SYNTHESIS of DISCUSSIONS

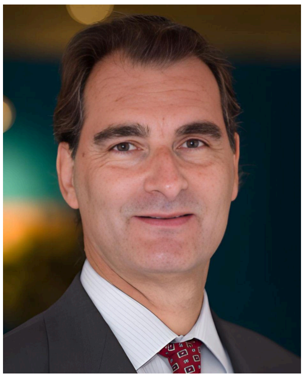
Plan Bleu Workshop **Environmentally Friendly Economic Tools and Finances : The Path Towards Sustainability in the Mediterranean**

January 29th 2025 Marseille (France) and online

Synthesis by :

Constantin Tsakas . Saif Salmi . Christelle El Selfani

Introduction:



Guillaume Sainteny, President of Plan Bleu, opened the event by underscoring Plan Bleu's growing commitment to green and sustainable finance, a focus that has deepened over recent years. He also highlighted the pivotal role of the MED 2050 initiative in supporting ecological transition strategies. Today's workshop, he noted, serves as an important opportunity to invigorate the green finance sector and explore how it can drive the transition toward more sustainable futures.

Building on last year's key work addressing environmentally harmful subsidies, the conversation has now turned toward identifying positive financial instruments that can effectively support the ecological transition. This discussion also involves keeping in mind different international approaches to green finance, particularly the prevalent ones seen in the European Union and the United States.

- On the one hand, the United States has introduced the Inflation Reduction Act (IRA), which fosters clean technology development through an extensive program of subsidies and financial incentives.
- On the other hand, the European Union has rolled out the Green Deal, an ambitious plan designed to achieve carbon neutrality by 2050 through numerous norms, but limited (or no) funding attached.

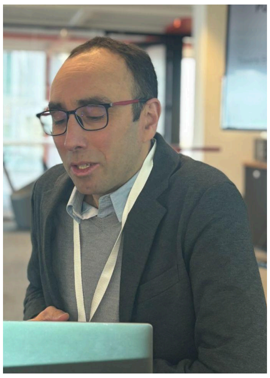
Though these two strategies follow different paths, they are united in their ultimate goal: accelerating the transition to a sustainable economy. Looking ahead, it is essential to identify which tools and strategies are best suited to the unique challenges of the Mediterranean region. Guillaume Sainteny expressed his gratitude to the participants for their insightful contributions to this crucial dialogue on the future of green finance.

Constantin Tsakas, Chief Economist of Plan Bleu, reminded the audience that to advance this agenda, Plan Bleu launched a Call for Papers in April 2024, inviting experts and researchers working on key Mediterranean issues to submit Policy Paper proposals exploring effective mechanisms for supporting the sustainable transition. Following a competitive selection process, 13 outstanding proposals were selected for funding, the authors of which are here today. This workshop serves three key purposes:

- Providing the authors with the opportunity to present their first drafts, preliminary findings, and conclusions to the Plan Bleu team and external participants. This will allow constructive discussions and feedback from both internal and external stakeholders, enabling authors to refine and strengthen their analyses.
- Laying the groundwork for the finalization and publication of these papers in a new Plan Bleu-UNEP/MAP Edited Volume by the end of 2025.
- Additionally, the insights and comments generated during the workshop will contribute to the discussions for the revision of the Mediterranean Strategy for Sustainable Development (MSSD), ensuring a strong policy impact.

The presentations of each paper followed, as described below.

Paper 1. Assessment of Green Economy Tools and Public Finance Mechanisms in Mediterranean Countries Jérémie Fosse



Abstract : The paper examines the implementation and impact of green economic tools and public finance mechanisms in the Mediterranean region. It aims to assess how these tools, such as environmental taxes, green bonds, and eco-friendly subsidies, are adopted across countries with diverse socio-economic contexts. Through a mixed-methods approach, including case studies and stakeholder interviews, the project offers a comprehensive analysis of the region's transition towards sustainable development.

Comment By Plan Bleu : The paper provides a contextual foundation by outlining the different green economic tools and public finance mechanisms that exist overall. This contextualization is valuable, and sets a clear framework for understanding their role in achieving sustainability (and is also a good intro for the rest of the forthcoming report). Among the things that need to be fleshed out more, the final paper would benefit from more detailed country-specific information to capture the diversity of experiences across the Mediterranean region (something which you plan on doing). Given the differences in institutional capacity, financial resources, and policy priorities, including more nuanced country analyses will provide a clearer picture of how these tools are being adopted and implemented. Additionally, exploring the challenges and opportunities faced by different countries—especially lower-income ones—will offer a more comprehensive understanding of the barriers to and enablers of green finance in the region

Questions/answers

Robin Degron opened the debate by questioning how adaptive transition financing could be effectively addressed in the context of climate change. He also raised the idea of introducing a tax on tourist flows as an alternative funding source to finance environmental public goods. In response, the author agreed that exploring regional financing mechanisms would be valuable in supporting the transition.

Cécile Seguinaud emphasized the need for a clear classification of financial tools. She posed several fundamental questions: How should these instruments be designed? What types of tools should be prioritized to support the transition? She proposed distinguishing between economic instruments and investment-based mechanisms while also considering the role of transition finance. According to her, financial instruments should be complementary and tailored to the specific needs of different sectors. In response, Jérémie highlighted that while many tools already exist, their effectiveness depends largely on political will.

Several participants contributed additional insights. Aldo Ravazzi stressed the dual challenge of increasing funding for the transition while simultaneously greening financial flows. He underscored the importance of working at both unilateral and multilateral levels to ensure effective implementation. Isabella Rolla emphasized the importance of international collaboration, particularly among Mediterranean countries, when researching public green investments.

Constantin raised the question of how to structure financing mechanisms to ensure effective implementation. The author added that while much work has been done on public policy, successful implementation requires not only large-scale political agreements but also decentralized cooperation between countries, citing France's bilateral collaboration with Morocco as an effective model. He emphasized the importance of structured frameworks and peer review processes, particularly in bilateral cooperation. He acknowledged the political constraints surrounding these issues, noting that the coming years would bring even greater challenges. He also raised concerns about the European taxonomy for sustainable finance, pointing out key differences with the U.S. approach and stressing the need for a clear and structured regulatory framework. Developing a solid legislative foundation while also envisioning optimistic transition scenarios was, in his view, essential.

In conclusion, Constantin Tsakas emphasized the need for more detailed country-specific observations to refine analyses and recommendations in the final paper, to which the author agreed.

Paper 2. Financing the green transition: A synthesis and analysis of green finance tools employed in the Mediterranean region Sevil Acar

Abstract : This paper examines the impacts of environmentally related taxes and feed-in tariffs (FiTs) on climate change in Mediterranean countries, highlighting that green taxation and targeted FiTs can reduce GHG emissions when combined with stringent policies. While FiTs for certain renewables lower emissions, biomass FiTs may increase them, underscoring the need for balanced public and private sector engagement in advancing green finance.

