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Deliverable 15

Report: the UrbanByNature Programme in Brazil, the Caucasus, Korea and China
Recommendations on the Implementation Conditions for Nature-based Solutions in 4 Regional Hubs



Cover Figure: UrbanByNature's event in Brasília, March 2020

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Abbreviations

CN Framework	Connecting Nature Framework
NBS	Nature-based solutions
CGEE	Center of Strategic Studies and Management
GCAP	Green City Action Plan
CENN	Caucasus Environmental NGO Network
ICT	Information and Communication Technology
ICLEI ES	ICLEI European Secretariat
ICLEI SAMS	ICLEI South American Secretariat
ICLEI KO	ICLEI Korea
ICLEI EAS	ICLEI East Asian Secretariat
EBRD	European Bank for Reconstruction and Development
CRAES	Chinese Academy for Environmental Sciences
TCD	Trinity College Dublin
SKKU	Sungkyunkwan University
MCTIC	Brazilian Ministry of Science, Technology and Innovation
Urban-LEDS II	Urban Low Emission Development Strategies



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1. Executive summary

Deliverable 15 relates to various tasks within Connecting Nature's Work Package 5: "*Task 5.1 Taking stock of funding and co-designing regional Connecting Nature consortia*", "*Task 5.2 Launching regional multiplier hubs*", "*Task 5.3 Matching nature-based solutions*" and "*Task 5.4 Academy for regionalising nature-based solutions*".

Report's main objectives

- understand the co-funding potential in the four regional hubs of Brazil, the Caucasus, Korea, and China, undertaking efforts with the local partners in each regional hub to obtain mirror-funding to support UrbanByNature's activities (related to task 5.1);
- describe the preparation work and developments for the launch of the UrbanByNature programme in the regional hubs (related to Task 5.2);
- considering Milestone 4 as an internal report that summarised the processes undertaken by Connecting Nature's Work Packages 3 and 6, outline how their work could be used and complemented by the project's work at global scale, facilitated by the UrbanByNature programme (related to Task 5.3). The scope of the produced strategic report has been adjusted to avoid creating another stand-alone catalogue for technical nature-based solutions (as there are multiple from different nature-based solution projects already);
- describe the concept and implementation strategy of UrbanByNature, a knowledge-sharing and capacity-building programme designed to perform the global outreach of the Connecting Nature, bringing the project's valuable outputs to a global audience (relates to Task 5.4);
- perform reflections on the implementation conditions for nature-based solutions in each of the four regional hubs considering the Connecting Nature Framework (CN Framework), its three phases (planning, delivery and stewardship) and seven elements (technical solutions, governance, financing and business models, nature-based entrepreneurship, co-production, impact assessment, and reflexive monitoring);
- provide considerations and recommendations for nature-based planning, delivery and stewardship in the regional hubs of Brazil, the Caucasus, Korea, and China.

With the currently growing momentum towards expanding the awareness, capacity building and extending the knowledge base for nature-based solutions, UrbanByNature programme, launched with the support of the Connecting Nature project, comes right in time. With a global outlook, the UrbanByNature programme has an extensive outreach potential, more concretely in the four multiplier hubs of Brazil, the Caucasus, Korea and China. This report elaborates upon the establishment, timeline and outreach of the UrbanByNature programme. It also presents the status quo concerning nature-based solutions in the four regional hubs in terms of technical solutions, governance, financing and business models, nature-based entrepreneurship, co-production, impact assessment, and reflexive monitoring and lists recommendations on the implementation conditions for the nature-based solutions uptake in the regions. Below you will find the timeline of the establishment of the UrbanByNature programme and the highlights from the elements of the report.

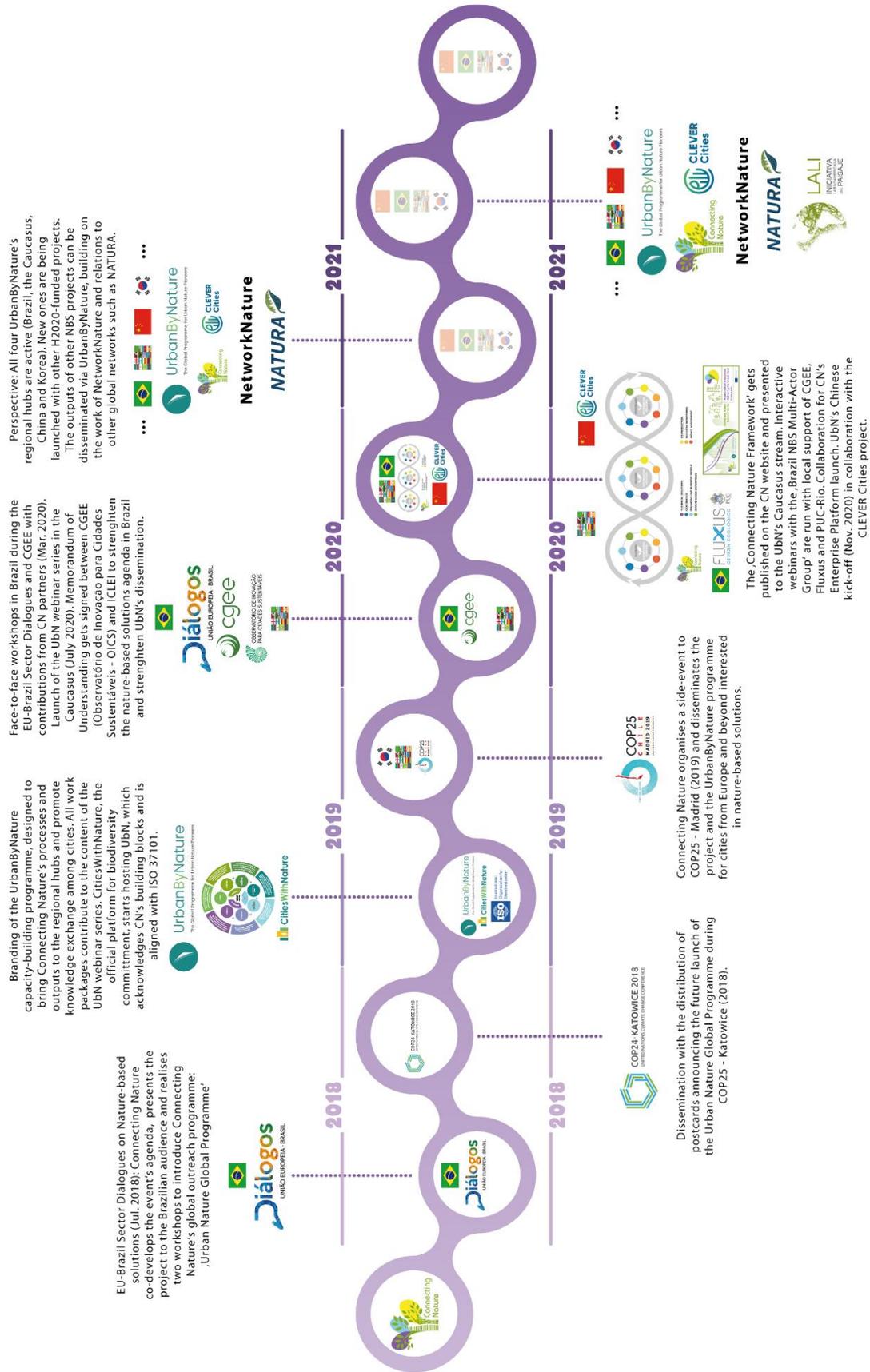


Figure 1. Timeline of the UrbanByNature programme



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UrbanByNature's Outreach - Highlights

- The UrbanByNature programme was successfully established in the field of nature-based solutions with almost 800 registrants coming from more than 80 countries.
- Face-to-face UrbanByNature launch events were held in Brazil, the Caucasus and Korea. Virtual launch event planned in China in November 2020.
- Global launch of UrbanByNature programme carried out in Bonn at the 10th Resilient Cities conference from 26th to 28th of June 2019.
- The UrbanByNature webinar series was completed within the Brazilian hub (>30 videos were generated, more than 5000 views so far). The webinar series of the Caucasian hub is ongoing. Each webinar has gathered at least 80 attendees so far - tendency to grow.
- With CitiesWithNature hosting the UrbanByNature programme, the longevity of the programme is safeguarded to extend beyond the project's duration.
- A Memorandum of Understanding was signed with CGEE ([Center of Strategic Studies and Management](#)) to safeguard long-term collaboration in the field of nature-based solutions in Brazil.
- A "Brazilian NBS Multi-Actor Group" was established in Brazil and webinars were conducted in Portuguese with the engagement of this group using interactive digital tools such as Miro and Mural.
- A Technical Catalogue on Nature-based Solutions in Brazil is under development by CGEE with contributions of the Brazilian NBS Multi-Actor Group and joint work with ICLEI via the signed MoU
- ICLEI and the Brazilian NBS Multi-Actor Group have been collaborating to assist CGEE in the development of a Sustainable City Innovation Observatory platform, which will have nature-based solutions as one of the axes
- Support of regional ownership by inviting relevant local actors such as from PUC-Rio, CGEE, and Fluxus Design to be active in the Brazilian NBS Multi-Actor Group

Status Quo in the 4 regional hubs - Highlights

Brazil

- There has been a formation of a 'Multi-Actor Nature-based Solutions Group in Brazil' with the engagement of key local partners in the nature-based solutions scene such as Fluxus Design Ecológico, PUC-Rio's Professor Cecília Herzog, and CGEE, which is supported by Connecting Nature by ICLEI SAMS and ICLEI Europe,
- Nature-based Entrepreneurship has also been stimulated in Brazil through the recognition of the private sector in the implementation and diffusion of nature-based solutions. However, there are still some difficulties such as the absence of legal incentives and the lack of interest of large companies in implementing alternative solutions to conventional ones.

Caucasus

- [Yerevan's Green City Action Plan](#) (GCAP) specifically mentions the Connecting Nature project and the term 'nature-based solutions', but there is no chapter devoted to nature-based solutions in the GCAP. That is desirable considering that it would help to disseminate the concept for future iterations of GCAPs in the Caucasus region. Moreover, the contact with the CENN network will help to disseminate the activities of the UrbanByNature programme in the Caucasus.

- There are some innovative nature-based typologies that were applied in the region (e.g. the famous Yerevan cascade and the upgrade of some central streets in Tbilisi, where elements of green corridors were implemented), but there is a wide field that remains unexplored by entrepreneurs. There are green-minded developers, architects and planners in the region, but nature-based solutions are not yet considered as mainstream and therefore a local market is still lacking.

Korea

- In June 2020, the Korean government announced the **Korean Green New Deal** to foster a green transition of infrastructure through fields such as green energy; ICT-based smart water and sewage management system; the creation of innovative ecosystems for green industries; and the spread of low-carbon distributed energy aligned with a renewable energy transition. Nature-based solutions are precisely a valuable approach to implement the Korean Green New Deal.
- One of the governance-related barriers to the planning and implementation of nature-based solutions in Korea is the fact that the country's economic growth-oriented development does not prioritise the value of nature and ecosystem services. However, related activities such as raising awareness, research initiatives and pilot projects are being made to shift the focus from a pure economic growth model towards a model of sustainable development.

China

- In China, a majority of operational costs of nature-based solutions are funded by the local governments themselves, on initiatives such as [“Sponge Cities”](#), or along programmes for ecological restoration and the establishment of urban parks.
- The uptake of the term nature based solutions in China only started after the [2019 UN Climate Summit](#), when a cross-sectoral platform was established to carry out further studies on the topic. In the Chinese context, a clear set of policy guidelines and practice guidance tools are needed for mainstreaming NBS-related implementation.

In the table, the entry points of the [Connecting Nature Framework](#) in each of the regional hubs are displayed. The ‘entry points’ related to the first element(s) of the CN Framework to be dealt with in a given regional hub, according to CN Framework interpretation of our regional partners.

