

COMMON HERITAGE OF MANKIND
WHEN SCIENCE CHALLENGES LEGAL CONCEPTS

ABSTRACT

By demonstrating the role of marine organisms in the formation and composition of deep-sea mineral resources, the aim of this poster is to demonstrate that legal definitions can sometimes be relatively simplistic and limited. Considering that on the deep seafloor, the meaning of legal terms can determine the applicable legal regime, this study represents an important aspect of academic legal research. The overall goal is to introduce the interpretation methodology that will be used in the author's PhD research project on the legal framework of deep-sea mining.



Fig.1: Division of international maritime spaces and their governing principles.

INTRODUCTION: WHAT IS THE COMMON HERITAGE OF MANKIND?

On the 10th December 1982, after a 10 years long negotiation process, the **United Nations Convention on the Law of the Sea (UNCLOS)** was adopted, a global framework that aims at organising maritime spaces and activities occurring at sea. However, it took twelve more years before its effective entry into force on the 16th November 1994, all because of one legal concept for which consensus could not be reached: **the Common Heritage of Mankind (CHM)**.

But what is this? Well, the legal framework set by UNCLOS divides the international waters into two zones, ruled by two opposite principles (see fig.1):

- On the one hand, the resources found in the high seas are considered **res nullius**, and ruled by the concept of **freedom of the high seas**. In other words, the marine organisms do not belong to anyone, and if one catches a fish it becomes one's property (Part VII UNCLOS). **It sounds logical, but...**
- On the other hand, the mineral resources of the seafloor are **a res communis**, a common good ruled by the CHM. Thus, **"mankind" possesses rights over them**, and anyone who collects a rock from twenty thousands leagues under the sea owes humanity for depriving it from a part of its heritage (Part XI UNCLOS). **Wait... What ?**

That is right. The CHM status found in UNCLOS is unique. With a legal framework that grants the right for future generations to receive this heritage, and the obligation for current generations to transmit it with as little damage as possible, rules for a good management were set (KISS 1985).

As we approach the 20th anniversary of the entry into force of UNCLOS, the CHM principle is still the subject of vivid debates on the international stage. The discussions are particularly animated in the context of the fast rising sectors of deep-sea mining, and even more so, bioprospecting. Why?

Because the CHM only applies to mineral resources, says the UNCLOS (art.133).

However, when reading the UNCLOS provisions *stricto sensu* some organisms should be a CHM too. Lawyers' life would be too easy if it were not for Nature (§1). That is why, although legal research is all about the meaning of words, a lawyer cannot conduct research on a topic without taking into account the context behind it and the evolution of scientific knowledge (§2). Especially not in the deep sea, where a lot remains to be discovered.

§1 A VAIN ATTEMPT TO SEPARATE MINERAL AND BIOLOGICAL RESOURCES

The UNCLOS provisions do limit the application of the status of CHM to the following:

The Area and its resources are the common heritage of mankind. (art. 136)

Based on the two following definitions, the international community considers that marine life is explicitly excluded from the status of CHM. Only, if one looks at the wording *stricto sensu*, it is not that simple to separate minerals from organisms. Let us explain by focusing on nodules fields.

"Area" means the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction.(art. 1. 1. (1))

According to the UNCLOS definition, the Area consists of the seafloor and the subsoil, which benefit from the status of CHM. But what is it actually made of ? Well, like terrestrial ground, it is made of rocks, sand or else, depending on the location. In other words sediments, thus minerals. Yes, but...

There is actually a diversity of **organisms that live IN the sediments**, called the **endofauna** (DYMENT *et al.* 2014, p.393 et seq.). Polymetallic nodules are found on abyssal plains of which the seafloor is made of soft sediments. Studies in the Clarion-Clipperton Zone of the Eastern Pacific have sampled a variety of macro-endofauna ($\pm > 300\mu\text{m}$) and meio-endofauna ($\pm 63\mu\text{m} > 300\mu\text{m}$) in the sediments of nodules fields (MENOT 2005; MENOT *et al.* 2012).

In the background of this poster are pictures of some specimen collected during Ifremer BIONOD sampling cruise in 2012.

The results of these scientific missions prove that there is much more than just soil and subsoil to the Area than what the UNCLOS drafters (and many others) might have thought.

Consequently, given that the seafloor and subsoil constitute the Area, and that in the seabed **both sediments AND marine organisms are found**, both these types of components should be qualified of CHM in accordance with article 136 of UNCLOS. If one reads the law *stricto sensu*, that is.

"Resources" means all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules.(art. 133 (a))

Studies have shown that nodules, which are the primary reason for creating the principle of CHM, originate from a biogenic process called redox reaction (WANG *et al.* 2009).

More precisely, it is the settlement of bacteria around sand gravel that Allows the growth of these little potato-size rocks, through biomineralization Mineralization that results in a shell around them (fig. 2). The accretion process that follows Will eventually lead to the formation of the final nodule that is targeted by the mining industry.

This clearly demonstrates that organisms and minerals are sometimes **so intrinsically linked that the attempt of UNCLOS to separate them can be considered vain**.

Indeed, by providing that polymetallic nodules the CHM, then according to UNCLOS these bacteria fall under the CHM regime.

