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EMWIS

Palestinian Water Information System Seminar

Spanish National Water Information System

SIA

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Ramallah – 23/10/2010

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Why a water information system?

- Official space for water information promoted by the Spanish water authority (Ministry of environment, and rural and marine affairs). Inaugurated in January 2008.
- Transparency policies in water related environmental information.
- A more efficient way to manage water information
- A tool to support Water Framework Directive implementation

Development criteria

- Selected contents: only representative, validated and relevant information published in the system

- Direct access to own (DGA) and external (CEDEX, IGME, IGN, etc.) data sources

- Unified data model compatible with the principles of the Water Framework Directive INSPIRE

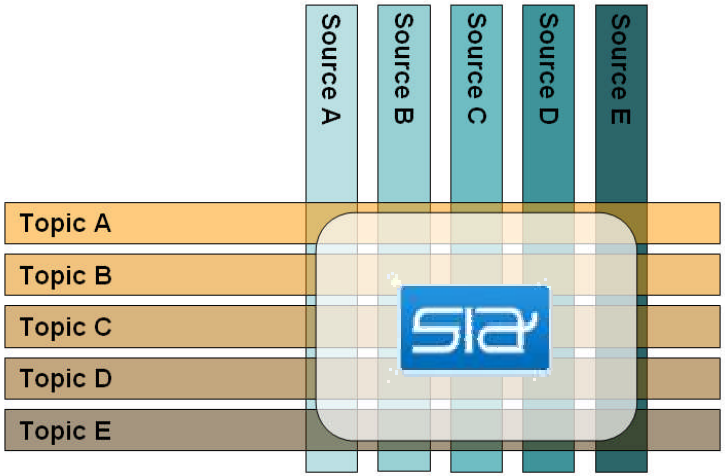
SIA opportunity

- The Water Framework Directive Opportunity
  - EU Commission has developed new criteria for water data management and acquisition:
    - New standards on data management (metadata, GIS, etc.)
    - WISE – Water Information System for Europe
  - WFD implies a new, more integrated, water management model and information systems need to reflect this new paradigm too

Spanish WIS Concept

- Multiplicity of topics
  - Water description and water status: surface water, ground water, quantity, quality, rainfall.
  - Water uses and impacts: industrial, agriculture, urban
  - Water infrastructure
  - Water management: laws, institutions, investments, monitoring actions.

- Multiplicity of information types
  - Documents
  - Real time data
  - Validated data
  - Aggregated data / indicators
  - geographic information



- Multiplicity of focus levels
  - Local
  - National
  - International / regional