UrbanBy Nature's Regional hubs	Connecting Nature Framework						
	Technical solutions	Governance	Financing and business models	Nature-based entrepreneurship	Co-production	Impact assessment	Reflexive monitoring
Brazil		●		●	●		
Caucasus		●	●			●	
Korea	●	●	●				
China	●		●				

Figure 2. Entry Points of the CN Framework in the regional hubs according to the regional partner' reflections



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Recommendations and key points in the 4 regional hubs

Brazil

- Brazilian institutions that provide funding could include NBS-related innovation and technology as a priority to transform cities, reducing their vulnerability to extreme weather events, and help them to adapt to climate change challenges.
- Awareness raising and the dissemination of ongoing planning frameworks such as the European Green Deal and the EU Biodiversity Strategy 2030, both of which support nature-based solutions in cities, are ways to encourage Brazilian decision-makers to search for more knowledge in the field and support the planning and implementation of nature-based solutions in the future.

Caucasus

- A catalogue with local nature-based solutions exemplars would be highly recommended, for city officials, decision-makers and relevant non-governmental stakeholders to better plan and implement nature-based solutions. Such a catalogue could be developed and used as an instrument for voluntary self-selection for the implementation of nature-based solutions as part of rehabilitation and/or reconstruction projects.
- Universities could be valuable partners to support co-production processes (e.g. organising multi-actor workshops, performing case studies).

Korea

- It would be recommended to provide case-based webinars to inform local governments of the potentials of nature-based solutions as well as their link to climate responses through implemented examples. Furthermore, methodologies targeting the delivery of nature-based solutions are also of interest - but these would need to be adjusted to the Korean context.
- It would be highly recommended to provide various communication opportunities between European municipalities with experience in the delivery of nature-based solutions and Korean municipalities, promoting a city-to-city exchange. Korean participants are usually interested in practical, in-depth, and technical content.

China

- It is recommended to harness the opportunities posed by the upcoming UN CBD COP15 in China to promote cross-departmental synergies towards a wider acceptance of planning and implementation of nature-based solutions in Chinese cities;
- It would be beneficial to provide a series of capacity-building activities via UrbanByNature to government officials and practitioners

Quotations from the regional hub in Brazil

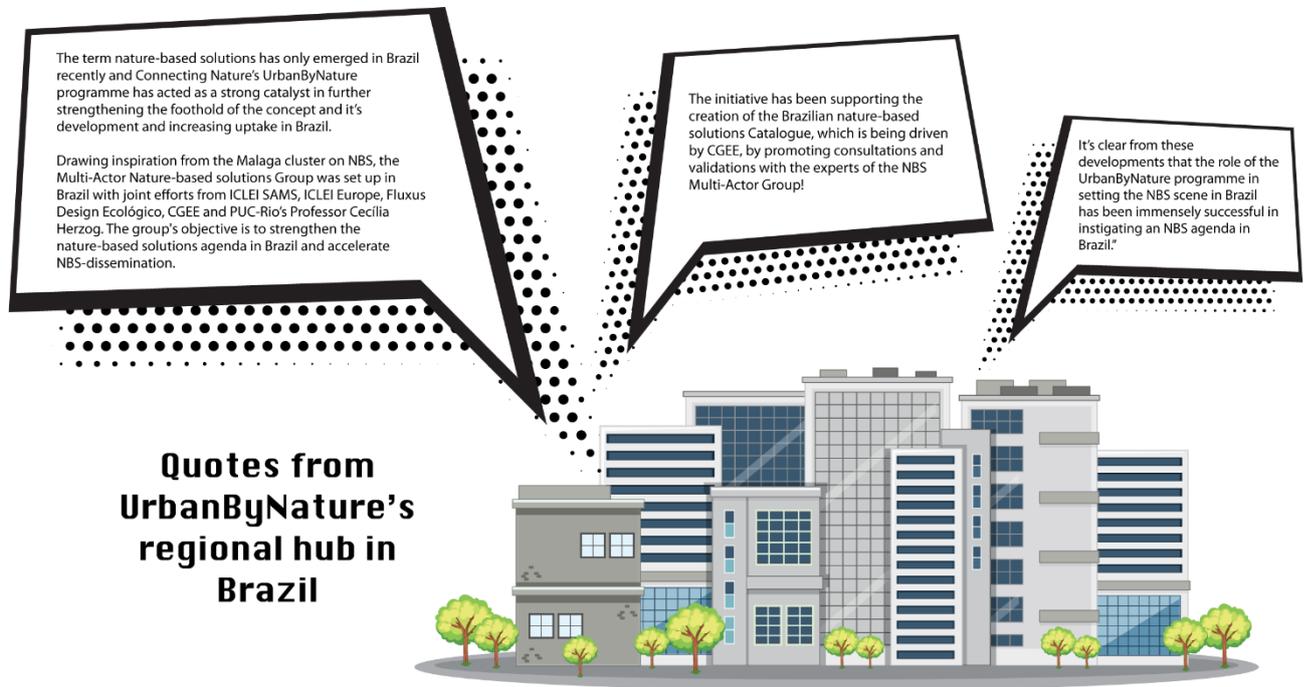
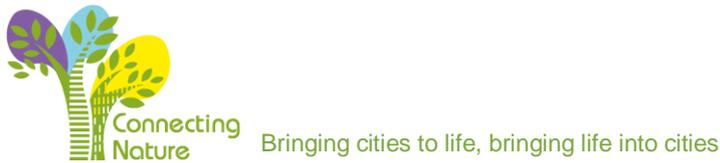


Figure 3. Quotations from the UrbanByNature Brazilian regional hub (Vectors by Starline and brgfx, Freepik)

2. Introduction

The Connecting Nature project, running from 2017 to 2021 under the coordination of the Trinity College Dublin, has more than 30 partners (ranging from local authorities, regional and civil society organisations, companies and research institutes) who are developing innovative planning processes in 11 cities. Among these, Genk (BE), Glasgow (UK) and Poznań (PL) are front-runner cities, and A Coruña (ES), Bologna (IT), Burgas (BG), Ioannina (GR), Nicosia (CY), Malaga (ES), Sarajevo (BA) and Pavlos Melas (GR) are fast-follower cities. To make sure that the valuable processes and outputs of the Connecting Nature project can also go global and inspire local governments beyond Europe in the planning, implementation and upscaling of nature-based solutions, a knowledge exchange and capacity-building programme called [UrbanByNature](#) was designed. Four regional multiplier city hubs around the world were considered as the main audience of UrbanByNature within the Connecting Nature project: Brazil, the Caucasus, South Korea and China.



To ensure the longevity of the UrbanByNature beyond the conclusion of the Connecting Nature project, the programme is also hosted by [CitiesWithNature](#), the commitment and reporting platform for biodiversity at global level, designed by ICLEI, IUCN, and the Nature Conservancy, which is endorsed by the [Secretariat for Convention on Biological Diversity](#).

The programme caters to a wide audience in general by being an open programme for anyone interested to attend, learn more about nature-based solutions and be inspired by a nature-based approach, also having access to the upscaling and large-scale implementation framing offered by the CN Framework. However, specific focus has been given to the four mentioned regions, starting with different streams being activated in Brazil, then the Caucasus, Korea, and China. Each region has a different context and different entry points for nature-based solutions, what will be discussed in the chapters of this report. UrbanByNature's targeted audience ranges from governments, businesses, academia, and non-governmental organisations, to city officials and representatives such as staff working for various departments (Environment and Greening, Urban Planning, Public Spaces, Public Health, Sustainable Development, Climate Change, Environmental Justice, Sustainable Procurement, et cetera), planners, technicians, resilience officers, and policy officers. Not only city representatives and actors from local governments of the four regional hubs have been joining UrbanByNature, but registrations from all over the globe indicate a clear interest in learning more about the planning, delivery and upscaling of nature-based solutions.

UrbanByNature consists of face-to-face meetings and online, step-by-step webinars to support cities in understanding a city-wide (or even region-wide) planning approach for innovative nature-based solutions to foster not only water and climate resilience, but also to promote social cohesion, foster human health and wellbeing, stimulating citizen empowerment. There is constant engagement of experts from Connecting Nature, the project cities and city administrators, who together make for a good mix of inputs and insights on several different topics, tailored to each regional context. UrbanByNature's steps are:

- [Join \(Step1\)](#)
- [Explore \(Step 2\)](#)
- [Prioritise \(Step 3\)](#)
- [Commit and Plan \(Step 4\)](#)
- [Implement \(Step 5\)](#)
- [Monitor \(Step 6\)](#)
- [Upscale \(Step7\)](#)



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GET IN TOUCH

The Connecting Nature project will launch the first phase of the UrbanByNature Programme with its 7 steps worldwide in 2019 with the global city network ICLEI – Local Governments for Sustainability.

connecting.nature@iclei.org

REGISTER TO FIND OUT MORE



STEP 1. JOIN

STEP 2. EXPLORE

STEP 3. PRIORITISE

STEP 4. COMMIT & PLAN

STEP 5. IMPLEMENT

STEP 6. MONITOR

STEP 7. UPSCALE

Programme Steps



Our curriculum reflects a co-creative approach, in which not only principles and methods are shared, but participants work together to actively engage in making cities and towns more resilient towards water and climate change challenges and in transforming their neighbourhoods.

The programme is powered by ICLEI - Local Governments for Sustainability with contributions by more than 30 partners (cities, researchers, practitioners and experts) from Connecting Nature project and hosted by CitiesWithNature. The project's 11 cities are sharing their expertise in planning for and using urban nature's potential and are keen to exchange with other global cities.

Figure 5. Screenshot of the Connecting Nature's website with the "UrbanByNature's Programme Steps"

As Connecting Nature has been analysing the impact of large scale nature-based interventions in European cities with regards to climate change adaptation, health and well-being, social cohesion and sustainable economic development at local level, the UrbanByNature programme has been promoting peer-to-peer learning, capacity-building and knowledge exchange between city officials and planners that are already more experienced in implementing nature-based solutions as well as those that have the wish to realise them but still lack capacity and knowledge.

Each step is brought to the fore in dedicated webinars, where experts and city officials share knowledge and experiences with the large audience pertinent to the relevant step of the cycle. The webinar's audience is formed by members who registered for UrbanByNature and those who found it through different channels. The registration is free of charge. At the moment, there are almost 800 registered members, only growing in number with time.

This programme not only organises webinars on different thematic areas covered by the CN Framework (such as technical nature-based solutions, co-production and nature-based enterprises) but also dedicated face-to-face workshops, such as the one realized in the Brazilian context at the III EU-Brazil Sector Dialogues on Nature-Based Solutions in Brasília (March 2020). During the event, a dedicated session to explore the concept of Nature-based Entrepreneurship attracted almost 100 participants, enabling the rise of a Brazilian NBS Multi-Actor Group on nature-based solutions (see details in Chapter 6).

Today the UrbanByNature programme has registrants from more than 80 countries and more than 800 registrants.



Figure 6. UrbanByNature's registrants from more than 80 countries

3. Co-Funding in UrbanByNature's regional hubs

The chapters of this report are organised along the tasks within WP5. Therefore, this is why the co-funding context in the different regional hubs is described before the proper design of the UrbanByNature programme. The Connecting Nature project has been supporting regional partners and multiplier cities to apply for co-financing from complementary funding programmes in China, South Korea, and Brazil to enable Connecting Nature's outputs to increase the project's impact through a vast global outreach with offers of capacity building and knowledge exchange in nature-based solutions beyond Europe. However, co-funding in Brazil, Korea and China has proven to be a challenging task, as efforts to acquire co-funding in these regions have encountered barriers such as lack of information in regards to funding requirements and timelines, low degree of responsiveness from funding initiatives and inadequacy of candidature due to co-funding mechanisms focusing solely on research.

Despite the efforts by Climate Alliance to compile potential funding sources and programmes to support the setting up and implementation of Connecting Nature's global outreach programme in each of the four regions, the identified funding sources have shown to be unsuitable for Connecting Nature's scope. The existing funding programmes usually focus on research outputs and do not allow funding of local governments and related political bodies. Additional barriers are that funding/granting figures are too large, and therefore inadequate for Connecting Nature's scope and/or because the application process, thematic focus and timing are not suitable.

