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Abstract

This deliverable describes the outcomes of the trans-national access programme (TNA) offered at UKRI-BAS, 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 UKRI-BAS, 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 UKRI-BAS, 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 Overview of the access provider

UKRI-BAS is a partner within EMBRC-UK, with the aquarium installations in Rothera and Cambridge.

Rothera:

- Ecosystems: Antarctic benthic ecosystems and LTER sites for plankton and water chemistry – sampled weekly. Research: benthic biodiversity analysis, LTER on water chemistry, iceberg scour, reproductive capacities and metagenomic collection.
- Biological resources: Antarctic biota.
- Research platforms: collection of biota by divers, transport to UK by RRS Ernest Shackleton in cooled transport aquarium facilities, typically at the end of March, arriving the UK early May.

Cambridge: Research platforms: installation 2 acclimation for ≤30 days to aquarium conditions for biota upon arrival from Rothera. Access granted at any time during this window. Installation 3: bench space for short-term (weeks) experimental manipulations. Marine physiological equipment includes Presens oxygen sensing equipment, jacketed tanks and thermocirculators. Services currently offered by the joint UKRI-BAS infrastructure:

Rothera installation: a SCUBA Team gathers benthic biota (0 to -25m). Temporary maintenance in aquarium facilities before transport to UK.

Cambridge installation: acclimation in aquaria and short term working at aquarium facilities. TA visitors access both Cambridge and Antarctica.

Modality of access: Remote Access. TA involved transport of benthic animals from Antarctica. TA to Cambridge includes acclimation of biota in aquarium for ≤30 days and remote access to labs with standard equipment and disposables, and access to aquarium and cooled facilities. Duration of TA to Cambridge installations: 1-4 weeks. Guidance to users has been provided in discussions with UKRI-BAS Liaison Officer.

3.2 Installations offered

UKRI-BAS has offered access to the installation in the following table.

Installation no.	Method of access	Unit of access
Installation 4	Remote collection	remote collection per boat launch



4. Applications received

4.1. *Origin country of applicants*

UKRI-BAS has received a total of 5 applications in the nine calls of TNA (4 accepted, 1 rejected). Among these, 100% of applicants were based in European countries.

4.2. *Applicants profile*

4.2.1. Home institution type

Applicants were mostly based in research organisations (research organizations: 80%; universities: 20%).

4.2.2. Career status

The most recurring career profile of the applicant was Senior at 60% with Post doc at 20% and PhD student at 20%.

5. User hosted and their stats

5.1. *Projects completed*

Overall, UKRI-BAS has hosted 4 projects for a total of 4 users. All projects were carried out on remote access. The main reason for remote access was that, for obvious reasons, travel to Antarctica was not offered on the grounds of logistics and costs. The list of projects completed at UKRI-BAS is available in "[Appendix 1 – List of user-projects completed](#)" further below.

5.2. *Installations used*

The installations used were Remote Access using boat and dive support.

5.3. *User satisfaction*

Overall, users have positively evaluated the services offered (Very good: 100%).

5.4. *Projects not completed or cancelled*

All projects were completed.



6. Use of resources

Beneficiary / Linked Third Party	PM	short name of the installation(s)	explanations of tasks
UKRI-BAS	6.1	Rothera. Natural Environment Research Council, British Antarctic Survey with aquarium installations on the Antarctic Peninsula (Rothera) and Cambridge, UK.	Samples collected and shipped, provided for WP30 – TA19 transnational access to BAS.

7. Conclusion

The access scheme was a useful exercise, which highlighted the limitations of providing remote access in an extreme environment. We realised that due to the nature of the environment we have limited resources (largely manpower), which effectively precludes a formal remote sample supply scheme.

- Experiences gained regarding giving access to users

The only access provided was remote access with collection and preservation of specimens. The main problem was getting the request in time to ship any consumables needed to the Antarctic, which required significant amount of time by someone at BAS to fill in the requisite logistics paperwork. In addition it could take quite a lot of discussion with regard to identifying exactly which specimens needed collecting, as the dive team are not experts in the particular taxa that were requested. Significant UK time was required, but not foreseen, with regard to the remote access bids. It also took significant time for the divers to collect the sample requests, more so than was envisaged.

- Difficulties encountered and overcome

Identifying what to collect and how to preserve the specimens was largely overcome by email discussions and provision of ID guides by the users. With regard to the amount of time required by BAS staff to enable remote access, I think this was a lesson in exactly how much time and effort is involved, which was useful when considering future projects and collaborations.

- Reflections on collaborations or strict service use in terms of benefits for institute and in-house scientists, future collaborations with users

To be honest, the hope for the access scheme was to widen the user community, but all requests came from what we would term “traditional Antarctic users” as 3 users had previously been to, or accessed specimens from, the Antarctic. The CNR application did lead to a joint application to an Italian Antarctic research call, which was not funded, largely because of the timing of the application call and the pandemic. It was disappointing not to develop any collaborations with teams outside the main Antarctic research catchment groups.



8. Appendices

8.1. *List of user-projects completed at UKRI-BAS*

- Project title: Biodiversity and connectivity of Antarctic Polynoida. User: Stephane Hourdez (SBR, France). Services used: Remote access.
- Project title: Marine metabolomics-guided chemical ecology and biodiscovery potential of Antarctic benthic organisms. User: Deniz Tasdemir (GEOMAR, Germany). Services used: Remote access.
- Project title: Comparative neuroanatomy of sea spiders (Pycnogonida): illuminating phylogeny and nervous system evolution in an ancient arthropod group. User: Georg Brenneis (University of Greifswald, Germany). Services used: Remote access.
- Project title: Comparative study on Sponge-associated Prokaryotic communities in RoThera (Adelaide Island, Antarctic Peninsula) and Thetys Bay (Terra Nova Bay, Ross Sea) sub-littoral zones. User: Angelina Lo Giudice (National Research Council (CNR), Italy). Services used: Remote access.