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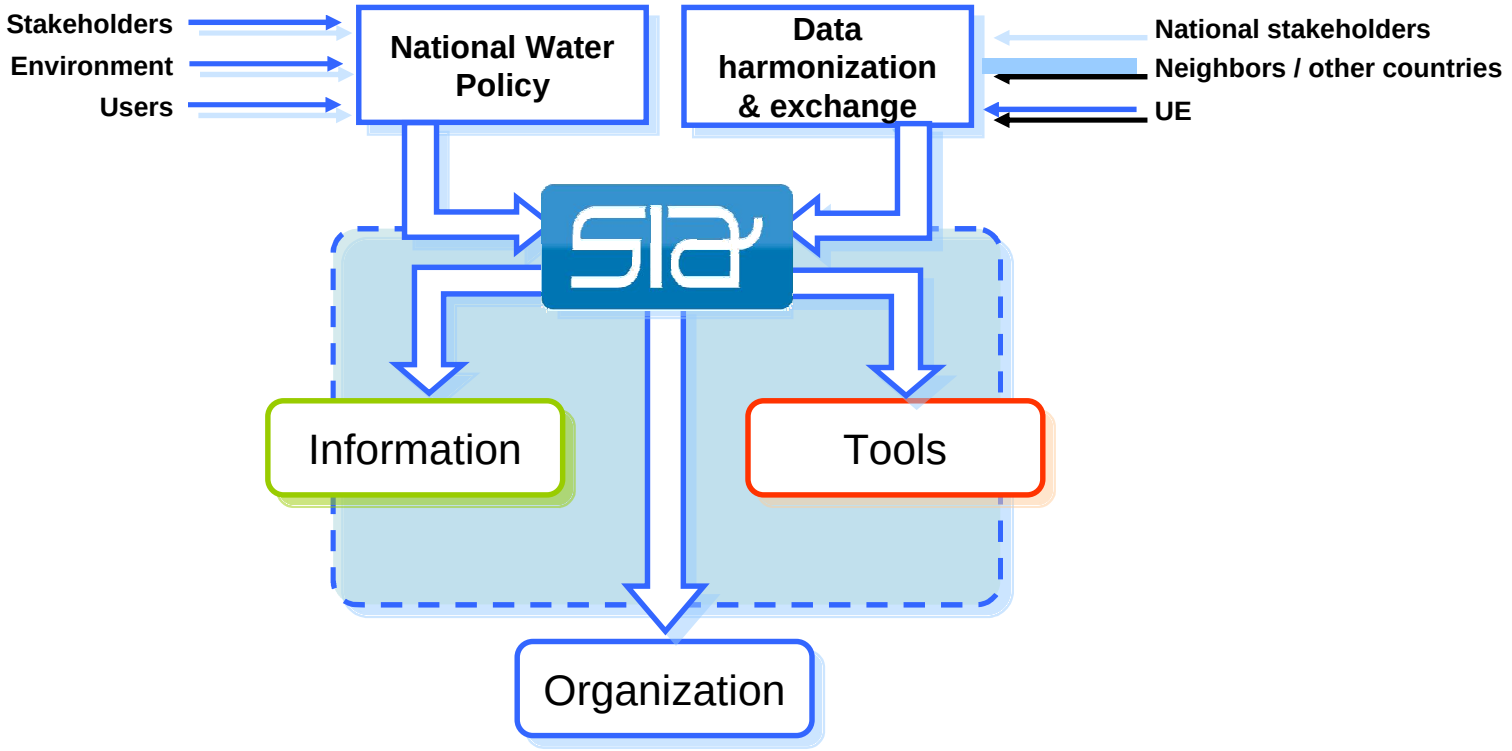
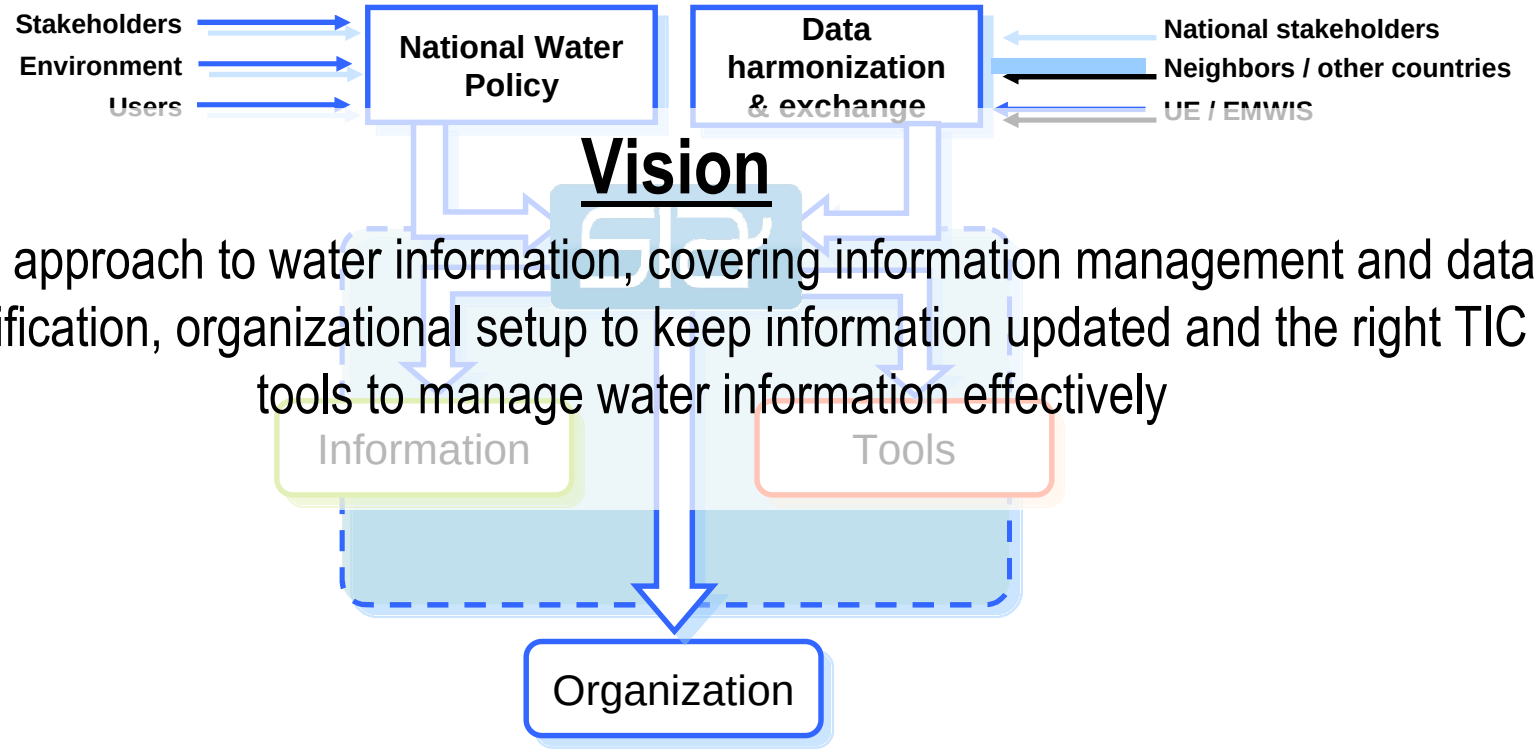
