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Technical report: Exploratory study on environmentally harmful subsidies in the Mediterranean

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List of acronyms

CBD:	Convention on Biological Diversity
CFP:	Common Fisheries Policy
CGDD:	Commissariat Général au Développement Durable (General Commission for Sustainable Development - France)
COP:	Conference of the Parties
DAFN:	Droit Annuel De Francisation Des Navires (annual fee for francization and navigation)
EC:	European Commission
EEA:	European Environment Agency
EMFAF:	European Maritime Fisheries and Aquaculture Fund (2021 - 2027)
EMFF:	European Maritime and Fisheries Fund (2014 - 2020)
EFR:	Environmental Fiscal Reform
EHS:	Environmentally Harmful Subsidies
FAO:	Food and agriculture organization of the UN
GHG:	Greenhouse Gases
ICZM:	Integrated Coastal Zone Management
IEEP:	Institute for European Environment policy
IMF:	International Monetary Fund
IPBES:	Intergovernmental Platform for Biodiversity and Ecosystem Services
ITA:	International Tourist Arrivals
IUCN:	International Union for Conservation of Nature
IUU:	Illegal, Unregulated and Unreported
MAP:	Mediterranean Action Plan
MedECC:	Mediterranean Expert Network on Climate and Environmental Change
MPA:	Marine Protected Area
MSSD:	Mediterranean Strategy for Sustainable Development
NbS:	Nature-based Solutions
NSDS:	National Sustainable Development Strategies
OECD:	Organisation for Economic Co-operation and Development
PES:	Payments for Ecosystem Services
SDGs:	Sustainable Development Goals
SDSN:	Sustainable Development Solutions Network
SIMPEER:	Simplified Peer Review Mechanism
SoED:	State of the Environment and Development Report
UN DESA:	United Nations Department of Economic and Social Affairs
UNEP:	United Nations Environment Programme
UNWTO:	United Nation World Tourism Organisation
USD:	United States Dollar
VAT:	Value Added Tax
WB:	World Bank
WTO:	World Trade Organization

Executive summary

This first exploratory study aims to raise awareness among decision-makers and suggests making environmentally harmful subsidies (EHS) a new topic to be included in the MAP scope of activities. The objective is to provide a first overview of environmentally damaging subsidies in the Mediterranean, their impacts as well as initial avenues of reform, in two of the most relevant sectors in the MAP framework, fisheries and tourism.

First, the study shows that the definition of environmentally harmful subsidies is multiple and not shared or common. Indeed, there is a multiplicity of methodologies, definitions and typologies described by different international or national bodies. The scope of EHS is therefore variable and more or less broad: direct financial transfers, tax reductions or exemptions, or non-internalisation of external costs on the environment. This can create a difficulty in setting up a coordinated and coherent action for EHS reform. Research shows, however, that there are conceptual and methodological frameworks of reference such as those developed by OECD and the IEEP.

As a result, estimates of the amount of EHS vary between USD 500 billion and USD 1.5 trillion per year. However, it is generally accepted that EHS are far greater than the subsidies in favour of environmental protection. In comparison, general government expenditure in the EU and US on 'environmental protection' only reach a combined €269 billion annually. Thus, to reduce this amount but also the environmental, economic and social impact of EHS, international, regional and national commitments have been made. There are indeed a multitude of multilateral agreements that advocate or commit countries to reform or even abolish EHS, in different sectors. However, these agreements have generally not been implemented and have not led to reform, as the targets set by the SDGs or the CBD, for example, have not been met and EHS persist.

At the Mediterranean level, protocols (ICZM protocol) and strategies (MSSD) translate the international objectives of EHS reform onto the regional level, but there is no specific study on EHS, as has been done in France or Italy. This study therefore provides a first overview. While harmful subsidies in the fisheries sector are well documented, the link between harmful subsidies and tourism is less clear, due to methodological difficulties.

In the fisheries sector, economic incentives favour unsustainable practices and increased fishing capacity of vessels, including EU subsidies, which contribute to overexploitation and degradation of marine ecosystems. In the tourism sector, subsidies do not limit or even favour the development of mass tourism and tend to favour land occupation, overexploitation of resources, pollution, and degradation of ecosystems such as wetlands, particularly in Mediterranean coastal areas. Both, fisheries and tourism, are greenhouse gas emitting sectors and the proportion of subsidies to these sectors that support fossil fuel use is significant.

In addition, this study highlights the unequal nature of certain subsidies. In the fisheries sector, subsidies mainly benefit industrial fisheries, which are fewer in number and have a greater impact on the environment. The study also highlights the fact that the persistence of environmentally harmful subsidies favours the establishment of a vicious circle. Indeed, they allow an expansion of activities but the resulting environmental degradation jeopardises the very exercise of fishing or tourism and consequently the subsistence capacity of the populations which depend on these activities.

It is therefore important to consider and reform EHS in the Mediterranean to preserve the environment and its components but also to maintain the quality of life of local populations. By eliminating or redirecting environmentally harmful subsidies, governments can also free up funds that can be used for more productive and sustainable purposes.

However, the present study cannot be an end in itself and aims at a longer-term perspective. First, based mainly on bibliographic research, it highlights the difficulty of accessing certain data concerning EHS in the Mediterranean (notably specific regional data). Therefore, to increase both data availability and accessibility, the development of a network of experts as well as the transparency and sharing of data are essential and would feed research work as well as the implementation of a reform in the Mediterranean. Secondly, it is necessary to extend this study to other important sectors such as transport, waste, agriculture or energy.

On the other hand, it is important to underline that a reform dynamic is constantly evolving at the international level, through events to which Mediterranean countries are linked, and can help promote EHS reform (COP15 CBD, WTO negotiations). Mediterranean countries can also initiate EHS reforms using environmental fiscal reform tools to raise revenues and redirect them to environmental protection or sustainable ecosystem management activities.

Finally, several tools are available to Mediterranean countries to create awareness of EHS and linked reform but also to limit the appearance of new EHS. The MAP framework, and its different lines of action, must be mobilised to promote coherent and effective action.

Introduction

"What is common to the greatest number is the object of the least care. Man takes the greatest care of what is his own, he tends to neglect what is in common".

Aristotle, *Politics*, Book III

"Building the Mediterranean's future together"

Plan Bleu

Humanity is facing an unprecedented ecological crisis, which it is still possible to tackle. Since the 1970s, scientists have been warning of the need to rethink our modes of development, production, and consumption (Meadows Report, 1972). This triple ecological crisis is characterised by interdependent global changes namely global warming, the collapse of biodiversity and pollution. It challenges the adaptive capacity and livelihoods of the 512 million human populations in the Mediterranean (UNDESA, 2019).

In this region, the ecological crisis is particularly strong because of its status as a biodiversity hotspot¹. Indeed, characterised by its richness, biological diversity, and high rate of endemism, but also by its great fragility (Duschesne, 2019), the Mediterranean Sea is a very vulnerable region in the face of global changes. The State of the Environment and Development report (SoED) for the Mediterranean published by Plan Bleu in 2020 shows that global changes are more intense and rapid in this region. For example, the Mediterranean region is a hot spot for climate change which is evolving *"at a rate exceeding global averages, particularly through faster air and ocean warming in all seasons"* (UNEP/MAP and Plan Bleu, 2020).

Mediterranean populations are therefore strongly impacted by these changes, which lead to drought, water shortages, reduced agricultural yields, natural disasters, and rising water levels. Currently, about 47 million people in the Mediterranean are facing severe water stress - by 2050 this number could reach 202 million (Milano et al., 2013).

The IPCC (2018) or IPBES (2019) reports show that these global changes are mainly due to anthropogenic factors, stemming from human activities that are characterised by unsustainable production and consumption practices. The First Mediterranean Assessment Report of the Mediterranean Expert Network on Climate and Environmental Change (MedECC) underlines that *"virtually all continental and marine sub-regions of the Mediterranean basin are impacted by recent anthropogenic changes in the environment"* (MedECC, 2020). In the Mediterranean, these human activities exert a strong pressure on ecosystems, depleting natural resources and extensively degrading the environment (UNEP/MAP and Plan Bleu, 2020). For example, fishing is one of the most important factors affecting the deterioration and overexploitation of marine ecosystems (IPBES, 2019) and the Mediterranean Sea is one of the most overexploited seas in terms of fisheries resources (FAO, 2020).

Despite international momentum for sustainable development, these unsustainable activities are exacerbated by economic incentives that *"generally favour an expansion of economic activity at the expense of conservation and restoration, often causing environmental damage"* (IPBES, 2019). Indeed, much of the funding that comes from public authorities to support economic activity is considered environmentally harmful or damaging.

These are known as environmentally harmful subsidies (EHS). They are defined as a set of aids emanating, directly or indirectly, from a public entity, which favour production or consumption that is harmful to the environment by increasing the exploitation of resources, the level of pollution or the deterioration of biodiversity. They are therefore opposed to subsidies that are environmentally friendly, i.e., that finance environmental protection.

Globally, environmentally harmful subsidies are estimated to be worth between \$500 billion and \$1.5 trillion per year (Meyer et al., 2009). In comparison, general government expenditure in the EU on 'environmental protection' amounted only to €119 billion (0.8% of GDP) in 2021², meanwhile expenditures for environmental protection in the U.S. are estimated to \$150 billion annually or about 2% of GDP³. A study by the International Monetary Fund (IMF)

¹ The Mediterranean is one of the 25 biodiversity hotspots. To qualify as such, a hotspot must contain at least 1,500 species of vascular plants as endemic and to have lost at least 70% of the original habitat. Source: Tour du Valat, 2015

² https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Government_expenditure_on_environmental_protection

³ <https://www.rff.org/publications/journal-articles/the-cost-of-environmental-protection/>

highlights the importance of energy subsidies, estimated at \$5,200 billion in 2017, 85% of which are destined for coal and oil (Coady et al., 2019), while their consumption increases the concentration of greenhouse gases in the atmosphere, causing pollution and premature deaths (Coady et al., 2015). Finally, it should be noted that subsidies that create environmental damage are 5 to 6 times higher than those that benefit the environment (OECD, 2020a).

Faced with this observation, environmentally harmful subsidies have been the subject of international interest, reflected in various international commitments such as the Rio Conference in 1992, the Aichi Targets of the Convention for Biological Diversity (CBD) in 2010 or the Sustainable Development Goals (SDGs) in 2015. All of them call for a reform of these subsidies to reduce or even eliminate them. This interest is also reflected in the various studies conducted by intergovernmental bodies such as the Organisation for Economic Co-operation and Development (OECD) (e.g., OECD, 2003, 2005), the Institute for European Environmental Policy (IEEP) (e.g., Valsecchi et al., 2009, Withana et al., 2012) or the IMF (Coady et al., 2015, 2019).

However, despite international commitments, subsidies persist and reveal the difficulty of taking environmental protection into account in financial mechanisms, despite the positive effects of such consideration. These subsidies are a burden on the budgets of states, which find it difficult to release funds to finance the ecological transition. Thus, by continuing current trajectories, the international objectives of environmental protection and global change mitigation will not be achieved, according to the IPBES (2019). A study by the Sustainable Development Solutions Network (SDSN) shows that no country in the Mediterranean is on track to achieve the Sustainable Development Goals (SDGs) by 2030 (Sachs et al., 2019).

To help the Mediterranean countries achieve these objectives, but more broadly to guide the region towards sustainable development, an action programme was adopted in 1976 by the Barcelona Convention: The Mediterranean Action Plan (MAP). It is part of the United Nations Environment Programme (UNEP) and provides a regional response to the ecological crisis in the Mediterranean by proposing to strengthen cooperation between the countries of the basin. Indeed, the MAP brings together the 21 countries bordering the Mediterranean as well as the European Union (EU) and commits them to implement "*measures concerning the protection of the marine environment in the Mediterranean Sea area from all types and sources of pollution*". The ambition is to create an area of cooperation in the Mediterranean basin for the construction of a future based on sustainable development. Initially entitled "Convention for the Protection of the Mediterranean Sea against Pollution", it was renamed, by amendment, "Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean" in 1995. It defines a common framework for combating pollution in the maritime waters of the Mediterranean through the implementation of 7 protocols⁴, a medium-term strategy renewed every six years and contributing more broadly to the implementation of the SDGs, and a biennial work programme.

In this context, Plan Bleu, MAP's regional activity centre, aims to work towards sustainable development in the Mediterranean. In its mandate, renewed in 2009 in Marrakech, Plan Bleu's objective is to "*contribute to raising the awareness of the actors concerned and Mediterranean decision-makers to issues related to the environment and to the sustainable development of the region by providing them with scenarios for the future so as to inform decision-making. In this regard and under its dual function of observatory of the environment and sustainable development and of systemic and prospective analysis centre, Plan Bleu's mission is to provide Contracting Parties with assessments of the state of the environment, environment and development in the Mediterranean and a solid base of data, statistics, indicators and assessments concerning the environment and sustainable development enabling them to underpin their actions and their decision-making process*".

Recent and relevant decisions and declarations from the MAP system including its subsidiary bodies include:

- Activity Report of the Compliance Committee for 2018-2019 "To urge and recommend the Contracting Parties concerned to promote the sharing of information and experience among them to enhance the use of economic instruments in Mediterranean region (...) to take appropriate measures to adopt relevant economic, financial and/or fiscal instruments intended to support local, regional and national initiatives for ICZM."
- UNEP/MAP communication. strategy 2020/2021: "As the leading authority on environmental sustainability in the Mediterranean, we strive to set a regional agenda that leads with research, policies, and economic incentives."
- ICZM Protocol "Gradually reduce environmentally harmful subsidies while putting in place compensatory measures to address socio-economic losses that might occur";

⁴ <https://eur-lex.europa.eu/legal-content/FR/TXT/?uri=LEGISSUM%3A128084>

- Naples Declaration paragraph 9.c) “Boost capacity building and involvement of a range of actors – particularly the scientific community, private sector and civil society – in designing and implementing adaptation strategies, and mobilizing funding resources, inter alia, through subsidies’ reforms and efficient green tax collection;”

In line with its mandate and these recommendations, Plan Bleu has taken up the subject of environmentally harmful subsidies, the reform of which is necessary to achieve sustainable development in the Mediterranean. The present study is a first exploratory work about EHS in the Mediterranean, for which there are no specific regional studies yet. The objective is to raise awareness among the signatory countries of the Barcelona Convention, so that they consider integrating the subject - possibly with concrete political commitments, into the next MAP work programme and medium-term strategy. In the longer term, this work aims to inform decisions by Parties to reform EHS.

