



Klaudija Cremers – “The ongoing negotiations at the United Nations for a new marine biodiversity treaty provide a unique opportunity to ensure that everyone benefits from exciting advances in marine biotechnology.”

As new technologies and scientific methods to sample and study the Ocean are rapidly developing, scientists and companies have become increasingly interested in exploring the genetic diversity of the underwater world. Bioprospecting, the search for marine genetic resources (MGRs) of potential commercial value, is not regulated international waters, but ongoing United Nations (UN) treaty negotiations could change the governance landscape.¹ Klaudija Cremers, Research Fellow in International Ocean Governance at the Institute for Sustainable Development and International Relations (IDDRI)² in Paris talked to us about the biotechnology prospects and outstanding issues in the final stages of the treaty negotiations.

Marine biotechnology, what are the prospects?

Biological samples used in marine scientific research are collected for a variety of scientific fields, including taxonomy, ecology, conservation biology and climate change research. Organisms living in the deep sea are especially interesting to researchers and the private sector, because they have evolved unique characteristics to survive in extreme environments.

Genetic information from these organisms has already been used for the development of commercially valuable pharmaceuticals and cosmetics. Enzymes from sponges have been used to fight some types of cancer, microbial infections and inflammation. The first COVID-19 drug authorized in the EU was derived from sea sponges. Nonetheless, it is difficult to give an indication of the market value of MGRs: the commercialization process is costly and challenging, as research takes place in deep and distant waters, and it can take several years to create a commercial product from a biological sample.

Why is it so urgent to regulate marine genetic resources in areas beyond national jurisdiction (ABNJ)?

The use of genetic resources collected within a State's national waters is regulated by the Nagoya Protocol to the Convention on Biological Diversity, which turned pre-existing ethical norms and established good practice into binding legal obligations. In ABNJ, there is no such regulation, which means that States with advanced technological capabilities are free to exploit these common resources, with no obligations to share the profits, protect the marine environment, or assist other States

¹ <https://www.un.org/bbnj/>

² <https://www.iddri.org/en>



in developing their research capacity. Almost all MGR patents (98%) have been registered by actors from just ten countries, with Germany (49%), the United States (13%) and Japan (12%) leading the charge.

The negotiations have been characterized by an ideological divide: many developed States argue that MGRs are part of the longstanding “freedom of the high seas” principle, leaving them to be exploited on a “first come, first served” basis; whereas many developing States argue that MGRs are part of the “common heritage of mankind”, which would require that the benefits of exploiting MGRs be shared between all nations. Developing States strongly argue that a new treaty should prioritize development of their research capacity and ensure that all countries can access MGRs and the results of scientific research. However, some scientists are concerned that a treaty may impose new obligations, such as requiring them to obtain permits and share data, which could constrain future research.

How advanced are the international negotiations?

The latest draft text of the treaty of November 2019 still contains many provisions in brackets, waiting for States to reach a consensus and choose between a range of alternative options.³ How MGRs should be regulated in the future remains the key point of contention, because of the stark ideological divide between developed and developing countries. But this deadlock could be overcome if negotiators focus on the practical aspects of a benefit-sharing regime, such as how (e.g., who is responsible for monitoring the use of MGRs?), when (e.g., at what point will the obligation be triggered?) and what kinds of benefits (e.g., monetary or non-monetary, such as access to samples and the sharing of information) will be shared.

For the moment it remains unclear how ambitious and practical the text of the agreement will be. However, it is clear that the negotiators can use this unique opportunity to establish minimum ethical standards for future marine scientific research that could benefit all.

Interview by Lauriane Gorce, Scientific Director of the Institut de la technologie pour l'humain – Montréal

³ Read IDDRI's study published in January 2020 [“A preliminary analysis of the draft high seas biodiversity treaty”](#), Klaudija Cremers, Glen Wright, Julien Rochette (IDDRI), Kristina Gjerde (IUCN), Harriet Harden-Davies (University of Wollongong)