A Distributed Life Sciences Research Infrastructure Supporting Innovation in Marine Sciences

ELIXIR

ELIXIR's mission is to construct and operate a sustainable infrastructure for biological information in Europe to support life science research and its translation to medicine and the environment, the bio-industries and society.

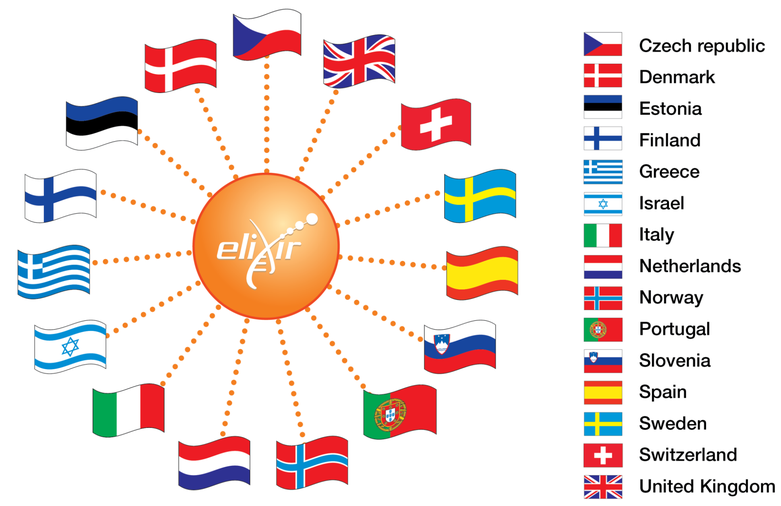
ELIXIR is a distributed Research Infrastructure. It will operate using a Hub and Nodes model, comprising a central co-ordinating Hub and a series of inter-connecting Nodes distributed throughout the participating Member States *(see figure 1)*. Nodes will specialise in services including data provision, compute provision, tools, standards and training.

The ELIXIR Norway Node has a strong focus on fish genomics and as such will deliver a series of key services relating to marine sciences.

A large proportion of ELIXIR's users will come from industry and their primary focus will be to access ELIXIR's bioinformatics resources so that new products and technologies can be developed. *(figure 2)*

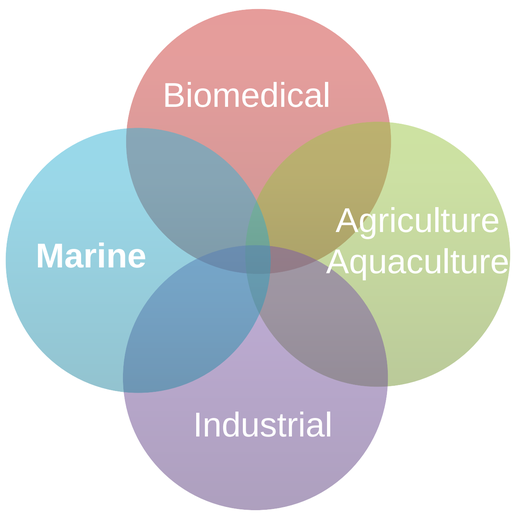
ELIXIR can also act as the repository for data generated on marine related grants funded nationally and at the European level including the emerging Joint Programming Initiatives.

Figure 1: Current ELIXIR Member States



Norwegian ELIXIR Node

Figure : The Norwegian ELIXIR Node will provide services and resources toward marine genomics and metagenomics.



Marine genomics

The Norwegian Node will make available integrated packages geared towards large-scale analysis of marine genomic data (e.g. resource for species-oriented and comparative fish genomics). Provision of web-based solutions for services, toolboxes, and computational access to reference data provided by the ELIXIR infrastructure.

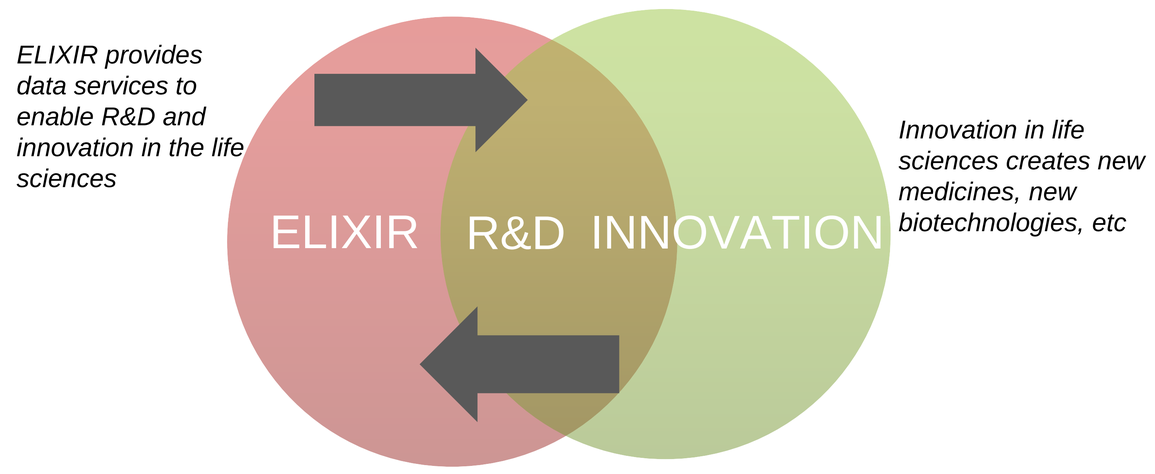
Marine metagenomics and bioprospecting

Within marine metagenomics the Norwegian node will primarily offer analysis pipelines (workflows) for processing, analysis and mining of marine microbial genomics and metagenomics data sets. The workflows will include pre-processing, assembly, annotation, biodiversity estimation, comparative genomics and including pan-genome analysis, and mining of enzymes and pathways.

In relation to marine ESFRI projects, ELIXIR.NO aims to provide solutions for the European Marine Biology Resource Centre (EMBRC).

Supporting Innovation in Marine Sciences

Figure 2: ELIXIR supporting the innovation chain



ELIXIR services will support innovation in marine sciences, supporting researchers in their work to address issues ranging from aquaculture to using marine natural products for pharmaceutical development through to the monitoring of pollution.

A repository for marine related data

- ELIXIR can act as the resource to store marine-based biological data generated through nationally-funded research projects as well as through European programmes such as the Joint Programming Initiatives.
- Research projects funded through the JPI Oceans initiative are likely to generate large amounts of relevant data, which can be preserved, annotated and made available for further use by the ELIXIR infrastructure, ensuring maximum value for taxpayers.

Collaboration with other marine resources

- ELIXIR also coordinates the BioMedBridges cluster project, which links the ESFRI Bio Medical Sciences infrastructures, including the European Marine Biology Resource Centre (EMBRC)

BioMedBridges

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