The Urban Lab of Europe!

THEORICAL BACKGROUND
EDIT 24 OCTOBER 2024
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Inception report - Innovative financing schemes in European cities

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Financial schemes have long been a cornerstone of the private sector, driving innovation, growth, and sustainability. As cities face resource constraints and traditional funding sources become insufficient, urban policymakers, practitioners and stakeholders are increasingly seeking to adapt and implement financial schemes within the public sector to do more with less in tackling urban development challenges. Recognising the growing need for financing bold and innovative solutions in cities to tackle multi-faceted and complex challenges, and the increasing importance of innovative funding solution in this process, the objective of this report is to shed light on the need for innovation in finance to address new urban challenges; to further understand the concept of innovation in public finance and their application at local level; to better grasp the opportunities and challenges associated with their use; and to determine the factors that may contribute to their success in different sectors of sustainable urban development. This inception report, developed on the basis of a literature review, is part of a comprehensive study examining innovative financing schemes (hereafter referred as IFSs) used by projects funded through the Urban Innovation Action (UIA) initiative. The goal of this study is to identify and analyse key IFSs that are easily accessible and effective in promoting urban resilience, sustainable development, and social cohesion. By focusing on the most significant and practical IFSs, the study seeks to offer valuable insights into financial mechanisms that can shape more robust, environmentally conscious, and equitable urban environments. In line with the need for innovation in financing EU projects, the study aims to collect, learn from and share the experiences of UIA cities which have successfully developed and used IFSs, in order to inspire urban authorities of EU to seek alternative avenues of funding for their urban challenges.

This inception report and study target urban practitioners, including professionals in urban planning, and related fields working for local administrations and local authority stakeholders involved in urban development policymaking. By examining the IFSs employed in UIA projects, this study aims to provide practical insights, making these innovative financing approaches more tangible for urban practitioners across Europe. As such, the study seeks to indicate how IFS can be adapted in cities of various sizes and to contribute to sustainable urban development strategies by informing future initiatives within the EU regional and cohesion policy framework.

Introduction

The use of financial schemes has long been an integral part of private sector, allowing innovation and growth. Instruments, such as bonds, loans and equity investments, have enabled businesses to scale, diversify, and navigate economic fluctuations. As cities grow and traditional funding sources become insufficient, urban decisionmakers are increasingly adapting and adopting within the public sector to do more with less in tackling urban development challenges. While the core principles of some of these schemes are not new, their various adaptations and applications in diverse urban contexts is considered innovative.

EU Cohesion policy has also sought to catalyse a shift in how European cities approach financing sustainable urban growth and regeneration by supporting the experimentation and adoption of financial instruments tailored to the unique challenges and opportunities of urban environments. This shift is encouraged at both the macro and micro levels within EU Cohesion policy.

At the macro level the use of both off-the-shelf and tailor-made financial instruments is supported. This includes the use of loans, guarantees and equity, as well as tailor-made schemes, such as the New European Bauhaus Territorial Development Model (NEB TDM)[1].

At the micro level cities are encouraged to trial and test new ways of funding and financing development solutions, through initiatives such as the Urban Innovative Actions (UIA). During the last programming period, from 2014-2020, this initiative provided cities with the opportunity to apply for €5 million in grant funding to test innovative solutions to address major urban challenges. As the "Urban lab of Europe", UIA projects tested new and unproven processes, services, and products at the urban scale in real urban settings, with a strong involvement of key local partners and stakeholders. Several UIA cities have innovatively mobilised their sources of financing to their fullest potential and for innovative purposes by relying on financial schemes to deliver their solution.

The increasing use of Innovative Financing Schemes, hereafter referred to as IFSs, at the city level marks a significant evolution in urban policy, reflecting a pragmatic and dynamic approach to achieving long-term urban sustainability and resilience. There remains, however, significant knowledge and capacity gaps to support the demystification and mainstreaming of these novel financing pathways within cities of all sizes. This report therefore will shed light on the use of IFSs at the urban scale.

The purpose of this report

Recognising the growing need for financing bold and innovative solutions in cities to tackle multi-faceted and complex challenges, and the increasing importance of IFSs in this process, the objective of this report is to shed light on the need for innovation in finance to address new urban challenges; to further understand the concept of IFSs and their application at local level; to better grasp the opportunities and challenges associated with their use; and to determine the factors that may contribute to their success in different sectors of sustainable urban development. This inception report, developed on the basis of a literature review, is part of a comprehensive study examining IFSs used by projects funded through the Urban Innovation Action (UIA) initiative. The goal of this study is to identify and analyse key IFSs that are easily accessible and effective in promoting urban resilience, sustainable development, and social cohesion. By focusing on the most significant and practical IFSs, the study seeks to offer valuable insights into financial mechanisms that can shape more robust, environmentally conscious, and equitable urban environments. In line with the need for innovation in financing EU projects, the study aims to collect, learn from and share the experiences of UIA cities which have successfully developed and used IFSs, in order to inspire urban authorities of EU to seek alternative avenues of funding for their urban challenges.

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Innovative Financing Schemes in urban development projects

The need for innovation in finance to address new urban challenges

As public funding sources are becoming increasingly constrained particularly following the 2008 global financial crisis, cities can no longer rely solely on traditional funding channels, such as loans and mortgages from banks or grants and subsidies form national governments or the EU to finance their ambitious urban development projects (Ulpiani et al., 2023; UN, 2009). Moreover, nowadays EU cities are facing complex, multifactorial socioeconomic challenges, which require significant investments. These challenges include lack of affordable housing, transportation systems dominated by privately-owned fossil fuel vehicles, the need for inclusive and accessible social services (education, health and employment), demographic shifts marked by an ageing population leading to population declines in over half of EU cities, social division, environmental degradation, and the pressing urgency of climate action (JRC, 2019). To address these complex challenges and build urban resilience, cities are increasingly looking into IFSs, which offer the flexibility and resourcefulness needed to navigate the multifaceted demands of modern urban development and sustainability goals.

