

Portugal



The Caia catchment

In the Caia catchment, the main problem are the **scarcity and irregularity of the water resources** available for supplying mainly the irrigated agriculture and the domestic consumption. Serious concerns about **diffuse pollution** resulting from spilling and infiltration of waters from soils with intense agricultural activity do emerge, as well as some shortcomings in the **treatment systems** for urban and industrial wastewater can also be noticed. As a consequences of the **Dam Management**, the life conditions, the efficiency of water use and the ecological conditions of the river might change.

Most conflicts fundamentally arise during the periods of **low rainfall** which lead to take measures to ensure **domestic consumption** and to respect the **ecological flow** of Guadiana river, in detriment of agricultural use.

Due to the geographic situation of the catchment under analysis, the **transboundary** question is particularly relevant because of the usage of water by Spanish farmers.

A **participative approach** involving Stakeholders at different levels has been set and a **Social Network Analysis** has been drafted to investigate the possible management options for the dam. The objective was to understand the relationships between stakeholders thanks to series of interviews targeted to the different actors: the responsible entity for the ordnance of the dam (INAG), the municipalities (responsible for the treatment and distribution of water for domestic consumption) and the Caia Irrigation Board (responsible for the distribution of the water from the dam).

Based on this framework, **three different alternatives** to manage the dam reservoir in order



to solve the problem of scarcity of water could be defined and furthermore discussed with the stakeholders involved.

DSS tools and approaches in Portugal

DSS tool to support water resources management decisions is very recent and fragmented in Portugal. Some quotable experiences are just simple GIS or DB without any task with multivariate analysis.

Some DSS were developed to help decision makers in the process of design and selection of on-farm surface irrigation systems, at the local scale. The tools are composed by an input data base, design models for alternative design and impact analysis, and a multiple criteria decision making model that evaluates and ranks the alternatives.

Keywords: Conflicts, Social Network Analysis, Operational Management

Further readings: See the NOSTRUM-DSS Portuguese National Report, available at <http://www.nostrum-dss.eu>
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