

A photograph of the UNESCO-IHE building in Delft, The Netherlands, with a blue flag flying on a tall pole in the foreground. The building is a modern, multi-story structure with a grid-like facade and large windows. The sky is a clear, deep blue.

# Participatory Integrated Water Resources Planning SITUATION ANALYSIS

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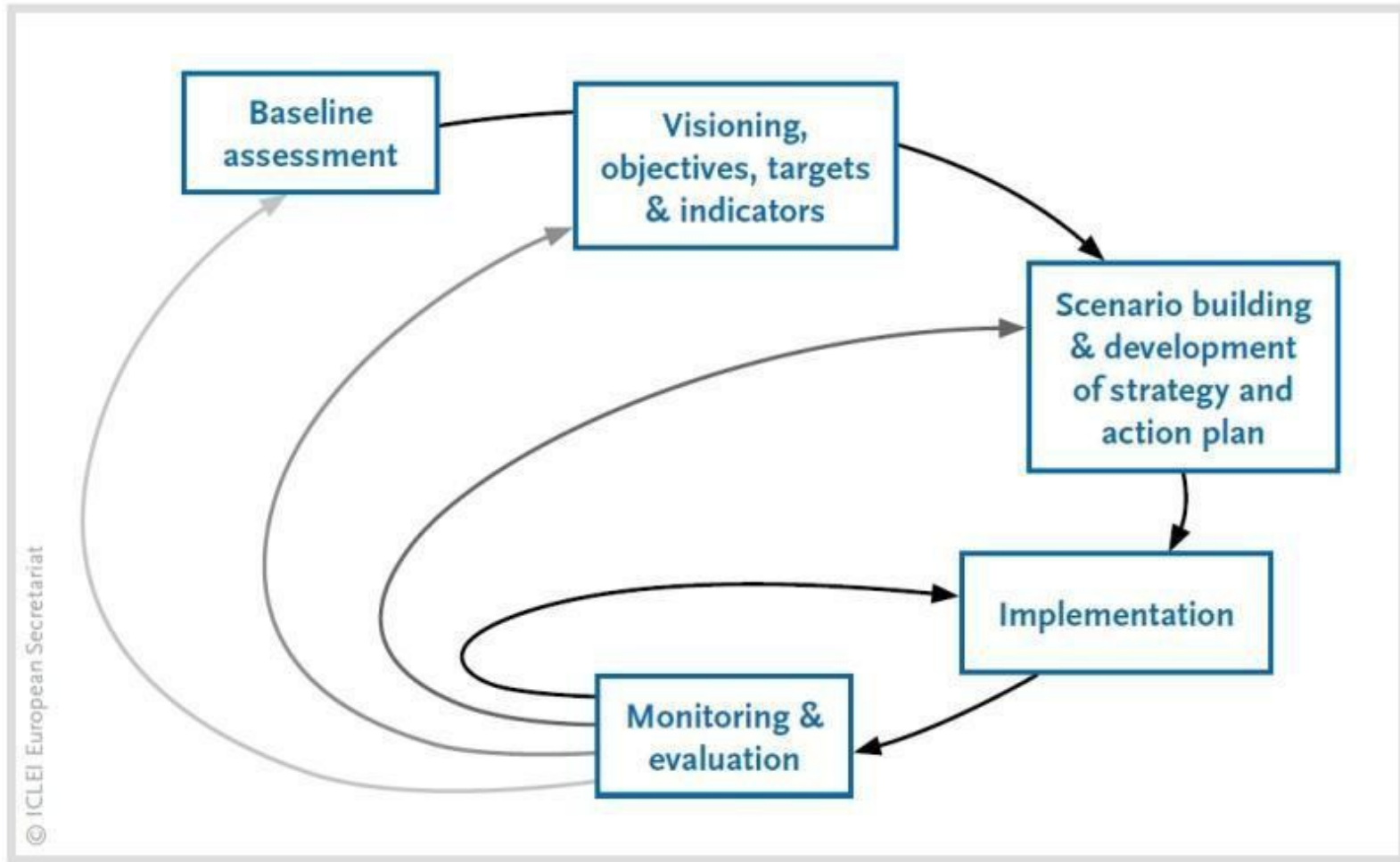
UNESCO-IHE INSTITUTE FOR WATER EDUCATION

# Learning objectives

This courses will assist participants in:

- Understand the rationale and objectives of a situation analysis
- Apply techniques for situation analysis to a particular case study
- Assess the functions and problems in the basin/area that is object of planning

# Steps in the planning process



# WRP in the Andarax river basin

Case study on PIP

# Context: Almeria, Andalusian Mediterranean Basin

- Click to edit Master text styles
- Second level
- Third level
- Fourth level
- Fifth level



# The ALTAGUAX project: case study on participation

- “Improving sustainable water management in the Andarax river basin, through development of a decision support tool with interactive GIS-based interface that allows stakeholders to evaluate different management scenarios in the basin.”
- Collaboration UNESCO-IHE, Andalusian Water Agency (AAA) and Universidad de Almeria (UAL) - (2009-2012)
- Follow up project EU FP6 ALERT (2004-2007, 8 partners)
- Key deliverables
  - Operational tool for group negotiation of optimal water allocation alternatives
  - Feed-backed protocol for organizing negotiation workshops





