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Abstract

This deliverable describes the outcomes of the trans-national access programme (TNA) offered at the MBA, in terms of: installations available, applications received and user's projects performed (through on-site and / or remote access), users' profile and other stats (country of origin, career profile, type of organization, satisfaction of the services used).



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1. Introduction

Transnational Access in ASSEMBLE Plus is provided to a total of 36 marine stations in 15 countries. In the whole consortium, the stations provide access to a high diversity of marine environments; from the high Arctic (IOPAN) and Antarctic (UKRI-BAS) to the tropics (IUI and NIOZ-CNSI) and the mid-Atlantic ridge (CCMAR and IMAR). Within mainland Europe, access is provided to the Mediterranean, the Atlantic and the Baltic seas. Habitats comprise estuaries (e.g. SZN, ISMAR, CCMAR, AWI, IOPAN, UG), mega-tidal seas (SBR), cold-water coral reefs (KMRS, NUIG, SAMS), brackish seas and sea ice communities (IOPAN, TSZ, ARI, HBS), near-shore deep sea (HCMR, IMEV, NUIG, UGOT, SAMS) and volcanic seeps (high CO₂ – low pH; HCMR, SZN, IMAR). The TA-providing stations (access providers) have modern research laboratories and a wide array of specialized research facilities to support internal and external users. Several of these also have technological backup of nearby university institutions.

This deliverable describes the outcomes of the trans-national access programme (TNA) offered at MBA UK, in terms of: installations available, applications received and user's projects performed (through on-site and / or remote access), users' profile and their stats (country of origin, career profile, type of organization, satisfaction of the services used).

2. Objective

This deliverable intends to show the outcomes of the transnational access programme executed at MBA UK, hence contributing to the ASSEMBLE Plus objectives:

- Enhance transnational access to a coordinated set of state-of-the-art European infrastructures for marine biology and ecology;
- Improve service provision by these infrastructures in line with their areas of excellence in marine biology and ecology, with emphasis on developing novel key enabling technologies and data solutions;
- Strengthen complementarity and interoperability within the consortium and with related infrastructures;
- Lay the logistical and strategic foundations to expand the coverage of the European Marine Biological Resource Centre (EMBRC) in both its scope and its geographical distribution and to consolidate its long-term sustainability.

3. Outcomes of the Transnational Access programme

3.1 Description of the infrastructure

The infrastructure is a partner within EMBRC-UK and comprises the MBA. The MBA infrastructure is housed in the Citadel Hill Laboratory and includes research laboratories, platforms, educational resource centre, advanced training and development centre, the National Marine Biological Library and administrative offices. Ecosystems: estuarine (pristine and contaminated), intertidal and sub-tidal



habitats, the long-term time series stations L4 (Western Channel Observatory) and E1, Research: “Cellular and Molecular Processes Underlying Biogeochemical Drivers” and “Ecosystems, Environmental Change and Science for Sustainable Resources” delivered by PI-level scientists and their research groups, providing associated expertise. Research facilities at MBA: culture and husbandry of marine organisms, molecular biology laboratories, advanced imaging with a speciality in live cell imaging and single cell physiological approaches, environmentally controlled physiological monitoring of phytoplankton cells in the lab and in natural populations, tagging and modelling studies of fish populations, evolutionary studies of nervous systems, plankton bio-mineralization, and novel marine viruses.

3.2 Installations offered

MBA offered access to marine station with a specific set of installations:

- Access to circulating seawater systems
- Access to Ecosystems/Ship
- Access to National Marine Biological Library
- Access to Live cell Imaging
- Access to Cell and Molecular Facilities
- Access to Marine Microalgae Cultures Collection

4. Applications received

4.1. Origin country of applicants

MBA has received a total of 9 applications in the nine calls of TNA. Among these, 8 applicants were based in European countries while 1 applicant came from other non-European countries.

4.2. Applicants profile

4.2.1. Home institution type

Applicants were mostly based in academic institutes (universities: 66.7%; research organizations: 22.2%, SME 11.1%).

4.2.2. Career status

The most recurring career profile of the applicant was Post-Doctoral Researcher.

5. User hosted and their stats

5.1. Projects completed

Overall MBA has hosted 4 projects for a total of 6 users. 4 projects were carried out on-site.

