

INBO General Assembly

Martinica, 24 – 28 January 2004

THE JUCAR PILOT RIVER BASIN IN SPAIN

Teodoro Estrela

Jefe de la OPH de la CHJ

European Pilot River Basin Network

B, F, N (Scheldt)

D, F, Lux (Moselle-Sarre)

Denmark (Odense)

Finland (Oulujoki)

Norway(Suldalsvassdraget)

France (Marne)

Ireland (Shannon)

Greece (Pinios)

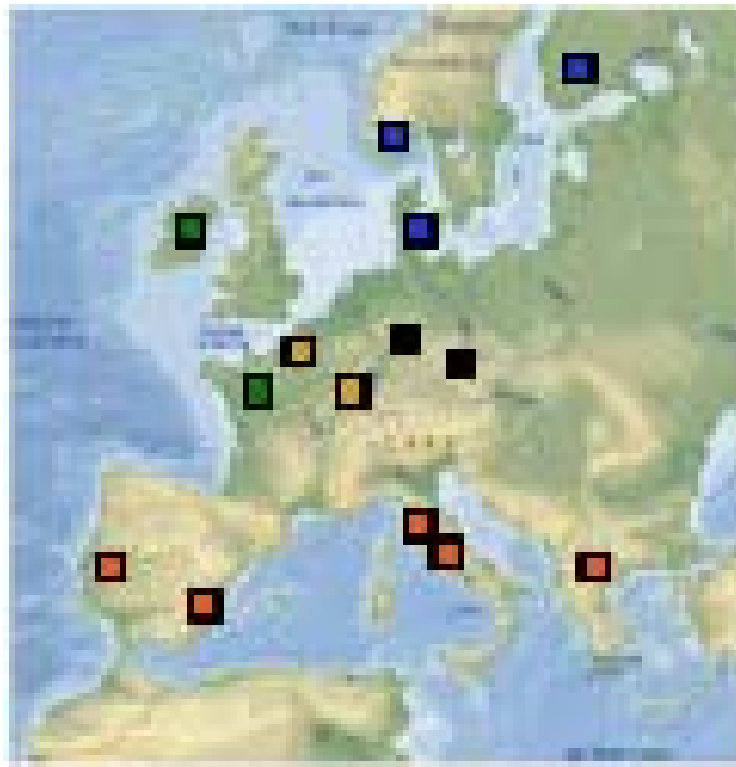
Portugal (Guadiana)

Spain (Júcar)

Italy (Cecina, Tevere)

Romania Hungary (Somos)

CZ, D, PL (Neisse)



Main figures of Júcar River Basin



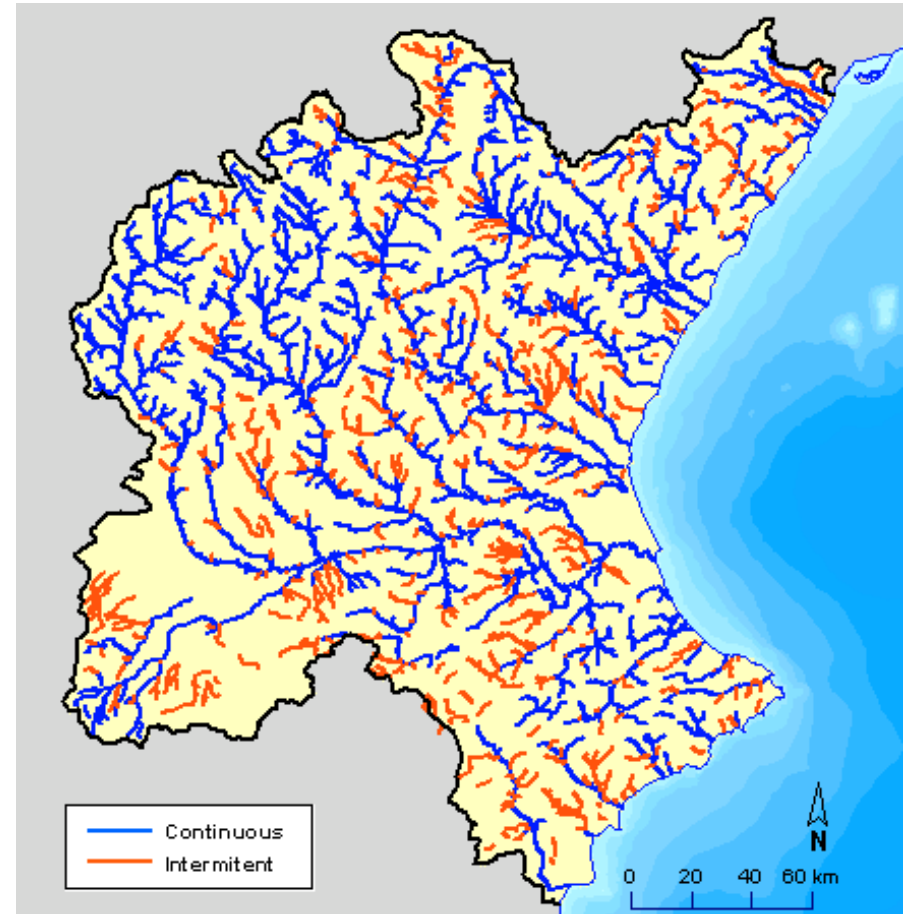
Area (km ²)	43.000
Population (inhabitants)	4.360.000
Equivalent Population due to Tourism (inhabitants)	1.400.000
Irrigated land (ha)	370.000
Water Resources (hm ³ /year)	3.400
Water Demand (hm ³ /year)	2.960



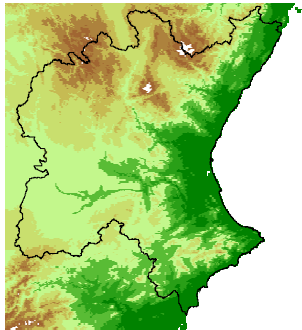
Main activities for WFD implementation

- Characterization of surface and groundwater bodies
- Register of protected areas
- Analysis of pressures and impacts due to human activity
- Economic Analysis
- Public participation

