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Financing Greener Cities Report

Strengthening the capacity of local authorities and practitioners to make informed decisions on financing nature-based solutions

Athens, Greece
October 8 – 9, 2019

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1. Introduction

The interactive 1.5 day workshop “Financing Greener Cities” took place on October 8th and 9th, 2019 in the city of Athens, Greece. The event was organised by ICLEI Europe as part of the Horizon 2020 NATURVATION project. The event was co-developed with the EKLIPSE Mechanism and supported by the Resilient Athens and Europe Direct City of Athens.

NATURVATION is a project led by Durham University and involves 14 institutions across Europe working in fields as diverse as urban development, innovation studies, geography, ecology, environmental assessment and economics. The partnership includes city governments, non-governmental organisations and businesses. The purpose is to assess what nature-based solutions can achieve in cities, examine how innovation is taking place, and work with communities and stakeholders to develop the knowledge and tools required to realise the potential of nature-based solutions for meeting urban sustainability goals. Input from the participants of the ‘Financing Greener Cities’ workshop formed the base for the solutions-oriented financing pathways developed during the NATURVATION project that aim at upscaling NBS in cities.

1.1 Objective of the workshop

The goal of the workshop was to build local stakeholders’ understanding of and capacity to influence:

- (1) **financing and funding landscapes** for nature-based solutions, biodiversity and ecosystem services projects,
- (2) **financing and funding types and options** (including blended finance, etc.), and
- (3) **underlying ‘investment’ cases** for nature-based solutions, biodiversity and ecosystem services.

Local stakeholders include local and sub-national decision and policy makers, public authority practitioners and experts, researchers, civil society organisations, and NGOs.

1.2 Workshop activities

In advance of the workshop, participants attended an informative webinar and shared their most frequent and pressing challenges related to financing nature-based solutions (NBS), local biodiversity, and ecosystem services (ESS). The results of the webinar were used to tailor the workshop program to participants’ needs.

Day one of the workshop began with a review of the feedback from the pre-event webinar and a description of how this information was used as the starting point for formulating financing (solution) pathways in the NATURVATION project. The day continued with a guided exercise in which participants mapped the financing /funding landscape; this exercise identified under-utilized financial mechanisms and instruments. Next, experts from the European Investment Bank (EIB), Natural Capital Financing Facility (NCF), and the municipality of Athens provided first-hand insights and advice on how to access one specific funding instrument – Green Finance. Green Finance involves loans from private or public financial institutions, such as a bank or the NCF set up by EIB, to support projects focusing on nature, biodiversity, and ecosystem-based adaptation to climate change. The presentation focused on how to create bankable NBS and biodiversity projects and attract private sector investment. The entirety of day one focused on how NBS projects are funded, the variety of financial tools available, and barriers to funding new projects.

On day two, participants applied what they discovered in day one by building the case for investing in biodiversity and NBS projects with the NBS Business Model Puzzle (presented by NATURVATION) and the NBS Business Model Canvas (presented by Connecting Nature) to real-life examples.

1.3 Participants

Forty individuals attended the workshop. They represented local authorities, researchers, practitioners and experts, as well as, civil society and NGOs from across Europe with a majority of representation from South-Eastern Europe.



Photo author: Alexandru Matei

2. Summary of challenges for financing nature-based solutions

Workshop participants, together with Utrecht Sustainable Finance Lab¹, compared/contrasted the challenges identified during the preparatory webinar² with those found in the NATURVATION case studies research.

The most pressing challenges identified and their associated solution pathways are summarized in the table below, Table 1. Summary of Financing Challenges for NBS.

¹ Partner on the Horizon 2020 NATURVATION project

² See Annex 3 for the challenges identified in the webinar.

Table 1. Summary of Financing Challenges for NBS

Summary of financing challenges for nature-based solutions			
	NATURVATION: Barriers to NBS financing from case studies	Financing Greener Cities: Challenges identified by workshop participants	NATURVATION: Pathways to upscaling NBS
1	No convincing cash flows resulting from NBS.	Lack of understanding and awareness of financing tools by public servants.	Engage the insurance sector as missing link
2	Evidence of the (local) NBS effectiveness (impact) is often missing.	Lack of understanding of (localized) NBS value. Lack of evidence of NBS effectiveness to convince financiers.	<i>Sits on highly valuable climate risks and damage data (portfolio), integrates climate related EU regulation (TCFD) / double exposure to climate risk in insurance business and investments (portfolio)</i>
3	NBS' (cost-) effectiveness is based on multiple benefits.	Municipal budgeting silos pose difficulties with clustering public budgets. Challenge of setting up public-private financing based on multiple benefits.	Create governance mechanisms for co-funding <i>NBS become cost-effective when interests and budgets are aligned. Co-governance mechanisms for co-funding should be created at different scales that allow for cooperation and pooled funding.</i>
4	NBS compete for scarce (expensive) urban space.	Absence of regulations/legal framework fostering NBS.	Curb "square metre" incentives of real estate development <i>Public authorities can influence NBS-integrated real estate development through tender criteria and regulation, by selling climate-proofing, well-being and health benefits as a business case, or through hard agreements on greening with obligatory compensation measures.</i>
5	NBS are often small scale and not standardized.		Make urban NBS a mainstream climate change adaptation (CCA) instrument, including data and modeling to increase value <i>Increase awareness among building owners and infrastructure owners about exposure to climate risk</i>