The list of projects completed at *the MBA* is available in “[Appendix 1 – List of user-projects completed](#)” further below.



5.2. Installations used

- Access to circulating seawater systems
- Access to Ecosystems/Ship
- Access to National Marine Biological Library
- Access to Live cell Imaging
- Access to Cell and Molecular Facilities
- Access to Marine Microalgae Cultures Collection

5.3. User satisfaction

Overall, users have positively evaluated the services offered during their on-site access (Very good: 33.3%; Good: 66.6%).

5.4. Projects not completed or cancelled

There was 1 approved project cancelled due to extended COVID travel restrictions and then maternity leave. There was 1 approved project that was only part completed due to extended COVID travel restrictions.

6. Use of resources

Beneficiary / Linked Third Party	PM	short name of the installation(s)	explanations of tasks
MBA	0.34	Access to Ecosystems/Ship	Field support Technician Research Vessel manager
MBA	0.21	Access to National Marine Biological Library	Library Services Manager
MBA	0.20	Access to Live cell Imaging	Imaging scientists and technicians
MBA	1.06	Access to Cell and Molecular Facilities	Research Scientists Cell and Molecular Lab Manager
MBA	0.25	Access to Marine Microalgae Cultures Collection	Cell and Molecular Lab Manager/Curator Technician



7. Conclusion

Overall it was a very successful programme of project visits with some good and interesting outcomes and the potential for future collaborations. Also, the TA visits have undoubtedly help increase the profile of the MBA with the Users institutions.

Being a relatively small institute, the preference was to host research projects which were aligned with MBA current core research programme in order to better form collaborations. The projects were however, quite diverse and interesting outcomes included further advancing the understudied world of algal-fungal interactions potentially leading to further potential funded international collaborative projects (NERC-NSF), and the MBA's expertise on algae model system *E. huxleyi*, provided a unique opportunity for a Researcher to learn and evaluate new and established methods and techniques on assessing algal and viral life cycles. Also from an applied science aspect, a bioprospecting project to find new Structural Colours (SC) from the marine environment from natural nanostructures resulted in advances made on how Structural Colour (SC) forms on marine organisms with the potential aim of leading to methods of creating SC in consumer products.

On the application process, it was not always clear about which infrastructure Users required access to in their proposals but this was normally resolved and agreed through discussions at the "user access contract" negotiation stage. Also, it was apparent with the MBA being a relatively small institute there was a slightly increased burden on resources, both facilities and research staff when hosting visits, however, MBA research staff always very happily accommodated Users and there was never a problem with Users obtaining access to infrastructure or scientific services.

All Users on the Completed projects provided a talk to the wider MBA staff on their projects and their project visits were widely communicated via MBA Communication channels including news articles and social media.



8. Appendices

8.1. *List of user-projects completed at the MBA*

- Project title: STRUCOLR - Searching for Colours in the Marine Environment Plymouth. Users: Dr Colin Ingham, Hoekmine BV (SME) (Netherlands), Services used: Access to Ecosystems in the SW (Ship), Access to Circulating Seawater Systems and Aquaria, Access to Cell and Molecular Facilities, Access to Culture Collection.
- Project title: FungAlBase - combining a culture dependent and independent approach to assess the endophytic diversity in different algal life history phases. Users: Dr Stacey Krueger-Hatfield (Lead), University of Alabama at Birmingham (USA), Guido Bonthond (User2), Geomar Helmholtz Centre for Ocean Research (Germany). Services used: Access to Cell and Molecular Facilities
- Project title: Algal Virus - Preparation of marine algal virus and characterization of virus-host dynamics for structure determination. Users: Dr Carina Büttner (Lead), CEITEC-MU Central European Institute of Technology -Masaryk University (Czech Republic), Miroslav Homola (User 2), CEITEC-MU Central European Institute of Technology -Masaryk University (Czech Republic). Services used: Access to Cell and Molecular Facilities, Access to Live Cell Imaging, Access to Library.
- Project title: MAPOLPHAE-Maternal determination of apical-basal polarity in brown algae. User: Dr Kenny Bogaert, University of Ghent (Belgium). Services used: Access to Ecosystems in the SW. NB: This project was split into 2 visits, the first visit (11/11/2019 to 22/11/2019) was completed but the second visit planned for 09/03/2020 to 20/03/2020 was cancelled due to COVID travel restrictions.

