



The Spanish National Centre for Irrigation Technology (CENTER) depends on the General Sub-direction of Irrigation and Water Economy of the Water General Direction of the MARM (Ministry of the Environment and Rural and Marine Affairs). Its main goal is:

To make known the existing technology within the irrigation sector, as well as support stakeholders, researchers, manufacturers and technicians involved in developing, setting up and asserting innovative irrigation technologies.

The CENTER not only works at a national level, but it certainly has an international scope.

Since it is a government dependant body, it is an international reference when it comes to the following topics:

- > It is member of INITL Network, which conducts inter-comparison testing of irrigation equipment using current standards, together with the most prestigious worldwide centres, such as Cemagref (France), CIT (USA), SII (Israel), etc.
- > It is the Spanish representative in the international organization IPTRID-FAO, which studies on how to improve water management internationally.
- > It provides technical assistance to international cooperation schemes concerning irrigation, such as those being presently undertaken in Algeria by the Ministry of the Environment and Rural and Marine Affairs.



The CENTER carries out a number of activities, previously set out by the MARM, in order to give a determined support to the irrigation sector development.

TECHNOLOGY TRANSFER

The CENTER offers a wide range of technical-focused training conferences and seminars:

- > International MSc on Irrigation and Drainage Engineering, which provides the appropriate post-graduate education for becoming an irrigation specialist.
- > International Course, arranged jointly with the Spanish Association for International Cooperation (AECI), and undertaken so as to empower technology transfer within the irrigation sector. The course is attended by Latin-American technicians engaged in irrigation matters in their own countries.
- > Specific conferences regarding irrigation topics. The usual format is a crash-course on a specific issue, targeting national irrigation technicians currently working in the modernization of irrigable areas, providing guidance for optimizing irrigation networks design.

The MARM considers a matter of key important to provide training at all levels, from technicians to users. Hence that the MARM, together with the National Irrigators Communities Federation (FENACORE) and taking advantage of the outreach tool "*Knowledge Platform*", deals with stakeholders claims and try to meet their needs through specific training. Remarkable emphasis is being made in disseminate modern technology related to remote monitoring and control of irrigable areas, regarded as essential for a correct management of irrigation water.

Technology transfer at CENTER is periodically updated according to users' demands and evolves along with new technologies reaching the market, opening up progressively its instructive fields.

STANDARDIZATION

The MARM decided to bet on leading standardization activities in the irrigation sector, in order to give a boost to the irrigation industry and guarantee good quality of irrigation equipment.

Standards are voluntary impartial technical reference documents which characterize a particular product. Therefore, being aware of its existence and way of use is a must for everyone in contact with those manufactured goods:

- > For manufacturers, so as they know exactly the specifications to be defined in their products and how to determine these parameters. Standards also make products easier to commercialize.
- > For public administration staff and project designers, so as they identify the reference documents that must be demanded in irrigation projects put out to tender.
- > For consumers, so as they get guaranteed a minimum operating quality and durability of the equipment they purchase.

In this context, the main activities are carried out by means of actively participating in the most relevant standardization bodies. The MARM, throughout the CENTER, coordinates the drawing up, acquisition and review of irrigation standards in three different levels:

- > Nationally, in the Spanish Association for Standardisation and Certification (AENOR).
- > At European level, in the European Committee for Standardization (CEN).
- > Internationally, in the International Organization for Standardization (ISO).

The CENTER contributes in the spreading of standardization issues by supporting specific seminars and conferences, arranged by a number of organisms such as the Spanish Association of Irrigation Manufacturers (AFRE), several Universities, Avila and Córdoba Universities for instance, and different Research and Investigation Centres like the Agricultural and Fisheries Investigation and Training Centre (IFAPA), etc.



CENTRAL LABORATORY FOR IRRIGATION EQUIPMENT TESTING

Enclosed within the CENTER facilities, the MARM has built a testing laboratory endowed with the latest cutting-edge technology, where testing of whichever equipment to be found in an irrigation network is possible: water meters, valves, filters, etc. Testing of on-farm water application devices which mean irrigation water savings is also feasible: emitting pipes, sprinklers, drippers, etc.

The national irrigation sector heavily relies on our central laboratory due to the following reasons: The capability for testing a wide range of irrigation equipment, the great versatility of the existing testing rigs, the high precision and periodical calibration of the installed devices, as well as an up to date management of the quality system.

- > Project Management teams are able to check the hydrants in the laboratory before they are installed in the irrigation system, assuring its functionality and durability.
- > Product users have a place for verifying that the products they have purchased actually have the characteristics specified by the manufacturer.
- > Manufacturers have the ability, under previous request, of testing and characterizing their equipment impartially.

Additionally, the laboratory is under a continuous upgrading process in order to answer the diverse incoming demands from the sector. Hence that new testing facilities are regularly built, such as an original testing bench for determining the "*filtering degree*" in agricultural filters, created in respond to works undertaken in the standardization area.

IRRIGABLE AREAS ASSESMENT

Since the National Irrigation Plan (PNR) was approved, the MARM has started a series of evaluations over those irrigable areas subjected to be modernized. With the aim of making a full and comprehensive assessment, the studies take into account agronomic, socio-economic and environmental factors.

This drawing up of these publications is a necessary action to take in order to discern how, and to which extent, irrigation modernization helps to:

- > Optimize the use of available water.
- > Increase farming competitiveness.
- > Help the sustainability of irrigated areas and promote rural development.

The assessments are done following FAO benchmarking guidelines and indicators, which allow comparing studies outcome for different regions.

The CENTER is an 80 ha irrigated farm located in the countryside and where the most representative irrigation systems for Spain are displayed. This creates the ideal environment for:

- > Carrying out irrigation equipment tests under working field conditions.
- > Permanently show the existing technology in the irrigation sector.