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PROMOTING THE DEVELOPMENT AND TRANSFER OF MARINE TECHNOLOGIES AS A MECHANISM FOR IMPLEMENTING THE SUSTAINABLE DEVELOPMENT GOALS: INTERNATIONAL LEGAL ASPECT

PROMOVER EL DESARROLLO Y TRANSFERENCIA DE TECNOLOGÍAS MARINAS COMO MECANISMO DE IMPLEMENTACIÓN DE LOS OBJETIVOS DE DESARROLLO SOSTENIBLE: ASPECTO JURÍDICO INTERNACIONAL

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1 Introduction. 2 Sustainable development Goals-2030 and promotion of marine technology transfer. 3 International legal regulation of the transfer of marine technologies genesis. 4 Framework for international legal regulation of the development, transfer and use of marine technologies. 5 Conclusion. References.

ABSTRACT

Objective: We seek to understand the definition of marine technologies, placing it in the historical context of narratives of international law of the sea. We seek to analyze the criteria, conditions and principles of their transfer and the international legal framework and interstate practice. We seek to investigate the international legal regulation of the development and transfer of marine technologies in legal research. The authors consider the importance of facilitating the transfer of marine technology in

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relation to promoting marine scientific research which is reaffirmed by international agreements, including the Rio+20 outcome document: The future we want, and the outcome document of the third International Conference on Small Island Developing States as well as discussions on the Sustainable Development Goals, numerous UN General Assembly resolutions.

Methodology: The research uses general scientific and special cognitive techniques wherein legal analysis and synthesis, systemic, formal-legal, comparative-legal, historical-legal and dialectical methods are applied.

Results: We found out that despite the fact that the UNESCO IOC Guidelines have clarified a number of provisions of the 1982 UN Convention on the Law of the Sea concerning the development and transfer of marine technologies, this document needs revision. In particular, it is necessary to specify the criteria and terms for the transfer of marine technologies to both developed and developing states. It is not clear from the text of the document which technologies should be transferred free of charge or at a reduced cost to developing states and states with an unfavorable geographical position. We also point out that as part of the implementation of SDG 14, the Intergovernmental Oceanographic Commission is charged with elaborating research capacity in marine scientific research and optimizing the transfer of marine technology to developing and least developed states. The research indicates that the modern international legal framework needs a revision.

Contributions: Following a review of the content, we raised possible problems, strategies, suggestions and guidelines for the marine technologies. The authors come to the conclusion that promoting the development and transfer of marine technologies to developing states and states with an unfavorable geographical position is not only consonant with the SDGs, but is also one of the mechanisms for their implementation. The authors encourage the complement to the international legal regulation of the transfer and development of marine technologies.

Keywords: Intergovernmental Oceanographic Commission's Criteria and Guidelines on the Transfer of Marine Technology. The UN Convention on the Law of the Sea. Sustainable Development Goals (SDGs), protection and preservation of the marine environment, biodiversity. COVID-19.

RESUMEN

Objetivo: Buscamos comprender la definición de tecnologías marinas, ubicándola en el contexto histórico de las narrativas del derecho internacional del mar. Buscamos analizar los criterios, condiciones y principios de su transferencia y el marco legal internacional y la práctica interestatal. Buscamos investigar la regulación legal

internacional del desarrollo y transferencia de tecnologías marinas en la investigación jurídica. Los autores consideran la importancia de facilitar la transferencia de tecnología marina en relación con la promoción de la investigación científica marina, lo que se reafirma en los acuerdos internacionales, incluido el documento final de Río + 20: El futuro que queremos, y el documento final de la tercera Conferencia Internacional sobre Pequeños Estados insulares en desarrollo, así como debates sobre los Objetivos de Desarrollo Sostenible, numerosas resoluciones de la Asamblea General de las Naciones Unidas.

Metodología: La investigación utiliza técnicas científicas generales y cognitivas especiales en las que se aplican métodos de análisis y síntesis jurídica, sistémico, formal-legal, comparado-legal, histórico-legal y dialéctico.

