

# CONTRIBUTION OF THE “WORLD OVERVIEW OF CONSERVATION APPROACHES AND TECHNOLOGIES - WOCAT” PROGRAMME TO THE SERBIAN PRACTICE AND EDUCATION

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## 1. Abstract

The aim of WOCAT is to provide tools that allow SWC specialists to share their valuable knowledge in soil and water management, assist them in their search for appropriate SWC technologies and approaches, and support them in making decisions in the field and at the planning level. WOCAT has developed tools to document, monitor and evaluate SWC know-how and to disseminate it around the globe in order to facilitate exchange of experience. A set of three comprehensive questionnaires and a database system have been developed to document all relevant aspects of SWC technologies and approaches, including area coverage. WOCAT results and outputs are accessible via the Internet, in the form of books and maps and on CD-ROM. WOCAT uses global knowledge for local improvements. It offers contacts as well as opportunities to share experience around the globe. It provides SWC specialists with technical information about SWC technologies and approaches from their own and other regions.

## 1. Introduction

Just as land use is the main cause of soil loss in the world, in Serbia, along with the natural factors, the main cause of soil erosion is the man. The hilly and mountainous regions are especially exposed, i.e. Serbia is predisposed to erosion processes, bearing in mind that about 70% of its area belongs to rol, hilly and mountainous regions. In addition to the relief, i.e. the terrain configuration, there are also other natural factors contributing to this predisposition, such as: labile geological basis, intensive rainfall, poor vegetation cover. However, the main factors of the accelerated erosion in this region are of the anthropogenic origin. The development of erosion processes can be classified into the period until 1950s and from the mid 1950s to the present day. The first period was characterized by the highest agrarian pressure and accelerated erosion. The second period was characterized by population migration, large extent of erosion control works, changes in the structure of agriculture production and, as the consequence, the decline of erosion intensity. The high agrarian pressure in hilly-mountainous regions was primarily reduced by migration (Zlatic, 1998). As younger household members migrated, arable fields were left uncultivated, invaded by weeds, and converted into pastures which contributed to diminishing erosion. This cannot be called development. The revival of degraded regions should be based on people remaining in the area and being able to have decent livelihoods. Participation of all stakeholders in sustainable land management and decision making can make it possible (Zlatic, 2007). In that point of view “World Overview of Conservation Approaches and Technologies was introduced to the Serbian practice.

## 2. Methods

WOCAT has developed a set of three questionnaires as method for evaluating SWC. Questionnaire on SWC Technologies (WOCAT 2002 a), questionnaire on SWC Approaches (WOCAT 2002 b) and questionnaire on the SWC Map (WOCAT 2002 c).

**Questionnaire on SWC Technologies (QT):** QT addresses the following questions: **what** are the specifications of the technology, and **where** is it used (natural and human environment), what impact does it have. The questionnaire consists of three main parts: 1. General information; 2. Specification of SWC Technology; 3. Analysis of SWC Technology.

The **questionnaire on SWC Approaches (QA):** QA addresses the questions of **how** implementation was achieved and **who** achieved it. It is also made up of three main parts: 1. General information; 2. Specification of SWC Approach; 3. Analysis of SWC Approach.

The **questionnaire on the SWC Map (QM)**: QM addresses the question of **where** problems and their treatments occur. It is split up into: 1. General information; 2. Land use; 3. Soil degradation; 4. Soil and water conservation; 5. Soil productivity.

The three questionnaires (QT, QA, QM) complement each other. The information obtained from the questionnaires will provide an information base / database for the development and evaluation of SWC. The analysis and evaluation process is based on this information and on the knowledge provided by core groups of SWC specialists and the world community of SWC implementers at large.

### 3. Results

Besides of number of collected technologies, approaches and maps, the main result is established WOCAT network in Serbia. It was not an easy task, especially at the starting level. We needed several years to involve it in education programme as well as in the long term programme of the Ministry of Agriculture, Forestry and Water Management.

Wocat in Serbia is led by Faculty of Forestry of Belgrade University. It is now involved in the study programme of IV year of studying (Department for Ecological Engineering in Soil and Water Resources Protection at the Faculty of Forestry) as well as in the master studies at the same Department. At the moment, there is one ongoing Ph. D. thesis regarding using WOCAT methodology as the tool in collecting data of the environmental, social and economic point of view of implemented soil and water conservation technologies and approaches.

Faculty of Forestry is organising trainings and workshops, then mentioned education/research, revision of collected data and publishing results. Data collecting is organized through Water Management Enterprises (“Erozija” Niš, “Erozija” Kragujevac, “Loznica” – Loznica), Student’s Forum of World Association for Soil and Water Conservation (formed at the Faculty of Forestry in 2005) and partly by the Faculty of Forestry. WOCAT is financed by the Directorate for Waters of the Ministry for Agriculture, Forestry and Water Management. Special attention is given to WOCAT in education as well as to the institutional/organizational setup/framework, which is mostly different than in other countries.