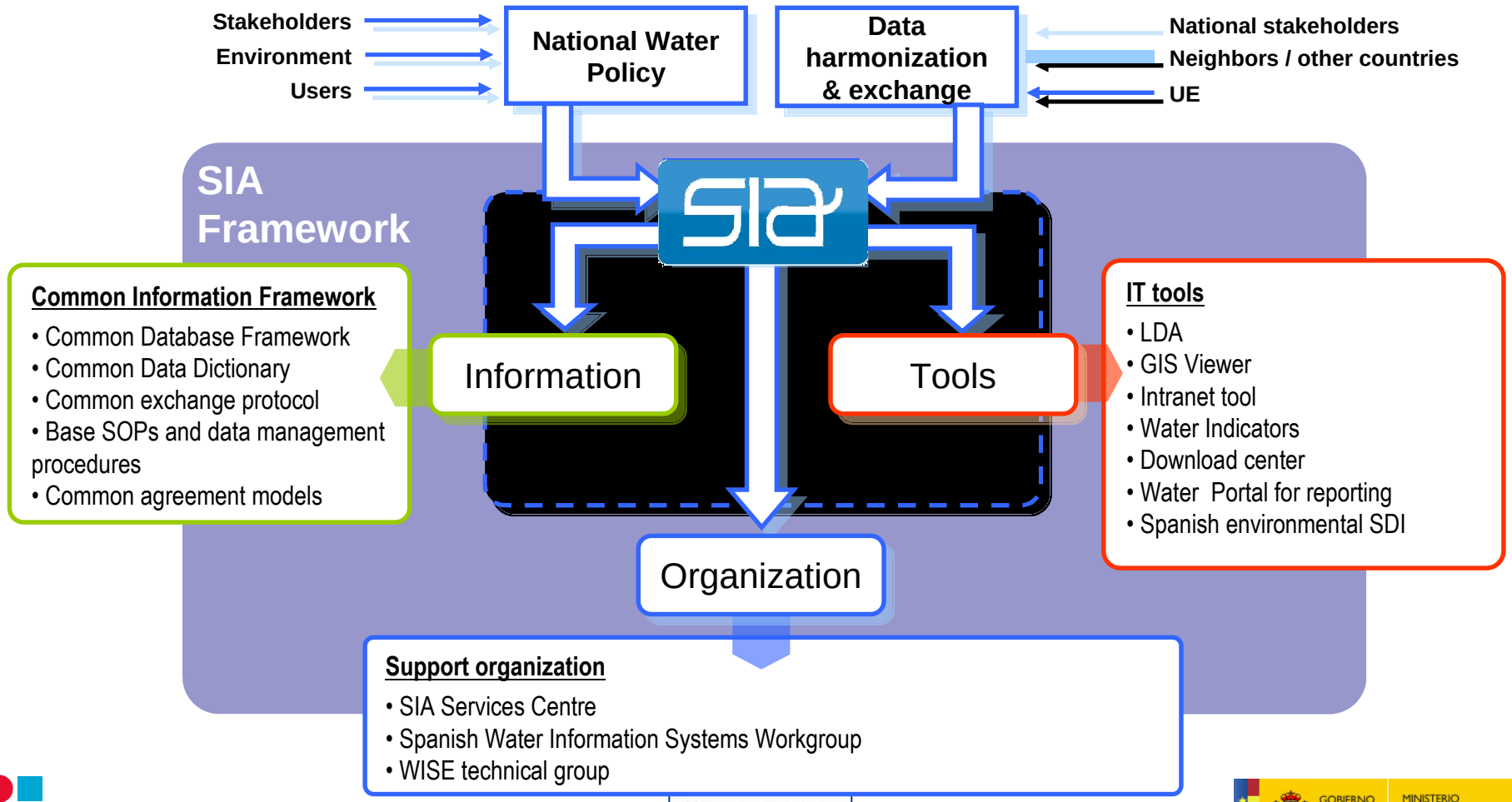
Spanish WIS Conceptual model



