



ADASA

WATER AND ENVIRONMENT
TECHNOLOGY

Best practices in information management during
the WFD Implementation Process in SPAIN

SIA: The Water Information System of Spain

Pogdorica, Montenegro

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1. Introduction
2. Development criteria of Water Information System
3. Data Management Models
4. SIA & WFD Reporting
5. Conclusions

INTRODUCCTION

The WFD is a challenge and a chance for organize the water information:

- The European Commission sets out criteria for the generation of information, both in relation to the format as the mechanisms of integration:
 - Establish new European standards for data processing
 - Establish the european Information System for Water - WISE and mandatory electronic reporting by Member States.
- From the point of view of how to manage the information, the new integrated management model posed as challenges:
 - A new philosophy of environmental study based on an integrated vision
 - The need to generate a new data model supporting this vision

1. Introducción - NEW WATER INFORMATION SYSTEM (SIA)

In this context the Water Information System (SIA) provides a common platform for information management on the water that allows:

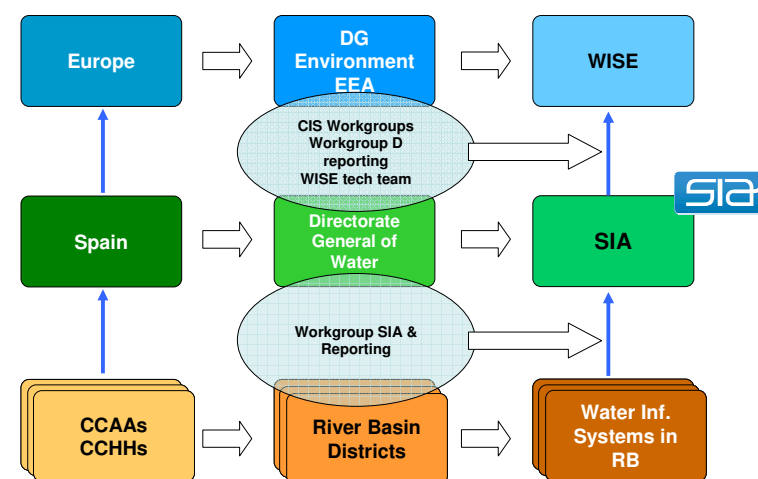
- Improving the **quality** of information on water
 - Avoiding duplication, allowing to validate the information submitted by third parties, using the best available sources, integrate related information...
- Improve **availability** of the water information for both internal and external users to Environment Ministry by:
 - Integrating different environmental databases (internal and external)
 - Relating the data into a common framework to jointly exploit geographic and no geographic information
 - Developing new publishing tools
- Having a single tool to meet the reporting **obligations** of the various European directives on water issue



1. Introducción - WATER INFORMATION SYSTEM

Water Information System **purpose**:

- To establish a **Central System** to unify and to **exploit jointly** the different data on water.
- **To get a more efficient management** of water information
 - Avoiding duplication of data and processes
 - Creating a unique frame that allows access and channel the different partial views over the water.
 - Exploiting the potential of technology
- To develop a key tool to manage the implementation of the **Water Framework Directive** (WFD) and other European directives (nitrates, UWWTD ...)
- To promote a policy of **transparency** in the environmental information on water



