

The Portuguese Hydrographic Institute (Instituto Hidrográfico (IH)) is a public organization with the following roles: national hydrographic office, marine observation and marine technology national laboratory and a Portuguese Navy unity.

The main activities are:

1. Nautical Charts production;
2. National authority for Hydrographic Chart production;
3. National coordinator for Maritime safety information;
4. Ocean observation: chemistry, oceanography and marine geology;
5. R &D in marine domains: observation technology, marine data and monitoring.

As public body and data producer IH is aware about the Open Data Directive and the INSPIRE. IH is involved and works in several data sharing projects to build and keep European infrastructures: EMODnet, SeaDataCloud, JERICO-RI, EuroGOOS, Those pan-European initiatives are by nature strongly connected with the Green Deal Space, blue economy and Sustainable Development Goals by making marine data accessible and interoperable to european citizens and researchers. Several of this project are keep running through R&D funding and timely initiatives. This kind of funding model supports the implementation of infrastructures but not the long run.

IH as data producer and provider invests a lot of resources to keep the observation sensors network operational and to maintain long time series of observation data and update Near Real Time observations. This investment is also made for chart production and maritime safety information. IH invests to keep update systems\equipment's, to keep an IT infrastructure to manage and store all data alive. IH develops an internal HR capacity building program to maintain their competency align with the best practices. For all of this IH is **partially** funded by public budget but needs to get the remaining part of its budget from commercial activities such as nautical charts and publications' revenues, hydrographic and monitoring services, R&D projects funding support and royalties from products intellectual property.

Particularly, official nautical chart data is very sensitive regarding the open data directive because its specification and permanent update mechanisms are focused on the safety of navigation (one dedicated purpose). Also, several hydrographic offices' budget, such as IH, depend on its chart sales revenues to be able to operate.

The alternative for chart data to be used for purposes other than the safety of navigation is already in place. Hydrographic data is already being made available for free via the EMODnet portal and services.

For all of those reasons IH believes that the **European Strategy for data** should address the multiplicity of data producers (DP) funding models and heterogeneity of the data policy and governance. The strategy should clearly address and provide recommendations about the ways and alternative models to keep public DP activity sustainable. A data economy and a data-driven society needs validated and robust data and data providers.

For example: maritime shipping activities needs for highly quality data with authenticity certification of originator, this data with special quality requirements has a high production cost and must be produce by one certified producer to prevents accidents with a high economic and environmental costs. How will open data directive implementation address this issue?

For sure the public data producers will notice a funding shift when public sector highly quality data and HVDs starts to be available as free and open access. It is important to correctly identify these impacts and mitigate them.

Normally it is referred that HVDs data public producers receive public funding for the data productions and for this reason those data should be freely and open available. However, data acquisition is one of the equation variable in data production and reuse chain. A hypothetic automatic reuse network implementation needs a strong investment at all levels: in sensors infrastructures to collect data and monitoring the environment (remote sensing is important but doesn't replace the high quality in-situ observation used for its regular calibration), IT infrastructure to storage data/information and data services support, contract services or invest in HR education to have highly skills data science and data management employees plus the need for adaptation (introduce new models, tools and standards). Not all are possible to be replaced by machine processes and all are part of the cost equation.

IH strongly recommends the promotion of discussion, the involvement of public and reference national Data Producers - potentially the principal HVDs Providers (e.g. national data centers in the several domains), and the implementation of tools for impact analysis at all levels and risk mitigation. Only this way it will be possible to correctly identify all issues associate with multidimensional reality of data market and define cross-sectors and cross-domains data-driven strategic plan.