The concept of Innovative Financing Schemes

The concept of IFS lacks a universally accepted and precise definition, and the available definitions differ from one another. In the framework of the EU Cohesion Policy and its urban dimension, the UIA Knowledge Management Strategy[2] refers to IFS as "schemes supporting the distribution of rewards following a contest (such as prizes, vouchers or grants) to the benefit of third parties (individuals or organisations) that are not part of the project partnership". Another definition describes them as "non-traditional ways of raising funds and facilitating investments by mixing different sources (own funds, public and private funds) or engaging different partners (e.g., citizens, private sector)" (FEDARENE, 2022).

Nonetheless, while the specific wording may differ in these definitions and some IFSs may resemble some traditional funding schemes (e.g. loans), IFSs are considered innovative because they mark a breaking point in the finance sector with traditional sources of funding (Interreg ForHeritage, 2021) and share some or all key principles summarised as follows (EIB, 2016):

- Revolving nature: Repaid funds can be reused, fostering a cycle of reinvestment.
- Financial viability: They are suitable for projects that generate income or savings, enabling repayment of the support provided.
- Co-investment: They are designed to attract co-investment, including from private sources, thereby increasing available funds.
- Market development: They can contribute to the development of markets by supporting supply-side initiatives.
- They can be combined with other sources of fundings, some more traditional such as grants, debt and equity (EPRS, 2019; Interreg ForHeritage, 2021)

These common elements highlight the innovative nature of IFSs, emphasising their ability to blend different funding sources, leverage partnerships, and employ unconventional distribution methods to achieve sustainable financing for urban development projects.

In the EU context, this new approach to financing sustainable urban development projects can be summarised by four key characteristics (EIB, 2016; The Global Fund, 2018):

Scalability and replicability: These schemes should enable leveraging more funds than traditional schemes, notably by lowering risks via their multi-stakeholders' approach and be easily replicable across different EU contexts.

1. Complementarity: They can be used alongside other EU funding sources, such as grants, without complicating processes.
2. Additionality: They are used to fill gaps in traditional EU funding schemes.
3. Sustainability: These schemes finance projects with the intention of not only achieving long-term operation and financial sustainability, but also to remain as a self-sustaining viable funding source. This will allow moving away from a grant-only approach and adopting a more entrepreneurial mindset.

To embrace the diversity of IFSs and their potential in co-financing or funding innovative and sustainable urban development projects that address urban challenges, this study will define IFS as:

Creative or novel approaches used by **cities and urban practitioners** to **mobilise, distribute and/or govern the use of funds** for **implementing sustainable urban development projects.** These innovative financing schemes are characterised by their integration of diverse financial sources and capacity to leverage private funding. Their emphasis on collaboration and partnerships among **urban development partners** increasing efficiency and long-term economical sustainability of projects.

In this definition,

- **Creative and novel approaches** refer to original ideas or methods that deviate from traditional practices in the context of urban development, leveraging technologies or EU Financial Instruments. These approaches may be used in other sectors already but are considered innovative if they are not widely implemented by cities yet or are new to a given sector.

- **Cities** refer to municipal governments and local administrations that are directly responsible for initiating, planning, and implementing urban development projects.
- **Mobilisation** of the funds relates to identifying funding sources, attracting investments, fundraising and financing. **Distribution** of the funds refer to budgeting and funds allocation methods. **Governance** of the use of the funds relates to legal, regulatory and managerial structures and methods supporting the distribution of funds.
- **Urban development partners** refer to stakeholders who collaborate with cities in the design, implementation, and financing of urban development initiatives, often through innovative financial schemes that emphasize partnership and the integration of diverse financial sources. These partners include private sector entities, non-governmental organizations, research institutions, and community groups. They bring valuable expertise, resources, and perspectives to urban development projects, complementing the central role played by cities.

A European landscape - The use of innovative financing in the EU urban context through financial instruments

As established in the introduction, IFSs became more prominent in the European urban context particularly through the framework of EU Cohesion policy with the introduction of financial instruments. Financial Instruments, or, hereafter Fis, are a form of support delivered via a structure through which financial products are provided to final recipients (European Union law, 2021[3]). They abide by the principles mentioned previously and have progressively evolved to address the complex, multifaceted challenges faced by EU Member States and cities. FIs are considered an effective use of public funds because they can amplify the impact on the economy by leveraging additional private resources, enabling managing authorities to achieve more with fewer resources. (EIB, 2022[4])

- **Loan:** an agreement in which a lender provides a specified amount of money to a borrower for a set period, with the obligation for the borrower to repay it according to a predefined schedule. They differ from traditional bank loans due to key advantages for borrower, such as lower collateral and longer repayment periods. (EPRS, 2019; EIB, 2016)
- **Guarantee:** a written commitment to take responsibility for all or part of a third party's debt or obligation if they fail to meet their obligations, such as defaulting on a loan. It assures the lender that the guarantor will cover any shortfall or repay the debt in case of default (EPRS, 2019; EIB, 2016). Guarantees are instruments that help lower risks and costs for managing authorities as their condition and fees can be lower due to the presence of a guarantor. Guarantees are important in sustainable urban development projects that are not necessarily profit-driven and there may exist higher risks for financial institutions. (EIB, 2022)

Loans and guarantees could also use microfinance (microcredit, micro-savings, micro-insurance and micro-leasing) to support microenterprises as well as low income and other disadvantaged people (the unemployed, migrants, women, people with disabilities and students) who have been excluded from access to traditional banking and related services. (EIB, 2016)

- Equity and quasi equity capital: the provision of capital to a firm in exchange for total or partial ownership, allowing the investor to share in the firm's profits and potentially assume some management control. Equity investments include instruments such as venture capital, seed capital, and start-up capital, with returns depending on the growth and profitability of the business. These returns are typically realized when the investor exits, either by selling their share to another investor or through an initial public offering (IPO). Quasi-equity, a hybrid between equity and debt, involves higher risk than senior debt but lower risk than common equity, and may be structured as unsecured, subordinated debt or preferred equity. (EPRS, 2019; EIB, 2016). Through predefined social outcomes and impact in the contract with the service provider, equity can help support better social outcome, for instance, by linking service provider's compensation to predefine social outcomes and benefitting from public and private knowledge to enhance capacity building (EIB, 2022).

