

Briefing: Collaborative management for sustainable beaches

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Since 1950 coasts worldwide have experienced remarkable changes, with an accelerated spread of resorts devoted to sun and sand tourism. This kind of tourism generated a profitable market associated with urban centres that demanded beach infrastructure, hotels, dwellings, commerce, road networks and complementary attractions. During the last century the expansion of massive tourism has been dominated by fast, short-term profit, which leads to the unsustainable development of resorts on narrow coastal strips. Rapid uncontrolled urbanisation has caused beach erosion, contamination and adverse impacts on the natural resources. Sandy beaches constitute one of the most desirable amenities for popular recreation, offering several different activities, such as leisure, relaxation, enjoyment of the landscape and observation of wildlife, as well as beach and water sports. Sandy beaches are a multifunctional system where natural, socioeconomic and management components join together (James, 2000). Structurally they vary in characteristics related to the environment that influence their quality, such as width, length, gentle slope, fine and yellow sand, absence of stones, water and sand cleanliness, fauna and vegetation cover. Although sandy beaches are the most used type of shore for leisure, people seldom appreciate their ecological features (Schlacher *et al.*, 2008). The emergence of new threats linked to sea level rise, due to climate change, and the continuous spread of urbanisation are forcing a fundamental reassessment of beach management. The significance of the challenges facing beaches enforces a rethinking of their design and management, looking for a balance between the supply of infrastructure and conservation of the natural and cultural environments (Aguiló *et al.*, 2005).

This briefing describes examples of integrated coastal zone management (ICZM) systems implemented along the Atlantic coastal strip in Argentina. ICZM is a process of governance and consists of a legal and institutional framework to ensure that development and management plans for coastal zones are integrated with environmental and social goals and are made with the participation of those affected (Post and Lundin, 1996).

In Argentina conservation management of beach processes and distinctive ecological features was implemented in many resorts. The programmes helped to limit negative impacts on the natural resources and to regulate practices such as off-shore transit, sand-surfing, sand extraction, construction and forestation on the front dunes. They aimed to revert environmental deterioration and the decline of resorts that had been attractive tourist destinations, counteracting the negative effects of rapid growth of unplanned tourism. In the late 1980s and 1990s, market forces indirectly induced the loss of the natural protective function of beach and dune systems, putting people, property and the environment at great risk.

During the last decade municipal managers, coastal experts and users have discussed the critical situation of the coast and have worked out new approaches, methods and tools to help in decision making concerned with beach management and quality assessment (STN and SAyDS, 2005). These outcomes were the basis for setting up an integral plan of sustainable beach management to be applied in each coastal municipality. At the local level it was felt that there was a need to provide specific types of information because stakeholders were not sufficiently aware of the problems associated with the dynamic systems of beaches and dunes. This type of information and the need for conservation of undisturbed natural habitats was communicated through workshops, newsletters, fact sheets, advertisements in the street and also through thematic guided tours for residents and tourists.

The sustainable features of the programme implemented include:

- (a) restoration of coastal dunes: using sand fences to trap sand and planting perennial native grass species for stabilisation with transplants from nursery stocks or intact dune systems nearby (Figure 1(a))
- (b) environmentally smart building systems: concrete buildings at the beach were pulled down and replaced with new ones, using sustainable materials; walkover structures



Figure 1. Examples of preservation/restoration techniques for coastal dunes: (a) planting and fences for stabilisation; (b) walkover structure to mitigate effects of human traffic

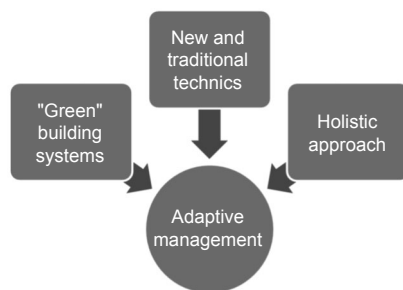


Figure 2. Flow diagram showing components of the adaptive management approach

- were placed in areas where dunes were threatened by human traffic (Figure 1(b)).
- (c) implementation of systems that prevent storm water and urban runoff pollution from reaching the beach
 - (d) commitment to ongoing environmentally sound operations and maintenance practices.

Programmes to enhance environmental performance were successful because they considered beaches as multidimensional environmental systems, where nature and society interact. They succeeded in building understanding and a strong political alliance among the various community sectors concerned; an improved flow of information between government departments was also central to achieving adaptive management goals (Figure 2).

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