Project title:	**ROmania Serbia NETwork for assessing and disseminating the impact of copper mining activities on water quality in the cross-border area**
eMS:	RoRS 337
Partner:	WUT

D.T1.10.1
Knowledge base

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1. Introduction

Within the project ***ROmania Serbia NETwork for assessing and disseminating the impact of copper mining activities on water quality in the cross-border area*** (RoS-NET2, project code e-MS no. RORS-337, http://www.elearning-chemistry.ro/rosnet2/), a public knowledge base containing the physicochemical and toxicological characterization of the water streams in considered areas and remediation solutions was produced as a new monitoring systems

established in the field of environmental protection in cross-border area. This knowledgebase offers the advantage of presenting the dynamics of the environmental monitoring indicators.

The knowledge base is accessible on the project webpage, http://www.elearning-chemistry.ro/rosnet2/knowledge-base/ as presented in Figure 1.

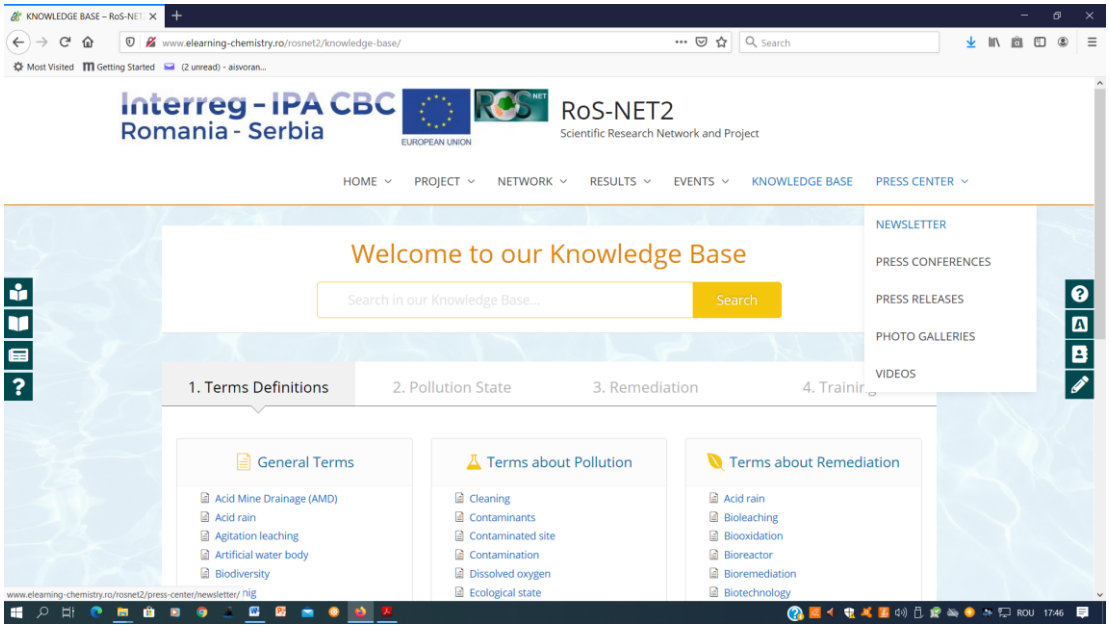

Fig. 1. Interface of the knowledge base produced in the project RoS-NET2 (http://www.elearning-chemistry.ro/rosnet2/knowledge-base/)

2. Short description of the knowledge-base

The knowledge base contains 4 sections and every section has several subsections. The main sections are:

- ”Terms definitions” is a section where terms related to mining activities, pollution state and pollution remediation are defined and explained. There are three subsections of this section: 9i) ”General terms” that contains 40 entries; (ii) ”Terms about Pollution” containing 9 entries; (iv) ”Terms about Remediation” containing 7 entries (Figure 2). This section contains information in English. Terms contained in each subsection are ordered alphabetically such as to facilitate the search. There are terms that may appear in more than one, or in all subsections.
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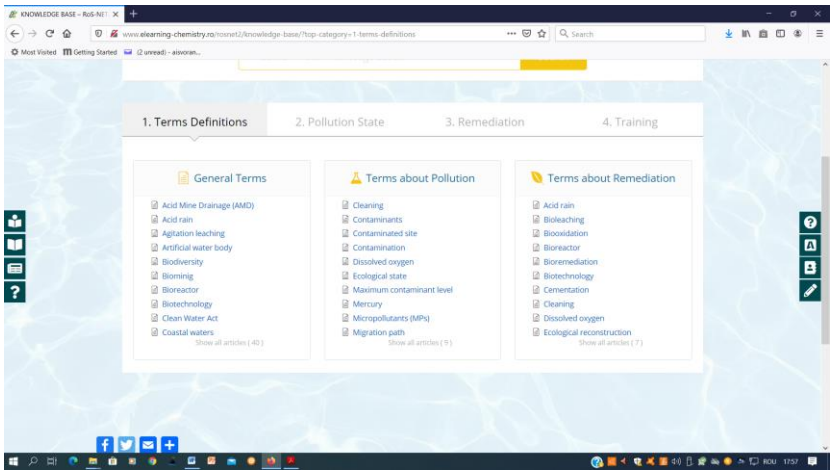

Fig.2. Subsections belonging to the section ”Terms definitions” and their content.