			<p><i>(including investors), create localized measurement tools and approximation models for NBS (risk reduction value), integrate NBS into CCA and DRR strategies at national & regional level (for public funding).</i></p> <p>Integrate urban NBS strategically into Climate-related Financial Disclosures (TCFD) and Taxonomy (EU regulations)</p> <p><i>The TCFD requires financial institutions to be transparent about the impact of climate change on the valuation of their investment portfolio; Taxonomy aims to create transparency on what constitutes a 'green' investment per sector</i></p>
6	Maintenance and monitoring more complex than with grey infrastructure.	Maintenance and the underlying governance mechanism for maintenance.	<i>None identified</i>
7	Greening seen as less urgent, less profitable than other private spending - lower available funding for urban NBS.	Lack of resources (budget). Lack of political will, long-term vision, differing interests and corruption.	<p>Use local leadership in municipalities and regions to apply for EU funds</p> <p><i>In case of non-prioritisation of NBS by national governments (austerity, corruption, willful ignorance), use local leadership and build 'willing coalitions' who can apply for EU funding directly.</i></p>

3. Summary of the financing landscape for nature-based solutions and ecosystem services

Workshop participants mapped the funding and financing landscape for NBS and ESS projects. Participants used a template provided by Social Finance³ to categorize types of funding and funders that they have worked with on NBS, ESS, and green infrastructure projects⁴. There is a correlation

³ Social Finance is an international not-for profit organisation based in the UK that partners with public, social, and financial organisations to address social problems.

⁴ Social Finance developed this template for the Horizon 2020 project CLEVER Cities. The template differentiates types of *funders* and types of *funding*.

between funder and type of funding. For example, if the funder is central and local government, the funding is usually grant funding. This is reflected in tables 2 and 3, below.

The variety of funders and funding options available are underutilized in practice. As expected, according to the polls of the preparatory webinar, grant funding and donations from central/local government are most frequently utilized (see tables 2 and 3, below), closely followed by the pooling of different government budgets. Private sector funding and revenue generating business models were significantly less represented by participant’s project funding portfolios. Under-explored and under-utilized funders and funding sources are highlights in red.

Table 2. Types of funders utilized by workshop participants

Central government	Local government	Philanthropy and charity	Commercial investors	Social investors	Citizens	Others (i.e. EU funds, research funds)
15	15	4	2	0	3	6

Table 3. Types of funding / funding instruments utilized workshop participants

Pooling of different government budgets	Green Finance	Grant funding and donations	Revenue-generating instruments	Market-based instruments	Revolving funds	Public-private partnerships	Other
7	3	21	2	2	2	1	0

NBS investments pose several challenges for the banking sector. Banks consider risk, return, and impact when making investment decisions, often choosing to invest in companies that are actively creating measurable positive social or environmental impacts. Additionally, they tend to think short-term and favour the familiar; they prefer low risk and attractive returns. NBS and biodiversity investments represent the opposite. The complex concepts and long-term benefits of biodiversity and ecosystem services are new business cases and unfamiliar to banks. Taken together, this suite of complexity, unarticulated business models, and newness is perceived as unsafe and risky.

In order to create a market for NBS a favourable internal (within banks) and external (general public, practitioners, and policy makers) environment needs to be created. Internally, banks need to become familiar with these concepts, understand how value is created through NBS, and develop clear accounting frameworks. Externally, **borrowers need to learn how to develop business plans that capture both financial and non-financial values**. Also, **regulations and standards** play an important role for mainstreaming NBS in the banking sector. Municipalities need to continuously promote, implement, and safeguard planning regulations and standards that facilitate NBS. At the same time, governments, EU policy makers, and regulators should provide clear signals supporting the NBS

business case. Overcoming barriers with such communication and planning needs to be addressed in order to access additional funding for NBS, ESS, and green infrastructure projects⁵.

4. Overview of the Business Model Puzzle: Identifying value drivers for business models

In order to identify value drivers for business models, workshop participants applied the Business Model Puzzle⁶ on six scenarios that were submitted by the participants in advance. The six scenarios were: 1) Maintenance of Ilisia Park, Athens (Greece), 2) DADA DISTRICT project, Brno (Czech Republic), 3) Community roof gardens and biodiverse green roofs, Nikosia (Cyprus), 4) Wetland filtration in the Southmere Lake, South Thamesmead, London (UK), 5) 101 green cool schools in Austria, Vienna (AT), and 6) Aquaponic on post-industrial cultural heritage site in Dortmund (Germany). The Business Model Puzzle was designed to be used as a preparatory step to the Business Model Canvas and to developing a Business Plan.

Participants were guided through three steps 1) choosing a type of NBS or specific case, 2) Identification of NBS values and actors: Who values what? and 3) Business model selection.

For further guidance on how to play the puzzle refer to Annex 4 and look at [NATURVATION's Business Model Catalogue for Urban NBS](#) which presents eight different business models for urban NBS. These were identified based on 54 in-depth case studies of urban NBS, both in- and outside of Europe. These models explain which value propositions can drive urban NBS funding.

Step 1: Choose a type of NBS or a specific case

The first step is to identify what project or type of NBS you will evaluate and write a summary statement about it.

Illustrative case: community rooftop garden, Nikosia (Cyprus)

Uplifting Nicosia is a project aiming to create small scale, bottom up, experimental community roof gardens and biodiverse green roofs as a new layer of green superstructure on rooftops of the capital of Cyprus. The objective is to revitalize the rooftops and to tackle the sustainability challenges of climate resilience, biodiversity and social cohesion (between the divided Turkish-Cypriot Community in the North and the Greek-Cypriot Community in the South). It reimagines rooftops as a new collective place that can become the venue for a range of socio-cultural events based on artistic interventions and nature based solutions, because both art and nature contribute to building the foundations for a socially sustainable community.