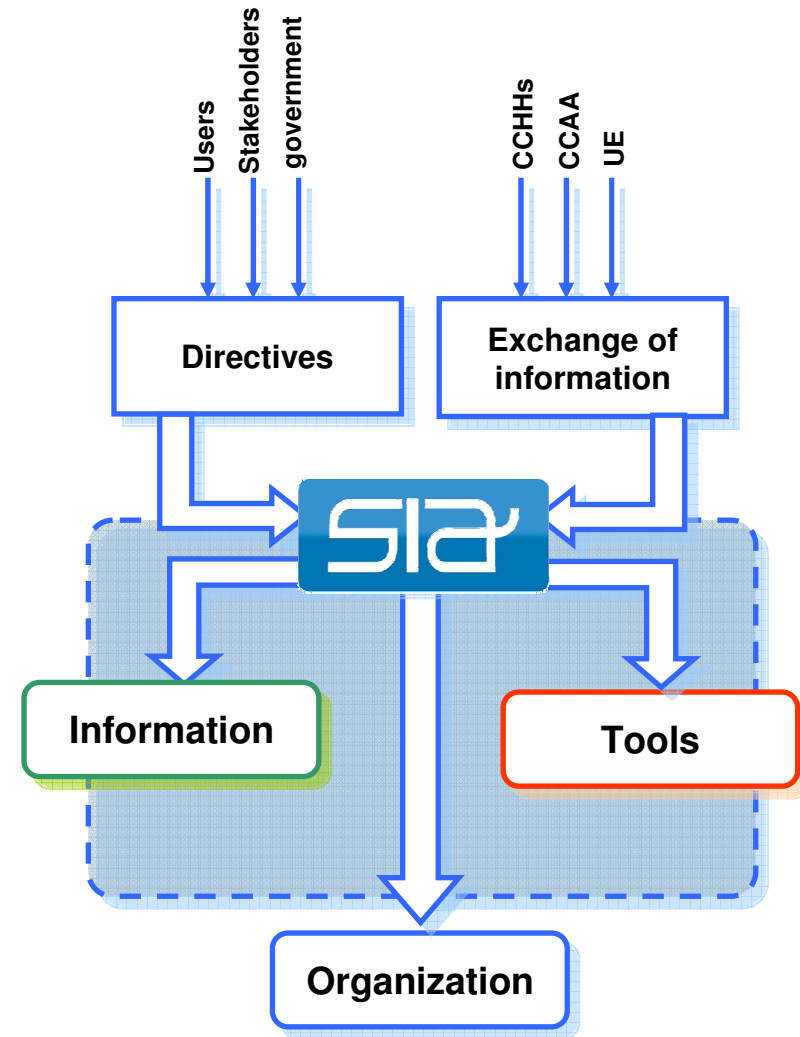
DEVELOPMENT CRITERIA OF WATER INFORMATION SYSTEM

2. Development criteria of Water Information System

The development criteria of the SIA were:

SIA Features:

- Water Information System **collects all information related to water** within a modern, unique and centralized system.
- In the system are **integrated, homogenized and process** large volumes of data, providing them with the essential features to its availability and therefore for its use, analysis, monitoring and reporting.



2. Development criteria of Water Information System

Contents and Information:

- Content selection ensure only validated content, representative and relevant
- Access **to sources of information**, avoid duplication of data. Sources can be:
 - Own sources of the Directorate General of Water
 - For external sources, applies general criteria of the direct access to original sources of information
 - For all this has been established agreements and exchange agreements with organizations and institutions (access to information at source)
- Preliminary treatment of data has been carried out
 - Adapting and taking consistency to the integrated layers
 - To obtain related information and consistent

