

The Flanders Marine Institute (VLIZ) and its oceanographic data centre have led the data integration activities in MarBEF. After the project finishes, VLIZ guarantees that no data will be lost. All the original MarBEF data files have been described, frozen and archived in the Marine Data Archive. Based upon the principles and rules of the MarBEF data policy, the data will not leave the repository without the consent of the data owners.

Data that are generated in MarBEF, with EU funding, will become available without restrictions. This is not necessarily the case for other datasets that are owned by the participating institutes and/or other agencies

that funded the data collection. The data systems will remain connected to MarBEF, and VLIZ will provide basic maintenance.

To further develop the systems, new funding opportunities and alliances with other partners will need to be found. VLIZ will also continue hosting EurOBIS and WoRMS, but without extra funding it will not have the manpower for regular updates of, for example, the MarBEF website, the weekly news bulletin, the Open Archive, the mobility portal and the large integrated data systems.

The continuation of MarBEF stands at a crossroads, a defining moment to speed up or

to turn down. The MARS network has survived many storms and we hope it can adopt MarBEF's legacy and organise a new basis for further integrated research.

Ward Appeltans,
MarBEF Data Management Office,
Flanders Marine Institute (VLIZ),
Belgium
Email: ward.appeltans@vliz.be
Email: data@marbef.org

MARBEF PROGRESS

MarBEF Quality Assurance

Quality Assurance update: The MarBEF QA Framework

© Róisín Nash / EcoServe

By **Keith Cooper**

We hope you are aware of the MarBEF QA Framework, an early deliverable of the QA workpackage. The framework is designed to encourage common standards of working across the network. The need for such an initiative stems from a recognition that the adoption of Quality Systems and/or internal in-house QA measures across the MarBEF network was likely to be patchy. The framework is intended not to replace but to complement existing Quality Systems. MarBEF participants are encouraged to abide by the QA framework for all MarBEF projects.

The QA framework comprises 12 sections (outlined below). Adhering to the principles contained within the framework should assure the quality of the research.

● Responsibilities

Individual project responsibilities should be clearly identified and documented. Individual laboratories are responsible for the quality of work they undertake.

● Competence

All personnel associated with the project must be competent to perform the technical, scientific and support tasks required of them. Personnel undergoing training must be supervised at a level such that the quality of the results is not compromised by the inexperience of the researcher.

● Project planning

Written project plans should be put in place for all projects. These plans should include details of the tasks to be performed, who is responsible, and timings.

● Quality control

Required standards are determined for each stage of a process and Quality Control (QC) measures put in place to check attainment.

● Health and safety

All practical science must comply with the relevant health and safety regulatory requirements.

● Handling of samples and materials

All samples should be labelled (clearly,

accurately, uniquely and durably). The storage and handling of the samples and materials should be as specified in the project plan (or proposal) and must be appropriate to their nature. If the storage conditions are critical, these must be monitored and recorded.

• Facilities and equipment

All equipment must be appropriate for the measurements to be made, calibrated if necessary, and be in good working condition.

• Documentation of procedures and methods

All the procedures and methods used in a project must be documented. This includes analytical and statistical procedures and the generation of a clear audit trail linking secondary processed information to primary data.

• Research/work records

All records must be of sufficient quality to present a complete picture of the work performed, enabling it to be repeated if necessary.

