

Maximising uptake by opening access to research: The BlueBRIDGE endeavour

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Open Science is emerging as a force that by democratizing access to research and its products will produce advantages for the society, economy and the research system, e.g. “more reliable” and efficient science, faster and wider innovation, societal challenges-driven science. BlueBRIDGE is a European funded project realizing the Open Science *modus operandi* in the context of Blue Growth Societal Challenge. The overall objective of this project, starting from September '15 and running over a 30 months timeline, is to support capacity building in interdisciplinary research communities. These communities are principally involved in increasing scientific knowledge on marine resource overexploitation, degraded environment and ecosystem. Their aim is to provide advices to competent authorities and to enlarge the spectrum of economic growth opportunities. BlueBRIDGE will implement and operate a set of Virtual Research Environments (VREs) facilitating communities of scientists from different domains (e.g. fisheries, biology, economics, statistics, environment, mathematics, social sciences, natural sciences, computer science) to collaborate in their knowledge production chain, from the initial phases, data collection and aggregation, to the production of indicators. These communities involve EU and International world-renowned leading institutions (e.g. ICES, IRD, FAO, UNEP) that provide informed advice on sustainable use of marine resources to their member countries. Furthermore, the communities also include relevant Commissions of international organizations, national academic institutions and small and medium enterprises (SMEs).

VREs are innovative, web-based, community-oriented, comprehensive, flexible, and secure working environments conceived to serve the needs of science [2]. They are expected to act like “facilitators” and “enablers” of research activities conducted according to open science patterns. They play the role of “facilitators” by providing seamless access to the evolving wealth of resources (datasets, services, computing) - usually spread across many providers including e-Infrastructures - needed to conduct a research activity. They play the role of “enablers”, by providing scientists with state-of-the-art facilities supporting open science practices [1]: sharing, publishing, and reproducing comprehensive research activities; giving access to research products while scientists are working with them; automatically generating provenance; capturing accounting; managing quota; supporting new forms of transparent peer-reviews and collaborations by social networking. The development of such environments should be effective and sustainable to actually embrace and support research community efforts.

In this presentation, we described the set of VREs that will be developed and operated to serve four main scenarios of BlueBRIDGE: (i) Blue assessment; supporting the collaborative production of scientific knowledge required for assessing the status of fish stocks and producing a global record of stocks and fisheries, (ii) Blue economy; supporting the production of scientific knowledge for analysing socio-economic performance in aquaculture, (iii) Blue environment; supporting the production of scientific knowledge for fisheries & habitat degradation monitoring, and (iv) Blue skills; boosting education and knowledge bridging between research and innovation, in the area of protection and management of marine resources. BlueBRIDGE builds on the D4Science infrastructure and the gCube technology to operate the VREs by aggregating the needed data, software and services.

Links, references, publications, etc.

- [1] M. Assante, L. Candela, D. Castelli, P. Manghi, and P. Pagano. Science 2.0 repositories: Time for a change in scholarly communication. *D-Lib Magazine*, 21(1/2), 2015.
- [2] L. Candela, D. Castelli, and P. Pagano. Virtual research environments: an overview and a research agenda. *Data Science Journal*, 12:GRDI75–GRDI81, 2013.

Primary authors: CASTELLI, Donatella (Consiglio Nazionale delle Ricerche (CNR) - ISTI); Dr CORO, Gianpaolo (CNR); CANDELA, Leonardo (ISTI-CNR); PAGANO, Pasquale (CNR)

Presenter: Dr CORO, Gianpaolo (CNR)

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