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Sharing knowledge and inspiring the adoption of innovative financial structures and instruments

Reflection publication after the ECCA 2025 session “Scaling Innovative Adaptation Finance Solutions: Transference of Financial Structures and Instruments”

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1. INTRODUCTION

While finance and investment in climate adaptation are in their embryonic stage, there are several cases across the world that not only are a rich source of knowledge but also a demonstration of successful practice. Europe is the fastest warming continent with estimated investment needs between €15bn and €64bn a year through to 2030 (World Bank), and finance is recognized as a key enabling condition for building resilience in the medium and long run[1]. Exploring and disseminating such cases among academics, practitioners, and policymakers enables the transference of knowledge and supports the scaling of solutions across European countries and beyond. At ECCA 2025 the Thematic Working Group on Financing Climate Action organised the session “Scaling Innovative Adaptation Finance Solutions: Transference of Financial Structures and Instruments” to generate a space for knowledge sharing and inspire others, by presenting international cases that could be transferred, and contributing to awareness raising to adopt solutions implemented internationally.

The session used a World Café format to facilitate meaningful conversations in a collaborative setting. The process encouraged collective intelligence, fostered diverse perspectives, and led to actionable insights. By creating a café-like atmosphere, the method promotes relaxed, engaging discussions that generate deeper understanding. In the following sections, we present the main messages and insights from each thematic table. These are complemented by broader insights from the Thematic Working Group. The report concludes with some wider perspectives on financing and investment from across the conference.

2. ENVIRONMENTAL IMPACT BONDS

Environmental Impact Bonds (EIBs) are generally perceived as attractive to investors in the bond market due to their unique attributes. This type of financial instrument is particularly strong from an investor perspective in terms of strengthening **transparency and impact disclosure**, because it allows for the disclosure of project impact based on actual results, rather than just expected impact based on design, which is typical of green bonds. This crucial feature helps to avoid greenwashing, making them appealing to sustainability-oriented investors. However, a significant concern for such investors and lenders arises when bond issuance is used for debt swaps, replacing old loans with higher capital expenditure **without generating additional impact or "additionality"**.

[1] World Bank. (2024). *Climate adaptation costing in a changing world: Valuing climate adaptation helps us orient our compass toward effective and resilient pathways* (Report No. P179070).

From the Local and Regional Authority's (LRAs)' perspective, several challenges were identified for the implementation of this financial instrument. Firstly, national **legal and regulatory frameworks** can hamper the issuance of bonds by limiting the financial flexibility and management of sub-national governments. Competing political leadership and positions among different public authorities (e.g., water utilities and municipalities), including views on adaptation priorities and suitable measures, can challenge agreements that are necessary to de-risk investments in climate adaptation projects. In some situations, even if legally eligible and with political support, LRAs may lack the **necessary technical and financial** expertise and capacity required for bond issuance. Outsourcing these services is a potential solution, provided the LRA has the financial capacity to cover associated costs.

Issuing bonds also involves additional **capital and transaction costs**, such as those for obtaining a credit rating and undertaking due diligence processes. However, these costs are generally small compared to the total investment volume, and can be included in the overall debt raised. As a result, a key consideration for LRAs when exploring debt raising for adaptation projects is to determine to what extent the **cost of adaptation inaction is higher than the cost of private capital**. This question frames the decision-making process by comparing the long-term benefits of adaptation with the immediate costs of private financing.

Despite their attractiveness, more case studies are needed to draw definitive conclusions on the **transferability and scalability** of EIBs across LRAs in Europe, including how revenues are reliably generated to support their repayment and risks are mitigated and distributed among project stakeholders. This suggests that while promising, the widespread adoption and effectiveness of EIBs still require further practical evidence.

3. INNOVATIVE INSURANCE SOLUTIONS

Insurance has traditionally been designed to provide financial relief after disaster, but the sector is now shifting from a narrow claims-paying function to a more proactive and integrated role in risk management and resilience building. When we speak of innovative solutions in insurance, this should not be understood only as the creation of new products. The deeper innovation lies in redefining the role of insurance itself: moving from a safety net to an active partner in resilience. Rather than limiting their role to claims management, insurers can advise clients on risk reduction, invest in technologies for better risk assessment or adaptation measures, and raising awareness of climate risks among communities. Understand the underlying risk and resilience of assets before they are insured is fundamental. This approach helps prevent losses before they occur, supports "building back better" and moves "upstream" in the risk cycle.