• Sierra de Filabres

• Sierra Nevada

• Desierto de Tabernas

• Sierra Alhamilla

• Andarax river

• Sierra de Gádor

• Campo de Nijar

• Almería

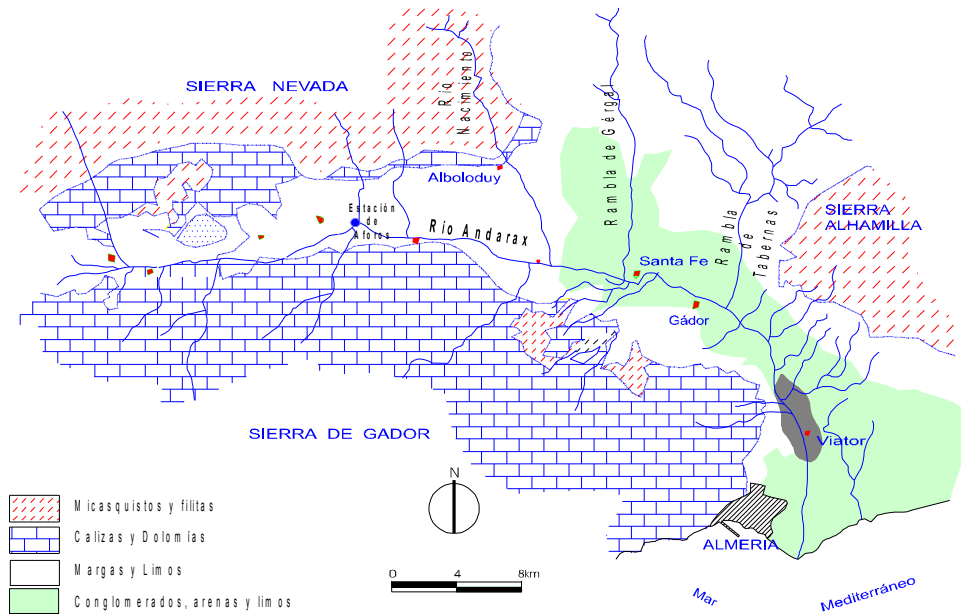
• Cabo de Gata

• Campo de Dalías

# Semi-arid: low rainfall, high variability



	Almería		Canjáyar	
	mm	%	mm	%
Fall	89	38	136	33
Winter	72	31	159	39
Spring	49	22	85	21

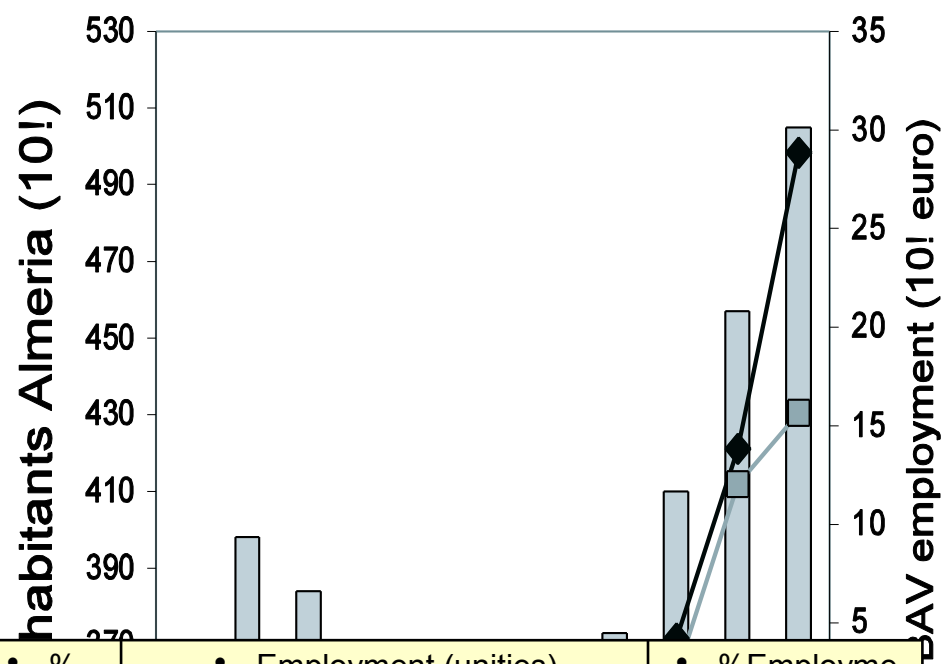
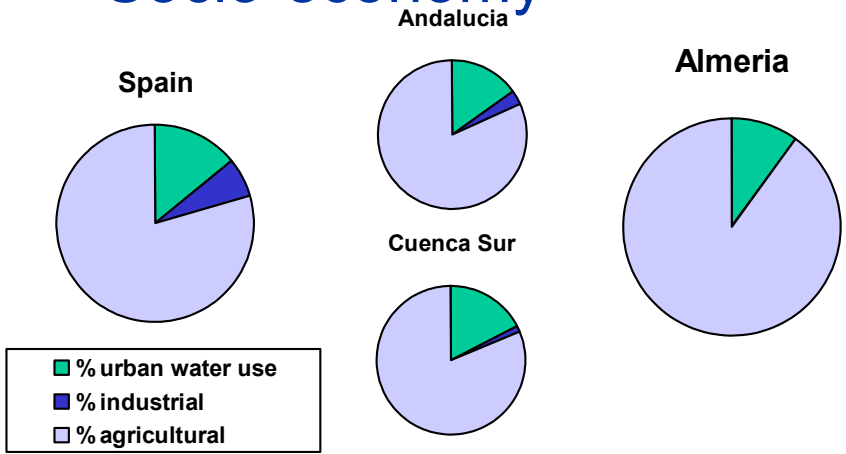