The following examples demonstrate the purpose, outcome and impact that EU Cohesion policy financial instruments can have on sustainable urban development projects:

VIPA: Renovation is the new Lithuanian fashion[5],[6] - IFS used: loan

The Lithuanian Public Investment Development Agency (VIPA), now INVEGA, has allocated €427 million in loans for energy efficiency initiatives in residential buildings. This funding includes €74 million from the European Regional Development Fund (ERDF) and €353 million raised through partnerships with market entities and international institutions like the European Bank for Reconstruction and Development (EBRD).

VIPA's innovative loan program provides low-interest financing directly to apartment owners for energy-efficient renovations. The legal framework enables collective borrowing by apartment owners, making renovations more accessible. The repayment structure aligns VIPA's sub-loans to apartment owners with its own repayment obligations, creating a sustainable financing model supplemented by EU and national grants.

These financial resources aim to renovate approximately 800 multi-apartment buildings, benefiting 28,500 households. The energy-efficient renovations are projected to result in annual energy savings of 257 GWh, with typical savings around 60% per year for renovated buildings.

VIPA has effectively leveraged its initial ERDF portfolio of €74 million, securing an additional €353 million from external sources, resulting in a leverage ratio of 1:5.9. The program's success lies in its ability to make renovations financially viable for homeowners resulting in significant energy savings.

This achievement has been made possible by involving municipalities and private and municipal companies in building maintenance, creating a comprehensive legal and financial framework for collective renovation projects.

Financial instruments for urban development in Portugal – IFRRU 2020[7] - IFS used: Guarantee

IFRRU 2020 in Portugal includes a guarantee instrument managed by SPGM to support urban rehabilitation projects lacking collateral. It covers up to 70% of loan value for eligible projects in designated urban renewal areas, implemented through partner banks. The guarantee requires energy efficiency improvements and cannot be combined with IFRRU's risk-sharing loans.

By offering both guarantees and loans, the program can address a wider range of urban renewal needs, from large-scale redevelopments to smaller, localised projects that are vital for community revitalisation. The Pestana Churchill Hotel project in Câmara de Lobos, Madeira, exemplifies IFRRU 2020's impact. This €2.9 million project converted an old fish market into a hotel, creating 20 jobs and reducing energy consumption by 60%.

However, the program faces challenges such as the complexity of combining multiple funding sources and managing diverse stakeholder interests. There has been less uptake in deprived neighbourhoods (PAICD areas), highlighting the difficulty in balancing economic viability with social impact.

The guarantee instrument benefits from IFRRU 2020's robust governance structure and extensive communication strategy, ensuring that city planners, developers, and local authorities across Portugal are aware of this financing option. This integrated approach helps to maximize the instrument's impact on urban renewal efforts throughout the country, contributing to the creation of more vibrant, sustainable urban spaces in cities of all sizes.

Energy transition in The Hague Holding Fund 'HEID[8],[9] – IFS used: Equity

The Energy Development (ED) Fund, part of The Hague Economic Investment Holding Fund (HEID), implements an innovative equity-based financing model to support the city's energy transition goals. Established in 2013 under the JESSICA initiative, the ED Fund has a total size of approximately €18 million, combining €11.5 million from ERDF, €2.5 million from national co-financing, and €4 million from the City of The Hague.

The ED Fund's investment strategy allows for flexibility in financial products, including also loans, and guarantees in addition to equity. This adaptability enables the fund to effectively address specific market failures and project needs. One of the fund's notable early investments was an equity stake in a company developing a major geothermal heat station in the city.

This equity investment proved crucial in safeguarding the heat station project, which became operational with additional funding. The facility now provides low-carbon heat to over 4,000 homes in the city's southwest neighbourhoods, contributing significantly to The Hague's ambitious goal of becoming carbon neutral by 2030.

The ED Fund's equity-based approach has shown promising results. As of 2017, the fund achieved an annual gross rate of 5.5%, translating to a net profit of 1.6% after management fees. The leverage effect of ERDF funds reached 1.51-fold, although additional financing came primarily from public sources. Non-financial achievements include:

- Reduction of approximately 93,000 tons CO_2eq in greenhouse gas emissions
- Financing of an additional 700 MW of renewable energy capacity
- Creation of 18 new jobs

The success of the ED Fund's equity investments, particularly in the geothermal project, has inspired plans for a new generation of FIs. These aim to mobilise both public and private investments to finance the massive scale of energy transition required in The Hague, including the conversion of over 250,000 homes and 30,000 other buildings from gas to renewable energy sources.

This equity-based model demonstrates the potential for city funds to take calculated risks in supporting innovative energy projects, potentially offering higher returns and greater impact than traditional financing methods. It provides a replicable example for other European cities seeking to leverage public funds to attract private investments in their energy transition efforts.

With the widespread use of FIs through the European Regional Development Fund (ERDF), the Cohesion Fund (CF), and the European Social Fund Plus (ESF+), and the Just Transition Fund (JTF), the EU is able to help fund sustainable urban development projects covering diverse themes, from circularity and climate adaptation, to demographic changes and social inclusion. Nonetheless, a crucial milestone in the evolution of innovative finance and FIs for urban development funding was the launch of the JESSICA (Joint European Support for Sustainable Investment in City Areas) initiative in 2007. JESSICA was developed by the European Commission and the European Investment Bank (EIB), in collaboration with the Council of Europe Development Bank (CEB) (EIB, 2008[10]). This initiative allowed Managing Authorities to use some of their Structural Fund allocations to invest in revolving funds, rather than only providing grants. JESSICA specifically targeted sustainable urban development projects, enabling cities to access a more diverse range of financial tools to support their urban renewal strategies (EIB, 2008). The 2007-2013 programming period saw the emergence of Urban Development Funds, building on the JESSICA model. These funds, often combining public and private capital, provided loans, guarantees, and equity investments to projects forming part of an integrated plan for sustainable and integrated urban developments (EIB, 2008).