But is that so, really ?

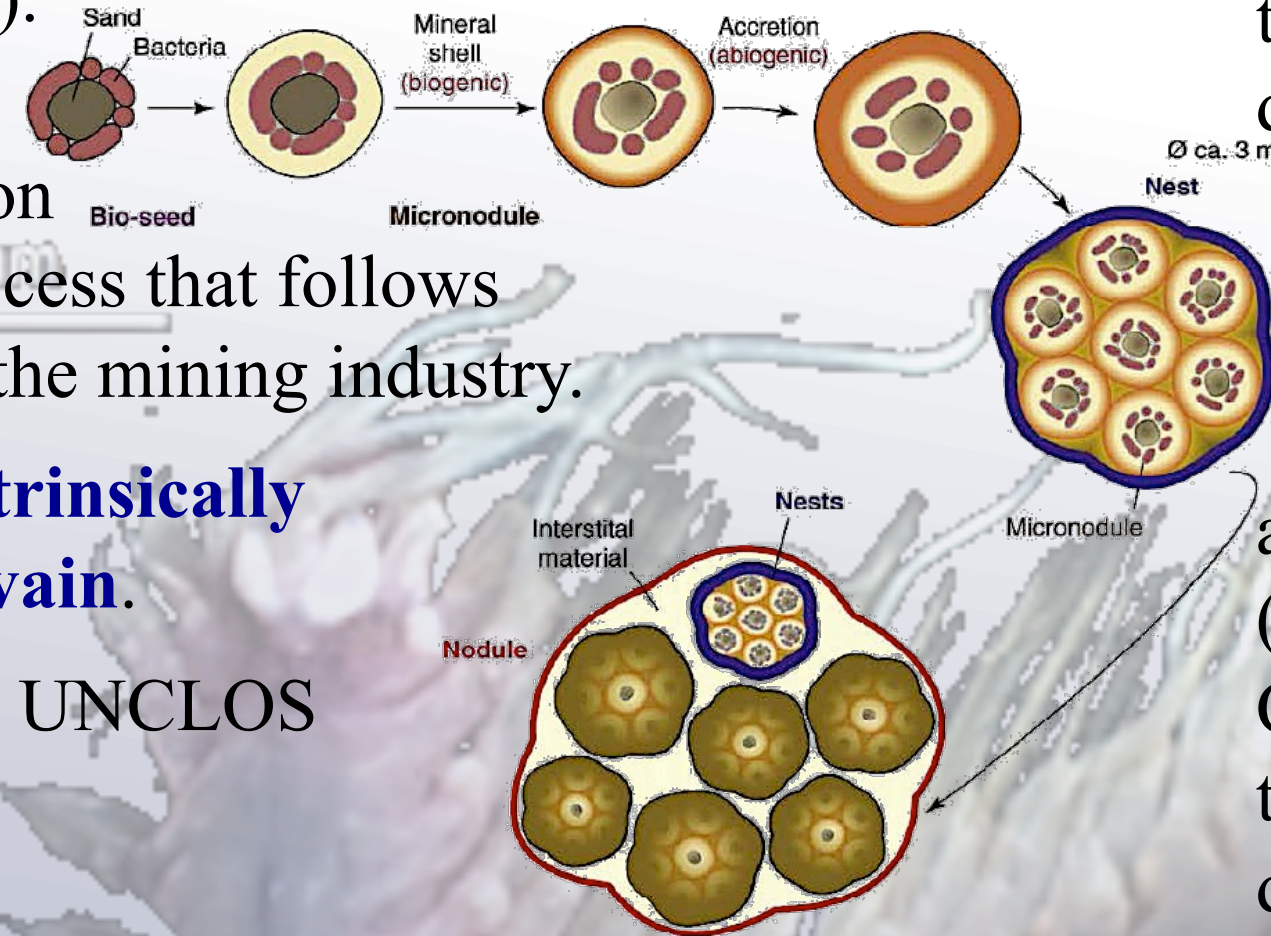


Fig.2: Nodule growth (WANG *et al.* 2009a)

CONCLUDING REMARKS

In light of these considerations, conducting a research project on the legal framework of deep sea mining in the Area, which is governed by the CHM principle, requires knowledge and study material that go beyond UNCLOS and the implementing instruments that gravitate around it. And that is a task that requires at least a PhD to be dealt with.

This study can be considered as an introduction to such a research project, setting the standards for the most adequate interpretation methodology to pursue with this endeavour.

On your marks, ready, set, go!

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- Background pictures: Meio- et macrofauna from a nodule area. © Ifremer/BGR, campagne BIONOD (2012). A) Crustacé Amphipode; B) Bryozoaire; C) Komolacea; D-F) Crustacés Isopodes; D) Eurycope sp. (fam. Munopodidae); E) Macrostylis sp. (Macrostylidae); F) Thaumastosoma sp. (Desmosomatidae); G-I) Crustacés Tanaidacés; J) Lepidogathia sp.; K) Tanaidacé indéterminé; L) Parafiliatula sp.; J-L) Annelides Polychètes; J) Braniella cf. palpa; K) Macelliphalia sp.; L) Kesun sp.