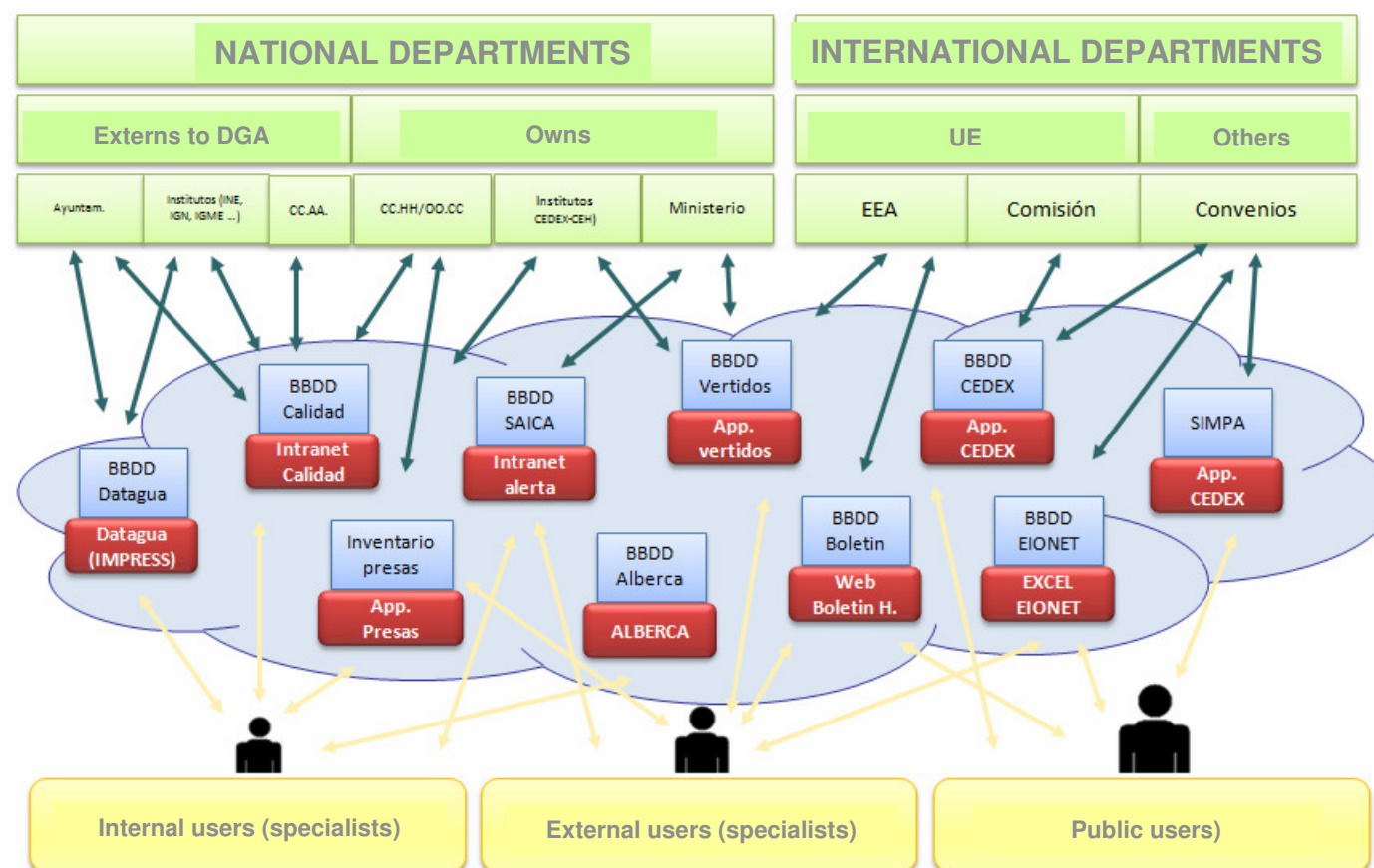
2. Development criteria of Water Information System

Contents and Information: Examples of organizations and institutions involved:

- Internal departments of Ministry of Agriculture, Food and Environment
 - Department of Planning and Sustainable Use of Water
 - Department of Integrated Public Water Management
 - Department Ocean Protection and Prevention of Marine Pollution
 - Department of Quality and Environmental Assessment
 - External agencies
 - River Basin Districts
 - Regions (Nitrates Directive & WISE SoE Reporting)
 - CEDEX-CEH (Experimental Studies Centre - Centre for Hydrographic Studies)
 - IGME (Geological and Mining Institute of Spain)
 - IGN (National Geographic Institute)
 - INE (National Institute of Statistics)
 - AEMET (Meteorological Agency)
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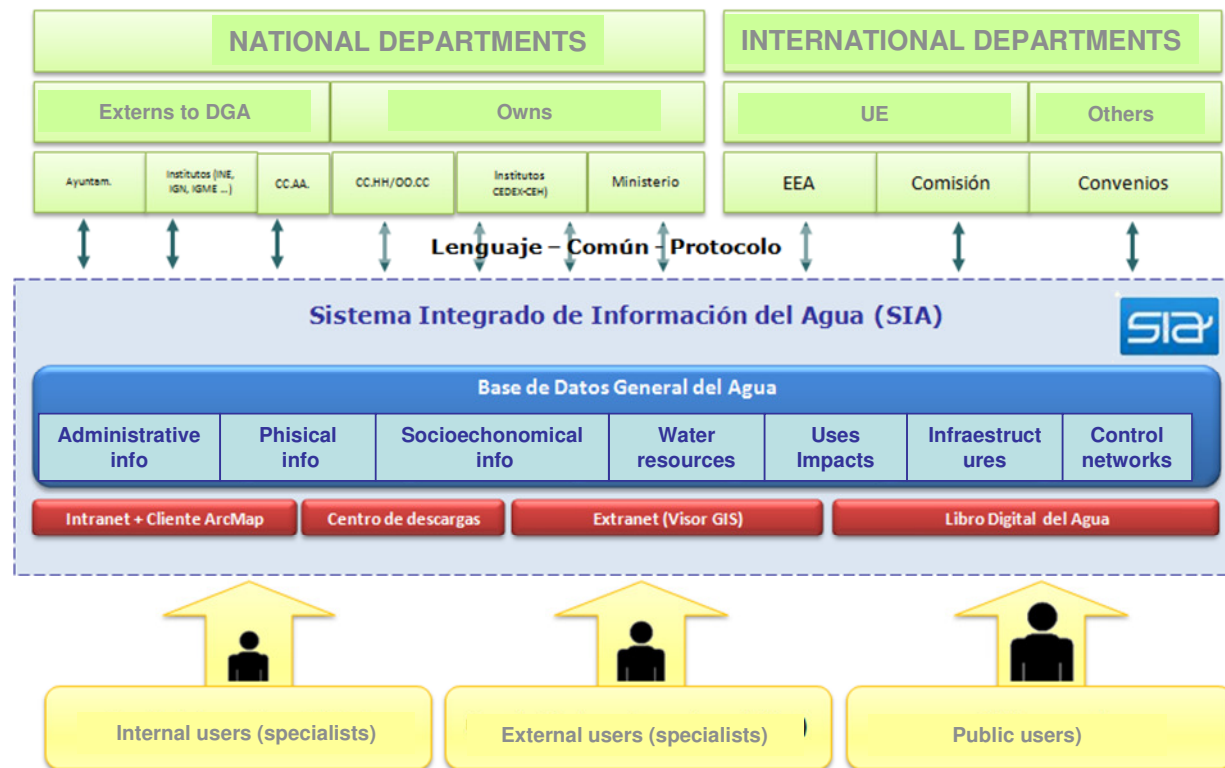
2. Development criteria of Water Information System:

- In the **initial situation**, the different agencies were making use of multiple sources of data with different and specific applications.
- It was impossible to relate directly water information.