NWIS Conceptual model



NWIS Framework



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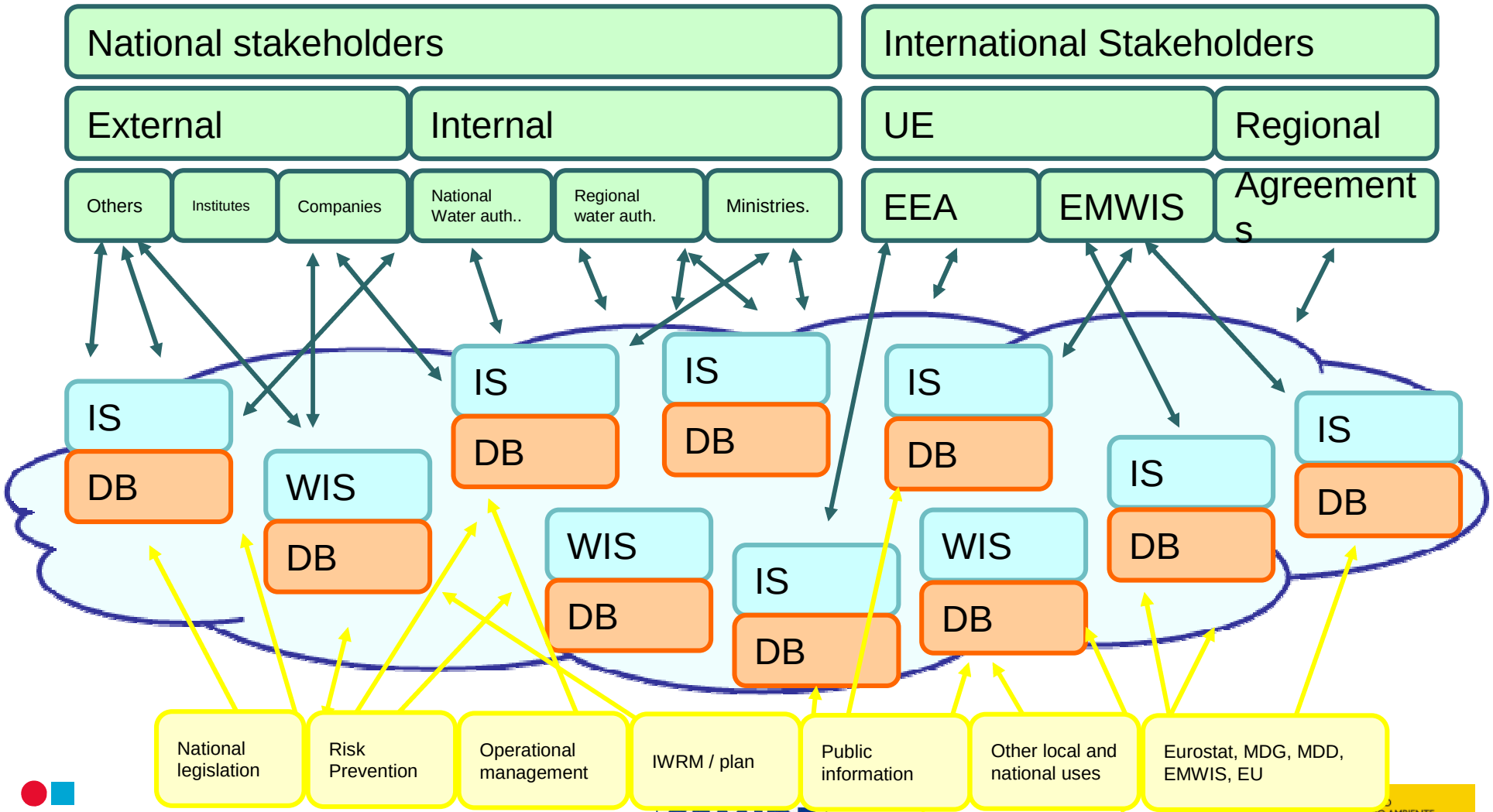
Functional Architecture (previous)