Several examples of innovative solutions illustrate this shift. In the UK, Flood Re is a government-backed reinsurance scheme that helps insurers provide affordable flood insurance to high-risk homes by reinsuring the flood portion of policies, funded through a levy on all home insurers. In France, mandatory 10-year insurance for new buildings holds builders accountable for structural

defects[2], embedding resilience and responsibility directly into construction practices. In Denmark, the city of Copenhagen adopted a public-private finance scheme where public investment in blue-green infrastructure mitigates flood risks and insurers incentivize risk reduction by offering lower p**remium for protected properties**, creating a model of shared responsibility between the government, the insurers and the citizens[3].

Practicality is central to innovation. Insurance solution should address current deficiencies, rather than just theoretical ideas. Crucial questions for evaluating such innovations are: "Will people use this?" and "Will it still be relevant in two years?".

Nonetheless, challenges remain. There is a misalignment between **long-term investment models and short-term insurance contracts of premium holders** (typically yearly premiums with variability). This disconnection hinders joint action in the insurance sector on prevention and resilience initiatives.

Regulations can also significantly enable or block innovation. There's a need to critically assess existing rules, question their continued utility, and explore how they might be reformed to encourage innovative approaches. The insurance sector is highly regulated and diverse, meaning that any innovation must consider the heterogeneity of the sector, its strict regulations, and vast differences in local legal frameworks, cultural norms, and financial systems across regions.

Another challenge lies in **valuing adaptation measures like Nature-based Solution**s (NbS) and quantifying in monetary terms the risk reduction benefits they provide. Some insurers are beginning to explore this, with examples such as the Netherlands ensuring green roofs, Mexico ensuring mangroves, and Switzerland investing in prevention as a cultural norm.

4. PUBLIC PRIVATE PARTNERSHIPS

Despite progress in recent years, adaptation financing is still not fast enough to close the gap in the needed resources for implementation of adaptation efforts. Public Private Partnerships (PPPs) are increasingly seen as an important **entry-point to mobilise private financing** and help close the adaptation financing gap. PPPs seem a promising model, especially for supporting **infrastructure development**, where the focus has progressively switched from “resilience of infrastructure” to “resilience through infrastructure”. However, it remains difficult to identify innovative models of climate-resilient PPPs, besides large-scale infrastructure development – presumably because PPPs create revenue streams for private sector, and infrastructure facilitates user charging which repays them; such arrangements may be harder to replicate for smaller scale adaptation projects with limited revenues. More examples and successful practices would be needed to showcase innovative approaches, for instance in NbS, and guide local authorities in the implementation of such initiatives.

[2] https://www.ecologie.gouv.fr/politiques-publiques/assurance-construction
[3] https://www.c40.org/case-studies/c40-good-practice-guides-copenhagen-public-private-finance-scheme/?

Another key consideration that was raised is that it is still difficult to **quantify and incorporate all the benefits associated with climate adaptation**, and with NbS. As a result, many of these benefits are not systematically reflected in the PPP development process. In particular, while avoided damages represent an important theoretical benefit, they do not translate directly into revenues. In the case of NbS projects, users may be requested to pay for the co-benefits they receive. For example, landowners and residents in a coastal flood-prone area may contribute to the construction or maintenance of NbS that reduces the risk of flooding.

Regarding the scale, innovative approaches would be needed to incentivise the participation of the **private sector in smaller-scale initiatives**. In this regard, it would be helpful to bundle together small projects into larger, coherent programs to increase bankability and maximise efficiency.

Lastly, **policy environment and regulations** remain critical to ensure participation and appetite to invest from the private sector. Defining clear adaptation needs and targets at the national level helps provide clarity and predictability for private investors; at the same time, effective regulations at the local level might help in speeding up implementation processes (such as permits, etc.). This can be challenging due to deep uncertainty, but methods are available to help address these, such as those outlined in guidance from ClimateFIT and Patthways2Resilience.