The NBS to be implemented and tested on a demonstration site is a community rooftop garden. Using participatory methods, the users of a building and groups of citizens will co-create a common rooftop garden to grow food and vegetables that are appropriate for the Cypriot climate. Local businesses in the neighborhood can also participate in the process, which may give economic sustainability to the project. The garden will be used as an example by the NGO Urban Gorillas, who will facilitate workshops and other events to educate the public about building community rooftop gardens.

⁵ Additional information: [Positive impact finance for business and biodiversity](#) and [Financing conservation and nature-based solutions](#)

⁶ Developed by the Horizon 2020 NATURVATION project

Step 2: Identification of NBS values and actors: who values what?

In this step, participants identify what benefits are delivered by the specific NBS (i.e. rooftop gardens, street trees, green roofs, sustainable drainage systems etc.) and which stakeholders value which benefits. The puzzle differentiates between the economic (i.e. flood risk reduction, energy efficiency, employment, etc.), biophysical (i.e. biodiversity, cooling, air filtering), social (i.e. health, safety, relaxation) and cultural (i.e. cultural heritage, identify, aesthetic value) benefits. The identified benefits are allocated to potential beneficiaries, namely public actors, private actors, not for profit organisations, citizens, and local communities.

Table 4. Puzzle output: who values what? Community rooftop garden in Nicosia, Cyprus

Who values what?	Economic benefits	Biophysical benefits	Social benefits	Cultural benefits
	flood risk reduction, material & energy efficiency, higher revenues, economic growth, employment, employee wellbeing	biodiversity, water quality, cooling, pollination, air filtering	health, social cohesion, relaxation, safety, noise reduction, concentration, justice	identity, aesthetic value, sense of place, cultural heritage, symbolism, creativity
Public actors (municipalities, water boards, provinces, national government, universities)	Cost reductions	Biodiversity	Health	Identity
Private actors (insurers, real estate developers, roofing firms, gardening firms, landscape architects, restaurant owners)	Cost reductions, Entrepreneurship, Employee wellbeing, Higher revenues	Pollination	None identified	Identity
Not for profit organisations (NGOs, stakeholders, networks)	Employment	None identified	None identified	Symbolic value, Creativity, Identity
Citizens & local communities	Cost reductions, Material efficiency, Citizens wellbeing	Cooling, Pollination, Air Filtering	Health, Social Cohesion, Relaxation	Identity, Symbolic Value, Sense of Place, Cultural Heritage, Aesthetic Value

Step 3: mix & match business models

In this third and final step, participants discuss four key themes (value proposition, value delivery, enabling conditions, and value capture) with several guiding questions in order to arrive at one or a blend of several business models suited for the case at hand (see Figure 1. Step 3 mix and match business models). At the end of playing the puzzle, the information distilled and collected can be used to develop a more robust business plan.

To guide the participants' thinking about a potential business model for the NBS under consideration, NATURVATION established and described 8 business model types (see Fig. 2 Business models and Fig. 3 Business models contd.). The business models can be blended according to the context, the identified stakeholders, and values generated.



Figure 1. Step 3 mix and match business models

Illustrative case: community rooftop garden Nikosia, Cyprus, step 3 key theme discussion

Value proposition

What is being offered? Cultural and symbolic value, social cohesion, higher revenues and cost reductions.

Who is the customer? Citizens and local communities, private actors (restaurants, entrepreneurs, building owners).

Value delivery

What resources are needed? Permits to use buildings with roof (public/private) and material for roof garden.

What network? Technical expertise on architecture and engineering as well as horticulturists and researchers.

What is the strategy? To map and select vacant roof spaces and create a coordinating mechanism between the NGO Urban Gorillas and the owners of the building in order to facilitate the network.

Value Capture

What costs are being made? Operational costs and technical solutions.

What costs are being prevented? Lower electricity bills because of temperature reduction of building. Illness costs because of public health improvement.

What revenues, for whom? Creation of new employment opportunities, tourism development, new investments and renovation of old buildings, entrepreneurial spirit.

Enabling Conditions

What conditions enable this business model to be effective? Community engagement using the right incentives and appropriate technical advice.

Illustrative case: community rooftop garden Nikosia, Cyprus, step 3 business model selection

In this case, the vacant space and green heritage business models were identified as best fits for the project. Information from the thought process around these two models was brought together as the precursor for a business plan.