In China and Korea, for example, cities are not eligible for funding. Therefore, two local research partners agreed to take the lead in applying for co-funding. In China, the Chinese Academy for



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Environmental Sciences (CRAES) led the application, supported by ICLEI East Asian Secretariat (ICLEI EAS) ICLEI European Secretariat (ICLEI ES) and TCD. Although the co-funding application was successful in the first stage, it did not make it to the second stage. In Korea, it is challenging to find detailed funding application requirements in the English language. According to the funding institution's requirements of the National Research Foundation Korea (NRF), Korean partners are only eligible if they were mentioned in the H2020 second stage proposal submission to the European Commission as partners. As the initial Korean research partner has switched from Yonsei University to Sungkyunkwan University (SKKU), ICLEI Korea (ICLEI KO) engaged in communications with the funding body of NRF to enable SKKU's eligibility. The Connecting Nature consortium arranged for SKKU to become a partner in the project. SKKU finally got in the position to lead an application and was ready to submit a proposal, but due to academic staff and structural changes within the university, the process could not be taken forward. Because of the situation arising from COVID-19 in Asia, it is highly unlikely that there will be another funding call this year suitable for nature-based solutions.

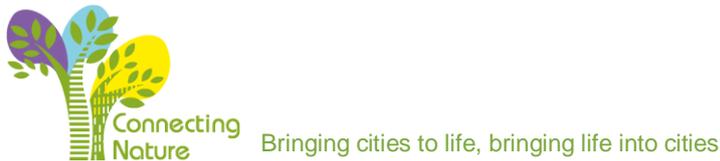
In Brazil, with support of ICLEI South America Secretariat (ICLEI SAMS), who has been in close contact with the Brazilian Ministry of Science, Technology and Innovation (MCTIC), shared the information that funding mechanisms are for projects with a clear research focus and do not allow the co-funding of local governments or non-governmental institutions. Therefore, ICLEI ES, SAMS and TCD have joined forces with MCTIC, who is pushing for nature-based solutions agenda in Brazil, and engaged in co-organising international seminars on nature-based solutions in Brasilia (Brazil), in the framework of the [EU-Brazil Sector Dialogues](#) on Nature-based Solutions.

To overcome co-funding barriers and ensure that the UrbanByNature programme would play out in the regional hubs, ICLEI ES has designed the programme with a solid digital format (see Chapter 4). Apart from activities in online format, face-to-face workshops in the different regional hubs were carried out. To enable these events to take place even without regional mirror-funding or other external financial support, ICLEI's subcontracted regional offices (ICLEI SAMS, ICLEI KO and ICLEI EAS) have joined efforts to establish regional partnerships and to organise workshops and seminars back-to-back to relevant NBS-related events in each regional hub. This has taken place so far not only due to the support of ICLEI's regional offices, but also through the engagement of the Connecting Nature partners GeoGraphic and CENS, who have been identifying relevant local partners for the nature-based solutions agenda and pointing out back-to-back opportunities in the Caucasus region, considering that no co-funding is available by the EC for the Caucasus.

To mark the kick-off of the UrbanByNature programme in each regional hub, it was relevant to realise face-to-face launching events. Three launches were organised so far without co-funding in Brazil, the Caucasus and Korea (see Chapter 5). Because of the pandemic situation that started in Asia at the end of last year, the launch of the UrbanByNature programme in China had to be postponed several times. It is rather likely that it will take place next year in 2021.

3.1 - Co-Funding in the Brazilian Regional Hub

In search of co-funding opportunities to further develop the Connecting Nature project within the Brazilian context, a number of Local National Contact Points and other assistance services were



contacted to understand the requirements for funding:

- CONFAP (<http://confap.org.br/>)
- CNPq (<http://www.cnpq.br/>)
- FINEP (<http://www.finep.gov.br/>)
- EU H2020 delegation in Brazil

The obtained answers (see ANNEX) did not lead to the identification of co-funding opportunities to support local governments or local nature-based SMEs. In regards to mirror funding of Brazilian cities through international organisations and initiatives, ICLEI ES explored options with INCOBRA, whose main objective is to focus, increase and enhance Research & Innovation Cooperation Activities between Brazil (BR) and European Union (EU) actors. The obtained information was that the city, to be funded, would need to be located outside Brazil, and in the case of ICLEI SAMS, if the Secretariat is located in Brazil, indeed this would prevent eligibility for EU funding.

In addition, ICLEI SAMS combined projects activities to further support the development of UrbanByNature's activities. The first example of this type of engagement was the second International Seminar for Nature-Based Solutions in Brasília, July 2018, when ICLEI ES, ICLEI SAMS, the Brazilian [Center of Strategic Studies and Management](#) (CGEE) co-developed the agenda of the event and agreed on the invitation of national and international relevant actors to join. Other examples drawing from existing initiatives are the integration of nature-based solutions into the text of the Climate Action Plan for Recife and Fortaleza, which are being developed in the framework of the project [Urban-LEDS II](#) (Urban Low Emission Development Strategies) and the introduction of the concept into the Local Biodiversity Strategy and Action Plan for the Metropolitan Region of Campinas, which is part of the [INTERACT-bio](#) project. This project also enabled the dissemination of events and newsletters as well as the co-funding of travel expenses for 3 Brazilian city representatives (Campinas, Belo Horizonte and Londrina) to participate in the Connecting Nature's Workshop on Nature-based Entrepreneurship in Brasília on 11 March 2020, during the [III Nature-based Solutions International Seminar](#) of the EU-Brazil Sector Dialogues.

Within this face-to-face event, which happened right before the COVID-19 pandemic arrived in Brazil, the workshops on UrbanByNature's Way Forward in Brazil and on Nature-based Entrepreneurship were carried out with the participation of almost 100 people, culminating in the announcement of a Memorandum of Understanding (MoU) for Intent of collaboration among ICLEI ES, ICLEI SAMS and CGEE. CGEE has offered a cocktail during the event to celebrate the signature of the MoU, whose purpose is to set a common framework of declaration for cooperation amongst the aforementioned parties to jointly promote both the UrbanByNature and the Sustainable Cities Innovation Observatory ([Observatório de Inovação para Cidades Sustentáveis](#) - OICS, Sustainable City Innovation Observatory) initiatives. Both programmes are set up for expertise sharing and capacity development on nature-based solutions to empower professionals and decision-makers to plan and implement urban sustainable development. Within the scope of this partnership, there are valuable co-funding opportunities. ICLEI has been collaborating with CGEE's to increase the momentum on nature-based solutions in the Brazilian context by contributing to the [launch of a web-platform](#) in November 5th 2020 - the Sustainable City Innovation Observatory Platform - and to co-develop a Technical Brazilian Catalogue for Nature-based Solutions in 2021.



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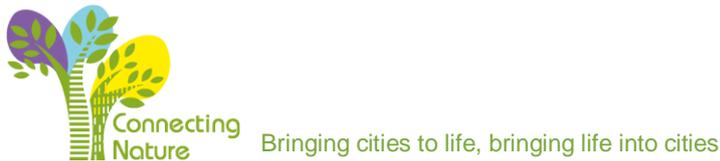
Still, ICLEI ES and ICLEI SAMS will keep searching for alternative local funding sources. Conversations with CGEE and other partner organisations are taking place to explore the possibility of co-funding for the elaboration of the Catalogue mentioned above.

3.2 - Co-Funding in the Caucasian Regional Hub

The Connecting Nature project remains as the main funding source of the Caucasian regional hub. However, the project partners GeoGraphic and CENS have been seeking additional sources for co-funding of future events. The State Committee of Sciences of the Ministry of Education, Science, Culture and Sport of Armenia is one of these sources, which provides grants for the organisation of events. Therefore, CENS, as an Armenian focal point of Caucasian regional hub, expects co-funding for the organisation and implementation of the final workshop of the Caucasian hub to be held in Yerevan in 2021. In addition to this, the Georgian Association of Landscape Architects (GALA), which is cooperating with GeoGraphic in Connecting Nature, has received funding resources under the H2020-funded [GOGREEN ROUTES](#) (launched in September 2020) and through this project, some funds were allocated to GALA for the realisation of a nature-based solutions stakeholder workshop in Tbilisi in the future, probably in 2022. Considering that GeoGraphic and ICLEI are partners in both projects, synergies can be sought - also due to the fact that Connecting Nature and GOGREEN ROUTES are complementary in terms of content on nature-based solutions. Joint future events could be considered as a co-funding resource. There is also the expectation that a high-profile venue in Tbilisi (e.g. at Academy of Fine Arts) will be hosting the Caucasus Hub face-to-face events free of charge. Another smaller workshop space is expected to be leveraged by GALA enabling discussion meetings of the nature-based solutions professional community.

3.3 - Co-Funding in the Korean Regional Hub

The ICLEI Korean Office (ICLEI KO) has been supporting ICLEI ES and TCD in analysing the co-funding mechanism for Korea, as there is no information available in English. The National Research Foundation Korea (NRF) only considers co-funding applications from Korean research partners that were official members of a H2020 project consortium from the start of the second stage of proposal submission to the EC. In the case of Connecting Nature, the Korean research collaborator changed his position during the contract negotiation phase from Yonsei University to Sungkyunkwan University (SKKU). SKKU and ICLEI Korea office (ICLEI KO) had lengthy discussions with NRF with the intent to have SKKU considered as eligible for the NRF co-funding scheme. To this end, SKKU also became an official partner of the Connecting Nature consortium in May 2018. Yet, what NRF requires in the funding application does not cover the activities foreseen by the UrbanByNature programme, which, among others, is targeting knowledge exchange, capacity building and interaction between participants of local governments, SMEs, etc. The application tends to seek R&D initiatives, which explore and explain new knowledge or principles of natural science and technology to enable practical achievements and to assess the result of research impact such as the number of scientific papers published. In short, the criteria of funding do not seem to fit the co-funding of the UrbanByNature's activities in Korea, considering that the UrbanByNature programme is a knowledge exchange and capacity building programme to promote the global outreach of the Connecting Nature project.



When SKKU was ready to lead an application for submission to the NRF, new academic staff and structural changes occurred within the university, so the process was not taken forward. Considering the outbreak of the COVID-19 in Asia, there were delays. To unlock future co-funding opportunities in Korea, a new expert of SKKU in the area of nature-based solutions or green infrastructure would need to be identified for him to review suitability once the call is relaunched. The scenario is not a favourable one, as non-research partners such as local governments and SMEs are not eligible for NRF co-funding, which makes it challenging for these parties to get involved in the programme. Still, ICLEI ES, ICLEI KO, SKKU, and TCD will keep searching for alternative local funding sources.

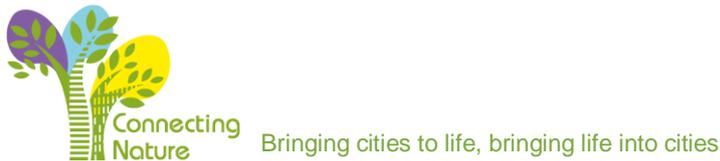
3.4 - Co-Funding in the Chinese Regional Hub

Currently there is one official co-funding mechanism between the European Commission and China with the Ministry of Science and Technology (MoST). However, from ICLEI's experience, the process is unfortunately not integrated enough, lacking a coordination mechanism, i.e. there is no guarantee that getting granted by the EC will lead to co-funding from the Chinese side and, vice versa.

In the case of the Connecting Nature project, upon approval by the EC, ICLEI East Asia (EAS) supported the composition of a Chinese consortium, led by the Chinese Academy of Environmental Sciences (CRAES) with participation of the Chinese Society of Urban Studies and Eco Foundation Global. By the end of 2017, MoST opened an application call for H2020 projects granted in 2016 and in 2017. In early 2018, the Connecting Nature related consortium submitted a proposal focusing on the research of ecosystem services in support of sustainable urbanisation. Although the proposal entered the final round, leading to CREAS and ICLEI EAS to attend a virtual interview in August 2018, unfortunately the consortium was informed in October 2018 that the application failed to get co-funding from MoST. Therefore, the existing budget allocation via subcontracting can mainly cover ICLEI EAS' staff hours for coordination, organisation and dissemination of UrbanByNature's online activities and a few face-to-face events. Creativity is needed to allow for increasing the expected impact of the programme in China.

