



# Regional Workshop on National Water Information Systems (NWIS) and EMWIS

Results of the feasibility study on the Water Information  
Systems in 10 Mediterranean Partner Countries

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# Presentation Topics

- Study background
- Study Deliverables
- Conclusions

# Overall objective

## Background

### Objective

Countries

Duration

Reasons

NWIS  
definition

To carry out feasibility studies of National Water Information Systems (NWIS) in 12 Mediterranean Countries involved in EMWIS.

# Countries included in the study

## Background

Objective

**Countries**

Duration

Reasons

NWIS  
definition

- Algeria
- Cyprus
- Israel
- Jordan
- Lebanon
- Malta
- Morocco
- Palestine
- Tunisia
- Turkey

# Study duration

## Background

Objective

Countries

**Duration**

Reasons

NWIS  
definition

- **Starting date 1/4/2005**
- **Ending date 30/1/2006**

# Reasons for conducting the study

EMWIS started in 1999 with the main objective; “Facilitate access to the existing know-how in the water sector and develop the sharing of information along with preparation of common outputs and cooperation programs between the participating countries”.



Success factor: is the information provided by participating countries.



The input from countries is not as smooth , frequent or harmonized as required



EMWIS believes it is caused by unavailability of efficient NWIS



EMWIS initiated the first step (the feasibility study) for development of NWIS



Motivate Countries and donor agencies to finance NWIS implementation

## Background

Objective

Countries

Duration

**Reasons**

NWIS  
definition

# Definition of NWIS

A system that stores and processes information shared between the main national water stakeholders in a country.