To support the increased use of FIs, the European Commission and the EIB launched the fi-compass[11] platform in 2015, providing advisory services on FIs under the European structural and investment funds (ESIF) and microfinance under the Programme for Employment and Social Innovation (EaSI) (EIB, 2015).

The EU's focus on urban areas through its Cohesion Policy and initiatives like JESSICA reflects the growing importance of cities in driving change. Urban areas are epicentres of innovation, especially in the context of just and green transitions, and now house approximately 75% of the EU's population. The concentration of people and industries on a smaller and more manageable scale makes cities particularly compelling as testing grounds for IFSs. This environment not only provides a diverse and dynamic setting for implementing IFS in a multi-sectoral approach, but also facilitates the adoption of innovative sustainable urban projects that can be scaled up and applied in other cities. Successful implementations in cities can demonstrate the viability of sustainable urban solutions, paving the way for their adoption at a larger scale by providing a unique urban landscape with the complexity and density needed to closely monitor and refine challenges and successes. (UIA, 2017; ICLEI 2016).

FIs can also be initiated at the national scale by national authorities to be applied at the city scale, as shown in the example below with the Social Green Loan initiated by the Belgian Ministry of Energy and Environment and used in Brussels under the "Brussels Green Loan Scheme".

Brussels, Belgium – the Brussels Green Loan Scheme[12]

The Brussels Capital Region, Belgium, recognised the need to promote energy-efficient retrofits for residential buildings, which contribute significantly to the region's energy consumption and carbon emissions. To address the financial barriers faced by homeowners, particularly those with low to moderate incomes, the region launched the Brussels Green Loan initiative based on a governmental initiative created by the Ministry of Energy and Environment in 2008[13]. This IFS provides homeowners with access to zero or low-interest loans from two cooperative lenders (Crédal and the Housing Fund) to finance energy renovation projects. The loans come with attractive interest rates (ranging from 0% to 2%), tailored to the homeowner's income level, and flexible repayment periods of up to 10 years for short-term consumer loans or up to 30 years for long-term mortgages. The initiative also offers technical assistance through the Energy House – a place where homeowners can receive advice on energy-saving measures, guidance on available grants and financing options, and support throughout the renovation process. By making energy-efficient renovations more accessible and affordable, the Brussels Green Loan initiative aims to accelerate the region's transition towards a sustainable and low-carbon built environment.

Additional Innovative Financing Schemes to fund sustainable urban development projects

In addition to the three majors FIs used by EU institutions, cities are using other IFSs to fund their sustainable urban development projects often in combination with FIs. These schemes share the advantages of FIs: they allow to leverage more funds, allowing managing authorities to do more with less. Their multi-shareholder structure reduces risk, enabling the funding of sustainable projects that traditional institutions might avoid due to uncertain profitability.

- **Performance-based contracts:** Performance-based contracts are agreements between a service provider and a payer in which payments are contingent on the achievement of specified performance targets or outcomes over the lifetime of the contract (Ogita, Palsson, and Mills, 2022). These contracts incentivise service providers to deliver results efficiently and effectively, as their compensation is tied to their performance. Often used in combination with FIs and in Public Private Partnerships, they shift financial risks to service providers, focus on measurable outcomes rather than inputs, and create incentives for efficiency and effectiveness. These contracts align public and private interests, encourage long-term thinking, and can be applied across various urban sectors. By linking payment to results, they aim to improve value for money in public spending while fostering innovation in service delivery. This approach represents a significant departure from traditional procurement methods, making it a key tool in modern urban finance strategies (European Platform on SUMPs, 2019).

Energy Performance Contracting in Ljubljana, IFS used: Energy performance-based contract[14],[15],[16]

Ljubljana, Slovenia's capital, launched the "Energy Retrofit of Public Buildings" project to address challenges with aging public infrastructure and rising energy costs. This initiative leveraged the Energy Performance Contracting (EPC) model under a Public-Private Partnership approach, aiming to reduce energy consumption, increase renewable energy use, and improve public infrastructure quality.

The project's implementation was significantly bolstered by EU support mechanisms. Ljubljana utilized the European Local ENergy Assistance (ELENA) program, a joint initiative by the European Investment Bank and the European Commission under Horizon 2020. ELENA provided crucial technical assistance, supporting costs for technical studies, energy audits, tender preparation, and project management. This support was instrumental in mobilizing an investment program of €49 million for energy efficiency in public buildings through EPC. The funding structure combined private investment, EU cohesion funds, and municipal resources, demonstrating effective use of diverse financial sources.

The project covers over 100 public buildings, including schools, sports facilities, and administrative buildings, implementing both partial and comprehensive renovations. The EPC model ensures the Energy Service Company (ESCO) is paid based on achieved energy savings, aligning interests and transferring performance risk. Projected results are promising, with expected energy savings of over 400,000 MWh and CO_2 reductions exceeding 80,000 tons over the project's lifetime. Beyond energy efficiency, the initiative aims to enhance building safety and quality. Importantly, it has played a crucial role in developing Slovenia's legal framework for Public-Private Partnerships and EPC. Ljubljana's success, facilitated by EU support, positions it as a model for other European cities implementing large-scale, performance-based energy efficiency programs. As the project progresses, its actual impact will be measured against these projections, potentially inspiring similar initiatives across Europe.

