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D9 Report and online catalogue on existing taxonomic training resources in Europe

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PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Executive summary

European science is facing a tremendous loss of taxonomic expertise as the succession of retiring qualified taxonomists is hampered by reorientation of work and by cuts in staff. Consequently, the passing-on of taxonomic knowledge and skills to a new generation might be decreasing. To evaluate if adequate training opportunities are currently still available to the new generation of taxonomists, EDIT scored today's education in taxonomy and analysed its strengths and weaknesses. This exercise was needed to meaningfully implement the overall objective of WP 8: establishing a European state-of-the-art school of taxonomy.

The training resources for taxonomy in Europe were assessed through the answers of an online survey, from interviews with people involved in taxonomy, and from existing websites and reports. In total, 203 pertinent sets of information on training courses in taxonomy in Europe and 45 from elsewhere were selected from a total of more than 300 contacts. A complete listing of the inventoried trainings can be found in the EDIT Component 8.1.1.

A gap analysis revealed the current status of the training offer in taxonomy in Europe and highlighted the challenges that these training courses have to face in order to meet the standards and needs of the 'twenty-first century' taxonomy. Pertinent issues relate to the accessibility, content, and teaching material of the training courses.

Accessibility of the European training offer

- Information on the training offer in taxonomy is hard to find and fragmented.
- Many training courses are limited to a national audience.
- An important barrier to the promotion of trainings outside the organising country is the language in which it is held. In this respect, it is encouraging that some training providers adapt the teaching language to the audience.
- A large fraction of the trainings is organised by and in universities. Consequently inscription fees for enrolment must be paid to attend the courses and can prevent the attendance of trainees.
- Courses for technicians and amateurs are underrepresented and/or do not specifically address their problems.
- Most of the training courses are organised at least yearly or on demand. However, half of the trainings on taxonomy last for two weeks or more, hampering the participation of trainees who search for a short and intensive training in taxonomy.

Recommendations

- A central portal for the dissemination of information on trainings in taxonomy is crucially missing. The set up of an online catalogue of courses in taxonomy by EDIT, updateable by concerned parties, can be an essential tool to disseminate the information on the training offer in taxonomy.
- EDIT, in dialogue with training providers and organising institutions can assist for promoting:
 - a wider use of a common language (English in most cases) when a training course is designed in such a way that an international audience may attend it,
 - a system of payment by course instead of the full payment for an entire academic programme.
- EDIT has a key role to play in order to inform future trainees on potential sources of funding, including existing European mobility schemes.
- EDIT should promote trainings intended for the technical staff.
- EDIT should promote the development of intensive and condensed trainings that could attract more participants by demanding less time and funding resources.

- **EDIT** should seek more collaboration with taxonomic societies since in several taxa a large proportion of new species and new records are achieved by amateurs.

Content and material of the training offer

- Classic teaching methods like lectures and exercise sessions are popular methods in taxonomical training because they are still the most cost effective and easy to implement. Comprehensive e-learning courses are almost inexistent.
- The integration of taxonomy with other disciplines during the trainings is frequent, since taxonomy is a prerequisite to many other research areas (biodiversity assessment, development of conservation strategies, pest management, ...).
- Half of the taxonomic trainings only teach morphological aspects of taxonomy. The other half takes into account both molecular and traditional approaches. Very few courses address taxonomy using only the molecular approach.
- Half of the trainings do not include teaching on the nomenclatural rules.
- Currently, a majority of training courses focus on arthropods, vertebrates and flowering plants, which does not reflect the whole diversity of life.
- The geographical cover of the targeted taxa is strongly biased towards the Palearctic region, although some institutions from countries with former colonies are active in overseas countries.
- Curation practices are an important component of the training offer.
- Skills linked to the use of informatics in taxonomy are largely developed during the trainings.
- Much of the training material used during training courses is only available to the participants of the training and is not easily distributed by other means.

Recommendations

- E-learning courses have a great potential to teach students in taxonomy while avoiding the costs of travel and subsistence. E-learning initiatives should be promoted by **EDIT** (in collaboration with WP 5).
- More efforts should be put into the production of courses dealing with both the morphological and molecular aspects of taxonomy. **EDIT** can assist to put in touch morphological and molecular training programmes that share a pertinent content to integrate the molecular approach into the traditional taxonomy.
- **EDIT** should promote the teaching of nomenclatural rules since this knowledge is crucial to taxonomy.
- More attention should be given to less studied taxonomic groups having a recognised ecological importance. These taxa can be identified in agreement with the assessments realised within the **EDIT** WP7.
- **EDIT**, together with active players in taxonomy, has to develop North-South, South-North and South-South exchange programmes to train taxonomists because the largest part of the biodiversity that still needs to be discovered lies in the tropical regions.
- **EDIT** should promote:
 - the importance of curation practices as part of the training offer,
 - trainings using new tools for taxonomic descriptions and revisions (link WP6).
- **EDIT** should be a major player to improve the accessibility and exchange of training material, in particular the development of online cooperation between training providers.

The complete report is available at: http://www.e-taxonomy.eu/files/EDIT_Component_8_1_2.pdf

The online catalogue of training resources can be found at: <http://www.e-taxonomy.eu/trainingresources/>