According to the existing mechanism, repeating MoST co-funding applications are not possible, meaning that there is no further room to officially apply for co-funding from the Chinese side. To mitigate the impact, ICLEI EAS has been trying to synergise Connecting Nature components with other projects related to nature-based solutions in the form of in-kind support (not financially). For example, the CLEVER Cities project, an EU-funded nature-based solutions project focusing on urban regeneration in which ICLEI EAS is also involved as a subcontracted institution, has received MoST funding. Therefore, there is the opportunity to organise Connecting Nature events back-to-back to CLEVER Cities events, also considering the complementary nature of both projects. Further, the UrbanByNature programme will be further expanded within CLEVER Cities, which represents a further argument for the realisation of project activities back-to-back to one another.

As the UrbanByNature programme could not be launched this year in China due to the outbreak of the COVID-19 pandemic, ICLEI EAS has been analysing the contextual situation to promote the launch and dissemination of the UrbanByNature programme in China during international forums and conferences, as for example, the upcoming the 4th High-Level Forum on Sustainable Urban Development to be held in Chengdu, Sichuan, in November 2020, as well as the highly anticipated



UNCBD COP15 to be hosted in Kunming, Yunnan, China, in May 2021. This event focusing on biodiversity conservation is a great opportunity for disseminating nature-based solutions in the Chinese context and enhancing their role in protecting biodiversity in the urban environment. In addition, ICLEI EAS is taking the lead to organise the 7th Global Biodiversity Summit of Cities & Subnational Governments, one of the parallel events to CBD COP15. This event expects high-level participation from a large number of countries across the world. With the endorsement and financial support from the local government, the Chinese regional hub of Connecting Nature will be able to reach a wider public at a relatively low cost.

ICLEI EAS would like to provide a recommendation that the H2020 and the Chinese MoST programmes further discuss on how to strengthen the existing co-funding mechanism. There is a need to align the application processes and timelines on both sides, exploring co-assessing mechanisms so that a joint decision can be made whether the consortium could win funding from both sides (or not at all). Another barrier at the moment is that technically, in the EU-China context, the EC can only fund institutes located within Europe while MoST can only fund those located in China. So considering the context of bilateral collaboration, if only one side is granted with funding, realistically it becomes difficult, if not impossible, for joint cooperation to happen smoothly and lead to practical collaboration between consortium members in the two regions.

4. Design of the UrbanByNature Programme

The [UrbanByNature](#) programme has been designed after a thorough analysis of existing platforms for nature-based solutions and related topical areas to understand potential players/competitors in the field, the mission, vision and unique selling points of UrbanByNature. Prior to the UrbanByNature's design, there was no programme on nature-based solutions accounting for the complex combination of departments, sectors and organisations of local governments involved in sustainable urban planning. The programme's vision is "to give local governments, civil society and businesses the opportunity to co-create a sustainable and resilient urban future using nature's innovative potential." UrbanByNature has been founded on a solid foundation taking into consideration relevant urban greening methodologies such as the [Green Climate City programme](#) and the [Green City Action plan methodology for the EBRD](#), both co-developed by ICLEI, as well as the [CitiesWithNature](#) Initiative, designed by ICLEI, IUCN and the Nature Conservancy. The conceptual approach of UrbanByNature is also aligned with the International standard [ISO 37101](#) "Sustainable development in communities", which establishes requirements for a management system for sustainable development in communities, including cities, using a holistic approach, with a view to ensuring consistency with the [UN Sustainable Development Goals](#).

Further, [UrbanByNature](#) was designed in alignment with the elements of the "[Connecting Nature Framework](#)" (see section 4.2).

Target Audience

The programme's main [target audiences](#) are city officials and representative such as:



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- city staff working for Departments of Environment and Greening, Urban Planning, Public Spaces, Public Health, Sustainable Development, Climate Change, Environmental Justice, Sustainable Procurement, etc., as planners or technicians
- resilience officers
- policy officers
- political representatives

However, other audiences are equally welcome:

- green entrepreneurs or small and medium enterprises, i.e. 'nature-based enterprises'
- design professionals
- non-governmental organisations
- associations
- citizens interested in nature-based solutions
- community leaders
- researchers and scholars

UrbanByNature's Registration

The UrbanByNature's registration procedure complies with the (EU) 2016/679 - General Data Protection Regulation (GDPR). When realising the [registration process](#) via website, registrants are required to tick a check box agreeing to have their contact details added to a contact database to become a member of UrbanByNature in order to receive information on related events and programme activities.

The registration form asks for the registrant's name, field of work, position, organisation, country and email address. Further, the form enables registrants to point out the UrbanByNature's step(s) that they are especially interested in (see screenshot below):

Which of the following programme step(s) are you especially interested in?

- EXPLORE - Understand how far your city has already come in strengthening urban nature (e.g. policy objectives, projects)
- PRIORITISE - Identify the urban challenges which nature-based interventions should help address within your city and elaborate indicators
- COMMIT and PLAN - Learn how to foster commitment to common goals for urban nature and to develop an action plan for your intervention
- IMPLEMENT - Tap into knowledge required to implement an action plan for nature-based interventions
- MONITOR - Track your implementation progress by using previously selected indicators and evaluate the results
- UPSCALE - Learn to develop a strategy to promote nature-based solutions in your city and region and replicate good practices

Figure 7. Screenshot of part of UrbanByNature's registration form



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As of September 2020, there are almost 800 registrants to UrbanByNature receiving regular updates and invitations to the programme's activities.

4.1 - UrbanByNature's Integrated 7 Steps

Drawing from ICLEI's long-standing experience in co-implementing integrated urban management and planning processes, the programme was structured around step-by-step modules to support cities in understanding the planning approach for innovative nature-based solutions to foster water and climate resilience, providing environmental, social and economic benefits. However, these steps are not to be understood as a corset. The seven steps that structure the knowledge-exchange and capacity-building programme were set as a pragmatic approach to help out local governments embark in the planning and delivery of nature-based solutions. Of course, in practice the steps will not be linear but rather overlap with one another in both time and concept. Considering the complexity of city politics and the particular dynamics within cities, back-and-forth loops might not only be required, but even recommended to allow for adjustments and improvement. So the structure of 7 steps of the UrbanByNature programme serve as an instrument for cities to visualise their planning process, identify their unique starting points and plan for the different planning phases throughout time.

UrbanByNature's curriculum also reflects a co-creative approach, in which not only principles and methods are shared, but participants are invited to work together to actively engage in making cities and towns more resilient towards environmental change challenges and in transforming their neighbourhoods into more social cohesive and inclusive ones, also contributing to job creation. Therefore, the co-creation approach should pertain to the whole process (see below in the middle of UrbanByNature's conceptual cycle: "Learn and improve together").

The programme is structured around seven steps:

[STEP 1 | JOIN](#)

Join a community of active subnational and local government planners and policy-makers, businesses, researchers, practitioners and interested citizens.

Engage in shaping and participating in a facilitated process to share your own expertise and learn with and from committed peers with the ambition to create a greener, more sustainable and resilient future in your city. Join hands with others who are equally eager to use the potential urban nature has to offer and take a step closer to your city's urban development.

[Step 2 | EXPLORE](#)

Explore how far your city has already come in strengthening urban nature and identify how to lift the barriers to integrating more nature into your city.

Consider your local urban fabric, its particularities and challenges. Explore and identify existing strategic objectives within your city, relevant urban policies and plans in place to see where your city or town is starting from and understand what might be possible in terms of space, decision-making and engagement. We support you in understanding current roles and responsibilities of local urban

actors. Learn how to better identify opportunities to make your city more resilient and spot opportunities for creative investment!

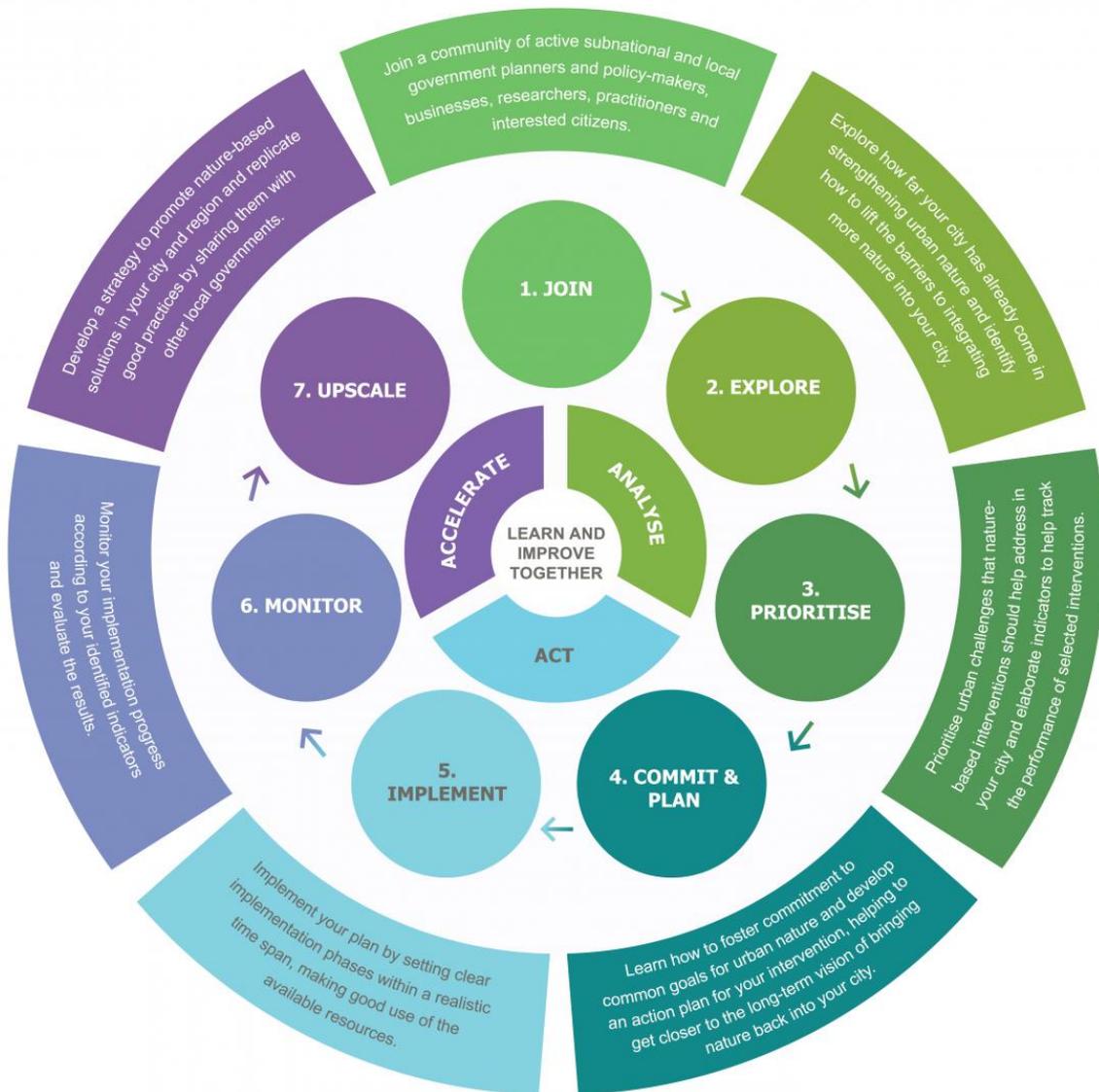


Figure 8. UrbanByNature's integrated 7 Steps

Step 3 | PRIORITISE

Prioritise urban challenges that nature-based interventions should help address in your city and elaborate indicators to help track the performance of selected interventions.

Prioritise the themes or urban challenges on which you want to focus on while participating. Learn how to do this together with citizens as users and supporters of urban nature. In this step, other cities share how they selected their approach and engaged with citizens. Cities and partners from the project support you in identifying indicators to help you track the impact of your efforts.



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[Step 4 | COMMIT & PLAN](#)

Learn how to foster commitment to common goals for urban nature and develop an action plan for your intervention, helping to get closer to the long-term vision of bringing nature back into your city. Get support in convincing local decision and policy-makers to commit to common goals. This step facilitates outlining an action plan, in which priority topics and intervention areas are developed together with citizens, responsibilities are assigned, and feasibility is accounted for as far as possible.