## Background

Objective

Countries

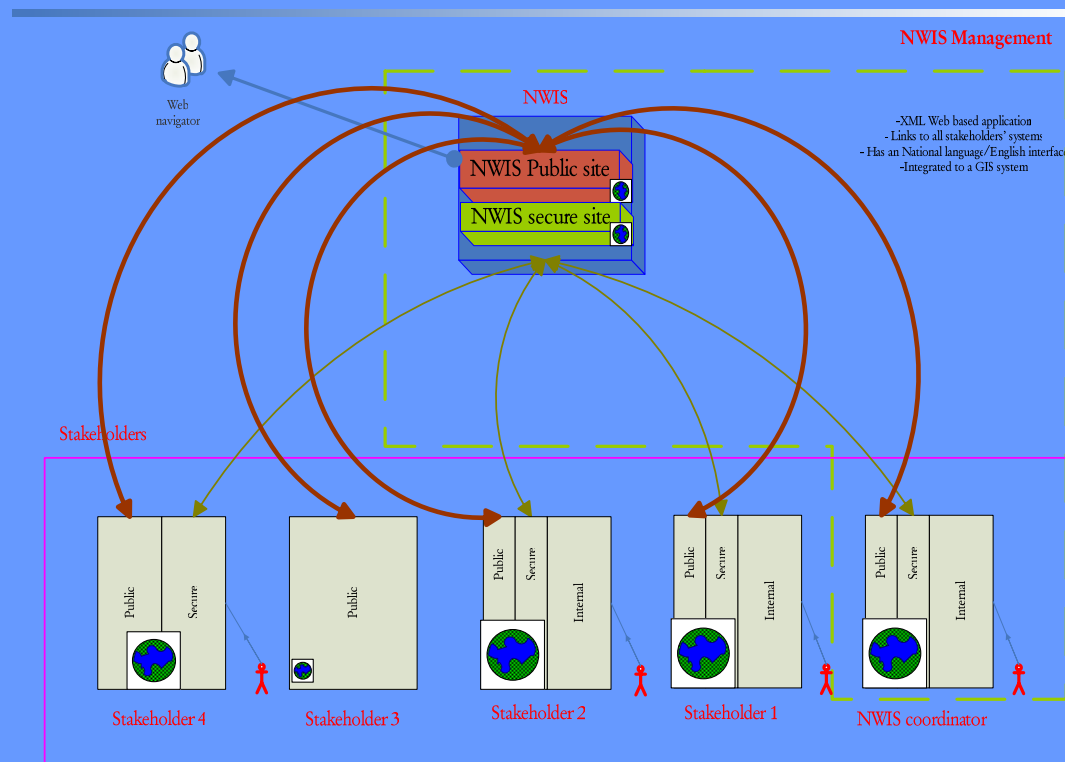
Duration

Reasons

NWIS  
definition

- Usually a computerized system
- Considered as one of the main instruments of the national water policy.
- A NWIS has usually restricted accesses for the national stakeholders (user or information providers) and a “public window” .
- NWIS includes :
  - Institutional and legal information (agreements between stakeholders, ownership, copyright, legal data exchange, etc.)
  - Standardization and organizational information (formats, exchange and management procedures, etc.)
  - Could include quantitative information, maps, best practices, directories, water legislation information, and grey literature.
- NWIS allows for easy and timely provision of services and information products that are tailored to satisfy specific user needs .

# Envisioned ideal NWIS



# Presentation Topics

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# Study deliverables

- 10 country reports
- Final Report

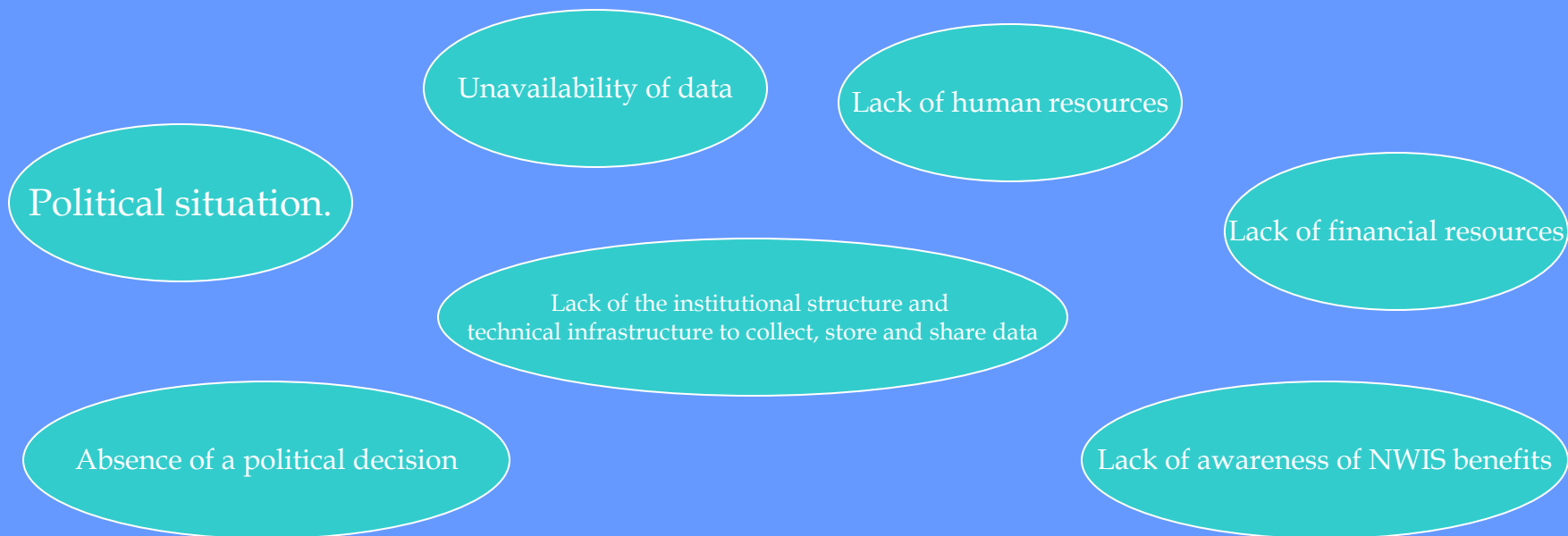
# Presentation Topics

- Study background
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# Conclusions