5. TAX INCENTIVES

The discussion primarily focused on Reserve for Investments in the Canary Islands (RIC), which benefits from a unique fiscal regime as part of a Special Economic Zone (SEZ) recognized by the EU. The RIC allows companies to allocate up to 90% of their undistributed profits to investments in the Canary Islands such as acquisition of new assets, creation of jobs, or subscription of shares in local companies. This mechanism aims to promote reinvestment and regional development. This unique fiscal status means that the tax mechanisms used there are not easily replicable elsewhere due to stricter national or EU-level constraints. However, it is important to note that other places have used or created financial incentives (e.g. in Hamburg for Green Roofs).

To assess whether such fiscal mechanisms could effectively support adaptation, it is useful to distinguish between the conditions required at the level of private investors (micro) and at the level of public policy and finance (macro)

Adaptation will only attract private investment if it reduces risks that investors themselves face. A tax break may lower costs, but if the benefits are too diffuse or accrue mainly to the public, private actors will not participate. The design must therefore target sectors where adaptation provides tangible, quantifiable benefits: for instance, reduced flood risk for hotels, higher land values for developers, more reliable water supply for agriculture, or reputational gains for tourism and utility companies. In practice, this means identifying “actual beneficiaries” and structuring incentives so they clearly link adaptation to reduced business exposure. Complementary measures such as risk-sharing instruments, capacity building, or knowledge exchange can further strengthen the case for private investment

For the public perspective, tax incentives must generate a net societal benefit. That is, the societal benefits of granting tax reduction including avoided damages, improved health, biodiversity, and climate resilience must exceed the fiscal cost. Otherwise, direct public investment may be more efficient. This requires a comprehensive cost-benefit analysis that accounts for all impacts. Moreover, such schemes often generate additional fiscal resources, either by expanding the tax base or redirecting corporate investment flows, and in practice these fiscal gains are sometimes considered the primary benefit of the mechanism. However, this creates a critical trade-off: adaptation competes with other political and budgetary priorities, such as infrastructure, energy, and employment. In this context, governments are often pressured to deliver visible, short-term outcomes, whereas adaptation and nature-based solutions typically yield benefits over medium- to long-term horizons. Consequently, this misalignment can result in underinvestment in adaptation, even when fiscal incentives exist. Furthermore, political agendas, administrative complexity, and limited resources can influence how funds are allocated, meaning that adaptation projects may be deprioritized in favor of initiatives with more immediate or politically salient returns.

Ensuring that tax incentives actually promote adaptation requires careful design. Incentives must be explicitly targeted and conditional, focusing on specific measures such as green infrastructure rather than being applied too broadly. Robust monitoring and verification systems are also essential to track outcomes, maintain accountability, and ensure that both public and private objectives are achieved.

The Canary Islands' fiscal tools are highly specific, limiting their direct transferability to other regions. Replicating similar schemes would likely require national or EU-level support to adapt the framework to local legal, fiscal, and administrative conditions. These considerations illustrate that replication is not merely a technical issue but also depends on political, institutional, and administrative alignment.

To conclude, despite these challenges, tax incentives can strategically mobilize private capital toward underfunded areas such as adaptation, particularly where public funding is limited and clear private benefits exist. Their effectiveness depends on careful design: incentives must be targeted, transparent, and conditional. Risks of inefficiency, low-impact projects, or misuse of tax breaks must be actively managed. In regions without special fiscal instruments like those in the Canary Islands, alternative sources, instruments, or business models may be more appropriate to achieve comparable outcomes.

6. PAYMENTS FOR ECOSYSTEM SERVICES

Payments for Ecosystem Services (PES) are considered an **innovative, market-based financing** mechanism for climate adaptation and resilience actions. PES involves a system where beneficiaries of ecosystem services pay those who manage the land to provide those services. This mechanism aims to finance activities that support and enhance natural ecosystems.

PES represents a significant opportunity to **de-risk investment** in climate adaptation actions and projects. To mainstream PES as a financing mechanism in adaptation, PES should be designed to create "**win-win" situations** and ensure sustainable involvement of all stakeholders. PES

schemes have a **broad applicability**, since they are adaptable to many diverse fields, such as eco-tourism, agriculture, biodiversity, and the protection and restoration of natural ecosystems. **PES contracts** can also take various forms, including private, public, or partnership agreements between the bodies. However, there can be tradeoffs – for example a focus on co-benefits can lead to a reduction in overall adaptation effectiveness - with projects being skewed towards other co-benefits which have easier financing streams, such as carbon. Finally, there are big differences between economic benefits and financial benefits – for example high economic carbon prices vs. t5he market price for carbon.

