

Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط

Study Guide

for

the Union for the Mediterranean

**Topic Area: Promoting innovation and prosperity
through science diplomacy across the Mediterranean**

Table of Contents

1. Welcoming Letter	3
2. Introduction to the Committee	4
3. Introduction to Topic Area	6
4. Definitions	7
5. Legal Framework	8
6. Main discussion of the Topic	9
<i>A. Sustainable Development and Environmental Challenges</i>	9
<i>B. Collaborative Research and Development Initiatives</i>	11
<i>C. Science Diplomacy for Economic Growth</i>	18
7. Conclusion	22
8. Points to be addressed:	23
9. Bibliography	24

1. Welcoming Letter

Dear Delegates,

We are excited to welcome you to Rhodes MRC 2023, the 13th edition of the conference. It is our pleasure to be part of this beautiful experience and we are certain that your contribution is more than important.

This year's agenda, the topic, and its aspects, which we are about to discuss, are plaguing our modern societies while they are considered as some of the most urgent issues nowadays. We highly encourage you to study, search and delve into every subsection of our topic under discussion and ultimately present to the committee your ideas, solutions and of course your country's policy.

Keep in mind that our agenda constitutes one of the sharpest issues, it is proven by the fact that some countries could not find a common ground to address it; this is no other but: "Promoting innovation and prosperity through science diplomacy across the Mediterranean".

We hope you enjoy the procedure and this beautiful experience. We have supplied you with this articulate Study Guide to do your research and be prepared for this year's Rhodes MRC 2023. Simultaneously, we are at your disposal for any questions or assistance you need.

The Board Members of the Union for the Mediterranean Union,

Adamantia-Evangelia Xenidi (Co-President),

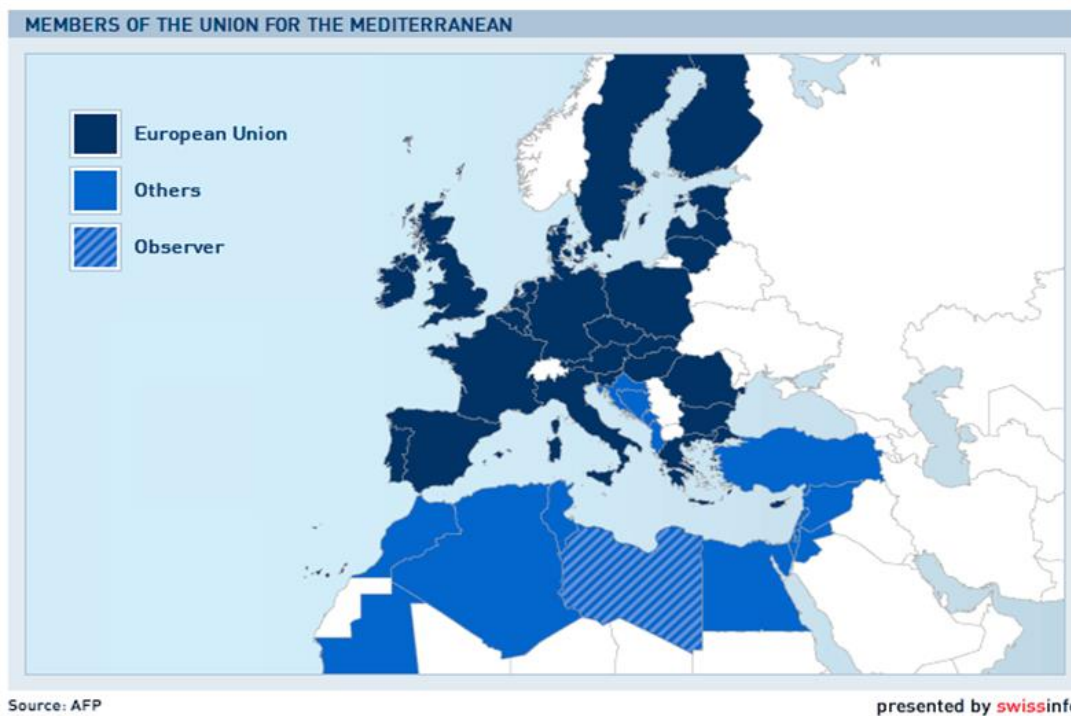
Evangelos Chatzis (Co-President) &

Nikoleta-Tryfonina Sarantou (Secretary General)

2. Introduction to the Committee

The Union for the Mediterranean is an intergovernmental institution, an intergovernmental partnership, which was founded on July 13th, 2008, at the Paris Summit for the Mediterranean. The UfM consists of 43 member states (Syria's status as a member state has been suspended due to the civil war) and Libya (under observer status). Euro-Mediterranean Partnership aims to promote dialogue, strengthen regional cooperation and operate specific projects and initiatives with tangible impact.

The action of the UfM extends across six sectors: Economic Development & Employment, Energy & Climate Action, Water, Environment & Blue Economy, Higher Education & Research, Social & Civil Affairs, Transport & Urban Development¹.