[Step 5 | IMPLEMENT](#)

Implement your plan by setting clear implementation phases within a realistic time span, making good use of the available resources.

Use the potential of nature-based solutions to address urban development challenges. This step invites public and private authorities and companies offering nature-based products and services to navigate the interests and offers of both and facilitate the implementation of the planned interventions. Participating companies get to learn from companies already in the nature-based solutions market on how to extend their portfolio.

[Step 6 | MONITOR](#)

Monitor your implementation progress according to your identified indicators and evaluate the results.

Track and evaluate how your planning and implementation process is progressing and use your assessment to adjust and improve your approach where necessary. Learn how the project's European cities approached evaluation beyond the use of indicators, and particularly evaluation of the soft process of co-creation. Monitoring and evaluating a process is not about measuring everything that changes, but measuring what you want to change and understanding the dynamics driving it.

[Step 7 | UPSCALE](#)

Develop a strategy to promote nature-based solutions in your city and region and replicate good practices by sharing them with other local governments.

Prepare the grounds to replicate and adapt nature-based solutions across your city and share your experience with other cities and towns in your region. Learn to check the transferability of your solution to another place or planning process, so it fits the new local context in terms of its spatial features and needs as well as the types of partners that could be involved. You hear from other local governments how they went about applying their interventions elsewhere in their city. In addition, you can share your experience with upscaling as well.

During approximately one year in each stream of a regional hub (meaning, a set of region and context specific events), participants are guided through the programme's cyclical approach,



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listening into thematic modules that cover a range of aspects relevant for nature-based city planning and upscaling. The programme has been receiving contributions by more than 30 partners within the Connecting Nature project (cities, researchers, practitioners and experts) and is also designed to receive contributions from other H2020-funded nature-based solutions projects.

4.2 – Consideration of the Connecting Nature Framework

The CN Framework is designed to give a very hands-on and comprehensive guide to cities that want to implement nature-based solutions. The CN Framework is a process tool that assists cities in “learning-by-doing”. It supports them in creating a 360 degree picture of implementing and scaling nature-based solutions, integrating all important elements in a comprehensive way. The framework helps cities to build a narrative of their nature-based solutions and their way of working. This allows cities to better communicate about what they are doing and it helps them to create synergies and collaborations, to further scale nature-based solutions.

The CN Framework was co-produced by academic partners, cities and SMEs. Through a learning-by-doing approach, they explored which needs the cities have with regards to planning, delivery and stewardship of nature-based solutions. This led to the identification of the critical elements of nature-based solutions implementation that the framework builds on. These were operationalized in a process tool with concrete guidelines and steps for all framework elements. The cities tested this approach and in an iterative process, the framework was adapted based on what was learned from the cities’ practice.

In this co-production process, innovations and connections of innovations that result from the cities’ implementation processes and lessons learned that will benefit other cities interested in developing and scaling nature-based solutions, were identified. The main challenge for scaling nature-based solutions is to facilitate and embed these innovations in the city’s context, including the practices, institutional structures and ways of knowing and relating. The CN Framework offers a tool to guide the planning, delivery and stewarding of nature-based solutions on a large-scale in cities, making sure you can reap and scale all the benefits that come with nature-based solutions.

The CN Framework is a process tool that helps cities specifically and urban practitioners more generally to navigate the path towards implementation of nature-based solutions on a large scale. Importantly, the framework embraces the implementation of nature-based solutions as an iterative process. While there is of course a direction of travel in terms of rolling out nature-based solutions and their benefits on a city scale, the steps involved in this journey are interrelated and non-linear. In this sense, the CN Framework is different from traditional urban planning approaches that move in a linear process from planning to delivery. It offers a more realistic representation of the complexities in such processes and is thus better able to guide cities through them.

Nature-based solutions are at the core of the framework in every phase of the process. The CN Framework distinguishes 3 phases: planning, delivery and stewardship. In the planning phase, the city is in the process of defining the goals for the nature-based solution, developing the various innovations needed to realise it – including for example the technical design, new governance models – and identifying the activities required to implement it, for example a specific co-production



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process. The delivery phase refers to the process of implementing the nature-based solution including all its innovations. In the stewardship phase, stakeholders work on the ongoing participatory management and maintenance of the nature-based solution. Stewardship includes the monitoring and evaluation of the nature-based solutions, which enables adaptations to be made to ensure long-term sustainability and resilience. The CN Framework is explained further in [this guidebook](#).

Throughout each phase there are seven separate elements that cities need to consider when shaping their individual nature-based solution. These elements are:

- Technical solutions: the detailed design of the nature-based solution and its features.
Guidebook: <https://connectingnature.eu/innovations/technical-solutions>
- Governance: the organisational conditions and skills for connecting different actors across sectors under the same vision of nature-based solutions for the city
Guidebook: <https://connectingnature.eu/innovations/governance>
- Finance and business models: the different sources of finances and business models for the delivery, long-term maintenance and operation of the nature-based solution that inform a new approach as a local business spin-off and attractor;
Guidebook: <https://connectingnature.eu/innovations/financing-and-business-models>
- Entrepreneurship: the stimulation of new market and business opportunities through and for nature-based solutions
Guidebook: <https://connectingnature.eu/innovations/nature-based-enterprises>
- Co-production: the process of active involvement and Part taking of different actors in the planning, delivery and stewardship of nature-based solutions
Guidebook: <https://connectingnature.eu/innovations/co-production>
- Reflexive monitoring: the process of facilitated, continuous and adaptive monitoring and assessment of the whole nature-based solutions process to capture lessons learnt in real time and adapt the planning and implementation process
Guidebook: <https://connectingnature.eu/innovations/reflexive-monitoring>
- Impact assessment: the set of indicators that will be used as a reference for monitoring and evaluating nature-based solutions implementation and scaling that is adaptable to every city context and open to inputs over time
Guidebook: <https://connectingnature.eu/innovations/impact-assessment>

The CN Framework encapsulates the many elements that need to be considered for the implementation of nature-based solutions on a large scale in cities. Specifically, it guides through the many steps that need to take place to support the implementation around these elements. The CN Framework is therefore not meant as a linear blueprint with each step leading to the next; instead, it is meant to raise questions about what are starting points and what steps are needed in a city's or community's context and needs.



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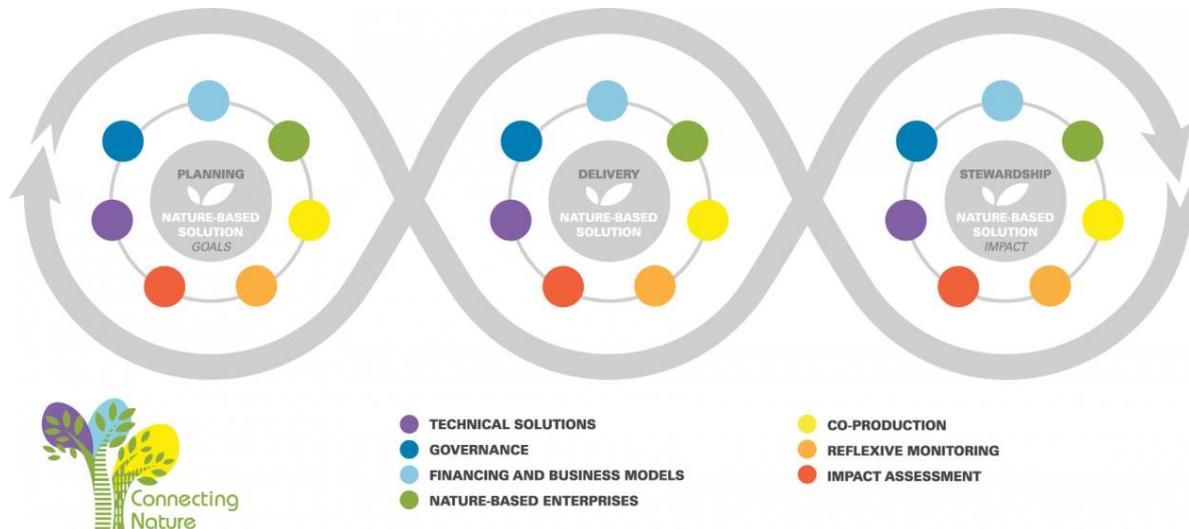


Figure 9. CN Framework

When the UrbanByNature programme was designed at the end of 2018 and beginning of 2019, the CN Framework was still being co-produced by the CN partners at that stage - see the timeline below. So in the design of the Brazilian stream the UrbanByNature programme took into account the elements of the CN Framework, as defined in Deliverable 5 and published online in the CN guidebooks, and connected to the steps of UrbanByNature. The final CN Framework figure was co-produced with the scientific partners, frontrunner cities and two follower cities and presented to the consortium in July 2020. Therefore, in the design of the Caucasian stream a webinar on the CN Framework was developed and presented via UrbanByNature in September 2020.

In summary, the CN Framework is a process tool that helps to navigate the path towards implementation of nature-based solutions on a large scale as an iterative process between the three phases in which all CN Framework elements are considered. The UrbanByNature programme with its seven steps is designed to disseminate the knowledge co-produced by the CN partners and translate this into suitable formats (e.g. webinars, workshops) for the regional hubs.

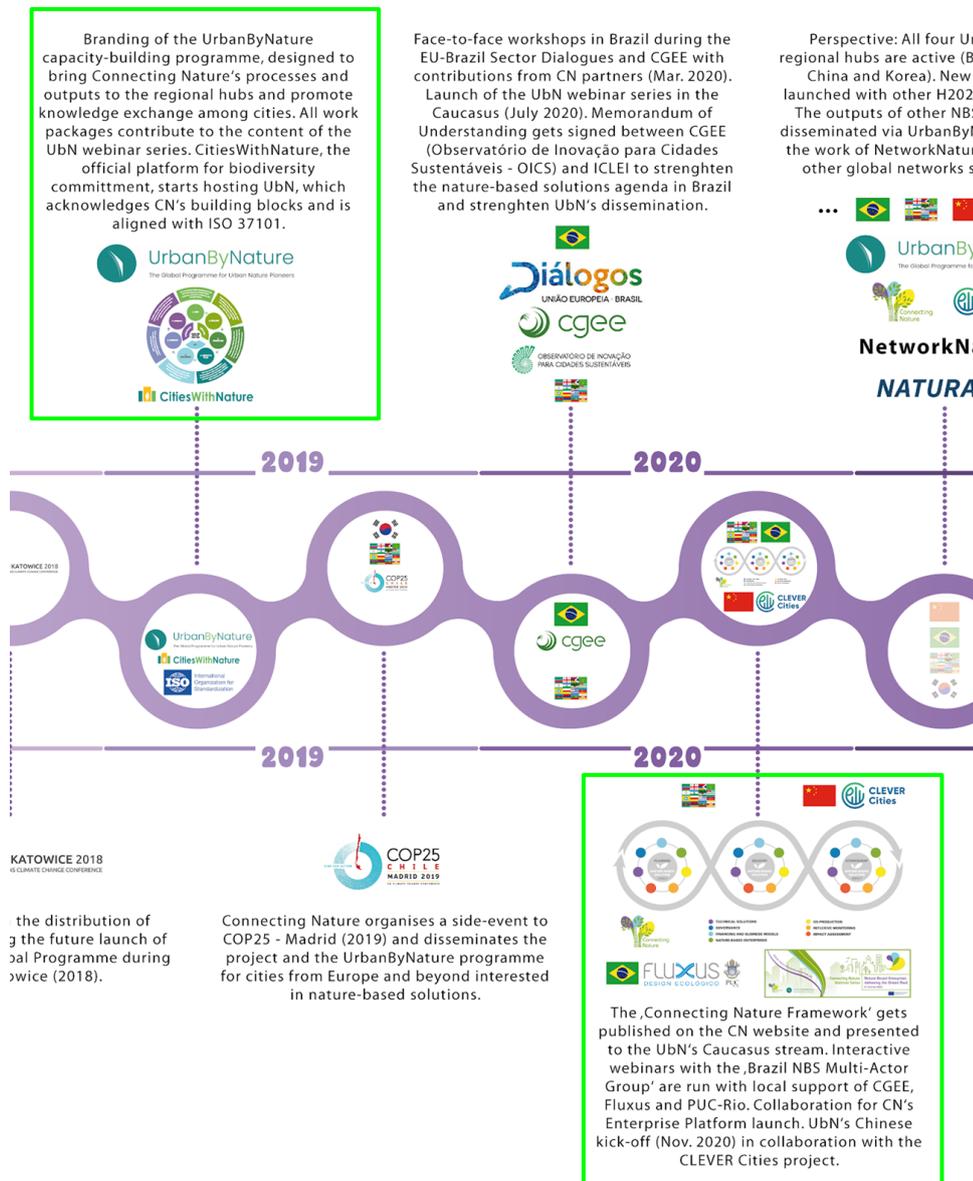


Figure 10. Timeline showing the design of the UrbanByNature programme and the co-production of the CN Framework

