Reforming Environmentally Harmful Subsidies

An Ecological Imperative and an Economic Opportunity for the Mediterranean

The Mediterranean is at a crossroads. As the region is warming 20% faster than the global average (MedECC, 2020), governments are becoming increasingly aware of the need to adapt their economic models. A recent report (Plan Bleu and UNEP/MAP, 2024) highlights an encouraging trend: several countries, from Turkey to Morocco, have begun redirecting their public subsidies. However, the climate emergency calls for a much faster pace of reform. Environmentally harmful subsidies (EHS)[1] remain widespread and constitute a major structural challenge: they artificially sustain the profitability of unsustainable economic models, from fossil fuels to overfishing, by encouraging the expansion of economic activity at the expense of conservation. Beyond their environmental impact, EHS are also economically costly and inefficient. Yet they persist because of their political and social sensitivity: often used to support specific sectors or household purchasing power, their reform tends to trigger resistance and fears of short-term economic consequences. In a context of increasingly severe budgetary constraints, Mediterranean countries are being called upon to allocate increasingly limited public subsidies with the utmost care in order to preserve their natural capital sustainably. Drawing on the report by Plan Bleu and UNEP/MAP (2024), this policy brief outlines these financial challenges and examines how they can be transformed into drivers of a just transition, serving a resilient and inclusive blue economy.

1. The Fisheries Sector: Notable Progress and a Course That Must Be Maintained

The fisheries sector in the Mediterranean demonstrates that a transformation of public policies is possible, although the path toward sustainability remains fraught with challenges.

A Structural Transition Underway

The analysis of fisheries subsidies provides compelling examples of policy reorientation, as illustrated by the case of Türkiye. Between the periods 2000–2011 and 2012–2020, the country succeeded in reversing the trend of its public support measures: the share of so-called "beneficial" subsidies increased from nearly 37% to more than 50%. This strategic shift enabled a substantial reallocation of funds toward management expenditures and, above all, toward monitoring and strict enforcement of regulations, marking a genuine transition toward more environmentally sustainable instruments for marine ecosystems.

The Regional Challenge of Modernization

However, the environmental impact of these reforms is tempered by "rebound effects" observed across the Mediterranean region. Despite vessel buyback programs aimed at reducing fishing fleets, with investments in some cases exceeding USD 70 million, pressure on ecosystems has not declined as rapidly as expected in several countries. This is partly because the technological modernization of the remaining vessels, supported by various national subsidies, has increased fishing intensity per unit.

Moreover, fuel tax concessions still account for approximately 35% of "capacity-enhancing" subsidies in several Mediterranean countries, artificially sustaining the profitability of industrial fishing at the expense of more sustainable artisanal practices. Maintaining the regional momentum will therefore require more targeted reforms of fuel subsidies to avoid undermining the benefits generated by conservation measures.

1 The definitions of environmentally harmful subsidies (EHS) vary across institutions: the WTO restricts them to direct financial support, whereas the OECD includes any intervention that provides an economic advantage with a negative environmental impact (OECD, 2017). The World Bank adopts the broadest approach, also including non-internalized environmental externalities, such as pollution costs (World Bank, 2023).

TYPE OF SUBSIDY	WHAT THEY INCLUDE	GLOBAL WEIGHT
Capacity-enhancing subsidies *Often considered harmful as they encourage overfishing and overcapacity.*	• Fuel subsidies (tax exemptions). • Aid for vessel construction and modernization. • Port infrastructure development. • Access agreements for foreign waters (distant-water fishing).	*~ 60 % (Considered globally harmful)*
Beneficial subsidies *Investments aimed at restoring fish stocks and resource management.*	• Fisheries management measures (surveillance, control). • Research & Development (R&D). • Creation & management of Marine Protected Areas (MPAs). • Training and education.	*Minority share globally, but increasing in certain areas (e.g., EU, Turkey).*
Ambiguous subsidies *Uncertain impact; can be positive or negative depending on implementation and context.*	• Direct income support for fishers. • Vessel buyback programs. • Support for rural/artisanal fishing communities.	*Variable share depending on national policies.*

Table 1. Classification and Global Weight of Fishing Subsidies

Image 1. Fishing Vessel © Pixabay

2. Fossil Fuels: Accelerating the Phase-Out

The energy transition in the Mediterranean requires bold reform of fossil fuel subsidies, which act as an invisible yet powerful barrier to regional decarbonization. Globally, direct transfers and tax expenditures related to fossil fuels reached USD 428 billion in 2022, in addition to more than USD 1.1 trillion in fossil fuel sales priced below market value (Figure 1). Despite the expansion of carbon pricing mechanisms, the revenues generated remain negligible compared to the scale of these subsidies.

