

THE DESCRIPTION OF THE
TARGET AREA OF ARGES-VEDEA NITRATE VULNERABLE ZONE
(SOUTH ROMANIA)

EU.WATER
Kick-off meeting
6th of July, Province of Ferrara

Description of PP's background

NATIONAL RESEARCH AND DEVELOPEMENT INSTITUTE FOR SOIL SCIENCE AGRICULTURAL CHEMISTRY AND ENVIRONMENT - ICPA

- National inventory of soils and soil monitoring
- Evaluation of soil threats according with EU soil strategic documents
- Designation of sensitive areas to various threats (e.g. Nitrate Vulnerable Zones, Less Favoured Areas to Agriculture)
- National focal point for monitoring soil and crop related aspects in Nitrate Vulnerable Zones
- Developing Codes for Good Practice in Agriculture

Description of PP's background

MINISTRY OF AGRICULTURE FORESTRY AND RURAL DEVELOPEMENT

- NATIONAL AUTHORITY FOR DEVELOPING AND IMPLEMENTING AGRICULTURAL POLICIES IN ROMANIA
- DEVELOPING LEGISLATIVE ACTS FOR INCLUDING ENVIRONMENTAL ISSUES IN AGRICULTURAL POLICY – NITRATE DIRECTIVE
- DEVELOPING AND IMPLEMENTING THE STRATEGY FOR DROUGHT PREVENTION

Target area : ARGES-VEDEA BASIN

- Basin with vulnerability to nitrate pollution due to the low flows of aquifers
- 20 municipalities declared as NVZ



Fig. 2.2 Bazinete / Stările hidrografice și Apele Costiere pe care se elaborează Planurile de management

CRITERION ON SOIL WATER BALANCE
Number of Growing Period Days (90 % percentile)
1961-1990

Note: Number of Growing Period Days are defined as having $T \geq 5$ degree Celsius and available moisture exceeding half the potential evapotranspiration calculated according with Thornthwaite-Mathers-Benfratello method
Rooting depth evaluation based on soil resistance to penetration at field capacity

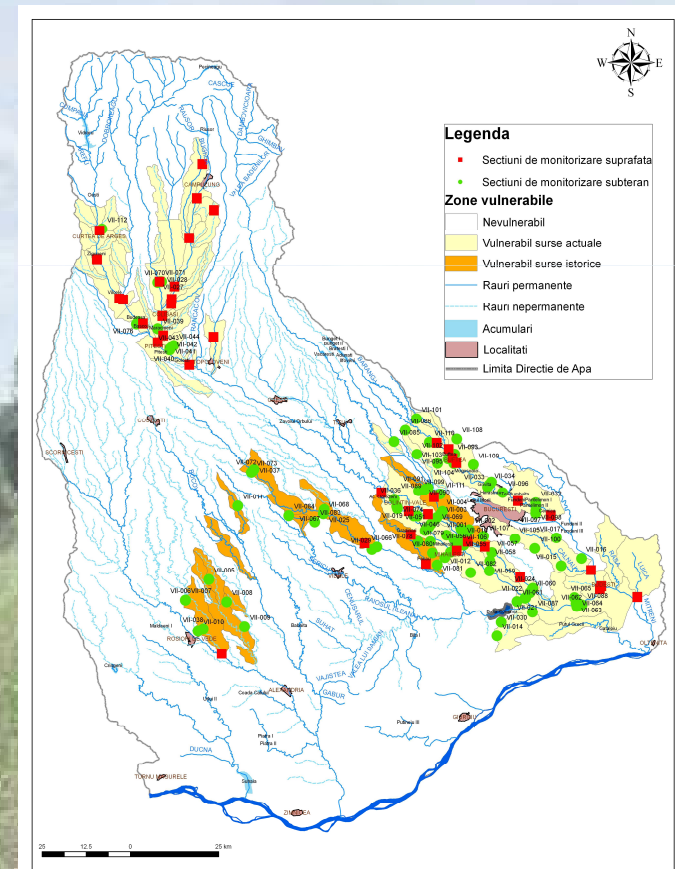
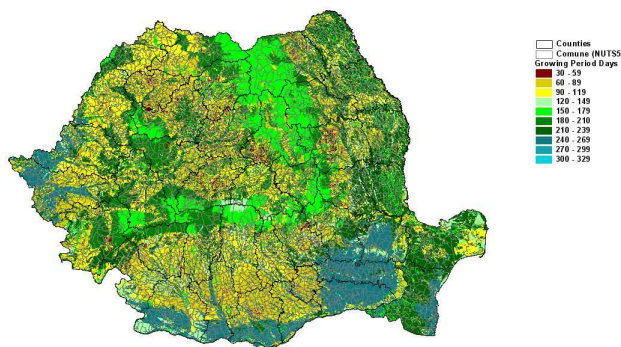