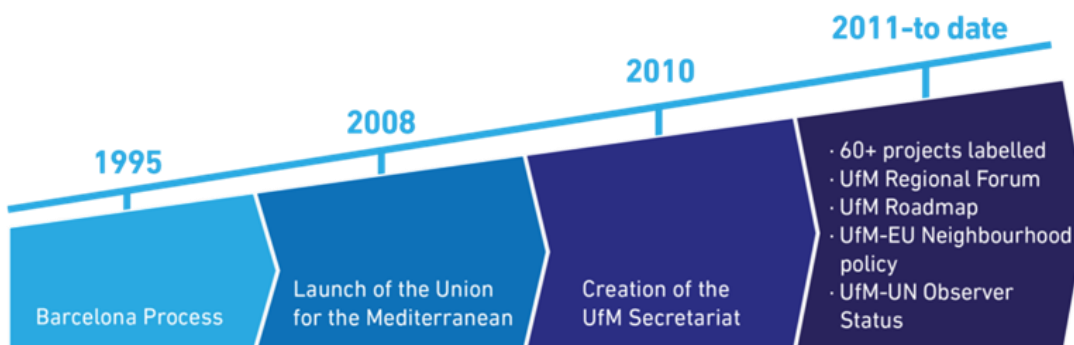
Source: Dacey, J. (2017) Divisions could hamper New Cooperation Drive, SWI swissinfo.ch. Available at: <https://www.swissinfo.ch/eng/divisions-could-hamper-new-cooperation-drive/6799816>.

¹ Carmona, F., Trapouzanlis, C. and Jongberg, K. (2023) *European Neighborhood Policy: Thematic Briefs for the European Union*: European Parliament, Thematic Briefs for the European Union. | Available at: <https://www.europarl.europa.eu/factsheets/el/sheet/170/the-european-neighbourhood-policy>.

The Union for the Mediterranean is the forerunner of the Euro-Mediterranean partnership (Euromed) also known as the Barcelona process, which was founded in 1995 and had the purpose of achieving stability and development in the Mediterranean through political, economic and social cooperation. In 2008 at the Paris Summit it was decided to create the Union for the Mediterranean, which incorporated the objectives of the Barcelona Declaration (1995). Specifically, the UfM aims to create an area of peace, stability, security and shared economic prosperity, with full respect for democratic principles, human rights and fundamental freedoms, as well as promoting understanding between cultures in the Euro-Mediterranean region².

In 2010, the UfM Secretariat was created in Barcelona and is responsible for identifying, developing, promoting and coordinating technical projects in areas such as energy, water, environmental protection, research, empowerment of women, business development. The EU, the European Investment Bank and other international and regional stakeholders have undertaken the financing of the UfM's actions.

In 2012, it was decided that the Presidency of the Union for the Mediterranean should be dual and exercised by the European Union and Jordan. The Co-Presidency is the political arm of the UfM³.



Source: *History* (2023) *UfM*. Available at: <https://ufmsecretariat.org/who-we-are/history/>

² *UfM* (2023). *Description of what we do*. Available at: <https://ufmsecretariat.org/what-we-do/> (Accessed: 18 August 2023).

³ *UfM* (2023). *The History of the Union*. Available at: <https://ufmsecretariat.org/who-we-are/history> (Accessed: 18 August 2023).

From 2021 the Union for the Mediterranean coordinates Mediterranean Day, which is celebrated every November 28 and aims to promote a common Mediterranean identity, embrace diversity and celebrate cooperation in the Euro-Mediterranean region⁴.

3. Introduction to Topic Area

Over the years, The Mediterranean is facing vital threats and pressures - such as social and economic pauperization, environmental corruption, military operations, and migration - that clearly have a great effect on our daily lives while it is well known that the Mediterranean Union is one of the most complex regions globally. Serious environmental challenges, debility of development initiatives and the lack of economic growth must be settled through diplomacy and regional cooperation.

The Mediterranean Union is currently suffering from anthropogenic activities that derogate and violate marine and terrestrial biodiversity, environment, climate system, economic pauperism and ultimately deficiency of collaborative research and development initiatives⁵⁶. Nevertheless, science diplomacy could be easily used as an instrument for eliminating the barriers that encroach on innovation and prosperity in the area. In general science diplomacy is the scientific cooperation among Nations to face common difficulties and threats and it is aiming at international partnerships.

At first, the term “science diplomacy” made its appearance in the 17th century as there were many States that wanted to cooperate to establish peace and security in the European continent. More specifically, when it comes to the Mediterranean Union, must be underlined that science diplomacy assisted in many times of crisis in the Mediterranean region.

⁴ [UfM \(2021\) *The Day of the Mediterranean is born*, UfM. Available at: https://ufmsecretariat.org/international-day-mediterranean-born/](https://ufmsecretariat.org/international-day-mediterranean-born/) (Accessed: 18 August 2023).

⁵ [Papamichael, I., Voukkali, I. and Zorpas, A. \(2022\) "Mediterranean: main environmental issues and concerns", *Euro-Mediterranean Journal for Environmental Integration*, 7\(4\), pp. 477-481. doi:](#)

[.1007/s41207-022-00336-0.](#)

Exigency and emergency situations actuate Nations to cooperate in order to eliminate any difficulty that emerge in the region. Such a necessity, in the 17th century, gave impetus to “science diplomacy” which assisted in numerous scientific ways in military, economic, social and assuredly in environmental crises. Science diplomacy's ultimate aspiration is to constitute an instrument for eliminating threats and for creating international partnerships.