2. Development criteria of Water Information System

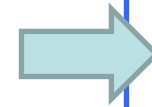
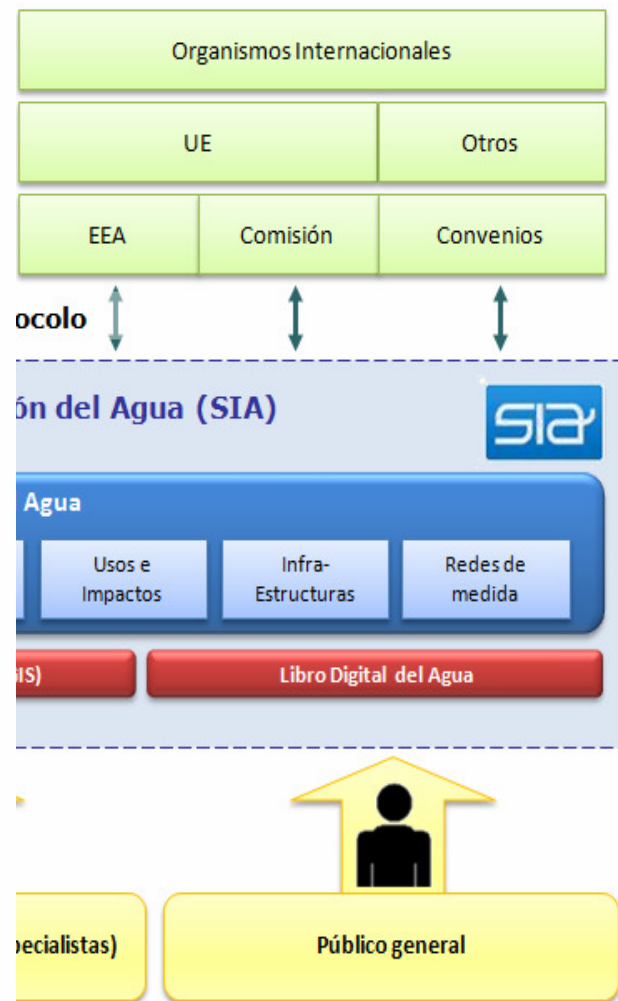
- With the implementation of the **new information system**, different available data sources were **organized** and **integrated** on the **same platform**.
- Since that moment all national user can access to the information using one single application with different types of access depending of the type or user ((technical, specialist or general public)



DATA MANAGEMENT MODELS

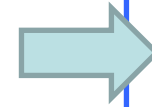
3. Data Management Models

The System Areas are



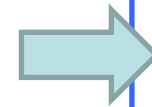
Data
Integration
Model

How we support the integration of data into the system and what models we propose integration of external data



Data
Administration
Model

Which model we propose for data administration (validation and updating)



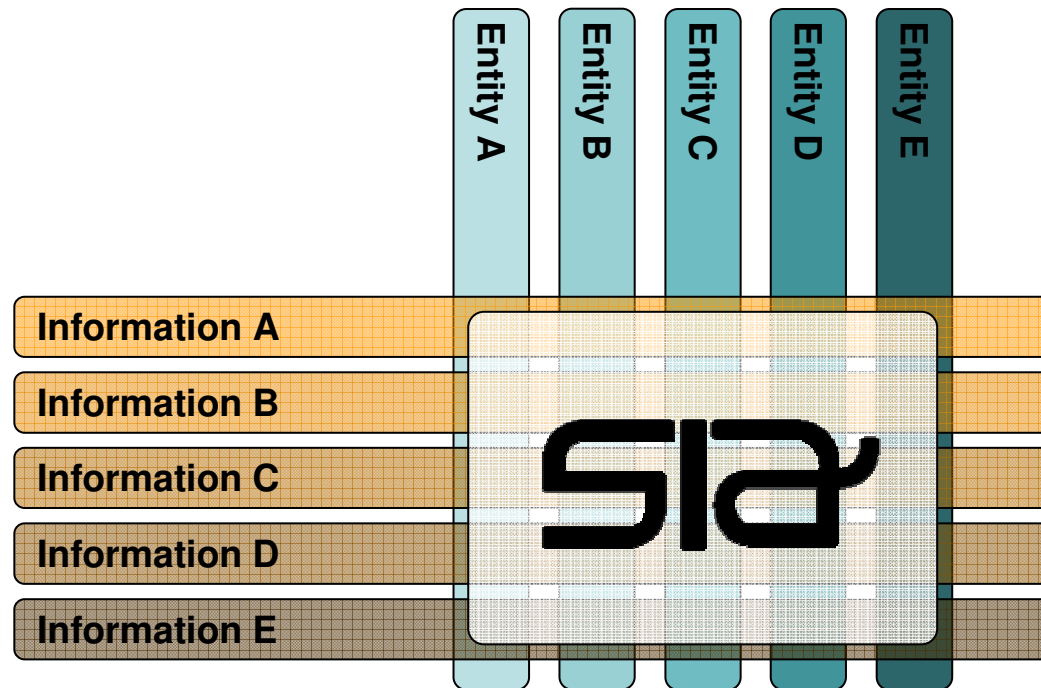
Data Use
Model

Which uses we support of the data of the system and which tools and formats

3. Data Management Models

Process of Data Integration

- SIA is a Integrated and unified system:
 - Unifies equivalent data from different sources
 - Relates heterogeneous data that are complementary in water management