In 2021, explicit global fossil fuel subsidies amounted to approximately USD 577 billion (or nearly USD 697.2 billion according to other estimates). In 2022, the OECD estimated direct transfers and tax expenditures supporting fossil fuels at USD 427.9 billion, to which should be added USD 1.126 trillion in fossil fuels sold below market prices, according to the IEA. When "implicit" subsidies are included — namely those that fail to internalize the costs associated with pollution and climate change global support for fossil fuels exceeded USD 5.4 trillion. By comparison, worldwide revenues from carbon pricing reached a "record" of only USD 104 billion in 2023.

This imbalance highlights a major challenge facing both the Mediterranean and the wider world: the need to realign economic incentives toward more sustainable pathways. Across the region, fossil fuel subsidies absorb a considerable share of national wealth, representing between approximately 5% and more than 30% of GDP depending on the country. In absolute terms, this translates into extremely large amounts, reaching several tens of billions of dollars annually in some cases.

Moreover, beyond direct subsidies, implicit forms of support continue to exist, particularly through tax exemptions in sectors such as aviation, maritime transport, and industry. Reforming these subsidies is therefore an essential step not only to correct market distortions and reduce greenhouse gas emissions, but also to free up critical fiscal space for green and social investments.

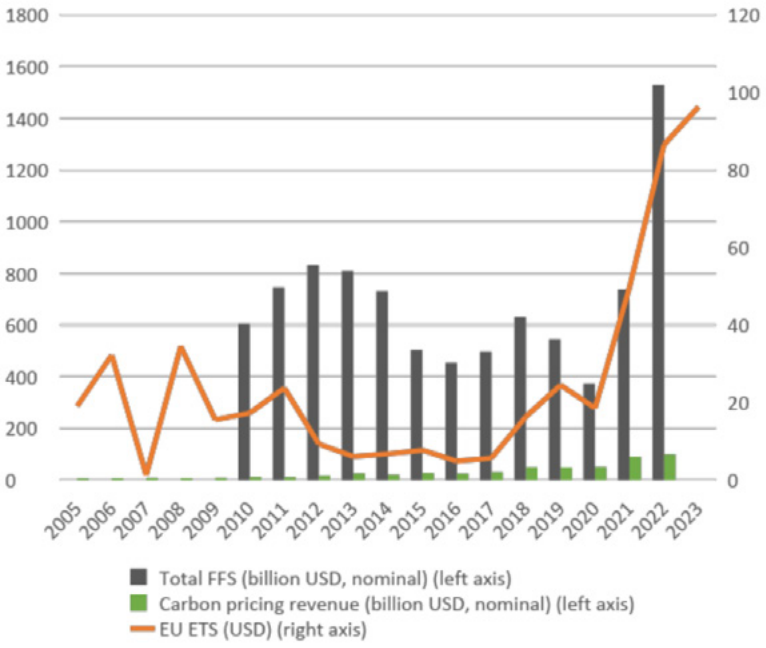
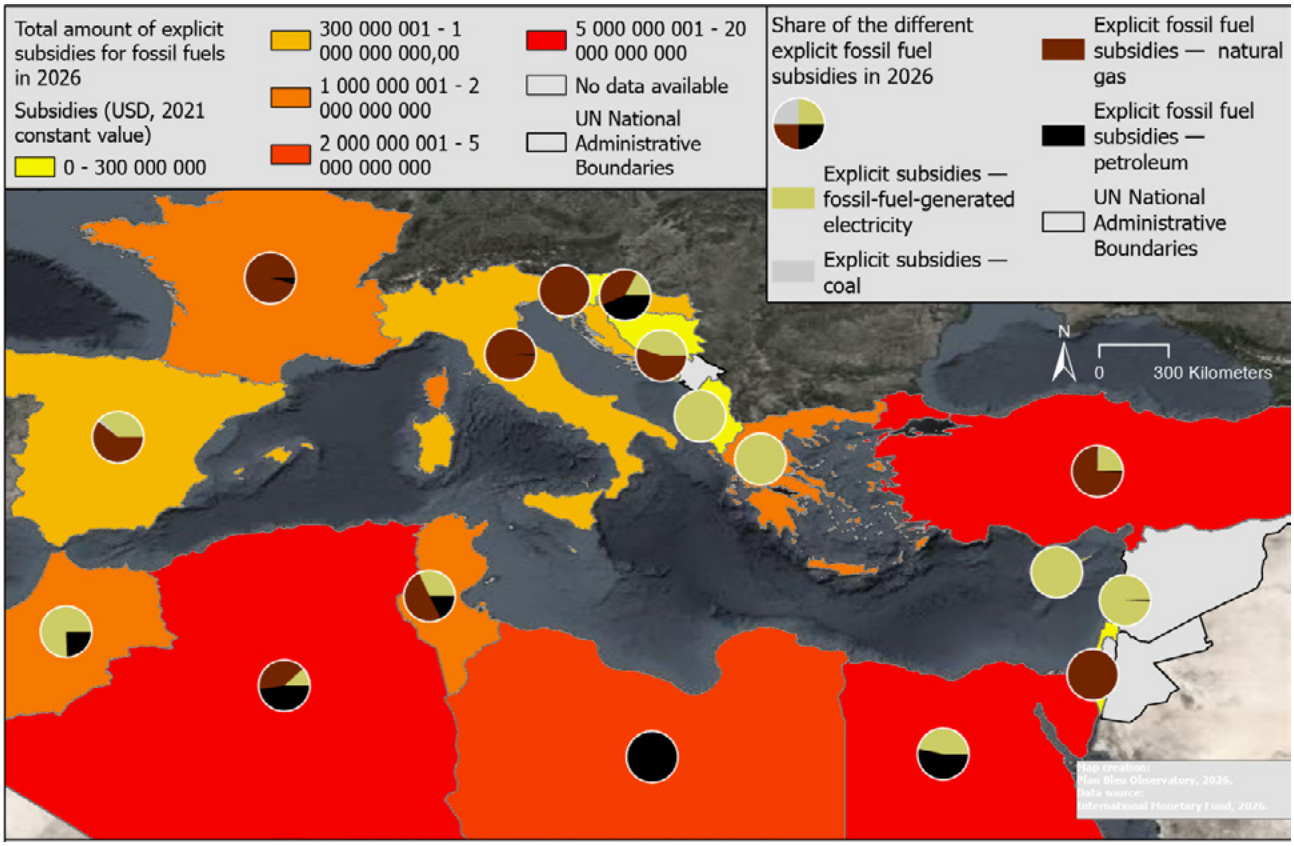


Figure 1. Global Estimates of Fossil Fuel Subsidies versus Carbon Pricing Data



Map 1. Explicit Fossil Fuel Subsidies in the Mediterranean Region, by Energy Type in 2026
Source: Plan Bleu Observatory

A Proven Correlation with Emissions

The econometric analysis conducted by Plan Bleu on a panel of Mediterranean countries provides robust statistical confirmation: fossil fuel subsidies directly hinder the transition toward a low-carbon economy. The findings show that a 1% increase in the total amount of fossil fuel subsidies leads to a 0.04% rise in per capita greenhouse gas (GHG) emissions. This statistically confirms that these financial flows artificially lower the cost of polluting energy sources, creating market distortions that encourage consumption and undermine the competitiveness of clean technologies.

