



Intellectual Property in the Blue Economy

G. ELIAS

The Blue Economy

The Blue Economy (“BE”), also referred to as the Ocean Economy, is “the sustainable use of ocean resources for economic growth, improved livelihood, jobs, and ocean ecosystem health.”¹ The BE encompasses all forms of economic activity on the oceans, high seas, archipelagos, and coastal areas. It is explored mainly through activities like fishing, shipping, aquaculture, costal tourism, renewable energy, undersea cabling, deep sea mining, and biotechnology to name a few. A discourse on the BE will naturally involve reference to these activities.

As a growing supplement to the Green Economy (which refers to all source of livelihood based on land), the BE is constantly attracting more global investment. In 2016, the Organization for Economic Cooperation and Development estimated that by the year 2030, the BE will be worth about \$3 trillion. Laws and industry policies are constantly being developed both at the domestic and international level to protect and regulate the exploration of the huge potential contained in the BE. Perhaps this informed the adoption of the 14th Sustainable Development Goal (“SDG 14”) by the United Nations which deals with ‘Life under Water’.

Intellectual Property (“IP”) laws in general serve as a chaperone over the fruits of creative ingenuity, to prevent undue exploitation. Through the annals of history, we have been furnished with innumerable instances of the pivotal role IP plays in driving economic development. To effectively protect and harness the BE, IP will continue to occupy its centre stage across all levels of the value chain. In this essay, an attempt will be made at highlighting the key position IP occupies, and the critical role it plays especially at the international level in protecting the BE.

IP Rights in the Blue Economy

1. **Patents:** According to the World Intellectual Property Organisation (“WIPO”), patent is “the exclusive legal right granted to a person for an invention, which is a product or a process that provides in general, a new way of doing something, or offers a new technical solution to a problem.” Basically, patents are designed to protect inventions, subject to the general conditions of novelty and capability for industrial application². Most patent laws afford the patentee the right to produce, import or sell a product, and in the case of patents granted to protect an industrial process, the exclusive right to apply that process.

Now, it is common knowledge that over 2/3 (two-third) of the earth surface is covered by water. This means that the BE constitutes more than 70% of the earth surface. Of all key players in domestic and international trade, the maritime industry (the “MI”) remains the most active in the BE, the BE being its primary sphere of operation. The MI is also at the helm of the crusade in the development and exploration of the BE. By developing new technologies on a constant basis for the benefit of mankind, the MI has become the greatest beneficiary of patent rights in the BE. This is demonstrated in some of the following areas:

- (a) **Marine Biotechnology:** Many companies have developed pharmaceuticals, enzymes, and other products from marine organisms using specific methods of extraction, synthesis or production. The products derived from these processes have been patented in order to secure

¹ World Bank, *The Blue Economy Definitions*
<https://www.worldbank.org/en/news/infographic/2017/06/06/blue-economy>

² Section 1, Patents and Designs Act 1971.

exclusive rights and incentivize research. For instance, *Ziconotide*, an analgesic widely used today for the treatment of chronic pain was derived from the venom of a marine cone snail. It was developed by researchers at Neurex Corporation, a pharmaceutical company based in the United States. *Ziconotide* is now patented in the US with Patent No US5053556A.

(b) **Aquaculture and Fishing:** It is no longer news that technology is the new state of the art when it comes to exploration of marine resources. Manual methods of fishing and aquaculture have become otiose. Some patented developments in this area include:

(i) **Fishing Technology:** Sensors are now being used to monitor fish movement in international waters. Devices known as 'echo sounders' are implanted into the sea, which monitor sound pulses in the water and emits them when they hit solid objects such as fishes and other marine organisms. This gives information on where there is a school of fish in the water. In 2023, Marine X Inc., a Nova Scotia-based company received the Aqua Nor Innovation Award for developing a unique sensor technology for monitoring fish welfare. The technology which is now patented in Canada has opened a new dimension in the conservation and exploitation of fish resources in the BE.

Another relevant area is the use of Artificial Intelligence to analyse pictures/videos of the ocean which were taken using high resolution equipment, to determine fish population. In the United Kingdom, marine companies like Fiskevegn have developed automatic fishing gears which are now being used for fishing at an advanced level. These developments have all been patented thereby conferring economic benefits on the companies that developed them.