Resultados: Descubrimos que a pesar de que las Directrices de la COI de la UNESCO han aclarado una serie de disposiciones de la Convención de las Naciones Unidas sobre el Derecho del Mar de 1982 sobre el desarrollo y la transferencia de tecnologías marinas, este documento necesita una revisión. En particular, es necesario especificar los criterios y términos para la transferencia de tecnologías marinas tanto a los países desarrollados como en desarrollo. No queda claro en el texto del documento qué tecnologías deben transferirse de forma gratuita o con un costo reducido a los estados en desarrollo y los estados con una posición geográfica desfavorable. También señalamos que como parte de la implementación del ODS 14, la Comisión Oceanográfica Intergubernamental está encargada de desarrollar la capacidad de investigación en investigación científica marina y optimizar la transferencia de tecnología marina a los estados en desarrollo y menos desarrollados. La investigación indica que el marco legal internacional moderno necesita una revisión.

Contribuciones: Luego de una revisión del contenido, planteamos posibles problemas, estrategias, sugerencias y lineamientos para las tecnologías marinas. Los autores llegan a la conclusión de que promover el desarrollo y la transferencia de tecnologías marinas a los estados en desarrollo y estados con una posición geográfica desfavorable es no solo en consonancia con los ODS, sino que también es uno de los mecanismos para su implementación. Los autores fomentan el complemento a la normativa legal internacional de la transferencia y desarrollo de tecnologías marinas.

Palabras clave: Criterios y Directrices de la Comisión Oceanográfica Intergubernamental sobre Transferencia de Tecnología Marina, Convención de las Naciones Unidas sobre el Derecho del Mar. Objetivos de Desarrollo Sostenible (ODS), protección y preservación del medio marino, biodiversidad. COVID-19.

1 INTRODUCTION

In the course of his statement at the United Nations 75th Anniversary Celebration on October 24, 2020, UN Secretary General António Guterres pointed out that 2021 has been announced the "Year of the Environment" worldwide (GUTERRES, 2020).

The principles relevant to sustainable development are now most fully codified at the informal level in the draft Convention on Environment and Development (IUCN ENVIRONMENTAL LAW PROGRAMME, 2015), drawn up in 1995 by the International Commission on Environmental Law (IUCN) in cooperation with the International Council on Environmental Law, and in the Declaration of Principles of International Law relevant to Sustainable Development (ILA, 2002), adopted at the International Law Association Conference on April 6, 2002.

It can be observed, however, that environmental rights are considered by scholars as part of the third and fourth human rights generation (VASAK, 1973) including the right to a healthy environment; the right to freely seek, receive, transfer, produce and distribute information on the environment, legal phenomena and procedures, etc. Fourth-generation rights often include the rights of mankind (to peace, nuclear safety, peaceful exploration of outer space, environmental and others).

It was maintained that the principle of sustainable development is well established in the conceptual apparatus of public international law. For example, in a decision of the International Court of Justice, Judge C.G. Weeramantry, in his dissenting opinion to the *Gabčíkovo-Nagymaros* decision¹, called it a new fundamental principle of modern international law.

At the global and European level, the need to recognize a new fundamental right, namely the right to a healthy and balanced environment, have emerged relatively recently. From a human rights standpoint, the right to a healthy and quality environment is a fundamental right whose nature and characteristics do not change over time. The case law of the European Court of Human Rights highlights the following:

1. The right to a favorable environment, the right to be informed of its states and environmental concerns, the right to compensation in case of harm may be protected by

¹ See: *Case Concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* (1997), I.C.J. Rep. 7, Advisory Opinion on the Legality of the Use by a State of Nuclear Weapons in Armed Conflict, Advisory Opinion, [1996] ICJ Rep. 226 at 438 and *Certain Phosphate Lands in Nauru (Nauru/Australia)* (1993), I.C.J. Rep. 322. See also *United States - Import Prohibition of Certain Shrimp and Shrimp Products*, 20 September, 1999, WTO Doc.WT/DS58/AB/R (Appellate Body Report) and *LCB v. United Kingdom* of ECHR. (1998) European Court of Human Rights Reports 1998-III. Sustainable Development Principles in the Decisions of International Courts and Tribunals: 1992-2012 // Marie-Claire Cordonier Segger (Editor), Yolanda Saito (Editor), Judge C.G. Weeramantry (Editor). 2017. p. 884.

international judicial institutions such as the ECtHR, and violations of these rights are the subject of a complaint.