- ”Pollution state” is a section containing information concerning the state of pollution of air, water, soil and cities produced by mining activities. There are presented concepts that are used to assess the pollution state and values illustrating the situation of pollution produced by mining activities in the cross border area. This section contains 4 subsections (Figure 3): (i) ”Atmospheric pollution” illustrating scientific concepts that are used to assess the air pollution state and the situation of air pollution in the considered area and containing 3 entries; (ii) “Soil pollution” illustrating scientific concepts that are used to assess the soil pollution state and the situation of soil pollution in the considered area and containing 7 entries; (iii) “Water pollution” illustrating scientific concepts that are used to assess the water pollution state and the situation of water pollution in the lakes, rivers and household wells in the considered area and contains 11 entries; (iv) “Cities pollution” illustrating the air, water and soil pollution state in cities situated in the considered area and containing 3 entries; (v) “Evaluation of air, water and soil quality in considered areas” illustrating the measurements that were made by the members of the project teams such as to assess the state of the environment in investigated areas and contains 28 entries (Figure 3). The information in this section is in English and it is ordered alphabetically in every subsection.

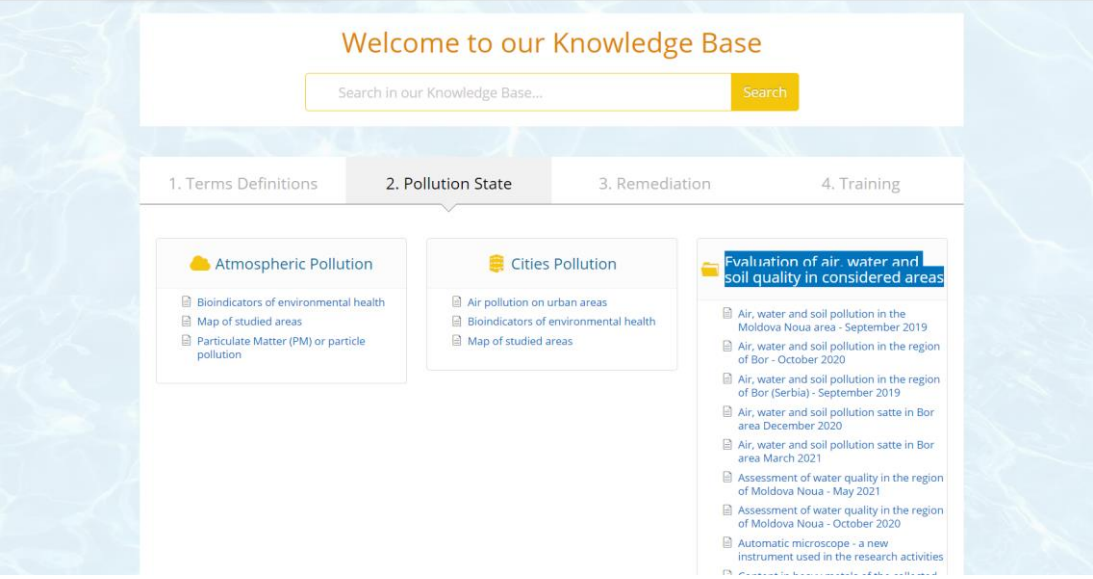

Figure 3. Illustration of the content of the section "Pollution state", subsection "Evaluation of air, water and soil quality in considered areas"

- "Remediation" is a section containing description of methods that are used for remediation of water and soil polluted by mining activities. This section is divided in 6 subsections (Figure 4): (i) "Biological Remediation Methods" contains description of remediation methods based on microorganisms and contains 5 entries; (ii) "Chemical Remediation Methods" comprises descriptions of chemical methods that are used for remediation of pollution of water, soil and air and contains 1 entry; (iii) "Enzymatic Remediation Methods" contains the description of the use of some enzymes to remove pollutants from water and soil and contains 1 entry; (iv) "Physical Remediation Methods" encloses physical methods that are used to remediate pollution of air, water and soil and contains 1 entry; (v) "Miscellaneous Remediation Methods" describes methods that are used to remove specific types of contaminants from air, soil and water in areas of mining activities and contains 1 entry; (vi) "Remediation solution proposed by project teams" illustrating those methods that were tested within the project and containing 3 entries. This section also contains information in English and it is ordered alphabetically in every subsection (Figure 4).