	 Risk reduction	 Green densification	 Local stewardship	 Green health
Value proposition What is being offered in the market? Who is the customer?	Nature-based solution interventions are valued for their ability to reduce climate risks (and costs) such as flooding, extreme heat and drought.	Urban real estate developers develop nature-based solutions along with housing and commercial buildings, targeted at quality of life of residents/employees (green roofs, gardens).	Local small plots of nature (and single trees) are valued by citizens who are willing to protect and support nature in their neighbourhood.	The therapeutic and health value for citizens of interaction with urban nature-based solutions is valued by (mainly) non-profit and public actors.
Value delivery What resources are needed? What network? What is the strategy?	Targeted at municipalities, citizens, firms. Data / metrics needed to increase risk awareness and underpin investments.	Green development expertise or partnerships with experts are required (roofing firms, landscape architects, ecologists).	A coordinating mechanism is needed for individuals to contribute at large scale, i.e. tool that identifies individual trees to build value and monitor.	In the case of vulnerable citizens, expertise is needed to help them recover through their interaction with nature. Sometimes maintenance needs to be provided for, as well.
Value capture What costs are being made (or prevented?) What revenues, for whom?	High, irregular costs prevented in case of extreme weather; insurance products remain accessible and attractive, can grow the market.	Real estate projects often generate high returns; use part of this to integrate nature-based solutions into building project. Expectations of higher sale prices / rents / occupation.	Many donations from citizens and firms; transaction costs and campaign costs can be lowered by implementing digital monitoring/platform.	Investments into urban greening can help deliver health objectives, both preventive and recovery, thus lowering (other) health-related costs.
Enabling conditions & risks What conditions enable this business model to be effective? What risks are there?	Awareness of risk is crucial, as is availability of data. Municipality should help poorer citizens who cannot afford insurance & risk mitigation interventions.	Green tender procedures / requirements, land ownership and monitoring by the municipality speed up this business model. Subsidies may be needed for social housing to be included.	Accounting for the additional nature provided by local citizens and businesses is important to prevent 'double counting'. Campaigning is often needed, including funding.	This model requires expertise on how green spaces need to be designed and used to support citizen health. Just stating 'green is healthy' will not be enough.

Figure 2. Business models

	 Urban offsetting	 Vacant space	 Education	 Green heritage
BUSINESS MODELS				
Value proposition What is being offered in the market? Who is the customer?	When green-blue urban space is lost to real estate or infrastructure development, a 'no net loss' program can incentivise or require offset investments into urban nature-based solutions elsewhere in the city.	Government steps back and provides space for local initiatives and (social) entrepreneurship in (temporarily) underused urban public space.	Urban nature-based solutions are set up and managed in support of environmental education, allowing young, urban citizens to engage with food and nature, usually through urban farming / gardening.	A green region, city or neighborhood creates value through its green cultural heritage which attracts tourists, residents and businesses.
Value delivery What resources are needed? What network? What is the strategy?	A reliable governance structure needs to be in place to earmark funds obtained from building activities for nature-based solution investment (i.e. a designated fund).	Governments can support through in-kind services and by (temporary) allocation of urban space; volunteer and community groups organize themselves bottom-up.	Using nature-based solutions as a form of education requires governance support from a specific school or school network. It also requires expertise on how to teach with an urban nature-based solutions.	Actors need to acknowledge the cultural value that is embedded in this green nature-based solution. It also needs to combine cultural and ecological expertise to deliver this joint value.
Value capture What costs are being made (or prevented)? What revenues, for whom?	The cost of offsetting biodiversity is internalized in larger real estate or infrastructural development projects, and paid out of the revenue or tax stream that is created.	Facilitates private actors to develop meaningful activities at low cost (low land rent), which enables (social) entrepreneurship even at low/no revenue.	Cost effective and interactive way to implement sustainability education, enriching other subjects and nutritional knowledge in children, as well.	A green cultural space can benefit from volunteers, networks and public financing. Value-added cultural produce and ticket / tour sales can provide income.
Enabling conditions & risks What conditions enable this business model to be effective? What risks are there?	An offset mechanism should not become a 'wildcard' to build on high quality green-blue spaces, but should be used as a 'last resort'. It requires availability of green spaces to invest into.	Closing temporary plots can destroy social capital built up in communities. Prevent through alternative location, integrate into urban development strategy.	Guidance, monitoring and expertise is needed from school teachers or staff. Adds to work load of sometimes already overburdened school teachers.	Cultural heritage needs to be equally accessible so entry prices may not be too high. Both ecological and cultural expertise is needed to deliver this model.

Figure 3. Business models contd.

5. Using the NBS Business Model Canvas to explore investment cases

The [NBS Business Model Canvas](#) was developed by the Horizon 2020 project [Connecting Nature](#) as a tool to support the initial stages of planning the implementation of NBS in cities. The NBS Business Model Canvas (NBS BMC) is based on the original Business Model Canvas developed by Osterwalder & Pigneur, 2009, a tool to emphasize key success factors of a product/services, create new ideas for a potential business model, and detect barriers to market. The NBS Business Model Canvas can be used to communicate NBS, to identify new partners, and to explore new sources of finance.

In the Business Model Canvas adjusted to NBS, the value proposition still remains at the centre, but is looked at from the three dimensions of environmental, social and economic benefits. The customer segment from the initial Canvas is turned into "key beneficiaries," thus widening the approach from direct end users. Due to their multiple benefits, NBS often have multiple partners and beneficiaries, which is why the management and governance structure is crucial (governance added as a dimension in the NBS BMC). Several NBS business models for NBS are based on emerging cost reduction, i.e. in energy consumption (green façade), reduced waste water and water run-off (closed water cycle in green roofs and sponge function). Thus, cost reduction is added in the NBS Business Model Canvas (see Figure 4. NBS Business Model Canvas).