2. Article 8 of the 1950 Convention for the Protection of Human Rights and Fundamental Freedoms is the substantive rule invoked by the complainants and applied by the ECtHR in “environmental cases”². Although the state is not always directly responsible for a particular breach, it can still be a defendant. Omission on the part of state authorities and failure to take all feasible (not only mandatory) measures to eliminate or prevent an environmental threat that interfere with privacy, is sufficient for this purpose. However, the ECtHR has repeatedly stressed that a state cannot be bound and be held responsible for refusing to resettle citizens to an environmentally sound area or to make a monetary payment for this purpose. Environmental issues may arise from state infrastructure projects, but such projects have a public interest that is generally superior to the private interest.

2 SUSTAINABLE DEVELOPMENT GOALS-2030 AND PROMOTION OF MARINE TECHNOLOGY TRANSFER

Oceans influence the Earth's climate and are an important source of fresh water, food and oxygen in the air. Furthermore, as noted at UNESCO, the ocean could become an ally in the fight against COVID-19. For example, bacteria found in the deep ocean are being utilized for rapid testing to detect the presence of COVID-19. Moreover, the diversity of species found in the ocean holds great promise for the development of pharmaceuticals³. For example, seamounts, deep-sea coral and spongy reefs offer great potential for bioprospecting, especially in pharmaceuticals⁴. UNEP report UNEP / CBD-SBSTTA / 11/11, paragraph 21, notes that

compounds extracted from deep sea organisms have been used as the basis for potential anti-cancer drugs, commercial skin protection products that provide higher resistance to ultraviolet rays and temperature, as well as for the prevention of skin inflammation, means of detoxification of snake venom, antiviral compounds, antiallergic agents and anticoagulants, as well as industrial use to reduce viscosity (UNEP, 2005, p. 8).

² Application no. 36022/97, *Hatton and Others v. the United Kingdom*, ECHR Judgment of 08 of July 2003; Application no. 16798/90, *López Ostra v. Spain*, ECHR Judgment of 09 December 1994; Application no. 55723/00, *Fadeyeva v. Russia*, ECHR Judgment of 09 of June 2005.

³ Goal 14: Conserve and sustainably use the oceans, seas and marine resources. [Electronic resource]. Available at: <https://www.un.org/sustainabledevelopment/oceans/>. Accessed on: 31 Mar. 2021.

⁴ UNEP/CBD-SBSTTA/11/11, PAR.44. The commercial value of marine genetic resources is confirmed by the fact that all leading pharmaceutical companies have marine biology departments. It is estimated that worldwide sales of all products related to marine biotechnology were 100 billion USD in 2000.

A report from the United Nations Economic and Social Commission for Asia and the Pacific⁵ suggests that the temporary cessation of activities and reduced human movement and resource requirements due to the COVID-19 pandemic could give the marine environment a much-needed respite encouraging long-awaited recovery.

The sustainable management of ocean resources is central to future prosperity. However, the state of marine waters is steadily deteriorating as a result of pollution and illegal and unregulated fishing. In turn, this has a negative impact on the functioning of marine ecosystems and biodiversity.

The need to protect and preserve the marine environment for future generations is reflected in SDG 14: Conservation and sound management of oceans, seas and marine resources for sustainable development.