(ii) **Breeding Techniques:** Innovations in selective breeding, genetic modification and hybridization of marine species are also protected by patents. In the early 2000s, Chulalongkorn University, a research University in Thailand, developed the *Sabay* fish. *Sabay* is a hybrid of the Thai walking catfish (*Clarias macrocephalus*) and the African Catfish (*Clarias gariepinus*) known mostly for its very fast growth, unique taste, reproductive efficiency and environmental tolerance. In 2007, researchers at the University of Guelph, Ontario, Canada, developed a genetically modified pig known as *Enviro-pig*. *Enviro-pig* was genetically engineered to produce a digestible enzyme called *phytase* which enables it to digest some kind of grains that ordinary pigs had no capacity to digest. *Enviro-pig* is now patented in multiple countries including the United States (Patent No. US7230146B2) and Canada (Patent No. CA2295454C). However, in Nigeria, animal varieties are not patentable, although the process through which they were developed could be patented.³

(c) **Renewable Energy:** Many companies in the energy sector have patents for protecting technologies which generate electricity by harnessing tidal and solar energy. For instance, a US based company known as Atlantis Resources Limited which specialises in the development of tidal power projects has patented several advanced turbine designs. In Patent No.

³ Section 1(4)(a) Patents and Designs Act 1971.

US8519436B2, Atlantis patented its 'Tidal Turbine Assembly', a turbine system that converts tidal flow into electrical energy.

2. **Trade Secrets:** Trade Secrets are also a crucial form of IP protection. It consists of confidential business information which provides a competitive edge to the owner. As it relates to the BE, pharmaceutical companies who derive their raw materials from the BE have specific methods of extraction and protection which are protected by IP as trade secrets. The various processes for genetic selection and creating hybrid species of plants and animals also qualify as trade secrets.
3. **Copyright:** Loosely speaking, copyright is the exclusive right to control the use of an original work. Elements of copyright protection also apply in relation to the exploitation of the BE. For instance, marine scientists, oceanographers and researchers for instance usually publish their findings in journals, newsletters and reports. These works qualify as literary works and are protected by copyright⁴. The information contained in those works can yield economic benefits for companies and individuals operating in the BE.

Also, multimedia content like maps, photos, documentaries, audios, and other educational content relating to the BE are eligible for copyright either as broadcasts or audiovisual works⁵. Television channels like Nat Geo Wild frequently publish documentaries and videos relating to life under water. The owners of these works enjoy the exclusive rights to reproduce, make copies or adaptation of those works, as well as other benefits conferred by copyright.

4. **Trademarks:** A trademark is a word, device, representation or mark, used by a person to distinguish goods or services originating from that person from that of another. Trademarks are very vital for business protection as it constitutes a very valuable asset in the hands of its owner for attracting consumers. Trademarks also play a key role in the value chain of exploiting and protecting the BE.

Many companies specialize in production of seafood. These companies spend a lot of money in extracting their products from the BE, which is then processed and sent into the market for public consumption. In Nigeria for instance, Atlantic Shrimpers Limited is a leading seafood company that produces and distributes a wide range of seafood products such as shrimps, fish, crabs and other seafood. Unimer Group, a prominent Nigerian brand which is over 100 years old and producer of the famous *Titus*, is also known for its high-quality sardine fish. These companies who all derive their products from the BE also have their various trademarks which they use to distinguish their goods from other competitors in the market. Without the protection afforded by IP in protecting those trademarks, they may not be able to reap the economic benefits of those activities.

Companies that offer marine eco-tourism, scuba diving and other recreational services in the BE also use their trademarks to attract customers and built market trust. *Tarzan Jetty* which is a well-known marine tourist company in Nigeria, offers a variety of marine and water based recreational activities such as boat rentals, water sports, and chartered cruises. *Tarzan*

⁴ Section 2 Copyright Act 2022.

⁵ *Ibid*

leverages on the protection offered by IP through its trademark to assure consumers of the safety of its services. Many consumers who have used their services satisfactorily have also come to associate the business with that mark. This eventually translates into economic benefit for the company.

5. **Geographical Indications (“GI”)**: A GI is a form of IP protection that attaches to a product or service which originates from a specific geographical area and is known to possess certain quality or characteristics. A quick example is the popular wine known as *Champagne* which originates from a region in Northeastern France known for its production of sparkling wine. *Champagne* is characterized by its effervescence, flavour and quality which is attributed to the unique climate, soil and traditional method used in France. Today there are various brands of *Champagne* in the market including brands like Moët & Chandon, Dom Pérignon, Krug, Ruinart, Taittinger, Bollinger etc. But in each case, the description of a wine as Champagne an appellation d’ origine Controlle’ is a GI that originates from a region in France. Another example will be the popular *Ijebu Garri*, which is mainly produced among the Yorubas in Ogun State and known for its high-volume expansion and probiotic benefits.