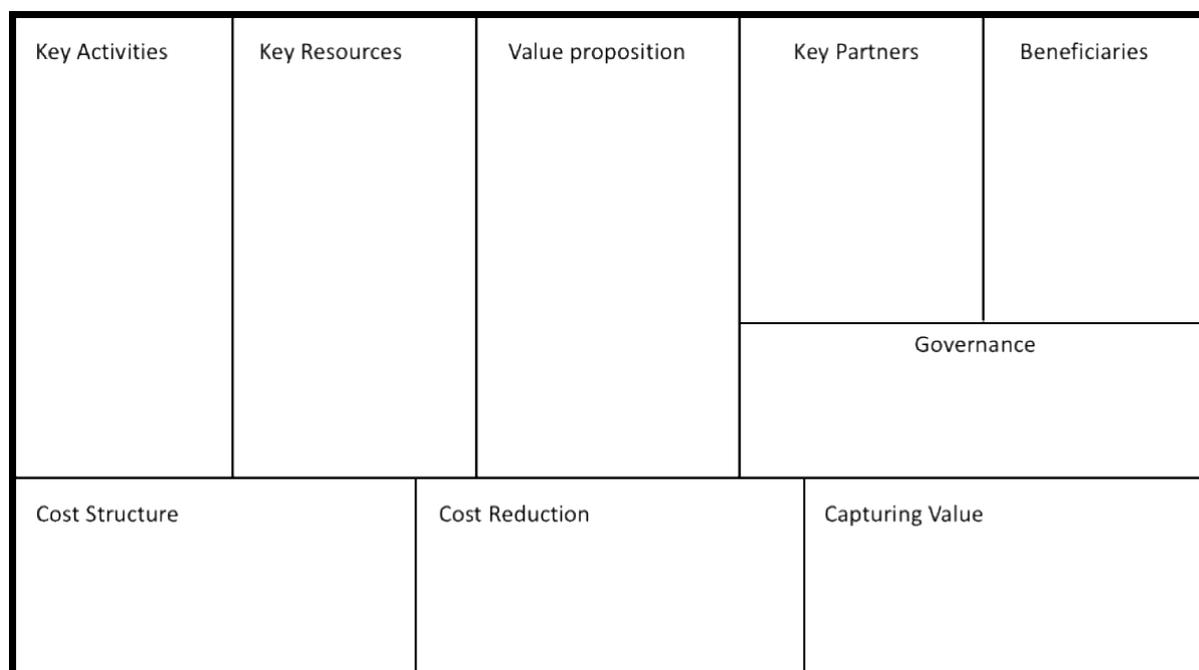


Figure 4. NBS Business Model Canvas (piloted by Connecting Nature)

The sections of the NBS BMC are worked through in consecutive phases, until all sections are filled. Based on the results, participants can move on to developing a financing strategy. The sections are as follows:

- 1) **Value proposition:** What does the NBS offer to the different groups of beneficiaries in environmental, social and economic terms?
- 2) **Key activities:** Actions needed to deliver environmental, social and economic value proposition;
- 3) **Key resources** required to deliver the key activities;
- 4) **Key partners:** What main partners are needed to deliver activities and resources?
- 5) **Key beneficiaries:** Who are all possible beneficiaries (direct-end beneficiaries and co-beneficiaries);
- 6) **Underlying governance model:** What type of governance/business model is best suited for the NBS at hand?
- 7) **Cost structure:** What are the ongoing costs of delivering and maintaining the NBS?
- 8) **Cost reduction:** What is the reduction of ongoing costs through NBS?
- 9) **Capturing value:** What is the direct revenue generated from the NBS at hand?

Illustrative case study: community rooftop garden in Nicosia, Cyprus, application of the NBS BMC

Key Activities: Mapping and selection of rooftop buildings, Community Engagement, Service Design, Permits & Safety, Design of roof & Plant Selection, Planting, Organise events/programme, Dissemination, choose legal form, propose legal framework

Key resources: Volunteers, other NGOs, Buildings, Material, Technical Expertise, Financial Resources, Coordinating Team

Key Partners: Existing Local communities, Urban Gorillas NGO, Building owners, Gardening Roofing Farms, Science relevant organisations (on agriculture, technology), other NGOs (Friends of the Earth, Friends of Nicosia), UN, Foundations, Municipality (of local decision maker)

Beneficiaries: Citizens of Nicosia, Building Owners, Housing Associations, Local businesses (tourism), Researchers/Scientists, Social services

Governance: for the pilot project for the demonstration site the Urban Gorillas will be managing and then found a social enterprise when a network of buildings is established. Every building will have its own “community champion” to represent its users and the board will be composed by the community champions.

Cost Structure: for the preparatory work for the community engagement and the technical consultants, Acquisition of permits, Material (plants, equipment), Safety equipment costs, Cost of organising events and activities (consumables, experts), Maintenance costs, Local coordination costs, PV panels/water harvesting

Cost Reduction: Active community (volunteers), DIY+Upcycling training and implementation, Buying in Bulk Quantities, Synergy with other projects and initiatives, PV Panels/Water harvesting, Selling products, Sponsorship

6. Key Takeaways

Key takeaways were identified during the workshop and through a post-event follow up survey.

- National and local governments are the most common funding source for nature based solutions, local biodiversity, and ecosystem service projects. Grant funding and donations are the most commonly used funding instruments. In times of dwindling public sector resources, this is not a sustainable business model. It is time to look into new, innovative, ways of blended finance.
- To-date, the range of funders and funding types is widely underutilized. There are vast opportunities in green finance⁷ (i.e. banks loans, such as the ones offered by the NCFE of the EIB), revenue-generating instruments, market-based instruments and public-private partnerships.
- The insurance sector is a promising sector for engagement due to their double-exposure to climate risk related to both insurance business and investments (portfolio risks). Additionally, the sector’s possession of valuable climate risk and damage data could help strengthen the basis of evidence for NBS impacts.
- Money is not the problem. Decision making systems and capacity of decision makers is the problem. It is the responsibility of project developers and implementers to find the right

⁷ See Annex 2: glossary on types of funders and funding for more information

funding/financing mix. This necessitates capacity-building to increase the understanding and operationalize the value of NBS in business models; also, to overcome the fact that municipal authorities are often not used to thinking along the lines of business models.

