      | 2,015,004         | 12.3                | -5.1                                    |
| Castilla-La Mancha                   | 1,457,484         | 8.9                 | -13.2                                   |
| Cataluña                             | 1,729,773         | 10.6                | 13.8                                    |
| Comunitat Valenciana                 | 1,241,425         | 7.6                 | -14.2                                   |
| Extremadura                          | 1,970,534         | 12.1                | 20.9                                    |
| Murcia, Región de                    | 574,697           | 3.5                 | 13.2                                    |
| Navarra, Comunidad Foral de          | 553,613           | 3.4                 | 9.2                                     |
| Rioja, La                            | 306,794           | 1.9                 | 9.5                                     |
| Rest of the communities <sup>1</sup> | 303,427           | 1.9                 | 9.3                                     |
| <b>Spain</b>                         | <b>16,344,099</b> | <b>100.0</b>        | <b>1.4</b>                              |

The Autonomous Communities that used the most water in 2011 were Andalucía (21.9% of the total), Aragón (15.9%) and Castilla y León (12.3%).

At the other end of the scale were La Rioja (1.9%), Comunidad Foral de Navarra (3.4%) and Región de Murcia (3.5%).

## Percentage distribution of the amount of irrigation water by Autonomous Community



<sup>1</sup> All the Autonomous Communities with an irrigating area below 1% of the national total, are grouped under the heading "Rest of the communities".

By irrigation technique, Castilla y León was the Autonomous Community that used the greatest volume of water in sprinkler. In turn, Comunitat Valenciana registered the lowest volume.

Regarding trickle irrigation, Andalucía registered the greatest volume of water. In contrast, the lowest volume was registered in Comunidad Foral de Navarra.

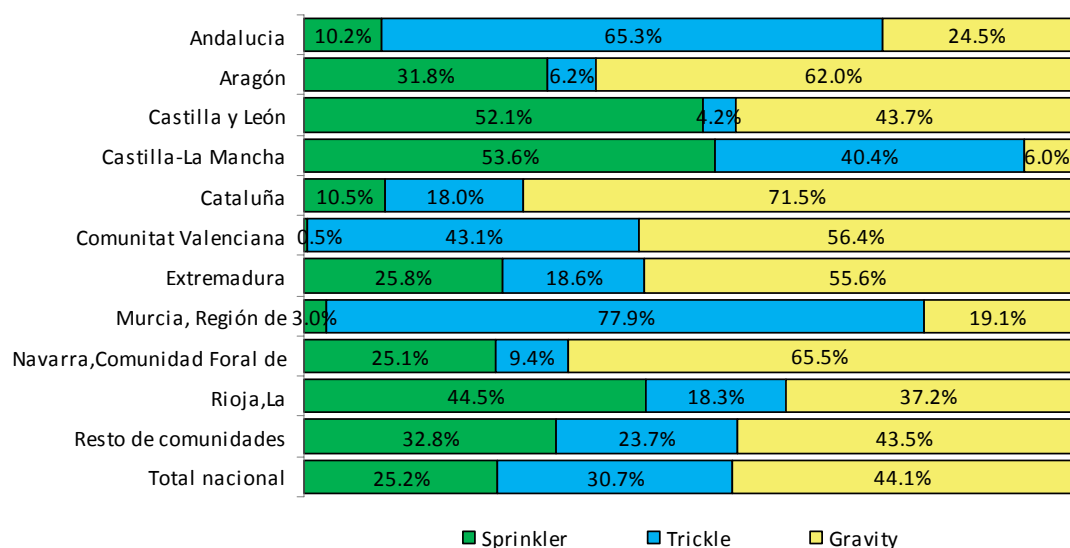
Finally, regarding gravity irrigation, Aragón registered the greatest use of water, whereas Castilla-La Mancha registered the lowest.

## Amount of irrigation water by Autonomous Community and irrigation technique. Year 2011

Unit: thousands of m3

|                                      | Sprinkler | Trickle   | Gravity   | Total      |
|--------------------------------------|-----------|-----------|-----------|------------|
| Andalucía                            | 367,494   | 2,346,171 | 879,164   | 3,592,829  |
| Aragón                               | 825,950   | 162,515   | 1,610,054 | 2,598,519  |
| Castilla y León                      | 1,049,345 | 85,124    | 880,535   | 2,015,004  |
| Castilla-La Mancha                   | 780,839   | 588,768   | 87,877    | 1,457,484  |
| Cataluña                             | 181,661   | 310,755   | 1,237,357 | 1,729,773  |
| Comunitat Valenciana                 | 5,961     | 535,658   | 699,806   | 1,241,425  |
| Extremadura                          | 508,174   | 366,508   | 1,095,852 | 1,970,534  |
| Murcia, Región de                    | 17,517    | 447,607   | 109,573   | 574,697    |
| Navarra, Comunidad Foral de          | 139,101   | 51,764    | 362,748   | 553,613    |
| Rioja, La                            | 136,686   | 56,069    | 114,039   | 306,794    |
| Rest of the communities <sup>1</sup> | 99,483    | 72,079    | 131,865   | 303,427    |
| Spain                                | 4,112,211 | 5,023,018 | 7,208,870 | 16,344,099 |

## Percentage distribution of the amount of irrigation water by Autonomous Community and irrigation technique



<sup>1</sup> All the Autonomous Communities with an irrigating area below 1% of the national total, are grouped under the heading "Rest of the communities".

### Availability of water

78.2% of the water available for irrigation and other uses in 2011 came from surface water sources.

In turn, 20.4% came from groundwater sources and 1.4% from other water sources, such as desalinated water (marine or salubrious) or reused water (from waste water treatment plants).

### Amount of irrigation water by origin

**Unit: thousands of m3**

| Origin                | Year 2011         | % of the total |
|-----------------------|-------------------|----------------|
| Surface water         | 14,792,098        | 78.2           |
| Groundwater           | 3,848,032         | 20.4           |
| Other water resources | 270,259           | 1.4            |
| <b>TOTAL</b>          | <b>18,910,389</b> | <b>100.0</b>   |

## Methodological note

The INE has been carrying out the Survey on the use of water in the agricultural sector, in order to estimate the volume of irrigation water used by farms. The survey for 2011 is aimed at 705 irrigation communities.

The INE Central Companies Directory (CCD) is used as a reference framework, along with other, supplementary information from administrative registers of the Ministry of the Environment, and Rural and Marine Environment.

The selection is exhaustive for those irrigation communities that include farms with a total area greater than 2,000 hectares. The irrigation communities with an area less than this magnitude are studied by sample, selecting a quota of entities previously stratified by size, using a commitment allocation that is either uniform or proportional, so that for each Autonomous Community, the irrigation area studied is approximately 60% of the total.

Worth noting is that the results obtained in the Modelling project for the consumption of irrigation water (Survey on Production Methods in Agricultural Operations- Agrarian Census 2009) has enabled - for reference year 2011 - improving the estimation of the available volume of irrigation water of the resource, in particular as related to groundwater.