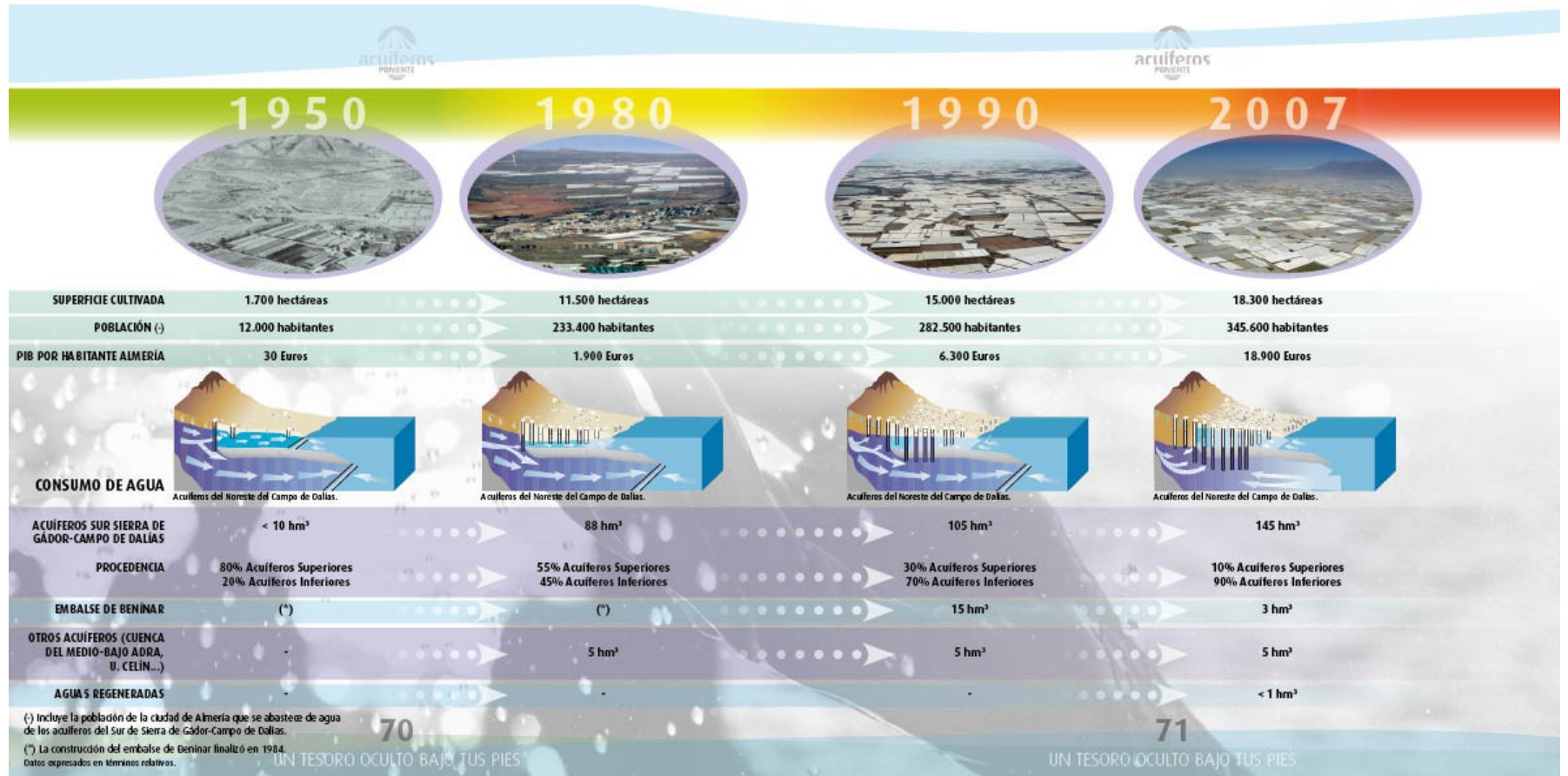
# Socio-economy



• Activity	• BAV (106 euro)			• % BIP Almeria	• Employment (unities)			• % Employment
	• Direct	• Indirect	• Total		• Direct	• Indirect	• Total	
• Intensive agriculture	• 695	• 447	• 1.142	• 25,7	• 55.000	• 14.314	• 69.314	• 41,3
• Other irrigation	• 445	• -	• 445	• 1	• 2.524	• -	• 2.524	• 1,5
• Industrial activities	• 128	• -	• 128	• 2,9	• 2.790	• -	• 2.790	• 1,7
• Tourism	• 237	• 89	• 326	• 7,3	• 10.855	• 3.512	• 14.367	• 8,6
• Total	• 1.105	• 536	• 1.641	• 36,9	• 71.169	• 17.826	• 88.995	• 53,1



# High pressure on scarce groundwater resources



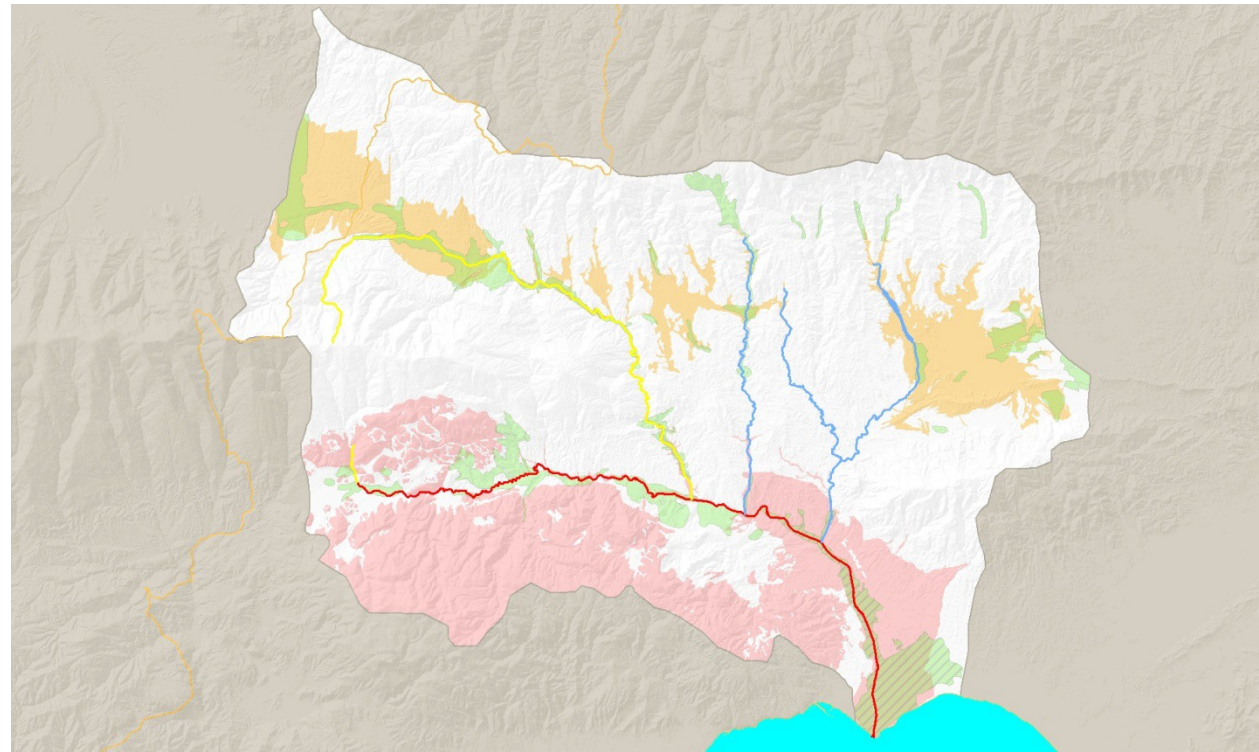
□ overexploitation, marine intrusion, quality degradation