Diplomatic frameworks, additionally, must be established and safeguarded to overcome geographic, socioeconomic, and environmental obstacles. Science Diplomats could be the individual whose ultimate aspiration is to find common ground -among States during a crisis- via a joint venture, international cooperation, and research; but also, they could be diplomats with high expertise in technology, novelty and science aiming to the advocacy of their national and international safety. Either ways, in order the problems to be solved, the augmentation of scientific and diplomatic agendas at both national and regional levels, partnerships, and coalitions must happen⁷.

4. Definitions

A. Diplomacy for science

The term diplomacy for science refers to *the use of diplomatic methods so as to aid and ameliorate international scientific collaboration*. This can be achieved through Research & Development agreements, exchange programmes and establishing international research facilities. Usually, large scale research infrastructure require a high level of funding and resources that can only be found through the collaboration among countries⁸.

B. Science for diplomacy

The meaning of the term science for diplomacy is *the use of scientific advances during diplomatic proceedings*. That is a way to achieve diplomatic objectives, such as creating or

⁷ Science and Innovation Diplomacy in the Mediterranean (2023) Ufmsecretariat.org. Available at: https://ufmsecretariat.org/wp-content/uploads/2021/12/Report_Science_Innovation_Diplomacy_Mediterranean_ALTA.pdf (Accessed: 18 August 2023).

⁸ What is Science Diplomacy? | EEAS [WWW Document], n.d. URL https://www.eeas.europa.eu/eeas/what-science-diplomacy_en (Accessed: 18 August 2023).

reinstating diplomatic relations between nations. By sharing scientific knowledge, countries build trust between them and this cooperation may expand to other diplomatic fields as well. Some characteristic examples of science for diplomacy is CERN (Conseil Européen pour la Recherche Nucléaire), the international center for nuclear research and SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East), a research facility based in Jordan⁹.

C. Science in Diplomacy

The third strand of science diplomacy refers to *the facilitation of diplomatic proceedings and decision-making by using scientific advice*. The possession and sharing of scientific evidence can be crucial for foreign and security policy decision making of a country⁹.

5. Legal Framework

Science diplomacy is considered as a fluid concept. There is no commonly agreed definition or a consensus on the objectives, the instruments and the activities of science diplomacy. This situation continues to the legal framework of it. In reality, science diplomacy plays an important role in the international affairs of most countries and brings closer even nations that have strained relations or face conflicts between them. Despite that, there is no international legal framework that regulates the goals and methods of science diplomacy.

There have been only a few individual efforts to approach the subject in order to better understand the complexity of it and present its different aspects. The most recent one that is worth mentioning is the European Union's S4D4C project. The aim of this project is to support and use science diplomacy actions in the Union for its benefit by achieving its foreign policy goals and providing solutions for many current challenges. For this purpose, the project brings

⁹ [Science Diplomacy in 2023: Courses and Resources by Diplo, n.d.](https://www.diplomacy.edu/topics/science-and-diplomacy/) URL <https://www.diplomacy.edu/topics/science-and-diplomacy/> (Accessed: 18 August 2023). ⁹ [The Royal Society, 2010. New frontiers in science diplomacy. Navigating the changing balance of power](#) (Accessed: 18 August 2023).

together scholars of foreign and science policy, advisors, science diplomacy professionals and diplomatic training institutions¹⁰.

S4D4C was concluded in 2021, but its results are notable. The participation in the project has influenced the national policies of some Member States and the current discussions on the issue of science diplomacy. It was also stressed out that in order for science diplomacy actions to be effective and fruitful collective action must be taken. This requires organization by the domain of science, technology and innovation in synergy with foreign policymakers. This is where a thorough legal framework is needed so that all organized action is carried out correctly and in accordance to the goals and values of science diplomacy efforts¹¹

6. Main discussion of the Topic

A. Sustainable Development and Environmental Challenges

Sustainable development is an efficient instrument to tackle and encounter the environmental challenges¹² that continuously emerge. However, we must apprehend what “sustainable development” exactly is and how it works. The responsible appropriation of natural resources, the long lasting/ perennial maintenance of environmental balance and the coverage of the needs of the current generations are the ambitions that sustainable development must handle. These also arise from scientific studies of geography and biology.

The Barcelona Convention (1975)¹³ might be considered as one of the most significant conventions for the protection of the environment and the preservation of marine and lowland regions as well as the elimination of many environmental challenges. From the Barcelona

¹⁰ [Using science for/in diplomacy for addressing global challenges | S4D4C Project | Fact Sheet | H2020 \[WWW Document\], n.d., CORDIS | European Commission. URL <https://cordis.europa.eu/project/id/770342>](#)

¹¹ [The Impact Story of S4D4C, April 2021, Using Science for/in Diplomacy for Addressing Global Challenges](#)

¹² [UfM Secretariat. \(n.d.\). UfM Environment Agenda. Available at: <https://ufmsecretariat.org/ufm-environment-agenda/> \(Accessed: 19 August 2023\).](#)

¹³ [IEMed. \(n.d.\). Environmental and Sustainable Development in the Mediterranean. Available at: <https://www.iemed.org/publication/environmental-and-sustainable-development-in-the-mediterranean/#section-environmental-and-sustainable-development-components-of-a-european-strategy-for-the-mediterranean-in-2010-Egy84> \(Accessed: 19 August 2023\).](#)

Convention emerged the Regional Seas Programme (UNEP/RSP)¹⁴ for safeguarding the maritime environment. More specifically, many are the threats that must be tackled, such as the impact of climate change on the agricultural sector, the limited water resources and management and the beggary of biodiversity. Human overconsumption of natural and raw materials relates to the malicious and negative affection of the environment. Unfortunately, taking into consideration recent reports of the Living Planet Report 2022¹⁵ the average of the wild (flora and fauna) life has fallen by 60%.