This report is structured in three parts. The first part consists of a state of knowledge on environmentally harmful subsidies through their definition, their typology, as well as the commitments at different scales for their reform. The second part will recall the objectives and present the methodology used to give a first overview of EHS in the Mediterranean. Finally, the last part will focus on the state of play of subsidies in two of the most relevant sectors in the MAP framework (respectively, fisheries and tourism) and the first avenues for reform.

I. State of knowledge on environmentally harmful public subsidies

A. DEFINITION AND TYPOLOGY OF ENVIRONMENTALLY HARMFUL SUBSIDIES

This first part aims to define the concept of environmentally harmful subsidies that will be used in this report and to determine a typology of them, based on existing studies. Then, in a second step, the current commitments for the reform of EHS, at the international, Mediterranean, and European levels, will be presented.

1. Definitions

This study is specifically concerned with subsidies that are harmful to the environment and that emanate, more or less directly, from a public entity. Thus, it is essential to define what a public subsidy is, a notion for which there is no common and universal definition but several definitions. Indeed, the choice of one definition rather than another depends on the perspective and objectives of the study, the sectors analysed but also the country or organisation involved.

For the purposes of this study, we will use the OECD's (2005) broad definition of a government subsidy as "*the result of a government action that provides a benefit to consumers or producers, with the aim of increasing their income or decreasing their costs*" (OECD, 2005). This definition allows for a broad acceptance that includes many government measures within the scope of government subsidies. Because it is inclusive, this definition is used as a reference in many other studies of environmentally harmful subsidies, for which the OECD also provides a conceptual framework of reference. Indeed, the OECD produced three reports (2003, 2005, 2007) on environmentally harmful government subsidies in the 2000s, providing both a definition and methodologies for identifying and reforming EHS. Subsequently, other intergovernmental bodies, such as the IMF, or independent think tank, such as the IEEP, have conducted studies on EHS, also proposing a definition, typology, or methodologies. Like the OECD, the work of the Institute for European Environmental Policy (IEEP) is a strong reference on environmentally harmful subsidies with, among others, two specific reports on subsidies, their definition, classification, reform, and evaluation (Valsecchi et al., 2009; Withana et al., 2012).

In addition, work has been carried out by France, Italy, Germany, and Switzerland, which propose an inventory of subsidies that are harmful to the environment or biodiversity at national level. Their work has made it possible to list many subsidies, e.g. up to 160 in Switzerland.

From all the studies on EHS, a multitude of definitions of this notion have emerged, for which there are points of convergence and divergence.

Another important point is to agree on what is encompassed under the term "environment"; in this report it is meant to include all its components which are "*spaces, resources and natural environments on land and at sea, the sounds and smells that characterise them, sites, day and night landscapes, air quality, living beings and biodiversity*" (Article L. 110-1-I of the French Environmental Code) and "*water, biological processes, soils and geo-diversity*" (Fonbaustier, 2020).

Thus, the OECD (2005) describes a subsidy as environmentally harmful "*if it leads to higher levels of waste and emissions, including those in the earlier stages of production and consumption, than what would be the case without the support measure. This includes higher levels of resource extraction than is socially optimal as well as impacts on biodiversity*". Valsecchi (2009) adapts this definition: "*All other things being equal, the [environmentally harmful] subsidy increases the levels of output/use of a natural resource and therefore increases the level of waste, pollution and natural exploitation to those connected*". Finally, harmful public subsidies are a "*set of public aids that can be harmful to the environment, through their direct or indirect harmful effects*" (IMF, according to Pourquier, 2017).

Otherly said, environmentally harmful public subsidies are a set of aids emanating, more or less directly, from a public entity, which favour a sector of activity (transport, energy, agriculture, etc.) that has a harmful impact on the environment and its components by leading to a higher level of greenhouse gas emissions, pollution, exploitation of natural resources or degradation of biodiversity than would otherwise be the case without the subsidy.

EHS are characterised by various types of preferential treatment or monetary benefits that support and drive production and consumption. These supports are often non-incentives to change behaviour (sending the wrong price signals) and can take different forms. It is also worth noting that subsidies can be "pre-tax" or "post-tax." Pre-tax subsidies are financial assistance or benefits granted by governments or public authorities to businesses or individuals before taxes, levies, or other deductions are applied. In other words, these subsidies are provided before recipients are required to pay taxes on the amounts received. This means that beneficiaries receive the total amount of the subsidy without tax deductions. Post-tax subsidies are financial assistance or benefits that are granted to businesses or individuals after taxes, levies, or other deductions have been applied to the received amounts. As a result, beneficiaries receive the net subsidy, that is, after appropriate tax deductions have been taken into account.

1. Categories et typology

There are indeed different forms of public subsidies. Even if there is no fixed and shared typology, there are points of convergence between the different classifications of the different studies⁵.

A common classification is the distinction between two broad categories which are "*on-budget subsidies, which appear on national accounts as government expenditure*" and off-budget subsidies which do not appear on the state budget and are considered indirect subsidies (Valsecchi et al., 2009, p.14). This classification is taken up in the Swiss national report (Gubler, 2020), which differentiates between explicit on-budget and explicit off-budget subsidies.

In the first category, environmentally harmful subsidies can take the form of direct financial transfers, provision of goods and services or infrastructure financing. The off-budget category covers, for example, tax exemptions, reduced tax rates or other tax expenditures. The report prepared by the Italian Ministry of the Environment (Ministero dell'Ambiente, della Tutela del Territorio e del Mare, 2016), which takes stock of environmentally harmful and environmentally beneficial subsidies, classifies EHS between direct subsidies and tax expenditures.

However, it is difficult to assign a type of grant to a category in a fixed and definitive way. Indeed, the plurality of typologies shows that the categories are permeable, and that the same subsidy may belong to different categories. Furthermore, while almost all studies agree to distinguish between direct financial transfers and tax expenditures, some have a much broader acceptance of what constitutes EHS.

Thus, to complete the classification, to broaden the scope of subsidies that are harmful to the environment, the IEEP reports, as well as the Swiss and French reports, take into account other measures described as implicit, such as the non-internalisation of negative environmental externalities⁶ in the price. It is characterised by the difference between the market price of a good or service (i.e. the observed price) and the marginal social cost of production (or optimal social cost), i.e. the price that includes the taxation of negative environmental externalities. In other words, what can be considered a subsidy is the price of a good or service that does not reflect the damage caused to the environment during its consumption or production. It should be noted that in practice, the inclusion or exclusion of "non-internalisation of negative environmental externalities" in the definition of EHS can be seen as a contentious issue and a source of differences in EHS estimates. Determining the extent of negative environmental externalities and attributing them to subsidies requires complex assessment, leading to varying interpretations and estimates. Also, deciding what constitutes a negative environmental externality and how it should be valued often involves subjective judgments. Meanwhile, data availability and transparency can vary across countries and regions, leading to inconsistencies in estimating the extent of negative externalities associated with different subsidies.

The French report goes further by including in the scope of subsidies any government action that confers a benefit. For example, the setting of quotas or the lack of enforcement of regulations can be considered as environmentally harmful subsidies (Sainteny et al., 2012).

The study of the above-mentioned reports as well as the perspective of the study allows us to retain the following typology:

⁵ See Annex 1 for a list of the main typologies.

⁶ Negative environmental externalities are defined as the negative effect created by an economic agent when it causes environmental damage to others through its activity, without monetary compensation (Echaudemaïson et al., 2009).

Figure 1. Typology of EHS

Categories	Types	Examples
On-budget, direct and explicit	Direct financial transfers	Support for housing (construction, home ownership, renovation), for the purchase of a vehicle, for the purchase of certain exogenous crops Grants for the modernisation of equipment (fisheries, agriculture) Subsidies on fossil fuel consumption
	Provision of goods and services or infrastructures	Infrastructures costs not covered by users ⁷
Off-budget, indirect	Tax exemptions and reduced rates	On fuels, on fossil energy (aviation, agriculture, construction, fishing, transport), on land On intermediate consumption (inputs, fuels, equipment, transport), on certain pollutants VAT on certain goods and services
	Underpricing of a good or service in relation to the cost of providing it	Under-pricing leading to incomplete coverage of drinking water costs (distribution, treatment); absence of waste collection fees
	Lack of tariffs and charges (rates and tariffs) on natural resource extraction (non-incentive rate)	Underpricing of water for certain uses (domestic, irrigation, hydropower, drainage) Lack of fees for the extraction of raw materials, fishery resources
Off-budget, indirect and implicit	Failure to internalise the costs of environmental damage	Lack of application of the polluter-pays principle, gap between the market price and the optimal price (including taxation of negative externalities)

Sources: Köder et al, 2016; Ministero dell'Ambiente, della Tutela del Territorio e del Mare, 2016; OECD, 2003, 2005; Sainteny et al, 2012; Valsecchi et al, 2009; Withana et al, 2012

2. Quantification of environmentally harmful subsidies

To facilitate the identification and reform of environmentally harmful subsidies, various methodological frameworks have been developed by the OECD, such as the *quick scan* (OECD, 1998), the *checklist* (OECD, 2005) and the *Integrated assessment framework* (OECD, 2007). These methods also make it possible to identify the beneficial effects of reforming a subsidy, i.e. what the benefits would be of reorienting or removing a subsidy. These methodologies also make it possible to identify and quantify the EHS (see diagrams of the methodologies in Annex 2).

Estimates of the amount of EHS can vary depending on the method used, the definition and typology used, and the sector targeted. The global amount of subsidies is estimated at between USD 500 billion (OECD, 2020a) and USD 1,500 billion per year (Meyer et al., 2009). In 2019, USD 478 billion is given to fossil fuels by 81 countries, mostly from the OECD and G20 (OECD, 2021). This is about 5-6 times the amount spent on biodiversity, estimated by the OECD to be about 80 billion. The sectors where the largest amount of harmful subsidies have been estimated are energy, transport and agriculture. Harmful subsidies in the fisheries, water, waste and housing sectors are also significant. However, the quantification of EHS is hampered by conceptual and data gaps (Lehmann et al., 2009).

In order to reform these environmentally damaging subsidies, international, Mediterranean and European commitments have been made to initiate a reform process.

B. INTERNATIONAL AND REGIONAL AGREEMENTS TO REFORM ENVIRONMENTALLY HARMFUL SUBSIDIES

Environmentally harmful subsidies are delimited by an institutional framework that sets objectives and long-term commitments to reform them. This section aims to present the different commitments of the Mediterranean countries through the signature of different international and EU conventions and declarations, which set targets for the reduction or even elimination of environmentally harmful subsidies.

⁷ The provision of goods, services, or infrastructure can be considered a subsidy when the costs of building and maintaining those infrastructures are not fully covered by the users or beneficiaries. For instance, when a government or public authority provides goods, services, or infrastructure, there are costs associated with their development, construction, operation, and maintenance. If the fees or payments collected from users do not cover these costs entirely, there is a gap between the actual cost and the revenue generated. Obviously, the provision of infrastructure is not a subsidy if the costs are (fully) covered by the users of this infrastructure.

1. International agreements

Les engagements internationaux émanant des institutions et réunions onusiennes et intergouvernementales, concernent plusieurs secteurs et différents horizons temporels.

The international agreements emanating from UN and intergovernmental institutions and meetings are multi-sectoral and have different time horizons.

Firstly, in the opposite direction to reform, the 1945 Chicago Convention will leave a lasting mark on the framework of harmful subsidies by establishing the non-taxation of kerosene for air transport. The Kyoto Protocol of 1997 maintained this exemption for the aviation sector, but also for the maritime transport sector, by excluding them from the greenhouse gas (GHG) emission reduction targets. These measures remain in force in many countries today. This exemption has been a topic of debate and concern in discussions about addressing climate change and reducing carbon emissions, as the aviation and maritime sectors are major contributors to global emissions. It could be argued that these exemptions have contributed to an uneven playing field in terms of environmental responsibility and have hindered efforts to achieve meaningful progress in reducing emissions from these sectors. Since 2003, European Union member states have had the option to impose taxes on jet fuel at both national and cross-border levels. Despite this allowance, only the Netherlands introduced a tax on commercial jet fuel, specifically for domestic flights, from 2005 to 2011. However, due to challenges in execution and limited revenue generation, the country ceased this tax for domestic commercial flights in 2012. Nevertheless, the country continued to apply taxation to aviation kerosene used in leisure and non-commercial business aviation.

The first incentive for EHS reform is found in Article 8.32 of the Rio Declaration, adopted at the first Earth Summit in 1992, which aims to "remove or reduce those subsidies that do not conform with sustainable development objectives ». This wording leaves a wide margin of interpretation for countries, particularly because the article, and the declaration, do not define the scope of subsidies. It does, however, anchor subsidy reform as an international prerogative.

The Millennium Ecosystem Assessment, coordinated by the UNEP Secretariat, identifies taxes and subsidies as important drivers of ecosystem change. Subsidies that lead to excessive consumption of ecosystem services, particularly in the fisheries and agriculture sectors, should be eliminated (Millennium Ecosystem Assessment, 2005).

More concretely, the tenth Conference of the Parties (COP) of the Convention on Biological Diversity (CBD), which was held in Nagoya in 2010, set a target for 2020 through the adoption of the twenty so-called Aichi Targets. The aim of Aichi Target 3 is that *"by 2020 at the latest, incentives, including subsidies harmful to biological diversity, are eliminated, phased out or reformed so as to minimise or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions"*.

Environmentally harmful subsidies in the fisheries sector have been particularly addressed at the international level since 2001 with the WTO discussions aimed at reducing subsidies that promote unsustainable fishing practices. They are given particular attention in the definition of the Sustainable Development Goals (SDGs). In 2015, the 193-member countries of the UN adopted the 2030 Agenda for Sustainable Development, which sets out the 17 SDGs for an international strategy for sustainable development. They specifically target fisheries subsidies in Goal 14 and more specifically Target 14.6: *"by 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognising that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiations"*. Taken together, the SDGs provide a strong international framework for countries to implement sustainable development.