# Limited resources under high pressure

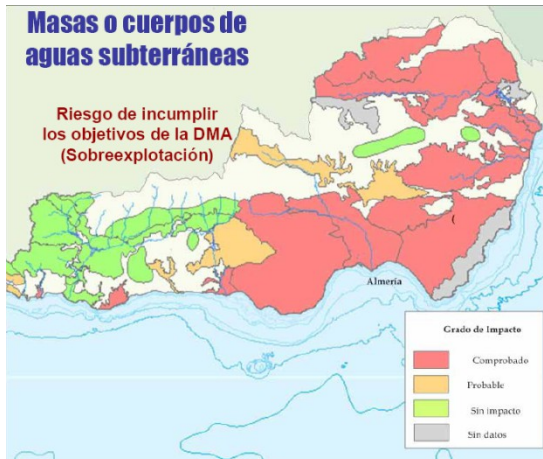
## Estado de las aguas superficiales

- Ríos Almanzora y Antas
- Río Aguas
- Nijar - Cabo de Gata
- Río Andarax
- Río Adra - El Ejido

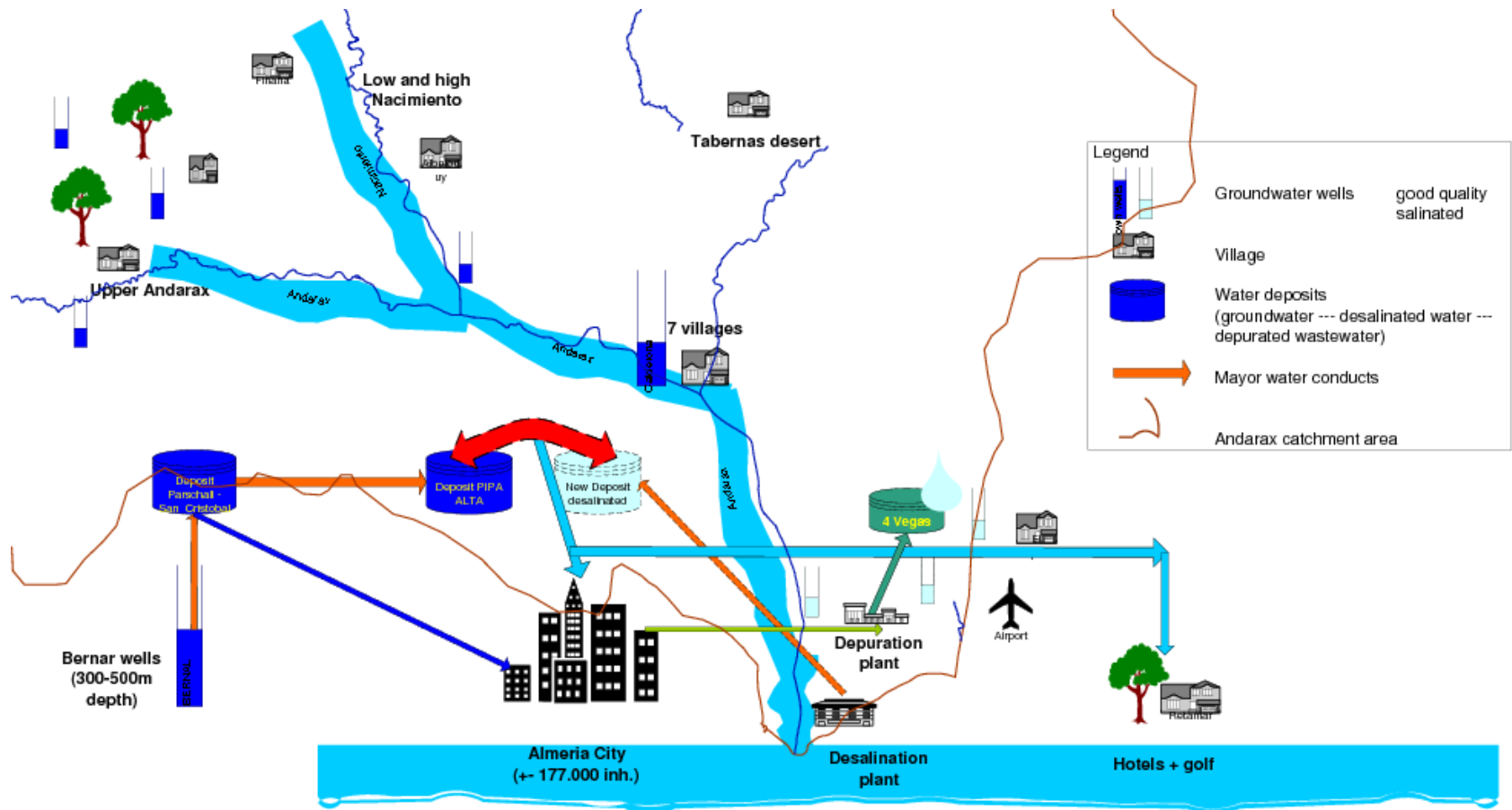


## Masas o cuerpos de aguas subterráneas

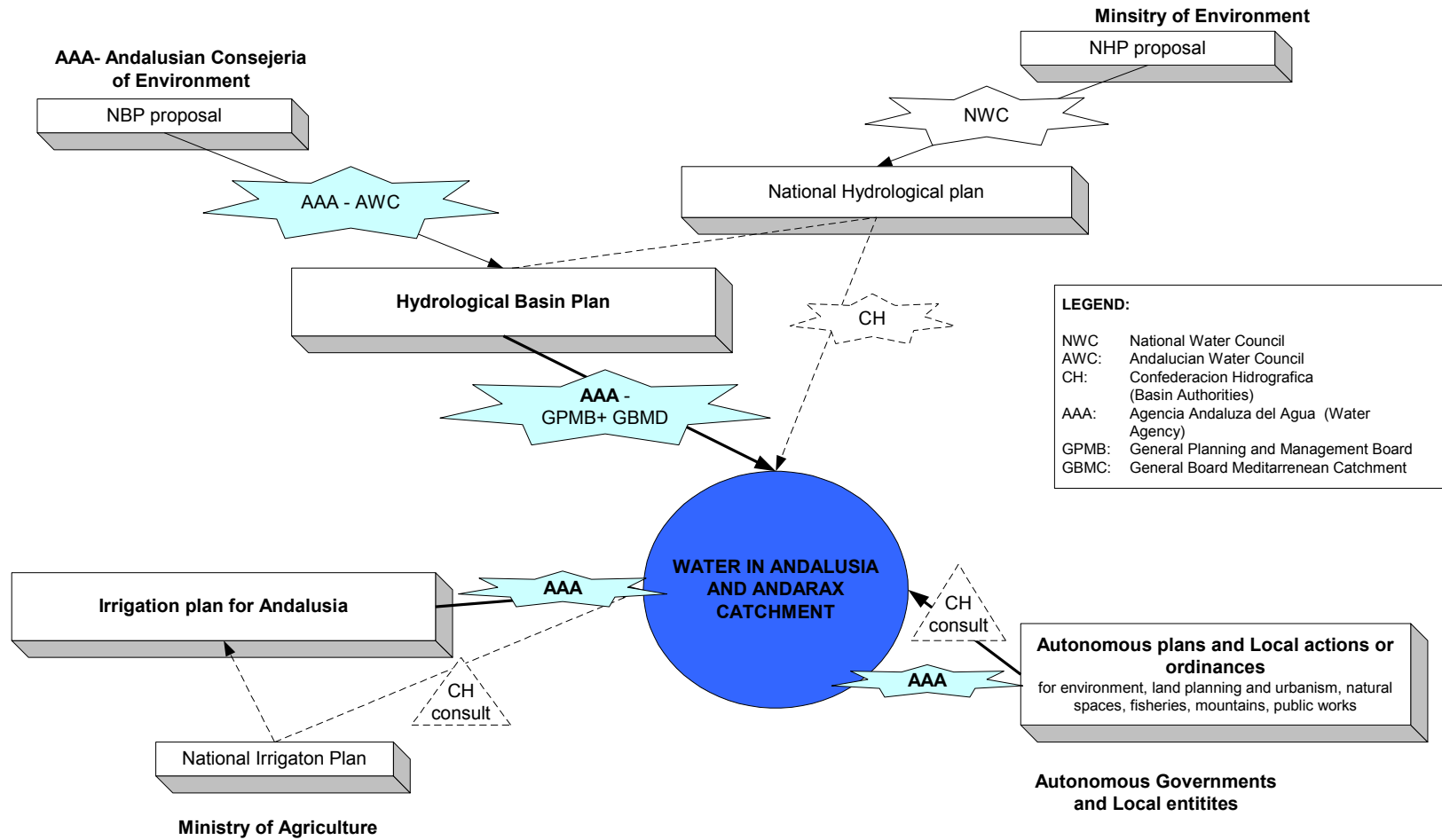
Riesgo de incumplir los objetivos de la DMA (Sobreexplotación)



# Water scheme



# Decision making context and institutions



# Official planning process by water agency (AAA) – introducing new content and actors

- Internal changes + EU Water Framework Directive
  - Environmental uses and good status of water bodies
  - **Public participation** (article 14)
  - Principle of Cost recovery
- ➡ Changes in planning process: Integrated Water Management
- ➡ Changing institutions and tasks
  - Water council now integrates **different voices**
  - Organization of « **Participation days** » - Different publications and sensibilization campaigns
  - Environmental Impact Assessment, Economic Analysis, Action Plans

= a different table

~~ASSURED~~





# Water management problems

- Over-exploitation
- Marine intrusion
  - decline in quantity and quality of available water resources
  - □ **Conflicting water uses, need for organization**
- Institutional and legal aspects (transition to coördination in water management, WFD implementation)
  - need for decision support (optimal allocation taking into account environmental, economic and social impacts of different scenarios)





# River basin plan

HOW?