It would be an infelicity not to mention the association between “Sustainable Development” and “Science Diplomacy” while expertise and negotiations are capable of achieving balance between Nations¹⁶. Namely, science diplomacy is one of the most efficient steps to promote and finally achieve the seventeen Sustainable Development Goals (SDGs)¹⁷ such as, poverty and hunger reduction, health and equality amongst individuals, elimination of air pollution and water contamination. Technology is a mean to address serious and several environmental dangers; this is how the term “environmental technology” occurs while simultaneously via technology produces energy through water, wind and other sustainable commons¹⁸.

Taking into consideration the United Nations Framework Convention on the Climate Change¹⁹ is more than understandable that it consists an effective way to delve deeper and negotiate the reasons and ultimately the ways to reduce the triumphalism of the climate change and its socioeconomic and environmental consequences as there are mentioned the means of sustainable development.

¹⁴ UNEP. (n.d.). Regional Seas Programme. Available at: <https://www.unep.org/explore-topics/oceans-seas/what-we-do/regional-seas-programme> (Accessed: 19 August 2023).

¹⁵ WWF. (n.d.). Living Planet. Available at: <https://livingplanet.panda.org/> (Accessed: 19 August 2023).

¹⁶ FISD. (2020). Sustainable Development Report, March 2020, 9. Available at: https://fisd.in/sites/default/files/Publication/SDR%20March%202020_0.pdf#page=9 (Accessed: 19 August 2023).

¹⁷ UNDP. (n.d.). Sustainable Development Goals. Available at: https://www.undp.org/sustainable-development-goals?qclid=CjwKCAjwT52mBhB5EiwA05YKo7rZj4v1ZvBQAKJgXhkd6pVH3amaUCPF0Qyv_B_iLhAXT1bB2i8GLxoCSBoQAvD_BwE (Accessed: 19 August 2023).

¹⁸ Edinburgh Sensors. (n.d.). Environmental Technology: The Impact of Technology on the Environment and Environmental Technology. Available at: <https://edinburghsensors.com/news-and-events/environmental-technology-the-impact-of-technology-on-the-environment-and-environmental-technology/> (Accessed: 19 August 2023).

¹⁹ UNFCCC. (n.d.). Sustainable Development. Available at: <https://unfccc.int/gcse?q=sustainable%20development> (Accessed: 19 August 2023).

Additionally, according to the Intergovernmental Science - Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Report on Biodiversity and Ecosystem Services, the risk of extinction of many wild species has been dramatically increased.

All the aforementioned facts could easily reduce their impact on our daily lives, by following the steps of the “Horizon Europe” program²⁰. Specifically, “Horizon Europe” is aiming at the accomplishment of the the UN’s Sustainable Development

Goals²¹ such as the reduction of every type of pollution in the region of the Mediterranean.

It is also necessary to pay attention to the Mediterranean Strategy for Sustainable Development (MSSD)²², of which aspiration is to promote and strengthen the associations between economic growth and natural resources. This specific program targets to custodianship of marine areas and the reduction of climate pollution.

B.Collaborative Research and Development Initiatives

Research and development initiatives play a vital role in societal progress, as they lead to a better understanding of the challenges we face on a regional and global level and they help achieve sustainable growth, regional stability and cooperation. One of the aims of the Union for the Mediterranean is to strengthen regional collaboration on research and innovation in order to reach human and sustainable development and improve regional scientific diplomacy²³.

²⁰ European Commission. (n.d.). Horizon Europe - Research and Innovation Funding. Available at: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-andopen-calls/horizon-europe_en (Accessed: 19 August 2023).

²¹ UNDP. (n.d.). Sustainable Development Goals. Available at: https://www.undp.org/sustainable-development-goals?qclid=CjwKCAjwzo2mBhAUeIwAf7wjkgRaiie ovax-LdCWXX48wtq5buTotJ-7teivwki26a3vEnhR9nRRoCR_4QAvD_BwE (Accessed: 19 August 2023).

²² UNEP. (n.d.). Mediterranean Strategy for Sustainable Development (MSSD). Available at: <https://www.unep.org/uneppmap/what-we-do/mediterranean-strategy-sustainable-development-mssd> (Accessed: 19 August 2023).

²³ UfM Regional Platform on Research and Innovation, n.d. . Union for the Mediterranean - UfM. URL <https://ufmsecretariat.org/platform/ufm-regional-platform-on-research-and-innovation/> (Accessed: 19 August 2023).

