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Departman za Hidrogeologiju

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# DEPARTMAN ZA HIDROGEOLOGIJU

RUDARSKO-GEOLOŠKOG FAKULTETA UNIVERZITETA U BEOGRADU

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## CCWaterS

**Project name: *CLIMATE CHANGE AND IMPACTS ON WATER SUPPLY***

**Duration: *01.05.2009 – 30.04.2012***

**Partners: *15 ERDF, 2 IPA, 1 10% (18 PP from 9 countries)***

**All partners engaged on the project you can look [here](#)**

### Project Background

The impact of climate change on South East European's water resources is a critical issue for society and economy. The European Environmental Agency (EEA) suggests regional and local projects and studies in order to assess extent of Climate Change (CC) and impact on water resources. The main water supply problems are related to the significant change of groundwater quantity and quality observed in the last decades as an effect of land use practices and an excessive precipitation. The latter may affect the ability of suppliers to provide enough water of sufficient quality to the consumers. In the territories of involved project partners, covering relevant areas of SEE, groundwater plays a major role as drinking water resource, which will be affected severely by CC. CC-WaterS tackles the defined challenge by developing an innovative solution - a sustainable water supply management system regarding optimisation of water extraction and land use restrictions regarding CC scenarios for water suppliers in SEE.

### Project Intervention Logic:

Overall (Wider) Objective: To safeguard water availability and ensure sustainable water supply for citizens in different regions of SEE for the future in spite of the influence of Climate Changes (CC).

Specific Objectives (Project Purpose):

- Identified possible impact of CC on water resources and water supply;
- Proposed measures to protect quantity and quality of water;
- Prepared proposals for new legislation and plans to mitigate negative impact of CC.

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#### ***Expected Results:***

*Established water supply management system under CC scenarios for water supplies in SEE, including:*

- 1. Assessed future drinking water resources availability;*
- 2. Determined future drinking water demands considering climate and land use changes;*
- 3. Identified and protected recharge areas for future water supply;*
- 4. Developed common tools for risk assessment to secure drinking water supply;*
- 5. Introduced sustainable national, regional and local water supply management practice.*
- 6. Shared experience in SEE region, and raised awareness in the wider public towards sustainable water use.*

#### ***Planned Activities:***

- 1) Establish a transnational climate database covering a period of 50-60 years;*
- 2) Assess future climate variations in SEE and pilot areas based on existing climate change studies;*
- 3) Develop, calibrate and validate an internal downscaling methodology;*
- 4) Establishment of transnational hydrological and water management database;*
- 5) Development of common water balance methodology on the basis of existing models;*
- 6) Estimate of present groundwater (GW) availability: GW recharge and water demand of GW-dependent ecosystems;*
- 7) Analyze trends in GW discharge;*
- 8) Evaluate existing land uses on a catchment scale (GIS);*
- 9) Analyze trends in water quality;*
- 10) Propose strategy change in spatial planning, best practices in land use for safeguarding recharge areas of water resources for potential water exploitation;*
- 11) Propose additional surveys and methods for exploration of existing and potential aquifers;*
- 12) Propose legislation to mitigate possible negative effects of climate and land use changes on water supply management;*
- 13) Promote project achievements and propose measures to local authorities and water end-users.*

*Activities schedule you can look [here](#)*

***Working groups from Serbia : IPA 1 (Faculty of Mining&Geology, Belgrade) and IPA 2 (Institute for Water Management'Jaroslav Cerić, Belgrade)***

#### ***Members of IPA 1:***

***[Project manager: prof. dr Zoran Stevanovic](#)***

***[Project secretary: MSc Sasa Milanovic](#)***

***[Hydrology expert: assis. prof. Vesna Ristic](#)***

***[Groundwater Management Expert: assoc. prof. Petar Dokmanovic](#)***

***[Groundwater Modeling Expert: assoc. prof. Dusan Polomic](#)***

***[Hydrogeologist: Ljiljana Vasic](#)***

***[Finance Secretary: Slobodan Siljanovski](#)***

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#### **Activities of IPA1 groupe until now:**

Since November 2009 IPA 1 PP (FMG) participated in the workshops of TW 41 and 51 held in Patras, Greece and TW 32 held in Termoli, Italy. Several staff meetings has been organized and TOR for the staff of IPA 1 prepared. The four tenders for external consultants were drafted and sent for approval to the contracting authority. The monitoring system for groundwater (GW) observation has been installed in both test areas, in Zagubica and in Pirot (Test area Beljanica and test area Stara Planina). Several field visits were undertaken in both areas including hydrogeological survey and hydrometric measurements. Historical climatology data has been collected and sent to the responsible PP for the Climate changes modelling.

#### **[Test area Beljanica](#)**

#### **[Test area Stara Planina](#)**

**Meeting Report from IPA1 and IPA2 partner, held in Belgrade, on Faculty of Mining&Geology on 18.01.2010. you can look [here](#)**

*Photos from Workshops in Vienna (May 2009., Austria), Patras (November 2009.,Greece), Termoli (January 2010., Italy)*



*Kick-off Workshop CCWaterS - Vienna*

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*Kick-off Workshop CCWaterS - Bucharest*



*Workshop of thematic group TW41.52 - Patras*



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*Workshop - Termoli*

Projects that have been realized in 2007-2008. on the Department of hydrogeology

**\* Project SUDEHSTRA**

- [promotional flyer](#)

- [summary of the action](#)

**\* [VUSPLAN workshop Serbia-Bulgaria](#)**