Several activities have been proposed to reach this objective:

- a) significantly reduce marine pollution of all kinds, particularly from land-activities;
- b) to improve the sustainable management of marine and coastal ecosystems and protect them from adverse impacts;
- c) to minimize and eliminate the effects of ocean acidification;
- d) to prevent illegal unreported and unregulated fishing;
- e) to prohibit certain forms of subsidies to the fishing industry that contribute to overfishing and illegal, unreported and unregulated fishing;
- f) to increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources including through sustainable management of fisheries, aquaculture and tourism;
- g) to enhance the conservation and sustainable use of the oceans and their resources by respecting international law as reflected in the UN Convention on the Law of the Sea;
- h) to develop scientific knowledge, research capacity and transfer marine technology, taking into account the criteria and guidelines of the Intergovernmental Oceanographic Commission (IOC) on the transfer of marine technology to improve ocean health and enhance the contribution of marine biodiversity to developing countries, in particular small island developing States, and least developed countries.

Thus, under SDG 14, the IOC is charged with developing research capabilities in the field of marine scientific research and facilitating the transfer of marine technology to developing and least developed countries (UNITED NATIONS, 2017). Understanding how the IOC will contribute SDG 14 requires detailed consideration of

⁵ ESCAP Report: Responding to the COVID-19 Pandemic: Leaving No Country Behind. Bangkok, Thailand: United Nations, 2021. p. 6. DOI: <http://dx.doi.org/10.22617/SPR210111-2>.

Promoting the development and transfer of marine technologies as a mechanism for implementing the sustainable development goals: international legal aspect

the prerequisites and mechanism for international legal regulation of the transfer of marine technologies.

3 INTERNATIONAL LEGAL REGULATION OF THE TRANSFER OF MARINE TECHNOLOGIES GENESIS

The 20th century has created great opportunities for states to explore the Oceans and seas to use its resources. Marine technology application permitted to not only explore and exploit seabed resources but also provided new opportunities for the protection and preservation of the marine environment, identification and conservation of underwater archaeological sites, which play an important role in the world history and culture research. However, due to the increased demand for marine technologies and the accessibility of them to individuals and companies necessitated their international legal regulation.

It was the second half of the 20th century when people faced a number of urgent tasks concerning an access for developing countries to the living and nonliving resources of the seabed, marine ecology, expanding the jurisdiction of coastal states and maritime spaces delimiting. Those challenges were the official reason for convening the III UN Conference on the Law of the Sea. "To prevent the extension of one's sovereignty as well as to apply the concept of jurisdiction to them, the idea of internationalizing control over their use was put forward" (GUDEV, 2013, online). The transfer of marine technology was listed in the conference agenda as well.

Extensive negotiations have produced part XIV "Development and transfer of marine technology" of the UN Convention on the Law of the Sea. Some marine technology issues were also highlighted in other parts of the above document. Thus, for example, part 4 of Art. 62 The Use of Living Resources stipulates that a coastal state is entitled to enact laws and regulations for citizens of other states fishing in its exclusive economic zone. "These laws may concern <...> the licensing of fishermen, fishing vessels and equipment including charges and other payments that represent a reasonable compensation for developing coastal states in the form of <...> equipment and technology related to the fishing industry" (UNITED NATIONS, 1982, online)...

Matters pertaining to the transfer and use of marine technologies are highlighted in Part XI "Area" and Part XII "Protection and preservation of the marine environment", as well as in Appendices III "Basic conditions for prospecting, exploration and development" and IV "Charter of the Enterprise".

Accordingly, the rules and regulations governing the development, transfer and use of marine technology appeared throughout the 1982 Convention. Such

fragmentation⁶, the revision of the international seabed area regime in the Agreement on the Implementation of Part XI of the UN Convention on the Law of the Sea 1994, and the emergence and spread of new IT in maritime activities substantiated the need to review and harmonize transfer rules. Therefore, in 2005, the Intergovernmental Oceanographic Commission of UNESCO adopted a set of rules - IOC Criteria and Guidelines on the Transfer of Marine Technology (IOC Criteria and Guidelines). Nevertheless, a number of issues remained to be settled.