- **Bonds:** Bonds are debt securities issued by governments, corporations, or other entities to raise capital. When an investor purchases a bond, they are effectively lending money to the issuer in exchange for periodic interest payments and the eventual repayment of the principal amount until the term of the bond expires (Stratigos, 2018). While bonds have been available for centuries, recent innovations have introduced new types of bonds, such as green, social impact and social benefits bonds, aimed at addressing modern social and development challenges. Social impact bonds, for instance, are agreements in which investors provide upfront capital for social services, with payments tied to the achievement of predefined social outcomes and targets (OECD, 2016). Investors are repaid with a premium if these outcomes are met, often provided by a governmental entity. These bonds enable local authorities to leverage third-party investment for social initiatives, reducing their upfront capital requirements and sharing risks with third-party investors.

Region of Stockholm, Sweden: Karolinska University Hospital[17] – IFS used: Green Bond

The Region of Stockholm, Sweden, has been issuing green bonds since 2014, with green financing now making up over 70% of its debt portfolio.

Green bonds follow the same principle as traditional bonds, when the regional authority issues green bonds to investors. However, the difference lies in the fact that all money received from investors who have bought these green bonds will be earmarked for specific environmental projects via a separate and dedicated account.

One of the projects funded by these green bonds is the new state-of-the-art building for Karolinska University Hospital in Huddinge. This building not only features high-tech hospital equipment but is also highly energy-efficient, using 100% renewable energy and environmentally friendly materials. Key performance indicators (KPIs) are linked to environmental considerations, such as greenhouse gas (GHG) emissions and energy efficiency, to determine how much can be attributed to the green bond.

This regional green bond initiative allows the Stockholm Region to secure funding directly linked to environmental projects, helping the region to meet its sustainability goals and targets. Moreover, the obligation to repay investors with interest, compels project planners to consider the long-term sustainability and economic viability of their initiatives from the outset.

However, as seen in these examples, projects using these recognised IFSs are mostly used by large cities and capitals or large consortiums, sometimes managed by national agencies for a city application. Therefore, cities – especially small to medium-sized ones – have started to adopt additional forms of IFSs better adapted to their smaller-scale projects, such as:

- **Public Private Partnerships (PPP):** Traditionally used for large-scale infrastructure projects, PPPs enable public and private entities to share costs and risks in delivering major projects, often of public service (ADB, 2008). While PPPs are a core element within other IFSs and have long been part of traditional finance, they are now considered an IFS themselves. This classification stems from their novel application in smaller-scale projects beyond infrastructure, where they serve not only as a financing tool, but also as a means to share knowledge and resources between sectors.

The **MILMA project in Fuenlabrada, Spain**, implemented an innovative PPP to address immigrant integration and unemployment challenges. The project allocated resources for collaborative training programs designed and delivered in partnership with local companies. In 2024, MILMA's PPP model engaged 508 participants, of which 34% were immigrants, exceeding the initial target of 30%[18].

The partnership focused on seven high-potential employment areas identified by local businesses. Companies contributed expertise, materials, and training, while the municipality provided infrastructure and coordination. This model allowed for the creation of "Business Challenge Labs" (BC Labs) where participants gained both technical skills and practical experiences[19].

The project achieved significant outcomes, with 66 immigrant participants entering the labour market during or within 3 months after training, surpassing the initial target of 59[20]. Additionally, 389 participants completed technical and practical training, increasing their employment opportunities in identified market niches[21]. The perception of social and labour exclusion among immigrant participants improved by 54%, far exceeding the 20% target.

MILMA's PPP model also fostered social integration. The collaborative work in BC Labs improved exchanges and mutual knowledge between local and migrant populations by 34%, surpassing the 20% target. This dual approach of addressing both labour market integration and social cohesion proved effective in promoting overall community integration.

The MILMA project demonstrates the potential of innovative PPP models in addressing complex social challenges. By leveraging private sector resources and expertise, the project created a more efficient and targeted approach to immigrant integration and employment, potentially reducing municipal spending on traditional social and employment services.

- **Crowdfunding investments** offer lending or reward-based models, allowing investors to support projects of their choice. Municipalities can leverage community participation, retain control over returns, and diversify financing between traditional methods and crowdfunding. However, managing numerous small investors poses risks, including the possibility of investor attrition during the funding phase (Novikova, A. et al., 2017; Net Zero cities, 2022)

Ghent, Belgium – crowdfunding platform for climate adaptation through urban greening[22]

The city of Ghent, Belgium, used crowdfunding to finance a nature-based solution (NBS) - a platform to facilitate the creation of climate adaptation measures. Recognising the limitations of traditional funding avenues for small-scale initiatives, Ghent's 'crowdfunding.gent' platform enables residents to propose and finance community projects. Citizens can support projects with a minimum donation of €10. Project initiators can apply for municipal subsidies of 25%, 50%, or 75% of their funding goal, with a maximum of €5,000 per project. To be eligible for the subsidy, projects must first raise a corresponding percentage of their goal through citizen donations. For example, a project seeking a 50% municipal subsidy must first raise 50% of its goal from supporters. An independent jury decides on granting the subsidies, with the city allocating €55,000 annually to this purpose. Projects receive collected donations even if they don't reach their full goal, but they must communicate any resulting changes to supporters. As of 2023, this collaborative approach has led to the realisation of 150 initiatives, collecting over €545,000 in total. Key strengths include its broad scope and ability to inspire similar initiatives elsewhere. Limitations involve high costs, staffing needs, and unpredictable outcomes. The city targets a 33% project success rate, acknowledging challenges like inexperienced project initiators, varying public interest, and initiators' project management skills. While fostering innovation and engagement, the platform offers limited control over project focus, resulting in diverse initiatives not always aligned with goals like climate adaptation.

