

Recommendations of the meeting of the European Platform for Biodiversity Research Strategy

held under the Czech Presidency of the EU
Průhonice, Czech Republic, 19th -22nd May 2009

concerning

WORLD BIODIVERSITY AND EUROPEAN TAXONOMY

STRATEGIES IN TAXONOMY: RESEARCH IN A CHANGING WORLD

Acknowledging the key role played by taxonomy in safeguarding biodiversity and ensuring its sustainable use, the participants of the meeting place high priority on interdisciplinary research to:

1. Reduce the gaps in taxonomic knowledge, through integrative and revisionary taxonomic research that focuses on groups of organisms that are insufficiently studied and lack effective capacity, existing knowledge and appropriate tools;
2. Integrate phylogeny, genetic diversity, evolutionary dynamics, life-history and functional traits to improve our capacity to understand and predict impacts of global change on biodiversity;
3. Improve knowledge of species' occurrence by developing tools to integrate data resources (e.g. taxonomic, climatic, ecological, and geographical) and by developing standardised approaches and modelling tools to enable mapping and prediction of biodiversity patterns;
4. Develop approaches to monitor and predict spatial patterns of genetic and phylogenetic diversity change including the challenges of scaling (e.g. to the global level) and determine taxa/areas of high conservation priority;
5. Develop advanced inventory and monitoring methods (including automated recording tools and specimen barcoding), to efficiently generate the threshold data mass needed for large-scale and detailed analyses of patterns;
6. Improve knowledge on rapid evolution, its taxonomic and ecological determinants, its role in changing genetic and species diversity and its consequences for ecosystems (including adaptive capacity against global change).

To develop the necessary high quality and policy relevant research in taxonomy and systematics, particular attention should be paid to:

- Increase research capacity in developing countries and on less well known groups by engaging in a concerted effort *inter alia* through:
 - targeted training efforts in good practises in (field) sampling, processing and identification of samples and setting up of collections;
 - dedicated partnership programs, involving senior scientists together with graduates and young researchers in research projects, with a longer term perspective for career development;

- Promote the implementation of global and European programs for the discovery, digitisation and mobilisation of biodiversity data, applying rigorous methods for data quality control and general strategy for data digitization prioritisation and gap identification;
- Encourage the participation of citizens in the survey, monitoring and dissemination of biodiversity information;
- Integrate efforts to construct a Global Names Architecture that ensures optimal conceptual cross-referencing of taxonomic concepts to optimise the use and integration of biodiversity data;
- Develop efficient and effective ways to ensure the preservation of voucher material (e.g. specimens and tissue material), taking into account current and future development in molecular and genomic methods;
- Promote the revision of the criteria and guidelines used by funding bodies and organisations for approving research grants, to correctly recognise the academic value of:
 - publishing basic biodiversity data and information on electronic platforms;
 - contributing to national, regional and international database and information infrastructure initiatives and programs;
 - participating in communication and outreach activities aimed at disseminating taxonomic knowledge and products to end users.

These research priorities were derived from the following key considerations:

- Effective collaboration between taxonomy, systematics, evolution science and ecology is urgently needed;
- It is vital that taxonomy and systematics teaching, training and learning be reinforced in Europe and across the world;
- The international context includes activity 19 of the GTI program work (COP decision IX/22);
- The DIVERSITAS bioGENESIS project provides a framework for a global research agenda contributing to this collaboration;
- GEO BON and LifeWatch are significant international and European developments;
- All Taxa Biotic Inventories (ATBI) should be established in more protected areas in Europe.