

## Mare Geneticum: Building Blocks for the Governance of Marine Genetic Resources in Areas Beyond National Jurisdiction

Broggiato, Arianna, Thomas Vanagt, Laura Lallier, Marcel Jaspars, Geoff Burton, and Dominic Muyldermans. 2018. "Mare Geneticum: Balancing Governance of Marine Genetic Resources in International Waters." *International Journal of Marine and Coastal Law* 33 (1): 3–33;<sup>1</sup> to be republished in David Freestone (ed) "Conserving Biodiversity in Areas beyond National Jurisdiction" Brill, 2019.

### Executive summary

A fair and effective regime regulating benefit-sharing of marine genetic resources (MGR) in areas beyond national jurisdiction (ABNJ) must consider the inclusion of developing states, support scientific research and safeguard investments of the private sector. The present innovative proposal ensures a delicate balance through an approach based on open access, albeit with limitations. Access to MGR in ABNJ is facilitated, but conditional on the public release of collected samples and raw data. Adoption of the open access principle guarantees a powerful form of non-monetary benefit-sharing. The balance is maintained by the option for an extended embargo period, allowing samples and data to be kept confidential for a certain period, against payment to a biodiversity contribution fund.

#### **Access:**

In our proposal *in situ* access to MGR in ABNJ is facilitated through a simple notification step: the Obligatory Prior Electronic Notification (OPEN). The online notifications submitted by (prospective) users should be managed by the international organisation that will likely be established or mandated by the ILBI. However, the user must accept (through a click wrap agreement containing a viral clause thus imposing the same conditions of use to the subsequent users) certain conditions for the OPEN to be recorded: the obligation to share non-monetary and monetary (if and when applicable) benefits arising from the utilisation of the MGR. The OPEN is the starting point of a track-and-trace system that can benefit both the users and the regulator (See Figure 1).

#### **Benefit-sharing:**

The main non-monetary benefit is based on the open access (OA) principle: releasing samples and raw data (metadata and, if applicable, genetic sequence data and biochemical data) to the public domain through openly accessible biorepositories and databases. Connecting various collections around the globe will strengthen existing and newly created networks of biorepositories, or "common pools" of MGR.<sup>2</sup> Their coordination, coupled with the OA approach, will therefore facilitate *ex situ* access, as easily as *in situ* sampling, through the same OPEN system.

---

<sup>1</sup> Arianna Broggiato and Thomas Vanagt are equally contributing first authors. For questions, contact: [thomas.vanagt@abs-int.eu](mailto:thomas.vanagt@abs-int.eu) [Arianna@broggiato.it](mailto:Arianna@broggiato.it)

<sup>2</sup> Broggiato *et al.* (n 20), at p. 181; T Greiber, 'Common pools for marine genetic resources: a possible instrument for a future multilateral agreement addressing marine biodiversity in areas beyond national jurisdiction', in EC Kamau and G Winter (eds.), *Common Pools of Genetic Resources – Equity and Innovation in International Biodiversity Law* (Routledge, London and New York, 2013), 399-414, at pp. 407-411; G Wright, J Rochette and T Greiber, 'Sustainable Development of the Oceans: Closing the Gaps in the International Legal Framework' in V Mauerhofer (ed.), *Legal Aspects of Sustainable Development* (Springer International Publishing, Switzerland, 2016) 549-564, at p. 556.

To safeguard the interests of scientists and of commercial users, limitations to the OA principle can be awarded via an embargo period which will allow a user to keep material and data private for a certain period, e.g., to secure confidentiality while publishing the first results of research or while applying for a patent. When needed, the embargo could be extended, triggering the payment of an exclusivity fee as a counterpart. This will allow users to further advance their research and to safeguard their investments, without preventing other users from doing R&D on the same MGR.

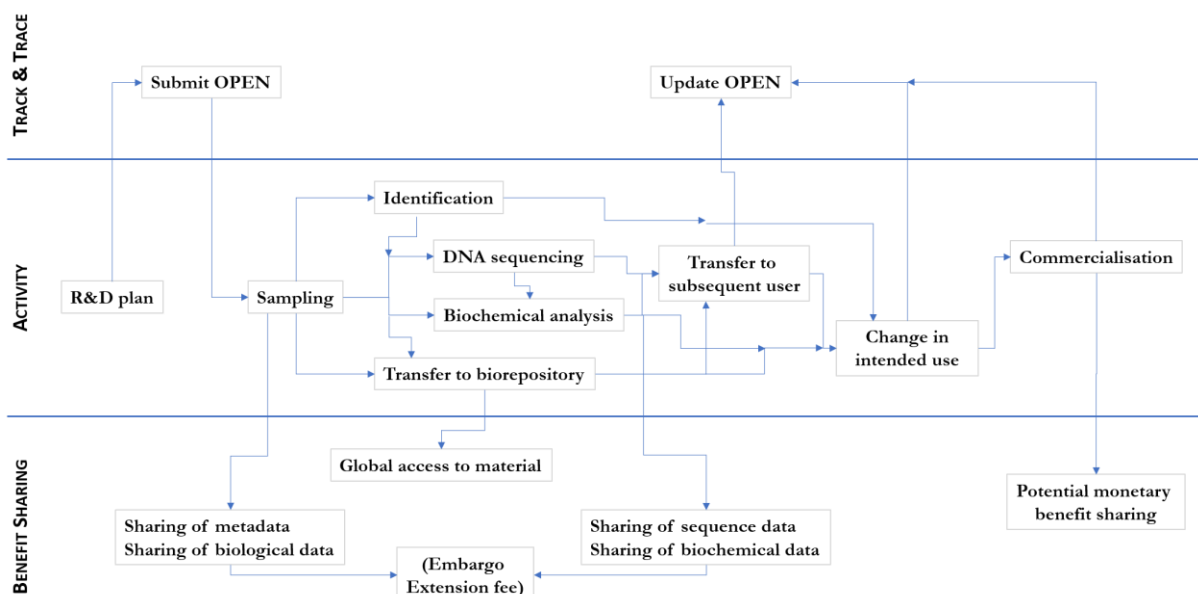
If monetary benefits, additional to the exclusivity fee, would be agreed upon/prescribed by the ILBI, we suggest these to be linked to the commercialisation of a product derived from MGR coming from ABNJ, and not to the act of research and development (R&D) itself. In this case, to reduce the transaction cost and to maximize predictability, which are necessary to attract investments from the private sector, a fixed percentage would be preferable over case-by-case negotiations.

The *Mare Geneticum* approach thus offers three possibilities to users:

- ✓ Open Access to MGR and data;
- ✓ Embargo period (relatively short);
- ✓ Exclusivity subject to payment (extension of the embargo period).

**Compliance:**

Compliance will be ensured through the centralised system of the OPEN registry whereby reports and additional conditions arising during the lifespan of MGR and data utilisation will be kept and tied to it, enabling easy tracking and tracing.



**Figure 1:** The flow diagram of Mare Geneticum. The diagram is not intended to give a complete picture in terms of access and benefit-sharing options associated with utilisation of MGR from ABNJ. For example, this figure does not capture all types of benefit-sharing options such as technology transfer or capacity building.