- **Participatory budgeting** is an innovative and democratic approach that allows both governments and communities to choose jointly spending priorities and allocate the funding of certain projects. (EPRS, 2016)

Lille, France – micro-forestry to promote biodiversity[23]

Each year, Lille, France implements a participatory budgeting process as part of its annual city budget, allocating a specific portion of funds for citizen-proposed projects. In 2024, Lille's participatory budget reached €4 million to fund projects proposed by Lille's inhabitants, including €1 million earmarked for projects of inhabitants between the ages of 9 and 18. The jury overseeing the attribution of funds is also made of adults and children.[24]

Inhabitants can propose their project ideas online via 'participez.lille.fr' platform or by mail. In 2024, 1255 proposition were made which represent an increase of almost 50% compared to 2023[25]. After projects are submitted, inhabitants can vote for their favourite projects and 5 projects are selected to receive funding according to the number of votes. The city of Lille is engaged to ensure the good delivery of each funded projects.

One of the projects which received funding from the participatory budget was the Arrassine association. This association is leading the redevelopment of a square by planting a micro-forest to combat air pollution and encourage biodiversity. After several participatory plantings, the project was completed with the planting of a symbolic tree. The City of Lille and the European Metropolis of Lille have complemented these plantings with other urban projects: pedestrian paths, green infrastructure, and bee refuge.

- **Community Land Trust (CLT)** allows communities to acquire land to build real estate and to sell real estate without the land to keep prices low. The reselling of the property is also capped to prevent speculation. This IFS is also innovative regarding its governance. Within the CLT boards are made of homeowners, as well as local community members and the local authority represents, each having the same decision-making power (Lenna, 2020).

Brussels, Belgium – Community land trust[26],[27]

Due to rising property prices and rents, coupled with a shortage of social housing compared to demand, finding housing has become increasingly unaffordable for low-income families in Brussels, Belgium. In response, associations, aided by grants, have opted for purchasing of land and construction of housing. Subsequently, the associations sell solely the buildings, while retaining ownership of the land, thereby reducing the cost of the houses and making them more affordable. To ensure long-term affordability, owners are allowed to sell the houses, but at a capped price, enabling them to make a modest profit without significantly increasing prices for other low-income families seeking to purchase homes. This system is sustainable as it operates without the need for ongoing grants, relying instead on the continuous cycle of selling and buying houses on the land.

- **Local and Virtual currencies:** The aim of local currencies is to support the local economy. These are often issued by a local authority to be used in a defined geographically limited area with participating companies and associations able to receive this currency (Dodd, 2015). Contrary to local currencies, virtual or digital currencies often use cryptographic functions that allow them to be decentralised and not issued by a traditional entity, such as a central bank or a local government. However, virtual currencies can also be used as local currencies to provide better security features using technology, such as blockchain (European Parliament, 2018)[28].

Antwerp, Belgium – Circular South[29]

Antwerp's Circular South project implemented a rewards system using blockchain technology (Ethereum) for the circulation of virtual currency - Circules (CIR) (1CIR=0.001€). Circules are earned through individual and group challenges, stored in personal wallets, and can be exchanged for A-card points. These challenges are related to environmentally friendly actions, such as citizens reducing their garbage production or water consumption. Using their A-card, inhabitants can get discounts in eco-shops or when attending cultural activities.

- **Incentive mechanisms:** These mechanisms refer to financial and non-financial incentives designed to encourage specific behaviours or actions that contribute to desired outcomes. In the context of innovative finance, incentive mechanisms are used to stimulate and support the development, adoption, and scaling of innovative solutions, products, or services that address social, environmental, or economic challenges.

Ferrara, Italy – FerrarBike2Work[30]

The city of Ferrara, Italy, introduced a campaign, which rewards employees of participating companies with economic incentives for their home-to-work trips made on bike. A mobile app, called FerrarBike2Work was introduced, which allows employees to keep track of their trips and results (e.g., points earned, badges collected, active challenges with completion status, weekly and global leader boards ranking, personal mobility diary, Kms travelled, and CO2 saved). It also gives information on weekly and global prizes, as well as the access to game rules and regulation. Employees of participating companies are rewarded with economic incentives for their home-to-work trips done on a bike in their pay- checks: 0.20€ per Km, max 20 km per day, max 50€ per month.

- **Innovative procurement:** innovation in procurement refers to leveraging the purchasing power of cities to stimulate the development of new and innovative solutions, products, or services that address specific urban needs or challenges. This involves rethinking traditional procurement processes and adopting methods that actively encourage and reward innovation. By doing so, cities can increase the positive impact on their social, economic and environmental objectives.

Växjö, Sweden – Digital Acceleration for medium Sized Sustainable cities[31]

In Växjö, Sweden, the DIACCESS project introduces a streamlined approach to procurement. By fostering partnerships between municipal departments, companies, and digital innovators, DIACCESS aims to procure innovative digital solutions tailored to specific needs. This project is based on three key components: a digital acceleration hub to guide the procurement process, a technical unit (digital lab) for developing and testing prototypes, and a data platform for accessing various data sources. By employing collaborative procurement practices, DIACCESS aims to spur digital innovation and effectively tackle the societal challenges faced by the city.

- **Revolving funds** are a type of loan that create a continuous cycle of investment. Entities from the public or private sector may lend money to fund the initial investment of the projects and use the payback of the loan to reinvest into future projects. It is usually used for individuals who may not have access to loans from traditional financial institutions (PROSPECT+, 2017).

Ghent, Belgium - Improving housing Conditions for Captive Residents[32]

Ghent, Belgium, faces a severe shortage of affordable, quality housing for low-income residents, with 15.5% of the population living in poverty. Many are "captive residents", trapped in houses that are unsafe, of poor quality, and not energy efficient. To address this, Ghent aims to renovate 100 houses of captive residents, providing a starting capital of €30,000 per renovation and comprehensive technical support throughout the process. An innovative revolving fund, where residents who received the initial funds to finance these renovations repay their loans, enables continuous reuse of public funds to tackle this housing challenge sustainably. This approach not only benefits current residents but also ensures a steady cash flow for the municipality, allowing them to support subsequent rounds of renovations without requiring substantial additional resources. According to the last evaluation report the project had renovated 48 houses in 2022[33].

- **Classical funding schemes** targeting innovation: these funding schemes take various shapes, e.g. grants - particularly via Call for Projects or award prizes which aim to enable the funding of innovative sustainable urban projects.

