TRANSNATIONAL INTEGRATED MANAGEMENT OF WATER RESOURCES IN AGRICULTURE FOR EUROPEAN WATER EMERGENCY CONTROL (EU.WATER)

Priority Axis: Protection and Improvement of the Environment
Area of Intervention: A.O.L. 1.2 Improve integrated water management and flood risk prevention
Project Duration: 36 months

WP3: Knowledge capitalization and sensitive area maps
Action 3.2: regional report

Abstract of the regional report

Pilot area: Region of Istria (Croatia)

Partner: Agency for the rural development of Istria Ltd Pazin

Pazin, 30/11/2010

“Summary of regional report for Croatia”

EU WATER project aim is to develop common methodologies and implementation of demonstrative/innovative interventions for management of water resources in the rural areas, fulfilling the goals of the models of sustainable development set by EU legislative.

Due to its position, Croatia has always been bound to cooperate in area of water management with the neighbouring countries and wider international surroundings.

As candidate country for the EU membership, the Republic of Croatia is liable to harmonise the national legislation with the EU acquis communautaire as Directive 2000/60/EC (Water Framework Directive) and Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources (The Nitrates Directive).

Climate data:

The climate in the Region of Istria is Mediterranean along the coast, shifting into sub-Mediterranean towards the centre of the peninsula, and due to the closeness of the mountains and the Alps, even to continental or submountain-continental climate.

Relief data:

The relief of the territory of the Region of Istria is extremely diverse, with a range of heights from 0 to 1.300 masl and four main relief bodies.

Soil data:

The dominant types of soil in Istria, where the majority of farming production is carried out, are the red soil (terrarossa), brown earth on limestone and dolomite (calcocambisol), rendzina and anthropogenic soils (regosol). In accordance with the chemical content and in terms of suitability for agricultural production, it can generally be said that the soils of Istria are: poor in phosphorus, medium rich to rich in potassium, red soils and anthropogenic soils stand out for being poor in nitrogen supply. Reaction of the soil moves from acidic reaction with red soils containing no carbonates to alkaline reaction with flysch soils rich in carbonates.

Land uses and agricultural land:

Basic ways of land usage in the Region of Istria: about 30% cultivated land, 23% grassland/pastures and about 43% forests.

Already at first sight one can notice a marked dispersal of habitat dominated by areas covered in forests, dry grassland and dispersed agricultural areas being a consequence of the traditional mixed production and tendency towards self-sufficiency.

Irrigation and agricultural land:

Only about 500 ha (1.5 % of the used areas) are being irrigated today, mostly from alternative resources (groundwater, water main). On the basis of the macro-territorial approach, NAPNAV (National Irrigation and Farming Land and Water Management Project for Croatia), it has been estimated that in the Region of Istria there is the total of approx. 88,000 ha of farming land of various classes of fitness for irrigation, and approx. 59,000 ha of land temporarily or permanently unfit for irrigation.

Surface waters:

The most important surface watercourses on the territory of the Region of Istria are: Mirna, Raša, Boljunčica, Dragonja and the subterranean river Pazinčica.

Ground waters:

Drainage systems of the Istrian peninsula, namely of the Region of Istria, are distributed from the north, we distinguish: 1. Mirna river basin and part of the Dragonja river basin; 2. Raša river basin and 3. Southern Istria basin.

General Hydrological Features:

On the basis of its hydrological features, Istria has been divided into three areas showing different conditions of formation and existence of surface and ground waters.

These are: 1. The area built from carbonate deposits (south of the flysch basin); 2. The area built from flysch deposits (flysch basin); 3. The area built from the replaced carbonate and flysch deposits – area of wet tectonics (north-east of the flysch basin).

Quality of groundwater in the Region of Istria:

Water supply from public systems in the Region of Istria is currently servicing above 95 % of regions population which is very good with reference to national average that is around 70 %.

Waste water drainage system in the Region of Istria is currently covering from 45 to 65 % of the area.

Average use of water per capita is estimated somewhat over 100 lit/day.

The majority of the available water quantity used to supply the Region of Istria with water is provided by groundwater: springs and wells.

Waters can vary in their geochemical characteristics, starting from waters with a low quantity of minerals to be found in the areas of recharge of Ćićarija, via the moderately hard and hard waters between the Mirna river basin and the Raša water basin, to the very hard waters with an extremely high mineral content of the wells in the wider area of Pula and the southern tip of Istria.

The state of the water quality in area of Region of Istria is being constantly monitored by two programmes on: 1) national level; 2) regional level. Both programmes are being implemented by Public Health Agency of the Region of Istria – Pula. There are 22 measuring stations in the Region of Istria.

Springs react to changes of water flow in a very karstic manner – showing events of great opacity. Compared to the springs, wells hardly ever become opaque and the bacteriological pollution is very low. The greatest problem with the wells in water supply is the high content of nitrates.

Furthermore, extraction of groundwater at private drill-wells for individual and very intensive vegetable growing is substantial.

Current status of water treatment at wells, including sedimentation, filtration and disinfection, provides complying standard of drinking water. The level of treatment at wells is not adequate to guarantee the required standard. Chemical and toxic substances do not endanger safety of drinking water.

Pollution of surface and ground waters:

Karst aquifers of the Region of Istria are exceptionally sensitive to external pollution due to drained water does not undergo cleaning processes on the ground on its way into the ground because it reaches the

underground through a crack or through the thin earth cover over a limestone bad. Because of that almost 70 % of Region of Istria is considered water protected area.

Major pressures/sources of pollution on the territory of the Region of Istria include: municipal waste water, 2) untreated industrial waste water; 3) leachate water from landfills 4) untreated rainfall water which leach pollution from urban areas and roads; 5) agricultural (crop and animal production); 6) occasional exceptional pollutions (industrial, traffic accidents and similar); 7) torrents, i.e. soil erosion and washing out, may represent the most conspicuous item of the watercourse burden. About 30% of the territory of the Region of Istria is endangered by erosion, primarily in flysch areas, especially endangered is the area surrounding the Butoniga Water Reservoir; 8) speleological bodies (around 2000), caverns and caves suffering from permanent pollution (irresponsible citizens throw municipal solid waste, dead animal bodies and slaughter waste, empty sewage tanks, car bodies etc. into them).