### Case Study Name:
Participatory decision making for sustainable development—the use of mediated modelling techniques

### Authors:
Paula Antunes, Rui Santos, Nuno Videira

### Document Type:
Journal article

### Year:
2006

### Language:
English

### Document Location:
New University of Lisbon, Portugal

### Full Citation:

### Region:
Europe

### Country:
Portugal

### Ecosystem Type:
Lagoon system

### Social Characteristics:
Coastal community

### Scale of Study:
National – Regional scale

### Resource Type:
Urban commons

### Type of Initiative:
Conservation and development planning

### Community-Based Work:
Environmental assessment

### Keywords:
System dynamics; Mediated modelling; Participatory tools; Complex environmental decisions
| Summary: | In this paper, the integration of mediated modelling (MM) techniques with multi-criteria assessment (MCA) in a participatory decision-making context is discussed. We briefly present the major features of MCA, of system dynamics methodology, and of group model building techniques. The application of MM in a participatory exercise is illustrated by a case study developed in a protected coastal wetland (Ria Formosa, Portugal). Possible avenues to integrate MM into multi-criteria decision making in the framework of sustainable development issues are discussed. |
## Case Study Name:
Numerical modeling of the impact of the Ancão Inlet relocation (Ria Formosa, Portugal)

### Authors:

### Document Type:
Journal article

### Year:
2009

### Language:
English

### Document Location:
University of Aveiro, Portugal

### Full Citation:

### Region:
Europe

### Country:
Portugal

### Ecosystem Type:
Lagoon

### Social Characteristics:
Coastal community

### Scale of Study:
Regional

### Resource Type:
Urban commons

### Type of Initiative:
Research-driven project

### Community-Based Work:
Modelling

### Keywords:
Hydrodynamics, Models, Ria Formosa Lagoon, Ancão inlet,
<table>
<thead>
<tr>
<th>Summary:</th>
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<td>This work describes the application of hydrodynamic (ELCIRC) and transport (VELA and VELApart) models to the Ria Formosa lagoon (Portugal) to study the impact of the relocation of the Ancão Inlet. Located in the south of Portugal, this lagoon is a mesotidal barrier island system that communicates with the sea through 6 inlets. The Old Ancão Inlet was artificially closed and the New Ancão Inlet was relocated into a westward position. This work investigates the hydrodynamic patterns and the potential pathways of tracers in Ria Formosa in two distinct configurations: before and after the Ancão Inlet relocation. The hydrodynamic model was successfully calibrated and validated against elevation, velocity and inlet discharges data, accurately reproducing the tidal propagation. The inlet relocation increases the magnitude of tidal currents, residual velocities and the tidal prism across the bar, suggesting a better stability. The tracers transport simulations suggest enhanced water exchanges through the Ancão Inlet and smaller residence times in the western part of Ria Formosa with the present configuration. Overall, it is concluded that the Ancão Inlet relocation had a positive contribution towards increasing the water renewal of the western part of the lagoon, thus decreasing its vulnerability to pollution.</td>
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