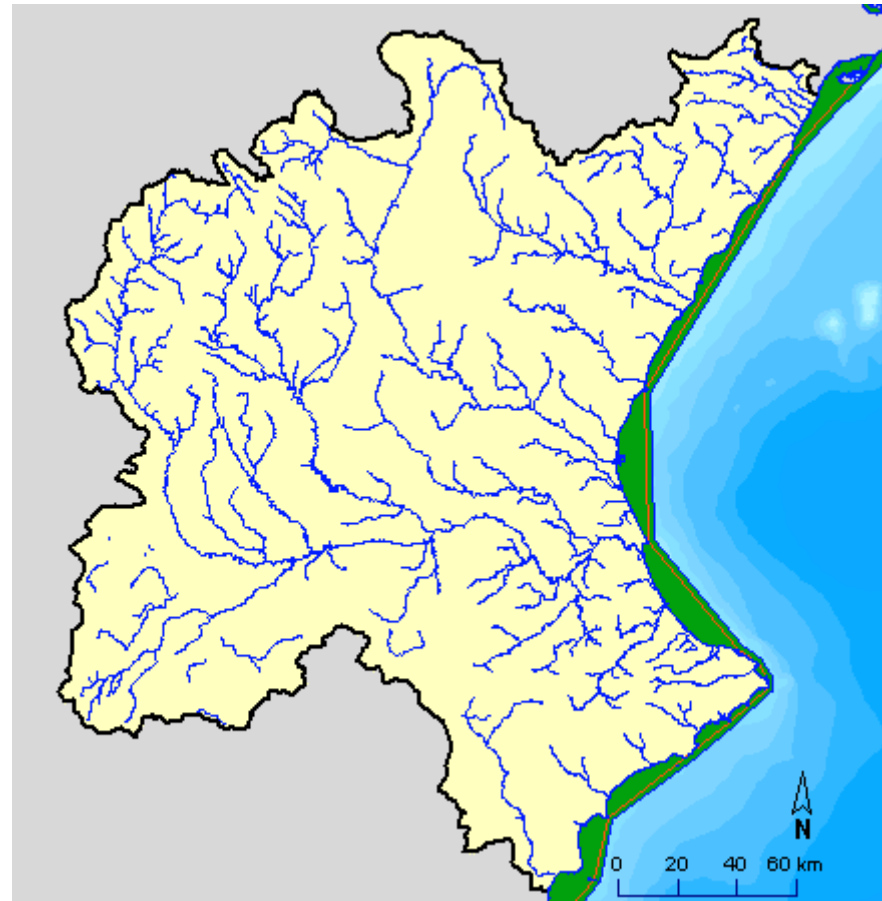
River typologies



Surface water bodies

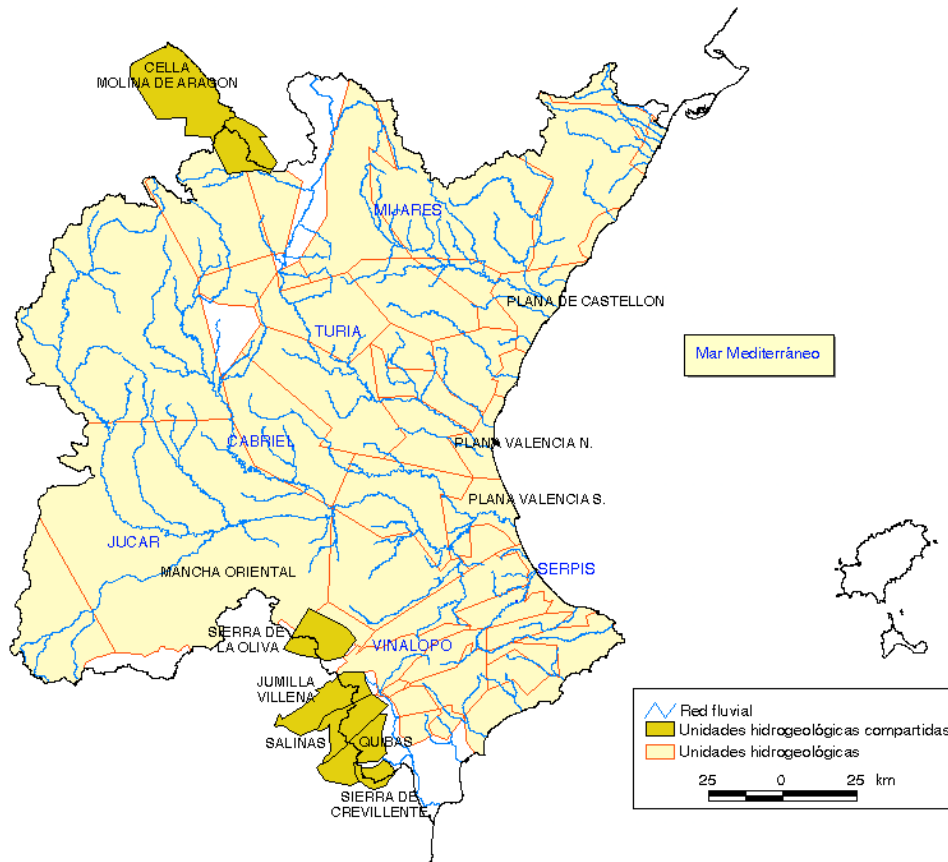


Digital terrain model
(100 m x 100 m)

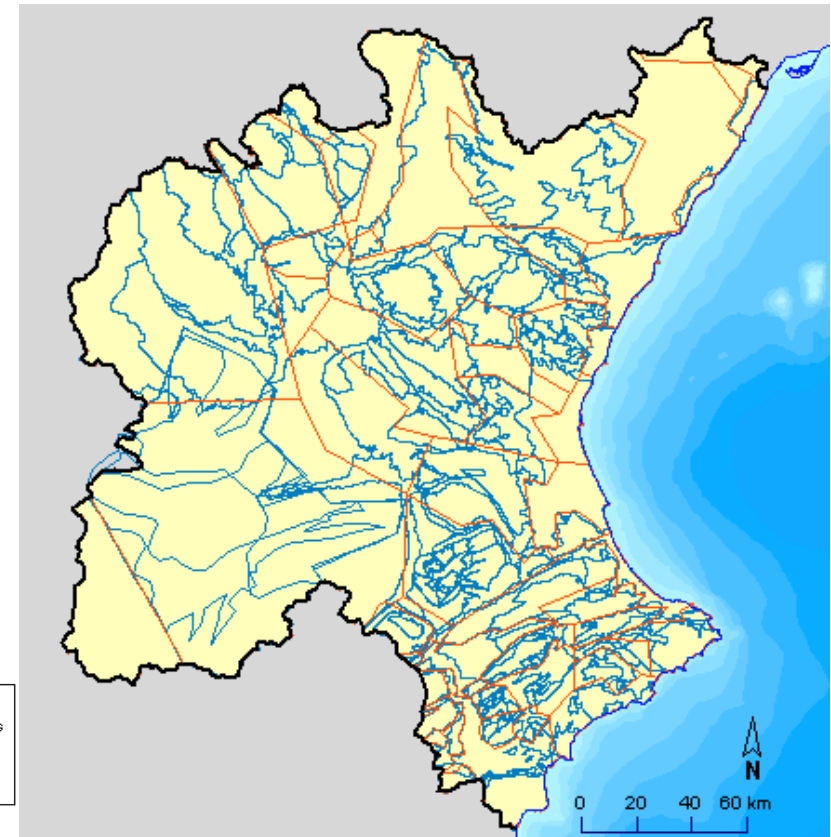


Drainage network with basins > 100
 l/s and drainage area $> 10 km^2$

Initial characterization of aquifers

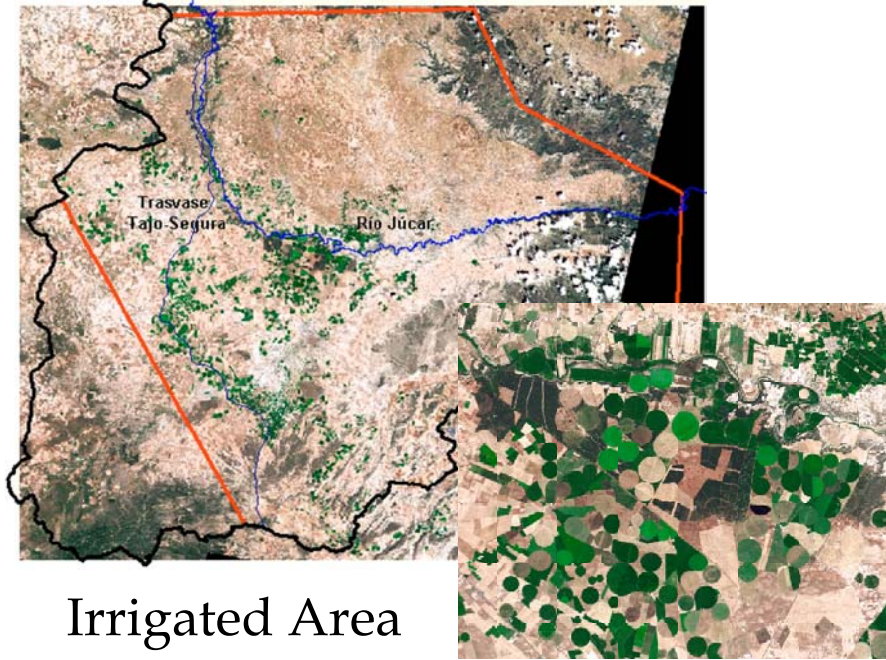


Groundwater body =
Hydrogeological unit

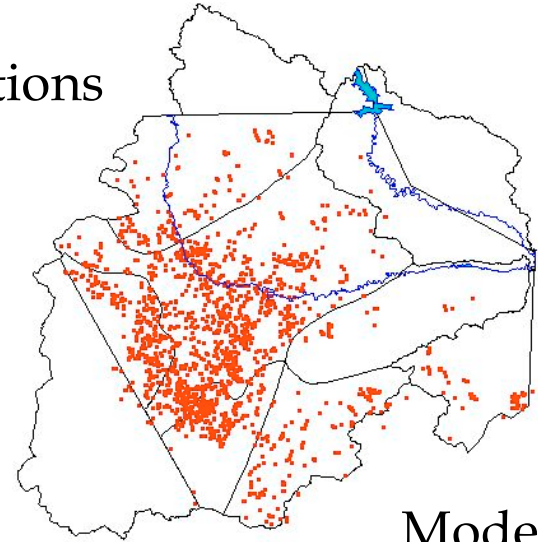


Activities in course

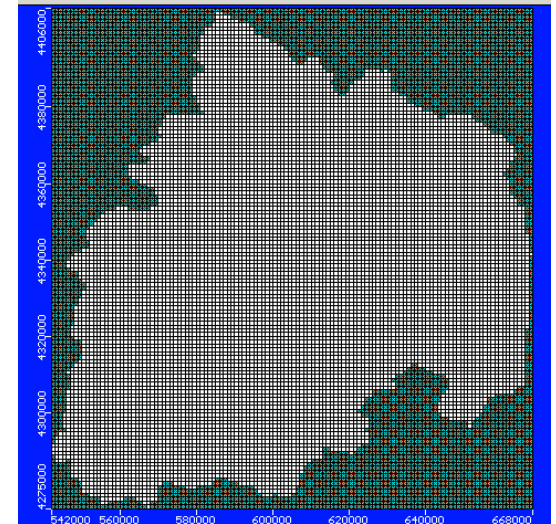
Additional characterisation: Case study Mancha Oriental Aquifer



