

# ALARM PROJECT

**The first research initiative with the critical mass needed to deal with combined impacts and their consequences**

Period: Feb. 2004 to Jan. 2009

Coordinator: Centre for Environmental Research Leipzig-Halle (Germany)

**Abstract :** Based on a better understanding of terrestrial and freshwater biodiversity and ecosystem functioning, the FP6 project "ALARM" aims at developing and testing methods and protocols for the assessment of large-scale environmental risks in order to minimise negative direct and indirect human impacts. In particular, risks arising from climate change, environmental chemicals, biological invasions and pollinator loss in the context of current and future European land use patterns are assessed. The project gathers 80 partners representing 36 countries in Europe, China, South Africa, Southern and Central America. The Belarusian partner gives his point of view of the project.

## Context and Objectives

The ALARM objectives are as follows:

- To develop an integrated large scale risk assessment for biodiversity as well as terrestrial and freshwater ecosystems as a part of environmental risk assessment.
- To focus on risks consequent on climate change, environmental chemicals, rates and extent of loss of pollinators and biological invasions.
- To establish socio-economic risk indicators related to the drivers of biodiversity pressures as a tool to support long-term oriented mitigating policies and to monitor their implementation.
- To develop, for the first time, a research network that is consistently thinking, interacting, and investigating on a continental scale across different environmental problems (impacts) and across different spatial and temporal scales of ecosystem diversity changes.
- To provide a contribution to objective based politics, to policy integration and to derive outcome-oriented policy measures in the field of biodiversity preservation by contributing to the integrated assessment of socio-economic drivers affecting biodiversity and integrated, long-term oriented means to mitigate them. Because of the project complexity several separate research groups have been created within it.

The Belarusian team joined the invasive species (IS) group in 2007 when the theoretical base of invasions within the ALARM has been developed already and the group was entrusted with verifying the theory. The Belarusian team brought to the consortium 60% of the data needed to solve this problem. Thanks to the fact that the territory of Belarus was considerably smaller than of the neighbour Ukraine and Russia they were fortunate enough to cover all the country in 2007 during the 20-days expedition along the Pripjat river. The data received there made the base for 2 publications. The problem of invasive species influence on local flora and fauna is of great importance for Belarus which is a transit country. At the moment there are over 30 invasive species of animals in Belarus from Northern and Central America, New Zealand and China. This number grows up rapidly; that is why the results of ALARM project in assessing the risks of biological invasions are of great importance: we need to plan economic losses in Belarus. Thanks to collaboration within ALARM during 1,5 years the national group considerably moved ahead in investigating this problem. It could take many years if we made that job alone.

## "When gathering high level professionals having different views on the same problem, a balance of interests is essential for the success of the project."

One factor can be mentioned both as a success one and factor of difficulties – having a large number of high level professionals in one team. From one point of view, it gives a huge collection of knowledge and experience that can speed up considerably the decision of the problem. On the other hand, having several people with different views on the same problem and personal ambitions can reduce the positive effect of INCO and needs a special attention to keep a balance of interests. For Belarusian team, IZ-NASB the success factors as scientific background and experience of INCO could be mentioned.

## "Joint work speeds up getting new knowledge many times"

The main benefits for the Belarusian team resulted from cooperation within ALARM are as follows:

- 1) The problem of invasive species influence on local flora and fauna is of great importance for Belarus which is a transit country. At the moment there are over 30 invasive species of animals in Belarus from Northern and Central America, New Zealand and China. This number grows up rapidly. Nevertheless research in the area of biological invasions is supported in Belarus on the national level it could take many years to achieve such the results as ALARM gave if IZ-NASB made that job alone. The results of ALARM project in assessing the risks of biological invasions will be used in the country; they are needed to plan economic losses in Belarus.
- 2) When Belarusian group entered the project in 2007 the theoretical base of invasions within the ALARM has been developed already and the group was entrusted with verifying the theory. It was Belarusian team which gave 60% of the data needed to solve this problem. Thanks to the fact that the territory of Belarus was considerably smaller than of the neighbour Ukraine and Russia the team was fortunate enough to cover all the country in 2007 during the 20-days expedition along the Pripjat River. The data received there made the base for 2 publications.
- 3) Networking and fruitful contacts with ALARM partners, especially within the "water" group on invasive species that made the base for future joint projects.

