



Growing
ideas
through
networks

COST – Growing Ideas through Networks

Prof. Dr. Paulo Ferrão – COST President



Funded by the Horizon 2020 Framework Programme
of the European Union

COST - 45 years proven track record in research collaboration

- 38 COST Members

Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Republic of Moldova, Montenegro, The Netherlands, The Republic of North Macedonia, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and United Kingdom

- 1 Cooperating Member

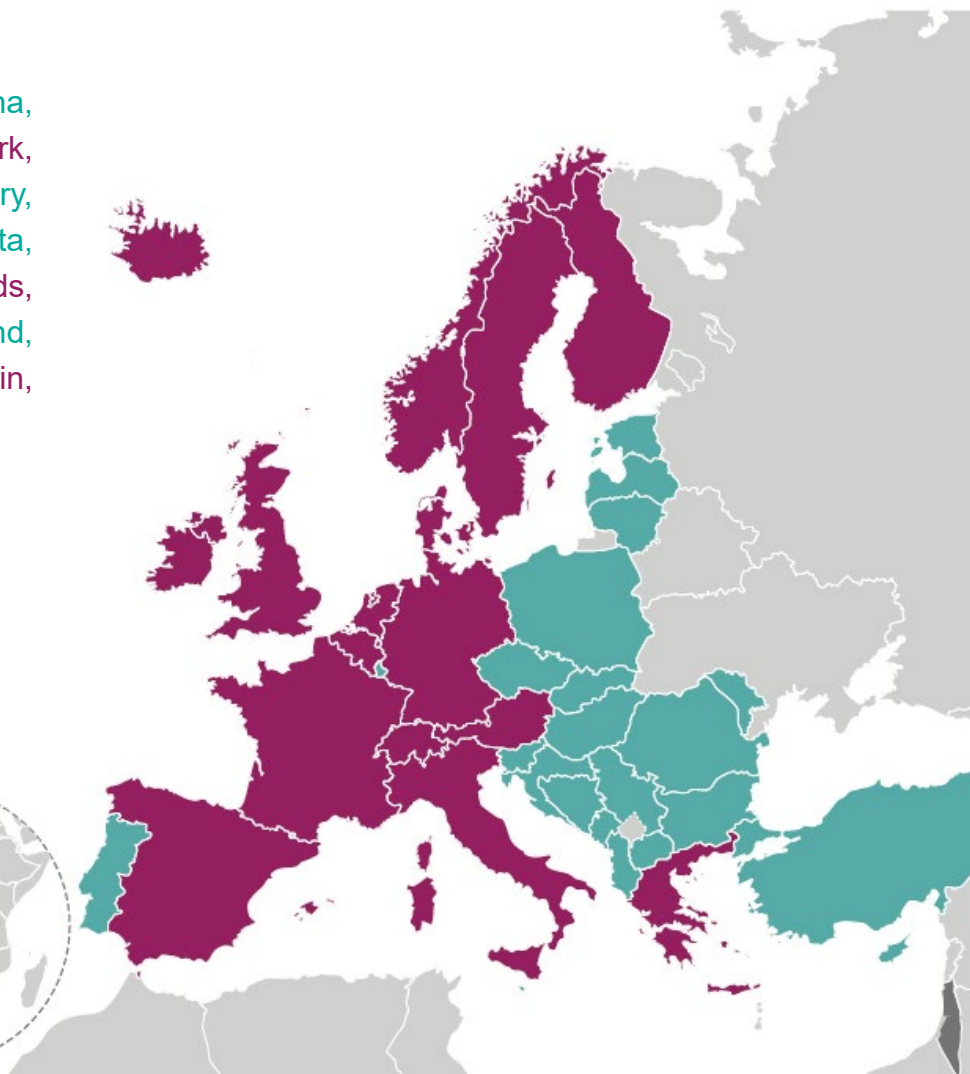
Israel

- 1 Partner Member

South Africa

- Near Neighbour Countries participation

Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Jordan, Kosovo*, Lebanon, Libya, Morocco, Palestine**, Russia, Syria, Tunisia and Ukraine



*This designation is without prejudice to positions on status and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

**This designation shall not be construed as recognition of a State of Palestine and is without prejudice to the individual positions of the Member States on this issue.

- COST Members
- COST Members ITCs
- Other Countries
- COST Cooperating Member
- COST Partner Member

COST key figures of 2018

291 
Running Actions

213 
Training schools

 €134,500
Average annual budget
of a COST Action

 2,457
Short-term scientific missions

 45,000
Researchers involved
in COST Actions

 €300 million
COST budget (from Horizon
2020 for a 7 year period)

COST: The networking tool in the ERA and the pre-portal to other ERA funding schemes

COST Strategic Pillars

- 1 Promoting and spreading excellence
- 2 Fostering interdisciplinary research for breakthrough science
- 3 Boosting careers young researchers

How it works?