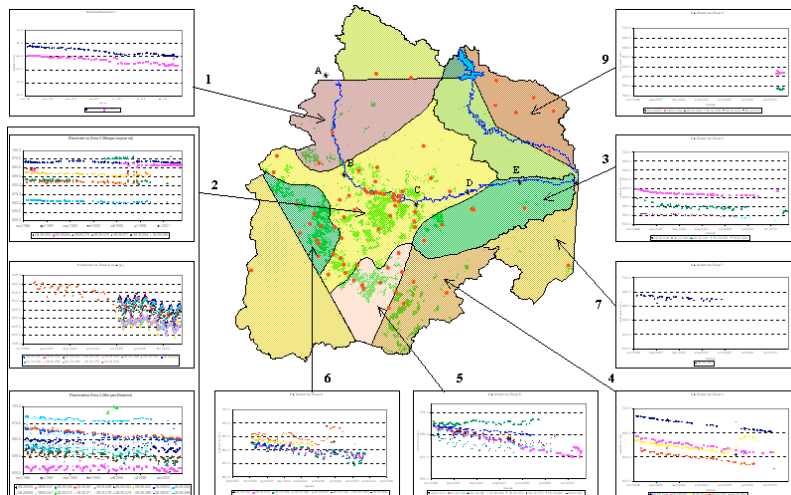
Abstractions



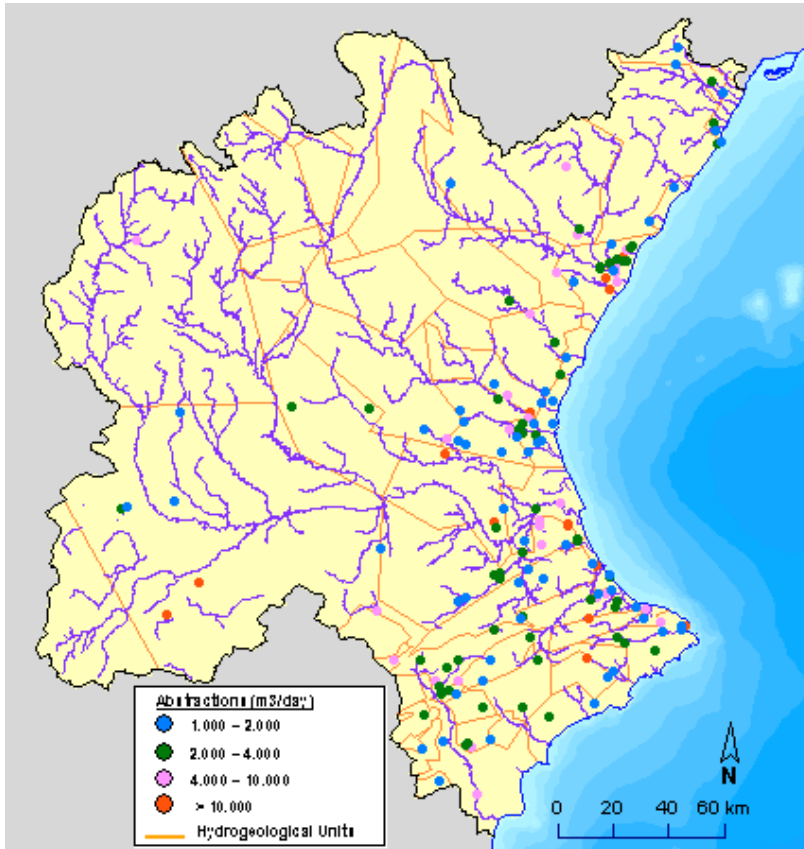
Modelling



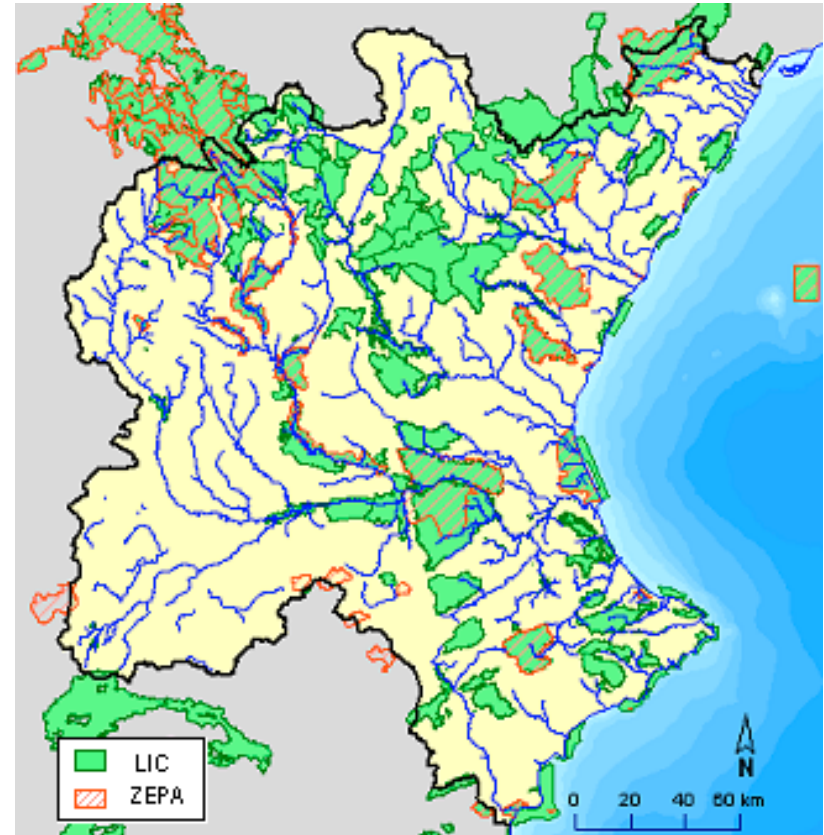
Water levels



Protected Areas

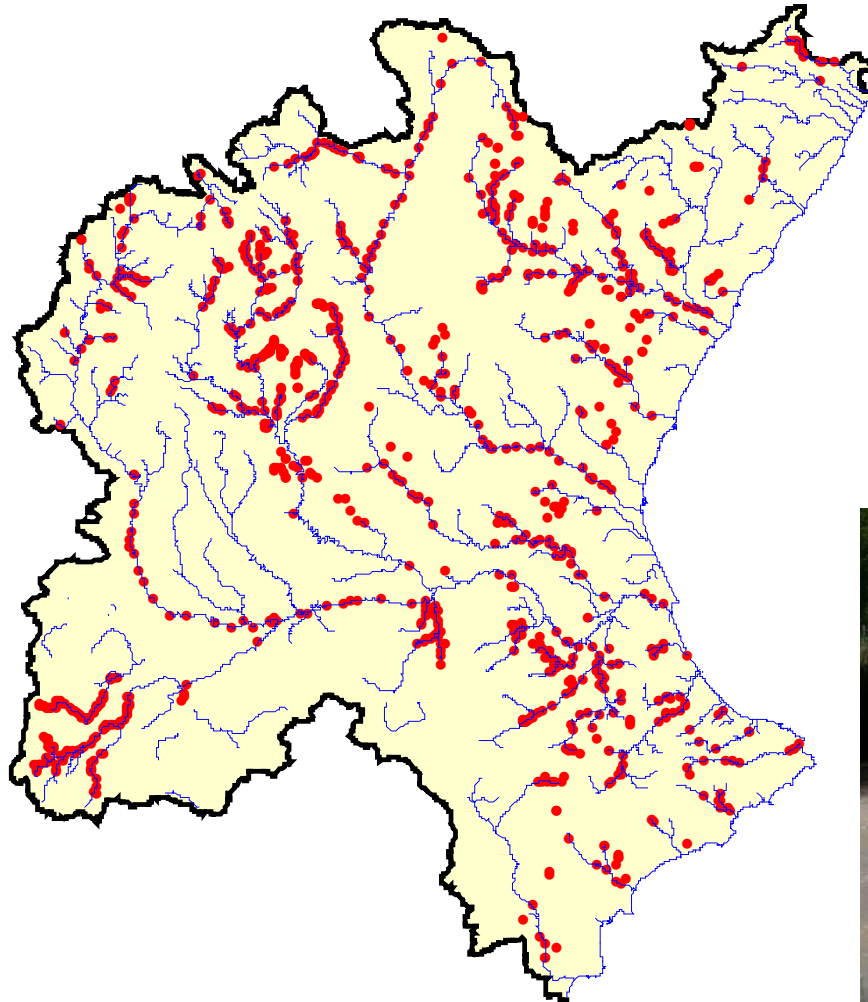


Water intended for human consumption