4.3 - Strategic Work for the Longevity of the UrbanByNature Programme

The UrbanByNature programme is also hosted by [CitiesWithNature](#) (CWN), a long-term initiative in which ICLEI is one of the main partners, endorsed by the Secretariat for Convention on Biological Diversity (SCBD) as 'the' commitment and reporting platform for cities to show the results of their commitments towards urban nature (and specifically towards biodiversity conservation and net gain). The hosting of the UrbanByNature programme by CWN will ensure its longevity beyond the Connecting Nature project, regardless of external funding, and the reach of a wider audience beyond the duration of the Connecting Nature project. UrbanByNature is being promoted by CWN as an expertise-sharing medium for the planning and implementation of nature-based solutions, disseminating Connecting Nature's findings within this international online-shared platform, and



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bringing valuable European contributions from other nature-based solutions H2020-funded projects to cities worldwide. There is a [dedicated link](#) to the UrbanByNature programme in the CWN website, which encourages cities to draw from the European experiences and engage, taking action around integrating nature in their urban realms, engaging in advocacy and mainstreaming nature in urban life, planning, policy, research, and practice.

In the effort to ensure that UrbanByNature will be kept alive beyond Connecting Nature, NetworkNature will enable new opportunities for engagement of other EU-funded initiatives in the programme. Considering that the EU-funded nature-based solutions regeneration project CLEVER Cities also has a Work Package related to UrbanByNature, funding is secured for at least one year after the conclusion of the Connecting Nature project to enable NBS-related activities to promote urban regeneration. Other options for the future financial sustainability of UrbanByNature and its establishment as a long-term nature-based solutions training programme are:

a) Having UrbanByNature being promoted by the [NetworkNature](#) platform. During the next 3 years of the NetworkNature platform, ICLEI + Oppla + IUCN will develop a business model for the nature-based solutions platform, also considering the added value of the UrbanByNature programme. Via NetworkNature, the UrbanByNature programme will be intertwined with many other nature-based solutions projects. A partnership map will be designed considering relevant key partners such as the [Committee of the Regions](#) (CoR), the [CBD Secretariat](#), TCD's [Connecting Nature Nature-based Enterprise Platform](#), [DRIFT's Transition Academy](#), [OPPLA](#), the [Trento University Renature Training Course](#), [NATURVATION's MOOC](#) and others. As new projects add content to the programme, several communities of experts can be consolidated and different types of engagement with these experts can be facilitated within UrbanByNature. A working group is previewed to foment this collaborative element of the UrbanByNature programme and guarantee the protection of the IPR of contributors.

b) Considering middle-term financing, ICLEI is previewing the inclusion of UrbanByNature in forthcoming H2020 and Horizon Europe bids to build new partnerships. Further, opportunities forthcoming with the calls launched in light of the [European Green Deal](#) will be explored, also in the context of the European Biodiversity Partnership, and in the context of the [Green City Accord](#).

5. Launch of the Regional Multiplier City Hubs

An official global launch of the UrbanByNature programme took place in Bonn at the 10th [Resilient Cities](#) conference from 26-28 June 2019. Connecting Nature participated in the European Session on June 26th 2019: "Can't see the forest for the trees? City experience meets integrated planning for resilience, with launch of the global UrbanByNature programme." The session brought together firsthand municipal experience with imaginative reflections on the value of an integrated, cyclical planning and management approach to building more sustainable and resilient cities. A fundamental basis of the international standard 'Sustainable development in communities – Management System



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for Sustainable Development' is the concept of a series of interlinked, iterative phases to optimise planning and implementation processes. In the session, speakers from local authorities told their stories of adapting to climate and building resilience in the context of the integrated management cycle.

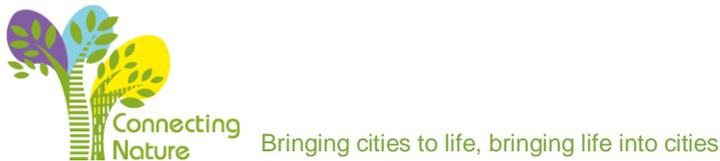
As part of the session, the Connecting Nature Front-Runner city of Glasgow with Gillian Dick was invited to consider their planning strategy in relation to the integrated management approach towards planning and implementation of adaptation measures.

The session at Resilient Cities 2019 ended with the [UrbanByNature's global launch](#), when Edilene Silvia Oliveira, Environmental Policy Coordinator of the Municipal Secretary of Urbanism and Environment of the City of Fortaleza, Brazil, gave an interview on the added-value that the programme brings to her city. The programme had a face-to-face launch in Brazil already on JULY 2018 and a Brazilian webinar stream of the programme started running from March 2019, when the kick-off webinar occurred (see 5.1 for more details).



Figure 11. Official global launch of the UrbanByNature programme at the 10th Resilient Cities Conference, Bonn, 2019

Opportunities for the regional launches in the remaining hubs were identified both in terms of location and in terms of dates. CENS joined the Green City Action Plan (by EBRD) Working Group and participated in public meetings to place nature-based solutions as a topic and ensure the plan is adopted by Yerevan Council of Elders in 2019 and ICLEI EAS and ES started discussions to organise a launch in Asia back-to-back to UNCBD COP15, which was initially planned to take place in 2020.



In September 2019, taking the opportunity of an invitation to participate in the [DMZ Forum](#), the launch of UrbanByNature in Korea occurred on 20th of September 2019 (see details in 5.3).

The Caucasus region was the next one to have a regional launch of the programme on the 8th of October 2019 (see details in 5.2).

Due to the COVID-19 outbreak, the plans for a face-to-face launch in China needed to be postponed, so UrbanByNature's kick-off in the region is still pending. An UrbanByNature event is foreseen to occur back-to-back to the UNCBD COP15 in Kunming in May 2021, but depending on lockdown conditions, the launch might also occur already in November 2020, back-to-back to the "4th High-Level International Forum on Sustainable Urban Development" at Chengdu, China, considering that ICLEI EAS is a key co-host of the forum, which might have both in-person and virtual sessions (see 5.4 for more details).

5.1 - Launch of the Brazilian Regional Hub

The Brazilian regional hub of UrbanByNature was launched during the 2nd International Seminar on Nature-based Solutions, held in Brazil from 9th to 10th of July, 2018, as part of the [EU-Brazil Sector Dialogue on Nature-based Solutions](#). The event was co-organised by the [ICLEI European Secretariat](#) on behalf of the [Connecting Nature project](#), the [ICLEI South America Secretariat](#), and the [European Commission's Directorate-General for Research and Innovation](#). On the Brazilian side, co-organisation was carried out by the [Center for Strategic Studies and Management](#) (CGEE) and the [Ministry of Science, Technology, Innovation and Communication](#) (MCTIC), with support of the [Global Environmental Facility](#) (GEF).

This event was a major milestone of the EU-Brazil Sector Dialogue on Nature-based Solutions. The seminar brought together Brazilian and European cities, researchers, non-governmental organisations (NGOs), businesses and practitioners to share experiences, learn from one another and have a dialogue about how the planning, co-implementation and maintenance of nature-based solutions can contribute to making sustainable cities. Over the past years, the EU-Brazil Sector Dialogues have been contributing to strengthening EU-Brazil relations, focusing on a range of themes of mutual interest linked to four pillars a) competitiveness, growth and jobs, b) global challenges, c) human rights, peace and international security and d) networking including people-to-people contacts and cultural exchanges. Most themes go beyond the bilateral interests, embracing regional and global challenges in Brazil and Europe.

Within the International Seminar, two presentations were held for the wider audience, one focusing on the Connecting Nature project's objectives and expected outputs by Alice Reil (ICLEI Europe) and the other on co-production, which was delivered by Niki Frantzeskaki via Skype. Also, two workshops were organised and conducted in Portuguese and English by ICLEI ES and ICLEI SAMS, helping to lay the ground for establishing the global outreach programme with Brazilian cities and actors:

- WORKSHOP 1: "Co-creating nature-based solutions – Ways of involving the urban



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community through the Academy on Nature-Based Solutions”

- WORKSHOP 2: “The potential for Nature-based Solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-Based Solutions”

The first workshop on co-production draws on the work of Niki Frantzeskaki, which was a member from DRIFT (now Swinburne University of Technology) on [co-production principles](#) (inclusivity, openness, legitimacy, actionable knowledge, usable knowledge; extending institutions) - for more information, see ANNEX.

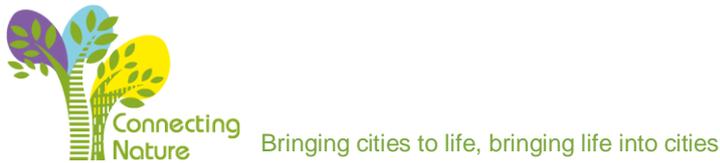
In 2018, the visual identity and name of the programme were not yet developed, so the programme was launched as an “Academy on Nature-Based Solutions”, drawing from the language used in Connecting Nature’s Grant Agreement. After many discussions and reflections, ICLEI ES backed away from using the term “Academy” and went for the term “Programme”, considering the programme’s audience, which is rather local governments than academia.

In the workshops Brazilian cities, researchers and practitioners shared their experience related to nature-based solutions and explored what the Academy should offer in terms of nature-based solutions to help solve environmental, societal and economic urban challenges in the Brazilian context. The workshops saw the participation of cities (city staff and residents), researchers, professionals, representatives of non-governmental organisations, companies, as well as international guests from European projects and institutions, accounting to more than 40 attendees. Government representatives from the following cities were present: Belo Horizonte, Brasília, Campinas, Goiás, Londrina, Rio de Janeiro, Sorocaba and Vitória. There were city residents from Florianópolis and São Paulo.

The event happened in an interactive setting, reuniting representatives from Belo Horizonte, Brasília, Campinas, Goiás, Londrina, Rio de Janeiro, São Paulo, Sorocaba and Vitória. In addition, there were Brazilian researchers, non-governmental organizations and businesses as well as European partners, who together explored the opportunities related to the Brazilian regional hub as a mechanism for improving and stimulating the engagement of different stakeholders with Nature Based Solutions.

The Brazilian regional hub and WP5 activities of Connecting Nature were presented for the first time during a dedicated session. In addition, two workshops were conducted by ICLEI ES and ICLEI SAMS to explore together with city representatives i) to tap into co-production and approaches developed by Connecting Nature’s WP2 (led by DRIFT) and ii) the potential of nature-based solutions to address urban challenges, their ongoing experiences, their stories of success and typical barriers. The discussion enabled a clearer picture of Brazilian cities’ interests and needs towards nature-based solutions. Participants explored the idea of co-producing nature-based interventions together and discussed the concept as well as the potential of nature-based solutions to offer solutions towards current urban challenges in Brazilian cities. They also voiced their interests and needs to be able to apply and use the potential of nature-based solutions to the fullest.

The Brazilian regional hub was welcomed by participants as a great opportunity to engage in and catalyse a transition process from grey to green interventions in the Brazilian urban and business contexts.



