
GERMAN
VIETNAMESE
SCIENCE
DAY
NGÀY KHOA HỌC ĐỨC VIỆT
26 – 27 APRIL 2023
ĐÀ NẴNG

SESSION 2

Workshop

Biodiversity research as a key driver for new technologies and innovative applications

Vietnam has an outstanding rich biodiversity, but essential data are lacking across all domains, hampering conservation & monitoring, sustainable utilization, bioeconomy & innovative applications

- New approaches needed: use of new technologies to catalogue & characterize Vietnam‘s species – emphasis on frugal science
- AI, low-cost sequencing, *Omics* data, robotics & involvement of Vietnamese companies (SMEs)

  Will enable to crosslink into other fields of societal and economic importance: biotechnology, bioeconomy, agro-forestry, health, climate change mitigation

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Successful examples of bilateral cooperation:

1. **ScreenForBio**: joint development for environmental DNA (eDNA) based biodiversity and pathogen discovery, survey and monitoring tools

2. **VIETBIO**: joint biodiversity science training program conveying state of the art techniques for application in Vietnam including the transfer of essential equipment, e.g. for DNA analyses, bioacoustics & data mangement, *Omics*

- Training of 36 Vietnamese scientists in Berlin incl. Vietnamese PhD & MSc students, and technology transfer
- Discovery of novel viruses obtained from eDNA and more than 1,000 new invertebrate species

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Biodiversity research as a key driver for new technologies and innovative applications

New initiatives & approaches:

- Development and implementation of **AI applications for rapid identification** of invertebrates particularly **relevant for agriculture & forestry** sector (pests, pollinators, etc);
- Efficient and **innovative (AI) approaches towards data mining and screening for metabolic, active compounds** & relevant bio-chemicals/substances, especially plant-based;
- **New data, insights and implications for biodiversity conservation** and environmental management, in particular from **semi-automated biodiversity monitoring** (camera traps, sound recording, permanent plots, etc.);
- Developing the future of biodiversity data/information management in Vietnam – for research, bio-economy, and society.