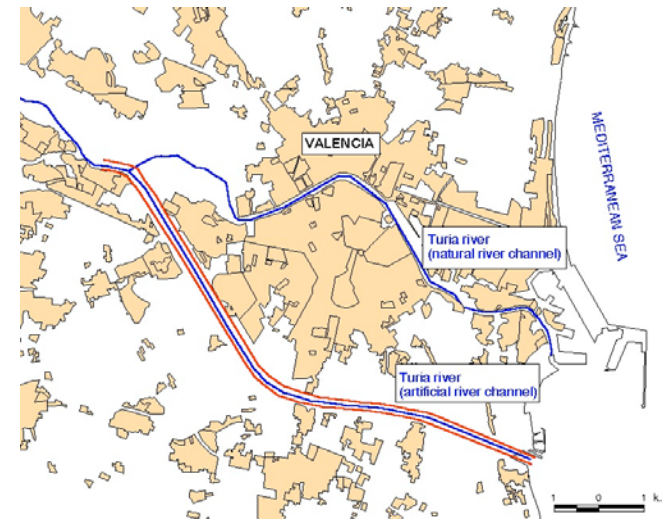
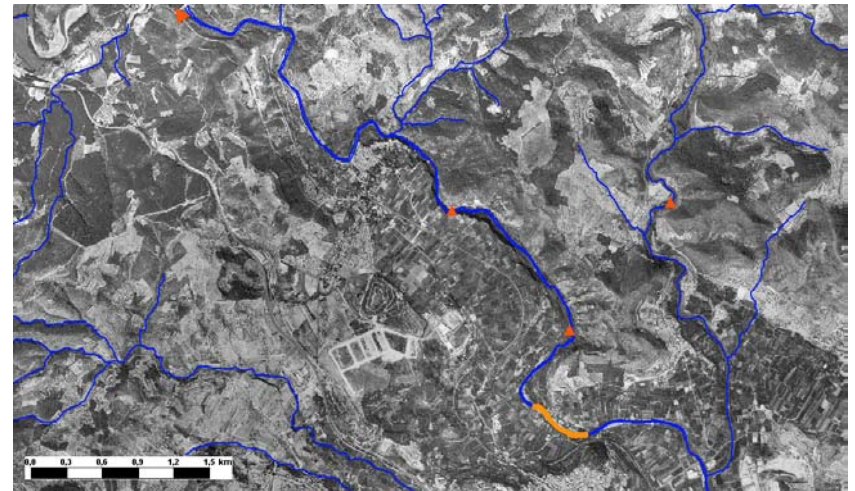
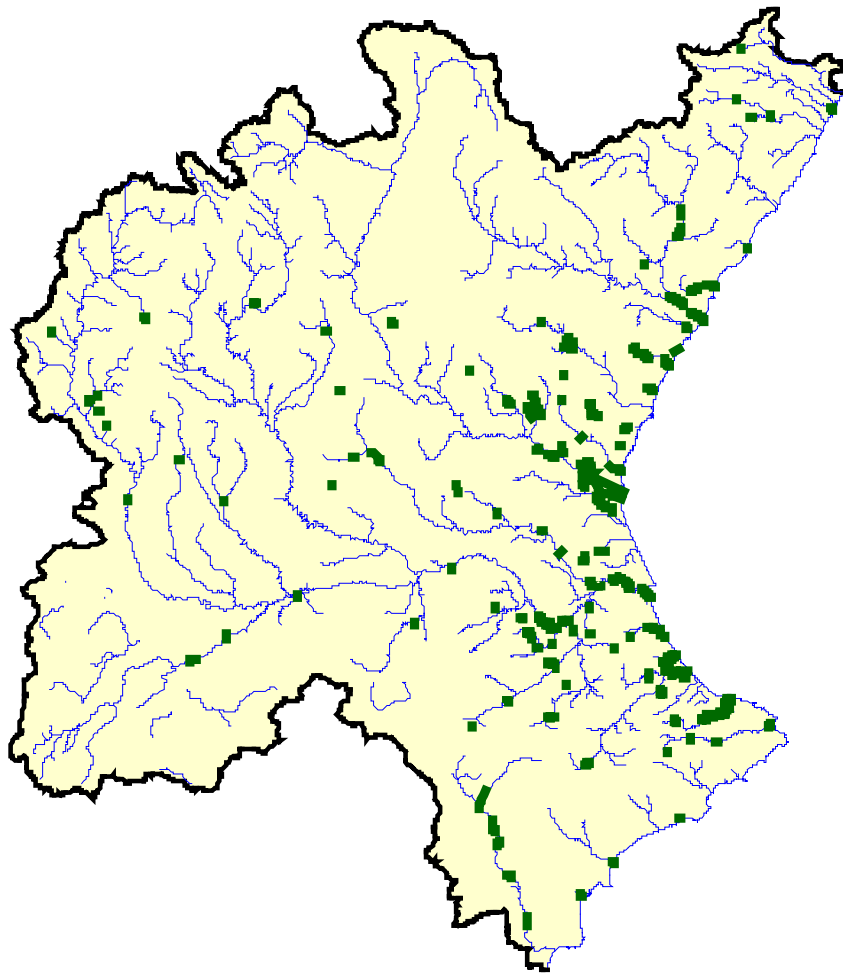


Natura 2000 network

Morphological alterations (weirs)



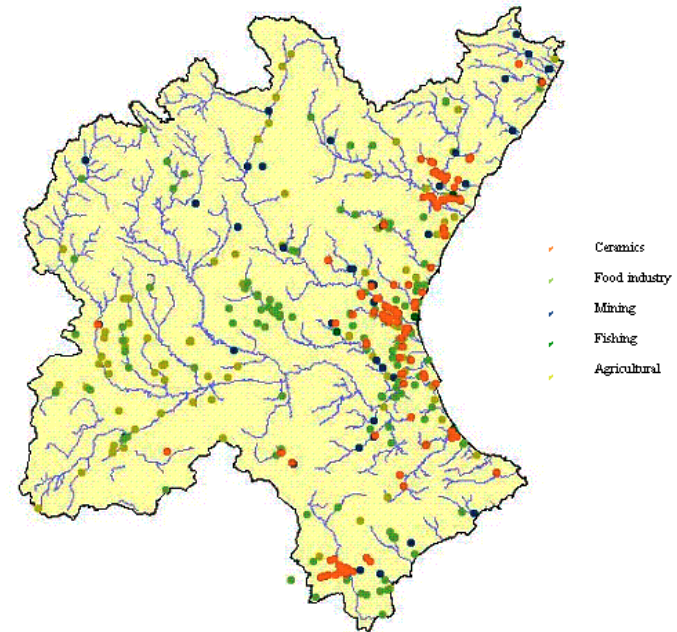
Morphological alterations (channelling)



