



The Decision support system: Gesso and Vermenagna valleys



UNIVERSITÀ DEGLI STUDI DI TRENTO
Dipartimento di Ingegneria Civile,
Ambientale e Meccanica



Short description

The pilot area Gesso and Vermenagna valleys is located in the south west of Italy, Piedmont Region, Cuneo Province, close to the French border. About 32.000 ha are situated in protected areas (parks or Nature 2000 sites). Maritime Alps Natural Park and Nature 2000 site Maritime Alps are the most important protected areas of the pilot area. The main land uses are forests (42%) and pastures (33%). The main forest types are the European beech forests (11.500 ha) and the chestnut forests (2.700 ha). The principal renewable energy actually used is hydropower. The local economy is based on tourism and secondarily on agriculture and forestry.

In order to analyse trade-off between energy production and ecosystem services valorisation, the following approach is applied:

1) Input data (knowledge of current renewable energies development):

- Basic data collection (basic geographic data, existing power plants...)
- Local experts identification (chosen by their expertise on ecosystem services and/or renewable energy and their knowledge of the local context)
- Questionnaire survey in which the local experts evaluating the potential effects of renewable energy development on ecosystem services and local actual development

2) Output data (Decision Support System):

- Definition of current renewable energies development
- Study of perceived effects of renewable energies development

- Social network analysis of the professional relationships between local stakeholders
- Total Economic Value maps
Several scenarios of production and ecosystem valorisation by means of r.green.biomass and r.green.hydro tools.

3) Stakeholders and local community involving:

- Round tables and meetings

Link(s) to further information

Software (r.green.biomass, r.green.hydro, r.green). Reports on perceived effects of renewable energy development. Total economy value maps (Jecami)

Renewable energy types

Hydropower, Forest Biomass

Main objective

The production of energy from renewable sources in the Alpine Environment can reduce the availability of many ecosystem services. However this negative impact can be managed and reduced by the use of our Decision Support Systems (DSS) based on GIS databases. In the Gesso and Vermentagna Valleys the integration of a comprehensive GIS database with the DSS can be a starting point to reduce the conflicts between ecosystem services and production of energy from renewable sources.

Target groups

Administrators, planners, designers, citizens

Operating sites

Gesso and Vermentagna Valleys. Municipalities of Valdieri, Entracque, Roaschia, Roccavione, Robilante, Vernante and Limone Piemonte.

Experiences / best practise examples

This method is also used in another recharge.green project pilot area: the Mis and Mae valley in the north east of Italy.

Data sources

For Forest Biomass study:

- Forest Assessment Plans: Maritime Alps Natural Park and Maritime Alps Mountain Community
- Geographic data: Piedmont Region Geographic database (<http://www.regione.piemonte.it/geopiemonte/>)
- Land use: Territorial Forestry Plans (PFT) of Piedmont Region (<http://www.sistemapiemonte.it/montagna/sifor/>)

For Hydropower study:

- Geographic data: Piedmont Region Geographic database (<http://www.regione.piemonte.it/geopiemonte/>)
- Land use: Territorial Forestry Plans (PFT) of Piedmont Region (<http://www.sistemapiemonte.it/montagna/sifor/>)
- Existent Hydro intakes: Piedmont Region database (<http://www.regione.piemonte.it/siriw/cartografia/mappa.do>)

Responsible Partner

EURAC

Stakeholders involved

Administrators, local associations, citizens

Contact person

Giorgio Curetti, EURAC - giorgio.curetti@eurac.edu