- An important next step is to find a way to translate the outputs from applying the NATURVATION Business Puzzle and the NBS Business Model Canvas into a concrete business model.
- There is a problem with funding accessibility in South-Eastern Europe and with funding reaching local action and small communities: LIFE funding does not fund small infrastructure projects and the percentage of co-funding is limited; this sheds light on the importance of co-funding/co-governance mechanisms to tap funding in a collaborative manner.

ANNEX

Annex 1: Detailed workshop programme

DAY 1 – October 8, 2019

11:00	Registration
11.30 - 12.00	<p>Introduction</p> <p>Welcome - EKLIPSE Secretariat, ICLEI Europe & City of Athens</p> <p>Introduction to Workshop Agenda</p> <p>Alexandros Ath.Tsiatsiamis, General Secretary of the City of Athens Lenio Myrivili, Loeb Fellow GSD Harvard University, Advisor to the Mayor of Athens on Resilience and Sustainability</p>
12:00 - 13.10	<p>Financing challenges for nature-based solutions (NBS), ecosystem services (ESS) and biodiversity projects</p> <p>Facilitated interactive discussion by ICLEI& presentation by Helen Toxopeus (Utrecht Sustainable Finance Lab, NATURVATION):Challenge-based financing pathways-Learning from the Horizon 2020 project NATURVATION</p>
13.10 - 14.10	Lunch
14.10 - 14.30	<p>Valuation of biodiversity: why is it crucial?</p> <p>Presentation by Prof. Phoebe Koundouri (Athens University of Economics and Business, President Elect of the European Association of Environmental and Resource Economists, Director of EIT Climate-KIC Greece)</p>
14.30 - 16.30	<p>Exploring the financing and funding landscape for NBS and ESS projects</p> <p>Interactive, guided exercise: Mapping the financing/funding landscape</p> <p>3 presentations, each followed by a Q&A session:</p> <ul style="list-style-type: none"> Stefanie Lindenberg (EIB, NCFE): Funding focus EIB and NCFE Elissavet Bargianni (City of Athens): Accessing and implementing the NCFE program Dimitrios Dimopoulos (Piraeus Bank):Considerations for creating bankable NBS and ESS enhancement projects

16.30 - 16.45	Coffee break
16.45 - 17.45	Improving access of cities to financing and funding options Stock-taking exercise of learning experiences
17.45 - 18.00	Outlook on Day 2

DAY 2 – October 9, 2019

09.00- 11.00	Workshop 1 Business Model Puzzle led by Helen Toxopeus (Utrecht University / Sustainable Finance Lab) Interactive exercise in small groups
11.00 - 11.30	Coffee
11.30 - 12.30	Workshop 2 Intro: Making the case for investing in NBS led by Shira Lappin (Social Finance) and Bernd Poelling (South Westphalia University of Applied Sciences)
12.30 - 13.30	Lunch
13.30- 15.00	Workshop 2 Application of NBS Business Model Canvas led by Shira Lappin (Social Finance) and Bernd Poelling (South Westphalia University of Applied Sciences) Interactive exercise in small groups
15.00 - 15.15	Coffee
15.15 - 15.45	Wrap-up and conclusions

Annex 2: Report Financing Greener Cities Preparatory Webinar

The webinar is available for download: https://iclei-europe.org/fileadmin/templates/iclei-europe/lib/projects/tools/push_project_file.php?uid=EBFUb2vn

Annex 3: Glossary types of funders and types of funding

Social investors

ESG funds are portfolios of equities and/or bonds for which environmental, social and governance factors have been integrated into the investment process. This means the equities and bonds contained in the fund have passed stringent tests over how sustainable the company or government is regarding its ESG criteria.

Pooling of different government budgets

GI creation, improvement and maintenance are often funded from local authorities' own budgets. However, budgets specifically for nature and green space are usually insufficient. A partial solution is for local authorities to find creative ways of channelling funding from other relevant government departments.

For example, cities could **pool funding from different departments** within the city administration to deliver GI projects with cross-sectoral benefits (e.g. urban forest management). Departments that qualify could be the health department (public health budget) given the growing evidence base on the benefits of nature to physical and mental health. Another option could be the police budget since well-designed and well-maintained NBS /GI improvement can reduce crime.

Green finance (debt instrument)

Instruments falling under this category are green bonds, loans from public or private financial institutions; or from the Natural Capital Financing Facility (NCF): a financing facility set up by the European Commission and the European Investment Bank (EIB) to support projects focusing on nature and biodiversity and ecosystem-based adaptation to climate change.

Green bonds are a type of loan. The bond issuer (debtor) borrows a fixed amount of capital from investors (creditors) over a defined period of time (the "maturity" of the bond), repays the capital (the "principal") when the bond matures, and pays an agreed-upon amount of interest ("coupons") during that period. In the case of a 'municipal green bond', the issuer (the city) commits to use the bond proceeds exclusively for projects with an environmental benefit (UN-Habitat, 2017).