COST Action participants
nominated by COST National Coordinators



Main proposer



Secondary proposers



Positioning of COST as leading networking tool in the ERA



Priorities COST Presidency 2019-2021

- Increasing significantly **COST budget under Horizon Europe**
- Critical component of **the future of the European Research Area, the best widening mechanism!**
- **Increasing visibility, maximizing impact**
 - **COST Innovators Grant** pilot (first call January 2020)
 - **Global networking** (after South Africa, explore Partner Membership, Canada, China, etc.)
 - **COST Ministerial Conference** during Portuguese EU Presidency (January-June 2021)

Spreading the impact of science

- Promote networking
 - Be inclusive
 - Bringing together different contexts, results in wider impact!
 - Transform science and knowledge in innovation
 - Impact on society
-
- Sustainable development is about engaging all, particularly those at the margins, in creating new frontiers for the world: respecting the limits of environment, promoting social cohesion and economic development – THIS IS COST !

COST Actions on Water

- COST has 19 running COST Actions on Water topics
- Topics include marine biology, marine energy, tsunami hazards, drinking water problems, aquatic ecosystems, etc.
- All of these Actions include a wide range of countries and stakeholders
- Full overview available on the COST website

COST Actions on Water

Number	Title
CA18234	Computational materials sciences for efficient water splitting with nanocrystals from abundant elements
CA18238	European transdisciplinary networking platform for marine biotechnology
CA18225	Taste and Odor in early diagnosis of source and drinking Water Problems
CA18102	The European Aquatic Animal Tracking Network
CA18109	Accelerating Global science In Tsunami HAZard and Risk analysis
CA16203	Stem cells of marine/aquatic invertebrates: from basic research to innovative applications
CA17133	Implementing nature based solutions for creating a resourceful circular city
CA17120	Chemobrionics
CA17109	Understanding and modeling compound climate and weather events

COST Actions on Water

Number	Title
CA17105	A pan-European Network for Marine Renewable Energy
CA16233	Drylands facing change: Interdisciplinary Research on Climate Change, Food Insecurity, Political Instability.
CA16208	Knowledge Conversion for Enhancing Management of European Riparian Ecosystems and Services
CA16219	Harmonization of UAS techniques for agricultural and natural ecosystems monitoring
CA16209	Natural Flood Retention on Private Land
CA15219	Developing new genetic tools for bioassessment of aquatic ecosystems in Europe
CA15206	Payments for Ecosystem Services (Forests for Water)
CA15217	Ocean Governance for Sustainability - challenges, options and the role of science
CA15121	Advancing marine conservation in the European and contiguous seas (MarCons)
CA15113	Science and Management of Intermittent Rivers and Ephemeral Streams (SMIRES)

DNAqua-Net

- COST Action on “*Developing new genetic tools for bioassessment of aquatic ecosystems in Europe*”
- 36 COST Members involved
- China participates through the Nanjing Institute of Geography and Limnology
- Exchange of ideas and best practices on biomonitoring, taxonomy and barcoding of aquatic habitats, such as the Yangtze River and the Danube

Developing new genetic tools for bioassessment of aquatic ecosystems in Europe

- The protection, preservation and restoration of aquatic ecosystems and their functions is of global importance. In order to assess the ecological status of a given water body, aquatic biodiversity data are obtained and compared to a reference water body. The quantified mismatch thus obtained determines the extent of potential management actions.
- The current approach to biodiversity assessment is based on morpho-taxonomy. This approach has many drawback such as being time consuming, limited in temporal and spatial resolution, and error-prone due to variation of individual taxonomic expertise of the analysts.
- Novel genomic tools can overcome many of the aforesaid problems and could complement or even replace traditional bioassessment. The goal of this Action is to identify gold-standard genomic tools and novel eco-genomic indices for routine application for biodiversity assessments of European water bodies. Jointly with water managers, politicians and other stakeholders, the group will develop a conceptual framework for the standard application of eco-genomic tools as part of legally binding assessments.

CHINA participation

Action number	Country	Institution
CA15104	CN	Beijing Jiaotong University
CA15104	CN	Huawei Device Company
CA15107	CN	Beijing University of Technology
CA15115	CN	Tsinghua University
CA15115	CN	Shenzhen University
CA15125	CN	College of Underwater Acoustic Engineering of the Harbin Engineering University
CA15130	CN	SHUFE
CA15137	CN	Shanghai Jiao Tong University
CA15139	CN	Institute of High Energy Physics
CA15206	CN	Beijing Forestry University
CA15215	CN	Chinese Academy of Agricultural Sciences (CAAS)
CA15219	CN	Nanjing Institute of Geography and Limnology
CA15219	CN	Nanjing University
CA16106	CN	China Agricultural University
CA16108	CN	Peking University
CA16108	CN	Institute of High Energy Physics, Chinese Academy of Sciences
CA16207	CN	Tianjin Mental Health Center
CA16218	CN	Nanjing University
CA16220	CN	Institute of Semiconductors, Chinese Academy of Sciences
CA16220	CN	Shilong Pan
CA17103	CN	Tianjin Medical University
CA18104	CN	Shanghai Astronomical Observatory, Chinese Academy of Sciences
CA18104	CN	Yunnan University
CA18108	CN	Peking University
CA18112	CN	University of Science and Technology of China

CHINA as an International Partner Country (IPC) ?



Minister of Science and Technology,
Prof. Wang Zhigang

IPCs can also partners as from a proposal stage whereby they join the core network and contribute to the elaboration of the proposal as secondary proposals

IPC partners can join the COST Actions following their establishment

In all cases the cooperating partners mutually gain access to knowledge, technologies that could lead to further collaboration for seeking funding, reaching out to new markets and developing common projects.



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