Pressures: urban and industrial point discharges

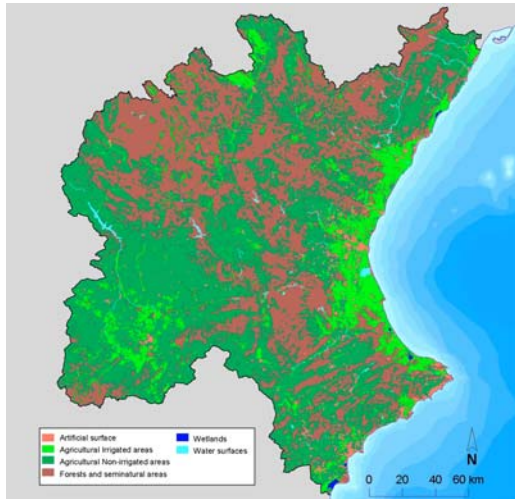


Urban discharges

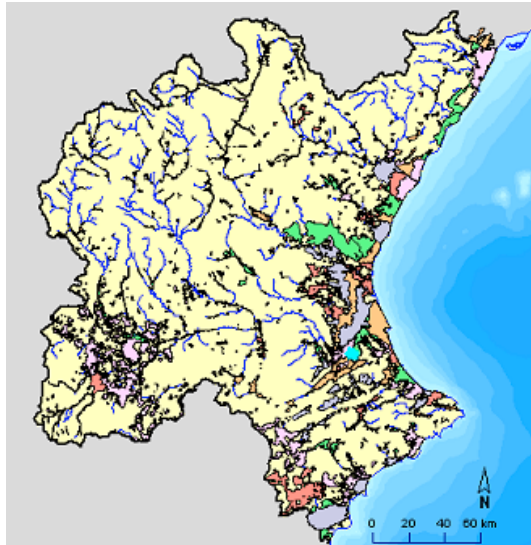


Industrial discharges

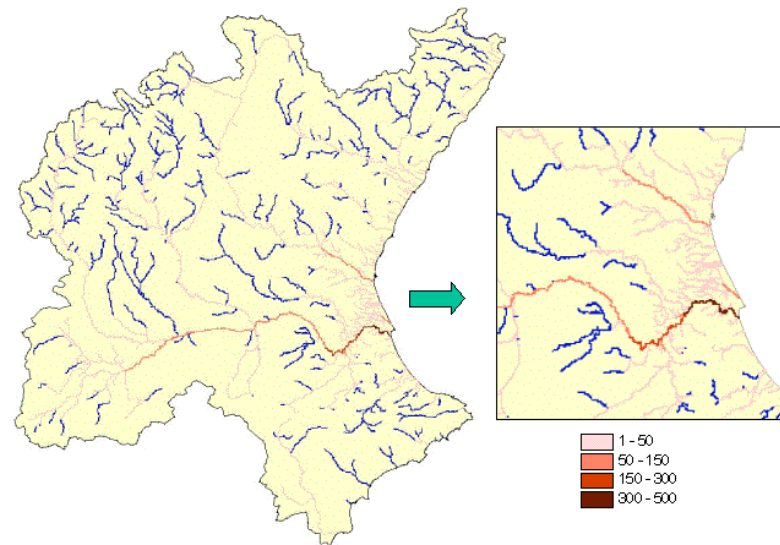
Pressures: diffuse pollution



CORINE land cover map



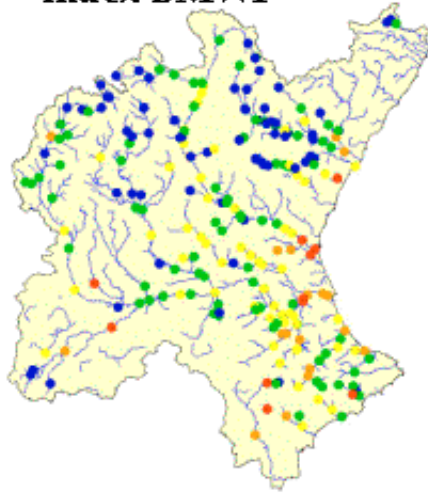
Agricultural Demand Units



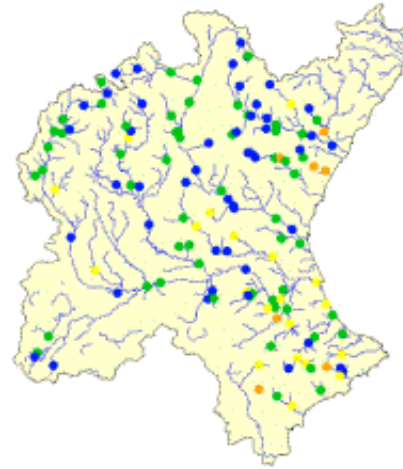
Flow returns from irrigation

Impact: biological monitoring network

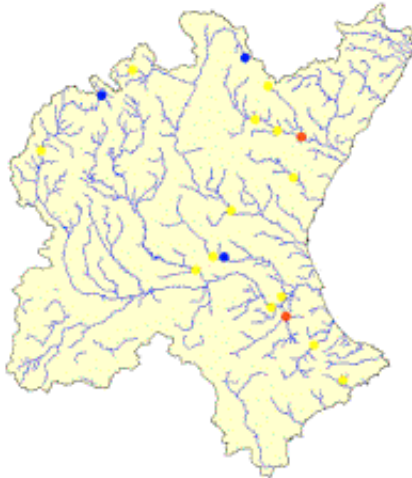
