Dune nourishment to protect the coastal lagoon from washover, Sicily - IT

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space

2. Key Approaches

- Ecosystems based approach
- Technical

3. Experiences that can be exchanged

Techniques and methodologies applied in active management and protection of habitats, in particular measures to protect and restore coastal dunes.

4. Overview of the case

Vendicari hosts a great variety of habitats and biodiversity: coastal lagoons,coastal dunes, Mediterranean maquis, rocky coast. The Nature Reserve is close to Noto Municipality, capital city of the baroque. The initiative SEEKS to restore the ecological balance of the coastal ecosystem and the dune habitats which have being eroded in Sicily.

5. Context and Objectives

a) Context

The Natural Reserve of Vendicari is located at the extreme south-east of Sicily and it is part of an extended wetland system, which is among the biggest and most important in Sicily. The area is part of the Municipality of Noto (Siracusa). Vendicari has been, during the last twenty years, beneficiary of many protection instruments. Among them, the most important was applied in 1984 when the Natural Oriented Reserve was established and denominated: Faunistic Oasis of Vendicari (Oasi Faunistica di Vendicari), according to the Regional Law 98/81. Furthermore, in 1989 the area has been declared a Special Protection Area (SPA) and has been included in the “List of Wetlands of International Importance” established by the Ramsar Convention of 1971, in conformity with the IWRB criteria (International Waterfowl Research Bureau). The Natural Reserve of Vendicari is developed along 8 km of coast and it is characterised by a succession of very different environments and landscapes: rocky coast, sandy coast, Mediterranean maquis, marshes (brackish and freshwater), salt pans, garigue, and cultivated areas. The coastal lagoons close to the sea is characterised by sensitive habitats such as coastal dunes. This variety of habitats clearly influences the diversity of animal and vegetation species present in the reserve. The local fauna is very rich in birds and varies according to the seasons. Vendicari is not only a natural area, but also an historical site. Within the area it is possible to admire the Necropolis, the ruins of the Byzantine churches, catacombs, houses, but also the tower Sveva and, last but not least, the "Tonnara" built around the eighteenth century.

The dunes of Vendicari represent one of the last coastal sandy ecosystems present in Sicily. They were saved from anthropogenic pressure and especially from the expansion of the building industry, which was, in this area, one of the main causes of this precious habitat disappearance. The dunes of Vendicari develop for about 3 km of coast, with a width of 25 - 40 m and which reach a maximum height of 6-8 m above sea level. Coastal erosion and wetland drying-out phenomena, related to seasonal variations in rainfall, have impacted both plant and bird communities. In addition, coastal ecosystem and ecological balance are in danger due to tourism impacts.

b) Objectives

The main goalis to restore the ecological balance of the coastal ecosystem and the dune habitats which have being eroded. One of the objectives was to increase bird fauna biodiversity.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The actions have been carried out under the responsibility of the Regional Agency for the Gazetted Forests of Sicily (Azienda Regionale Foreste Demaniali).

b) ICZM tools

The activities for the protection of the dunes focused on the following actions:

- a wooden fence was located along the dune's perimeter - 6 km. This measure was intended to avoid disturbance by users;
- the construction of three walkways ensuring, for tourists, the possibility to access the beach through the dunes;
- oncerning the morphological restoration of the dune, the choice was that of installing wind-breaking barriers to favour sandy sediment deposition, leaving to nature the duty to rebuild the missing tract of the dune. The wind breaking barrier, built with interlaced rods of willow put on stakes of chestnut, has been used to create an alveolar honeycombed structure, that was duly oriented towards the dominant wind direction, and therefore favouring sedimentation of sandy particles inside the cells. The presence of this structure, created a micro-climate inside the cells, facilitating a better persistence of humidity, thus accelerating the colonizing process of pioneer vegetation. Indirectly, this favours the accumulation of sandy deposits brought by winds.

7. Cost and resources

The total budget of interventions was of €831,180. The LIFE contribution was €415,590.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The work ended in 2005. The activities successfully contributed to stopping the degradation and o improving the ecological condition of the coastal dunes habitat along the coastline.

9. Success and Fail factors

Among the different motivations which have facilitated the development of this effort, one of the most important was that Vendicari was beneficiary of many protection measures and awards.

10. Unforeseen outcomes

Furthermore, the Municipality of Noto received a QualityCoast Award. These acknowledgements improve the environmental interest of local authorities.

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13. Sources

- http://ec.europa.eu/environment/life/project/Projects/
- Life Brochure “A management and conservation project of coastal dunes and wetlands in Vendicari” (LIFE02NAT/IT/8533)

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