## Brainstorm on the steps to follow

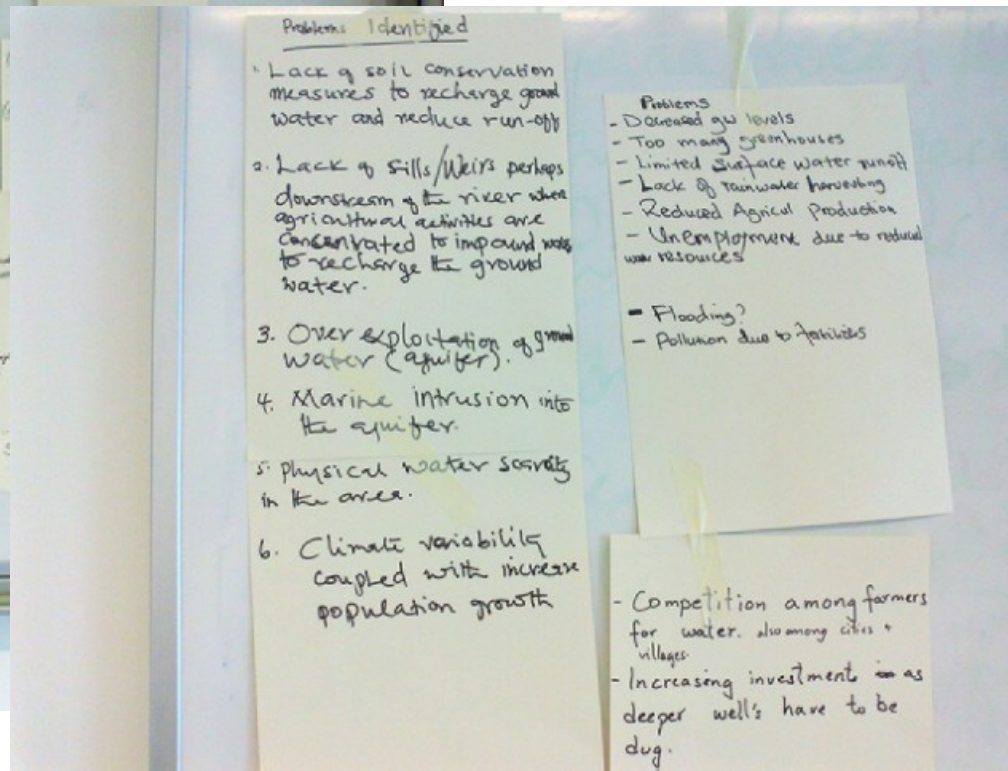
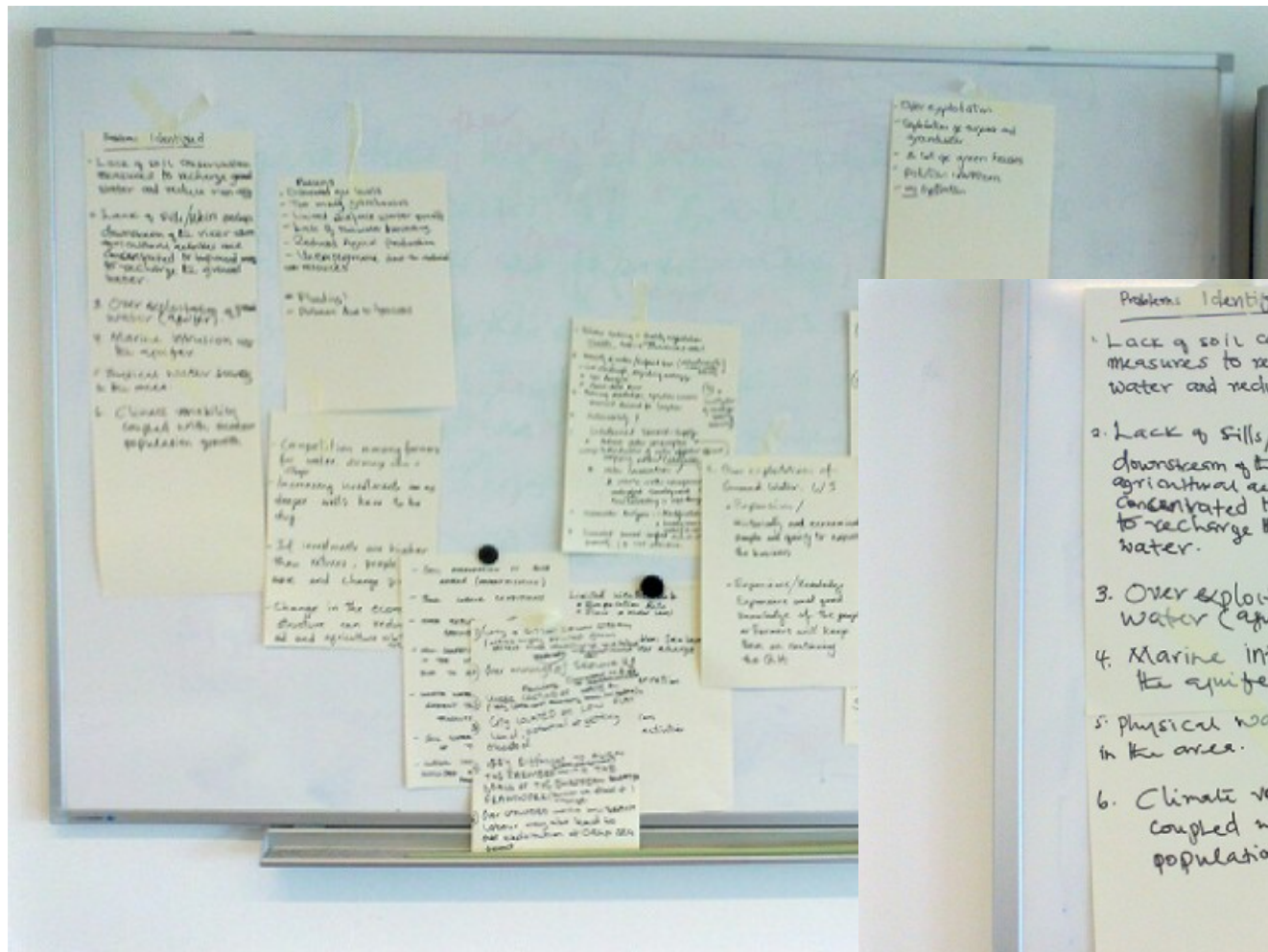
- What is a river basin plan
- How do you create one
- What is the information you need
- How? Who? When? Where? Why?