The achievement of this goal was supported by a declaration, adopted by the UN Conference on the Oceans and subsequently by the UN General Assembly on 9 June 2017 in New York, entitled "The Ocean, Our Future: A Call to Action" which urges countries to implement SDG 14 through *"accelerating work to complete negotiations at the World Trade Organization"* (UN General Assembly, 2017). Also, in 2017, at a ministerial conference, the WTO reaffirmed the ambition to find an agreement to reduce harmful subsidies in the fisheries sector and achieve SDG 14.6 (WTO, 2017). However, the negotiations, which were intended to be concluded in 2020, have been postponed to 2021 due to the constraints imposed by the global health situation.

In July 2021, at the G20 meeting in Naples, countries agree to highlight the need to reduce fisheries subsidies, in point 13: *“We recognize that overfishing, illegal, unreported, unregulated and destructive fishing practices, and fisheries subsidies contributing to IUU fishing, overfishing and overcapacity, remain a serious threat to the health of our Ocean and seas and the sustainability of marine resources. We support the ongoing WTO fisheries subsidies negotiations to reach a meaningful agreement with effective discipline on the harmful fisheries subsidies, in line with SDG 14.6.”* (G20 Italia 2020).

Thus, whether it is Aichi Target 3 or SDG 14.6, these have not been met and environmentally damaging subsidies continue to be a significant burden on national budgets and have a lasting impact on the environment. In particular, the IPBES report on the assessment of biodiversity and ecosystem services (IPBES, 2019), highlights that Aichi Targets 3.1 and 3.2 show insufficient progress.

Figure 2. Achievement of Aichi targets, IPBES, 2019

Goal	Target	Target element (abbreviated)	Progress towards the Aichi Targets		
			Poor	Moderate	Good
A. Address the underlying drivers	1	1.1 Awareness of biodiversity			
		1.2 Awareness of steps to conserve			
	2	2.1 Biodiversity integrated into poverty reduction			
		2.2 Biodiversity integrated into planning			
		2.3 Biodiversity integrated into accounting			
		2.4 Biodiversity integrated into reporting			
	3	3.1 Harmful subsidies eliminated and reformed			
		3.2 Positive incentives developed and implemented			
	4	4.1 Sustainable production and consumption			
		4.2 Use within safe ecological limits			

2. The Mediterranean agreements

The Barcelona Convention is the main framework for sustainable development at the Mediterranean level, but it does not mention environmentally harmful subsidies in its declaration. Nevertheless, the Contracting Parties must apply *“the polluter pays principle, according to which the costs of measures to prevent, combat and reduce pollution must be borne by the polluter, with due regard to the public interest”* (Barcelona Convention, 1994). More concretely, one of the protocols and several strategic guidelines and decisions taken by the Contracting Parties to the Barcelona Convention at the Conferences of the Parties refer to EHS in the Mediterranean.

In accordance with Article 21 of the Integrated Coastal Zone Management (ICZM) Protocol of the Barcelona Convention, which states that *“for the implementation of national coastal strategies and coastal plans and programmes, Parties may take appropriate measures to adopt relevant economic, financial and/or fiscal instruments intended to support local, regional and national initiatives for integrated coastal zone management”*, the Common Regional Framework for Integrated Coastal Zone Management, in its Decision IG.245 (adopted at the 21st COP of the Barcelona Convention in 2019), encourages to *“gradually reduce environmentally harmful subsidies while putting in place compensatory measures to address socio-economic losses that might occur”*. This refers to the need to put in place compensatory measures for the most vulnerable populations who may lose out in a policy of eliminating subsidies.

In order to translate the 2030 Agenda for Sustainable Development at the regional level, the signatory countries of the Barcelona Convention (at the COP19 in February 2016 in Athens) adopted the Second Mediterranean Strategy for Sustainable Development (MSSD) for the period 2016-2025. In these strategic guidelines, it sets the objective of *“ensuring a greener and more inclusive market that integrates the true environmental and social cost of products and services to reduce social and environmental externalities”*. This objective is reflected in action 5.6.2, which provides for *“carry out reviews on the environmental impacts of public subsidies with a view to the phasing out of environmentally harmful subsidies”* (UNEP/MAP, 2016). This reflects the desire to internalise the cost of negative environmental externalities in the price of goods and services.

The Sustainable Consumption and Production (SCP) Action Plan adopted in 2017 by the Contracting Parties to the Barcelona Convention, also has the operational objective 1.2 to *“promote “Green Finance” in the areas of production and consumption related to food, agriculture and fisheries, helping farmers and fishermen to access loans and grants to start up sustainable agricultural and fisheries activities, introduce financial instruments that promote sustainable*

agricultural and fisheries practices, such as the elimination or reduction of subsidies considered harmful on water and energy consumption, and provide incentives for good environmental practices such as integrated pest management and organic farming". The objective is thus to help, through financing, to change behaviour, here of the producers, to favour sustainable practices. This same action plan targets the tourism sector, a vector of pressure on the environment, in its objective 3.2 in order to "*promote regulatory, legislative and financial measures to integrate SCP into the field of tourism consumption and production*" via the implementation, for example, of eco-taxes to internalise externalities and to create a fund dedicated to improving environmental quality.

Beyond the strategic frameworks proposed by the MSSD and the SCP Action Plan, the Naples Ministerial Declaration, adopted on 4 December 2019 by the Contracting Parties to the Barcelona Convention, formally recalls the countries' commitment, already expressed within the ICZM Protocol and its regional framework, to "*boost capacity building and involvement of a range of actors - particularly the scientific community, private sector and civil society - in designing and implementing adaptation strategies and mobilizing funding resources, inter alia, through subsidies' reforms and efficient green taxes collection*".

Recently, the Mediterranean countries mandated the Plan Bleu to elaborate the State of the Environment and Development Report (SOED) in the Mediterranean, which was published in 2020 by the Plan Bleu, and whose summary was adopted at the COP21 in Naples in 2019. The SOED identifies key sectors of activity, the most subsidised, that have a negative impact on the environment in the Mediterranean: fossil fuel production and consumption, water use and treatment, agricultural production, fisheries and other activities (mineral extraction, metal production, all of which lead to increased environmental pressures, land degradation, water pollution, discouragement of re-use and recycling). Subsidies to these sectors are targeted because they are significant enough to be defined as environmentally damaging.

Specifically, SOED 2020 highlights the value of removing subsidies that support non-renewable energy, unsustainable fishing, and groundwater extraction as a priority. In the context of reform, the report highlights the importance of "*adequately targeting direct consumption support to the poorest and most vulnerable groups [to] improve the effectiveness of environmental measures, particularly in the water and energy sectors*" (UNEP/MAP and Plan Bleu, 2020). The elimination or reduction of environmentally harmful subsidies must be accompanied by compensation and support measures for the most vulnerable populations, so that such a reform does not disadvantage them.

Finally, the Declaration of the "2nd Union for the Mediterranean Ministerial Conference on Environment and Climate Action" (Cairo, 4 October 2021) mentions the need to remove inefficient subsidies as it highlights how Ministers of the UfM aim to enhance global climate commitments, achieve emission balance, foster resilient economies, curb pollution, and safeguard Mediterranean biodiversity. It stresses how this may entail "developing ambitious climate-resilient and nature-positive policies and post-COVID 19 sustainable and inclusive recovery and growth plans aligned with the Paris Agreement objectives and in accordance with national priorities which may cover – inter alia – budgets and green procurement frameworks; progressive reduction of fossil fuels use including through gradual phase-out of inefficient subsidies; accelerated clean, safe and sustainable energy transition; and reforms aimed at creating an enabling environment for sustainable investments and just transition mechanisms" (Union for the Mediterranean, 2021).

3. European agreements

It is useful to recall from the outset that the European Union is a contracting party to the Barcelona Convention.

At the European level, environmentally harmful subsidies are also the subject of particular attention, especially in the application of international standards at Community level. Various strategies and action plans refer to environmentally harmful subsidies.

In 2007, in point 2.4 of the Green Paper on market-based instruments for environment and related policy purposes, the European Commission mentions its "*intention to cooperate with Member States in reforming environmentally harmful subsidies at Community and national level*" (European Commission, 2007).

Later, the EU Biodiversity Strategy, adopted by the EU for the period 2011-2020, mentions in its objective 17.c that "*the Commission will work with Member States and key stakeholders to provide the right market signals for biodiversity conservation, including by working to reform, phase out and eliminate harmful subsidies at both EU and Member State level, and by providing positive incentives for the conservation and sustainable use of biodiversity*". Like the CBD's Aichi Target 3 or SDG 14.6, this strategy aims to achieve the targets by 2020.

In 2015, on the specific topic of energy, the EC adopted the European strategy "Energy Union", which highlights the need to phase out and fully eliminate environmentally harmful subsidies (European Commission, 2015).

In 2019, the European Commission (EC) adopts the Green Deal for Europe. In its communication report, the EC recalls the essential role of national budgets in initiating a transition through the establishment of "*green budgeting tools [to help] redirect public investment, consumption and taxation to green priorities and away from harmful subsidies*" (European Commission, 2019). The Pact also states that "*fossil-fuel subsidies should be ended*" by "*[looking] closely at the current tax exemptions including for aviation and maritime fuels*". Finally, both the strategy and the pact call for increased public investment and financing "*towards building a coherent financial system that supports sustainable solutions*" (European Commission, 2019).

In line with the Green Deal, the Commission adopted in May 2020 the "EU Biodiversity Strategy for 2030", which sees investment in nature protection and restoration as essential to revive the European economy after the COVID-19 crisis. Indeed, "*delivering an ambitious post-2020 global biodiversity framework will require greater cooperation with partners, increased support and financing and phasing out of subsidies harmful to biodiversity*" (European Commission, 2020).

In this sense, the above-mentioned biodiversity strategy highlights the usefulness of the EU Taxonomy on Sustainable Finance, finalised in March 2020 (EU Technical Expert Group on Sustainable Finance, 2020). It is an essential tool for countries to guide investments in sustainable activities and follow the "Do no harm" principle.

Finally, on fisheries, the Biodiversity Strategy follows the lead of the WTO discussions and commits to combat "*overfishing, including through WTO negotiations on a global agreement to ban harmful fisheries subsidies*".

Also, the European environment - state and outlook 2020 (SOER 2020) published by the European Environment Agency (EEA) makes several references to environmentally harmful subsidies, in the energy sector, but also in transport and agriculture. It is mentioned that the elimination of environmentally harmful subsidies is an international concern and could increase government revenues, reduce CO₂ emissions by more than 20% and halve premature deaths due to pollution (European Environment Agency, 2019). Thus, "*environmental fiscal reform, aimed at both increasing environmental taxes and removing harmful subsidies, will be essential to correct market failures*".

Finally, there is a strong interest at these different levels in reforming environmentally harmful subsidies, reflected in international, Mediterranean, European, and national agreements (Summary of main agreements in Annex 3). However, the ambitious objectives of these agreements have not been achieved, and these commitments have not been sufficient to reform EHS.

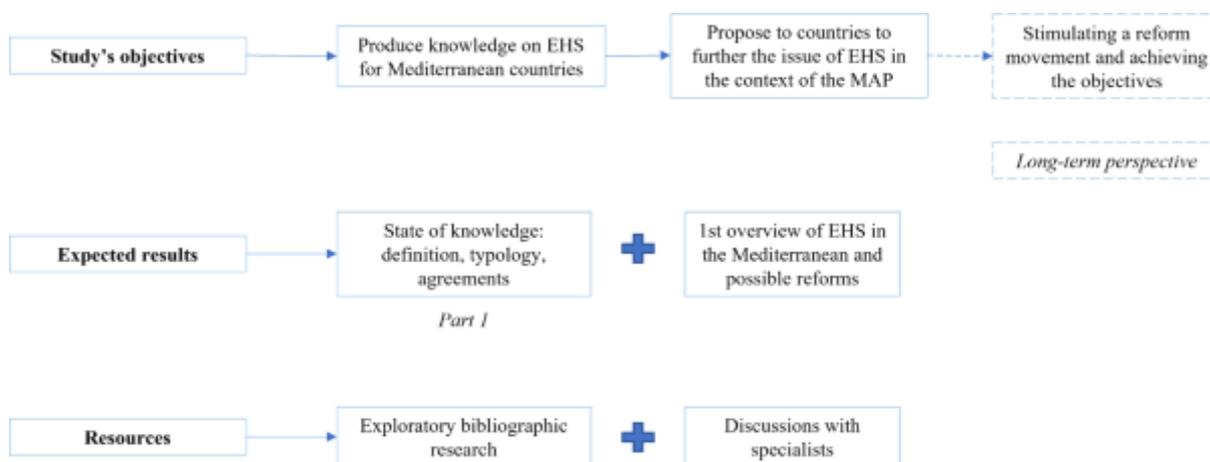
At the Mediterranean level, no specific strategy or study has been undertaken on the subject of environmentally harmful subsidies such as those carried out at the national level in France or Italy. The present study, whose methodology is presented in the following section, aims to initiate such a work by providing a first overview of environmentally harmful subsidies in the Mediterranean countries.

II. Objectives and scope of the study

A. REMINDER OF THE OBJECTIVES

The main objectives of this study are to respond to a lack of work about environmentally damaging subsidies in the Mediterranean, and to provide elements of knowledge to the signatory countries of the Barcelona Convention. This would allow them to integrate this subject into the MAP work plan and into their national strategies. Thus, the study should make it possible to give a first, broad overview of the state of EHS in the Mediterranean, by defining them upstream (Part I).

Figure 3. Objectives of the study



B. METHODOLOGY OF THE EXPLORATORY RESEARCH: IDENTIFYING EHS IN THE MEDITERRANEAN

This section presents the methodology used to provide a first overview of EHS in the Mediterranean.