## Key data

- According to the World Bank, the loss from the biological invasions reaches 120 bln\$ in the US, 80 bln\$ in India, 60 bln\$ in Brazil. In Belarus the assessed value of such wastes is tens of millions of dollars. Invasive species is the second threat for indigenous flora and fauna next to the human impacts.
- Project cost is 16,7 mln Euros with 12 mln Euros EC contribution.
- Website : [www.alarmproject.net](http://www.alarmproject.net)

**"INCO projects give the opportunity to bring together scattered expertise and create new opportunities for collaboration and innovation."**

**4 questions to Dr. Josef Settele, the EU coordinator (Centre for Environmental Research Leipzig-Halle, Germany)**

**Q: You have been part of an INCO project in the scope of the last European Framework Program, FP6. What was the project about? Which countries or regions were part of the project?**

**A:** We included so-called TTC country partners for the last 2 years of the 5-year project : Germany, Sweden, Belgium, Denmark, Italy, UK, Czech Republic. We worked on the integrative assessment of the impacts of climate change, environmental chemicals, biological invasions and pollinator loss in terrestrial and freshwater biodiversity and ecosystems.

**Q: How did you choose your INCO partners? Was the integration process easy?**

**A:** We have collected suggestions from within the consortium; this guaranteed:  
 • links to existing partners (who then acted as tutors);  
 • scientific complementarity to the work going on;  
 • and a broader geographic scope which is important in large-scale risk assessment.

Thus, some of the partners knew them before. Integration was achieved through a tutorial system.

**Q: What were the main benefits/drawbacks of such cooperation for your project?**

**A:** We achieved a much broader geographic scope of our work and also gained from new insights in other ecosystems than the ones covered so far. Drawbacks are only of an administrative type – it took some efforts to get the TTC element of the proposal put into place.

**Q: Would you consider working on a European INCO project again? On which topic?**

**A:** Clearly yes!! FP projects (especially if large enough) give the opportunity to bring together scattered expertise and create new opportunities for collaboration and creation of new ideas. From FP7 I expect strong involvements of INCO countries in order to tackle problems on a global scale.

**"We moved ahead considerably on our research subject thanks to the involvement of all countries!"**

**3 questions to Dr. Vitaly Semchenko (IZ-NAS, Belarus)**

**Q: What was the project about? Which countries or regions were part of the project?**

**A:** Based on a better understanding of terrestrial and freshwater biodiversity and ecosystem functioning, ALARM develops and tests methods and protocols for the assessment of large-scale environmental risks in order to minimize negative direct and indirect human impacts. In particular, risks arising from climate change, environmental chemicals, biological invasions and pollinator loss in the context of current and future European land use patterns are assessed. ALARM unites 80 partners from 36 countries of Europe, China, South Africa, Southern and Central America.

**Q: How did you connect with the EU consortium? What was your role in the project? How easy was your integration in the project?**

**A:** The research group of the Institute of Zoology of the National Academy of Sciences of Belarus headed by Dr. Vitaly Semchenko started investigation of the biological invasions in 2005 in the frame of the national program "Ecological safety" supported by the Ministry of Environment of Belarus. IZ-NASB was invited to join ALARM consortium after the report at the II International conference on biological invasions in Barok, Yaroslavl' region, Russia and finally became its partner as a result of the FP6-2006-TTC-TU Call. IZ-NASB enlarged the research potential of the ALARM "water" group on invasive species and contributed to the assessment of the environmental

risks of the biological invasions. When Belarusian group entered the project in 2007 the theoretical base of invasions within the ALARM had been developed already and the group was entrusted with verifying the theory. There were no problems with integration of IZ-NASB in the consortium. The previous experience of INCO helped the team to get used to the administrative procedures rather quickly.

