

# ITALY AS MEMBER OF MIRRI-ERIC AND THE SUS-MIRRI.IT PROJECT

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on behalf of the MIRRI-IT and SUS-MIRRI.IT partners

SUS-MIRRI.IT Research Infrastructure

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## SUMMARY

Italy has recently joined MIRRI-ERIC, the **pan-European distributed Research Infrastructure for the preservation, systematic investigation, provision and valorisation of microbial resources and biodiversity**. The creation of the National Node MIRRI-IT has started in 2017 with the constitution of a Joint Research Unit (JRU) where Italian microbial Culture Collections (mCCs) hosted in several Universities and Research Institutions clustered together to improve their management, implement the provision of services and expertise for industrial partners, increase collaborations with public stakeholders and serve bioscience with excellent quality-certified microbial resources.

MIRRI-IT provides access to high-quality microorganisms (**viruses, bacteria, filamentous fungi, yeasts and microalgae**), metadata, know-how, expertise, cutting-edge technological facilities, and services for the development of **innovative microbial-based solutions for academia and bioindustry**.

MIRRI-IT has obtained a great contribution from the **SUS-MIRRI.IT project** "Strengthening the MIRRI Italian Research Infrastructure for Sustainable Bioscience and Bioeconomy" funded by the European "NextGenerationEU" program for a total budget of approximately 17 million Euro.

SUS-MIRRI.IT is coordinated by the University of Torino and involves 15 Italian Research Institutions organised in 24 Operating Units. Organised in 6 Work Packages (WPs) with over 250 people of permanent staff and 50 hired researchers involved in them, it aims to **strengthen the network of Italian mCCs** facilitating their entry in the National Node and giving them a stronger weight in decision-making processes related to environmental, healthcare, and agricultural policies.

## MIRRI-IT PARTNERS

- **University of Turin**  
(UNITO - TUCC collection)
- **University of Modena and Reggio Emilia**  
(UNIMORE - UMCC collection)
- **University of Perugia**  
(UNIPG - DBVPG collection)
- **National Research Council**  
(CNR - ITEM and PLAVIT collections)
- **San Martino Hospital of Genoa**  
(HSM - ICLC cell bank)



More than 20 other Institutions with their mCCs are associated members in a JRU in the process to sign the MIRRI-ERIC Partner Charter.

## SERVICES

- **Collection, preservation, identification, characterization, and study** of microbial strains. **Multi-omics** approaches and **top-of-the-line platforms** are providing a new perspective on strain authentication, quality control, and accessibility of biological resources for research operators.
- Design and implementation of **microbial processes in food, agriculture, pharmaceutical, and environmental sectors**. Activities include microbial metabolite production, fermentation technologies, environmental microbiology, wastewater treatment, and, eventually, tailored biotechnological applications.
- Provision of **professional training and education programs**, including **workshops, TNA, and technical courses** for different stakeholders. Development of **databases, pipelines, and IT tools** to streamline microbial genomics, metagenomics and bioinformatics. Support for **Open Science, FAIRness data management**, and cross-sectoral **knowledge exchange**.

## SUS-MIRRI.IT

University of Turin (coordinator), Universities of Basilicata, Cagliari, Genoa, Milano Bicocca, Modena and Reggio Emilia, Naples «Federico II», Palermo, Perugia, Parma, Sassari, and Verona, National Research Council - CNR (IBBA, ICB, IPSP, IRSA, ISA, and ISPA), Italian National Agency for New Technologies, Energy and Sustainable Economic Development - ENEA (Brindisi, Casaccia, Portici, and Trisaia Research centres), National Institute of Oceanography and Applied Geophysics (OGS Institute)

## HIGHLIGHTS

The MIRRI-IT national Node arose with the dual objective of **standardizing**, on certified quality criteria, the **management of the Italian mCCs**, to best valorize the resources and skills available in Italy, and to **increase the offer of services and opportunities** for the European scientific and industrial communities.

Joining the MIRRI-ERIC network means to provide a top-trademark to the offer of Italian mCCs due to the improved visibility and voice in the European Research Area (ERA) landscape. Having all the Italian mCCs under the same coordination and allowing the access to the services and distribution of resources and data from a single-entry point, via a unique national catalogue, will boost efficiency, sustainability, and competitiveness.

The strategic impact of MIRRI-IT is:

- **Increased availability of microbial resources** in the ERA (the **Italian catalogue** is extremely rich and unique in microbial genetic diversity with many resources only available here due to the high level of endemism of the country);
- Offer of **innovative research facilities** for advanced microbial analyses (e.g. molecular fingerprinting, strain typing, sequencing, profiling of secondary metabolism);
- Provision of **long-standing expertise** for different types of stakeholders' requests;
- Fostering of scientific and technological development of ERA through the **exchange of knowledge and TNA programs**;
- Boosting of **competitiveness of European products and services** implying the use of microorganisms;
- Inspiration of **industrial research** or implementation of **technological transfer** for the creation of **new bioproduct and bioprocesses**;
- Safeguard of **local microbial biodiversity**;
- Support in **communitarian political decisions** in the agri-food, environmental, and health fields;
- Stimulation for the development of an **innovative, safe, resilient, and environmentally friendly European bioeconomy**;
- Promotion of **civic awareness** on the importance and usefulness of microbial resources in everyday life.

## ACKNOWLEDGEMENTS