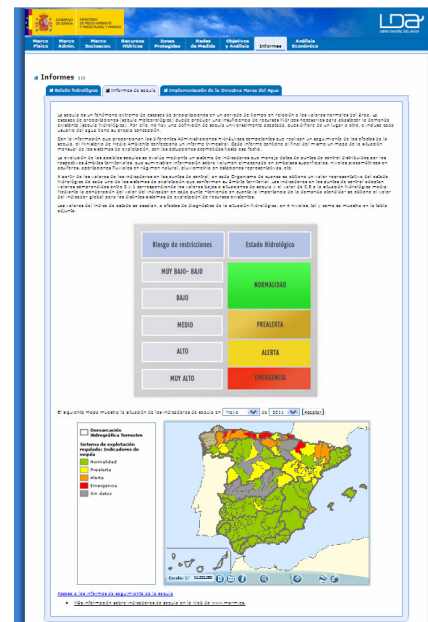


3. Data Management Models

- **Data Administration Model:** Basically we have 3 levels of administration:
 - **Generate their own content** (Directorate General of Water) to maintain and operate within the SIA
 - On these data Directorate General of Water is responsible for creating, updating and validating
 - Directorate General of Water is responsible for formal and conceptual content
 - Integrate or replicate **external data** that are maintained, operated and updated in a system that is not the SIA.
 - On this model it is apply a level of validation 'formal' on the data but not on the content: we 'believe' that the data are correct
 - Proposes patterned **exchanges of information** in which we provide infrastructure (e.g. Exchange Portal) and organize the conceptual validation process.
 - On this model we apply a level of validation 'formal' on the data but not on the content: we 'believe' that the data are correct

3. Data Management Models

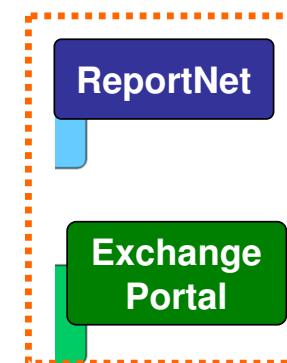
- **Data User Model:** The SIA offers a wide variety of tools to access the data:
 - These have been defined according to the identified user profiles
 - We have attempted to adjust to the specific needs of these users, although it is very difficult (you never match 100% of the user needs)
 - Apart from access to SIA data through proprietary tools, we also propose other ways more suited to the needs of users / owners of the information as for example thematic portals



SIA & WFD REPORTING

4. SIA & WFD Reporting

- In Spain, the Division of Planning and Sustainable Use of Water has the custom of **referring to Europe the information that responds to the directives and obligations related to waters**. It is within the Ministry of Agriculture, Food and Environment.
- Information should be collect and report to respond to these demands of European and international organizations, as well as to meet the needs of own information of the ministry.
- For this, in to the SIA has been developed the **exchange portal**. It is the software tool at Spanish level, as ReportNet in Europe, that serves to the management, coordination, climb and validation of information reporting obligations
- It is a web application restricted to those users participating in various reporting processes (WFD, UWWTD, NiD, WISE SoE..).



CONCLUSIONS

4. CONCLUSIONS

What were the advantages of having a Water Information System?:

- To have an **information base on water wide**, consolidated and updated
- To have a **single and open system** that offers a real frame of reference for environmental information on water
- Has been essential to **comply with reporting obligations** of environmental information
- Has meant the development of a **network of contacts** related to water world and a working group on which to build a common future
- This system has allowed **facilitate and improve the various processes of European exchange**, especially, the Water Framework Directive.
- As previous task, environmental consulting for availability of information, their formats, their periods update and its leaders has been very important. .

THANK YOU FOR YOUR ATENCION