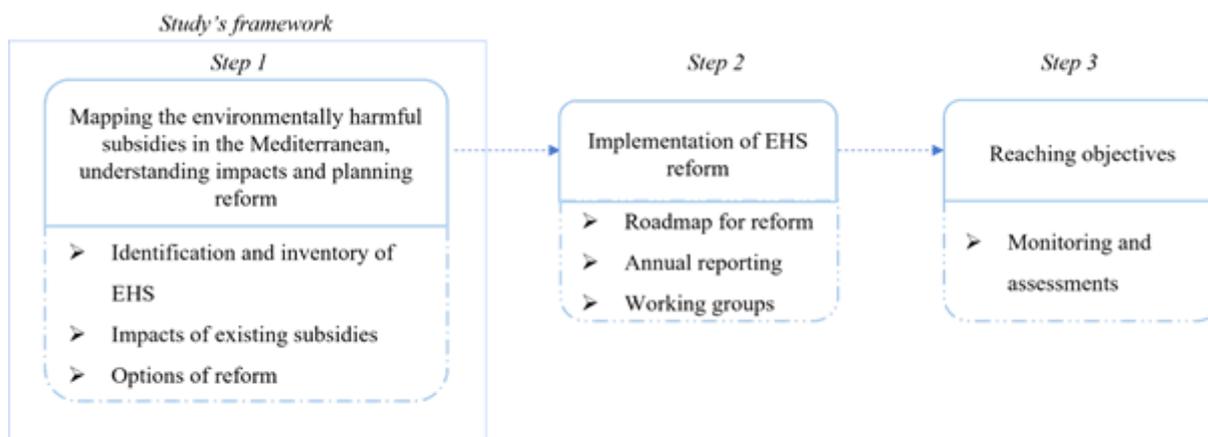
1. Framework for analysis

To meet these objectives, this study will draw on existing analytical frameworks. As seen above, the OECD provides methodologies for mapping and reforming EHS (OECD, 2003, 2005, 2007), which are echoed in the IEEP report (Valsecchi et al., 2009) or the French report (Sainteny et al., 2012). However, these methodologies are useful in the context of a longer and more detailed analysis.

Thus, to provide a first overview of EHS in the Mediterranean, this work will be based on the methodology described by Withana (2014), which is relevant and more adapted to the context. It defines three steps to achieve a reform of the EHS and to reach the set objectives, the Aichi targets, and the SDGs. The first step is to identify EHS, understand their environmental impacts and identify avenues of reform for states. To do this, Withana proposes to inventory subsidies, define their effectiveness, efficiency and impacts, and then determine the benefits and costs of a reform. The second step is the implementation of the reform in the countries, through the reorientation of the EHS, reporting and the establishment of "good" governance to reorient the subsidies. Finally, the last step is to meet international targets for reducing environmentally harmful subsidies.

The study is part of the first stage of the framework defined by Withana, shown below (Figure 4). Within this framework, the study will rely mainly on exploratory research and videoconferences with experts on the subject (see Annex 4).

Figure 4. Framework of the study, adapted from Withana, 2014



2. The choice of a sectoral approach

Within this analytical framework, Withana (2014) proposes three approaches to inventorying EHS. Either a holistic approach that covers all areas and sectors, or a sectoral approach with a focus on a specific sector, or a thematic approach with a focus on an environmental issue. Within the framework of this study, a sectoral approach will be favoured by focusing on two promising sectors of activity in the Mediterranean.

In order to identify the sectors to focus on, the first step of the research consists in identifying the key sectors of activity in the Mediterranean. This step allows us to limit the study to the fisheries and tourism sectors. Indeed, the fisheries and tourism sectors have a very important social and economic importance in the region and a particular relevance for the Barcelona Convention because of their close link with the marine and coastal environments. They have high social impacts as *"they contribute to employment in the region, while other sectors such as offshore oil and gas extraction and maritime transport have higher economic impacts for a lower contribution to employment"* (Plan Bleu, 2015).

The second step consists of identifying the main environmental pressures that arise from the two sectors of activity, in relation to practices that are considered unsustainable or have an impact on the environment. Fishing and tourism exert a significant pressure on the environment by accentuating the erosion of biodiversity, climate change or the depletion of natural resources (fisheries, water). The sustainability of these activities itself is jeopardised by the extent of these environmental pressures. There is therefore a twofold interest in reforming subsidies to these sectors and subsidising sustainable practices: to reduce the environmental pressure of tourism and fishing while ensuring the future of these activities.

Finally, based on these elements, it is a question of identifying the subsidies that support these practices, as well as their economic and social impacts. The exercise will also consist in identifying the avenues for the implementation of a reform of the EHS in the Mediterranean countries.

For both sectors, the trends and structure of the sector in the Mediterranean, the environmental pressures of the sector, and the nature of the subsidies in relation to these pressures will be presented. From a broader sustainable development perspective, the various economic and social impacts of these subsidies will be presented.

3. Intrinsic biases

a) The causal link

All consumption and production activities are likely to have an impact on the environment, so the question is whether the impact is accentuated by a government or public measure. However, establishing the link between the measure and the impact is not obvious. Indeed, the OECD emphasises that the impact of subsidies on the environment is the result of complex mechanisms and that it remains complicated to establish a direct link between the subsidy and the environmental impact (OECD, 2005). Thus, according to Sainteny (2012), *"there is not systematically a one-to-one link between the amount of public aid (however it is quantified) and the extent of its negative effects on biodiversity"*. This dimension should be considered in the analysis of EHS in the Mediterranean.

b) A subjective and restrictive choice

This study chooses to deal with the subject of fisheries and tourism. However, there are other important sectors, which can be studied in the same way in further studies: water management, waste, transport, agriculture or energy. For example, it was decided not to deal with the subject of subsidies to fossil fuels despite its importance, because it has been the subject of numerous studies at different levels (national, international): there is therefore a relatively large amount of documentation including at the Mediterranean level. The subject will be indirectly addressed in the fisheries and tourism sectors.

The choice of the sectoral approach corresponds to a choice of presentation adapted to the context of the study. However, another point of view could have been adopted for the presentation of the results. Indeed, it would have been possible to present the subject and the results from the point of view of the most degraded or impacted ecosystems, habitats or resources; from the point of view of the countries; from the point of view of the sources of pollution with reference to the Barcelona Convention; or from the point of view of the ecosystem services and their degradation. This choice also corresponds to the objective of the study, which is to provide a first, fairly broad overview. The study therefore does not aim to be exhaustive.

III. Environmentally harmful subsidies in the Mediterranean in two sectors

In the Mediterranean basin, generally speaking, it is worth noting that there are certain countries that have undertaken reforms aimed at reducing environmentally harmful subsidies, thus demonstrating the feasibility and potential benefits of such measures. For instance, within the framework of the IMF-Tunisia agreement, the IMF prioritized the removal of energy and food subsidies, urging the government to manage expenditures and allocate fiscal resources for social support. The Tunisian government has already initiated the process of gradually eliminating "inefficient subsidies" as a step toward this goal (IMF, 2022). This reform is partly motivated by the necessity to address budgetary constraints and allocate resources effectively in a challenging economic context. Additionally, prior to the new realities brought about by the COVID-19 pandemic and the conflict in Ukraine, Egypt had eliminated electricity subsidies, reducing them from 8 billion Egyptian pounds (509 million dollars) in the second half of 2018 to zero in the second half of 2019. Moreover, energy subsidies (excluding electricity) saw a significant reduction of 67%, decreasing from 30.2 billion Egyptian pounds (1.9 billion dollars) in the second half of 2018 to 9.9 billion Egyptian pounds (less than 630 million dollars) in the second half of 2019 (Enerdata 2020).

These initiatives have often been motivated by budgetary and economic considerations, as well as the desire to free up resources for more sustainable reforms. There have also been instances of policy implementation setbacks. Nonetheless, these initiatives demonstrate that when conditions permit, reforms in this regard are possible

This section describes how environmentally harmful subsidies in fishing and tourism have detrimental effects on their respective sectors. These subsidies encourage overfishing and unsustainable tourism growth, harming the environment and natural resources. Beyond the environmental impact, they generate negative effects such as declining fish stocks, degradation of marine ecosystems, greenhouse gas emissions, and tourism congestion. Moreover, these subsidies can also lead to other economic and social consequences (see Box 1), compromising the overall sustainability of the sectors.

Box 1. Other Negative Externalities Linked to Subsidies

Apart from their direct environmental impact, environmentally harmful subsidies have far-reaching negative repercussions that affect various economic, social, and health aspects. These harmful effects underscore the urgent need to reform these subsidies to promote sustainability and well-being in the Mediterranean region. Among the detrimental consequences are:

- **Increased Public Deficits:** Ill-targeted and ineffective subsidies can create financial burdens for governments, contributing to rising budget deficits and pressure on public finances. This can hinder states' ability to invest in essential sectors such as health, education, and infrastructure.
- **Limited Social Impact:** Environmentally damaging subsidies tend to favor certain sectors or groups at the expense of others, creating economic distortions and inequalities. These subsidies often do not effectively target vulnerable populations, thereby limiting their contribution to improving social well-being. For instance, subsidies for fuel in fishing boats, though intended to support the sector, do not always directly benefit small-scale fishermen and coastal communities. Instead, they may benefit industrial fishing fleets, exacerbating inequalities.
- **Effects on International Trade:** Subsidies can distort trade by promoting the production and import of unsustainable goods and services, while reducing exports of environmentally friendly products. This can compromise the competitiveness of local industries and limit economic diversification. Notably, subsidies in fishing can encourage overfishing and the overexploitation of fisheries resources, impacting fish stocks, reducing the sustainability of fishing industries, and affecting international trade of seafood products.
- **Human Health Consequences:** Some environmentally harmful subsidies encourage practices that have negative effects on human health, such as the use of polluting fossil fuels or harmful chemicals (e.g., subsidies for tourism-related transportation). This can lead to health problems, respiratory diseases, and increased costs for healthcare systems. Tourism-related transport subsidies can have negative consequences on air quality and the health of local populations in tourist areas.

- Innovation Stagnation: Misguided subsidies can maintain industries in unsustainable economic models and discourage innovation towards cleaner, more environmentally friendly technologies. This can impede technological progress and the transition to a green economy. Subsidies for fuel in fishing and tourism activities, for instance, can discourage the adoption of more sustainable and innovative practices, such as selective and eco-efficient methods.

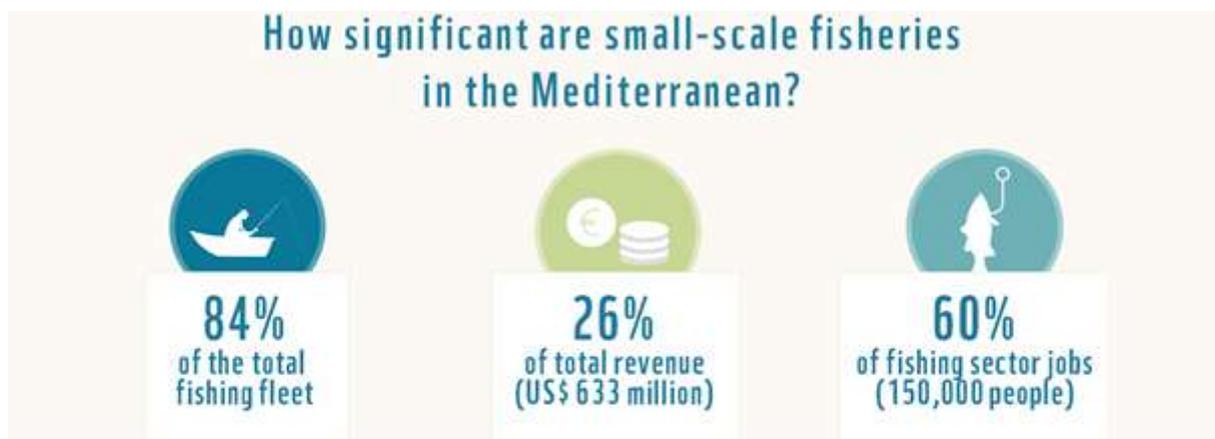
A. EHS IN THE FISHERY SECTOR

1. State of play of the fisheries sector

The fisheries sector is crucial in the Mediterranean because of the economic, social, and environmental stakes involved. It represents approximately 12 billion USD, 1 million jobs and 100,000 vessels (UNEP et al., 2020).

It is a source of income and one of the only sources of protein for many populations in coastal areas, particularly in the southern Mediterranean countries (FAO, 2020b). In this sense, the Barcelona Convention defines fishing as a "legitimate use of the sea" and targets pollution that could hinder this activity. The sector is characterised by very diverse production systems: both catch and farming systems, industrial and artisanal systems, extensive and intensive systems. The so-called artisanal or traditional (as opposed to industrial) fishing systems⁸ are largely dominant in the Mediterranean: they represent about 80% of the Mediterranean fleet (Idda et al., 2009). In some countries this share is even higher: it represents 60% of the fleet in Albania, 88% in Morocco, 92.4% in Tunisia and 100% of the fleet in Lebanon (FAO, 2020b). It is thus the main activity in the fisheries sector in the Mediterranean, accounting for nearly 60% of jobs on fishing vessels (FAO, 2020b).

Figure 5. "How significant are small-scale fisheries in the Mediterranean? "



Source : https://www.wwfmmi.org/what_we_do/fisheries/transforming_small_scale_fisheries/

In addition, the latest report on the state of world fisheries and aquaculture by the Food and Agriculture Organisation of the United Nations (FAO) shows that Egypt, Turkey, Greece, Spain, Italy, Tunisia, and France are among the largest aquaculture producers in the world. Egypt is the 6th largest aquaculture producer in the world (FAO, 2020). Thus, many populations depend on the fisheries sector in the Mediterranean.

Yet, the fishing sector is subjecting the ecosystems on which it depends to numerous threats, even though it itself depends on the quality of these ecosystems. The FAO report warns about the level of exploitation of fish stocks, which is particularly high in the Mediterranean. Indeed, while the region accounts for only 6% of total capture fisheries production and 0.7% of ocean surface area, "in 2017 (...) the Mediterranean and Black Seas (Area 37) had the highest percentage (62.5 percent) of stocks exploited at an unsustainable level" (FAO, 2020a). Fishing causes water pollution (fuel and waste) and air pollution (GHG emissions).

The fishing sector is the activity that exerts the most pressure on marine ecosystems (Sacchi, 2008), particularly through fishing practices that deplete fish stocks: by-catch and discarding of fish, deep-sea fishing (trawling), illegal,

⁸ There is no fixed and common definition, each country/region has its own definition. Artisanal fishing is often defined in terms of boat size, equipment, length of trips (FAO, 2020b). The term is used in contrast to industrial fishing.

unregulated, and unreported (IUU) fishing. These practices lead to overfishing and overexploitation, but also to the degradation of marine biodiversity and pollution. For example, non-selective fishing techniques lead to by-catches that are responsible for the decline of certain shark and ray populations in the Mediterranean (Cavanagh & Gibson, 2007). In addition to impacting the environment, these practices, mainly mobilised by industrial fleets, endanger the survival of Mediterranean fisheries.