4 FRAMEWORK FOR INTERNATIONAL LEGAL REGULATION OF THE DEVELOPMENT, TRANSFER AND USE OF MARINE TECHNOLOGIES

According to all above, the development, use and transfer of marine technology are governed by the 1982 UN Convention on the Law of the Sea (Part XIV "Development and Transfer of Marine Technology"), the Agreement on the Implementation of Part XI of the 1994 UN Convention on the Law of the Sea, and UN General Assembly resolutions and some other international instruments. The core document in the field under consideration is the 2005 IOC Criteria and Guidelines on the Transfer of Marine Technology.

It is important to highlight that regulating prerequisites for the transfer of marine technologies appeared in the mid-1960s. Thus, in 1967 the Ambassador of Malta, Arvid Pardo proposed that the seabed beyond national jurisdiction be declared part of the "common heritage of mankind." To ensure that technologically and economically advanced states do not dominate seabed exploitation, in 1970 the UN General Assembly Resolution 2749 (XXV) adopted the Declaration of Principles Governing the Regime of the Seabed and Ocean Floor and the Subsoil Thereof beyond the Range of National Jurisdiction.

The first three provisions of this Declaration, later included in the text of the UN Convention on the Law of the Sea with minor amendments, establish that:

1. The seabed and ocean floor and subsoil thereof beyond the national jurisdiction (hereinafter referred to as: this area), as well as the resources of this area, are the common heritage of mankind.
2. This area is not subject to appropriation in any way by States or persons, natural or legal, and no State will claim or exercise sovereignty or sovereign rights over any part of the area.

⁶Report of the Study Group of the International Law Commission A/CN.4/L.682 of 13 April 2006. Fragmentation of International Law: difficulties arising from the diversification and expansion of International Law [Electronic resource]. Available at: https://legal.un.org/ilc/documentation/english/a_cn4_l682.pdf Accessed on: 31 Mar. 2021.

3. No state or person, natural or legal, will claim rights, exercise or acquire rights in relation to this area or its resources, incompatible with the international regime to be established and the principles of this Declaration.

To enhance the effectiveness of the regime provided by the 1970 Declaration, a new approach has emerged to establish a procedure for the rapid and effective transfer of marine technology to other states "on fair and equal terms."

The issue of transfer of marine technologies was included in the agenda of the III UN Conference on the Law of the Sea. In the course of extensive negotiations, part XIV of the UN Convention on the Law of the Sea (1982 Convention) "Development and Transfer of Marine Technology" was elaborated. Let us consider it in detail.

Part 2. Art. 266 of the 1982 Convention contains a provision stating that

States shall promote the development of the marine scientific and technological potential of States that may need and request technical assistance in this area, in particular developing States, including landlocked States or geographically disadvantaged in relation to the exploration, development and conservation of marine resources and management for their maintenance, protection and preservation of the marine environment, marine scientific research and other activities in the marine environment compatible with this Convention, with the aim of accelerating the socio-economic progress of developing states (UNITED NATIONS, 1982, online).

As noted by experts, the compulsory mechanism for the transfer of knowledge and technology can easily pave the way for all sorts of provocations. For example, individual states may specifically initiate litigation through US-recognized Arbitration / Special Arbitration in order to gain access to maritime technology⁷.

Furthermore, there is no guarantee in the 1982 Convention that the funds received by these states will be used for: a technological breakthrough in the exploitation of the resources of the World Ocean; preservation of the marine environment; implementation of any humanitarian or public projects (GUDEV, 2014, p. 118).

Part 3 of the article under review establishes that States seek to promote the creation of favorable economic and legal conditions for the transfer of marine technology on an equitable basis for the benefit of all interested parties.