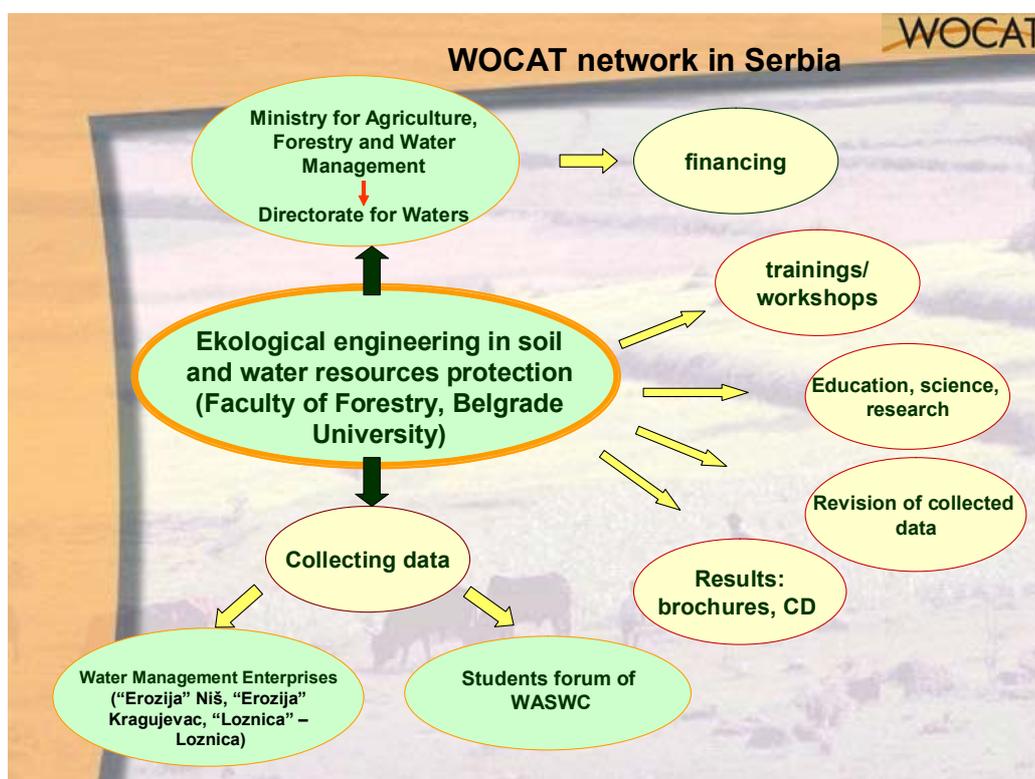


Figure 1 Functioning of WOCAT network in Serbia



**Photo 1 WOCAT promotion in Water Manag. Enterprise „Erozija“ in Kragujevac**

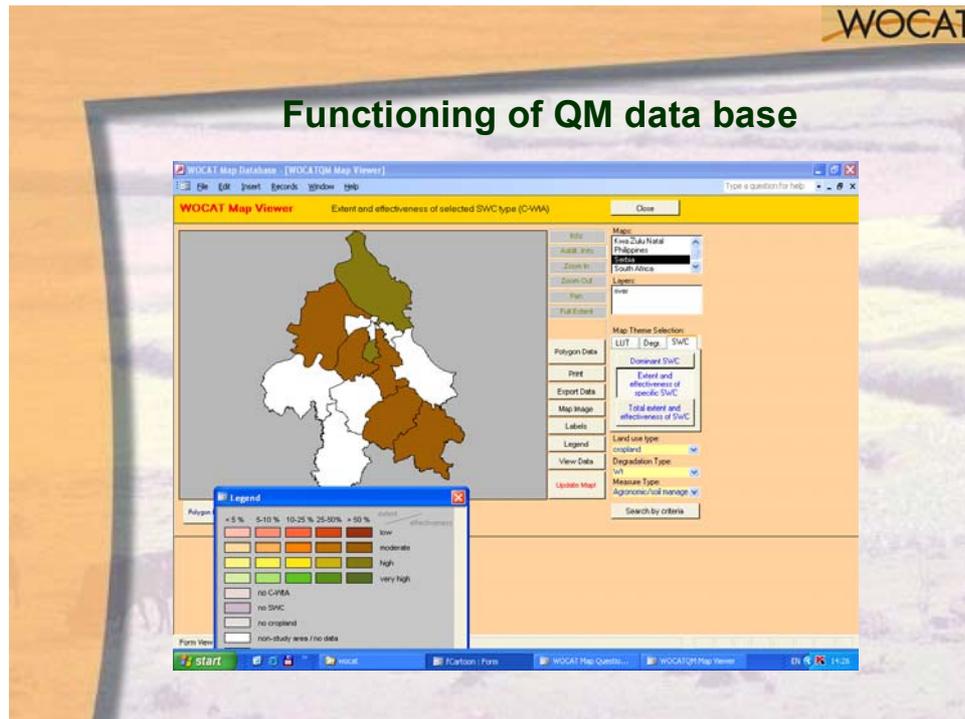


**Photo 2 Students education in the field**



**Photo 3 Collecting WOCAT data in the field**

The best examples of technologies, approaches and maps give the good pool of knowledge and information which can be used in the field as well as at the planning level. Due to this network there is collected 10 technologies and 3 approaches. Regarding WOCAT maps, which take into account not only land degradation, but also effectiveness of the implemented technologies, there is established WOCAT maps for more than 10 000 km<sup>2</sup> through the 20 communities explored in four districts of Serbia: Belgrade District, Kolubarski District, Macvanski District and Peinjski District.



**Figure 2 Established WOCAT maps in Belgrade District**

Implementation of WOCAT programme in the field level is also going slowly, as its network establishment. It is partly implemented in Belgrade District where we have had a great percentage of collected data (village Slanci, which is a great producer of vegetables and fruit for Belgrade market). But people from mountainous area of Macvanski District and Pcinjski District, where he have demonstration sites for this and other research, are accepting it individually. From year to year WOCAT is becoming stronger and now it is a long term task of Directorate of Waters (part of the Ministry of Agriculture, Forestry and Water Management). Slowly running WOCAT up till now has been a positive characteristic, as it has now strong fundamentals.

#### 4. References

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