2. Harmful public subsidies in the fisheries sector

International organisations (FAO, WTO) and associations such as Bloom have pointed out that these unsustainable practices are supported by public subsidies. Indeed, like other economic activities, fishing is supported by economic incentives. These are considered harmful when they *“artificially increase profits by reducing the cost of fishing and/or increasing the revenue received by fishers [which] result in overcapacity and lead to overfishing”* (Sumaila et al., 2019). They lead to an increase in the fishing capacity of vessels, finance unsustainable practices and thus lead to the overexploitation of fish stocks, the degradation of marine biodiversity and the pollution of the Mediterranean Sea.

Globally, of the 35.4 billion in subsidies granted to fisheries, 62% are harmful to the environment (Le Brenne et al., 2021). In France and Spain, fisheries subsidies that are unfavourable to marine biodiversity represent 25% and 41% respectively of total public aid to fisheries, compared with 18% and 9% that are favourable (Sainteny et al., 2012).

Thus, the need to reduce fisheries subsidies has been the subject of international attention since 2001 in the WTO negotiations or through SDG 14.6, as seen above.

The main public subsidies that are most damaging to the environment tend to favour the increase in fishing capacity of vessels through aid for the construction or modernisation of vessels, for the purchase of fishing gear and for fuel consumption (Martini 2019).

More than 70% of the harmful subsidies granted to the fisheries sector are tax exemptions, the majority of which are reduced rates on fuel consumption (Arthur et al., 2019). Thus, like most countries, Mediterranean fishing vessels are exempt from fuel taxes. This exemption or reduction in fuel taxes for fishing vessels encourages fuel consumption rather than rational use and encourages the use of energy-intensive vessels and fishing techniques. This is particularly the case for bottom trawling, which consumes up to 16 times more fuel than small-scale fishing (BLOOM, 2013). A recent study published in the journal *Nature* shows that bottom trawling emits more CO₂ than the aviation sector (Sala et al., 2021). France and Spain are among the largest emitters of CO₂ from bottom trawling. Despite efforts by the EU to ban this practice, it is still allowed under certain conditions, including in protected areas (less than 800 metres deep⁹). Furthermore, vessels that practice deep-sea fishing continue to receive subsidies without which they would not have been kept in business, as this activity is in fact not very profitable (Nouvian, 2011). Subsidies for the purchase of fishing gear or the modernisation of vessels lead to an abandonment of traditional fishing practices in favour of industrial and unsustainable practices.

For example, the European Maritime Fisheries and Aquaculture Fund (EMFAF), whose largest beneficiaries are Spain, France, and Italy, provides aid for the modernisation and renovation of vessels that are environmentally damaging. Thus, this fund has an impact on the resources of the Mediterranean Sea (see Box 2 below).

Box 2. European fisheries subsidies

While the new European Maritime Fisheries and Aquaculture Fund (EMFAF) reintroduces subsidies for vessel modernisation and renovation, studies have evaluated the previous funds and show that some of the subsidies are environmentally harmful. This EMFAF is the main source of funding under the Common Fisheries Policy (CFP) for European Mediterranean countries. The latest EMFAF which has been adopted for the period 2021-2027 has an overall budget of €6.1 billion and has been subject to public consultation. Among the largest beneficiaries of EMFAF, Spain, France and Italy receive the following shares respectively: 19.6%, 10.3%, 9.5%. Against this background, the following two studies evaluate the old Funds and make recommendations for the new one.

At the European level, a study by the International Council for the Exploration of the Sea (ICES) shows that subsidies that increase vessel capacity and therefore contribute to overfishing remain high despite efforts

⁹ The deep oceans are defined by oceanographers as the area beyond 200 metres, <https://www.bloomassociation.org/nos-actions/nos-themes/peche-profonde/>

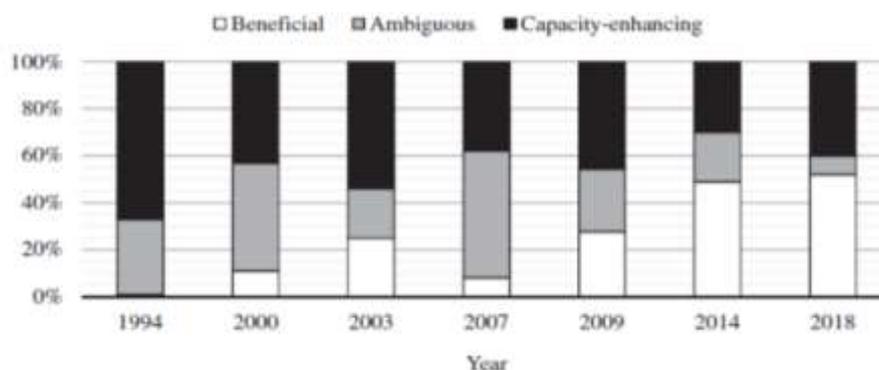
(Figure 6). According to the authors of the study, despite a redirection of subsidies for the construction of new vessels towards beneficial subsidies, Europe's financial instruments in the fisheries sector have not allowed for the elimination of subsidies that increase vessel capacity, such as aid for fleet modernisation or renewal, preventing the renewal of fisheries resources (Skerritt et al., 2020).

The previous European fund for maritime and fisheries policies was analysed by a study conducted by LPO and Birdlife. The report assesses the use of the European Maritime and Fisheries Fund (EMFF) in France over the period 2014-2020. Out of an envelope of 588 million euros, 254 million were legally committed, of which 123 million were not evaluated. Thus, 130 million euros have been qualified. The study concludes that, in general, one third of the subsidies are considered harmful to the marine environment, i.e., EUR 41.6 million. The three main harmful subsidies concern vessel modernisation and engine replacement, vessel purchase and the expansion of the aquaculture sector without environmental considerations (Caron-Strehlow et al., 2020).

In addition, in response to the health crisis, the EC has deployed a "Coronavirus Investment Initiative" which provides flexibility in the allocation of subsidies in the fisheries sector. A recent study, published in the journal Marine Policy, reveals that in France, subsidies linked to the COVID19, have largely benefited industrial fisheries, the largest vessels and environmentally damaging fishing practices, thus reinforcing existing inequalities (Le Brenne et al., 2021).

Thus, despite a stated desire to meet international commitments, the new EMFAF is seen as a step backwards in terms of reforming environmentally damaging subsidies (Le Brenne et al., 2021), particularly because it provides funds for the modernisation and renovation of vessels, whose harmful effects on the environment have been widely demonstrated.

Figure 6. Proportion of EU fisheries subsidies by category



Source : Skerritt et al., 2020

Indirectly, other subsidies favour IUU fishing, which constitutes an important part of Mediterranean fishing and has strong environmental, economic, and social impacts. Indeed, certain illegal practices deteriorate marine ecosystems and contribute to the depletion of stocks and are particularly important in certain Mediterranean countries. In Tunisia, for example, kiss fishing, although illegal, is carried out by some trawlers (Ben Hmida et al., 2014). Due to a lack of vessel monitoring, some fishermen receive subsidies while using illegal methods.

In addition to their environmentally damaging effects, the unequal and discriminatory nature of subsidies jeopardises the livelihood and adaptation capacity of small-scale Mediterranean fishermen. At the international level, while most of the fishing fleet is artisanal, over 80% of global subsidies go to large-scale fisheries" (Bloom) and mainly benefit large-scale fishermen (Martini, 2019). Although artisanal fishermen are much more numerous in the Mediterranean and more vulnerable to environmental phenomena, they are not the ones who receive the most subsidies. Indeed, in Morocco and Tunisia, fishermen receive subsidies, but fishermen point out that *'the main subsidies that affect their sector (usually on fuel and technical equipment) are often more advantageous to those with relatively larger vessels, which tend to consume more fuel due to their larger engines and greater range, and which generally switch to more advanced fishing and navigation gear'* (FAO, 2020b).

On top of the natural dangers to which artisanal fishers in the Mediterranean are exposed and vulnerable (natural disasters, weather conditions), *"the collapse of fish stocks, on which artisanal fishers' livelihoods depend, is one of the*

most telling forms" (FAO, 2020b). Thus, the economic and social viability of artisanal fishers, whose income depends on fishing and the availability of stocks, is challenged by the depletion of stocks and the ineffectiveness of subsidies that do not target the poorest populations (FAO, 2020b).

Harmful subsidies turn out to be economically inefficient, as shown by a study by the association Bloom on deep-sea fishing subsidies (see Box 3), but also by the study by the New Economics Foundations (NEF), which raises the 'vicious' dimension of European fisheries subsidies which are harmful to the environment (Griffin & Aniol, 2013). See Figure 7 below.

Figure 7. Vicious cycle of fish subsidies

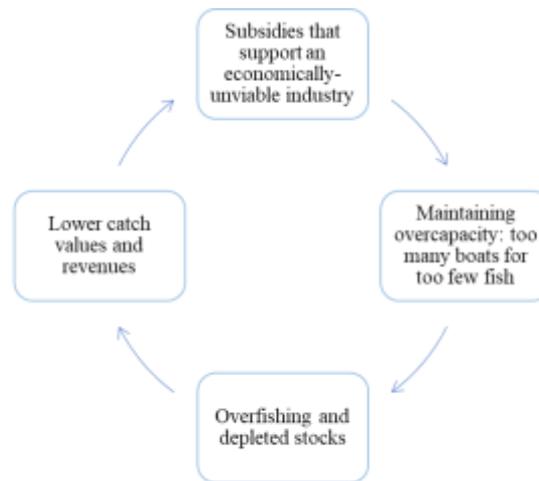


Figure 7 : Vicious cycle of fish subsidies.
Source : Griffin et Aniol, 2013

Source : Griffin et Aniol, 2013

Box 3. The economic inefficiency of deep-sea fishing subsidies in France

A study conducted by the association Bloom (Nouvian, 2011) highlights the economic inefficiency of deep-sea fishing subsidies. First, the report demonstrates that this fishing technique is practised by a very small number of vessels in France. Only a few large companies use it. Furthermore, the harmful impacts on the environment have been widely demonstrated by numerous studies on both the degradation of marine ecosystems and the exploitation of fish stocks. However, the sector continues to receive public subsidies, on which the companies are dependent. These include tax exemptions on fuel and aid for vessel construction. The study highlights that without these subsidies, the activity would have disappeared as it is not economically profitable. Thus, these subsidies represent a cost to the state to support an environmentally damaging and unprofitable activity.

Figure 8. Summary of harmful subsidies in the fisheries sector



B. ENVIRONMENTALLY HARMFUL SUBSIDIES IN THE TOURISM SECTOR

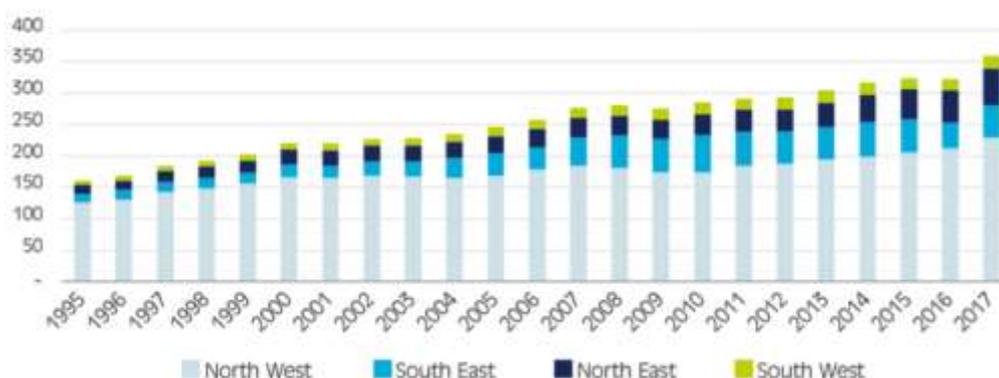
1. State of play of the tourism sector

The Mediterranean is the world's leading tourism region, with nearly 360 million international tourist arrivals (ITAs) each year, which represents 27% of the world's ITAs. In this respect, the tourism sector contributes strongly to the economic and social dynamics of the region in terms of production volume and employment. It "contributes to 11.3% of total GDP, 11.5% of employment, 11.5% of exports and 6.4% of capital investments in the region" (WTTC, 2015). Among the 360 million ITAs, "approximately half of the 2017 arrivals - 170 million - are in the Mediterranean coastal areas" (UNEP/MAP and Plan Bleu, 2020). In these areas, tourism represents "more than 70% of the value of production and gross added value with almost 80% for employment". Thus, like fishing, tourism is an important source of income on which the coastal populations of the Mediterranean depend.

The tourism sector in the Mediterranean is composed of different branches of activity. Fosse and Le Tellier (2017) distinguish five tourism products: seaside, cruise, nature-rural-ecotourism, culture, business. From these products derive activities and practices that sustain the sector such as coastal development and marinas, yachting and boating and all activities that are practiced by tourists (golf, amusement parks, fishing, diving, etc.).

Moreover, the geographical distribution of tourism is unequal (Figure 9). Indeed, the Northern Mediterranean countries (France, Spain, Italy, Greece, Turkey) concentrate 83% of tourist arrivals (Fosse & Le Tellier, 2017). While ITAs are rather declining in North African countries, they are on an upward trend in Albania and Bosnia-Herzegovina. It is estimated that the already strong tourist numbers will increase in the coming years. Indeed, the World Tourism Organisation (UNWTO) forecasts up to 500 million ITAs by 2030 in the Mediterranean countries.

Figure 9. Mediterranean International Tourists Arrival



Source: Plan Bleu and WTO

While tourism has benefits for the economic, social, and cultural development of countries, it is also a cause of environmental degradation and global change. The sector is therefore a factor in environmental change but is also a victim of it. Indeed, environmental degradation makes destinations less attractive to tourists while threatening the quality of life of local populations (Randone et al., 2017).