In spite of specific projects such as SESAME, science diplomacy in the Mediterranean consists of scientific networks, joint research projects, conferences, workshops and knowledge-sharing platforms. All of those activities have common goals; examine current challenges, promote dialogue between countries, support regional integration and cultivate mutual understanding and trust²⁴. Innovation initiatives consist of innovation hubs, startup incubators and programs that exchange ideas and technological advances. Such initiatives are the most effective and direct way to overcome international challenges, such as climate change, food, water and energy security and access to healthcare.

In more detail, R&I projects should promote capacity building, institutional innovation and networking actions so that knowledge exchange, partnerships and trust between parties can be expanded. Science diplomacy on research and innovation can be achieved through joint research projects on transboundary issues of common interest, where not only countries in the Mediterranean region can participate, but also other international organizations, academic institutions, the private sector and civil society groups²⁵.

In order for science and innovation diplomacy in the Mediterranean to flourish, supportive policies, institutional frameworks and funding mechanisms are needed. Emphasis must be put on the increase of investments for research and development, the amelioration of science education and the establishment of intellectual property rights framework. All those should be parallel to efforts for fostering regional cooperation and coordination in the region as well as finding methods to fully utilize available tools and skills and develop areas where Mediterranean students, graduates and researchers can be employed and excel their careers in the region²⁶.

²⁴ Science Diplomacy in the Mediterranean: Building Trust Through Science and Knowledge [WWW Document], n.d. URL <https://www.iemed.org/events/science-diplomacy-in-the-mediterranean-building-trust-through-scienceand-knowledge/> (Accessed: 19 August 2023).

²⁵ Science and Innovation Diplomacy in the Mediterranean, Take Away Ideas Report, 2021, Union for the Mediterranean and CREAM (Research, Innovation and Knowledge Transfer in Ecology) ²⁶ What we do, n.d. . International Science Council. URL <https://council.science/what-we-do/> (Accessed: 19 August 2023).

²⁶ International cooperation in research and innovation [WWW Document], 2023. URL https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation_en (Accessed: 19 August 2023).

International cooperation in research and innovation is a strategic priority for the European Union as well as it gives access to the most up-to-date knowledge and the best talent worldwide, allows business opportunities in multiple markets and uses science diplomacy to form and enhance its foreign policy²⁷. In this context, so as to boost the dialogue and cooperation between European and African countries on programmes and tools for sustainable development, the Africa Knowledge Platform (AKP) was created by the European Commission's Joint Research Centre (JRC). The platform includes data and information on Africa's development in the social, economic, territorial and environmental sectors. Its purpose is to give easy access to scientific information and available science-based evidence. This tool can be accessed not only by the European Commission, EEAS and EU Delegation staff, but also to African partner institutions, EU Member States, development cooperation agencies, research institutions and universities, as well as civil society²⁷.

Research and Innovation Organizations and Initiatives

SESAME

SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) is a “third-generation” synchrotron light source that was established in Jordan on 16 May 2017, under the auspices of UNESCO. Today it consists of 8 Member States (Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, Palestine and Türkiye), while many other countries and institutions have been granted an observer status. SESAME's goals are threefold:

1. Cultivation of scientific and technological innovation in the Middle East and the neighboring countries on a variety of fields, such as medicine, biology, physics and chemistry,

²⁷ ²⁷ Science diplomacy | EEAS [WWW Document], n.d. URL https://www.eeas.europa.eu/eeas/science-diplomacy_en (Accessed: 19 August 2023).

2. Creation of scientific and cultural bridges between nations, aiming at their mutual understanding through international scientific cooperation, despite their current political divides,
3. Prevention of the brain drain as a way to boost science education and research in the region.²⁸

With scientific progress and innovation as a priority, SESAME promotes inclusivity and scientific collaboration within the region despite the conflicts between some of the neighboring countries.

Union for the Mediterranean Platform on Research and Innovation

The UfM Regional Platform in Research and Innovation (formerly known as the “Euro-Mediterranean Monitoring Committee on Research and Innovation”) was created in 1995, when a first Euro-Mediterranean Committee was created, with the aim of monitoring and promoting cooperation in research, technology and development. The goal of the platform is to make recommendations for the joint implementation of research policy priorities in the fields of science, technology and innovation. It aids at the sustainable development of the region by being a means of information exchange, requiring collaborative activities and specific actions on issues of regional importance and organizing the UfM ministerial meetings on research, higher education and innovation²⁹.

The Ministerial Conference on research and innovation (R&I) of the Union for the Mediterranean was held in 2022 to promote international cooperation on science and knowledge in the region. Ministers set out three new research and innovation (R&I) roadmaps on climate change, renewable energies, and health³⁰. In the Declaration of the First Union for

²⁸ [What is SESAME? | SESAME | Synchrotron-light for Experimental Science and Applications in the Middle East \[WWW Document\]. n.d.](https://www.sesame.org.jo/about-us/what-is-sesame)
URL <https://www.sesame.org.jo/about-us/what-is-sesame> (Accessed: 19 August 2023).

²⁹ [Mediterranean \[WWW Document\], 2023. URL](https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation/mediterranean_en)
https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation/mediterranean_en
(Accessed: 19 August 2023).

