

HORIZON-CL6-DEC-2022-00-00: Building taxonomic research capacity near biodiversity hotspots and for protected areas by networking natural history museums and other taxonomic facilities.

CONCEPT NOTE

RATIONALE

EU member states and associated countries, **often lack permanent taxonomic capacity**, especially in relation to biodiversity hotspots and protected areas, that is essential to adequately shape actionable programmes that ensure biodiversity preservation and sustainability.

The **CETAF community** that unites over 5,000 researchers working at key taxonomic facilities across 22 European countries is fully aware of the need to have a robust knowledge baseline effectively grounded on the expertise of taxonomic researchers. Describing and understanding the natural world is at the core of the mission of this organization that contributes to discover, monitor, manage, preserve and sustain biodiversity.

In the light of this Call, CETAF and its members seek to **develop a project** that coherently unites efforts and resources around taxonomy towards setting a comprehensive picture of current assets, and therefore gaps to fill in, while identifying a roadmap to ensure its consistent improvement and sustainability in the future. To that end, contributions from related agents and relevant actors will be brought in as to include all perspectives and dimensions of the **taxonomic expertise model**, through its life cycle, including: a) generation of taxonomists (academia); b) building and supporting its experience (taxonomic facilities where most of the taxonomists work); c) equipping experts with innovative tools, means and mechanisms also in the digital sphere (data infrastructures); d) training (through a large variety of supporting institutions); e) collaboration in the co-creation of science (namely citizen science initiatives); and f) involvement of all actors interested in efficiently accessing and exploiting taxonomy-related knowledge (such as governmental agencies, administrative and regulatory bodies, policy-making entities, private sector).

The taxonomic expertise is built on top of the **national reference collections of geo- and biological diversity** that are hosted, curated and enriched **at research performing institutions**, including natural sciences and natural history museums, botanical gardens and other biodiversity centres. Collaboration with academic institutions, organizations of citizens and other entities managing, working and operating towards discovering biodiversity and conservation of nature need to align efforts and articulate a common message that sustains the existing taxonomic capacity and sets the mechanisms to allow its improvement and enlargement over the next years.

The **available base of experts** and its envisaged evolution clearly fall far behind the amount and dimension necessary to effectively tackle the current and foreseen challenges in preserving our often

still unknown biodiversity in Europe and beyond. **Actionable programmes** need to be agreed and implemented to expand that critical knowledge base.

Building on the existing CETAF community, the experts in Europe need to be mapped, linked, equipped and mobilised in an effective and sustainable manner to serve all detected needs coming from the scientific community and the society as a whole, and to support the co-creation of new knowledge with citizens. Moreover, the identification of such a European taxonomic workforce will be pivotal for policies and decision-making processes that necessarily are to be scientifically-driven and expert-grounded to be truly impactful, at local, national and European level.

Similarly, to enlarge and support the group of experts, taxonomy and related sciences calls for becoming **centred in the education sphere**, including promoting such expertise along the entire academic career, making it attractive for new generations and stimulating the engagement of new taxonomists in the field. Universities stand as necessary collaborators in the creation and enrichment of taxonomic expertise, with training in taxonomy and biodiversity-related matters needed at a large scale and across disciplines.

The **generation of new tools and mechanisms** that assist taxonomic expertise will be equally a pillar to enhance and improve the knowledge base on taxonomy and systematic biology. The digital transformation our society is immerse in provides incentives same as challenges for the taxonomic community that the CETAF proposal needs to address, taking into consideration the access and use of current and future digital resources provided by research infrastructures (such as DiSSCo), data aggregators (such as GBIF), taxonomic literature and taxonomy publishing (such as BHL), species catalogues and taxonomic backbones (as PESI and CoL) and other related initiatives that cover the entire biodiversity data generation, from description, curation, and management to publication.

ACTION

Conscious of the **herculean effort** that such endeavour implies, CETAF will **narrow down the scope and the scale of action**. Under this Call, the CETAF project aims to support, strengthen, and promote the building of a network uniquely able to identify and mobilise taxonomic expertise specifically around targeted groups, such as endangered species, and groups of particular interest (such as plant-pollinators, soil fauna, freshwater taxa, taxonomic underknown groups or invasive alien species), in all European countries). Likewise, geographic focused areas will be defined as to cover prioritized protected spots and those of other specific biodiversity richness.

Identification guides and methodologies, training programmes, online tools and activities adapted to local needs and resources (by area and by taxa of particular importance, such as endemic, locally-threatened species, those in the Red List, or intra-specific diversity) shall be made available to the scientific communities and societal agents. Strategy of promoting integrative taxonomy should also be considered for bridging publication gaps in taxonomic journals.

The planning and implementation of comprehensive but targeted actions for preserving biodiversity and ensuring its sustainability for the future requires regulatory initiatives, but equally the development of best practices, the alliance of efforts from all involved agents, including researchers, citizens, and policymakers, as individuals as well as members of greater organizations and entities.

A dedicated communication and dissemination plan will be developed to reach various target audiences and stakeholders to raise awareness on the taxonomic work and added value for society. The communication campaigns will target all related audiences to encourage participation in the design and development of a sustainable future for all.

BIOCAPTURE

Capturing inclusive taxonomic expertise to expand biodiversity knowledge