Indeed, tourism has a significant environmental impact due to an intensification of frequentation over short periods (OECD, 2020b). The development of tourism without consideration of sustainability has led to situations of "overtourism" requiring the implementation of crisis management measures (e.g., in Croatia, Peeters et al., 2018). Thus, in this case, tourism has many negative impacts on the environment but also on the economic and social context of a region. For example, in Italy in the 1970s and in Spain in the 1960s, environmental degradation due to mass tourism led to a drop-in tourist numbers (Randone et al., 2017).

The environmental impacts of the various activities arising from the tourism sector are particularly strong in coastal areas. Indeed, the concentration of tourist activities in coastal areas accentuates and aggravates the anthropic pressures on land use, on water and food consumption or on the quality of water and air in these areas, particularly during the summer periods.

Coastal development and tourism infrastructure contribute to the occupation, artificialisation and degradation of land and coastal areas, impacting habitats and ecosystems, such as wetlands.

Moreover, during the summer period, water consumption increases sharply, leading to situations of over-consumption of the resource. The SoED 2020 reminds us that *"a tourist staying in a hotel uses, on average, one third more water per day than a local inhabitant. Water parks, golf clubs, and other tourist and recreational facilities are significant consumers of water, especially during the dry season"*.

Tourism also increases the pollution of the Mediterranean Sea, in particular through waste, which increases significantly during the summer period. A study by the Autonomous University of Barcelona shows that marine litter in coastal areas is multiplied by three in the summer in the Mediterranean region (Universitat Autònoma de Barcelona, 2018). Pollution of the sea is caused by the discharge of wastewater from recreational boats that do not provide treatment, but also from urban wastewater treatment systems which fail to cope with the increase in population during the summer months.

Finally, tourism is a GHG emitter because of its dependence on carbon-based industries (air and maritime transport, accommodation) (UNEP/MAP and Plan Bleu, 2020) and contributes to air pollution by GHGs. At world level, tourism contributes to about 5% of GHG emissions (OECD, 2020b), mainly due to air transport.

Despite the strong impact of mass tourism on the environment, there are no studies that deal specifically with environmentally damaging subsidies in the tourism sector. Indeed, tourism involves sectors of activity that operate out of the tourist season, which raises methodological difficulties.

2. Characteristics of harmful public subsidies in the tourism sector

Environmentally damaging subsidies in the tourism sector are those that promote mass tourism and unsustainable tourism activities. EHS in this sector are characterised by specific and indirect subsidies. The former are specific to tourism products, the latter affect goods and services that are also used by the local population out of season (Gago et al., 2009).

Harmful subsidies in the tourism sector encourage visits through various tourism-related sectors (hotels, transport, or leisure) that impact the environment.

Among the subsidies that are specific to the tourism sector but indirect, and which will increase the number of visitors, the exemption from taxes on kerosene¹⁰, which was enshrined in the Chicago Convention in 1945, is important. However, a report by the Climate Action Network stresses that *"from a climate perspective, air travel is the most harmful means of transport for the climate, even though it receives the most direct and indirect public aid"* (Fink, n.d.). Subsidies to the aviation sector allow for lower ticket prices and potentially make this means of transport more accessible to all (Fink, n.d.). For example, in EU countries, international and inter-European air tickets are subject to reduced VAT rates. Thus, these subsidies contribute both to the increase in tourist numbers (potentially more people can fly) and to the increase in GHG emissions.

Other tax exemptions will favour maritime navigation activities (pleasure boating, yachting, jet-skiing) as shown by the application of the annual fee for francization and navigation in French maritime waters (Box 4).

Box 4. The annual fee for francization and navigation in France

In France, pleasure boats and jet skis are subject to an annual tax for navigation: the annual fee for francization and navigation (DAFN). This is a tax payable to customs by owners of pleasure or sports vessels for use in maritime waters. In 2005, boats of less than 7 metres were exempt from the DAFN, regardless of their engine power. This had the consequence of encouraging the use of more fuel-consuming and GHG-emitting vessels, but also of impacting biodiversity through noise pollution (Sainteny et al., 2012). To make this tax environmentally effective, this report recommended extending the DAFN *"by retaining only the criterion of the real power of mechanical propulsion and abandoning the criterion of hull length"*.

Moreover, this tax seems to pursue environmental objectives since the beneficiaries of the DAFN are, among others, the Conservatoire de l'espace littoral et des rivages lacustres (CELRL) or the eco-organisations in charge of the ship recycling sector (Douanes et droits indirects, 2019). However, today, pleasure boats under 7 metres are still exempt unless they have a power rating of over 22 hp. In total, only 20% of French motorboats are concerned by the DAFN.

¹⁰ This subsidy can also be considered as a non-specific subsidy since transport is not reserved for tourists.

An indirect but specific harmful subsidy in the tourism sector is the non-internalising aspect of the tourist tax (paid by the tourist per night spent in a municipality). Indeed, this tax is generally too low to internalise external environmental costs. In France, *"the setting of the tourist tax does not internalise either the negative impacts of tourist activity on biodiversity or the benefits that tourists derive from a preserved natural environment. This was not the objective of the tax when it was implemented"* (Sainteny et al., 2012). The amount of the tourist tax varies from country to country and is a matter for the local level. In some Mediterranean cities, measures have been taken to increase the tourist tax, the environmental objective of which is difficult to measure, as shown by the example of the ecotasa in the Balearic Islands in Spain (Box 5).

Box 5. Ecotasa in the Balearic Islands

The *ecotasa* is the tourist tax applied in the Balearic Islands in Spain. It was first applied for a short period from April 2001 to October 2003. Its objective was indeed to generate revenue to reinvest in the preservation of the environment. However, it was heavily criticised by the tourism sector, and it was shown that the tax was too low to have favourable environmental effects (Gago et al., 2009). Nevertheless, it was reintroduced in 2016 and increased. It varies from 0.2 euros per person per day in the low seasons to 2 euros in the high seasons. It is intended to be dedicated to, among other things, the *'protection, preservation and restoration of the natural, rural and marine environment, and the improvement of the quality and competitiveness of the tourism sector'*¹¹ (ecotasa.es website, 2016).

Compared to other Mediterranean cities, the Balearic *ecotasa* is relatively low. For example, in Venice the tourist tax varies between 3 and 10 euros. The difficulty lies in assessing the environmental performance of this tourist tax.

In addition, direct and sector-specific subsidies encourage the development of the tourism industry by facilitating investment, construction, or renovation of hotel infrastructures, which have a particular impact on the Mediterranean coastal areas. These subsidies are characterised for example by tax reductions, direct subsidies, or reduced VAT rates. The reduction of the VAT rate on certain goods and services mobilised in tourism activities is an implicit subsidy by the States to the tourism sector (Gago et al., 2009). These reduced rates will encourage consumption of these goods or attendance. This measure is used particularly in the hotel and restaurant sector.

Other, more indirect subsidies may accentuate the effects of mass tourism, or at least fail to offset the damage. For example, in response to the over-consumption of water during tourist periods, some Mediterranean countries have introduced differentiated pricing schemes targeted at tourism (Box 6).

Box 6. Differentiated and progressive pricing of water use in the tourism sector

The implementation of a pricing system targeted at a specific water use can encourage a change in behaviour and constitute a measure favourable to the protection of the environment, in this case by limiting water consumption in the tourism sector. Some Mediterranean countries have implemented differentiated water pricing measures in the tourism sector.

For example, in Israel and Jordan, differentiated pricing is applied for water consumption by hotels in the most touristic regions (European Commission, 2009). Tunisia introduced a differentiated pricing system in 1968, depending on the use of water. There are 5 levels of pricing; tourism and particularly the hotel industry are subject to the highest pricing (European Commission, 2009). (European Commission, 2009). However, in many countries, a part of consumption remains outside the scope of observation due to private or non-declared sources. Also, they do not include other sectors such as golf or water parks that consume a lot of water during the summer period.

The aim of these tariffs is *a priori* to reduce water consumption by the tourism sector, and thus to reduce its impact on water resources. On the other hand, it is difficult to determine whether these specific tariffs are really an incentive and whether they lead to a change in behaviour.

The economic and social impacts of environmentally damaging subsidies in the tourism sector are linked to the environmental degradation of mass tourism.

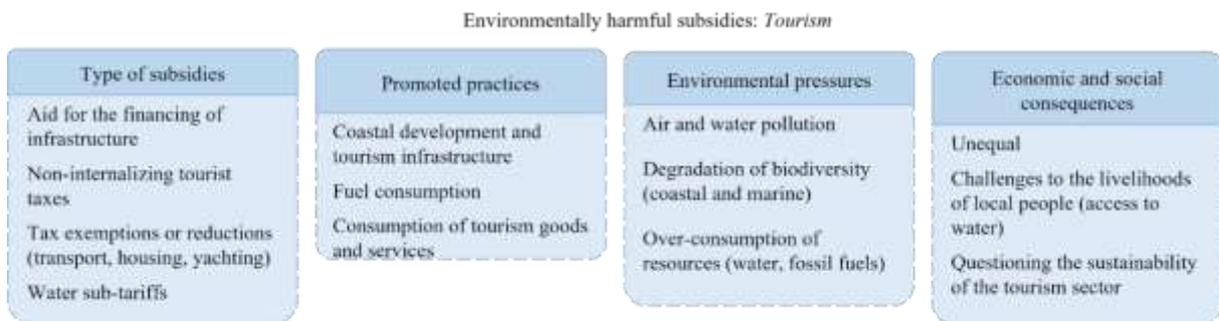
¹¹ Unofficial translation

In the case of air transport subsidies, these benefit the upper segments of the population. The Action Climat France report shows that they should allow greater access to air transport for low-income populations, but that subsidies to this sector favour the most affluent households (Fink, n.d.).

Furthermore, by promoting mass tourism, EHS undermine the livelihoods and quality of life of local populations, leading to the development of "anti-tourist" sentiments. Firstly, in already very dry regions, particularly in the southern Mediterranean countries, the arrival of tourists jeopardises the ability of local people to fulfill their water needs. Similarly, the failure to internalise the negative externalities of tourism on the environment accentuates environmental degradation or GHG emissions, thus altering the quality of life of the inhabitants.

In addition to having consequences for local populations, environmental degradation calls into question the very existence of tourism in the sense that it is the quality of the environment that ensures the attractiveness of a destination. Thus, a degraded environment decreases the tourist attraction of a region.

Figure 10. Summary of harmful subsidies in the tourism sector



IV. First steps towards reforming the EHS in the framework of the MAP

A. THE CHANGING DYNAMICS OF REFORM

1. International and regional agreements

The status of commitments to EHS reform is constantly evolving. Various events to which the Mediterranean countries are connected could contribute to furthering EHS reform, with new international commitments, in the coming months.

- WTO negotiations

The WTO discussions for the achievement of SDG 14 on fisheries subsidies did not achieve this goal in 2020. However, they resumed in 2021 via informal negotiation meetings that should lead to an agreement between WTO members at the Ministerial Conference in December 2021. The main areas of negotiation, leading up to the final decision, are the prohibition of subsidies for IUU fishing, those that lead to the depletion of stocks and those that lead to overcapacity and overfishing.

- CBD COP15

As signatory members, the Mediterranean countries will participate in the CBD COP15 in October 2021. This is also an opportunity to re-discuss the Aichi 3 objective by redefining a horizon and concrete measures.

2. Regional initiatives

- The Covid Recovery and the European Green Deal

The European budget and the Covid relaunch (see EU Biodiversity Strategy 2030) provide an opportunity to redirect funding towards sustainable practices.

- The opportunity of a Euro-Mediterranean Green Deal

In a similar dynamic, a project for a Euro-Mediterranean Green Deal is underway. The objective is to strengthen cooperation between Europe and the Mediterranean countries to accelerate the ecological transition. The aim is also to provide financial support to Mediterranean countries to facilitate the implementation of the transition.

As mentioned above, at the level of the Mediterranean Action Plan, references have been made in several instances of the potential of reforming EHS to better ensure sustainable development objectives; the issue of environmentally harmful subsidies is now integrated in the draft plan of work 2022 - 2023 for consideration during the next Conference of the Parties in December 2021.

These different events are an opportunity to renew and strengthen the commitment of States as well as international and Mediterranean cooperation for the reform of EHS. These commitments must be accompanied by the implementation of concrete measures such as knowledge sharing, environmental tax reform, or other biodiversity financing mechanisms.

B. TOOLS FOR REFORMING EHS: ENVIRONMENTAL FISCAL REFORM (EFR) AND FINANCING MECHANISMS

1. Principles and conditions of an EFR

Definition of EFR

Environmental fiscal reform (EFR) is a mechanism that consists of deploying a set of incentives measures with the aim of shifting the tax burden on environmentally harmful activities. This mechanism also aims to obtain tax revenues while achieving environmental objectives. (OECD, 2014).

EHS reform is a tool of environmental fiscal reform to free up financial resources and relieve the pressure on public finances from these subsidies. It "*can encourage management practices that protect public goods, promote innovation, reduce technological lock-ins and save public budgets for other objectives*" (Ten Brink et al., 2013). It is complementary to other EFR measures such as increased taxes on pollution or resource extraction, which still constitute a very small share of environmental tax revenues (OECD, 2014).

To promote the environmental efficiency of these economic instruments, the amount of taxes must be incentive-based and give the right price signals to induce a change in behaviour (Sainteny et al., 2012). Indeed, the EFR can aim to reduce the lack of internalisation of negative externalities by increasing the level of taxes to equal the marginal social cost, in the case of the tourist tax for example. The environmental effectiveness of taxes is also greater when they are specifically targeted at harm. In the fisheries sector, this may apply to the harvesting of fisheries resources or to the pricing of access to fishing grounds.

The EFR is complementary to other biodiversity financing mechanisms. Tax measures, which are partly based on the polluter-pays principle, can therefore release resources that can then be redirected to funding for biodiversity protection, for example payments for ecosystem services. The latter mechanism is based on the beneficiary-pays principle: the user pays to obtain the ecosystem services he wishes to benefit from.