Fig. VII Reteaua de monitoring pentru zone vulnerabile din spatiu hidrografic Arges - Vedea

ARGES-VEDEA BASIN

Agronomic information

	YES	NO
Does a GIS soil map of your target area exist?	X	





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ARGES-VEDEA BASIN

Agronomic information



What the GIS data says about...	
Type of soil	Soil type (Romanian and FAO), Texture, Soil degradation, Pedotransfer rules
Precipitation data	Daily for 1961-2008 in 3 reference weather stations, Monthly (10' x 10' long x lat grids) for 1901-2008 period
The quality of groundwater, in relation to concentrations of:	
Ammonium (NH ₄ ⁺)	Monitoring network, 2 times a year
Nitrite (NO ₂ ⁻)	Monitoring network, 2 times a year
Nitrate (NO ₃ ⁻)	Monitoring network, 2 times a year
Organic carbon	Monitoring network, 2 times a year
The quality of superficial water, in relation to concentrations of:	
Ammonium (NH ₄ ⁺)	Monitoring network, 2 times a year
Nitrate (NO ₃ ⁻)	Monitoring network, 2 times a year

Total amount of enterprises (in %) in the target area, which receive EU grants for agricultural production

CAP: 190,0000 ha of total 344,879 ha (55.1 %); 34,918 enterprises

Rural Development Policy : 1,150 enterprises



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ARGES-VEDEA BASIN

Agronomic information

Target area							
Crop	Area (in ha)	Area (in %)	Main nitrogen fertilizer	Units of nitrogen (kg/ha)	Period	Depth of plowing	Other
Wheat	60442	17.5	Ammonium nitrate	40-120	Pre-sowing 30%	15-25 cm	-
Barley	9953	2.9	Ammonium nitrate	40-120	Pre-sowing 30%	15-25 cm	-
Maize grains	41221	11.9	Ammonium nitrate	40-120	Pre-sowing 40%	15-25 cm	-
Sunflower	14866	4.3	Ammonium nitrate	40-120	Pre-sowing 40%	15-25 cm	-
Green fodder	17542	5.1					
Multi annual fodder	13119	3.8					
Orchards	22857	6.6					
Pastures	102689	29.7					
Hayfields	45783	13.2					

ARGES-VEDEA BASIN

Problems

- Rainfed agriculture
- Heavy soils with limited rooting front depth and maximum available water: limited number of growing degree days
- 20 municipalities declared as Nitrate Vulnerable Zones in 2003
- Limited understanding at local level of nitrate pollution problems
- High and very high content of nitrates (over 100 ppm) in private wells used for drinkable water
- Poor manure management (storage, processing, using nutrient management plans)

Partner's expectations

- Making a hierarchy of available methods for preventing nitrate pollution from agriculture sources of water bodies
- Calculating specific indicators for each method using available databases and modelling tools
- Including indicators in a multicriterial decision support system for capturing the end users and stakeholders opinions on ranking the methods for preventing nitrate pollution
- Developing Action Plans specific for each municipality and farm type

Partner's expectations

- Developing specific legislation acts dealing with implementing Nitrate Directive in Nitrate Vulnerable Zones
- Improving methods for designation and monitoring the Nitrate Vulnerable Zones