The study also identifies the fiscal mechanisms most detrimental to the Mediterranean climate. While oil remains the most heavily subsidized energy source, the econometric analysis shows that natural gas is the only fossil fuel whose subsidies are clearly and significantly associated with higher greenhouse gas emissions.Every additional million dollars of public funding injected into natural gas systematically increases each citizen's carbon footprint by 0.00005%.

In practice, this figure acts as a powerful multiplier: when applied and accumulated across populations numbering in the tens of millions, this continuous financial support mechanically translates into a massive volume of greenhouse gas emissions at the national level. The effect is even more pronounced in the case of subsidies granted directly to fossil fuel producers, which lead to a disproportionate increase in emissions, thereby confirming their detrimental impact on climate change mitigation.

Image 2. White Clouds © Pixabay

Towards Fiscal and Social Reform

To break out of this deadlock, the report recommends announcing realistic timelines for the gradual phase-out of fossil fuel extraction and combustion. This fiscal reform must be accompanied by robust compensatory measures. The removal of tax loopholes and fossil fuel subsidies should be paired with the simultaneous re-direction of public resources toward the deployment of renewable energy, while also safeguarding vulnerable households from rising energy costs. This approach would ensure that the transition is not only environmentally effective but also socially equitable. Morocco provides a compelling example of this approach: by progressively eliminating subsidies for liquid fuels starting in 2014, the country succeeded in reinvesting the savings into renewable energy projects while expanding social protection coverage particularly in healthcare and education in order to shield the most vulnerable populations.

3. The Water Sector: The Equation of Security and Sustainability

Nearly 40% of the population in the Mediterranean region already lives under conditions of water stress (defined as water availability below 1,700 m^3 per person per year), a situation expected to worsen due to unsustainable resource management and the impacts of climate change (UNEP/MAP and Plan Bleu, 2020). Moreover, in Southern Mediterranean countries, water security and energy security are inseparable. Current subsidy systems, although intended to guarantee universal access, tend to intensify pressures on both of these vital resources.

The Water-Energy Nexus in the Mediterranean

Countries facing water stress illustrate the complexity of this challenge: to address water shortages, several nations increasingly rely on a non-conventional water resource desalination an energy-intensive and highly costly process that has nevertheless become essential in certain parts of the basin. Operating costs (OPEX) are expected to rise by 2027 in several countries, including Morocco, Palestine, and Tunisia, while remaining relatively stable in Spain and Cyprus. Some countries are still in a phase of heavy capital investment (CAPEX), whereas others have already reached a more mature stage.[2] Costs also vary depending on the technologies used, with membrane-based processes overwhelmingly dominating desalination practices in the Mediterranean, accounting for more than 90% of all desalination plants.[3]

2 Capital expense (CAPEX) increases (million $) from 2018 to 2027 (DesalData, 2024) & Operating expense (OPEX) increases (million $) from 2018 to 2027 (DesalData, 2024)

3 Desalination plant technology implementations in the Mediterranean in 2024 (DesalData, 2024)

With production capacities in the region having increased by nearly 450% over the past decade, the analysis reveals a bidirectional causal relationship: fossil fuel subsidies lower energy costs, thereby encouraging the large-scale expansion of desalination and increasing energy consumption, ultimately creating an environmental and fiscal vicious circle. Nevertheless, several innovations particularly in the field of energy coupling support the sector's strong sustainability potential (Plan Bleu and UNEP/MAP, 2025).

Towards Equitable Pricing

To ensure the sustainability of this model without penalizing households, the report identifies optimal solutions through the simulation of various reform scenarios (Table 2). The projections show that the abrupt application of full-cost pricing, based on the actual cost of desalination, would be socially unsustainable, leading to an increase in household water bills of more than 155% (Scenario 5). Conversely, the adoption of a targeted progressive pricing system in which only the tariff for the second consumption block, corresponding to uses exceeding basic needs and associated more with comfort consumption, is aligned with production costs emerges as the optimal option (Scenario 3). This approach would limit the increase in the average household bill to around 7%, demonstrating that it is possible to reconcile the financial viability of water services with the imperative of social justice, unlike generalized price increases that disproportionately affect consumer welfare.