Certain regions are renowned for producing distinct types of foods derived from the BE. The brand *Scottish Salmon* for instance is a GI that the salmon in question was farmed in the cold, clear waters of Scotland. Any oyster that bears the brand *Connemara Oysters* is also a GI that the oyster was harvested from the pristine waters of Connemara in Ireland, revered for its finesse in taste and texture. These GIs are protected by IP laws under the various GI regulations of different states. Sadly, Nigeria does not have any specific law on GI. Many cases in this regard will likely be decided within the spectrum of the existing law on Certification Trademarks under Section 43 of the Trademarks Act 1965.

Challenges in IP protection in the Blue Economy

Despite the huge benefits that the BE portends for the global economy, some challenges may present themselves while we try to reap those benefits. These include:

1. **Jurisdictional issues**: Regarding exploitation of the BE within domestic or territorial waters, this will hardly present an issue since the State maintains full sovereignty in those areas. However, when it comes to exploitation of the BE on a much larger basis especially as it relates to the Exclusive Economic Zone, the Continental Shelf and the High Seas, problems of jurisdiction may arise since these areas are not fully subject to national sovereignty. The level of IP protection may then become complicated, having become an issue of international law.
2. **Adverse Technology**: While IP seeks to protect the fruits of ingenuity, there is need to strike a balance between commercial gain and public welfare. Many technologies that have been developed and currently used in the BE have some adverse effects on the BE in general. Although many of them have been outlawed in different States due to damage they cause to the ecosystem in general, they are still being used by companies and individuals in harnessing the potentials of the BE. The use of chemicals in fishing for instance is prohibited. Yet, in 2020, Kenya reported the increased use of *Endosulfan*- a very dangerous insecticide that kills fishes- in fishing.

3. **Lack of Awareness and Education:** Many stakeholders in the BE are not aware of the protection that IP offers to them. Particularly in developing countries, this results in an underutilization of IP mechanisms and inadequate enforcement in general.
4. **Poor regulatory framework:** In a country like Nigeria where our laws are mostly reactive rather than proactive, there is much left to be desired as regards the protection of IP in the BE. Many laws in this area are antiquated and need total overhaul. On some subjects like geographical indications and animal varieties, it is either there is no available law at all, or the law does not represent current legal thinking on the subject.
5. **Enforcement:** As with many other laws in Nigeria, there is a challenge in enforcement of IP rights, both in the BE and in general. Also, when disputes arise as to breaches of IP rights, they often take many years to resolve. This is unsatisfactory since IP issues are usually time sensitive.

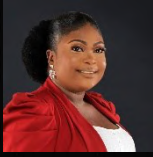
Policy Recommendations

It is recommended that Nigeria adopts a robust legal framework to cater for the protection of IP rights in the BE. Also, the existing laws should either be amended or repealed to reflect current legal thinking on the subject. Businesses and brands operating in the BE may also consider using other dispute resolution mechanisms in resolving their dispute, especially when there it has an international flavour. This will ensure the confidence of the disputing parties in the exercise.

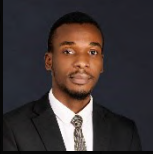
Conclusion

In conclusion, the protection of intellectual property rights within the Blue Economy is essential for fostering innovation, ensuring sustainable use of marine resources, and promoting economic growth. However, this sector faces unique challenges, such as the transnational nature of marine environments, rapid technological advancements, and varying national legal frameworks. Addressing these challenges requires robust international cooperation, comprehensive legal and regulatory measures, and increased awareness and education among stakeholders. But by effectively managing intellectual property rights, we can ensure that the benefits of the BE are maximized. The future of the BE also depends on our ability to balance innovation with sustainability, ensuring that marine resources are used responsibly and equitably for generations to come.

Authors



Similoluwa Oyelude
Partner
similoluwa.oyelude@gelias.com



Timothy Davies
Associate
timothy.davies@gelias.com



Ifenna Okeke
Associate
okeke.ifenna@gelias.com

LOCATIONS

LAGOS OFFICE

6 Broad Street
Lagos, Nigeria

T: +234 (1) 460 7890

E: gelias@gelias.com

ABUJA OFFICE

2nd Floor, Abia House,
Plot 979, First Avenue,
Central Business District
F.C.T, Abuja.

T: +234 (1) 888 8881

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