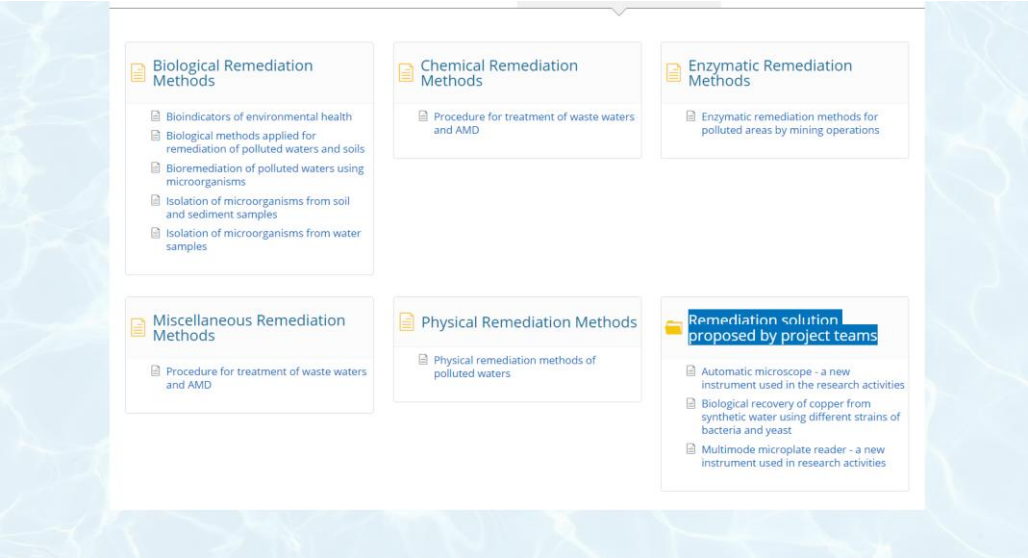

Fig. 4. Illustration of the subsections belonging to the section ”Remediation”.

-“Training” section contains the training materials that are used during the project implementation such as to raise awareness concerning the horizontal principles and environmental issues, respectively to train the volunteer students regarding the sample collection procedures and samples analysis methods. This information is usually presented in both in Romanian and Serbian language. There are three subsections of this section (Figure 5):

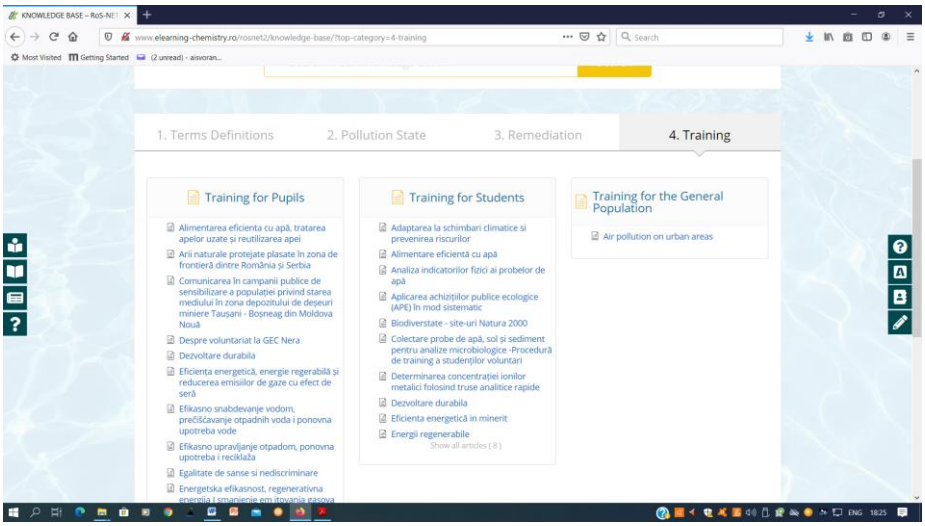

Fig. 5. Illustration of the subsections belonging to the section ”Training”.

(1) “Training for Pupils” comprises materials (presented in both Romanian and Serbian) that are used in the implementation in Romanian and Serbian schools of the training sessions

concerning the horizontal principles and environmental issues and contains 14 entries; (2) "Training for Students" in a subsection in Romanian and contains materials that were used during the implementation of training sessions for students regarding the sample collection procedures methods to analyse these samples and containing 10 entries; (3) "Training for the general population" that contains materials informing the general population how to use the project webpage and the knowledge base respectively, containing 5 entries (Figure 5). These materials are in various languages: Romanian, Serbian, English.