As we can see from the analysis of Art. 266 of the 1982 Convention, the concept of "marine technology" is not properly defined. Moreover, the Convention does not establish what is meant by "favorable economic and legal conditions" and what "fair

⁷ Prepared Statement of Frank J. Gaffney, Jr., President and CEO, Center for Security policy, Washington, DC // The United Nations Convention on the Law of the Sea (Treaty doc. 103-39): hearings before the Committee on Foreign Relations, United States Senate, One Hundred Tenth Congress. First session, September 27 and October 4, 2007. p. 86. Available at: http://www.fas.org/irp/congress/2007_hr/lots.pdf. Accessed on: 31 Mar. 2021.

conditions are for the transfer of marine technology” (UNITED NATIONS, 1982, online).

The term “developing states” is also not clearly defined either in international law or in economics not least the criteria for defining a “developing state” are based on various economic and social parameters⁸.

In this regard, it is necessary to note the objectives of interstate cooperation in the development and transfer of marine technologies. These include:

- a) acquiring, evaluating and disseminating marine technical knowledge and facilitating access to such information and data;
- b) development of marine technology and the necessary technological infrastructure to facilitate the transfer of marine technology;
- c) human resources training through vocational and theoretical education of citizens of developing countries, especially the least developed countries;
- d) international cooperation at all levels (UNITED NATIONS, 1982, online).

To achieve the above objectives, the 1982 Convention proposes special programs to promote agreements, exchange scientists and experts, implement of projects and encourage all forms of international cooperation.

It must be mentioned that despite the absence of specific international legal norms, in the 1982 Convention implementing, a steady trend has emerged for the transfer of technologies for fisheries and environmental protection free of charge and purely market-based: technologies related to the exploration and exploitation of the seabed⁹.

This practice was partly reflected in the Agreement Implementing Part XI of the 1994 UN Convention on the Law of the Sea (1994 Agreement). Thus, Section 5 of the Agreement states “an enterprise, as well as developing countries wishing to acquire technology for deep seabed mining, seek to acquire such technology on fair and reasonable commercial terms.”¹⁰ Thus, it is not about the free transfer of technology, but about its acquisition (GUREEV, 2011, p. 182).

Art. 274 of the 1982 Convention establishes the obligations of the International Seabed Authority to ensure access to technical documentation, devices, process, as well as to provide other support including through funding, to developing states.

⁸ At the same time there exists the “Group of 77” – the Association of developing States, whose composition has changed several times.

⁹ See: Nosikov (2010).

¹⁰ The 1994 Agreement on the Implementation of Part XI of the UN Convention on the Law of the Sea, Jul. 28, 1994. Available at: https://www.un.org/Depts/los/convention_agreements/texts/unclos/closindxAgree.htm. Accessed on: 31 Mar. 2021.

However, the adoption of the 1994 Agreement effectively abolished direct funding for activities in the Area for the benefit of developing States and the obligation to transfer technology free of charge.

With the further development of marine technology and its transfer, the need for more regulation of this area has emerged. The Intergovernmental Oceanographic Commission of UNESCO (IOC of UNESCO) tried to fill the gaps in the 1982 Convention and to develop a universal document in this field - the IOC Criteria and Guidelines.

This instrument is not mandatory but harmonizes and supplements the rules for the development and transfer of marine technologies established in the previously mentioned documents. It also provides a brief overview of the evolution of these regulations since 1967.

IOC Criteria and Guidelines give the unified definition of marine technology, which means: instruments, equipment, vessels, processes and techniques required to produce and use expertise to improve the research and comprehension of the ocean nature and resources as well as coastal areas. Based on the above, maritime technology includes:

- a) information and data, in a user-friendly format, on marine sciences and related marine operations and services;
- b) manuals, guidelines, criteria, standards, reference materials;
- c) sampling and methodology equipment (e.g. for water, geological, biological, chemical samples);
- d) observation facilities and equipment (e.g. remote sensing equipment, buoys, tide gauges, shipboard and other means of ocean observation);
- e) equipment for in situ and laboratory observations, analysis and experimentation;
- f) computer and computer software, including models and modeling techniques;
- g) expertise, knowledge, skills, technical / scientific / legal know-how and analytical methods related to marine scientific research and observation (INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION, 2005, p. 9).