Turin, Italy- Community-based urban security[34]

As part of the ToNite project aimed at improving nightlife safety and quality of life along the Dora river, the City of Turin, Italy launched a Call for Projects inviting NGOs and organisations to propose innovative solutions. The call received over 80 proposals, from which 19 were selected to receive a total of €1 million in grants. The chosen projects span a diverse range of ideas, including the repurposing of abandoned structures and public spaces, activating cultural and social facilities, and fostering community engagement - all with the common goal of transforming the Aurora and Vanchiglia/Campus Einaudi areas through resident-driven initiatives during evening and night-time hours. Involving 59 local NGOs, businesses, schools, and the university, the selected projects exemplify Turin's approach to urban regeneration through active citizen participation, collaborative planning, and creative place-making to enhance the city's night-time economy and environment.

By capitalising on the unique strengths and characteristics of cities, IFSs have found fertile ground for implementation and adaptation to address local urban challenges. Thess localised approaches not only promote sustainable development within these cities but also serve as a testing ground for scalable solutions that can be replicated across broader urban contexts, contributing to the achievement of EU Cohesion policy goals.

The challenges and opportunities in implementing innovative financing in EU city projects

Challenges

The reviewed literature, as observed with the various case studies in the previous chapter, highlights a large number of IFSs available. However, navigating through this wealth of resources and consolidating the relevant information poses a significant challenge. Locating clear and simple explanations regarding the nature of these schemes and their typology can be difficult, particularly for local actors, such as urban practitioners working in local administrations and Managing Urban Authorities (MUA), who are often constrained in terms of budget, time, and resources.

Additionally, the literature mostly focuses on the large-scale and complex IFSs, particularly through financial instruments, which may not necessarily address the needs and particularities of small-scale urban projects,. Although we have seen that other IFS exists for smaller scale projects, they may not easily be identifiable to MUAs and urban practitioners accessing the alternative forms of IFS. IFSs are being implemented for the various advantages they possess such as increased efficiency, sustainability, and leverage of public funds while improving access to financing, encouraging better investment quality, and providing flexibility for managing authorities – all the while moving away from grant dependency (EPRS, 2019). However, barriers persist mainly due to the fact that these IFSs, even though they have been widely used in the private sector, are still new practices for some administration who do not always have the in-house expertise and capacity to deal with banking and financial concepts (EPRS, 2019). In a report on innovative finance for green transition projects produced by NetZero cities, barriers for cities and urban practitioners to use IFSs are summarised in 10 points (NetZeroCities, 2022):

- Capacity constraints: Many cities, especially smaller ones, lack the necessary staff, skills, and resources to effectively manage and absorb available funds. This creates a disadvantage compared to larger cities with more capacity.
- Complex application processes: The multitude of funding sources at various levels (EU, national, regional) and their often-complicated application procedures create confusion and barriers for cities, particularly smaller ones.
- Insufficient national support: There is a perceived lack of dialogue and collaboration between national administrations and cities, especially smaller ones, in supporting access to funding opportunities.
- Budget prioritisation challenges: Cities struggle to balance operational needs with investment in long-term transition projects, often facing political constraints and inter-departmental competition for resources.
- Limited engagement with the financial sector: Some cities tend to rely heavily on public subsidies and lack familiarity with alternative funding sources and private sector engagement.
- Inadequate planning: Many cities focus on securing funds without developing clear, detailed plans for their use, leading to delays and inefficiencies.
- Isolated approaches: Climate-related projects are often scattered and disconnected, hindering progress towards comprehensive climate neutrality goals.
- Difficulty in combining funding sources: Cities struggle to effectively blend different funding types (public, private) and levels (EU, national, regional, local).
- Regulatory constraints: National, regional, or local regulations can sometimes limit cities' financing options, such as restrictions on taking on debt.
- Misalignment with EU funding programs: There is a perception among some cities that EU funding programmes are not always in tune with local needs and realities.

These barriers are reflected in the various innovative city's sustainable urban development projects, whether they are climate-related, social, or technology-related, as they carry considerable risks. According to the OECD, to unlock investment for funding or financing of particular infrastructure investments, right conditions in local authorities need to be in place. These include sufficient financial and investment capacity adapted to legal and regulatory frameworks, and increased cooperation across the various levels of government (OECD, 2021). Although one goal of IFSs is to spread these risks among various stakeholders, innovative projects with high social rewards often find it difficult to demonstrate a clear monetary return on investment (Deloitte, 2018; SIE, 2012).

Moreover, the cultural shift that innovation entails should not be overlooked. Using IFSs requires cities to embrace a more market-oriented and entrepreneurial mindset as well as developing a deeper understanding of complex financial concepts typically used in the private sector or by national governments. This involves a profound change in municipal financial procedures which explains the need for IFSs tailored to the needs and contexts of cities (NetZeroCities, 2022,). While there are numerous options available to source finance for innovative and socio-economic projects, a significant challenge is finding the most appropriate financing tool. This requires a comprehensive understanding of the project, its potential cash flows, the range of financing options available locally and internationally, and the procurement methods available to the government to ensure successful delivery (Deloitte, 2018).

Finally, as observed in previous sections, a key advantage of IFS in financing projects is their ability to be combined with related other funding resources and schemes, whether these funds originate from the EU, national, or regional governments for projects managed at the municipal level as well as private and third-party stakeholders. However, these various stakeholders and the silos that can exist between them and their own regulations pose challenges, as regulations governing interactions among these entities are not necessarily designed with a multi-partner approach and the use of IFSs in mind (NetZeroCities, 2022). Initiatives, such as the Urban Agenda for the EU's (UAEU, 2022) better regulations in procurement, aim to facilitate innovation in cities through a collaborative approach involving multiple partners (EU, member states, regions, and cities). This initiative seeks to simplify procurement processes to unlock the potential of procurement as a tool to enable innovative sustainable projects and address social challenges across the EU (UAEU, 2022).