Functional Architecture (actual)

National stakeholders

External

Others | Institutes | Companies

Internal

National Water auth.. | Regional water auth. | Ministries.

International Stakeholders

UE

EEA | EMWIS

Regional

Agreements

[redacted]

National Water Information System (SIA)

Centralized Database

Administrative framework | Physical framework | Water status | Met. | Uses & Impacts | Infra-structure | Water mgnt.

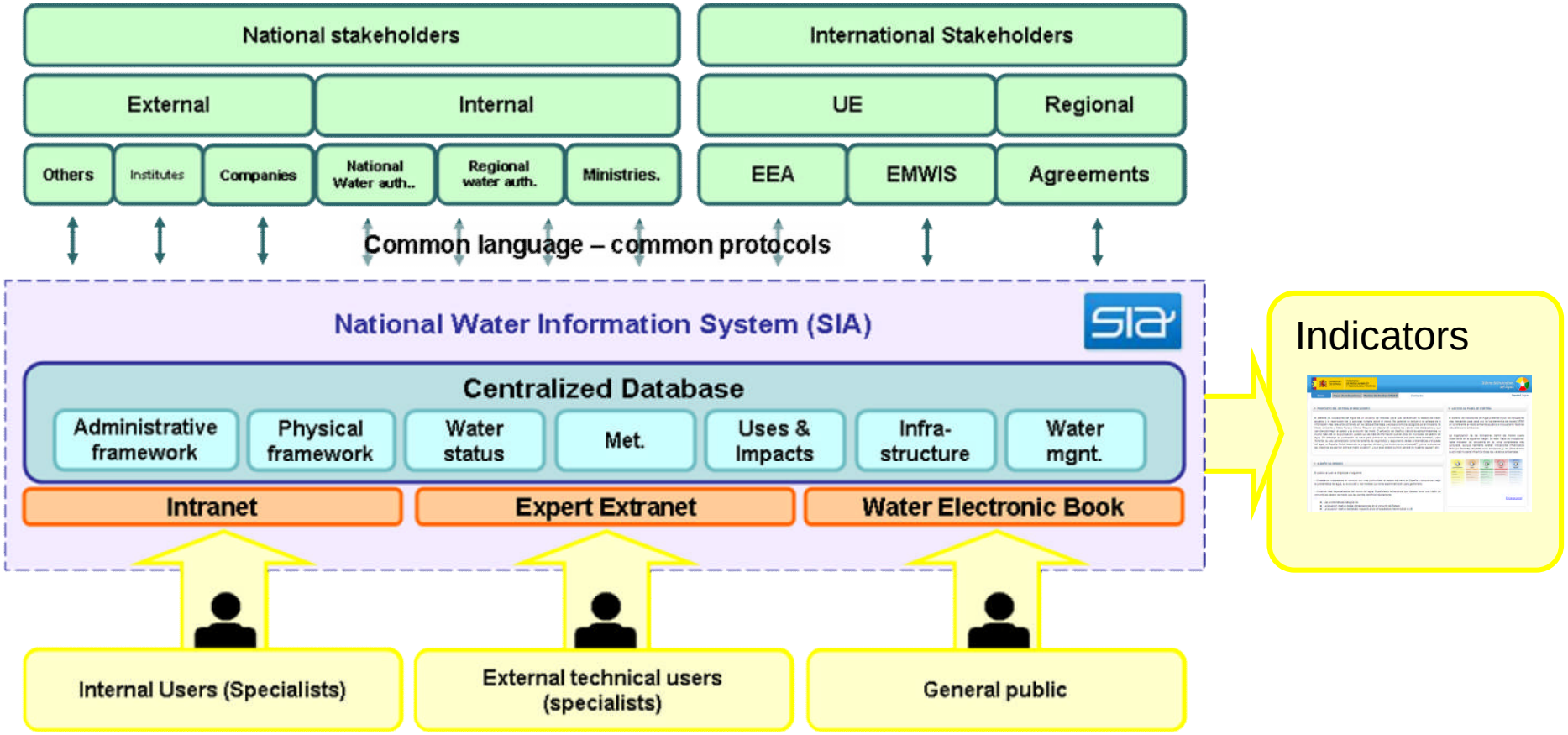
Intranet > download center | Expert Extranet | Water Electronic Book

