

Transnational Integrated Management of Water Resources in Agriculture for European Water Emergency Control

EU-WATER

MINUTES

Date: 6 April 2012

Place: Kozani

Type of meeting: 2nd Local Implementation Network

- **Training seminar for agronomists and related disciplines**
- **Training seminar for farmers**

On Friday, April 6, 2012, the Region of Western Macedonia organized in Kozani, within the framework of the project EU.WATER, the second meeting of the Local Implementation Network and two training seminars addressed to the agronomists and producers in the region. The meeting attended approximately 60 people, representatives of local authorities, associations, cooperatives, officials of relevant Regional Divisions, representatives of companies, agronomists, geologists and farmers.

The main topic of the meeting was to inform stakeholders about the EU.WATER project and its importance for the region of South East Europe, the environmental pressures on water resources of the Sarigkiol basin, which is the selected Greek pilot area, the efforts for developing a strategy of integrated management of water resources in agriculture and the presentation of the pilot actions for the development of a Decision Support System (DSS).

The aim of the training seminars was the more detailed presentation of the project tools available for the protection of water resources: vulnerability maps, decision support system, strategy, actions, new technologies and methods to improve the effectiveness and management of inputs in agriculture.

The meeting began with the welcome speech from the Assistant Secretary of the Region of Western Macedonia Mr. Ioannis Antoniadis, who addressed the serious problem of water consumption and pollution due to its intensive exploitation in agriculture, and the importance of the project activities as EU.WATER intends to give a definite answer to these problems. The meeting continued with Mr. Efstratios Arabatzis representative of TERO Ltd., who presented project EU.WATER, the progress made in Greece and the expected project outcomes.

The speech was then given to Mr. Konstantinos Voudouris, assistant professor of Hydrogeology at the Aristotle University of Thessaloniki, which also participates as partner in project EU.WATER. Mr. Voudouris presented the vulnerability maps, developed through the works carried out in the basin of Sarigkiol, which constitute a very important and useful tool for the protection of water resources. Mr. Voudouris mentioned that the assessment of vulnerability of aquifers enables us to identify areas where we need to pay particular attention to the protection of aquifers from pollution. The quality degradation of underground water is a limiting factor for the socioeconomic development of an area. For this reason, prevention is the best measure to protect water quality. He also referred to other important tasks to be done, such as intervention in infrastructure projects in agriculture that will help save water and use of treated municipal and industrial wastewater for irrigation purposes. A brief demonstration of the use of the maps followed. All the maps are available and accessible to all through the official website of the project www.eu-water.eu.

The meeting continued with the presentation of the strategy and actions to protect water resources. Mr. Aristotelis Tagarakis agronomist M.Sc., PhD candidate at the School of Agricultural Sciences, University of Thessaly and a member of the scientific team of EU.WATER, presented the strategy developed under the project, for an integrated water management and the prevention of nitrate pollution. He also presented the results and the overall strategic plan and general measures that enable producers to further benefit economically, either through subsidies or by reducing the cost of irrigation and fertilization. Irrigation and fertilization practices in the basin of Sarigkiol were presented as well as new technologies for the modernization of agriculture.

The speech was then given to Mr. Bournaris Thomas, PhD. in Agricultural Economics of the Aristotle University and member of the scientific team of EU.WATER. Mr. Bournaris presented the decision support system for the planning of agricultural production and environmental protection. The Decision Support System (DSS), developed through EU.WATER, is a software system that includes models and data bases and is used in the decision making process. It constitutes an important "tool" that helps farmers and decision makers in the decision making process and in choosing the best alternative solution. Mr. Bournaris stressed that the project's objective was to create a Decision Support System (DSS) which will optimize the production plan of the area, taking into account the available resources (land, labor, capital) and the environmental factors (reduction of nitrate use, reduce of water consumption). This will facilitate the decision making process as farmers and decision makers will use it and will get help in selecting the best (economic, social or environmental) alternatives, using the vulnerability maps.

During the training courses detailed presentations of the useful tools developed through the EU.WATER project were made to all participating agronomists and farmers. More specifically:

Throughout the seminar for agronomists, an extensive presentation of the hydro-geological basin of Sarigkiol was made, and both the contribution of agriculture to the consumption and pollution of water, as well as the lack of water resources, were discussed. Methods for the improvement of the current situation and the prevention of the quantitative and qualitative degradation of water were presented. The strategy for water conservation and reduction of nitrates was also presented. The seminar continued with a detailed presentation of the use of the project tools:

- Demonstration of the data bank and GIS platform. The information contained in the data bank refer to environmental, agronomic and soil data. The platform is used to view maps and download data as a tool for GIS.
- Demonstration of the process for using the vulnerability maps which provide information such as the total water losses, the total losses of nitrates and the transition time.
- Demonstration of the operation of the DSS. This tool supports the production planning and the management of water and fertilizer. It can also be used as a model simulating different scenarios and policies in accordance with changes in different social, economic and environmental factors.
- Use of programming software for irrigation (Cropwat example from FAO).

During the seminar a strong interest was shown for the EU.WATER tools, the potential they offer and their potential use by all interested parties. There was also interest in the hydro-geological data that were presented. Mr. Voudouris stressed that this demanded great effort, as the appropriate coordination and cooperation among stakeholders to create an updated database that is accessible to all stakeholders has not yet been achieved. The need for continuous updating of data and databases and more competent staffing of the services in charge is necessary. Finally, it was stressed that the role of geotechnicals is very important and should be strengthened, as they are the link between farmers and the state.

Throughout the seminar for farmers, extensive presentations and references were made on the existing irrigation systems and the new, more efficient ones, such as underground irrigation, variable doses irrigation, and irrigation with sensors, the various simulation models and the use of treated wastewater. The strategy for an integrated management of irrigation and fertilization was also presented, which was developed within the project and provides a common methodology for assessing the vulnerabilities of each region, suggesting specific management methods and tools for saving water resources and prevention of water pollution from the use of nitrates. The seminar continued with a detailed presentation of the proper use of the project tools:

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- Demonstration of the process for using the vulnerability maps which provide information such as the total water losses, the total losses of nitrates and the transition time.
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During the seminar some farmers expressed their interest in the project tools but also stressed that sometimes their use may not be feasible, as farmers often lack the necessary time to engage themselves and that nothing can be compared with the empirical knowledge professionals farmers have on the needs of their fields. The discussion concluded that as technology advances, scientists are trying to be ahead of their time. The goal is the transformation of a simple farmer to a farmer «manager» who will be familiar with the use of new technologies and management methods for soil and crops. The close relationship that must exist between farmers and agronomists was also emphasized, as agronomists are the ones who directly give guidance and affect most farmers on how and what to cultivate. Therefore the role of geotechnicals should be upgraded so that they can help farmers to adopt new management practices.

The participants were interested in all the project's results, giving special attention to practical issues like how to use the DSS and the vulnerability maps and whether these tools are free to be used by everyone. They also asked for a way to be found, to extend the current study to the wider rural area of the region. Finally they emphasized the need for the establishment of the production base with the collaboration of all the stakeholders.

At the end of the seminars, the participants were informed that the access to the tools of the project is open to all stakeholders and is possible through the official website of the project www.eu-water.eu. Educational material was also distributed to the agronomists of Western Macedonia.