A case study is Emilia-Romagna (Italy), which has a public mechanism to safeguard groundwater recharge areas in mountain regions. A regional regulation dictates that a portion of the water tariff income (approximately €2.4 million per year) must be used to finance activities supporting this purpose. These activities include sustainable forest management, maintenance of streams, and hydrogeological non-stability. The system is managed by a regional agency (ATERSIR), and projects are implemented by Unions of Municipalities. This mechanism generates **direct benefits** on water stock and groundwater quality, along with **important co-benefits** such as carbon absorption, water management, climate adaptation and mitigation, and biodiversity protection and restoration. The co-benefits are generated by the projects that have multiple effects (e.g. the extension of forestry shifts improves the carbon absorption, the habitat quality and the soil erosion protection. The use of naturalistic engineering favours the landslide management, the water infiltration and the habitat quality.

Nevertheless, there is a notable **lack of knowledge** about this instrument among key stakeholders, including local authorities and the private sector. Sharing success stories is deemed essential for replication. PES is also frequently **confused with other instruments** like offset measures, which can hinder its mainstream adoption. An oversupply of ecosystem services **without matching demand** can negatively impact their value and the overall sustainability of PES schemes. Guaranteeing **transparency** along the value chain can also be challenging in certain PES cases, such as in organic farming labelling systems. OBJ

WIDER DEVELOPMENTS

Finance and resources were a cross-cutting theme from across ECCA. As such, beyond the session from the Thematic Working Group, there were a number of other interesting developments from across the conference that are worth reflecting on here.

In the plenary a number of wider developments in practice were highlighted. Interestingly, some Insurance providers such as Zurich are starting to go upstream and practically support Local and Regional Authorities and private sector clients to develop adaptation projects and activities The European Court of Auditors also highlighted around 1/3 of their surveyed projects had a risk of maladaptation, and that inconsistencies in national and subnational regional adaptation planning can hinder implementation, as well as finding low awareness of planning and support mechanisms, and identifying opportunities to improve monitoring and evaluation, suggesting

significant potential to improve national planning processes which in turn support mobilisation of resources (European Court of Auditors, 2024)[4].

The tools and methods for mobilising resources are also becoming more mainstream and mature. The World Bank showcased new tools for costing adaptation strategies in Europe, whilst the ACCREU project showcased a practical application in the UK. Finally, the University of Graz (Austria) showcased recent work assessing the impacts of adaptation on public finances to help make a stronger case for investment.

There were also additional sessions showing the merits of Adaptation Investment Planning - including how the OECD's Climate Adaptation Investment Framework (OECD, 2024)[5] can help national governments create the enabling conditions for investment and processes such as those of Pathways2Resilience (England et al., 2023)[6], which have dedicated parallel processes integrate finance and economics considerations alongside the development of a climate resilience strategy to address financing barriers and enable more transformative approaches. In supporting transformational adaptation for European regions and cities, P2R introduces the *Adaptation Investment Cycle (AIC)*, a framework to develop regional investment plans in alignment with the adaptation action plans (existing or new). The AIC is a comprehensive six-step framework designed to bridge adaptation planning and public financial management, enabling regions to develop investment-ready project pipelines while systematically addressing financing barriers. This approach: estimates financial requirements and benefits, divides expenses across sectors, identifies sources of funding and financial instruments, creates better enabling environments, and develops stronger institutions to accelerate climate adaptation actions.

Bankers without Boundaries also demonstrated the added value of technical assistance in developing the financial and economic case for investment in projects with mitigation and adaptation synergies as part of their work for the Mission Cities Capital Hub.

CONCLUSIONS

It was clear at ECCA that approaches to finance and investment are moving from a niche topic, with a low level of sophistication, to a mainstream issue in enhancing adaptation delivery. As the Commission prepares the new Integrated Framework for European Climate Resilience and Risk Management this is a positive sign. However, the conference points to several important issues that will need to be addressed in the years ahead, including through the Framework:

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[4] European Court of Auditors (2024) Special report 15/2024: Climate adaptation in the EU – Action not keeping up with ambition. https://www.eca.europa.eu/en/publications?ref=SR-2024-15

5 OECD (2024), Climate Adaptation Investment Framework, Green Finance and Investment, OECD Publishing, Paris, https://doi.org/10.1787/8686fc27-en.

