



Assessing economic impacts of environmental research infrastructures: overview of methodological tools

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Environmental research infrastructures (ENVRIs) have become essential information providers for the management of environment sensitive industries such as farming, fisheries, offshore oil platforms, air transport, shipping and tourism. The data generated by these infrastructures are key material to forecast the environmental conditions of these activities' growth.

The decision over how much to invest in an ENVRI development project depends on its present and expected economic value. This value results from the costs incurred, and the benefits generated, by the project. The issue is then how to assess these costs and benefits in terms of value, time frame and impacted activities. Usually the main components included in the assessment are: a) RI development costs; b) benefits gained from improving environment forecasting capacity and avoiding damage costs for environment sensitive activities; c) economic impacts from the project on equipment suppliers and RI product users.

We focus on these components and make a survey of the assessment methods, exemplified by an ocean-related case study: the Argo in-situ ocean observing system, developed at global scale.

We analyse three major impact categories: 1) upstream impacts from ENVRI development on facility and equipment supply activities; 2) downstream impacts on ENVRIs' value added service supply to end users; 3) feedback impacts on environment in terms of damage mitigation and risk avoidance resulting from the combined development of ENVRIs, upstream supply businesses and downstream services.

Each of these three categories requires a specific approach, including business data collection, national accounts statistics, as well as performance metrics designed for marine instruments and ocean observation and forecast. Therefore, from a methodological standpoint, a comprehensive analysis of the value arising from ENVRIs' development is necessarily based on a diversity of economic tools.