3. Tutorial for using the knowledge base

A tutorial has been prepared to illustrate for the visitors of the webpage how to use the knowledge base. This tutorial is accessible on the web page (Figure 6).

Figure 6. Illustration of the existence of the tutorial for using the knowledge base on the project web page.

Furthermore, there were implemented 8 online training sessions for using the knowledge base organized for school teachers, researchers, academic persons, employees of the local and regional authorities, representatives of NGOs. Snapshots illustrating some of these training sessions are given in Figure 7. Not at last, the knowledge base has been promoted toward researchers and academic persons by participating in 4 scientific conferences.
A scientific paper has been also published in a scientific journal such as to promote the knowledge base toward the scientific community (Figure 8).

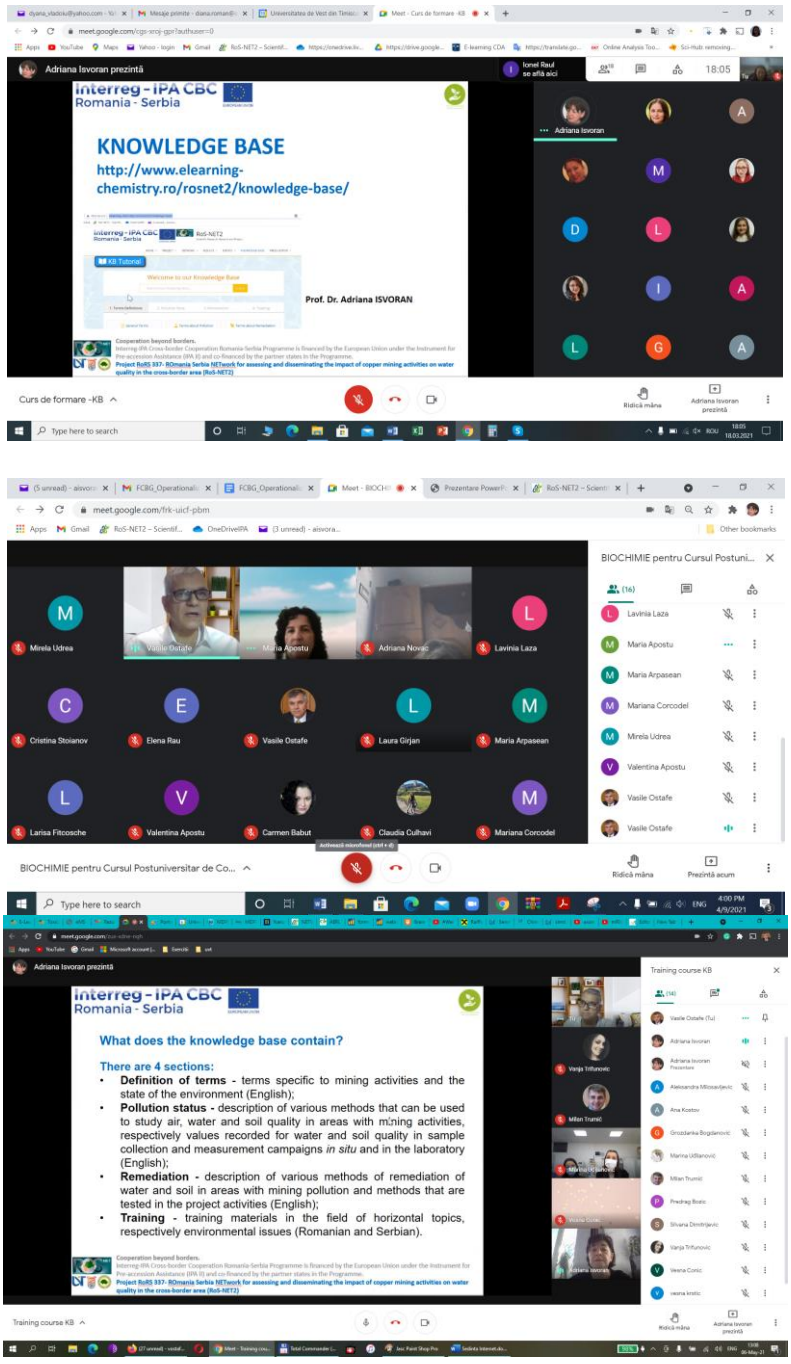

Figure 7. Illustration of the online training sessions for using the knowledge base.

Figure 8. Illustration of the published scientific paper promoting the knowledge base

4. Contact/Questions

For questions concerning the use of the knowledge base and/or its sections/subsections, the contact person is Prof. Dr. Adriana Isvoran, adriana.isvoran@e-uvt.ro.