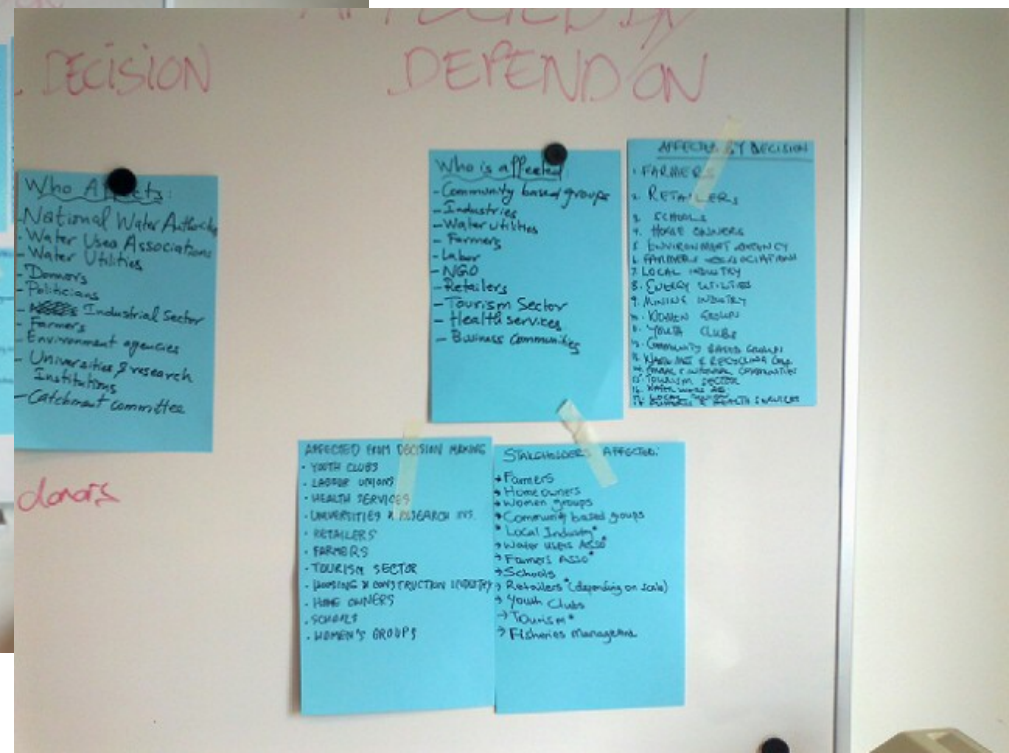
# Situation analysis

Problem analysis

# Exercise on situation analysis 08/04/13 – (1/3)



# Exercise on situation analysis 08/04/12 – (2/3)



## Exercise on situation analysis...observations – (3/3)

## Triggers for WRP and situation analysis

- problems have to be solved
- an undesirable event
- meet unsatisfied demands
- develop under-utilized resources
- achieve national development objectives
- other (sectoral) planning efforts: energy, agriculture, fisheries, land use



## Levels of situation analysis (1/2)

Trigger is a specific problem:

- “straight forward”, focus on cause and effects
- analysis of effects of interventions still to be “holistic” (EIA)

Trigger is regular process of river basin planning:

- analyse demand and supply (projections)
- impact of (human) activities on resource functions
- analyse (possible) conflicts between uses
- link with sectoral plans (agriculture, energy, health, .....)

## Levels of situation analysis (2/2)

Trigger is (WR) policy plan:

- systematic review of the functions and role of water for the different human and environmental uses

Intensity of analysis depends upon

- comparative importance of water resources functions
- the scarcity of the resource (quantity + quality) and
- the conflicts between uses

## Objectives of situation analysis

- identify all possible problems and issues
- gain insight in the extent, cause and effects of the problems and issues
- know the problem, before you try to solve it
- gain insight in the user functions of the WRS
- help identify all the interventions that possibly can be made
- identify all stakeholders involved in and affected by the plan
- help to rank problems
- specify priority questions for analysis

## Issues and assessments (1/2)

- The issues can be divided into **livelihood/demand issues** (e.g., meeting the increasing and often conflicting demands of different economic sectors) and **resource-impact issues** (e.g., impact of climate variability and changes, impact from human activities and land management).

## Issues and assessments (2/2)

- **Social assessment** examines how social and institutional structures affect water use and management, degree of equitable access to water such as by gender and how specific projects might affect the social structure.
- **Risk or vulnerability assessment** analyses the likelihood of extreme events, such as flood assessment; the environmental implications of development programs and projects; management, or how a specific project might affect social structures; and droughts, and the vulnerability of society to them.
- **Demand management assessment** assesses the potential for water savings through water conservation and demand management.
- **Unconventional sources assessment** examines the potential for water reclamation, re-use, recycling and desalination.
- **EIA**

## Techniques of situation analysis (1/2)

- no described format
- tables, diagrams, matrices, trees; highlighting
  - relations,
  - interactions
  - cause-effect relationships
  - gaps in analysis
  - good for communication / presentation
  - bring hierarchy / prioritization
- dissect (decompose) the problem

## Techniques of situation analysis (2/2)

- WWWWW Questions
- Problem Tree; Cause - Effect Table
- Matrix of Activities
- Function Analysis
- Resource Function Table; Resource Use Table
- Describe factors: Physical, Demographic, Socio-economic, Political / Institutional
- Stakeholder Analysis Tools
- EIA, SEA
- Objective Analysis
- Design Tree = Analysis of Measures

## Output

- The output from the situation analysis is a report elaborating the progress with implementing improved management of water resources, the outstanding issues, the problems and some of the solutions. Prioritising these problems, issues and solutions in terms of social, economic, environmental and political priorities is an important aspect of the report. The analysis is carried out with respect to achieving sustainable management and development of water resources.
- The situation analysis examines the key factors of influence in a given situation. It is especially important to view the situation first from the perspective of those directly affected. Awareness of the problems and the motivation to seek solutions are a function of the condition experienced by the stakeholders.



## Coordination “soft” and “hard” knowledge

- Coordination of **knowledge transfer** between more technical/analytical and more experience-based knowledge
- While there is an emphasis on the participation of stakeholders this should not be done to the extent of ignoring the statistical aspects and quality of data. One challenge in the situation analysis is to get the balance between the analytical tasks and the stakeholder inputs.
- **Combination of stakeholder involvement techniques and methods**
- *Specialist expertise* has an important role in conducting the analysis when highly technical skills are required, *large baseline surveys* need to be done or there is particular need for an independent viewpoint.
- Presence of technical experts in the stakeholder forums!

