

# Changing the change

Design Visions, Proposals and Tools

An international conference on the role and potential of design research in the transition towards sustainability

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Torino, 10th - 11th - 12th July 2008

Organised by Co-ordination of Italian Design Research Doctorates with  
Conference of Italian Design Faculty Deans and Programme Heads.

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**Jaime Diaz Sarmiento [makavi@hotmail.com]**

**Marine Biologist, Environmental Manager, Msc. Universidad Javeriana, IDEADE, Colombia**

## DESIGN AND ENVIRONMENTAL MANAGEMENT

### Relations and lessons learned from a Small-scale fisheries management project in the Colombian Caribbean coast

#### Abstract

The present study is based on an environmental management process developed to answer an ill-defined problem regarding the use of fisheries resources in the coastal lagoon of Navío Quebrado and its surroundings on a sanctuary area for flora and fauna, in the Colombian Caribbean.

The process included a base line study that allowed the understanding of the ecological functioning of the wetland, the characteristics of the fisheries and the socio-economic conditions of the indigenous and non-indigenous people living in the area. The results showed that the wetland is a highly productive ecosystem, with an increasing tendency to degradation; it is threatened by antropic activities and natural causes associated with the evolution of the lagoon. The fishery is a small scale artisanal activity of great socioeconomic and cultural importance. The present situation is also characterized by marginal and unsustainable settlements with an unregulated development that threatens the ecosystem and the living conditions of the people living around the wetland. This part of the study was carried out mainly by marine biologist and experts in habitat and rural settlements.

As a result of the base line study, a technological intervention to improve the development of the fisheries system was proposed, and industrial designers together with fisheries and aquaculture scientist worked together to propose alternative tools and systems. A project to evaluate the feasibility for coastal lagoon aquaculture and the introduction of alternative fisheries systems were conducted. Although groups of local fishermen were involved to participate in the exploration phase of the project, the feasibility of introducing the tools and systems selected or designed was low.

Design and environmental management relations were analyzed and some lessons were extracted relating the: 1) difficulties to ensure the usability of innovative or newly designed technological systems, 2) adequacy of management tools, 3) personal and professional capacities, and the suitability of management and design processes to work on such a context. Biophysical, social and cultural complexity, together with a resistance to outside-planned short-term changes constitutes a big challenge for the design and management of new systems.

An important role for designers and design is recognized for the development, management and sustainable use of natural resources and the improvement of living conditions of the coastal communities depending on them. However, to participate within this new context, education for design students must be revised and new concepts, research methodologies and communication skills need to be considered. The basics of design should also be incorporated as a part of the environmental management formation.

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In order to continue with the environmental management process, and guarantee that all the information and knowledge obtained during the 5 years of can be incorporated by local users, a multilevel communication strategy is under design to cover all the stakeholders involved in the area. An education program for the local school, based on the To promote the social learning required by the local people to be able to participate and leader an environmental management process is being proposed as a long term bet. This social learning can include the capacity building to foster the design and development of local technological systems.

The actual change is heading to natural resource depletion and socio-economical and cultural impoverishment and technological transfer has proved to be inefficient so far.

As well as environmental managers, designers working in our developing countries today require to go a step further in their education to change the way they think about cultures and communication, because is in places like the one exposed here, where poverty and environmental problems take place and where creative solutions are needed. New levels of awareness and sensitivity are required by designers to be strategic and pertinent in their thinking around cross-cultural design.