Transparency and data sharing

To foster an EFR and particularly a reform of EHS, knowledge sharing and data transparency between Mediterranean countries are necessary to move forward and carry out effective and coordinated actions. At the national level, it is necessary to improve transparency to facilitate the census and identification of EHS. As seen above, methodologies such as those developed by the OECD can be used to support this process. In addition, transparency makes it possible to inform decision-makers and the population concerned and thus to make certain measures more socially acceptable. It is therefore a key factor in the success of an EHS reform (Lehmann et al., 2009). The exchange of mutual information provides an opportunity to understand the specificities of Environmental Harmful Subsidies in each country, identifying the most affected sectors as well as the main sources of detrimental subsidies. This shared understanding would promote the identification of interdependencies among Mediterranean basin nations, highlighting how subsidies in one country can potentially have negative effects on the natural resources and ecosystems of other countries. The sharing of knowledge would also facilitate the adoption of best practices and proven strategies for EHS reform. Countries could draw inspiration from each other's successful experiences and learn from potential failures, thus accelerating the implementation of effective and context-appropriate reforms. The information and cooperation mechanisms envisaged in the Barcelona Protocols play a crucial role in this process. They encourage Mediterranean countries to exchange information, coordinate actions, and work together to address common environmental challenges.

Innovative mechanisms that could be considered include:

- **Mediterranean Data Platform:** Establishing an online platform dedicated to HES would enable Mediterranean countries to share up-to-date information on subsidies, the sectors involved, and allocated amounts. This platform could also incorporate indicators of environmental and economic performance related to EHS, aiding in the evaluation of the effectiveness of undertaken reforms.
- **National Reports and Joint Assessments:** Mediterranean countries could be encouraged to regularly publish national reports on EHS, detailing measures taken, outcomes achieved, and challenges encountered. Joint assessments could also be conducted periodically, allowing for progress comparison and sharing of lessons learned.
- **Transparency Incentives:** Mediterranean countries could be incentivized to share data in exchange for access to best practices and available knowledge. Mechanisms such as grants for collecting and publishing EHS data could be implemented to encourage participation.

Furthermore, encouraging the sharing of experiences and knowledge about EHS would make it possible to feed a network of experts. In fact, this exploratory study has allowed a first contact with experts on environmentally harmful subsidies. It is necessary to continue efforts in this direction to create a broader common framework on EHS in the Mediterranean countries. This would allow, for example, to agree on a common definition of EHS and a shared methodology to promote better coordinated action, share experiences in the Mediterranean countries and disseminate findings from studies currently underway at the OECD and European level with the aim of proposing tools to countries to reform and reduce EHS. This would make up for the lack of region-specific examples noted in this study.

Finally, the work initiated by this study should be continued to improve the quality and quantity of information within and between Mediterranean countries to allow for more informed project design and decision-making. Within the MAP framework, there are different projects and initiatives that can facilitate knowledge sharing and transparency as the Environment and Sustainable Development Observatory or the SIMPEER (Box 7). Finally, these tools should favour the emergence of a common framework for the Mediterranean basin facilitating the application of international recommendations (ODD, Aichi etc.).

Box 7. Strengthening transparency and knowledge sharing in the Mediterranean.

Mediterranean Environment and Sustainable Development Observatory

In the framework of the MAP, the Mediterranean Observatory on Environment and Sustainable Development provides the contracting parties with data and statistics on environment and development. It can be a tool to be used to facilitate the reform of EHS in the Mediterranean by facilitating sharing, transparency, and access to data. This can be done by strengthening the use of tools such as the UNEP World Environment Situation Room¹² (WESR) platform and developing specific set of datas related to EHS. This platform allows countries to visualize, query, access, link and download data, information and knowledge products regarding the world environment situation in near real time and can, for example, be used to monitor countries' progress towards international and regional targets.

UNEP/MAP Simplified Peer Review Mechanism (SIMPEER)

The Simplified Peer Review Mechanism (SIMPEER) of the sustainable development strategies of the Mediterranean countries, adopted by the Contracting Parties at COP19, is a tool for dialogue and sharing of experiences, knowledge, and good practices (Plan Bleu, 2020). Its objective is to analyse and review national sustainable development strategies (NSSD) in relation to the MSSD and the SDGs. Thus, as a follow-up to this study, next SIMPEER exercises could include a section on harmful subsidies. This would allow data sharing on EHS and facilitate their monitoring and reform.

The opportunity of the Mediterranean Biodiversity Consortium

In 2021, a new dynamic is established with the creation of the Mediterranean Consortium for Biodiversity. It brings together a cooperative vision, bringing together a multitude of actors, whose main objective is the protection of Nature and Mediterranean biodiversity by "*relying on Nature-based solutions*", raising awareness of these approaches among territorial actors "*or contributing to a greater awareness of the importance of acting for biodiversity in the Mediterranean*" (Dossier de presse. Le Consortium Méditerranéen pour la Biodiversité, 2021). This consortium is therefore an opportunity to communicate and raise awareness about the EHS and their reform as well as the financial solutions available to promote environmental protection.

Biodiversity criteria and monitoring approaches

While the EFR aims to redirect existing harmful subsidies, it is necessary to avoid or at least limit the appearance of new EHS in the design of laws, public policies, or projects at national or regional level. The aim is to strengthen the consideration of biodiversity criteria to promote its protection by identifying and limiting the appearance of harmful measures.

To monitor the evolution of and compliance with these criteria and indicators, it would also seem appropriate to implement annual monitoring and *reporting* procedures, as recommended by the IEEP (Withana, 2014) or in the French report on aid harmful to biodiversity (Sainteny et al., 2012). *Ultimately, the aim is to establish an "EHS logic" and raise awareness among designers and decision-makers to pay attention to harmful subsidies in the design of new national laws, new Mediterranean projects or in mechanisms such as impact assessment, thanks to specific indicators and criteria to identify them. These approaches, together with data sharing and transparency, could also help to inform about the environmental cross-border impacts of subsidies. This would improve the environmental effectiveness (i.e., considering negative externalities and achieving environmental objectives) and efficiency of subsidies and more*

¹² <https://wesr.unep.org/>

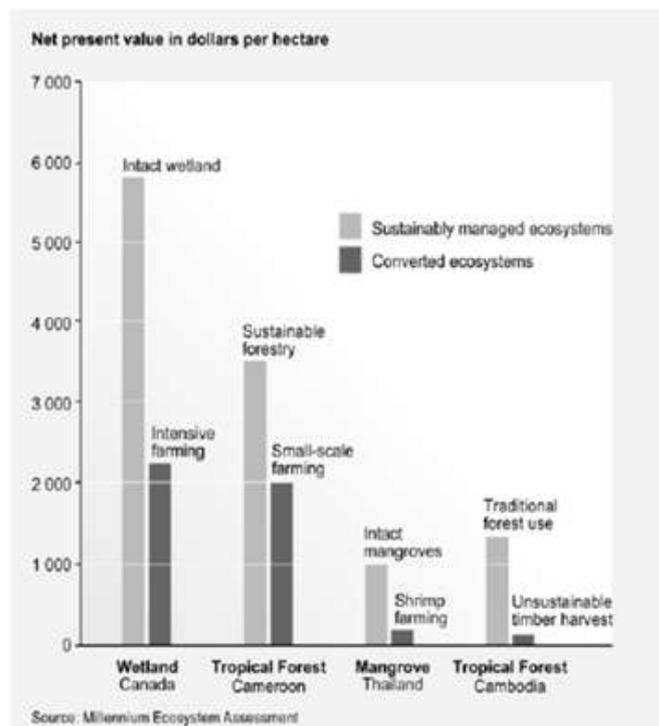
broadly of public policies. At a later stage, it could be relevant to set up a more precise monitoring of certain grants: for example, in accordance with the ICZM protocol, it would be appropriate to monitor EHS in the coastal zones.

Although there may be costs associated with setting up monitoring, the OECD points out that "EFR can be a relatively simple way to raise revenue without very high administrative costs" (OECD, 2014)

Furthermore, in the implementation of the EFR, it is important to consider the particularly heterogeneous socio-economic, political, and cultural contexts in the Mediterranean. Institutional and political instability, compromising governance capacities, can limit the implementation of an EFR. It should also be stressed that the implementation of an EHS reform may lead to "win/lose" situations, impacting the poorest populations. In this case, compensatory measures, such as redistribution, are necessary, especially if the poorest populations are affected.

EFR improves environmental efficiency by redirecting harmful subsidies towards environmental objectives. This is because it can encourage the adoption of sustainable management practices (Lehmann et al., 2009; Withana et al., 2012) and "[earmark] public budgets for other purposes" (Ten Brink et al., 2013). In this way, revenues can be redirected towards protecting ecosystems and adopting sustainable ecosystem management, especially as this brings far more benefits than costs, as the Figure 11 from the Millennium Ecosystem Assessment (MEA) shows.

Figure 11. Ecosystems value



Source: MEA, 2005

The following section will present two examples of ecosystems (marine ecosystems and wetlands), relevant in the Mediterranean, that can be subject to economic incentives and financing mechanisms favourable to environmental protection.

2. An example of reorienting EHS: economic incentives for nature-based solutions through sustainable management of marine protected areas (MPAs) and wetlands

Marine protected areas

Nature-based Solutions (NBS) are "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (Cohen-Shacham et al., 2016). IUCN differentiates between several categories of NBS, including

marine protected area management or natural infrastructure (IUCN, 2020). To facilitate the implementation of such solutions, 'governments need to provide financial/economic incentives, such as subsidies, tax breaks or others' (Klauschen, 2019).

In the Mediterranean, only 0.23% of MPAs have an effective level of protection, and for 95% of them there are no differences in regulations between protected areas and those that are not (Claudet et al., 2020). Thus, directing funding towards sustainable management of MPAs to strengthen their effectiveness, particularly those with a low level of protection, allows for better preservation of ecosystems and fisheries resources. Indeed, better management of MPAs and a higher level of protection allows for greater efficiency in the fisheries sector (Sala et al., 2021). The results of a recent study published in the journal Nature (Sala et al., 2021) show that cooperation between fishermen and MPA managers promotes conservation and increases food benefits. The study also highlights the need for global action through sustainable funding mechanisms to help countries achieve sustainable management.

In this sense, the FishMPABlue 2 programme within the framework of the Interreg MED programme aims to promote interactions between Mediterranean fishermen and MPAs. Among other things, the programme proposes governance tools to combine the management of small-scale fisheries and the management of MPAs in the Mediterranean. For example, it proposes investing in equipment that is closer to artisanal and traditional techniques (Hogg et al., 2019). Government intervention to compensate fishermen for potential losses is necessary but not sustainable in the long term. Thus, the programme advocates the development of financial support for the retraining of small-scale fishermen in new activities such as monitoring or surveillance.

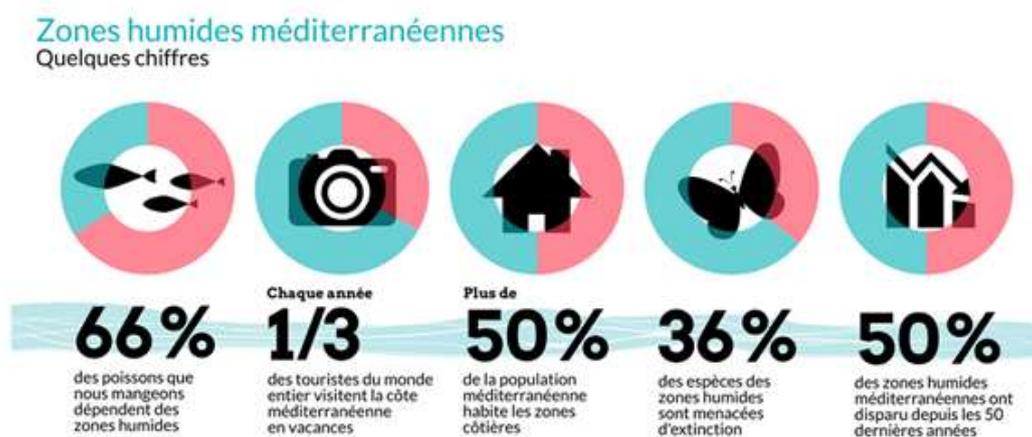
MPAs are a relevant tool for sustainable fisheries management in the Mediterranean, allowing both the renewal and sustainability of marine ecosystems while allowing small-scale fishermen to maintain their activity and their livelihood.

Wetlands

To promote efficient resource use, EFR can allow redirect subsidies to wetland protection (Ten Brink et al., 2013). They are among the richest ecosystems in terms of biodiversity and ecosystem services. They play a key role in the natural cycles of elements, including the water cycle and the carbon cycle. Their ecosystem value is higher than that of other types of ecosystems (Ten Brink et al., 2013). They constitute natural infrastructures and offer NBS that enable territories to adapt to global changes (Plan Bleu, 2016). For example, through the ecological regulation functions they provide, they make it possible to mitigate flooding phenomena, to cope with the increasing scarcity of water resources or to remove pollution.

However, these ecosystems are heavily affected by human activities. In the Mediterranean region, half of the wetlands disappeared during the 20th century (Plan Bleu, 2016). Their degradation leads to cascade effects, due to their high degree of interaction and interdependence with other types of ecosystems and has many negative impacts. The damage is both to biodiversity itself, to the ecosystem services they provide, but also to the populations and their activities that rely on them, such as tourism and fishing (Figure 12).

Figure 12. Figures on Mediterranean wetlands



Source: www.offyourmap.org

Wetlands are impacted by fishing and tourism activities, which are in turn impacted by wetland loss. Indeed, wetland degradation can lead to a reduction in fisheries resources, a reduction in "*recreational and tourism opportunities*", and all this has economic consequences (Ten Brink et al., 2013).

To preserve the areas, economic incentives, including through EHS reform, towards sustainable management of these ecosystems can provide multiple co-benefits "*by improving the health and livelihoods of local communities and reducing poverty, e.g. through sustainable fisheries, agriculture and tourism*" (Ten Brink et al., 2013) and promote efficiency and effectiveness. Indeed, through the ecosystem-based solutions they offer, wetlands can avoid future costs associated with damage caused by events from which they protect us. Economic instruments of an EFR can be applied: for example, higher pricing for water abstraction for certain uses (tourism, recreation) or better application of the polluter pays principle to reduce pressures on Mediterranean wetlands (Ten Brink et al., 2013).