**Macroinvertebrate
index BMWP'**



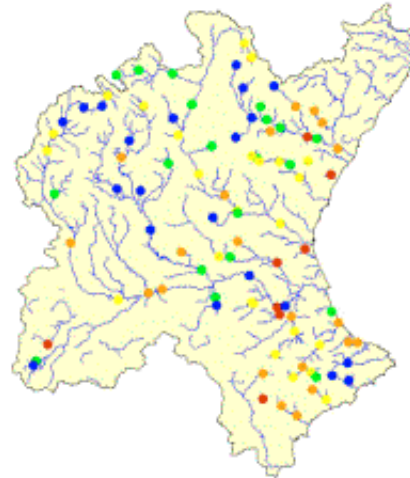
Diatome index



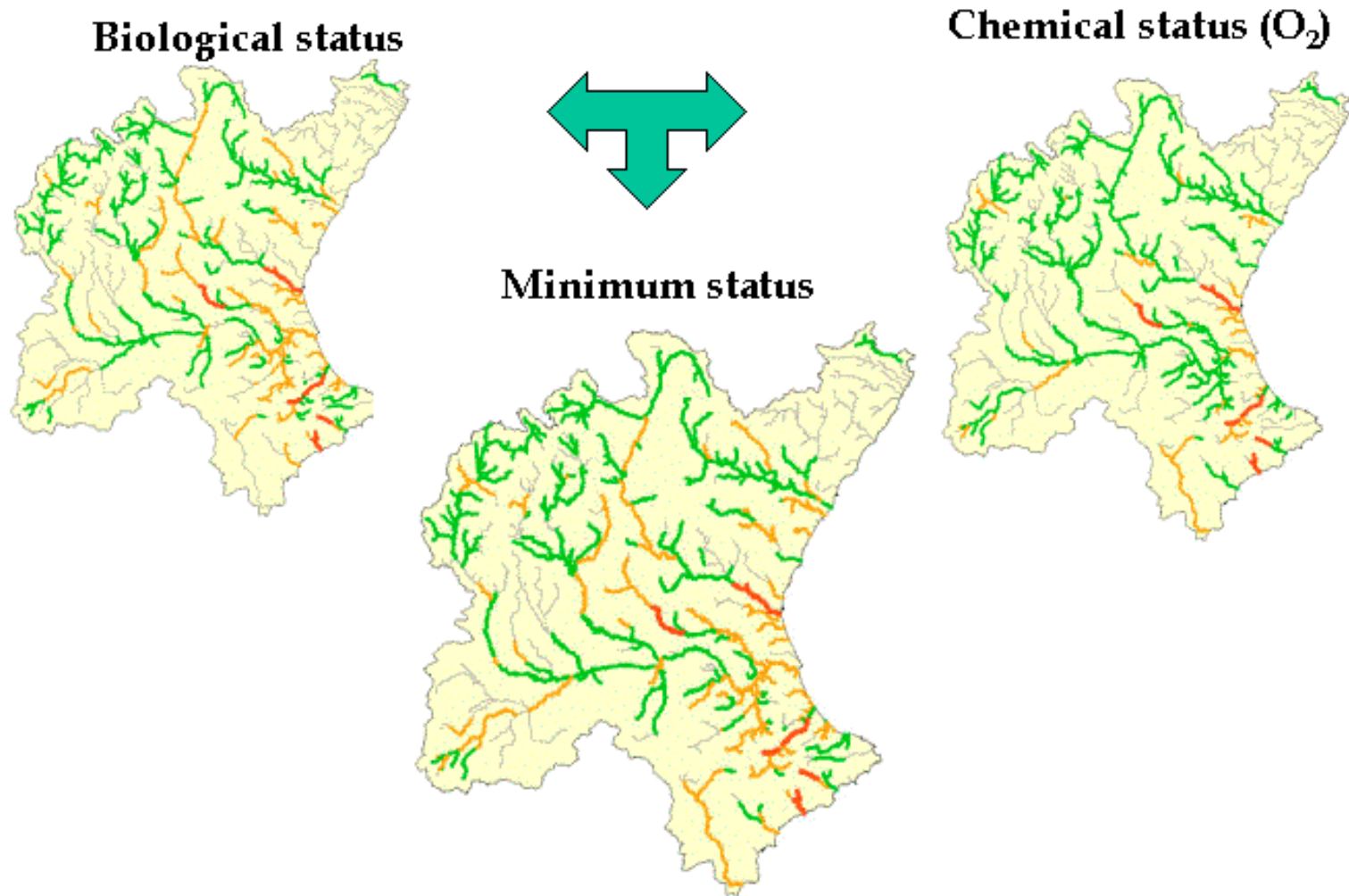
Ecotrophyc index



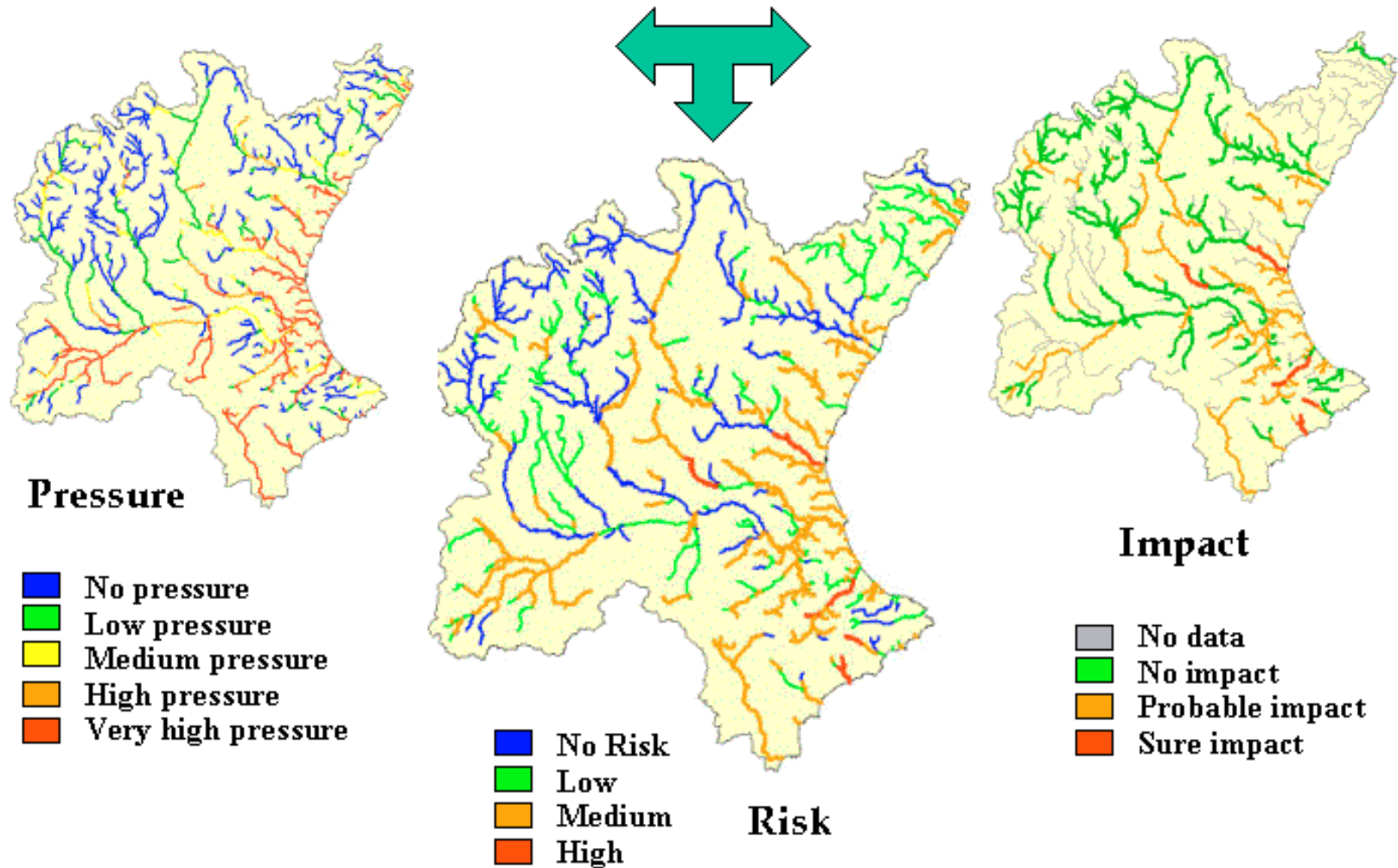
Macrophyte index



Impact: surface water bodies status

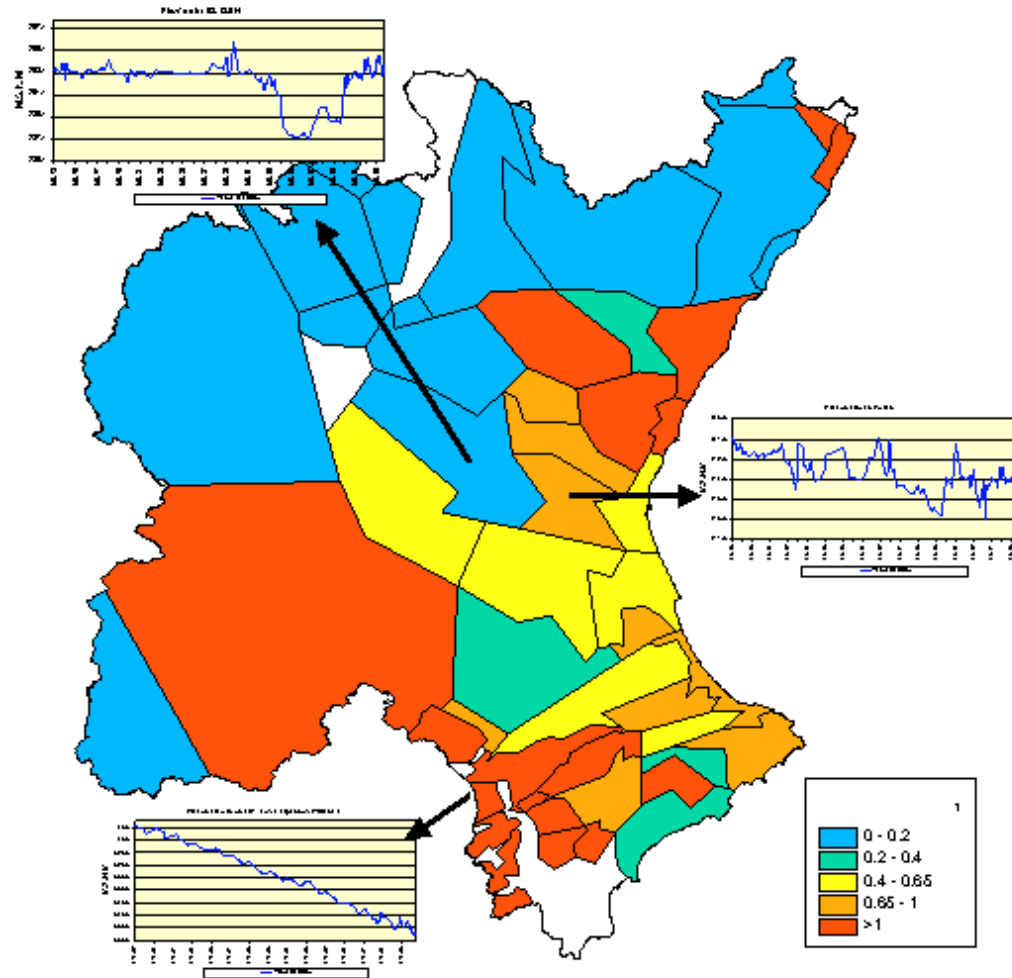


Levels of risk for surface water bodies

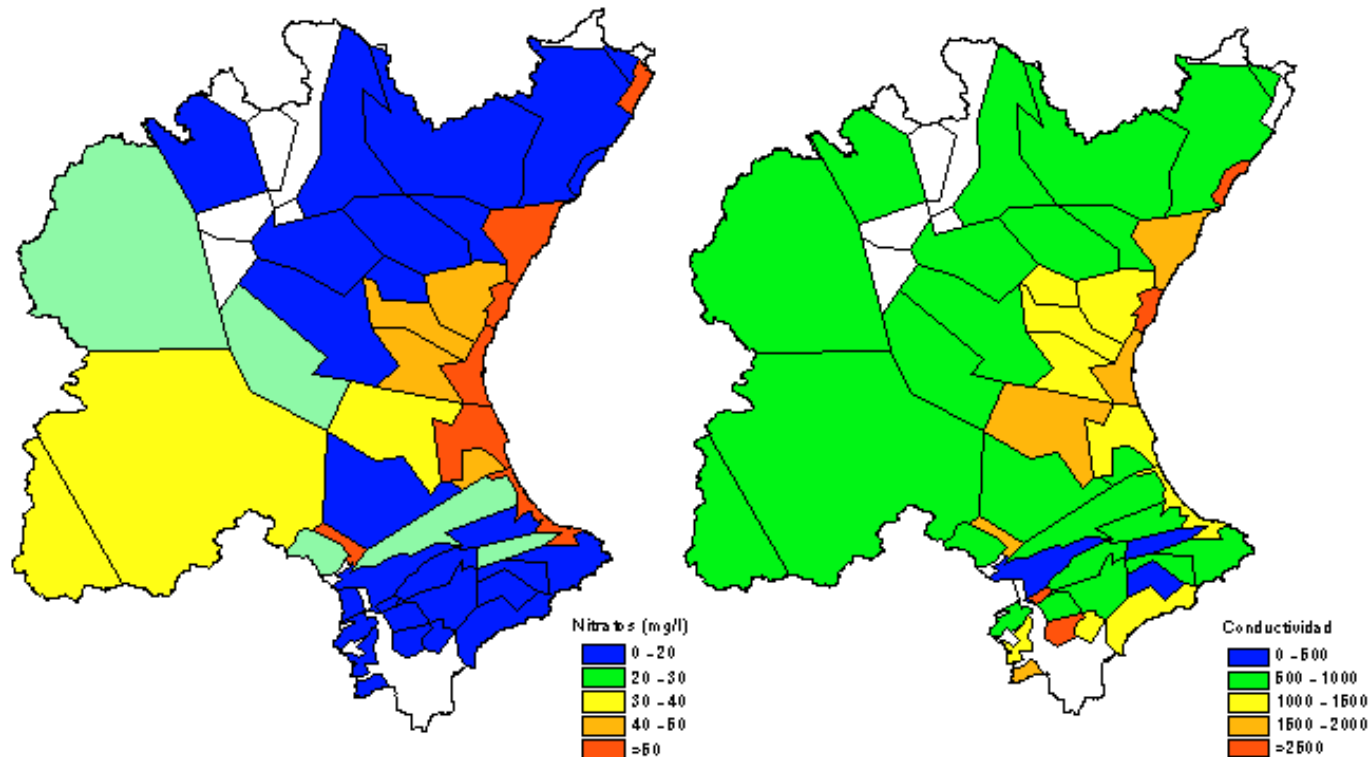


Groundwater bodies: quantitative status

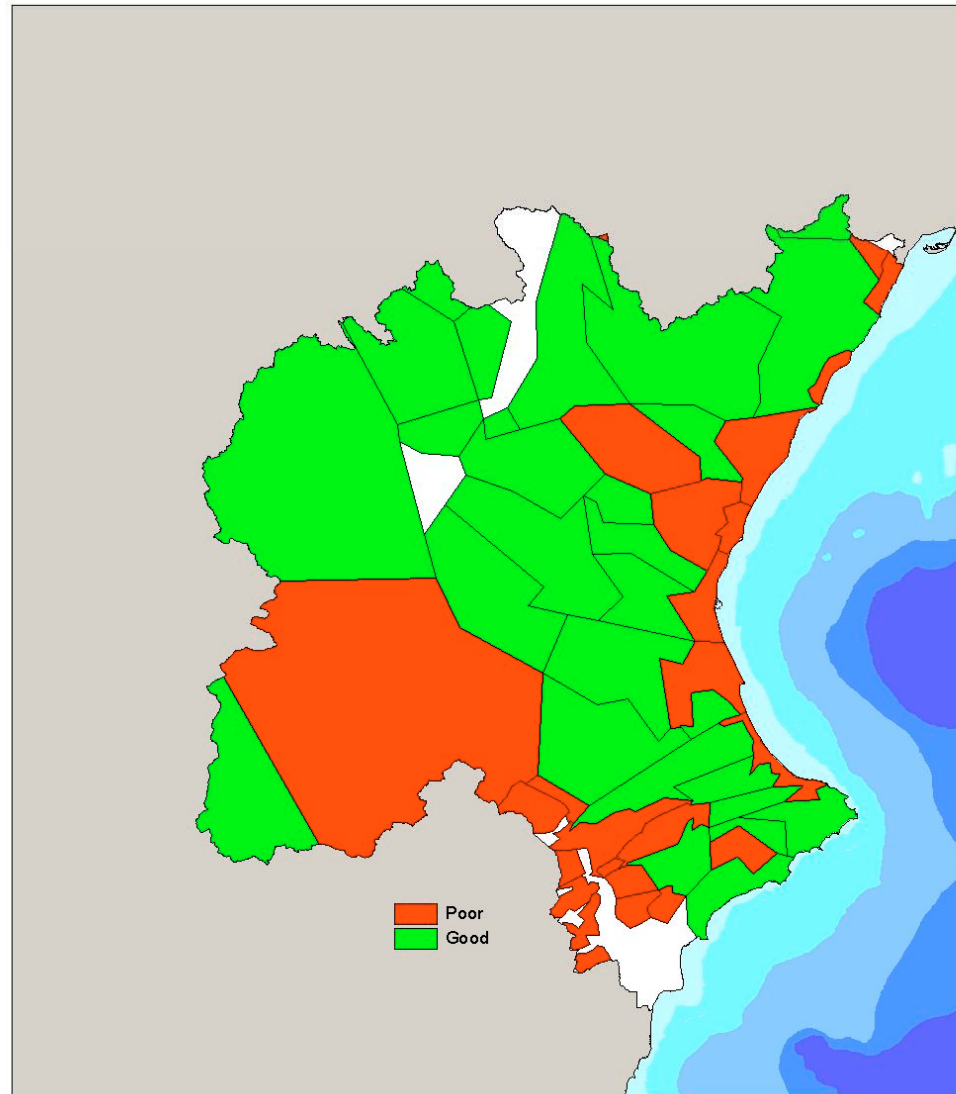
Exploitation index:
Abstractions /
Available water
resources