Internal Users (Specialists)

External technical users (specialists)

General public

Water indicators



SIA Elements - Tools

- GIS Viewer
  - Access to all the information available in the system
  - Could provide thematic views of all entities and data series available
  - Has been designed for
    - Advanced users (direct / rough access to data) > need to know what you are looking for
    - That understand water management issues and terminology
    - That need a high degree of flexibility to build their own queries

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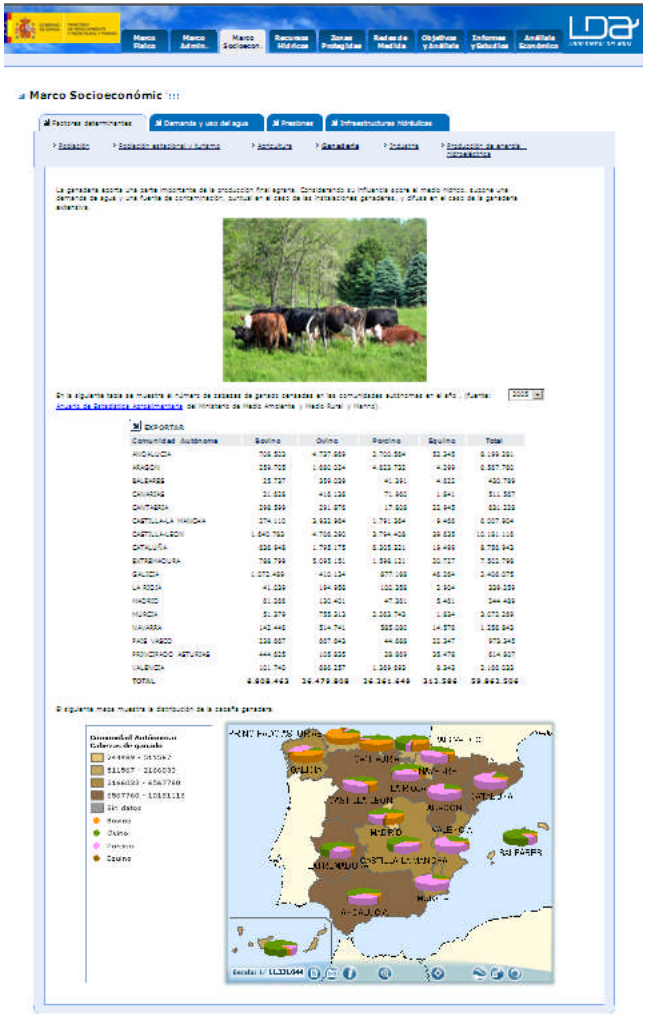
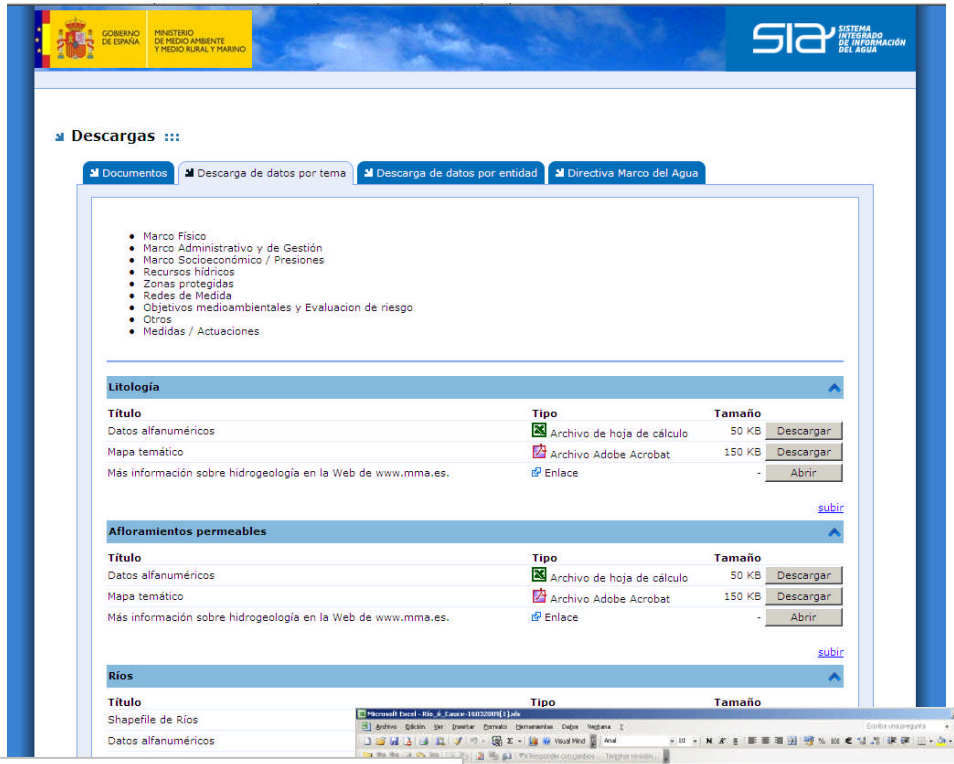
SIA Elements - Tools

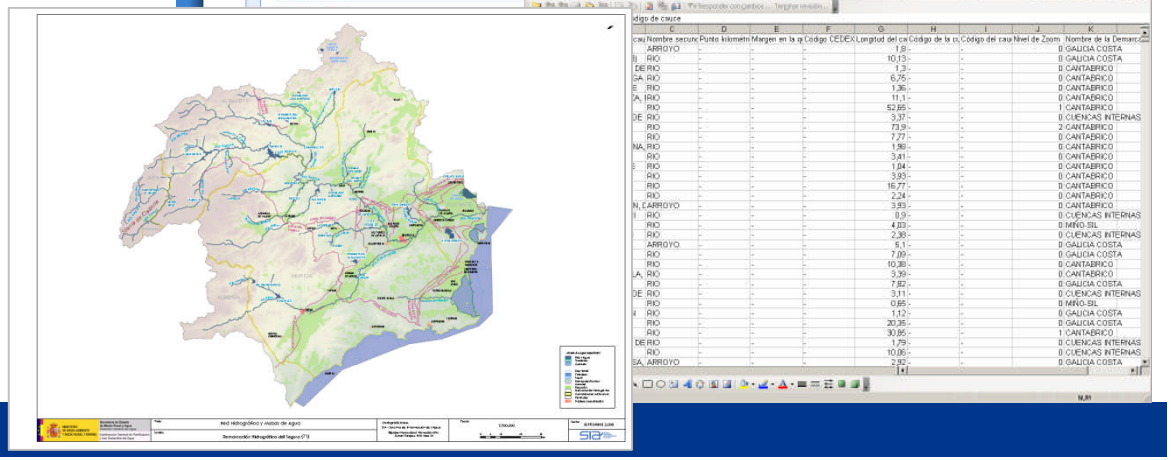
- Water Electronic Book
  - Public participation tool of the system, designed to popularize access to environmental water information
  - Dynamic elements, fed by the database, contextualized with static content explaining the relevance of the data.
  - Fully interactive: users can download life data, work with the map, export graphics, download documents, etc.
  - All dynamic content is up to date, renderized with the most actual available information.