Workshop 1: Co-creating nature-based solutions – Ways of involving the urban community through the Academy on Nature-Based Solutions

Local governments often engage citizens in planning nature-based interventions, but rarely co-plan, co-design, co-implement or even co-maintain them in their cities. Yet, co-producing nature-based interventions, enables cities to really use the potential of these projects and initiatives and turn them into a nature-based solution. Co-created nature-based solutions fit the needs of urban dwellers as well as the local context better, as knowledge is shared and innovative approaches are fostered. Applying co-productive planning processes also brings people together. In this workshop, the participants were encouraged to share their own experiences with co-creating nature-based solutions, explore principles of co-production processes developed by DRIFT, and also to discuss how the Academy on Nature-Based Solutions could offer a platform to exchange on good co-productive planning processes. For the design of this workshop, a close collaboration between DRIFT and ICLEI Europe took place. To see the programme and slide presentation given by ICLEI within the workshop, see ANNEX.

Workshop 2: The potential for nature-based solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-Based Solutions

In this workshop, representatives of Brazilian cities explored how urban nature can offer solutions towards water and climate-related challenges. In an interactive set-up, the participants shared their experiences with applying nature-based solutions, outlining success stories as well as mentioning hindering factors or less successful experiences. Participants also identified supportive strategic plans and limiting regulations in their contexts. ICLEI presented what the Academy on Nature-Based Solutions by the Connecting Nature project and its European project cities can offer (e.g. planning processes, financing and business models). The participants discussed what they as Brazilian cities could learn from and contribute to the Academy over the next four years.

Participants explored the concept of nature-based solutions and explained which terms they usually use in their cities. Successful examples of nature-based solutions and associated positive and negative factors were discussed. Further, strategic plans and policies related to the topic of nature-based solutions were highlighted, and the group pointed out if these were rather enabling or disabling the application of nature-based solutions.

After the group explored the implications of nature-based solutions in the context of Brazilian cities using them, the concept and preliminary structure of the Academy for Nature-based Solutions were presented. Cities were asked to talk about their interests and needs towards the Academy and to point out the formats in which they would like to engage in the Academy, so they could meet their knowledge exchange expectations. For the programme and slide presentation given by ICLEI within the workshop, see ANNEX.



Figure 12. Participants of the Workshop 2: The potential for nature-based solutions in Brazilian Cities

A scheduled series of thematic webinars visiting the UrbanByNature programme’s steps and covering the element of the CN Framework was offered. This webinar series was co-designed together with the contact point of the Brazilian regional hub, ICLEI SAMS, and the Connecting Nature’s Work Package leads. A number of regular hub meetings were relevant to substantiate and finalise the overall schedule for the webinar series of the hub. After calls between ICLEI SAMS and the consortium’s Work Package leads with expertise in the element of the CN Framework, the agenda with the speakers of each webinar could be defined and preparations could start: invitation of speakers, logistics such as webinar platform, mailing list service, webpages, social media, etc. Each webinar was set to have three inputs: a presentation or interview with a Connecting Nature’s Work Package lead, a presentation or interview with a Connecting Nature city, and an input from a local partner of the regional hub - either a Brazilian city or a Brazilian expert. To make sure that the webinar series would be designed taking into account the local needs, opportunities, challenges and goals of the hub, the results obtained in the face-to-face workshops during the EU-Brazil Sector Dialogues were taken into account.

A wide audience participated in the webinars of the Brazilian hub, which had on average had 90 attendees. The attendees were not only from Brazil, but from more than 30 countries. The frequency of the webinars occurred approximately every two months, with deviations considering vacation months in the European and South American continents. See in the ANNEX the list of all thematic webinars organised within the Brazilian hub, which sum up to 30 videos.



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5.2 - Launch of the Caucasian Regional Hub

The UrbanByNature program was successfully launched in Caucasian region, aimed at disseminating the European nature-based solutions experience to inspire nature-based solutions planning and delivery in the cities of the Caucasian region. The European Neighbourhood Countries of Armenia and Georgia, with the capitals Yerevan and Tbilisi, are taking the lead in preparing grounds for the implementation of nature-based solutions, as well as in replicating experiences to fellow cities throughout the countries of the Caucasus.

The launch of the UrbanByNature programme in the Caucasus took place on the 8th of October 2019 at the National Parliamentary Library of Georgia, Tbilisi, Georgia, which hosted the speakers and moderators as follows (Figure 1):

- ICLEI Europe – Local Governments for Sustainability, Germany: Dr. Daniela Rizzi, Officer for Nature-Based Solutions and Green Infrastructures – speaker and overall moderator
- Tbilisi City Hall, Georgia: Mr. Saba Pipia, Deputy Head of Municipal Department of Environmental Protection – speaker
- Yerevan Municipality, Armenia: Dr. Gevorg Navasardyan Head of Environment Department, a.i. – speaker
- University of East London (UEL), UK: Dr. Stuart Connop, Senior Research Fellow, Sustainability Research Institute – speaker
- Centre for Ecological-Noosphere Studies (CENS), Armenia: Mrs. Shushanik Asmaryan – speaker and moderator
- GIS and RS Consulting Center GeoGraphic (GeoGraphic), Georgia: Dr. Mamuka Gvilava (GeoGraphic) – speaker and moderator, Prof. Tinatin Khimshiashvili (GALA) – co-organiser, Dr. Nana Shakarishvili (IliaUni Institute of Botany) – co-organiser





Figure 13. Participants of the Launch Workshop of UrbanByNature in the Caucasus in Tbilisi, Georgia 2019.

During the launch, representatives of Georgian and Armenian cities and other participants explored how urban nature can offer solutions towards urban water and climate-related challenges. In an interactive set-up, the participants shared the experience, approaches and success stories they made with strengthening and benefitting from urban nature. They also identified their needs to plan and implement nature-based interventions, as well as enabling and constraining factors.

Within the workshop, the UrbanByNature programme was presented. Georgian and Armenian cities shared their insights and actions, with which they can contribute to and learn from the programme over the upcoming year. Additionally, the expertise of European cities participating in Connecting Nature was outlined, to show Georgian and Armenian cities what they can get in return for their engagement (e.g. planning processes, financing and business models for urban nature).

The workshop saw the participation of cities (city staff and residents) and researchers, as well as educators and master students, accounting to 39 attendees (including organisers). Government representatives from the following cities were present: Yerevan from Armenia, Tbilisi, Kutaisi, Poti and Mtskheta from Georgia (Batumi registered, but could not attend). Participants, in particular, included Acting Head of Environmental Department of Yerevan Municipality, Deputy Head of Municipal Department of Environmental Protection from Tbilisi, Chief Resilience Officer of Tbilisi, Assistant to Mayor of Poti on Infrastructure, Senior Specialist at Department of Infrastructure of Kutaisi City Hall, Greening Service of Mtskheta. The details are provided in the Report of the workshop in ANNEX.

In 2020, the Caucasian regional hub will continue the work with a scheduled series of thematic webinars targeting mainly representatives of Caucasian cities. The thematic content of webinars is quite similar to those of the Brazilian stream. The frequency of the webinars is set to be one per two months, starting on July 10th. See below the list of all thematic webinars to take place (or already taken place) in the Caucasian regional hub:

It is reported hereby with great satisfaction that the kick-off nature-based solutions stream under the UrbanByNature Caucasus Hub, after a careful planning, dissemination work and preparations was successfully held on 10th of July, 2020. The one-and-a-half-hour session had five presentations, including the participation of a representative from the European Commission, the Connecting



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Nature Coordinator, ICLEI ES and two partners from the Caucasus: GeoGraphic and CENS. The webinar started with an introduction into nature-based solutions with attendance of more than 120 participants, including a lively Q&A session lasting as long as the presentations. Participants from the Caucasus region as well as from a global audience coming from more than 30 countries showed interest in the kick-off webinar and the Connecting Nature's experiences with nature-based solutions (see Figures X).

The Caucasus stream videos can be accessed via the Connecting Nature YouTube channel [playlist](#).



Figure 14. Tweet by Connecting Nature's coordinator - participants from more than 30 countries in the UrbanByNature Kick-Off Webinar for the Caucasian region, July 2020.

After the face-to-face kick-off in October 2019, the planning for the realisation of 6 webinars in the region was carried out to occur during 2019 and 2020, culminating in a face-to-face event in Yerevan, tentatively scheduled for September 2021. On the Connecting Nature's website there is a [list of held/planned events](#) in the region that is constantly being updated.

5.3 - Launch of the Korean Regional Hub

The launch of the UrbanByNature programme occurred back-to-back to the [DMZ Forum](#), which itself took place on 19-20 September 2019, held by the Gyeonggi Province with the aim to provide continuous discussions with national and overseas intellectuals, specialists and other participants about the redefinition of the meaning and significance of the Korean demilitarized zone in both ecological and political facets.

In the DMZ Forum, ICLEI Europe chaired the session [“Domestic and International Cooperation to Preserve Biodiversity in DMZ”](#), having talked about the “Importance of Nature-based Solutions to Protect and Enhance Urban Biodiversity: Identifying Opportunities for Collaboration between European and Korean Local Governments”. The session had two key speakers: Roby BIWER (First Vice Chair, The European Committee of the Regions), who presented on “The European Union Perspective on Cross-border Cooperation Towards Biodiversity Protection and Conservation”, and KIM Seungho, President (DMZ Ecology Research Institute), who presented on “How South and North Korea can share DMZ Eco-Resources”. Three panellists were invited to provide their views on the presentations and share their reflections: PARK Yeonhee (Director, ICLEI Korea Office ICLEI - Local Governments for Sustainability); KIM Ohseok (Research Fellow, Korea Environment Institute); and JEON Seongwoo (Professor, Korea University).



Figure 15. Panellists and participants during the launch of UrbanByNature in Korea, September 2019.

Back-to-Back to the DMZ Forum at Kintex, the UrbanByNature programme was launched in Korea on the 20th of September 2020 for an audience of representatives of Korean cities and other participants who together explored how urban nature can offer solutions towards urban water and climate-related challenges.

The workshop was held with simultaneous translation in Korean and in English. Participants were city staff, researchers and city residents interested in nature-based solutions, accounting for 21 attendees. Government representatives from the following cities were present: Gyeonggi-do (Province), Chungnam-do (Province), Suwon city, Ulsan city (Metropolitan city), Dobong-gu (Municipality of Seoul Metropolitan Government). The objectives of the workshop sessions were to introduce the concept of nature-based solutions as a new approach for building sustainable cities in Korea. Further, it was about hearing the voice of Korean cities', their ideas, needs, interests and contributions towards the programme, also sharing cases of leading cities in nature-based solutions from the Connecting Nature project, to together understand the local context and needs of Korean cities to plan and implement them. In an interactive set-up, the group was able to sketch out opportunities arising from the participation in the UrbanByNature Korean stream. Korean cities shared their insights and actions, with which they can contribute to and learn from the programme.

Robert Biwer was also invited to the UrbanByNature launch, in which he gave a speech as the Rapporteur for Opinion of the European Committee of the Regions on the Contribution of European cities and regions to the CBD COP14 and the Post-2020 European Biodiversity Strategy. His speech highlighted that subnational authorities can play a key role in implementing biodiversity measures that need to be taken to halt the loss of biodiversity. Also, attention was drawn to the importance of engaging in sustainable urban planning. Three types of horizontal measures were mentioned as relevant: financing, partnerships and knowledge base. The Committee of the Regions has been calling on the European Commission to intensify research and innovation activities exploring the potential of nature-based solutions and green and blue infrastructures for regenerating urban nature.



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Also, Marco Neubert, a senior scientist of the Leibniz Institute of Ecological Urban and Regional Development (Germany), who spoke in the DMZ Forum about “Landscape Development as a Result of Separation and Reunification – Experiences from the Inner-German Border”, was invited to the UrbanByNature launch, in which he has participated.

There were two different rounds of World Cafés in the workshop. World café 1 had three different topics; 1) Enabling Factors and Constraining Factors, 2) Good examples of strategy and policy-making and 3) Good examples of action on urban nature. Participants could choose two themes consecutively and for each theme they had time to get together and share their insights and experiences.