## Conclusion 1:

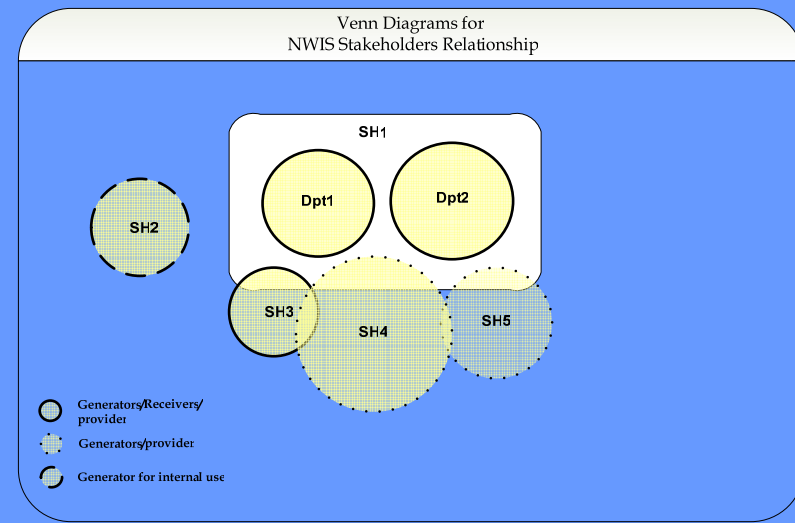
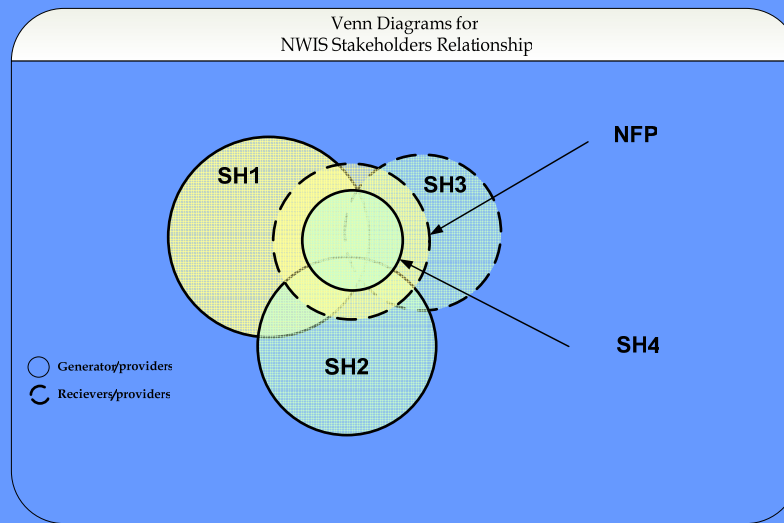
Most of the countries visited have not developed or thought of developing a national water information system except for Algeria and Tunisia, reasons are:



# Conclusions

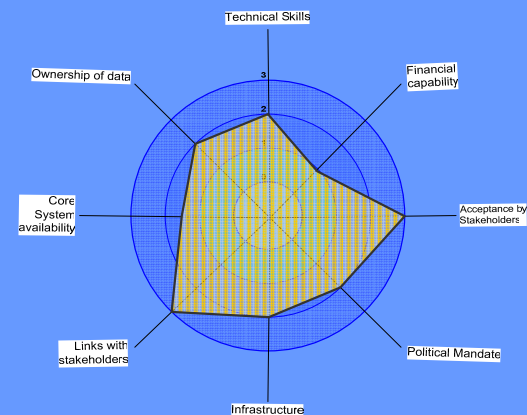
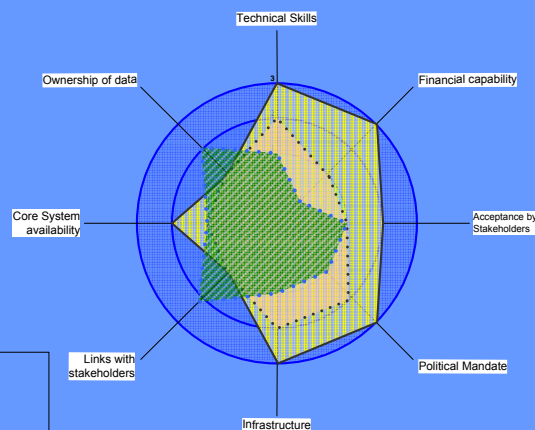
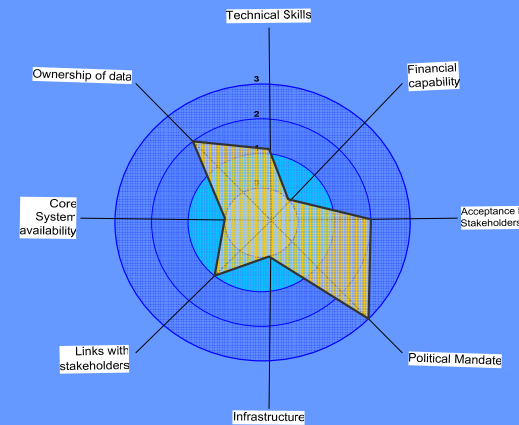
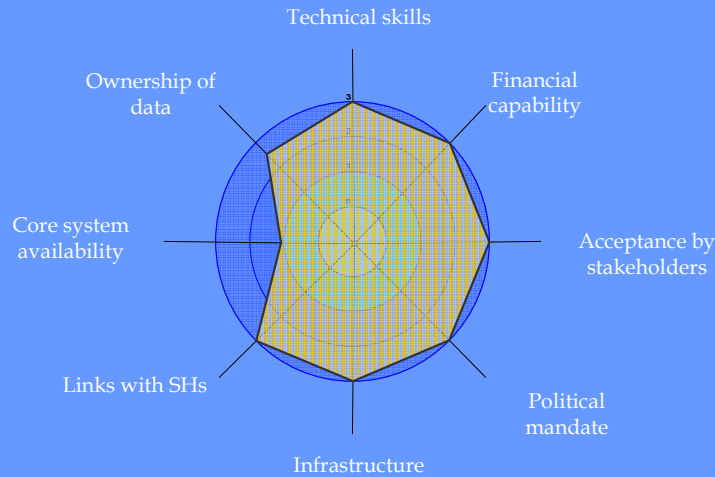
## Conclusion 2:

Relationships between stakeholders within the different countries range from "very close" to "nearly non-existent"



## Conclusion 3:

EMWIS NFPs' capabilities were assessed to evaluate their capabilities to coordinate and supervise the NWIS in their countries