For more information, check: EIB (undated) 'Natural Capital Financing Facility. Boosting investment for biodiversity and nature-based adaptation to climate'. Available at: <http://www.eib.org/en/products/blending/ncff/index.htm>

Grant funding and donations

Local authorities can access external grants for GI creation and maintenance from a variety of sources, including public sector bodies (at various administrative levels) and charitable or philanthropic organisations; EU funding through Horizon 2020, LIFE, the regional development fund; grants from regional and national public bodies; charitable contributions from foundations, citizens, private sector donors, etc.

Revenue-generating instruments

City governments can raise revenues to develop NBS through:

- **land sales or leases of government-owned land,**
- **taxes** (cost recovery and raising revenue),
- **user charges** (charging a fee for the use of green spaces, hiring out parks for private events, etc.)
- **Developer charges:** one-off compulsory charges paid by property developers as a condition of receiving development approval or as a condition of rezoning prior to development

Market-based instruments

A range of instruments that use markets or price mechanisms can be used to create incentives for private parties to invest in NBS, and/or to ensure a more efficient allocation of resources

- **User charges** (Charges on the use of 'grey' infrastructure can act as an incentive to reduce use by implementing green infrastructure. At present, this mechanism is being used in some cities to encourage the implementation of Sustainable Drainage Systems (SuDS) on properties)
- **Subsidies:** Governments can provide a subsidy to cover (part of) the costs of installing GI on private property. This can leverage off the private benefits to landowners from green infrastructure assets, to stimulate additional investments and increase public benefits.
- **Tax rebates:** similar to a subsidy, tax rebates have been suggested as a means of incentivising the management of green space by private individuals or landowners
- **Offsetting** Developers and other actors (such as companies whose activities impact on ecosystems) can be required by regulation to 'offset' or compensate for their negative impacts (compensation spaces for property development)

Revolving funds

Funds replenished through repayments of the loans drawn from the fund or by a constant flow of financial contributions (UN-Habitat, 2017). Revolving funds are often operated by not-for-profit organisations or trusts established by the state governments.

For more information, check: US EPA (2018) 'Learn about the Clean Water State Revolving Fund (CWSRF)'. Available at: <https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf>

Public-private partnerships (PPP)

PPPs can be defined as "long-term contracts between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility". PPPs have been used for a range of infrastructure services (government entities 'delegate' service provision to a private entity) and can also be developed for the delivery and/or maintenance of GI. In general, PPPs can take various forms, including operation and maintenance contracts, leases, concessions, etc. (UN-Habitat, 2017).

For more information, check: Climate-ADAPT (2016e) Public-private partnership for a new flood proof district in Bilbao. Available at: <https://climate-adapt.eea.europa.eu/metadata/case-studies/public-private-partnership-for-a-new-flood-proof-district-in-bilbao>

Others

Businesses and other stakeholders enter an agreement with local government to contribute an additional levy/ fee to finance improvements in a specific area, so-called Business Improvement

Districts. Once established, BIDs are free to constitute their own management body, make spending decisions, and seek additional income through various instruments

References:

UN-Habitat (2017) Finance for City Leaders Handbook 2nd Edition: Improving Municipal Finance to Deliver Better Services. Nairobi: United Nations Human Settlements Programme. Available at: <https://unhabitat.org/books/finance-for-city-leaders-handbook-2nd-edition/>

Trinomics and IUCN, 2019. Approaches to financing nature-based solutions in cities. Working document prepared in the framework of the Horizon 2020 project GrowGreen. Available here: http://growgreenproject.eu/wp-content/uploads/2019/03/Working-Document_Financing-NBS-in-cities.pdf

Annex 4: How to use the NATURVATION Business Model Puzzle



The Business Model Puzzle a dialogue tool for financing urban NBS

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Athens, Oct. 9, 2019, Financing Greener Cities Workshop



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Utrecht University





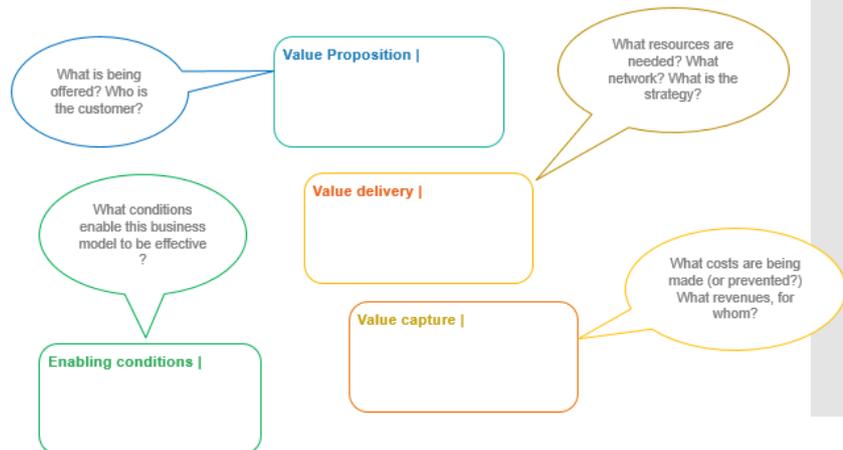
8 business model types identified

Example	City	Case author (field research)
Atlantis Water Fund Pilot Isar plan	Cape Town Munich	Laura Tozer Bernadett Kiss and Christine Wamsler
Eco-Valley Parc Marianne	Tianjin Montpellier	Attila Katona Anja Werner
Roadside tree concept Square meter for butterflies	Leipzig Edinburgh	Kathrin Hörschelmann Sander van der Jagt and Hade Dorst
Food for Good Newcastle's parks	Utrecht Newcastle	Sander van der Jagt and Hade Dorst Chris Martin
Urban Forest Fund Naturcent programme	Melbourne Hamburg	Kes McCormick and Bernadett Kiss Helen Taxopeus
Pla Built urban gardens Winter ice @The Forks	Barcelona Winnipeg	Panagiota Kotsila Attila Katona
School gardens Belvedere College Urban Farm	Győr Dublin	Attila Katona Panagiota Kotsila
Chinampas agriculture Park-Museum Vrana	Mexico City Sofia	Janice Asbury Yuliana Lazava and Stela Ivanova

