

Implementation of Innovative Financing for Nature-based Solutions in Flemish cities

Flemish cities are expected to take a leading role in climate adaptation and mitigation strategies. At the core of these strategies are nature based solutions (NBS) by green, blue and hybrid urban infrastructures. NBS address multiple problems related to climate change in an integrated, sustainable way. Although investments in NBS infrastructures are considered a cost effective way to achieve future societal and environmental benefits, current public budgets in Flanders are insufficient. As a result, the gap between investments in and societal need for NBS is growing. In contrast to limited public budgets, there is an abundance of private capital seeking for investments. Yet, the potential to invest private capital in NBS is not fully exploited. NBS projects typically have sizeable upfront

costs and diffuse and long-term societal benefits that are not easily captured in steady cash flows, making privately financed schemes often inappropriate. In order to attract private investments to NBS, new business models and alternative financing mechanisms are needed.

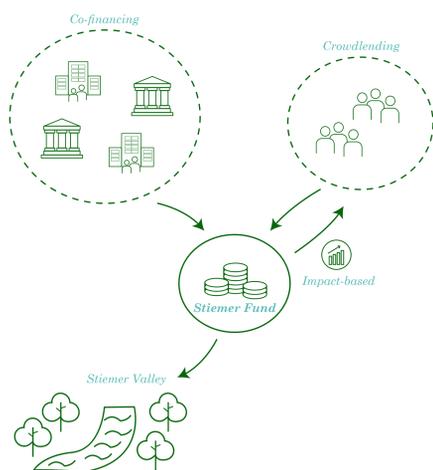
In this project, we study the utilisation potential of innovative financing models in the Flemish context by developing real life business cases of NBS, using new instruments such as impact financing, value capturing and cryptofinance. In order to develop a realistic and holistic interdisciplinary approach, this strategic research will study how new financial instruments impact planning

and design, governance arrangements, valuation methods, legal institutions and instruments as well as social justice. The urban living lab approach will ensure continuous integrated assessment of the spatial, juridical, institutional, economic feasibility and social impact of the new financing business models, optimising the utilisation potential for the societal users.

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URBAN LIVING LABS FINANCING CONCEPTS

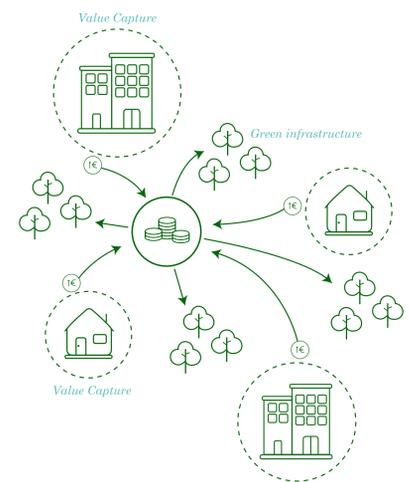


GENK

For the Urban Living Lab Genk, we are developing a **Stiemer Fund** that combines two financing concepts: **co-financing** and **impact-based crowdfunding**. This financial arrangement attempts to formulate a layered response to the problems in the Stiemer Valley. The Stiemer Valley is a green-blue artery that flows right through the city Genk, but is considered as unattractive due to frequent sewage overflows from adjacent grey infrastructure. To fix the overflow problem and transform the valley to an attractive green-blue space within the city, Genk has developed an integrated spatial vision for the transformation of the Stiemer Valley. This plan envisions the Stiemer Valley as a place of connection, tranquility, recreation and the development of nature.

However, realising this vision is challenging as complexity pervades the Stiemer Valley. As multiple actors are involved (multi-

governance), both the issues and solutions touch on different disciplines (multi-dimensional) and take place at multiple scale levels (multi-scalar). Within InnoFINS we make the distinction between measures to be taken upstream (disconnection of rainwater in residential areas) and measures to be taken in the valley (such as making room for inundation), as both types of measures involve different types of actors. This complexity means that agendas of the various actors involved need to be aligned. This to ensure a systemic approach to the development of the Stiemer Valley, involving both 'source' and 'restoration' measures. To support the approach as proposed in the spatial vision and to help create a resilient socio-ecological system, we are exploring an integrated financing arrangement, the Stiemer Fund.



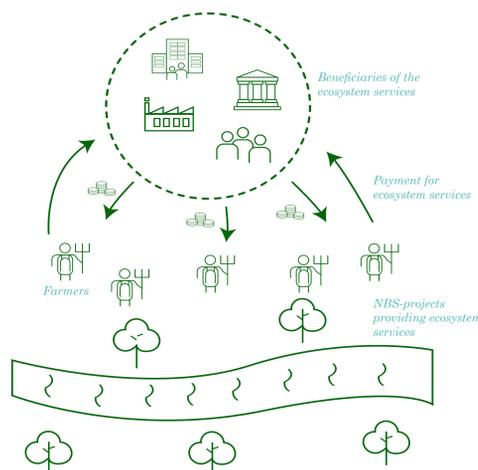
TURNHOUT

The Urban Living Lab Turnhout will work on financing green structures in and around the city to mitigate the urban heat island effect. This is particularly relevant in a center city such as Turnhout, which is becoming increasingly dense and populated. Over the past 10 years, Turnhout experienced a population growth of 11.5%. Moreover, this increase will be reinforced in the future by the proposed 'building shift' (*'bouwshift'*), which aims, among other things, to address the negative effects of urban sprawl.