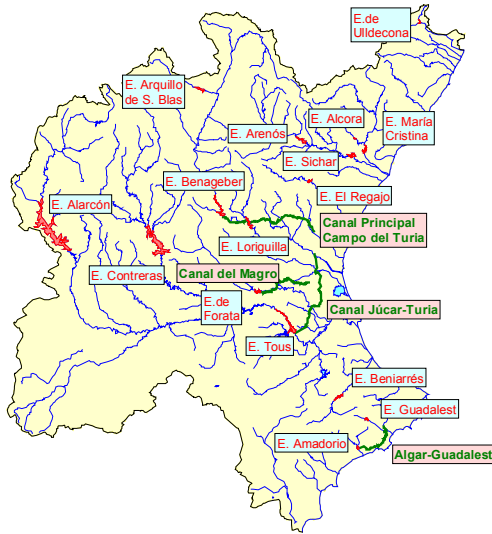
Groundwater bodies: qualitative status



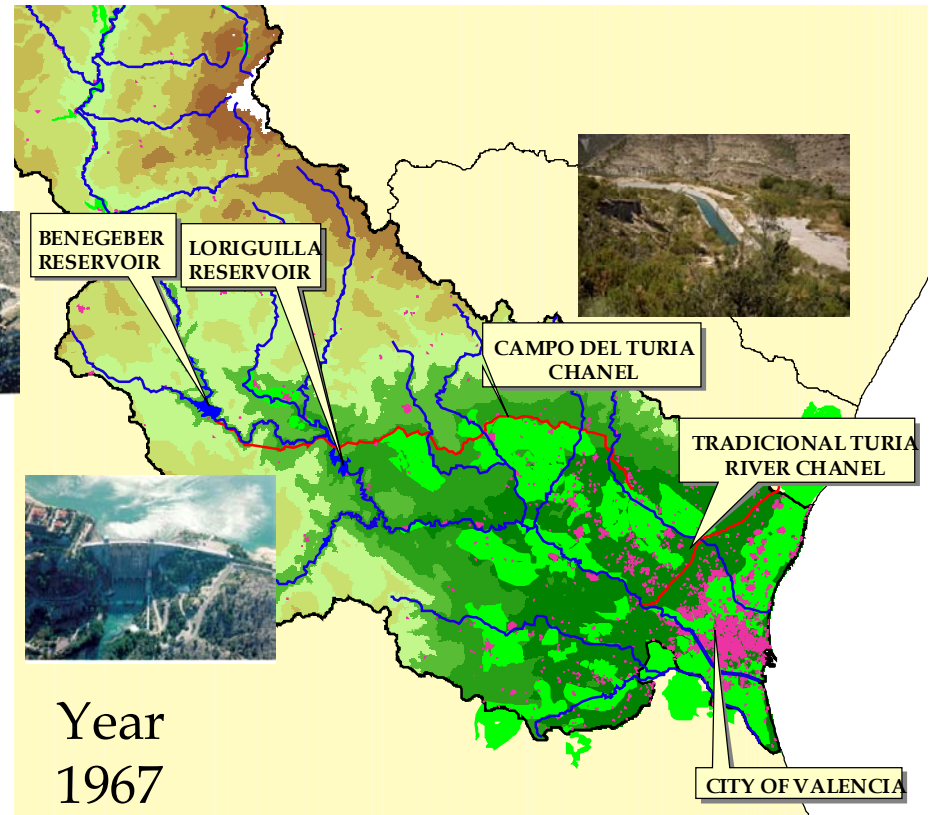
Preliminary status for groundwater bodies



Main hydraulic infrastructure at Benageber-Loriguilla System



Year
1955



Year
1967

Infraestructuras. Cánones y costes

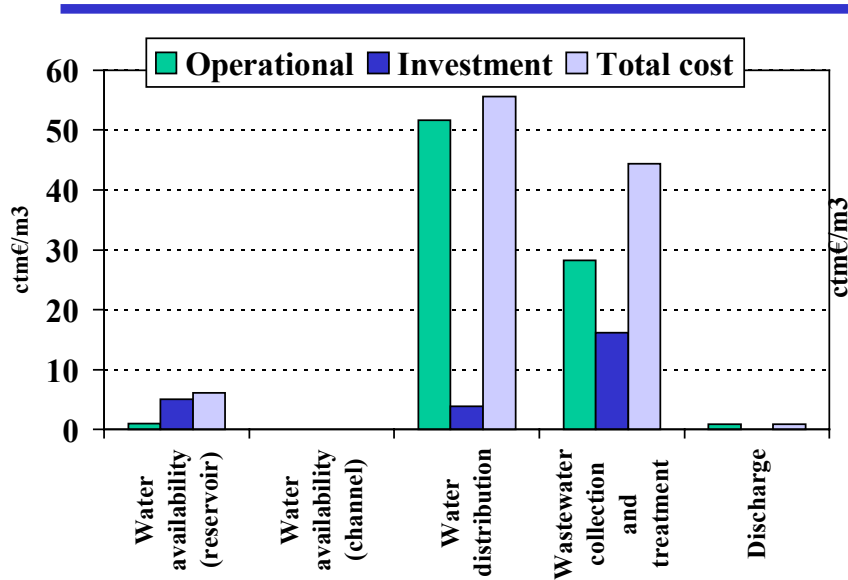
Infraestructura: 10 BENAGEBER-LORIGUILLA Buscar

Descripción Costes de la Infraestructura Histórico de cánones devengados Usuarios afectados Cánones aplicados

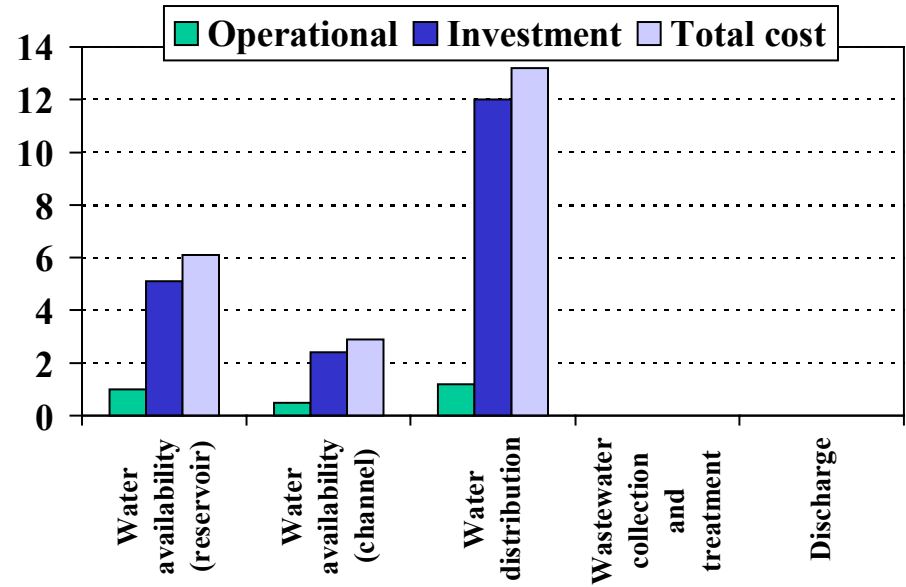
Anu.Cos	Coste Directo €	Coste Indirecto €	An.	Amortización €	Suma
1996	168,912.19	314,993.04	00	37,897.18	521,802.41
1997	157,318.42	324,468.87	00	86,058.42	567,845.71
1998	168,900.90	367,553.14	00	91,370.75	627,824.79
1999	196,764.17	349,326.62	00	89,392.11	635,482.90
2000	230,763.96	367,912.02	00	88,361.92	707,037.90
2001	252,058.47	401,674.71	00	89,154.45	742,887.63
*					