SIA Elements – Tools

- **Data download center**
  - Direct access to data download from the system
  - Static content:
    - Documents
    - Predefined maps
    - Reports
  - Dynamic content:
    - Shapefiles direct from the ArcSDE server
    - Excel files with life database information
    - Pdf maps dynamically generated from database information
    - Access to metadata





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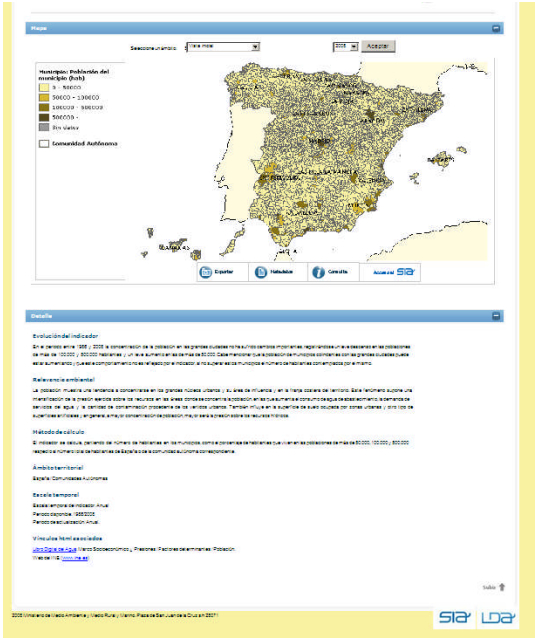
SIA Elements – Tools

- **New Spanish Water Indicators**
  - Web site (portal) to access dynamically calculated water indicators
  - Based on DPSIR model
  - Combines a map overview with the trend of each indicator with a detailed view for each of them containing
    - Textual
    - Data
    - Graphics
    - Maps
  - Linked with the other SIA tools to provide access to raw data used in indicator calculation
    - Viewer
    - Electronic book
    - Downloads

SIA Elements – Tools

- **New Spanish Water Indicators**



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SIA Elements – Tools

Exchange portal

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SIA Elements – Tools

- Future migration of GIS viewer to higher reliability and easier use:

SIA Elements - Organization

- Spanish Water Information Systems Workgroup
  - Created to discuss data exchange and interoperability issues with local and institutional partners in Spain.
  - Over 40 institutions represented
  - Specific CIRCA repository for information sharing
  - 6-monthly meetings
  - Three technical workgroups created to analyze specific topics
    - Data models: data modeling, metadata and codification
    - Information systems interoperability
    - Data exchange protocols and processes
- SIA Service center
  - Created to respond specific data requests that can't be addressed directly from available tools: LDA / Web GIS visor
  - Over 120 requests in 8 months, both from private and public institutions or citizens has been addressed.

Data usage of the system

- Users

	Phase 1 Jan to Jun 2008	**Phase 2** Jun to Dec. 2008	**Phase 3** Dec to end 2010	
Average users per day accessing data	85	105	> 200	
Total users accessing data	13.000	20.000	> 100.000	
Total requests delivered	80.000	112.000	> 500.000	

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