Comment By Plan Bleu : In its current version, the paper provides a comprehensive analysis of key policy measures and their impacts on climate change mitigation in the Mediterranean region. The detailed evaluation of tools like environmental taxation, feed-in tariffs etc offers valuable insights into their effectiveness and role in promoting a low-carbon economy. The integration of green finance as part of the broader policy framework is well-done, and the inclusion of social implications adds depth to the discussion.
However, to make the paper more accessible to non-specialists, there is a need to simplify some of the technical language and/or provide clearer explanations of different concepts. Additionally, it would be helpful to structure the paper with more intuitive subtitles that better reflect the conclusions of each subsection. Lastly, a more explicit discussion of how the methodology controls for confounding variables and addresses potential reverse causality (where GHG emissions could influence the adoption of policies) would strengthen the credibility of the causal claims.

Questions/answers

A question/comment by Constantin Tsakas focused on how policy stringency, as measured by the Environmental Policy Stringency (EPS) index, enhances the effectiveness of environmental taxes. The author elaborated on the idea that when policies are stringent, they create a stronger economic incentive to adjust behavior in response to taxation. In contrast, weak enforcement or lenient regulatory frameworks might limit the impact of such taxes. It was suggested by Dr. Tsakas that alternative measures of policy strength—such as the number of environmental regulations or the intensity of enforcement—could perhaps provide additional insights and may be explored in further research.

As noted by Dr Tsakas, the study's findings indicated that the presence of FiTs alone does not have a statistically significant impact on per capita GHG emissions (Models 3a and 3b) and asked the author to elaborate. The author clarified that while FiTs are designed to promote renewable energy, their effectiveness may depend on specific design features, such as tariff levels and overall investment in renewable infrastructure.

Dr Tsakas stressed that perhaps simply using a binary variable to indicate their presence may not fully capture their impact. An alternative approach could involve analyzing price levels or examining the share of renewable energy in total electricity generation to gain a more nuanced understanding of their influence on emissions.

Myriam Ramzy raised the question of whether energy market liberalization had been included as a variable in the study. The author agreed that this could be a useful factor to consider and mentioned that she would explore available data sources to incorporate it into future analyses.

Imen Khanchel suggested introducing a one-year lag in the model to better capture the impact of policies over time. Additionally, she proposed using a dummy variable for country-year variations to account for potential structural differences. The importance of providing an economic interpretation of the model's findings was also emphasized. Specifically, the question was raised regarding how much an increase in GHG emissions would lead to a rise in environmental taxes. The author stressed that preliminary estimates suggest that a 1% increase in taxation could lead to a GDP per capita loss of approximately 0.1–0.2%, although the overall impact would depend on the stringency of the accompanying policies. It was noted that a decline in GHG emissions would be expected if taxation was implemented within a strict regulatory framework.

A methodological question was raised regarding whether the study should differentiate between total GHG emissions and emissions specifically from the energy sector. The author acknowledged this possibility but noted that, given that energy production is the dominant source of emissions, the overall results would likely remain similar even if the analysis were disaggregated.

Paper 3. Helping Economic Policymakers Navigate through Ambitious Climate Policies Theo Zachariadis

Abstract : Achieving climate stabilization requires economy-wide decarbonization, with Ministries of Economy/Finance playing a key role. Collaboration with other sectors is essential for assessing fiscal, macroeconomic, and investment impacts. This paper outlines methods to guide policymakers in evaluating low-carbon strategies, demonstrated through a Cyprus case study.

Comment By Plan Bleu : The paper is highly relevant and provides valuable insights for economic policymakers working on decarbonization pathways. One area that could be further explored is the specific challenges that non-EU Mediterranean countries may face when attempting to implement similar frameworks. For example, differences in access to funds, technical expertise, or policy infrastructure might limit their ability to adopt the methods outlined in your paper. It could be helpful to propose some ideas or strategies for overcoming challenges.

Questions/answers

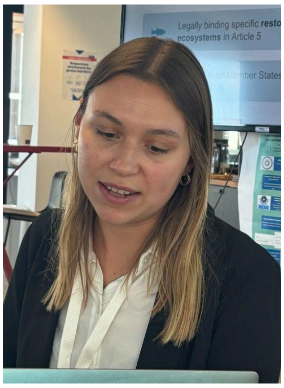
The author emphasized the need to combine datasets from different ministries—particularly those related to the environment and the economy—to improve policy coherence and analysis. This integration is crucial for assessing the fiscal implications of emission reductions and designing effective climate policies.

One of the key questions raised concerned the link between sectoral emissions and tax bases. Some sectors generate significant tax revenues through fuel duties and carbon pricing mechanisms, while others are less directly tied to emissions-based taxation. This raises concerns about how declining emissions will impact public finances in the medium and long term. Specifically, which tax revenues are most at risk, and what strategies can governments employ to mitigate these fiscal challenges? The discussion explored how governments might need to shift towards alternative revenue sources, such as broader environmental taxation or new fiscal instruments, to maintain financial stability as emissions decline.

Given that 74% of energy-related emissions are directly linked to tax bases, there was considerable debate over the vulnerability of fiscal systems to rapid emission reductions. A key issue is whether governments can balance this transition without jeopardizing fiscal stability. The challenge is particularly acute in economies where energy taxation represents a significant share of public revenue. Potential solutions include gradually reforming tax structures, introducing dynamic carbon pricing mechanisms, and diversifying tax revenues to reduce dependency on fossil fuel-based taxation.

Another important question focused on the role of institutional capacity, especially in non-EU countries. Building stronger collaboration between ministries and agencies is essential to ensuring that climate policies are effectively designed and implemented. However, many countries lack the institutional frameworks needed to facilitate this level of coordination. One potential avenue for improvement is the establishment of inter-ministerial task forces or data-sharing agreements to align economic and environmental policy objectives more effectively.

A crucial question was raised about how governments should prioritize public investments for decarbonization when faced with limited resources and competing policy demands, especially in the non-EU South/East Mediterranean. It was stressed that, beyond technical and economic considerations, social equity and economic growth must also be factored into decision-making. Ensuring a just transition one that minimizes negative impacts on vulnerable communities was highlighted as a core principle for guiding investment decisions. In response to these discussions, the author agreed to also consider providing recommendations that are more specifically tailored to non-EU countries, acknowledging the distinct challenges they face in implementing fiscal and environmental policies.