## Coordinate collection of knowledge (1/2)

- **Multi-stakeholder groups** should design the information gathering, analysis and research process themselves, to ensure **ownership** of the strategy and its results.
- All the 'analysis' tasks are best implemented by bringing together, and supporting, *existing centers* of technical expertise, learning and research.
- Since analysis is central to strategy development, it should be **commissioned, agreed and endorsed at the highest level** (i.e. by key government ministries or by the planning steering committee). This will increase the chance that analysis will be well focused and timely in relation to the plan's evolution and timetable, and that it will be implemented.

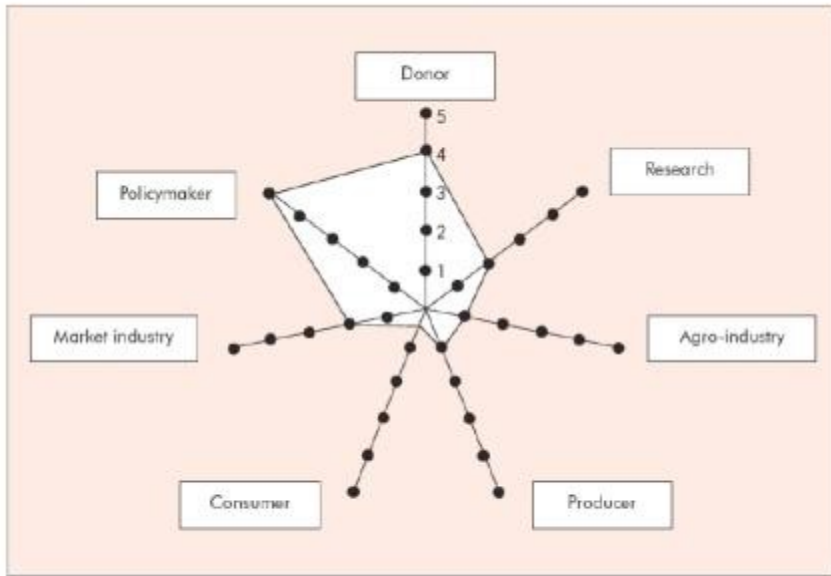
## Coordinate collection of knowledge (2/2)

- The situation analysis **links back to the existing water resources management system** and its effectiveness in reaching the goal of sustainable management and development.
- Weaknesses, problems and issues identified ~ :
  - Water resources policy
  - Water (resources) legislation
  - Water Management institutions, and
  - Water (resources) management practices.
- Causes of the problems may not lie in the same area.
- □ **identify gaps** in the management framework and allow a prioritisation of action.

## Stakeholder analysis

- Stakeholder analysis:
- Initial brainstorming
- Stakeholder analysis
  - Differentiate key, primary and secondary stakeholders
  - Rank stakeholders according to importance and influence

# Stakeholder analysis (2)



Source: 'SWITCH in the City' (2011), Part II

High Importance / Low Influence	High Importance / High Influence
A	B
C	D
Low Importance / Low Influence	Low Importance / High Influence

Source: UK Department for International Development, 2002.



## Institutional mapping

- Looking behind the scenes of power relationships
- Understanding the reality – rather than the rules
- Can lead to politically sensitive results
- Should be undertaken by researchers or consultants

## Notes on situation analysis (1/3)

- Identify existing and future known problems, but not potential, imagined ones (impact analysis)
- Problems to be analyzed in terms of the interaction between human activities, natural systems and management options
- A problem is not the occurrence of a physical phenomenon; the phenomenon becomes a problem:
  - if it has adverse social and economic consequences
  - if remedial measures are difficult to take

## Notes on situation analysis (2/3)

- Problems may be a function of time, space
- Focus on extreme event, while regular event may be much more worrisome (but may not reach the headlines)
- Constraints limit alternatives. Do not worry too much about them in the process, be creative
- What does each stakeholder think of other stakeholders situation



## Notes on situation analysis (3/3)

- Rounds of problem analysis:
  - 1) identification and classification + quantification and prioritization
  - 2) screening possible measures + formulation of specified questions

## Useful resources and tools from the Web

- OECD: <http://www.oecd.org>
- WB: <http://www.worldbank.org>
- EU: <http://ec.europa.eu/environment/water>
- ADB: <http://www.adb.org>
- GWP: <http://www.gwp.org>
- CAP-NET: <http://www.cap-net.org>

## Useful resources and tools from the Web

- OECD: <http://www.oecd.org> (topics/working papers,i-Library)
- WB: <http://worldbank.org>
- CAPNET: <http://www.cap-net.org>
- Water Resources Assessment. WMO UNESCO. Handbook for review of National Capabilities  
<http://www.wmo.ch/web/homs/documents/english/handbook.pdf>
- California Watershed Assessment Manual  
[http://cwam.ucdavis.edu/Manual\\_chapters.htm](http://cwam.ucdavis.edu/Manual_chapters.htm)
- Practitioner's guide. Data and Information Assessment Matrix.  
[http://www.methodfinder.net/pdfmethods/methodfinder/methodfinder\\_method67.pdf](http://www.methodfinder.net/pdfmethods/methodfinder/methodfinder_method67.pdf)
- Practitioner's guide. Problem tree.  
[http://www.methodfinder.net/pdfmethods/methodfinder/methodfinder\\_method1.pdf](http://www.methodfinder.net/pdfmethods/methodfinder/methodfinder_method1.pdf)
- WB. Participation and Social Assessment: Tools and Techniques.  
[http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1996/04/01/000009265\\_3980624143608/Rendered/PDF/multi0page.pdf](http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1996/04/01/000009265_3980624143608/Rendered/PDF/multi0page.pdf)

# Checking the learning objectives

Do you?

- Understand the rationale and objectives of a situation analysis?
- Know which techniques you can apply for situation analysis to a particular case study?
- Know how to assess the functions and problems in the basin/area that is object of planning?



**Situation analysed**

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