Registro: 1 de 6

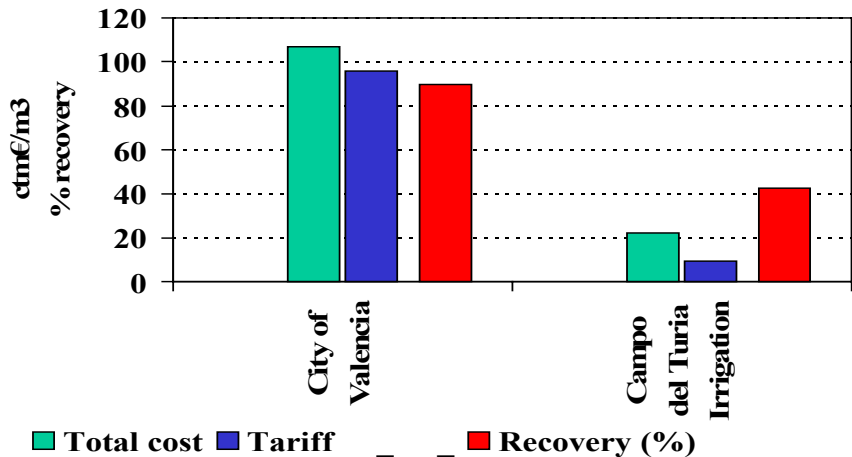
Cost recovery analysis



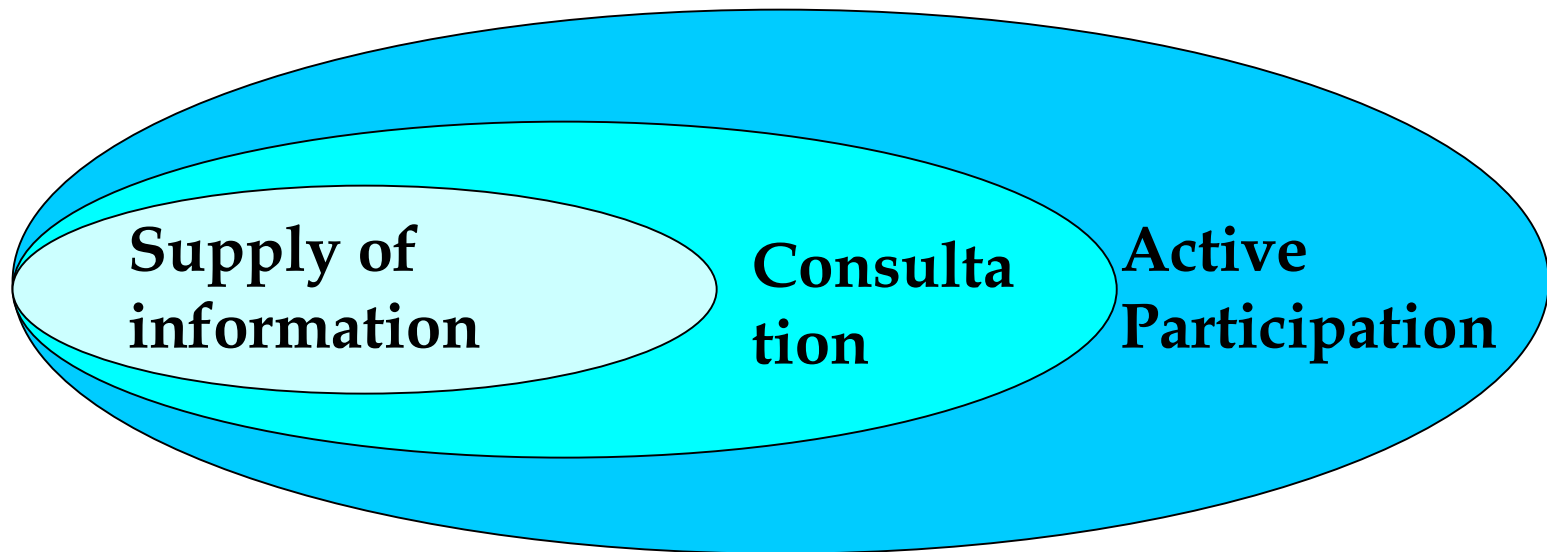
Costs for urban users



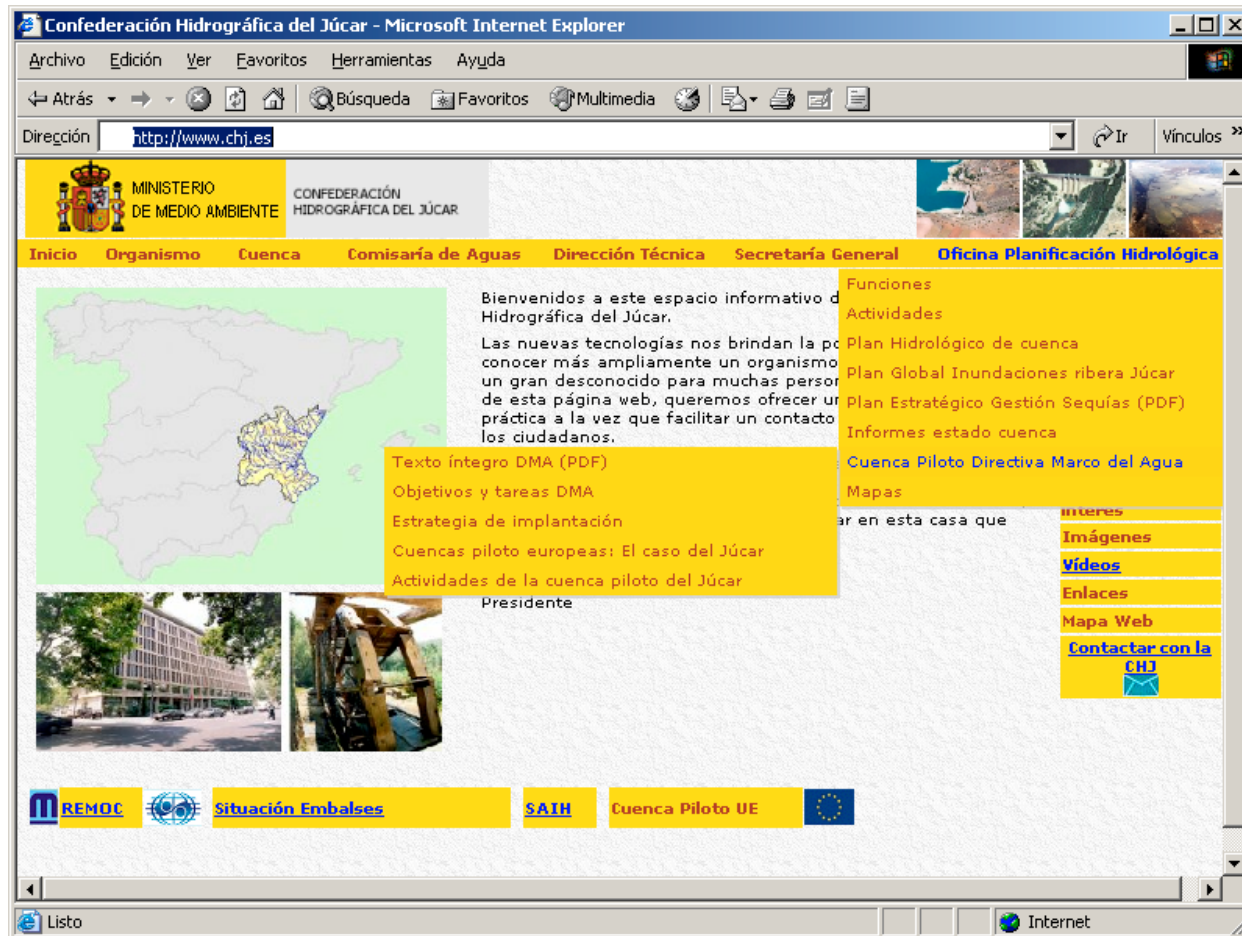
Costs for irrigation users



Public Participation



Supply of information: WEB page



Web Page [http : //www.chj.es/](http://www.chj.es/)

Supply of information and consultation

- *Droughts within the European Water Framework Directive and implications on river basin districts.* Seminario Internacional sobre gestión de recursos hídricos en situaciones de sequía, Universidad Politécnica de Valencia, marzo 2003.
- Reunión de coordinadores europeos de cuencas piloto en el Joint Research Centre, ISPRA, Italia, *Presentación del avance de los trabajos en la cuenca del Júcar.* Abril 2003. *La Directiva Marco del Agua.* Sala de Juntas de la Confederación Hidrográfica del Júcar. Abril 2003.
- *La Directiva Marco del Agua y la cuenca piloto del Júcar.* Escuela de Caminos de la UPV. 15 mayo 2003, Valencia
- *Análisis económicos en la cuenca piloto del Júcar.* Sala de reuniones de la DGOHCA, 4 junio 2003. Ministerio de Medio Ambiente. Madrid. *The jucar river basin - First results,* Seminar organised by EC on Integrated management -The river basin perspective, 2003, Athens, Greece.
- *Meeting with ONGs (Organizaciones No Gubernamentales).* Septiembre 2003
- *Presentación The pilot Jucar River Basin. Economical analysis of water uses and cost recovery.* Paris, octubre 2003.
- *Presentación del artículo La Directiva Marco del Agua y la cuenca piloto del Júcar.* Congreso Mundial de la IWRA celebrado en octubre, Madrid.

European Research and Development Projects

- Confederación Hidrográfica del Júcar is taking part in the project HARMONIRib funded by EC.
- Partners: Centre for Ecology and Hydrology (CEH) of England , Geological Survey of Denmark, DHI of Denmark, CNR-IRSA (Italy), IDR UCLM (Spain), etc