Paper 4. Leveraging the Nature Restoration Law – Innovative Financing Instruments for Restoring Mediterranean Marine Biodiversity Gabrielle Aubert

Abstract: This paper examines how the Nature Restoration Law (NRL) can drive reforms and innovative financing for restoring marine biodiversity in the Mediterranean. The NRL mandates Member States to set restoration targets, outline funding plans, and leverage co-financing with EU instruments. It emphasizes phasing out harmful subsidies, revising tax systems to promote marine conservation, and prioritizing blue carbon ecosystems. The chapter also warns against greenwashing in these efforts and advocates fairness for lower-income groups.

Comment By Plan Bleu : The paper provides valuable insights into marine restoration financing but has some limitations. While it mentions financing mechanisms, it lacks an in-depth analysis of challenges and barriers specific to the Mediterranean. The link between private finance and biodiversity goals needs clearer development. Recommendations are general and would benefit from more actionable steps, and ranking of financial measures, especially for non-EU Barcelona Convention parties.
Also, the proposal to reallocate harmful subsidies exclusively to environmental funding, while appealing, is unrealistic. Any reallocation should balance environmental priorities with pressing development needs, particularly in southern Mediterranean countries, where sectors like education, health, and infrastructure also demand significant attention. This balanced approach is more pragmatic and context-sensitive. Consider reflecting this nuance in the text and conclusions.

Questions/answers

During the Q&A, Robin Degron highlighted the importance of addressing biodiversity alongside climate change, emphasizing the need for public contributions, while also recognizing the essential role of private sector involvement. However, he reiterated that public finance remains crucial to addressing common goods. Aldo Ravazzi echoed Robin's point, emphasizing the need to focus on both climate and biodiversity. He mentioned that the failure to reform harmful subsidies has had negative implications for biodiversity. He also commented on the need to discuss private finance and how it could complement public finance. He observed that stakeholders often shift responsibility between the public and private sectors. He emphasized the importance of defining separate roles and responsibilities but acknowledged that blended finance might be effective when used in the right context.

Constantin Tsakas suggested that Gabrielle's work could be strengthened by exploring barriers more thoroughly, proposing the idea of actionable steps, and considering rankings for both EU and non-EU countries to better guide the implementation of the law.
Mattheo Mazzarano's comment focused on the importance of both costs and benefits in the context of public finance, highlighting that whenever we aim to limit consumption, we also contribute to replenishing resources. He argued that reduced fishing costs could lead to

increased fish availability, which could, in turn, reduce overall costs and generate benefits with multiplier effects. These benefits, he suggested, could potentially be quantified.

Jeremie Fosse pointed out the potential for integrating ecosystem service payments within the blue economy. However, he noted the significant challenges of implementing such tools. He expressed interest in how these tools could be developed in the future, as much of the discourse around them has remained theoretical so far.

The author acknowledged the challenges in implementing the NRL, citing significant pushback from policymakers during its adoption. She explained that the NRL's primary goal is to meet the EU's climate targets, but the synergies between climate and biodiversity can be leveraged to attract financing. She explained that there are provisions in the NRL concerning blue carbon, and discussing the potential benefits that could be incorporated into a restoration plan. She mentioned that in the Mediterranean, implementing fees and charges is one step already underway, underscoring the need for cooperation to ensure effective policy implementation.

Constantin Tsakas raised the issue of potential data gaps, wondering whether these could be addressed in the context of the author's work. Since the study relies on database searches and systematic reviews, cross-validation with local project implementers or stakeholders might strengthen the findings and ensure accuracy. Many international databases might focus disproportionately on larger, high-profile projects, potentially overlooking smaller, community-driven or regional initiatives that could also offer valuable lessons. He suggested that Nazli Demirel might elaborate on this point and proposed also discussing actionable steps that UNEP/MAP could take to fill these gaps, a point well-noted by the author. Regarding data gaps, the author acknowledged that there are significant gaps in the available data, which hinder the ability to fully assess the financial needs for restoration. She will strengthen the "qualitative interviews" component of the study.

Heino Nau raised concerns about ocean protection being underfunded, describing it as a significant challenge. He agreed that blended finance is useful for attracting philanthropic foundations but cautioned that it will never fully close the financial gap. He also emphasized that economic activities in the ocean contributing to its degradation should bear some responsibility for funding restoration efforts. He noted that maritime spatial planning in the EU could play a crucial role, but at present, it is not linked to financing mechanisms. He suggested that MPAs could play a role in this framework.

Theo Zachariadis inquired whether national restoration plans are required to address the financial needs. The author clarified that while the law requires countries to assess financial needs, it does not mandate that they must fill these gaps. She explained that restoration efforts can be categorized into active and passive restoration, with passive restoration being more difficult to quantify. She also agreed with the concerns raised about blended finance, emphasizing that while it has potential, it cannot be solely relied upon. She pointed out the need for more decisive public sector action and confirmed that she would link marine spatial planning to her paper.
Robin Degron pointed out that adaptation for conservation needs to be dynamic and that it is crucial to address these issues in the context of the changing climate. He suggested that the region should be more proactive in its approach to conservation adaptation.

Paper 5. Economic support tools for marine invasive alien species management in the Mediterranean Nazli Demirel

Abstract: Invasive alien species (IAS) pose severe threats to biodiversity and socio-economic stability, with the Mediterranean Sea being the most invaded marine ecosystem globally. This paper examines the ecological, economic, and management aspects of IAS, emphasizing the region's vulnerabilities, and how fisheries, tourism, and aquaculture are affected.

Comment By Plan Bleu : This paper addresses a critical topic but requires further development of the economic tools for managing marine invasive alien species (IAS) in the Mediterranean. The focus on IAS challenges is valuable, but more attention is needed on the tools themselves. To enhance impact, the paper should:

- Provide more details on the tools, including their usage, gaps, and relevance to the Mediterranean.
- Use a table to compare the tools' advantages, challenges, and real-world examples.
- Clarify the tools' alignment with regional and international policies.
- Expand case studies to assess the effectiveness of different strategies.

Questions/answers

During the discussion, several key points emerged regarding the economic tools available for managing marine invasive alien species (IAS) in the Mediterranean. One of the central concerns raised was the estimated total cost of IAS in the region, which is reported to be approximately €27.5 billion. Robin Degron asked for clarifications about the methodology used to calculate this figure and emphasized the importance of ensuring accuracy in economic assessments. Additionally, he raised the broader question of whether it is feasible to combat IAS effectively or if management efforts should instead focus on adaptation strategies.

Constantin Tsakas highlighted the need for the author to refine the structure of the paper. He suggested condensing the initial sections to allow for a more in-depth exploration of economic tools. A key recommendation was to examine specific mechanisms that are successfully applied in terrestrial ecosystems and assess whether similar approaches could be adapted for the marine environment. If no direct parallels exist, the author should explore the reasons behind this gap and discuss potential avenues for innovation. Furthermore, he emphasized the importance of adopting a constructive approach, considering new possibilities rather than focusing solely on challenges.

