

REP LECOTOX project: An example of FP INCO project to strengthen ecotoxicological research in Eastern Europe

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FP 6 INCO, followed by FP 7 Capacities Work Programmes present an ideal chance for established but sub-optimally equipped research groups from new, candidate and non-EU member countries to fully integrate into the international scientific community (for open REGPOT calls visit http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.capacitiesDetailsCallPage&call_id=222). The overall aim of the Capacities Programme is to enhance research and innovation throughout Europe by optimizing research infrastructure in Europe, enhancing research potential of European convergence and outermost regions, and building strategic R&D partnerships with non-EU countries.

The REP-LECOTOX project (Reinforcement of Research Potential of the Laboratory for Ecotoxicology at the University of Novi Sad Faculty of Sciences (UNFS) <http://www.lecotox.net>) can be seen as one of the success stories of EU capacity building programmes used to strengthen ecotoxicological research in Eastern Europe.

Although ecotoxicological research at UNFS dates back many years, during the 1990s it was patchy and restricted to national and regional funding, insufficient for basic consumables and chemicals needed for proper research. The overall scientific quality (and visibility) constantly failed to reach the level needed to become an equal partner in any of the European scale ecotoxicological research and networking projects. To overcome some of the deficiencies (e.g. fragmentation) LECOTOX was formally established in 2006. Having recognized the great potential of “omic” methods in ecotoxicological research and risk assessment, the multidisciplinary group of LECOTOX (consisting of ecotoxicologists, physiologists, and molecular biologists) made an initial step towards application of genomics-based tools in ecotoxicology. Mainly focused on two topics: (a) endocrine disruption/reproductive toxicity and (b) identification and characterization of aquatic toxicity, LECOTOX decided to combine ecotoxicogenomics with established conventional toxicity tests and traditional function-based biomarkers.

The REP-LECOTOX project achieved the following: upgrading and renewal of S&T equipment, reinforcement of human re-

sources, extensive networking via workshops, exchange of scientific personnel and training of young scientists in some of the finest EU research institutions in the field of environmental research: Helmholtz Centre for Environmental Research – UFZ, Leipzig, Germany; School of Bioscience, University of Birmingham, UK and RECETOX, Masaryk University, Brno, Czech Republic. Several new methods (e.g. DarT test on zebrafish *Danio rerio* embryos) were introduced and modern ecotoxicological concepts (e.g. EDA – effect directed analysis) were adopted. These joint research activities resulted in high quality publications (e.g. Kaisarevic et al., *Chemosphere*, 77(7), 883-1034, 2009; <http://dx.doi.org/10.1016/j.chemosphere.2009.08.042>). Two workshops organized in Novi Sad, „Ecotoxicogenomics: the challenge of integrating genomics/proteomics/metabolomics into aquatic and terrestrial ecotoxicology“ (June 2008) and “Trends in Ecological Risk Assessment” (September 2009) brought together key EU experts in respected fields (all invited presentations available at www.lecotox.net) and research groups from Eastern Europe (Figure 1). LECOTOX scientists could participate in many important international scientific meetings (e.g. SETAC, PRIMO) and several EU initiatives/networks (e.g. COST actions, SedNet, RISKBASE).



Figure 1. 2nd REP LECOTOX Workshop “Trends in Ecological Risk Assessment”, September 21–23, 2009, Novi Sad, Serbia. Invited lecturers: from the top row down, from left to right: Stefan Scholz (UFZ, Germany), Jakub Hofman (RECETOX, Czech Republic), Ivan Holoubek (RECETOX, Czech Republic), Ivana Ivancev Tumbas (UNFS, Serbia), Ivan Grzetic (Belgrade University, Serbia), Ludek Blaha (RECETOX, Czech Republic), Marjan Ahel (Institute Rudjer Boskovic, Croatia), Jos Brils (Deltares, The Netherlands), Jussi Kukkonen (University of Joensuu, Finland), Mikhail Beketov (UFZ, Germany), Radmila Kovacevic (REP LECOTOX project coordinator, Serbia), Armand Beuf (EC DG Research), Tvrko Smital (Institute Rudjer Boskovic, Croatia), Joop Vegter (TNO, The Netherlands), Werner Brack (UFZ, Germany), Brett Lyoons (CEFES, UK), Val Beasley (University of Illinois, USA) and Ivana Teodorovic (workshop organizer, LECOTOX, Serbia). Missing from the photo: Dimosthenis Sarigiannis (JRC, Ispra, Italy) and Katarina Krinulovic (Ministry of Environment and Spatial Planning, Serbia)