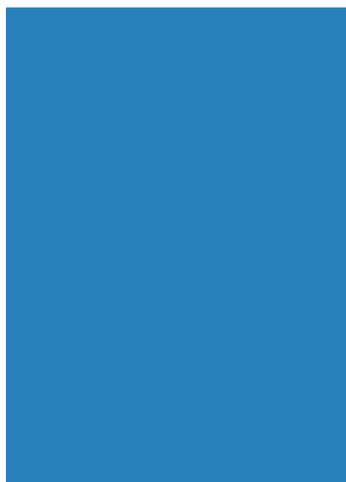
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Business Model Catalogue: Analysis of 54 in-depth urban NBS case studies

• To extract 'business models'



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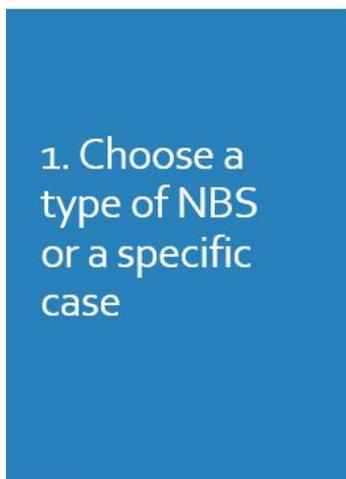
Welcome to the NATURVATION Business model puzzle!

NBS deliver different benefits to different actors. One of the key opportunities - and challenges - of implementing urban nature-based solutions is coordinating between different actors to realize an NBS. This puzzle helps coordinate between these actors to mix & match business models for different parties ("solving the puzzle").

Play the puzzle in 3 steps:



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1. Choose a type of NBS or a specific case



i.e. street trees, green roofs, sustainable drainage systems) or a specific project you are working on in your city or neighborhood. **(today we have 4 set cases!)**



This project has been funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No. 730243

2. Identify the values it creates, and for whom?

NBS type/case:

Who values what?	Economic benefits Read risk reduction material & energy efficiency, higher revenues economic growth, employment, employee retention	Biophysical benefits Biodiversity, water quality, cooling, filtration, air filtering	Social benefits Health, social cohesion, recreation, safety, sense of place, concentration, justice	Cultural benefits Identity, aesthetic value, sense of place, cultural heritage, recreation, creativity
Public actors (municipalities, water boards, provinces, national government)				
Private actors (business, real estate developers, roofing firms, gardening firms, landscape architects)				
Not-for-profit organisations (NGO's, stakeholder networks)				
Citizens & local communities				

Use the **puzzle pieces**: who values what? Use empty pieces if you want to add additional benefits (or write with a pen).



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Economic benefits

- Flood risk reduction
- Material efficiency
- Energy efficiency
- Higher revenues
- Cost reductions
- Economic growth
- Employment
- Employee wellbeing
- Water storage
- Entrepreneurship

Biophysical benefits

- Biodiversity
- Water quality
- Pollination
- Cooling
- Air filtering

Social benefits

- Health
- Social cohesion
- Safety
- Relaxation
- Noise reduction
- Concentration
- Justice

Cultural benefits

- Identity
- Aesthetic value
- Cultural heritage
- Symbolic value
- Creativity
- Sense of place

3. Mix & match NBS business models



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Use your puzzle template to select NBS business models that could be used for upscaling your NBS. Use the **Business Model Catalogue** as inspiration.

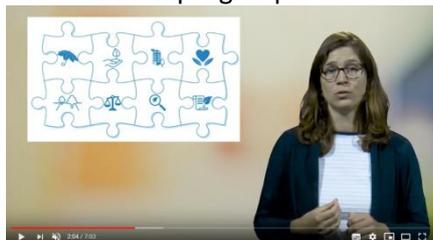
Further resources:

Business Model Catalogue for Urban NBS – an overview of eight models

The Business Models Catalogue for urban nature-based solutions presents eight different business models for urban NBS. These were identified based on 54 in-depth case studies of urban NBS, both in- and outside of Europe. These models explain which values propositions can drive urban NBS funding. Importantly, by combining different models, the funding capacity for urban NBS can be increased. Download it by clicking on the picture to the left.

Business Model Puzzle for urban NBS – a dialogue tool

The NATURVATION puzzle is a dialogue tool for understanding what values can drive the realization of an urban nature-based solution, and which stakeholders may be willing to pay for this value. It builds on the business model catalogue (above) and allows stakeholders like municipalities, real estate developers, NGO's and insurance firms to identify what values they can adopt to realize urban NBS. The material to play this puzzle as well as video instructions can be accessed on this webpage. The Business Model Puzzle material is suitable for one group of about 4-5 people; print it multiple times for multiple groups. The Business model displays can be used to show the eight business models



[Business model puzzle introduction \(video, 7 min\)](#)



[Business model catalogue introduction \(video, 5 min\)](#)