³⁰ [UfM Ministers launch a new Research and Innovation Agenda for the Mediterranean region. 2022, Union for the Mediterranean - UfM.](https://ufmsecretariat.org/ministerial-conference-research-innovation-2022/)
URL <https://ufmsecretariat.org/ministerial-conference-research-innovation-2022/> (Accessed: 19 August 2023).

the Mediterranean Ministerial Conference on Research and Innovation (27 June 2022) it was highlighted that a shared vision of fundamental R&I values and principles is necessary in order to cooperate effectively and the role of UfM as forum for dialogue in the Mediterranean region was emphasized. For this action to be implemented, a certain plan should be created, setting out specific priorities, coordinating joint actions and promoting synergy with other institutions³¹.

The UfM Platform on R&I contributes to human sustainable development by:

- ❖ acting as a forum for the exchange of information, views and recommendations on research and innovation policy in the Mediterranean region, and establishing a common information base on this subject;
- ❖ identifying issues of regional importance to be addressed by research and innovation and requiring cooperative Euro-Mediterranean activities;
- ❖ preparing and executing a work programme, either through the Platform itself or through the establishment of ad-hoc working groups reporting directly to the Platform;
- ❖ proposing specific actions to be taken in the interest of the region;
- ❖ monitoring and providing feedback on research and innovation policies, developments and activities in the Euro-Mediterranean context;
- ❖ supporting and preparing the UfM Ministerial Meetings on Research and Innovation as well as reporting to and contributing to follow-up on issues concerning science, technology and innovation.

PRIMA

The Partnership for Research and Innovation in the Mediterranean Area (PRIMA)

Foundation is a non-profit organization that is responsible for the coordination of the PRIMA Project. The four core areas of action of PRIMA are farming systems, agri-food value chain,

³¹ [UfM Ministers launch a new Research and Innovation Agenda for the Mediterranean region \[WWW Document\], n.d. . EU Neighbours.](https://south.euneighbours.eu/news/ufm-ministers-launch-new-research-and-innovation-agenda-mediterranean/) URL <https://south.euneighbours.eu/news/ufm-ministers-launch-new-research-and-innovation-agenda-mediterranean/> (Accessed: 19 August 2023).

water management and the WEFE nexus. Its main objective is to develop new research and innovation approaches to improve water availability and sustainable agriculture production in the region.

By promoting collaborative solutions, PRIMA has facilitated groundbreaking research and innovation efforts in the Mediterranean, contributing to the sustainable development of the region. PRIMA's innovative implementation structure has revolutionized research, innovation, and collaboration in the Mediterranean and has created bridges among national agencies and initiatives³². Along with the rest of its goals, PRIMA aims at the stability and socio-economic development of the Mediterranean region, in the context of an EU foreign policy and an increased euroMediterranean cooperation.

CERN

CERN, the European Council for Nuclear Research (in French Conseil Européen pour la Recherche Nucléaire), was established in 1949 by a group of scientists from many European countries. The CERN convention was signed in 1953 by the 12 founding states, Belgium, Denmark, France, the Federal Republic of Germany, Greece, Italy, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and Yugoslavia. One of the objectives of this initiative was to increase international scientific collaboration in Europe after the Second World War³³.

Today CERN has 23 Member States from all over Europe, while 10 more are Associate Member States. CERN's main objective is the research in fundamental particle physics, which can help technological progress in many areas, such as the environment, healthcare and space, digital and quantum technology. This has a remarkable global impact and is an important example of international collaboration. All of this is conducted in an environmentally

³² Guiheneuf, L., 2023. PRIMA's First Interim Evaluation showcases remarkable progress in Mediterranean Research and Innovation [WWW Document]. PRIMA. URL <https://prima-med.org/primas-first-interim-evaluation-showcases-remarkable-progress-in-mediterranean-research-and-innovation/> (Accessed: 19 August 2023).

³³ Our History | CERN [WWW Document], n.d. URL <https://home.cern/about/who-we-are/our-history> (Accessed: 19 August 2023).

responsible and sustainable way and at the same time people from all around the world are united with the same purpose³⁴.

1.1.1. **European Research Area (ERA) Framework**

The European Research Area Framework was established in 2000 aiming at creating a single EU market for research, innovation and technology. Its work gravitates towards the free circulation of researchers and knowledge and the alignment on national research policies and programmes within the Member States. The main objectives of this initiative are:

- ❖ Investment in R&I for a greener and digital future,
- ❖ Access to infrastructures and facilities for researchers,
- ❖ Support to researchers' mobility, skills and career opportunities, ❖ Encouragement of gender equality and diversity
- ❖ Development of open science practices³⁵

1.1.2. **Horizon Europe**

Horizon Europe is the 9th European Union program on research and innovation for the 2021-2027 period. This project aims at improving the scientific and technological basis of the EU, the reformation of the European Research Area and the amelioration of EU' s innovative capacity. Its objective is to connect science and innovation with the 6 main European priorities; combating climate change, digital reformation of society and economy, well- being and safety of citizens and the safeguarding of European democracy. The programme facilitates collaboration, strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges and boosts EU' s competitiveness and growth. Horizon Europe is accessible to researchers and innovators from all over the world. Even non- EU third countries can participate in the program on equal terms with EU countries, as many of the topics require international cooperation. There are three different forms of cooperation used for this purpose:

³⁴ [Our Mission \[WWW Document\], 2023.. CERN. URL https://home.cern/about/who-we-are/our-mission \(Accessed: 19 August 2023\).](https://home.cern/about/who-we-are/our-mission)

³⁵ [European Research Area \[WWW Document\], 2021. URL https://www.consilium.europa.eu/en/policies/european-research-area/ \(Accessed: 19 August 2023\).](https://www.consilium.europa.eu/en/policies/european-research-area/)

1. Association agreements provide non-EU countries the same rights and obligations in R&I projects as EU Member- States,
2. Bilateral science and technology agreements are based on common interests and priorities, aiming to increase cooperation in R&I,
3. Regional dialogues on science and technology combine policy dialogue with project collaboration³⁶.