• Data integration

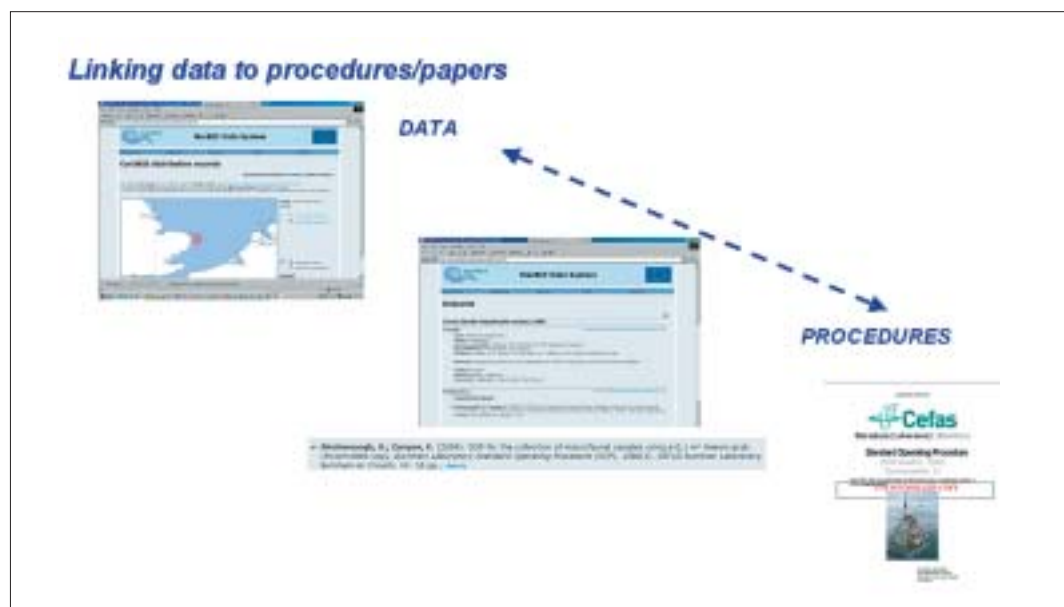
It is the responsibility of both data providers and users to determine whether data is 'fit for use.' For example, whilst all data can be regarded as being of poor quality if not collected in a scientifically robust way, 'data quality' also refers to 'fitness for use' and hence data may simultaneously be of high and low quality depending on how they are to be used.

• MarBEF QA Framework Register

In addition to the framework, a QA Framework Register has been created, <http://www.marbef.org/qa/framework.php>. The register is a list of those organisations that agree to abide by the principles contained within the framework. This public declaration sends an important message regarding quality to those outside of the MarBEF network. To add your organisation to the register, please e-mail keith.cooper@cefas.co.uk.

Organisation name

Centre for Environment, Fisheries & Aquaculture Science, UK
Flanders Marine Institute, Belgium
Consejo Superior de Investigaciones Cientificas, Spain
National University of Ireland, Dublin, Ireland
Institute of Marine Biology of Crete, Greece
The Marine Biological Association of the United Kingdom, UK
Netherlands Institute of Ecology; Centre for Estuarine & Marine Ecology
Plymouth Marine Laboratory
University Court of the University of St Andrews
Danish Institute for Fisheries Research
Ghent University
Royal Netherlands Institute for Sea Research
Christian Albrechts University, Kiel
Consorzio Nazionale Interuniversitario per le Scienze del Mare
Ecological Consultancy Services Ltd



• MarBEF Procedures database

One of MarBEF's major aims involves the integration of existing and new data to address 'larger questions' which could not be achieved by partners operating in isolation.

Disparate datasets are the building blocks of this work and the integration of this information can present a significant challenge. For example, methodologies can differ, both between laboratories and over time, and this may have implications for the comparability of data. We therefore need to ensure that the differences between datasets are real and not simply an artefact of the different methods used.

With this in mind, the MarBEF data management systems, in addition to storing data, also allow for the storage of procedural documents. We therefore encourage data providers to also submit any associated procedural documents (e.g. Standard Operating Procedures). In addition, we encourage data users to use this additional information to help ensure that data is used appropriately.

QA checklist

Here are a few ideas about how you can take account of quality assurance in your work:

1. Have a look at the MarBEF QA Framework and consider adding your organisation to the register (see www.marbef.org/qa/framework.php).
2. Have a look at the MarBEF QA webpages providing details on existing QA schemes (www.marbef.org/qa/schemes.php). Consider joining the BEQUALM/NMBAQC scheme (www.NMBAQCS.org).
3. Need help writing a Standard Operating Procedure? Check out the template and guidance at www.marbef.org/qa/docs.php.
4. Take a look at the tools available to assist with data management and quality control for (marine) biodiversity data (www.marbef.org/qa/dm.php).
5. Learn from others. Check out the QA initiatives of others in the network (www.marbef.org/qa/rmp.php).
6. Keep up to date with the ICES/OSPAR/HELCOM Steering Group on Quality Assurance of Biological Measurements (www.ices.dk/iceswork/wgdetail.asp?wg=STGQAB).

Keith Cooper,

Centre for Environment, Fisheries and Aquaculture Science,
Burnham Laboratory,
Remembrance Avenue, Burnham-on-Crouch
Essex CM0 8HA, UK
Email: k.m.cooper@cefas.co.uk