**Q: What were the main benefits/drawbacks of such cooperation for your project?**

**A:** There are several main benefits of cooperation within ALARM:

- Belarus is a transit country for whom the problem of invasive species influence very important. At the moment there are over 30 invasive species of animals in Belarus from Northern and Central America, New Zealand and China. This number grows rapidly. Despite national funding, it could take many years to reach alone the results we received within ALARM.
- When IZ-NAS entered the project in 2007 the theoretical base of invasions within the ALARM had been developed already and the group was entrusted with verifying the theory. It was the Belarusian team which gave 60% of the data needed to solve this problem. The data received made the base for 2 publications.
- Networking and fruitful contacts were made with ALARM partners, especially within the "water" group on invasive species.

**Partners:** **Germany:** Centre for Environmental Research Leipzig-Halle (UFZ) (Coordinator), Georg-August University of Göttingen, OLANIS Expert Systems LTD., University of Hannover, Potsdam Institute for Climate Impact Research, Martin-Luther-University Halle-Wittenberg, L.U.P.O. GmbH, University of Bayreuth, Department of Animal Ecology I, Mayor de San Andrea; **Bulgaria:** Bourgas University, PENSOFT Publishers; **Chile:** University of Concepcion; **China:** Institute of Zoology- Chinese Academy of Sciences; **Czech Republic:** Institute of Botany, Academy of Sciences of Czech Republic; **Denmark:** National Environmental Research Institute; **Estonia:** Estonian Institute for Sustainable Development, Tartu University, Inst. Of Botany and Ecology; **Finland:** Finnish Environment Institute, Finnish Meteorological Institute; **France:** National Institute of Agronomic Research, University of Versailles Saint Quentin en Yvelines, Centre National de la Recherche Scientifique; **Great Britain:** Natural Environment Research Council, Centre for Ecology and Hydrology, University of Leeds, Biomathematics & Statistics Scotland, Lancaster University, Environmental Science Dept., CAB International, University of Reading, School of Agriculture, The Natural History Museum, London, University of York, ALTER-Net: A Long-Term Biodiversity Ecosystem and Awareness Research Network, University of Edinburgh; **Greece:** University of the Aegean; **Guatemala:** Latin American Faculty of Social Sciences; **Hungary:** Institute of Ecology and Botany of the Hungarian Academy of Sciences; **Ireland:** Marine Organism Investigations, University of Dublin, Trinity College, School of Natural Science, Environmental Services Ireland, Institute of Technology, Sligo; **Israel:** University of Haifa; **Italy:** University of Milano Bicocca; **Lithuania:** Klaipeda University, The Coastal Research and Planning Institute, Institute of Ecology of Vilnius University; **Mexico:** El Colegio de la Frontera Sur; **The Netherlands:** Utrecht University, Butterfly Conservation Europe; **Philippines:** International Rice Research Institute; **Poland:** Jagiellonian University, Institute of Nature Conservation, Polish Academy of Sciences, Centre for Ecological Research, Polish Academy of Sciences, University of Łódź; **Portugal:** University of Evora; **Roumania:** Institute of Biological Research; **Russia:** Zoological Institute of the Russian Academy of Sciences, Institute of Cytology and Genetics SB, RAS, Novosibirsk, V. N. Sukachev Institute of Forest, Krasnoyarsk, St. Petersburg State University, Southern Scientific Centre of the Russian Academy of Sciences; **Serbia:** Centre for the Balkan Biodiversity Conservation, Institute for Biological Research "Sinisa Stankovic", University of Belgrade; **Slovenia:** Centre for Cartography of Fauna and Flora; **South Africa:** University of Stellenbosch; **Spain:** University of Castilla-La Mancha, Center for Ecological Research and Forestry Applications, Autonomous University of Barcelona, Biological Station Donana; **Sweden:** Lund University, University of Umea, University of Stockholm, Swedish University of Agricultural Sciences; **Switzerland:** Swiss Federal Institute of Technology, University of Bern; **Ukraine:** Institute of Biology of the Southern Seas, Odessa Branch.



Interlink is a  
FP6-funded project