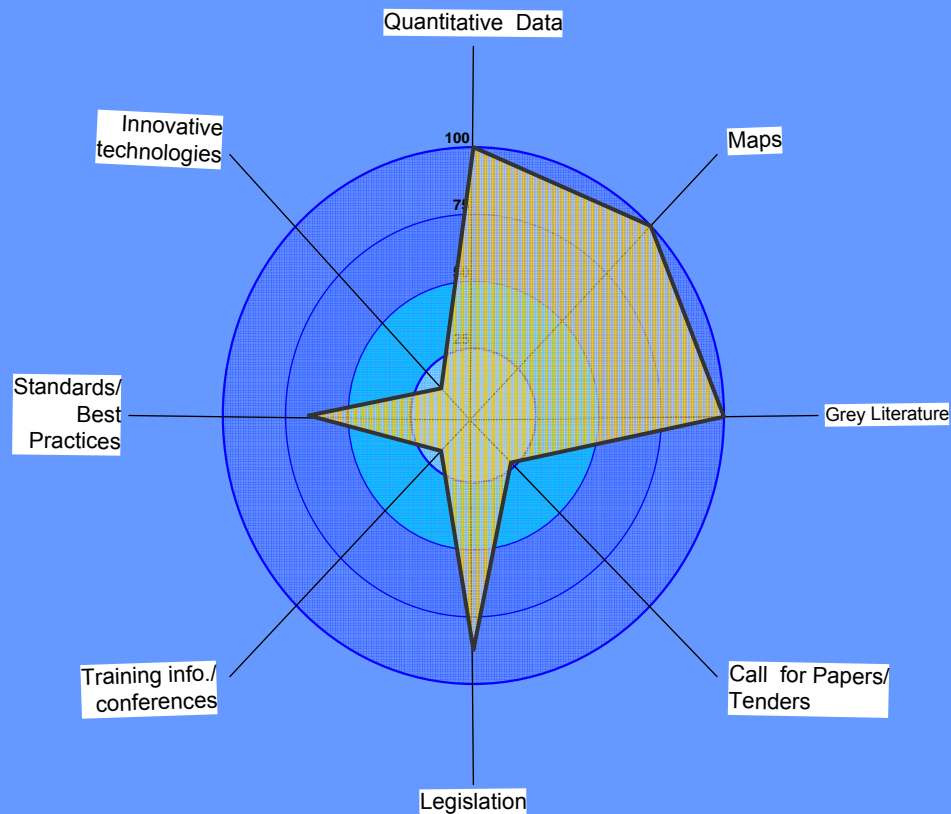
**Legend**

- 0 Undesirable; dramatic improvement needed
- 1 Poor situation, significant room for improvement
- 2 Satisfactory; some scope for improvement
- 3 Highly effective, but with minor improvement

# Conclusions

## Conclusion 4:

The types of information that were most commonly found in all countries are; quantitative data, maps, and grey literature.



## Conclusion 5:

All countries are facing problems in exchanging water information , common problems are:

Problems	Threat	Frequency	Severity	Solvability
Insufficient IT infrastructure (Software, Hardware)		high	severe	easy
Lack of NWIS Awareness		high	severe	easy
No SOPs for data exchange		high	serious	easy
Lack of financial resources to establish and operate	√	high	severe	moderate
Unclear roles and responsibilities for data exchange		high	serious	easy
All or some data not measured or collected from field		high	minor	difficult
Loss or Lack of NWIS-dedicated human resources	√	high	severe	moderate
Non-compatible data formats for data exchange		high	serious	easy
No or change in high-level political decision for NWIS	√	high	severe	difficult
Some stakeholders sell data which is a burden on data exchange		medium	minor	moderate
Some data cannot be shared because they are confidential	√	medium	serious	difficult
Data is not reliable and contains errors		medium	minor	moderate
Lack of data access policies and privileges		medium	severe	easy
Poor or non-existent relationships between stakeholders	√	medium	severe	difficult
Data monopoly or hesitation to release information	√	medium	serious	moderate
Some or the majority of data are not computerized		medium	severe	easy
Political situation	√	low	severe	difficult
No organizational structure for SH institutions	√	low	severe	difficult
Fears of data security breaches and hackers	√	low	severe	easy
No internet connections		low	severe	easy

# Conclusions

## Conclusion 6:

Two distinct phases in NWIS development were defined; the Pre-NWIS development phase and the NWIS development phase.



### NWIS pre-development phase:

- Survey of all water data sources.
- Monitoring of Water resources.
- Development of Standard Operating Procedures for monitoring and data collection.
- Usage of computers and availability of network infrastructure.
- Having qualified IT staff.
- Institutionalization of monitoring by having a specialized data collection and monitoring department.
- Internet connection availability.
- Web sites available for some or all stakeholders.



### NWIS development phase :

- Conduct awareness campaign.
- Obtain political decision to implement NWIS
- Establish a coordination committee
- Overall NWIS Concept.
- Select host/ coordinator.
- IT staff Capacity Building.
- Data Classification/sharing policy.
- Data Collection Roles & Responsibilities.
- Secure Funds.
- Feasibility Study & Design.
- Detailed Technical Design Study.
- Write the TOR.
- Develop NWIS.
- Validation and testing
- Institutionalization & implementation.