6 England, K., Watkiss, P., Qian, C., Plataniotis, A. (2023) Catalogue of sources and instruments and adaptation finance process. Deliverable 5.2 of the Pathways2Resilience project. https://www.pathways2resilience.eu/docs/delivrable/101093942_P2R_D5.2.pdf

1. **Better defining roles and responsibilities for adaptation –** The current EU Adaptation Strategy does not assign responsibility for climate risks or adaptation. However, the structure of markets and provision of public services, as well as the motivations for why. public and private sectors act shape why actors act. The private sector will typically undertake activities which protect value or generate returns – leading to them addressing their own needs, as well as potentially financing the needs of others. Similarly, in line with welfare economic theory (e.g. HMT, 2022)[7], Member States and LRAs will typically act to provide public goods, or address market failures. These factors also shape funding and financing approaches. However, there is still much confusion amongst LRAs in defining who provides the upfront money for adaptation (*financing)* and who ultimately pays for the adaptation (*funding*). For public needs, the private sector is likely to have a strong role in financing and delivery, with a more limited role in *funding* (Watkiss and England, 2025)[8]. Assigning roles and responsibilities for climate risks and adaptation informed by typical roles and motivations will better signal who is responsible for adaptation and will clarify funding and financing roles.

2. **Increasing the quantity and quality of adaptation costing and investment planning –** There is a need to significantly increase the quality and quantity of adaptation costing, to better estimate the short and long-term adaptation needs**.** In addition, emerging Investment Planning methodologies are helping to enhance the quality of adaptation plans and address specific barriers to financing. Supporting efforts to mainstream and scale such work will be crucial enabling step for widespread resource mobilisation.

3. **Strengthening multi-level governance and co-ordination to create enabling environments for LRAs –** Much of the enabling environments which allow LRAs to raise funds or mobilise others for adaptation (such as policies and regulations, or fiscal autonomy), are set at the Member State or EU level. As such, strong institutional arrangements, as well as political will to respond to such feedback, will be crucial in unlocking the mechanisms to crowd in the private sector for action.

4. **Improving the scaling and leveraging of the mission research outputs -** Many of the mission projects are developing novel, and leading-edge approaches with pilot cities and regions. However, whilst the findings are built on in subsequent projects, there is a large disconnect between research and deployment - many of these approaches fail to commercialise and scale for widespread deployment in support of the mission goals. Placing more emphasis on exploitation in the evaluation of applications or delivery approach, stimulating demand through effective policy, and providing additional support to

7 HM Treasury (2022) The Green Book – appraisal and evaluation in central government. https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government

8 Watkiss, P and England, K. (2025) Adaptation finance and the private sector – challenge and opportunities in developing countries. Technical report for the Zurich Climate Resilience Alliance. https://zcralliance.org/resources/item/adaptation-finance-and-the-private-sector-opportunities-and-challenges-for-developing-countries/

participants to scale up and spin out start-ups, will all help to mobilise further funding and finance.

5. **Boosting capacity building support to LRAs for implementation –** Whilst significant technical support and capacity building is available for development of projects and financing arrangements (across INVESTEU, MIP4ADAPT, EIB, Covenant of Mayors etc), there is a need to both scale this provision (to reach all those that need it), but also to deepen it, to cover implementation – for example advise and support in implementing climate-resilient PPPs. This could be supported by others such as the insurance sector (who have data and capacity to help decision making). This will help not just the development of a pipeline of future projects, but also their delivery.

6. **Engagement of private sector in mission adaptation projects –** There was limited private sector representation at the ECCA conference – either from businesses or finance institutions, and the organising committee had to work hard to secure engagement. At the same time, the emergence of separate conferences such as AdaptUnbound or Shift Climate Adaptation Conference suggest that the private sector does not feel suitably engaged through existing fora. Much policymaking **assume** private sector adaptation will occur autonomously and separately to those of LRAs. However, the mission secretariat could play a role in creating better conditions for the private sector to participate in adaptation projects – e.g. by introducing requirements for a minimum number of partners per proposal, changing the innovation action funding rates, or facilitating greater knowledge exchange through the topics. In addition, here should be greater focus on how **to maximise the societal benefits that come from the** private sector to increase its own resilience – with wider societal impacts.