In addition, this IOC Criteria and Guidelines provides the conditions for the above technologies to be transferred and a thorough plan for their implementation.

It has been established that the transfer of marine technology should enable all interested parties to benefit equitably from activities related to marine science aimed at stimulating the social and economic context in developing countries, subject to the following conditions:

- a) targeted legal, institutional, financial and scientific frameworks need to be formulated to optimize and simplify the transfer of marine technology at the national, regional or sub-regional levels;
- b) the transfer of marine technology should be on fair and reasonable terms. Generally, such transfer should be free of charge or at a reduced cost in favor of the recipient country;
- c) during the transfer of marine technology, due consideration should be given to:
 - the needs and interests of developing States, especially landlocked and disadvantaged geographically, as well as other developing States that have not been able to build or develop their own marine science, scientific research, ocean and coastal observation, or other similar technologies, or infrastructure necessary to achieve such goals;
 - other legitimate interests, including, inter alia, the rights and obligations of owners, suppliers and recipients of marine technology;
 - the importance of the transfer of environmentally friendly technologies.
- d) the transfer of marine technology should make full use of new, existing or potential cooperation schemes, including joint ventures and partnerships between Member States, relevant international organizations, governmental and non-governmental organizations and / or private companies.

Thus, the IOC Criteria and Guidelines specified certain provisions of the 1982 Convention. In particular, it was clarified that “fair and reasonable conditions” refers to the transfer of technology to developing countries “free of charge” or “at a reduced cost”.

However, art. 27 of the IOC Criteria and Guidelines contains a provision from IOC Resolution XXII-12, which states, “that any transfer of marine technology must take into account the ability of the recipient State to pay for such transfer”. This provision further conflicts the regulation of this area, since it is not clear which States’ capacity to pay is at issue. If the reference was to developed States, the provision seemed to be superfluous, since they will pay for technology transfer on market terms. If we are talking about developing states and states with an unfavorable geographical position, then this contradicts the meaning of Part XIV of the 1982 Convention.

Of particular interest from an organizational and legal point of view is the section of the IOC Criteria and Guidelines “Guidelines for implementation”. IOC is identified as the competent organization to promote and facilitate the transfer of marine technology, can carry out consultation with relevant international, governmental and non-governmental organizations, as well as other parties. To this end, the IOC shall establish and coordinate a clearing-house mechanism for the transfer of marine

technology in order to provide stakeholders with direct and rapid access to relevant sources of information, practices, scientific and technical experience related to the transfer of marine technology, as well as to optimize effective scientific, technical, and financial cooperation for these purposes.

Such a mechanism includes the following components that should be accessed by the most efficient means of communication:

- a) a list of governmental, non-governmental or private organizations interested in participating as suppliers of marine technology;
- b) capacity to implement projects or initiatives related to the transfer of marine technology;
- c) the sources, accessibility and, ultimately, the cost of marine scientific and technological information and data for transmission in various fields of marine sciences;
- d) a list of marine research institutes that offer laboratories, equipment, research and training opportunities;
- e) proposals for cruise study at the global and sub-regional levels;
- f) list of available experts / specialists who can provide scientific and technical assistance;
- g) universities and other organizations offering research grants and materials for the study of marine sciences;
- h) meetings, seminars and training courses at the global, regional and subregional level, especially that offer financial assistance;
- i) study of national, sub-regional and regional rules and regulations, as well as jurisprudence related to the transfer of marine technology and marine scientific research;
- j) partnership at national, sub-regional and / or regional levels with institutes and information centers, experience and technical expertise of scientific significance for the respective region.

Let us consider in more detail the mechanism for transferring marine technologies.

Despite the existence of channels for technology transfer at the bilateral, multilateral, subregional and regional levels, any participating State can submit an Application for the Transfer of Marine Technology (TMTA), which is presented in the Appendix to the IOC Criteria and Guidelines, to the IOC Secretariat.