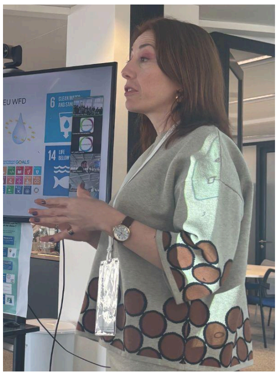
Gabrielle Aubert,raised a critical question regarding the role of economic tools in both preventing IAS invasions and managing their impacts once established. She also inquired about public awareness campaigns and whether there is a risk associated with untrained individuals mistakenly removing native species under the assumption that they are invasive. This concern underscores the need for clear guidelines and education to prevent unintended ecological consequences.

Stella Tsani stressed the importance of interdisciplinary collaboration between marine scientists and economists. She pointed out that marine scientists can provide early insights into species' edibility, toxicity, and potential economic value, while economists can translate these insights into concrete market opportunities. The discussion highlighted the broader challenge of aligning ecological realities with economic incentives, ensuring that policy interventions keep pace with both environmental changes and market dynamics.

The author acknowledged the necessity of further developing economic tools to address IAS challenges. She pointed to recent advancements in environmental DNA (eDNA) technologies as a promising avenue for early detection and prevention efforts. Additionally, she noted that marine protected areas (MPAs), spatial planning, and buffer zones could play a crucial role in controlling IAS spread. Regarding the economic valuation of IAS impacts, the author clarified that the €27.5 billion figure was derived from a review of recent studies, with the most up-to-date data coming from a 2023 publication. Dr Tsakas suggested, if possible, disaggregating these costs by sector to provide a clearer picture of how fisheries, tourism, and aquaculture are specifically affected. He also recommended ranking economic support tools based on their feasibility and effectiveness, considering both implementation challenges and alignment with regional and international policies, such as UNEP/MAP initiatives and national strategies.

In response, the author shared insights from her research on Greece and Turkey. She noted that Greece has implemented successful national strategies for IAS management, offering valuable lessons for other Mediterranean countries. She also discussed emerging market-based approaches, such as the commercial exploitation of invasive species. Aldo Ravazzi Douvan provided the example of the blue crab, which has become a sought-after delicacy in Italian restaurants. The author further illustrated how invasive species could be repurposed for human benefit, referencing ongoing efforts to utilize pufferfish leather through environmentally friendly methods.

The author agreed to refine the paper’s focus and expand its analysis of economic mechanisms.



Paper 6. EU water policies and innovative financing mechanisms: Developments and future perspectives for the Mediterranean countries Stella Tsani, Chrysoula Chitou

Abstract : Sustainable water management requires innovative policies and financing mechanisms to support water-related innovations and market deployment. This paper analyzes EU policies like the Water Framework Directive and Green Deal, highlighting their relevance to the Mediterranean. Using SWOT analysis, it assesses modern financing alternatives, with a case study on Zoomaal, Lebanon's crowdfunding platform, to explore conditions enabling novel financial tools.

Comment By Plan Bleu : This paper provides a comprehensive overview of financial instruments for water management in the Mediterranean, blending traditional and novel mechanisms with insights from EU policies like the EU Taxonomy. To enhance its applicability for decision-makers, a ranking of financial instruments based on their effectiveness in the Mediterranean, with justifications considering regional and economic contexts, would be valuable. Also, including an analysis of water management frameworks in non-EU Mediterranean countries would add crucial context, highlighting gaps and opportunities. Lastly, stronger connections between the Zoomaal case study and water-related challenges should be detailed to reinforce its relevance.

Questions/answers

The discussion on this paper revolved around the effectiveness of EU water policies and the potential for innovative financing mechanisms to address water management challenges in the Mediterranean.

Robin Degron raised a critical point about the absence of a dedicated UN convention on water, unlike those existing for climate change and biodiversity. He emphasized the importance of the water cycle for the Mediterranean Sea and highlighted the challenges associated with desalination in the region. He asked whether the author had considered regulatory mechanisms to address environmental continuity issues stemming from the proliferation of desalination plants. In response, the author acknowledged the need to examine water availability, scarcity, and competing uses in the region, linking these factors to the development of renewable energy technologies and the exacerbation of water scarcity due to climate change.

Constantin Tsakas encouraged the author to strengthen the paper's focus on the southern Mediterranean. He also asked about the relevance of the Zoomaal crowdfunding platform to water projects and suggested expanding the SWOT analysis, particularly in the threats section, by addressing political instability and shifting government priorities in Mediterranean countries. The author clarified that Zoomaal no longer exists and that Lebanon was chosen as a case study to illustrate the high level of uncertainty in the region. She emphasized that policies must be adaptable, as what works today may no longer be viable in the future.

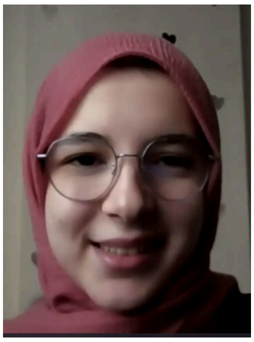
Additionally, she underscored that the paper does not advocate for a direct replication of European models but rather aims to highlight both successes and failures in EU policies to inform Mediterranean decision-makers.

Isabella Rolla suggested that while crowdfunding is useful for small-scale projects, the paper would benefit from an exploration of larger-scale financing mechanisms, such as green bonds. She pointed to examples like Brazil's largest sanitation company and large-scale water infrastructure projects in Egypt, arguing that such cases could add depth to the paper's analysis.

Heino Nau emphasized the multiple root causes of water scarcity, including climate change, industrial water use, tourism, and hydrogen production. He asked whether the paper could address the economic impact of water pricing, particularly how pricing mechanisms can incentivize investment in water infrastructure. The author agreed on the importance of pricing as a tool to drive investment but noted that the paper primarily focuses on innovative financing mechanisms rather than water pricing. However, she acknowledged that a discussion on pricing approaches could be incorporated, particularly in relation to how costs and benefits are allocated among competing water users.

Jeremie Fosse highlighted the need for a balanced approach that integrates both large-scale policy frameworks and localized actions. He pointed out that up to 30% of water is lost through pipeline inefficiencies, underscoring the importance of addressing infrastructural weaknesses. He also suggested that the author engage with organizations like the Union for the Mediterranean (UfM), which has conducted extensive work on financing water facilities. Additionally, he proposed exploring new financing models, including blockchain and cryptocurrency, as potential tools for water-related investments. Aldo Ravazzi Douvan also raised the question of whether Mediterranean water management should be approached through regional cooperation with the African Union or through existing Mediterranean frameworks like the Barcelona Convention. The author responded by emphasizing two key contributions of the paper: first, the integration of socioeconomic determinants into water management, and second, the importance of transboundary water governance. She pointed to European experiences in managing shared water resources and argued that small-scale interventions and innovative financial mechanisms must be tailored to the Mediterranean's specific challenges.