Opportunities

While challenges exist in implementing IFSs, there are also significant opportunities for cities to leverage these tools for sustainable local projects. These opportunities span multiple levels of governance and require a collaborative, multi-stakeholder approach.

Cities are increasingly recognising the need to reshape their internal processes (NetZeroCities, 2022). This evolving mindset is creating fertile ground for implementing IFSs that are more responsive to local needs and contexts. There is a growing interest in outcome-based funding models and leveraging public procurement to drive social innovation. By linking funding to measurable outcomes and harnessing the substantial purchasing power of public institutions, cities can create robust incentives for developing innovative, high-impact solutions to pressing social challenges (SIE, 2012).

However, the most impactful opportunities often lie beyond the municipal level, and are rather nested in city collaboration with key stakeholders and cooperation with other cities throughout the EU. For instance, **public stakeholders**, such as European institutions and national governments, have crucial roles to play in creating an enabling environment for IFSs. This includes streamlining processes, adapting funding calls to be more inclusive of smaller cities which lack access to the same resources as larger cities such as country capitals, and developing long-term, accessible funding opportunities for cities in general (ECR, 2017). Other key stakeholders including financial institutions, such as the European Investment Bank (EIB) and European Investment Fund (EIF), as well as third-sector stakeholders, such as foundations, have an essential role in enabling high-risk, high-reward projects in the domain of social innovation. By providing initial funding and support for experimental approaches, these institutions can catalyse breakthrough solutions to entrenched social problems. The involvement of major financial institutions like the EIB and EIF can provide the necessary scale and legitimacy to innovative and socially-driven projects to access the capital they need to grow and expand their impact (SIE, 2012).

Similarly, the **private sector** can have a vital role in the widespread use of IFS in sustainable urban projects. As highlighted in section 2.3, successful IFS implementation, particularly for large-scale infrastructure projects, often depends on strengthening cooperation across local, national, and EU levels, while also engaging private sector financial actors. (OECD, 2021).

Finally, despite their unique characteristics, many**cities** face similar challenges, making such collaborative approaches particularly valuable. By fostering these partnerships, cities can leverage diverse resources and expertise to address complex urban issues more effectively.

It is this vertical and horizontal collaboration and cooperation that appears to be essential for developing impactful projects using IFSs (OECD, 2021). It underscores the need for a systemic approach to fostering IFS in urban contexts. By aligning efforts across multiple levels of governance, supporting a diverse ecosystem of social innovation, and creating the right incentives for impactful solutions, cities can unlock the full potential of IFS to drive sustainable urban development across economic, social, and environmental dimensions.

Conclusion

The reviewed literature shows that there is a wide array of IFSs, and they differ significantly from one another in nature, as well as the scale they are used. While the various IFSs and particularly Financial Instruments have garnered extensive literature since the mid-2010s, a noticeable gap exists regarding the structure of the literature on IFSs used directly by EU cities to address their specific challenges. Sorting through the available resources and distilling the key information can be challenging. Much of the existing literature focuses on traditional schemes that fund large-scale development projects, implemented by large organisations at supranational, national or regional levels and/or on other geographical regions, characterised by different needs. These large-scale schemes are not always accessible or directly relevant for smaller, innovative city-scale projects involving local stakeholders and citizens.

This study aims to bridge this gap by collecting practical examples of IFSs tailored to the urban context and smaller-scale innovative projects, such as those within the UIA programme. The study will continue looking at effective IFSs used by local authorities, identifying the sectors in which they were more successful, as well as the challenges faced and their success factors. Furthermore, the study will provide recommendations to other cities on how to effectively implement IFSs in their specific contexts, based on the insights gained from the analysis of successful case studies.

As cities confront emerging challenges, the flexibility and adaptability of IFSs will be key in the creation of novel financing schemes that cater to cities' unique and dynamic requirements. However, the literature review showed that, despite common principles on their ability to complement and augment funds and finance socially benefitting projects with a long-term approach, there is no single, universally accepted definition for IFSs, as they often vary depending on the context in which they are used.

In the table below, are mapped the IFSs discussed in this section to indicate whether they aim to mobilise, distribute, or govern the use of funds.

Mapping relative to whether they aim to mobilise, distribute or govern the use of funds

IFS Category	Mobilise	Distribute	Govern
Loan		-	
Equity / Quasi-equity	-		
Guarantee	-		-
Bonds	-		
Classical funding schemes targeting innovation	-	-	
Community Land Trust	-		-
Crowdfunding	-		
Green Mortgage	-		
Incentive mechanisms		-	
Innovative procurement	-	-	
Local & virtual currencies	-	-	

IFS Category	Mobilise	Distribute	Govern
Participatory budgeting			-
Performance-based contracts		-	-
Public Private Partnership (PPP)			-
Revolving funds		-	

Methodology

The literature review was conducted using a combination of database searches and consultation of authoritative sources in the field of urban finance and sustainability. The following online databases and search engines were used: websites and online repositories of relevant organisations such as The European Commission, European Investment Bank, European Parliament, ICLEI, United Nations, OECD, UIA, and other relevant websites for information on real-life applications of IFS to provide the examples.

The search strategy employed a set of relevant keywords, including "innovative finance," "innovative finance mechanisms," "innovative finance for sustainable urban projects," "financing innovation," and "sustainable finance initiative." These terms were used to identify recent literature, with a focus on publications from 2008 onwards, with the majority between 2015 and 2023.

The search results were screened based on their relevance to IFSs for sustainable urban development projects at the city level. Publications were initially evaluated by examining titles, abstracts, and keywords. Those deemed potentially relevant underwent a full-text review to assess their suitability for inclusion in the literature review.

Ultimately, 27 publications were selected for in-depth analysis and inclusion in the review, other web-based sources (32) ranging from articles to city websites were also used to either providing real life examples or strengthen some key findings.

The full list of reviewed sources could be found in the References list.

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