Finally, these different tools should serve to establish coherence in the Mediterranean about environmentally harmful subsidies, in order to create a real reform dynamic in all countries while taking into account the specificities of the Mediterranean and the different social, political and cultural contexts, etc. This dynamic should also make it possible to establish an "EHS logic" that aims to limit the appearance of new harmful subsidies by promoting reporting and monitoring approaches and by strengthening the consideration of biodiversity criteria in the design of laws and in mechanisms such as impact studies. The aim is also to make funds available for the sustainable management of ecosystems, such as marine ecosystems and wetlands, to preserve the activities that depend on them, such as fishing and tourism.

V. Charting the Course: Navigating the Mediterranean's Future through Enhanced Research on Environmental Harmful Subsidies

In conclusion, the issue of environmental harmful subsidies presents a pressing concern that resonates deeply within the context of the Mediterranean region. The unique blend of rich biodiversity, delicate marine ecosystems, and intricate socio-economic dynamics underscores the urgency of addressing harmful subsidies to ensure the well-being of both the environment and the communities inhabiting this vital area.

The examples highlighted within this discussion already shed some light on the multifaceted challenges posed by harmful subsidies. From overfishing jeopardizing marine biodiversity to unsustainable coastal development driven by tourism-related incentives, the ramifications of these subsidies permeate various sectors and threaten the long-term sustainability of the region.

While the complexities are evident, the path forward requires a collective commitment to understanding and mitigating the impact of harmful subsidies. The interconnectedness of Mediterranean ecosystems and the shared vulnerabilities among the countries bordering the Mediterranean Sea demand a collaborative approach. However, to design effective policies and strategies, more in-depth studies are needed. These studies can illuminate the intricate interplay between all types of harmful subsidies, their environmental repercussions, and their socio-economic implications. Furthermore, they can provide the basis for a comprehensive framework of cooperation and coordination, uniting Mediterranean nations in the pursuit of sustainable development and the preservation of the region's ecological treasures.

As part of its work programme, Plan Bleu will examine in depth the different types of harmful subsidies, their associated environmental impacts and their implications for sustainable development in the Mediterranean.

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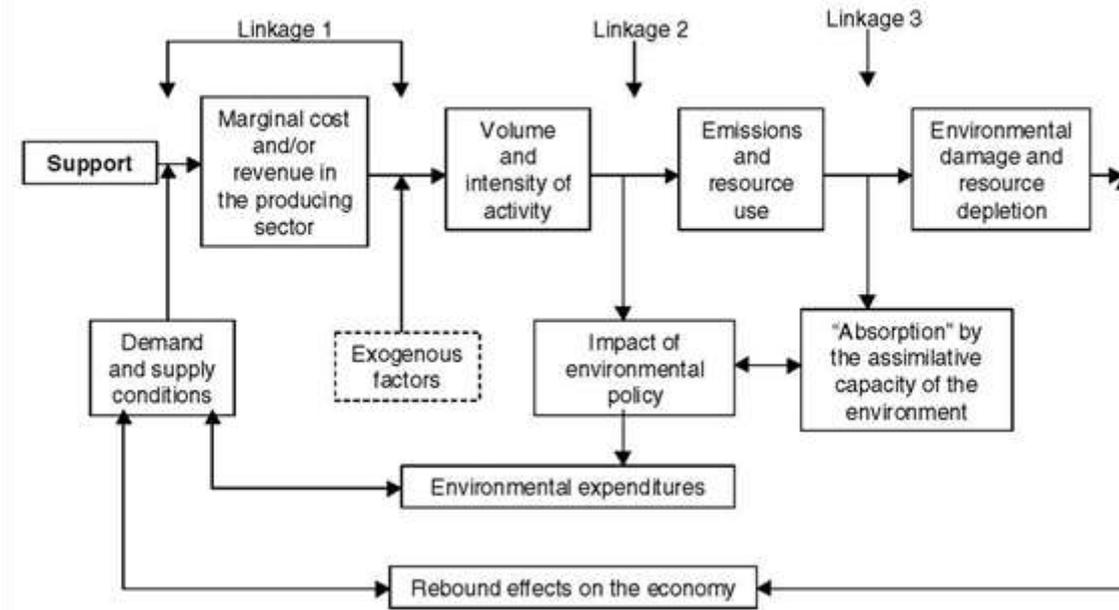
Annexes

ANNEX 1: BIBLIOGRAPHIC REVIEW OF EHS' TYPOLOGIES

Typologies	Thematic	Bibliographic reference
<ul style="list-style-type: none"> Financial transfer from the State to private or public agents that confers a benefit: effective transfer (direct subsidy) or renunciation of a reverse transfer (tax exemption). State actions that confer an income advantage Lack of internalisation of the marginal social cost of production (negative externalities) 	Biodiversity (as defined by the CBD)	Sainteny, 2012 French report
<ul style="list-style-type: none"> Direct subsidies Tax expenditures 	Environment	Ministero dell'Ambiente,della Tutela del Territorio E del Mare, 2018 Italian report
<ul style="list-style-type: none"> Grants with an impact on the budget: financial support, tax advantage, bonds and guarantees used Grants with no budgetary impact 	Environment	Köderet al, 2016 German report
<ul style="list-style-type: none"> Grants with an impact on the budget Grants with no budgetary impact 	Biodiversity	Schweppe-Kraft et al, 2019
<ul style="list-style-type: none"> Explicit on-budget: direct financial transfer Explicit off budget: tax benefits, tax reduction etc. Implicit: external costs to the environment Perverse financial incentives 	Biodiversity	Gubler, 2020 Switzerland Report
<ul style="list-style-type: none"> Direct aid: financial transfer Indirect aid: reduction or exemption from environmental taxes Implicit aid: cost of pollution insufficiently compensated 	Environment	Pourquier, 2017 CGDD
<ul style="list-style-type: none"> On-budget: Direct transfer of funds, provision of goods and services, infrastructure Off-budget: income or price advantage, tax exemption, low interest rates, etc., gap between observed price and production cost, non-internalisation of externalities 	Environment	IEEP (Valsecchi et al., 2009 and Withana et al., 2012)

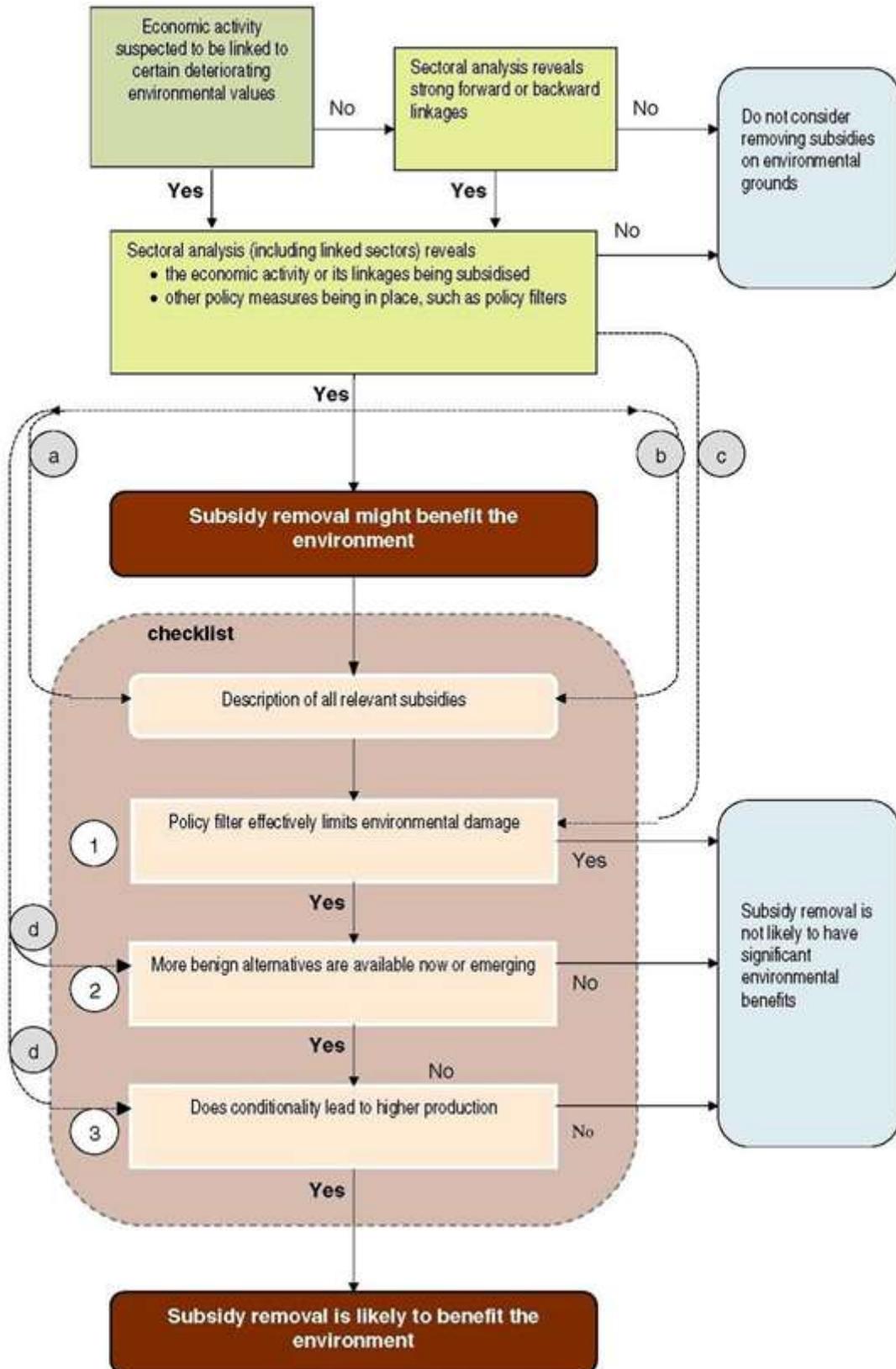
ANNEX 2: METHODOLOGIES FOR IDENTIFYING, ASSESSING, AND REFORMING EHS DEVELOPED BY THE OECD

Methodology 1: The quick scan (OECD, 1998)



Note: As with all analyses, results will be dependent on the chosen assumptions, methodologies and available data such that quantitative results will always be subject to some degree of uncertainty.

Methodology 2: The Checklist (OECD, 2005)



Methodology 3: The Integrated Assessment Framework (OECD, 2007)

Box 1. Integrated assessment framework

Features Scan

Objectives

What are the objectives of the subsidy, with respect to its environmental, economic and social impacts?

Design

Does the policy design avoid problems inherent in long-term existence of subsidies?

Adaptive design: Does it have a sunset clause or an adaptive review process?

Are the conditionalities right? Are they based on outcomes, rather than specific technologies (avoiding lock-in effect); on inputs and outputs rather than on capital stock?

Effectiveness analysis

Does it or will it achieve its objectives?

Economic: correct a market failure; increase the supply of a public good

Social: improve income distribution generally, or reach a target group with intended benefits; induce socially desirable behaviour.

Environmental: reduce pollution; preserve habitat; encourage the use of an environmentally preferable product speed the development of more-efficient or clean technologies.

Cost-effectiveness

What alternatives exist for meeting those objectives that might be more cost-effective?

Incidental Impacts

What incidental impacts (impacts other than those intended) have been or can be expected from the subsidy? The stress here is on long-term, dynamic and international impacts.

Economic: unintended economic impacts such as impacts on the prices of factors of production and intermediate inputs used by non-target industries; economic impacts of environmental improvement.

Social: socially undesirable distributional impacts (e.g., on low-income consumers, on non-target population generally, on developing country exporters); negative dynamic responses to the subsidy

Environmental: linked mainly to primary economic impacts – changes in the levels of inputs and wastes. e.g., degradation of ecosystem services; loss of biodiversity, synergistic effects

Long-Term Effectiveness

Is the subsidy designed so as to eventually address the underlying problems that gave rise to its creation?

Economic: Does the subsidy address the underlying problem, e.g., by spurring innovation, increasing resource or labour productivity or increasing the supply of a public good?

Social: If it is aimed at a soluble problem, rather than a structural market failure, does the subsidy decrease dependence, eventually making itself obsolete?

Environmental: Is the subsidy designed to directly address the problems facing infant environmental industries?

Policy Reform

What would be the environmental, economic and social impacts of various scenarios for reform of the subsidy, including outright elimination, phased elimination, and change in policy design? Would they differ from a simple reversal of the incidental impacts discussed above?

Where negative impacts are predicted (even in the context of positive net impacts), what sorts of flanking measures might be helpful in addressing them?

ANNEX 3: MAIN INTERNATIONAL AND MEDITERRANEAN AGREEMENTS FOR EHS REFORM

Agreements	Objective	Text
International agreements		
COP 10 of the Convention on Biological Diversity 2010	Aichi Goal 3	"By 2020 at the latest, incentives, including subsidies harmful to biological diversity, are eliminated, phased out or reformed in order to minimize or avoid adverse impacts, and positive incentives for the conservation and sustainable use of biological diversity are developed and implemented (...)" .
Sustainable Development Goals 2015	Target 14.6	"By 2020, prohibit fisheries subsidies that contribute to overcapacity and overfishing, eliminate those that promote illegal, unreported and unregulated fishing and refrain from granting new subsidies, bearing in mind that effective and appropriate special and differential treatment for developing and least-developed countries must be an integral part of the negotiations on fisheries subsidies in the World Trade Organisation" .
Mediterranean agreements		
The Mediterranean Strategy for Sustainable Development 2016-2025	Strategic Direction 5.6	"Ensuring a greener and more inclusive market that integrates the true social and environmental cost of goods and services to reduce social and environmental externalities
	Action 5.6.2	"Examine the environmental impacts of public subsidies with a view to phasing out environmentally harmful subsidies
ICZM Protocol 2009	Article 21	"To implement national coastal strategies, plans and programmes, Parties may take appropriate measures to adopt relevant economic, financial and/or fiscal instruments to support local, regional and national initiatives for integrated coastal zone management" .
Common Regional Framework for ICZM - Decision IG.24/5 2019		"Progressively reduce environmentally damaging subsidies while putting in place countervailing measures to address the socio-economic losses that may occur
Naples Ministerial Declaration 2019		"Stimulate capacity building and participation of a range of actors - in particular the scientific community, the private sector and civil society - in the design and implementation of adaptation strategies and in the mobilisation of financial resources, including through subsidy reforms and effective collection of green taxes.