Paper 7. "Green Bonds as Financial Instrument for Energy Transition in Türkiye: a CGE model approach" M and R. Benbouziane



Abstract: This paper investigates the potential of green bonds to accelerate Türkiye's energy transition. By applying a computable general equilibrium CGE model, the paper analyzes the economic and environmental impacts of green bond issuance. The paper identifies key opportunities and challenges in the Turkish green bond market, including investor awareness, market infrastructure and also regulatory frameworks.

Comment By Plan Bleu : There are some ideas, and thought has been put into the methodology, but this current draft is lacking as no concrete results from the model are presented, even in preliminary form. Given that the methodology is already defined, we expected at least some initial simulations in this draft. Immediate action is needed to provide concrete findings.

Questions/answers

Constantin Tsakas expressed concern over the lack of concrete results presented in the paper, noting that the methodology had been established, yet no preliminary findings were included. He also questioned the reliability of the input-output table used in the model, which was based on 2012 data. Given the significant transformations in Türkiye’s energy and financial sectors over the past decade, he asked whether adjustments had been made to reflect current economic realities. The author acknowledged this issue but did not clearly indicate what data adjustments had been implemented, something that will need to be explained in the final paper.

Sevil Acar suggested that the paper should expand its capital accounts to include Türkiye’s Renewable Energy Resource Areas, which are legally designated zones aimed at increasing renewable electricity capacity. She emphasized that these projects require substantial investment and should be considered in the analysis of capital accumulation and investment flows. The author responded that renewable energy was incorporated into the model as part of total green bond issuance, without distinguishing specific investments, due to data limitations.

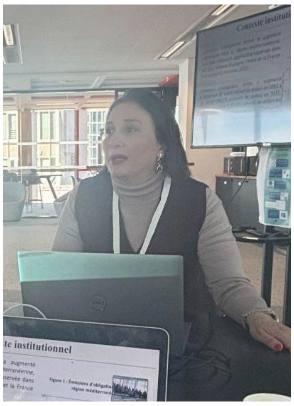
Heino Nau raised concerns about the legal liabilities of green bond issuers, pointing to European cases of greenwashing where bonds failed to meet sustainability criteria. He questioned whether similar regulatory challenges exist in Türkiye. Additionally, he highlighted that green bonds are not always attractive to investors without incentives. He asked whether Türkiye’s central bank or development banks were implementing support mechanisms, similar to the European Investment Bank (EIB), to foster market growth. The author did not provide a detailed response on legal liabilities but acknowledged the role of financial institutions in market development.

Constantin Tsakas further inquired about the assumptions underlying the "business-as-usual" scenario in the model. He asked how projections for Türkiye’s energy and financial markets were incorporated and whether the model accounted for market behaviors, interest rate variations, and benchmark comparisons with other countries. The author clarified that the business-as-usual scenario was based on calibration values from 2022, without modifying key parameters such as rental rates and wages, and was used to establish a baseline before running simulations.

Merve Ergun provided insights into Türkiye’s renewable energy legislation, explaining that policymakers closely monitor international developments and selectively adapt best practices. She noted that while greenwashing remains a concern in Europe, Türkiye does not yet have comparable legal cases. She also highlighted that Türkiye offers substantial fiscal incentives for solar energy, with the country hosting one of Europe’s largest solar power plants in Central Anatolia. However, she cautioned that incentives vary significantly depending on the project and regulatory assessments.

Overall, the discussion underscored the need for the paper to present initial model results, refine its assumptions for a more accurate representation of Türkiye’s economic context, and address regulatory and market challenges in green bond issuance. The author agreed on strengthening these points.

Paper 8. Clearing the Air: Evaluating the Effectiveness of Green Bonds in Reducing Air Pollution in the Mediterranean Region



Imen Khanchel Naima Lassoued

Abstract: This paper examines the effect of green bond issuance on air pollution levels in 21 Mediterranean countries (2012–2022), using panel regression analyses. It finds that green bonds reduce key pollutants like CO_2, CH_4, and N_2O, especially with moderate maturities (5–10 years) and frequent issuances, but their overall volume alone is insufficient. These results inform policies on optimizing green bond standards, taxonomies, and monitoring frameworks to enhance environmental outcomes in the Mediterranean.

Comment By Plan Bleu : This is a valuable contribution, offering concrete insights that can lead to targeted recommendations. While research often focuses on greenhouse gases or general sustainability metrics, this paper emphasizes air pollution, a critical but under-researched dimension in green bond analysis.

Questions/answers

Robin Degron highlighted the differing approaches between the European Union and the United States in addressing air pollution. He noted that while the U.S. primarily relies on financial incentives, the EU emphasizes regulatory frameworks and standardization. He suggested that the paper could benefit from a comparative perspective on the role of regulation in shaping environmental outcomes. Furthermore, he stressed the importance of ensuring that appropriate control variables are incorporated to isolate the effect of green bonds on air pollution. Imane Khanchel acknowledged the role of regulation and agreed that countries with existing green bond markets often have strong environmental policies. She noted that while governance indicators were included in the study, variables related to regulatory effectiveness and corruption control could be further refined to add nuance. Additionally, she recognized the need to explore whether green bond issuance itself influences the adoption of stricter environmental regulations.

Isabella Rolla raised the question of whether the paper differentiates between sovereign and non-sovereign green bond issuers. She suggested that the impact of green bonds on pollution might vary depending on whether they are issued by national governments or private entities. The author did not provide a detailed response on this point but acknowledged its relevance.

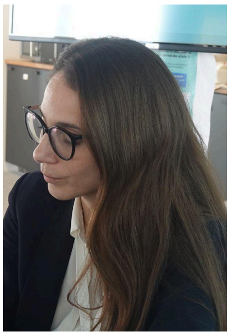
Aldo Ravazzi Douvan inquired about the quantitative and qualitative aspects of green bond issuance considered in the study. He asked whether the analysis used absolute issuance amounts, percentages of public debt, or proportions relative to financial markets. The author confirmed that public issuance data was used and that a sectoral analysis had been conducted. She explained that the sample was divided into high-polluting and low-polluting sectors, demonstrating a stronger effect of green bonds in the former. However, she admitted that data on the quality of funds collected remained a challenge and that further efforts would be made to investigate this aspect.

