

## Experience of UBM – Romania team

The coordinator of the project from UBM team, dr. eng. Mihaly Cozmuta Leonard has a long experience in the research of environment issue, gained during of 13 years as researchers at Research and Projection Mining Institute of Baia Mare and North University of Baia Mare (according of his CV):

- **coordination of 6 research projects and member in the teams of others 10 research contracts**, in the field of environment monitoring and heavy metals pollution reducing, developed in the frame of Research and Projection Mining Institute of Baia Mare, funding by the Ministry of Research (1995-2000)

- **coordination of 1 international research program** – CEEPUS, 2008-2009

- **member in 8 research national projects** in the field of heavy metals polluted environment, developed in the frame of North University of Baia Mare, funding by CNCSIS (2005-2010)

- **member in 4 international research projects** developed in North University of Baia Mare in the field of ecological accidents and analysis methods of chemically contaminated environment samples funded by EU in frame of FP 5 (2000-2004) and CEEPUS (2005-2008)

In the majority projects developed during 2000-2008, the RIVAM coordinator, lecturer dr.eng. Leonard Mihaly Cozmuta, cumulate both **scientific and financial responsible qualities**, assuring developing of financial activities according the laws, integration of technical and economical parts of projects, cooperation with audit commission, accomplished at imposed standard (CNCSIS, EU) of project's objectives. The experience in the project's management contributes to his assigned as Manager of Program Management Office of UBM.

The experience and maturity of RIVAM coordinator, the appreciation and recognition of his research activity and results, can be underlined by winning in the last 2 years **of 4 international scholarships in the field of performing analysis methods of environment pollution**, funding by EU by CEEPUS : 2 of them are research post-doc scholarships to Ecoanalytic Department-Nicolaus Copernicus University -Torun – Poland (03.-06.2007; 05- 08.2008) and 2 as invited professor (09.2006 Gdansk University of Medicine – Poland, 03.2008, Graz University – Austria). Starting from these aspects, we consider that the experience of coordinator in the field of the project represents a guarantee of combining of all abilities required for RIVAM coordination.

An assessment (2000-2008) of ZEMIP members' CVs from Romanian team indicates:

- **coordinators of 2 national research projects** AMSREI - 2007-2010)-PNCDI I; CONEEX—2005-2007- CEEEX)

- **project directors in 4 international projects**
- **project directors in 4 national projects**
- **members in others 8 national projects**

Also, we mention that the experience in the environment issue represented an important criteria in nomination of some researchers as *evaluators/experts* in the frame of some international programs:

- *prof.dr.eng.Anca Mihaly Cozmuta*: evaluator (code 2002B042388) of UE for Marie Curie program (2005-2006,11 evaluated projects), INTAS program (code 5224; 2005-2007—5 evaluated projects )

- lecturer *dr.eng.Mihaly Cozmuta Leonard*: evaluator of UE for INTAS program (cod 5424, 2006-2007 – 4 evaluated projects) and for projects of Grant Application for the National Research Foundation (NRF), Johannesburg, Africa (2007 -1 project)

- lecturer *dr. Monica Marian*: expert in projects: WWF for Nature International- Danube – Carpathian Programme LIFE05NAT/RO/00176 - RO 00081 (2006) and WWF One Europe more nature programme in Romania (2006)

We mention some projects won in European funding competition:

- ***Investigation of the Risk of Cyanide in Gold Leaching on Health an Environment in Central Asia and Central Europe, IRCYL, ICA 2-CT-2000-10065 ( UE -FP5 2000-2004):*** the project studied the factors which influenced physically/chemically stability of tailing ponds and the events which determined the cological accident in Baia Mare (January 2000) and the impact on environment;

- ***CEEPUS Program (Central European Exchange Program for Universities Study) CII-PL-0004-03-0708, (2005-2006, 2006-2007,2007-2008)-Education in separation and identification of organic xenobiotics in food product and environment*** (11 parters, only UBM Romanian partner); some activities provided by the RIVAM project have been developed: soil accumulation of heavy metals (dynamic and static regime, speciation of chemical combination in soil, plants bio-accumulation pathways and mechanism), studies about zeolites (tehcnical performances in retaining of metals, absorbtion cinetic in different condition), mathematical modelling and statistical interpretation of experimental data

- ***Ore Mining and Environmental Technology Information Network – OMENTIN HPRP-CT-2001-00002/2001 (UE-FP 5, 2001-2004)***, of which

main objective was to increase the public awareness about ores mining technologies and provoke the researchers to solve the environment issues generated in EU and associated countries; the main goal of UBM team was to assess the consequences of ecological accidents developed at Bozoxanta and Novat Tailing Ponds (2000).

● **TEMPUS PHARE–JOINT EUROPEAN PROJECT GRANT, IB\_JEP-13060-98: MANAGEMENTUL CAPITALULUI NATURAL:** training researchers in the field of environment protection and administration of natural resources.

Involvement in these international projects allowed, beyond the gain of new knowledge in the environment issue, strengthening of cooperation relationships with prestigious European research teams and building of a consortium which will submit, until 2011, a complex project in frame of FP7, which will study chemical contamination of environment and the impact of human health.

We mention, as examples, in the field of ZEMIP:

● **Monitoring of soil microbiota in order using it for ecological rehabilitation of tailing ponds –AMSREI (PNCDI II-2007-2010):** the project can be considered preliminary to RIVAM, because its aim is a comparative assessment of biotic and abiotic elements from natural and anthropized ecosystems in order to evaluate the microbiota capacity (fungus and microorganisms) in ecological reconstruction of tailing ponds from Baia Mare area.

● **Design and hazard maps and assessment of environment quality in mining areas of Satu Mare and Maramures using geographic information systems GIS -SIG (CEEEX 2006-2008):** the project made an inventory and characterized from physical/chemical stability point of view, all the tailing ponds coming from mining industry of MM and SM counties

Scientific results developed during the research projects were published in scientific journals and were presented to scientific events. We mention some of them (details in annexed CVs):

1. L. Mihaly Cozmuta, C. Varga, M. Monica, A. Mihaly Cozmuta, T. Hlanganani -Applying artificial neural networks in the modelling of copper recovery process by ionic exchange in aqueous solutions, *Revista de Chimie*, acceptata pentru publicare in 2008

2. V. Viman, L. Mihaly Cozmuta, A. Mihaly Cozmuta, Gh. Vatca, C. Varga, G. Oprea, 2005 – *Mathematical modeling of pollutants' dispersion in soil. I. Case study of copper dispersion*, *American Journal of Environmental Sciences*, 1(2), p. 126-129

3. L. Mihaly Cozmuta, T. Visan, A. Mihaly Cozmuta, C. Varga, V. Viman, Gh. Vatca, 2005 – *Energetic aspects related to heavy metals adsorption on the surface of volcanic tuff. I. The influence of activation parameters in Cu<sup>2+</sup> adsorption*, American Journal of Environmental Sciences, 1(2), p. 159 -163,
4. A.Mihaly Cozmuta, L. Mihaly Cozmuta, V. Viman, Gh. Vatca, C. Varga, 2005 – *Spectrometric methods used to determine heavy metals and total cyanides in accidental polluted soils*, American Journal of Applied Sciences, 2(1), p. 358-362