To sum everything up, nowadays countries face serious and complex problems that call for immediate solutions. These actions -in order to be effective- require the coordination of the policies of multiple countries that work together on a regional or international level. This is the role of science diplomacy, to find the best way to organize such efforts and close the gap between countries that might face conflicts with each other or differ in terms of scientific progress and infrastructure.

1.2.C. Science Diplomacy for Economic Growth

The Mediterranean Sea is one of the most highly valued seas in the world from an environmental and economic point of view. It is the crossroads of three continents (Africa, Asia and Europe). The Mediterranean represents a precious commodity locally and globally, a sea of diverse peoples. For years now, the Mediterranean has encouraged trade and cooperation, regulated climate, provided nutrients and propelled economic growth. Today, the region is characterized by the strong diversity of its coastal countries. Institutional and political heterogeneity, uneven economic growth, wealth disparities and a complex security environment are trying to be bridged through the Union for the Mediterranean.

Economic interdependence is expected to have a positive impact, bridging the development and security gap. Recent years, the Mediterranean area has been shaken by events such as the Arab Uprisings, the 2008 global financial crisis, the wars in Libya and Syria, a refugee crisis and terrorist acts which undermine the region's economic development³⁷.

³⁶ Horizon Europe [WWW Document], 2023. URL

https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-andopen-calls/horizon-europe_en
(Accessed: 19 August 2023).

³⁷ Manoli, P. (2021) *Economic linkages across the Mediterranean: Trends on trade, investments and Energy*. E/IAMEP. Available at:
<https://www.eliamep.gr/en/publication/%CE%BF%CE%B9%CE%BA%CE%BF%CE%BD%CE%BF>

The member states of the Union for the Mediterranean reap significant benefits thanks to their cooperation. At the political level, the participants observe an improvement in interstate relations through the strengthening of trust. They enhance security within the Union against both internal and external threats. They better deal with security challenges such as for example environmental challenges, illegal immigration. Bargaining power in the global economy is enhanced through group solidarity. Negotiations for regional agreements are easier to negotiate and implement than global ones.

At the economic level, the member states have the possibility of permanent protection of sectors that would not succeed under different conditions to survive in the context of global competition. They are provided with a "deeper draw" program that is not possible globally. States have access to larger markets (providing reciprocity) and attract foreign investment more easily³⁸.

The Mediterranean is home to a large diversity of ecosystems and species, with 17 percent of known marine mammals present in an area covering less than 1 percent of the world's oceans. The Mediterranean Sea also plays a vital role in the economy of its bordering States and is an important source of employment³⁹.

Science Diplomacy is the connecting link to achieve economic growth and environmental protection in the Mediterranean basin in several ways. Characteristic examples of the above combination are the green economy and the blue economy.

A green economy is defined as low carbon, resource efficient and socially inclusive. The Green Economy aims to improve production processes and consumption practices to reduce resource consumption, waste generation and emissions across the full life cycle of processes

[%CE%BC%CE%B9%CE%BA%CE%BF%CE%AF-%CE%B4%CE%B5%CF%83%CE%BC%CE%BF%CE%AF-%CF%84%CF%89%CE%BD-%CE%BC%CE%B5%CF%83%CE%BF%CE%B3%CE%B5%CE%B9%CE%B1%CE%BA%CF%8E%CE%BD-%CF%87 \(Accessed: 19 August 2023\).](#)

³⁸ [RAVENHILL, J. \(2018\) in GLOBAL POLITICAL ECONOMY, FIFTH EDITION. ΤΖΙΟΛΑΣ](#)

³⁹ [Mediterranean coast day: Economic growth and the protection of the environment can and need to be conciliated \(2018\) Mediterranean Coast day: economic growth and the protection of the environment can and need to be conciliated | UNEPMAP. Available at:](#)

[https://www.unep.org/uneppmap/news/news/mediterranean-coast-day-economic%20growth-and-protect ion-environment-can-and-need-be. \(Accessed: 19 August 2023\).](https://www.unep.org/uneppmap/news/news/mediterranean-coast-day-economic%20growth-and-protect ion-environment-can-and-need-be. (Accessed: 19 August 2023).)

and products. The Green Economy provides a macro-economic approach to sustainable economic growth with a central focus on investments, employment and skills.

Thanks to the green economy, the reduction of production and costs is achieved resulting in the more responsible use of raw materials and the increase of efficient energy consumption, the reduction of waste through recycling and reuse of products, the creation of new jobs and the increasing sales of products that respect the planet and are ecologically conscious.