Cécile Seguineaud sought clarification on how the study classified polluting versus non-polluting sectors. The author did not provide a detailed classification during the discussion but indicated that the distinction was based on established environmental impact metrics.

Constantin Tsakas pointed to a key statistic in the paper's descriptive analysis, which indicated an average green bond issuance rate of 0.41. He asked whether this suggested a broad adoption of green bonds across Mediterranean countries or if issuance was concentrated in a few nations. The author confirmed that while green bonds were issued in nine countries, they were more prevalent in certain economies than in others. She clarified that the 0.41 figure represented a panel data average over the study period (2012–2022) and that some countries had only issued green bonds in specific years. Constantin suggested that further analysis could capture regional clustering trends in green bond adoption.

The discussion emphasized the need to refine the paper's approach to regulatory and governance variables, differentiate between issuer types, and further investigate sectoral impacts.

Paper 9. Towards Mediterranean green bond guidelines



Sabrina Dupouy

Abstract: This paper highlights the absence of specific Mediterranean regulations on green bonds, leaving economic players without regional guidance. While international and European laws define green bonds, they lack practical advice for their development in the Mediterranean. Establishing Mediterranean guidelines could facilitate their use, considering how they can help combat pollution and support sustainable economic activities. Current legal frameworks emphasize harmonization but do not fully explore the tool's potential. Soft law guidelines could provide practical recommendations tailored to regional specificities, promoting green bonds as a means to enhance environmental protection and regional cooperation.

Comment By Plan Bleu : The ideas explored in this paper, particularly the proposal for soft guidelines on green bonds in the Mediterranean, are relevant. However, the final paper needs to be more profound in its analysis and should provide more details on how these guidelines would be structured and implemented, as well as concrete examples of their potential impact.

Questions/answers

Robin Degron opened the discussion by stressing the importance of translating strategic economic reflections into concrete legal actions within the Mediterranean region. He emphasized the need to balance the tools available (such as green bonds) with the financial resources to implement them, as current frameworks are conceptually rich but lack sufficient financial backing. Robin Degron suggested that the work on Mediterranean green bond guidelines could fit within the UNEP-MAP 2026-2027 work plan, underlining the need for operational tools and funding strategies.

Dr. Tsakas praised the paper's ideas but pointed out that it lacked some crucial details. He encouraged the author to provide concrete examples, particularly of how green bonds have been adapted successfully in other regions (e.g., Latin America or Asia), to offer lessons that could be applied to the Mediterranean context. He highlighted the diversity within the region, noting that the southern Mediterranean countries face unique challenges like employment needs and social equity, which must be addressed in the guidelines. Dr. Tsakas further discussed the balance between flexibility and legal certainty, asking how Mediterranean guidelines could strike this balance to ensure broader adoption.

Jeremie Fosse raised a practical question about whether these Mediterranean guidelines could coexist with other regional frameworks, such as those in the European Union, given the globalization of financial markets. He suggested that, although there isn't a unified Mediterranean market, it's essential to ensure that guidelines are adaptable and do not conflict with other existing regulatory frameworks, particularly in the absence of a large, unified Mediterranean economic zone.

Constantin Tsakas and Sabrina Dupouy further discussed the importance of national commitments to green bonds, citing examples like France, which implemented sovereign green bonds with detailed reporting on how funds are used. They suggested that such examples could inspire the development of Mediterranean guidelines and templates for green bonds. Sabrina also raised the question of whether it would be useful to extend the focus beyond private sector bonds to include those issued by public institutions, opening up a broader conversation on the types of green bonds that could be covered by Mediterranean guidelines. She also mentioned the possibility of introducing a certification system for green bonds that aligns with Mediterranean standards, drawing on European frameworks such as the EU's Green Bond Standard.

In conclusion, the discussion emphasized the need for a comprehensive and flexible approach to Mediterranean green bonds, with the author encouraged to further develop the guidelines by incorporating international examples, regional diversity, and potential cooperation with existing frameworks like the EU's. The key takeaway was the need for practical, actionable guidelines that balance regional specificities with broader global standards.

Paper 10. Does Energy Taxation Matter for Energy Efficient innovations? Evidence from Firms in the Southern Mediterranean Countries Myriam Ramzy Nancy Barakat

Abstract: The paper investigates the link between green public finance tools, such as energy taxation, and energy-efficient innovation among 6,952 private firms in the manufacturing and service sectors across seven Southern Mediterranean Countries. The findings highlight that energy taxation positively drives innovation, particularly in the retail and service sectors, and is most effective in firms with environmental self-regulation and those in energy-intensive industries.

Comment By Plan Bleu : The paper is well-written and presents a thorough analysis of the topic. It is structured, with a strong academic foundation, however, to make it more accessible to a broader audience, including non-specialists, minimal adjustments are needed. These could include simplifying some technical terms and providing additional context or examples to clarify more complex concepts. Additionally, while the methodological choices are valid, some aspects could be better explained to enhance understanding.

Questions/answers

The discussion on this paper focused on the role of energy taxation in driving energy-efficient innovation among firms in the Southern Mediterranean and the broader policy and regulatory frameworks that shape corporate sustainability efforts.

Constantin Tsakas noted that while the paper is well-structured, some sections might be too technical for non-specialists. He suggested moving some content to an annex to improve accessibility. Additionally, he asked the author about the reliability of the cross-sectional analysis, as it does not track the same firms over time. The author acknowledged this limitation but emphasized that the methodology allows for capturing broader trends in energy innovation across different countries and periods.

Imane Khanchel raised a methodological concern regarding the binary nature of the energy innovation variable. She suggested that firms adopting multiple energy-efficient innovations might experience interaction effects, leading to stronger impacts. She recommended exploring multinomial regression models to differentiate between firms adopting one, two, or more innovations and analyzing which combinations yield the greatest energy efficiency benefits. The author responded that additional categorical regression models would be incorporated to refine the analysis.

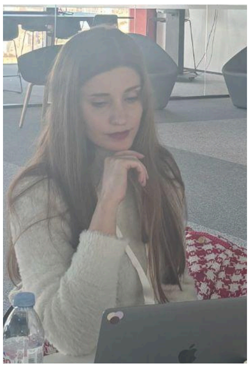
Theodoros Zachariadis inquired whether any countries in the sample appeared particularly prepared to implement policies fostering energy-efficient innovation. The author highlighted Egypt’s recent efforts to develop a voluntary carbon market, suggesting that regional responses to European Union measures like the Carbon Border Adjustment Mechanism (CBAM) could provide an opportunity for Southern Mediterranean countries to strengthen their regulatory frameworks.

Robin Degron framed the discussion within a broader policy context, noting ongoing efforts in the Mediterranean to transition towards sustainable economic models. He referenced existing initiatives on harmful subsidies, the blue economy, and green finance, suggesting that the paper aligns with emerging regional policy trends.