SCENARIO	POLICY MEASURE DESCRIPTION	ECONOMIC WELL-BEING LOSS	ANALYSIS / OBSERVATION
Scenario 1	Increase in the average water [4] price by **10%**	- 19,35 %	Moderate impact on household well-being (and budget).
Scenario 2	Increase in the average water price by **20%**	- 38,17 %	Significant impact on consumers.
Scenario 3 *(Recommended)*	Alignment of the **2nd consumption tier** tariff with the average production cost	- 6,98 %	**Optimal option.** Scenario that minimizes the impact on household well-being while balancing social equity and sustainable management.
Scenario 4	Alignment of **1st and 2nd tier** tariffs with the average production cost	- 98,52 %	Very heavy social impact.
Scenario 5	Pricing based on the actual cost of **seawater desalination**	- 155,06 %	**Worst social scenario.** A brutal reform towards «all desalination» without subsidies would be socially unsustainable.
Scenario 6	Rationing: Reduction of the supply duration by **1 hour**	- 18,81 %	The discomfort caused by the water cut is felt as equivalent to a price increase of approximately 19%.

Table 2. Estimated impact of water tariff reform scenarios (based on a representative case in the Mediterranean)

4 Average Water Price: Ratio of the Bill Amount to the Volume of Water Consumed

4. Outlook and Conclusion: A Roadmap for Action

The transition is no longer an option; it is a strategic necessity. To move to the next stage, Plan Bleu proposes concrete levers for action structured around the following complementary pillars.

Measuring to Act

We can only manage what we measure. This principle is particularly relevant to the reform of environmentally harmful subsidies (EHS). It is essential to adopt common definitions and classifications and to generalize national subsidy inventories across the Mediterranean. Some countries, such as Italy and France, have already paved the way by developing methodologies to map all public financial flows (Douvan et al., 2019). These inventories make it possible to identify subsidies that should be redirected, quantify their impact on national budgets, and assess their environmental footprint. The creation of a regional platform for data exchange on subsidies would enhance comparability between countries and foster positive momentum.

The Social Contract of the Transition: A Gradual and Fair Reform

Subsidy reform cannot succeed without public acceptance. It is precisely in this spirit that the Working Group led by Plan Bleu on «Community Empowerment on Sustainable Finance» operates. International experience shows that attempts to abruptly remove fossil fuel subsidies have often triggered strong social backlash, leading to the abandonment of reforms. The key lies in a gradual and compensated approach, supported by concrete solutions. Savings generated from the removal of fossil fuel subsidies must be visibly and equitably reinvested.

This involves three complementary pillars. First, large-scale investment in energy efficiency and renewable energy, particularly solar and wind power, whose potential in the Mediterranean is substantial. Second, social inclusion must be at the core of the strategy, notably through increasing women's employment in the energy sector, which currently remains underrepresented at only 15% participation. Finally, direct protection of vulnerable populations through targeted cash transfers (such as Egypt's Takaful and Karama programs) will help cushion the impact of rising energy prices.

Replacing, Not Only Removing EHS: Deploying Green Instruments

Eliminating environmentally harmful subsidies is not sufficient on its own; it must be accompanied by the parallel deployment of green economic instruments designed to correct market failures. Environmental taxes, transformative subsidies, and carbon pricing are key levers for internalizing the true environmental costs, in line with the polluter-pays principle. These tools reduce the economic attractiveness of polluting activities while encouraging the uptake of more sustainable alternatives.

This fiscal transition is crucial not only for environmental protection but also for securing the financial resources needed for sustainable development in the face of current budgetary pressures affecting many Mediterranean countries. The design, implementation, and evaluation of these economic transition instruments are the subject of a second Plan Bleu report, which analyzes best regional and international practices (such as green budgeting, green bonds, and targeted energy taxation) to accelerate the sustainability of the Mediterranean economy as a whole.

The Mediterranean has the human and technical resources required to succeed in its transition. Initiatives observed in various Mediterranean countries point the way forward. The urgency now lies in scaling up these good practices to transform yesterday's subsidies into tomorrow's investments, thereby ensuring the shared prosperity and stability of our common sea. Plan Bleu works toward this goal as a Mediterranean think and do tank.

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