Ready for phase

2

## Conclusion 7:

### Action opportunities for EMWIS and Donor agencies in NWIS Pre-development phase

Action Opportunity	Opportunity for EMWIS	Opportunity for donor agencies
Pre-NWIS development phase		
Strengthen country capacity in monitoring water resources		√
Development of standard operating procedure for monitoring and data collection	√	
Assigning more IT staff in stakeholder organizations		

## Conclusion 7 (Cont.):

Action opportunities for EMWIS and Donor agencies  
in development phase

Action Opportunity	Opportunity for EMWIS	Opportunity for donor agencies
NWIS development phase		
Conduct Awareness Campaigns o promote for NWIS between stakeholders and higher management	√	
Help countries take high level political decision to implement a NWIS	√	
Help establish a Coordination Committee in countries to prepare and implement NWIS	√	
Setting Data Classification/sharing policy, data collection roles & responsibilities	√	
Help country secure funds for implementing NWIS	√	
Conduct a detailed study for NWIS implementation		√
Develop technical specifications and design for NWIS		√
Write the TOR		√
Develop NWIS		√
NWIS Institutionalization & implementation		√

## Conclusions

### Conclusion 8:

Launching of awareness raising campaigns in the countries under investigation is of crucial importance in order to convince their high-level decision makers of the benefits of NWIS

## Conclusions

### Conclusion 9:

Wherever regulations for data exchange and information provisions existed, the flow of data and response of stakeholders were much smoother and timely.

## Conclusions

### Conclusion 10:

All the countries need assistance regarding the development of NWIS but with varying degrees.

## Formulated and recommended road Map for EMWIS to Aid in NWIS Development

Action	Problem/obstacle Addressed	Opportunity to utilize	Threats Contained
Conduct an NWIS Awareness Campaign	Lack of NWIS Awareness	After this study all NFPs know about NWIS and enthusiastic about implementing it in their countries	
Obtain a country high level political decision to establish NWIS	No or change in high-level political decision for NWIS	Act immediately after the consultant visit since most stakeholders in countries are willing to go forward with data sharing through NWIS	Contains or even eliminates one of the major threats to NWIS in the countries which is lack or change of political decision
Development of Standard operating procedures for data collection and exchange through NWIS	unavailability of SOPs for data exchange	Step in countries where they are in the process of organizational restructuring	Protect NWIS to a certain degree from possible future organizational restructuring threats
Hire more IT staff in stakeholder organizations	Loss or Lack of NWI-dedicated human resources	Available of in-country IT experience and knowledge	With dedicated staff the threat of loss of qualified staff will be reduced
Help establish a Coordination Committee in countries	Poor relationships between Stakeholders		Will significantly reduce the threat of stakeholders withdrawing from NWIS by actively letting them participate in the committee

## Road Map for EMWIS to Aid in NWIS Development (Cont. )

Action	Problem/ obstacle Addressed	Opportunity to utilize	Threats Contained
Coordinate with on-going similar projects		Availability on-going projects that are working on similar ideas to jointly build NWIS whenever possible. This opportunity will help reduce the funds required to implement NWIS.	
Setting Data Classification/sharing policy, data collection roles & responsibilities	Unclear roles and responsibilities for data exchange		
Secure funds	lack of financial resources to establish and operate NWIS		Eliminates the major threat to NWIS in almost all the countries, the threat of lack of financial resources
Conduct a full feasibility study and design	unavailability of NWIS in countries		Contains the Major threat in countries of losing information and the threat to EMWIS system of not having updated information
Detailed Technical Design Study			
Develop and institutionalize NWIS			

## Cost estimate for developing NWIS in countries

Cost estimates for enhancing or developing of NWIS in countries ranged between 130,000 Euro to 400,000 Euro

Costs in each country will have to be defined in more details after the pre-development phase



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