Cécile Seguineaud asked whether the study considered regulatory incentives beyond taxation, such as minimum energy performance standards for equipment. She pointed out that energy efficiency improvements often require a combination of regulatory frameworks and business models that incentivize firms to adopt sustainable practices. She referenced the European Union's experience with energy service companies as an example of how policy and market mechanisms can work together. The author acknowledged the importance of regulatory incentives but noted that the study primarily focused on fiscal tools. She also mentioned challenges in policy coordination, particularly between governments and ministries, which could limit the effectiveness of existing action plans.

Constantin Tsakas recommended that the paper delve deeper into the concept of crosscutting policies. He highlighted a passage from the paper mentioning the need for regulatory frameworks that stimulate energy-efficient innovation while addressing associated challenges. He suggested specifying which types of policies could achieve this, such as additional tax relief for firms investing in carbon capture or other sustainable technologies.

Paper 11. A Legal Perspective on the Mediterranean Energy Transition: The Delicate Balance between Green Public Finances and Tools Merve Ergun



Abstract: The paper discusses how key drivers of climate change are greenhouse gas emissions from burning fossil fuels, deforestation, and livestock farming, with the energy sector contributing 40% of global emissions. It takes a legal perspective and discusses ways to accelerate a fair and sustainable energy transition in the Mediterranean, including facilitating cross-border renewable energy trade and creating a regional energy hub.

Comment By Plan Bleu : Some interesting ideas throughout the paper, but the current version of the paper lacks clarity in its research question and in the overall coherence of the content. The paper should: better define the research question explicitly at the outset, adopt a more structured approach with clear sections, develop each idea thoroughly (avoiding redundancy while providing sufficient context and detail) and ground the analysis in the Mediterranean's unique context.

Questions/answers

The author's paper discusses the role of legal frameworks in facilitating a sustainable energy transition in the Mediterranean region. One of the central points raised was the need for clearer definitions and a more explicit research question. Constantin Tsakas emphasized the importance of explicitly stating the focus of the paper at the outset, outlining the main objectives and expected outcomes. The paper should clearly communicate what it aims to achieve and what specific issues it seeks to address.

A recurring theme in the discussion was the classification and structure of green economic tools. Constantin Tsakas suggested adding a table at the end of the paper to better organize and clarify the different tools discussed, particularly with regard to taxation policies targeting consumers. This addition could help provide a concise overview of the various green financial mechanisms proposed.

A key question raised by Dr Tsakas was about the potential challenges and implications of creating renewable energy trade agreements across borders, particularly between European Union and non-EU Mediterranean countries. He asked about how EU laws would impact the structure and implementation of such agreements, noting that the existing trade agreements, like the Barcelona Agreements from the 1990s, had certain limitations—particularly excluding agriculture and services. The question is : how could future agreements be shaped to address both environmental and economic factors in a balanced manner ?

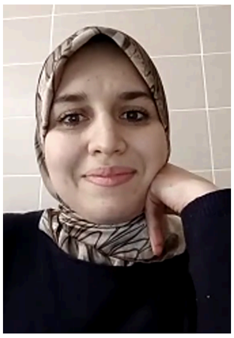
Aldo Ravazzi Douvan raised a point regarding the financing of green subsidies, asking where the necessary funds for energy transition initiatives would come from. He highlighted carbon pricing mechanisms, such as carbon taxes and fees, as potential solutions. He also pointed out that the recently agreed minimum 15% carbon tax at the OECD level, while a positive step, is still far below what is needed to drive significant change. He advocated for higher carbon tax rates, suggesting that rates in the range of 100-300% might be necessary to meet climate policy objectives.

Heino Nau raised concerns about the technical and infrastructural barriers to renewable energy integration in the Mediterranean region, specifically the lack of cross-border energy grids. He noted that while there is some progress in Europe, particularly with offshore wind energy, many parts of the Mediterranean, especially non-EU countries, lack the infrastructure needed to facilitate renewable energy trade. He emphasized that investments in energy infrastructure are critical for creating the necessary links between Mediterranean countries. However, he questioned how feasible this would be in the short term without substantial investments in both sides of the Mediterranean.

Merve Ergun responded by acknowledging the geographical challenges and the potential for smaller-scale investments, particularly between neighboring countries. She agreed that technological advancements could make such transitions more feasible over time but stressed that these changes would not happen overnight. She also agreed with the concern about the limited infrastructure and the need for greater investments in renewable energy systems.

Jeremie Fosse highlighted the existing, albeit limited, connections between countries like Spain and Morocco, noting that the European Union has already financed projects aimed at improving energy links between Italy and Tunisia. He emphasized the role of the private sector in driving these investments, suggesting that the public sector should focus on creating an enabling environment for private investments. He questioned whether these projects would be driven by large companies or whether there should be a stronger public and government-led initiative based on clean energy principles.

Constantin Tsakas concluded by cautioning against privileging certain countries over others, particularly when developing cross-border energy projects. He stressed the importance of ensuring that agreements are fair and equitable for all involved.



Paper 12. Social Carbon Cost: Measuring Climate Change's Socio-Economic Impact in the Mediterranean with a Carbon Tax Proposal Hadjer Boulila

Abstract: This paper analyzes the socio-economic impact of climate change in the Mediterranean and proposes tailored carbon tax strategies using the RICE-MED model. It reveals regional differences in carbon tax adoption, emphasizing the need for gradual approaches in North Africa and phased strategies for transitional economies like Turkey and Greece. The study highlights the importance of regional cooperation and harmonized carbon pricing to support equitable and sustainable decarbonization.

Comment By Plan Bleu : The paper offers a valuable analysis for estimating an "optimal" Social Cost of Carbon (SCC) tailored to each country, a key step in crafting effective carbon pricing strategies. However, the discussion could benefit from a deeper exploration of social and equity concerns, particularly for vulnerable populations in lower-income countries and within the EU. Additionally, caution is needed when advocating for harmonized policies without considering national differences. Also, keep in mind that some recommendations, like aggressive carbon taxes, might face political resistance. Highlight the importance of stakeholder engagement and realistic timelines. Finally, the methodology and model used should also be presented with humility, acknowledging the inherent uncertainties in SCC projections and their dependence on assumptions.

Questions/answers

One key point raised by Robin Degron was the importance of Mediterranean taxonomy, noting the region's diversity in terms of development levels. He emphasized the need to consider this diversity when developing taxonomies for the future, particularly because some Mediterranean countries are fossil fuel producers. This diversity in the region's development must be critically integrated into any future taxonomies.