In fact, the Green Economy as an idea does not show disadvantages but challenges. More specifically, there is a need for a real transformation of our society. It is considered necessary for companies to recognize and realize their corporate social responsibility, to adopt new procedures and to reduce their environmental impact as much as possible, something that in many countries is not yet implemented. Also in developing countries, adopting an effective green economic system is complex and requires more complex bioeconomic analysis, as they face increasing environmental problems and high poverty⁴⁰.

In February 2023, the UfM launched the new Grant Scheme to Promote Employment and Entrepreneurship in the Green Economy. This Grant Scheme's global objective is to support the green transformation of the Southern Mediterranean economies with a view of supporting employment promotion in the green economy⁴¹.

A blue economy, although there is no consensus on the exact definition and scope, is generally an economic term linked to the exploitation and conservation of the marine environment and is sometimes used as a synonym for the "sustainable economy based on the ocean".

The blue economy has multiple benefits for the environment. Thanks to this, better governance of marine ecosystems, lower emissions and the fight against climate change are achieved. Alternative energy sources such as wind energy, hydropower and tidal energy are fitting for marine environments.

⁴⁰ [Environment, U. \(no date\) Green economy, UNEP. Available at: https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy](https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy) (Accessed: 19 August 2023).

⁴¹ [UfM Grant Schemes \(2023\) UfM. Available at: https://ufmsecretariat.org/ufm-grant-schemes/](https://ufmsecretariat.org/ufm-grant-schemes/) (Accessed: 19 August 2023).

The blue economy integrates a diverse range of economic activities from coastal and marine tourism to maritime transport, fisheries and aquaculture, and offshore renewable energy. Its potential contribution to sustainable job creation, food security, clean energy supply, circular economy and sustainable mobility is huge⁴².

The UfM promotes regional cooperation to protect the Mediterranean Sea and the natural resources of the countries belonging to its area, and supports partnerships inspired by “green/blue” circular economy principles. Serious environmental threats, including water scarcity, put this potential at risk. Sustainable access, provision and use of water are key concerns. The UfM supports the implementation of regional agendas on Water, Environment and Blue Economy.



Source: *Mediterranean Blue Economy Stakeholder Platform 2* (no date) *Mediterranean Blue Economy Stakeholder Platform*. Available at:

<https://medblueeconomyplatform.org/about/blue-economy/>.

⁴² [Water, environment and Blue Economy \(2023\) UfM](https://ufmsecretariat.org/what-we-do/water-environment/). Available at: <https://ufmsecretariat.org/what-we-do/water-environment/> (Accessed: 19 August 2023).

The Union for the Mediterranean has observer status at the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD)⁴³.

7. Conclusion

Science diplomacy is a multifaceted concept that lacks a universally agreed-upon definition or specific set of practices. Despite this ambiguity, its role in fostering international and regional collaboration for scientific advancement and breakthroughs is undeniably significant. In the present global landscape, characterized by multiple simultaneous crises, the imperative for cooperation and interconnectedness has never been more pronounced.

Addressing the formidable global challenges that lay ahead requires concerted efforts. The international community grapples with environmental degradation and economic instability, both of which have far-reaching implications for ecosystems and the well-being of societies. Science diplomacy emerges as a crucial tool to safeguard the environment, attain sustainable development, and establish equilibrium in economic growth. Moreover, science diplomacy plays a pivotal role in the realm of research and development. Collaborative endeavors among nations stimulate the proliferation and accessibility of innovations and scientific advancements. By fostering an environment of shared knowledge and expertise, science diplomacy paves the way for accelerated progress and heightened accessibility to cutting-edge technologies.

In a world interconnected by technology and facing shared challenges, the significance of science diplomacy cannot be overstated. By transcending political boundaries, fostering cross-cultural dialogue, and promoting the dissemination of knowledge, science diplomacy lays the foundation for a more resilient, cooperative, and prosperous global community.

⁴³ [Water, environment and Blue Economy \(2023\) UfM](https://ufmsecretariat.org/what-we-do/water-environment/). Available at: <https://ufmsecretariat.org/what-we-do/water-environment/> (Accessed: 19 August 2023).

8. Points to be addressed:

1. How can effective implementation of sustainable development contribute to national advantages and facilitate support for the environmental challenges confronting the Mediterranean region?
2. To what extent do human-driven activities, notably the excessive consumption of natural resources, impact the environment, and can these effects be mitigated through international cooperation? If feasible, what strategies could be employed to achieve such collaboration?
3. Is there a viable potential for refining existing legal frameworks to integrate harmonious resolutions utilizing sustainable development methodologies?
4. What procedural measures should be undertaken to establish a comprehensive international legal framework addressing the principles of science diplomacy?
5. In what manners can research and innovation initiatives play a pivotal role in fortifying the interconnections among nations within the Mediterranean region?
6. How can the Union for the Mediterranean effectively orchestrate collective endeavors aimed at advancing Research and Innovation (R&I) projects, and which specific actions deserve heightened emphasis in this context?
7. With which established institutions and organizations could the Union for the Mediterranean engage in meaningful and productive collaboration?
8. How can UfM member states strategically leverage science diplomacy to realize sustained economic expansion and development?
9. What measures could be adopted by UfM member states to engender economic growth, and what initiatives can be pursued to achieve this goal?
10. In what ways can science diplomacy serve as a catalyst for fostering economic growth, and what strategies could be pursued to harness this potential effectively?

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