Upon receipt of the TMTA, the IOC Secretariat reviews it, consults with IOC staff, IOC scientific and technical subsidiary bodies, and, if necessary, with individual specialists. Such review shall aim at:

- a) identification of a TMTA-complaint marine technology provider within a reasonable time frame;
- b) development of possible cooperation schemes that can improve transfer efficiency.

After reviewing TMTA, the IOC Secretariat either decides to transfer it to the designated technology provider, or to facilitate contacts between the technology provider and recipient for the timely conclusion of an agreement on fair and reasonable terms.

Moreover, the IOC Secretariat is authorized to make available at the request of the supplier or recipient technical assistance for the implementation of the Marine Technology Transfer Project. Such assistance may include the provision of:

- a) expert missions;
- b) technical training;
- c) assess project outcomes 2 years after completion.

The IOC also facilitates the participation of scientists and/or experts from the recipient state in the scientific institutions of the transferring party / parties related to the development of marine technology and research. The supplier, the technology recipient and the IOC should discuss financing of such participation.

Several issues related to the Declaration itself are worth noting. TMTA contains only six items: 1. Applicant information, 2. Applicant's legal nature, 3. Purpose of the application, 4. Type of marine technology requested, 5. Activity planned or initiated by the applicant, 6. Other relevant information.

It is assumed that the information provided by the applicant may not be sufficient for an adequate decision by the UNESCO IOC Secretariat to approve or reject the TMTA. It is proposed to add several paragraphs to TMTA including "The zone of the sea space in which requested marine technology is to be applied", "The expected results of technology application". In addition, if the applicant is a non-State entity, a brief description of the entity should be provided, similar to the Annex to the Operational Guidelines to the Convention on the Protection of the Underwater Cultural Heritage.

It is also not clear from the TMTA text whether an individual has the right to request technology since in the clause "Applicant legal nature", in addition to government agencies, non-governmental organizations and private organizations, there is a sub-clause "Other".

The shortcomings of the established technology transfer regime include lack of precision in the timing of technology transfer. The responsibility for the late provision of marine technology is also questionable. This is due to the fact that the IOC, being the competent authority in this field only acts as an intermediary in the transfer of the

requested technologies. Further cooperation between technology provider and the recipient is formalized by additional agreements and contracts.

Addressing the above issues would be an important step towards harmonizing international rules for the development and transfer of marine technologies.

5 CONCLUSION

The following conclusions can be drawn from the study.

1. As part of the implementation of SDG 14, the Intergovernmental Oceanographic Commission is charged with elaborating research capacity in marine scientific research and optimizing the transfer of marine technology to developing and least developed states.

2. The 20th century opened up great opportunities for states to explore the World Ocean and use its resources. Marine technologies have allowed not only explore and develop the seabed resources but also provided new opportunities for protection and preservation of the marine environment, identification and preservation of underwater archaeological objects that are very important in teaching of world history and culture. At the same time, the increasing urgency of states for having various marine technologies as well as the availability of them for individuals and companies, necessitated international legal regulation of their transfer and development.

3. The framework of the international legal regime for the development, transfer and use of marine technologies: UN Convention on the Law of the Sea 1982, Agreement on the Implementation of Part XI of the UN Convention on the Law of the Sea of 1994, IOC Criteria and Guidelines on the Transfer of Marine Technology 2005.

4. Criteria and guidelines constitute the backbone of the marine technology transfer mechanism. For example, the transfer of marine technology must on fair and reasonable terms. Typically, this transfer should be free of charge or at a reduced cost to the recipient country.

5. Despite the fact that the UNESCO IOC Guidelines have clarified a number of provisions of the 1982 UN Convention on the Law of the Sea concerning the development and transfer of marine technologies, this document needs revision. In particular, it is necessary to specify the criteria and terms for the transfer of marine technologies to both developed and developing states. It is not clear from the text of the document which technologies should be transferred free of charge or at a reduced cost to developing states and states with an unfavorable geographical position.

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NOTE

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