Constantin Tsakas commented on the methodological aspects of the paper, specifically advising the author to be careful with the policy implications drawn from the analysis. He raised concerns about the elasticity values used in the model, questioning whether they reflect empirical evidence and the specific characteristics of the region. Constantin also sought clarification on the criteria used to select the percentages for elasticity, urging a clearer explanation of the choices made in the methodology. Regarding the elasticity values, the author clarified that these were derived from a combination of empirical data, calibration, and literature estimates specific to the Mediterranean region. She noted that the elasticity of emissions reduction to carbon pricing was based on historical energy price responses and studies such as the 2008 Gold report.

Sevil Acar raised a question about the discount rate, which plays a crucial role in determining the urgency of climate action. She inquired whether the author had tested multiple discount rates for different scenario analyses and how these choices affected the results. She also pointed out that some of the comparative graphs for different regions, like Greece and Turkey, showed almost identical carbon tax levels, prompting her to ask why these carbon tax rates converged in the analysis. This raised a broader question about the factors driving such convergence in the context of the Mediterranean countries.

Imen Khanchel brought up the importance of considering social costs, emphasizing that the economic side should not be the only focus. She introduced the concept of "social externalities," referring to the unintended consequences of economic activities that affect third parties but are not reflected in market prices. She asked whether the paper had addressed these externalities, and whether the social cost analysis had considered the broader social impacts, not just the economic ones.

The author responded to Sevil's question about the discount rate, explaining that three discount rates—1%, 3%, and 5%—were tested. The 3% rate was ultimately chosen because it is widely used in the literature. She explained that, in the absence of specific data for calibration, researchers often rely on commonly accepted values from the literature. The author also addressed Sevil's inquiry about the carbon tax scenarios. She confirmed that the model applied the same carbon tax scenarios across different regions, but the social cost of carbon varies by country. For example, Algeria has a lower social cost of carbon compared to some European countries, leading to different outcomes, even with the same tax scenario. The selection of policy scenarios, such as the optimal (100%), aggressive (120%), and gradual scenarios (50%), is grounded in economic theory. Specifically, the optimal scenario aligns with the principle that the carbon tax should equal the marginal social damage of emissions.

Paper 13. Climate Scenarios for Municipal Fiscal Revenues in Italy Matteo Mazzarano, Giulia Galluccio

Abstract: This study examines the impact of climate change on local financing in Italy, with a particular focus on municipalities. Local authorities are essential in managing climate risks and adapting policies, yet they often lack the resources to effectively tackle climate change. The research highlights the importance of understanding the long-term financial capabilities of municipalities in the context of climate change, especially given the projected demographic and economic shifts in Italy.

Comment By Plan Bleu : As expected, this research addresses an essential but underexplored intersection of local governance, climate change, and public finance, offering insights into how municipalities might adapt to climate-induced economic and demographic shifts. Overall a well structured and documented first draft. Some general remarks: - recommendations could be further strengthened making linkages to regional (UNEP/MAP) efforts. - also, some parts of the text should be made more accessible to non-specialists

Questions/answers

Robin Degron opened the discussion by questioning the purpose and output of local taxes in Italy, drawing a comparison with France, where the revenue is used for tourism offices rather than local authorities. The author explained that in Italy, municipalities have the right to levy taxes on visitors, including tourists using platforms like Airbnb. He emphasized that Italy's efficient statistical office allows for precise tracking of visitor numbers, even at the municipal level, making such taxes viable for funding. For instance, in cities like Florence, the tax revenue per day per visitor is significant.

Theodoros Zachariadis raised concerns about the use of fiscal revenues, suggesting that tourist taxes may only be sufficient to compensate for additional expenditures rather than supporting broader ecological transitions. He also asked whether the figures on fiscal revenues presented in the study referred to specific years or future projections (e.g., 2050 or 2100), noting that climate costs may accumulate over time. Theo Zachariadis inquired about the adaptation measures discussed in the paper and their potential benefits, specifically asking if there was any quantification of the benefits-cost ratio for these measures.

Constantin Tsakas questioned the assumptions in the model regarding the elasticity of tourism, land use, and income. He noted that the model assumes these elasticities are always positive and periodically sum to one. Constantin suggested considering whether these elasticities could change over time or under different economic conditions, particularly if local taxes become more prohibitive. He asked whether the model accounts for potential shifts in the responsiveness of tax revenues based on changes in the tax base, or if this dynamic was not incorporated in the analysis.

Imen Khanchel posed several questions related to the social impact of climate change on municipal revenues. She suggested dividing the analysis into two categories: coastal versus inland municipalities, as the risks they face, such as rising sea levels, erosion, and storms, are distinct. She also suggested looking at the effects of urban versus rural municipalities to identify any differences in the impacts. Additionally, Imen asked about the effect of revenue diversification in municipalities, questioning how much this could mitigate the negative effects on municipal income caused by climate change.

Heino Nau raised concerns about the effects of growing populations and urbanization, particularly in areas prone to erosion and flooding. He highlighted the importance of accounting for these issues in budgetary planning for metropolitan and smaller areas, noting that the lack of consideration for climate change impacts, such as soil sealing and increased rainfall, could lead to further challenges.

The author responded to several of the questions. He explained that the model was designed to be flexible and open-ended, acknowledging that long-term scenarios and elasticities might change. He emphasized that the innovation in his approach lies not in the results, but in the adaptability of the model. He noted that this approach can be adjusted as scenarios evolve, in contrast to black-box models that produce static results. He also pointed out that Italy has a tendency toward decentralized fiscal policies, which align with broader goals of local autonomy and decentralization, particularly under frameworks like the Covenant of Mayors.

CONCLUSION

- Constantin Tsakas outlined the next steps, emphasizing that each author would receive individual feedback on their papers, with two additional months for revisions. The next deadline is April 4th, after which the papers will be compiled into a cohesive report. An executive summary for decision-makers will be prepared by the end of May, and the final report is expected to be published around September or October. Constantin highlighted that all the discussions from the meeting contribute to UNEP-MAP's broader efforts on sustainable finance, particularly through the working groups.
- Robin Degron added that while the 13 papers effectively covered various aspects of the Mediterranean region, including legal approaches, economics, and environmental issues, the complexity of the subject at the regional, sub-regional, and local levels will require continuous work. He committed that Plan Bleu will continue to address these issues in the coming years. He emphasized the importance of considering both environmental and social aspects, including public acceptability, and the need for a more offensive approach to ecological transition. Robin Degron also acknowledged the difficulties posed by the current global and international context, particularly the lack of priority for environmental issues in some countries, where the ecological transition is not seen as a top priority by the current governments. Despite these challenges, he stressed that the Mediterranean region still has an opportunity to develop a new, collective model of transition, leveraging the support of the European Union while addressing the urgent realities of climate change and pollution.