The financing instrument that will be examined in this case aims to generate income for the implementation of green-blue measures, plan compensation (to prevent further urban sprawl), and/or the purchase of certain land by the city. The instrument is based on the principle of **'value capture'**. This principle can be described as the set of instruments that can capture all possible increases in land value and buildings. It focuses primarily on capturing

unearned benefits that result from actions other than those of the landowner, such as increases in value from infrastructure improvements, public services and land use regulations.

This case will look specifically at different types of taxes and fees to capture those capital gains. In the first order, the focus will be on the city of Turnhout. In the second order, we will examine how taxes and fees can be organized across municipalities, given the formation of the region, in which Turnhout as a 'central city' can play an important role.



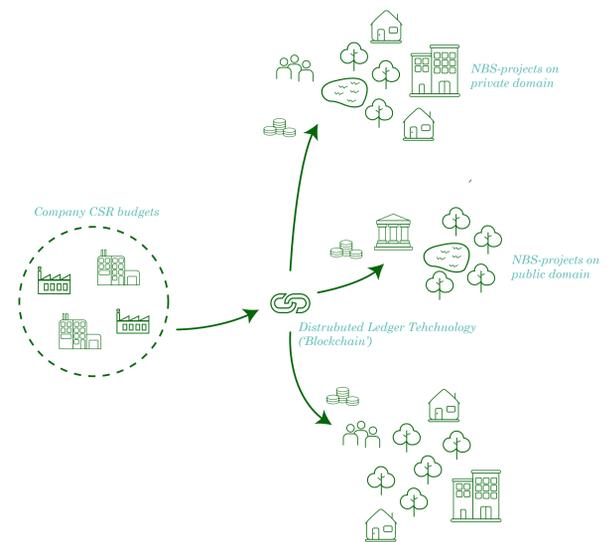
SOUTH-WEST FLANDERS

In the case of the Urban Living Lab Kortrijk-Zwevegem, located in South-West Flanders, the choice was made to develop a **Payment for Ecosystem Services (PES)** financing model. Based on a landscape plan drawn up by Leiedal (2021), it is being investigated whether a PES system could contribute to the creation of a climate-robust landscape. The area is elevated between two larger rivers (Leie and Scheldt), and is characterized by many smaller tributaries flowing to either river. This hydrological context and the presence of fertile soil have led to an intensive agricultural landscape which today faces numerous challenges, such as water scarcity during summer months, flooding during winter, erosion, lack of biodiversity, etc.

We are therefore researching whether a PES-model could motivate farmers (and other landowners) to adjust their

agricultural operations to provide more room for water storage, which would be deemed an ecosystem service.

This financial system is initially realised by linking beneficiaries (businesses, citizens, other farmers, tourists,...) of the ecosystem service 'water storage' to providers (often farmers). In this respect, it is innovative compared to the traditional system of agri-environment-climate agreements that farmers can enter into today with the VLM, as these are mainly aimed at realising biodiversity objectives (related to protected habitat areas). While in this Urban Living Lab we wish to further investigate PES to obtain the 'broader' objective of realising a climate-resilient landscape, benefitting both farmers and other beneficiaries.



ANTWERP

The rather densely populated and built city of Antwerp, like other cities worldwide, needs to adapt to the consequences of climate change, such as the Urban Heat Island (UHI) effect and more intense and frequent rainfall interspersed by longer periods of drought. Facing these challenges, the city of Antwerp has formulated different solutions, in their different plans (Waterplan, Greenplan and Climate Plan respectively), most notably: the provision of NBS, not only on public domain but also on private domain.

Putting these plans to action is mainly dependent on (restricted) public funding for public initiatives or, via subsidies for private initiatives. So the question remains how to attract additional and necessary private funding, especially in light of scaling-up existing and new initiatives. In the context of the Urban Living

Lab Antwerp InnoFINS proposes to develop an arrangement to give local Antwerp based companies the opportunity to invest in local NBS-projects and this because of the specific Antwerp-context of high business activity and the presence of several significant (international) companies (many connected to the port of Antwerp).

InnoFINS developed a conceptual case for the investment by companies, using their often existing **corporate social responsibility-budgets**, for NBS-projects in private or public form. In this we furthermore propose the use of **distributed ledger technology** (cfr. blockchain), using the technology's advantages as transparency and integrity and lowering transaction costs using (related) technologies such as smart contracts, artificial intelligence, and internet of things.