

Interaction between environment protection and best management of the water resource: the example of the Fusina Integrated Project in the Venice's lagoon

BACKGROUND

For most people in the European Union access to clean water in quite abundant quantities is taken for granted. But it is actually necessary to apply a European Water Policy in order to safeguard this fundamental resource.

The Community and Member States are party to various international agreements containing important obligations on the protection of marine waters from pollution. The European Water Framework Directive is to make a contribution towards enabling the Community and Member States to meet those obligations.

PROBLEMS

- As it is well known, the Venice's lagoon and its watershed are a very special territory, that needs to be carefully safeguarded. Within this territory, as in the chemical industrial area of Porto Marghera nearby Venice, lot of human activities require huge amounts of clean water, either for civil or for industrial uses.
It was herefore necessary to find out some solution in order to clean the water.



Source: <http://www.bbvenezia.com>

SOLUTIONS

The Regional Government of Veneto started up a special Master Plan (*Piano Direttore 2000*), which represents the first example in Italy of integrated approach to an environmental problem, designed in a proactive instead of a reactive framework.

The *Piano Direttore 2000* defines specific environment quality objectives for the Venice's lagoon: in particular it indicates the general strategies, the schedule of works, the economic resources needed.

In this Plan an important role is played by the Fusina Integrated Project, a technological solution aimed at solving most of the problems involved with the flow of nutrients as residual loads into the lagoon.

The Fusina Integrated Project (FIP) is a particularly meaningful treatment system, because it aims not only at reducing pollution, but at preventing it, through the re-use of the waste water.

In the FIP both civil and industrial waste water are treated, together with polluted water coming from the Porto Marghera's industrial area and from the drainage of polluted soil.

The civil treated waste water will be refined in a natural wetland (using marine plants) and then recycled in industry.

The industrial waste water will be treated further on.



Source: www.venicemainland.com

BENEFITS

The Fusina Integrated Project (FIP) aims at the optimization (in terms of safety, flexibility, reliability) of sanitation systems and water use in the most complex and sensitive area of the lagoon basin, by means of:

- centralised control of main pollution sources (urban, industrial, runoff)
- strong reduction of fresh water withdrawal through re-use of treated water up to 75,000 m³/d
- dramatic reduction of macro and micro pollution using advanced high efficiency techniques, supported by process calibration devices
- minimum environmental impact of final discharge (large constructed wetland, residual outflow to the sea)

Fusina Integrated Project is a qualified example of technological application able to create new know-how for all the situations concerning natural aquatic environment safeguard, within industrial and urban polluted areas.

AUTHOR

Regione Veneto
Segreteria Regionale Ambiente e Territorio.
Direzione Tutela Ambiente - Servizio
Sistema Legge speciale per Venezia
Cannaregio 99,
30121 Venezia – Italy

Contact Person:

Andrea Penzo

andrea.penzo@regione.veneto.it

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