World café 2 had the same setting with the following topics: 1) What are the interests and needs of your city in regards to nature-based solutions? 2) What UrbanByNature formats would be useful? 3) Do you want your city to contribute to the UrbanByNature programme? What are your expectations towards the programme? In what manner could we stay in contact? Participants chose two topics consecutively and for each they reunited in a discussion.

Time	Activity	Moderator/Speaker
9:30-10:00	Registration	ICLEI Korea taking registrations
10:00-10:20	Welcome + Objective + Agenda	Yeonhee Park, ICLEI KO
10:20-10:40	Presentation 1: Biodiverse nature as a solution for urban and regional challenges. EU’s vision and action for the post-2020 biodiversity framework.	Roby Biber, Committee of the Regions
10:40-11:10	Presentation 2: UrbanByNature, the global programme for urban nature pioneers	Daniela Rizzi, ICLEI ES
11:10 - 12:10	World Café 1	ICLEI ES and ICLEI Korea
12:15	LUNCH	All
12:45-13:45	World Café 2	ICLEI ES and ICLEI Korea
13:45-14:00	Closing	Yeonhee Park, ICLEI KO and Daniela Rizzi, ICLEI ES

Figure 16. Agenda of the UrbanByNature launch in the Korean regional hub, September 2019.

Some comments from the participants show appreciation for the World Café format in small groups, which allows for people to actively participate and share their honest opinions. In a large forum format, this might not be possible, as people might not feel comfortable to discuss the topics. Small groups also allow for people to deep-dive into their specific area of expertise and share valuable information. Participants find that webinars are interesting from the point of view of global promotion of the programme - although time zone differences need to be taken into account. Some participants mentioned though that the webinar format might be lower costs and avoid airplane travels, but Koreans are not so used to the format. Another raised aspect was that the audience of face-to-face events might be more a regional one, whereas digital formats tend to attract global participants, allowing for knowledge exchange with other cultures and backgrounds².

² At the moment of these observations by the workshop attendees, the COVID-19 outbreak was not a reality. The openness and



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Based on the presented outcomes of the launching event and further consultations with local partners, the webinars and face-to-face events of UrbanByNature's Korean stream will be designed by ICLEI Korea with the support of ICLEI Europe. To build up the programme's content for the Korean region, the organisers will take into account the whole range of topics covered by the material produced within the Brazilian and the Caucasian regional hubs. Further, the particular interests of the Korean region will be a priority. In the future, face-to-face events can be realised via the collaboration with other relevant initiatives.

5.4 - Launch of the Chinese Regional Hub

There has not been a launch of the UrbanByNature programme within the Chinese regional hub. As mentioned in Chapter 3, the consortium was unable to receive official co-funding from MoST. Additionally, with the outbreak of the COVID-19 crisis all previewed in-person events were either cancelled or had to be postponed.

Considering that much of the programme is designed to play out via online interactions, also due to the missing mirror-funding from the Chinese side, it is not an easy task to involve Chinese government officials, as they are not used to engaging in virtual exchanges. In-person events have always been preferred. There is a need for preparation work by ICLEI EAS in order to attract local government officials to take part in capacity-building webinars. ICLEI EAS sees a new opportunity arising from the COVID-19 crisis, which led interactions to happen more online than offline. So in general people are more open to webinar training than before. Alongside the new context, there is a strong motivation of stakeholders to engage digitally due to such an important event such as UN CBD COP15 being scheduled to happen in China. ICLEI EAS has been analysing the possibility to have the launch of the UrbanByNature programme in China happening back-to-back to this relevant event in the field of biodiversity conservation. It would be a valuable opportunity to highlight the role of nature-based solutions in the urban context to protect and enhance biological diversity, inviting local Chinese governments to join UrbanByNature's capacity building and knowledge exchange offer.

Another possibility would be to perform the programme's launch already this year, during the upcoming the 4th High-Level Forum on Sustainable Urban Development, to be held in Chengdu, Sichuan, in November 2020. However, considering the uncertainties in relation to pandemic-related lockdowns and restrictions, it is still unclear if this is possible.

ICLEI EAS is taking the lead to organise the 7th Global Biodiversity Summit of Cities & Subnational Governments, one of the parallel events to CBD COP15. So this event, which has as an audience high-level governmental representatives and a large number of Chinese municipalities and countries across the world, could also be an interesting stage to launch the programme in the region.

There is a concern from ICLEI EAS towards the longevity of a Chinese regional hub, as long-term cooperation between cities / local governments in the Chinese context without a clear long-term funding mechanism for cooperation is a challenge. Therefore, the regional office feels comfortable to rather highlight the roll out of an NBS-capacity-building training series, instead of highlighting that the programme will have face-to-face events whilst exchanging with local governments. When CBD

acceptability to attend webinars and engage in digital formats of exchange has increased after the pandemic.



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COP15 approaches, ICLEI EAS will revisit the feasibility of establishing a more “physical” hub.

6. Reflections on Implementation Conditions for Nature-based Solutions in the Regional Hubs

Drawing from the CN Framework as a diagnostic tool to perform reflections on the entry points of a nature-based approach in the different regional hubs, DRIFT and ICLEI Europe agreed upon a set of questions for the regional hub partners to answer. The set of questions was designed to assess the entry points of the CN Framework in the regional hubs, i.e. they consider the seven elements: technical solutions, governance, financing and business models, nature-based entrepreneurship, co-production, impact assessment, and reflexive monitoring. With the answers the regional partners gave to the questions, the contextual setting within the different regional hubs for the planning, delivery and stewardship of nature-based solutions could be described. See the set of questions submitted to the regions in ANNEX.

The sections below present the reflections of the regional hub partners on the CN framework elements. These reflections will be shared with CN WP leads and relevant partners, illustrating some entry points of the CN Framework elements in each region, which can guide further targeted discussions for adjustments in the design of future webinars or workshops aligned with the local context. So the content of this chapter does not reflect the views of the CN partners or WP leads upon the implementation conditions of nature-based solutions in the regional hubs, but it rather communicates the reactions and responses of the regional partners who know their region and are in close contact with stakeholders working with nature-based solutions in their contexts.

6.1 - Brazilian Regional Hub:

Reflections on the Implementation Conditions for Nature-based Solutions

Technical solutions in Brazil

Brazil is considered to be a megadiverse country (the most biodiverse-rich country in the world)³, and the extension of its ecosystems, the services they provide and the scale of environmental degradation make it a crucial country in any future reflections on the global environment. With its continental dimension and enormous variety of terrestrial and aquatic habitats, Brazil is the country with the largest number of plant species, of which more than half are endemic⁴. It is estimated that Brazil hosts between 15-20% of the world’s biological diversity, with the greatest number of endemic species. Brazil’s biodiversity is constantly expanding, with an average of 700 new animal species discovered each year. It contains two biodiversity hotspots (the Atlantic Rainforest and the Cerrado), six terrestrial biomes and three large marine ecosystems (see [Brazil’s profile in the Convention on Biological Diversity](#)).

A significant part of Brazil’s urbanisation has occurred along the Atlantic coast (e.g. Rio de Janeiro,

³ MMA - Ministério do Meio Ambiente (2018)

⁴ Estratégia e Plano de Ação Nacionais para a Biodiversidade (2017)



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São Paulo, Salvador, Recife), putting pressure on the conservation efforts of the Atlantic Rainforest. Nature-based solutions can enhance biodiversity in cities and contribute to the restoration of ecosystem functions whilst providing different societal benefits, such as the provision of clean water and recreational areas. Nature-based solutions must also help to address urban challenges including but not limited to: mobility, energy, water, solid waste, education, poverty, inequality and inclusion, participatory governance, integrated long-term city planning, ecosystem services, circular economy and climate change.

In Brazil, it is especially important to relate nature-based solutions to addressing critical issues that affect urban system functionality, mainly including basic social problems such as poor sanitation and building urban resilience to threats such as floods and landslides. Other urban challenges that can be tackled by nature-based solutions are heat-island effects, worsened by heat waves, and human health risks due to air, water and soil pollution.

Although Brazil is reassuringly endowed for hosting some of the world's largest freshwater resources, these are distributed unequally in terms of territory, space and time. Water availability is distributed unequally in Brazil's river basins and consequently its States. About 80% of the country's surface water is found in the Amazon Hydrographic Region, with low demographic density and relatively low human water use demands. Extreme events have been noted over the past few years resulting in too much or too little water, which has been leading to circumstantial evidence of climate change and alterations to rainfall patterns in Brazil. Droughts, severe dry seasons and floods account for around 84% of natural disasters in Brazil between 1991 and 2012. In 2016, floods affected approximately 1.3 million people in the country. In contrast, droughts impacted 18 million people in the same year, mainly in Northeast Brazil (home to 84% of these)⁵. It is important to reinforce nature-based solutions as a tool for solving basic social and economic problems in addition to linking the biodiversity and climate change agenda. Linking these two agendas and strengthening nature's potential in economic and social development is crucial for enhancing the potential of nature-based solutions, especially through the requalification of cities and the reduction of public spending in repairing consequences such as landslides and floods.

The "EU – Brazil Sector Dialogue on nature-based solutions" publication shows some case studies in which innovative landscape architecture and design companies have developed technical nature-based solutions that are already being applied in Brazil with adjustments to the Brazilian context (see [Report](#), page 31). Local businesses such as landscaping companies are also prospecting for new opportunities to adapt their nature-based technologies to local contexts.

Even though there is not a Brazilian nature-based solutions catalog yet, there are some publications such as the special edition for nature-based solutions of [Página22](#), prepared by the Faculdade Getúlio Vargas Sustainability Center (GVCes), and "[The EU - Brazil Sector Dialogue on nature-based solutions: contribution to a Brazilian roadmap on nature-based solutions for resilience cities](#)", which provided an analysis and covered important aspects particularly focusing on how to harness the Brazilian potential for nature-based solutions and how the EU's experience can contribute to accelerating the process. This publication also maps important examples of successful nature-based solutions recently implemented or under development in both the EU and Brazil, with a special

⁵http://www.snirh.gov.br/portalsnirh/centrais-de-conteudos/conjuntura-dos-recursos-hidricos/conj2017_rel_ingles-1.pdf



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emphasis on their potential for replicability, scalability and adaptation to the local context. There is also the [Sustainable City Innovation Observatory](#) (OICS, Sustainable City Innovation Observatory), developed by the Centro de Gestão e Estudos Estratégicos (CGEE) within a [GEF](#) project. The OICS is a major component of the Brazilian [Program for Sustainable Cities](#) (PSC) as a virtual platform to allow the monitoring, curation and display of context-based and innovative urban sustainability content and solutions related to nature-based solutions, water, waste management, mobility, energy and connecting their multiple ecological and socio-economic benefits to a comprehensive set of urban challenges. Identified solutions are organised according to urban-specific challenges and city-region typologies.

Concerning the technical barriers in implementing nature-based solutions, some of the main challenges faced in Brazil are: (i) the absence of research materials on the nature-based solutions topic in undergraduate and graduate courses - impacting in the lack of professionals and experts in nature-based solutions as well as the lack of companies specialised in the field. As a result, there is also a lack of monitoring techniques and in-depth cross-sectoral research in the area; (ii) the lack of public disclosure of the topic and the non-inclusion of the population to discuss the generated impacts and co-benefits; (iii) the absence of a legal incentive and regulatory nature-based solutions framework. In addition, the interests of large companies that aim to generate faster profits are a barrier, as these tend to not be interested in alternative solutions, preferring to stick to “business as usual”; and unfortunately, in Brazil large companies tend to influence the decisions of public authorities; (iv) the high cost for implementing nature-based solutions due to the lack of professionals and demand. On the part of contractors, governments and companies, a long-term vision building on the long-term and plural positive effects of nature-based solutions is lacking.

Governance in Brazil

In Latin America there are several networks and initiatives that are actively working on climate change and biodiversity. Different from Europe, nature-based solutions are not widely recognized and disseminated in Latin America. Organisations such as ICLEI South America, which aims to be a reference and a nature-based solutions multiplier in the region, can help foster nature-based solutions in Brazil and Latin-America. Other important initiatives working on these agendas are the [Center for Knowledge on Climate Change in Latin America](#) (the Climate Knowledge Hub, CliK Hub), composed by 18 institutions that have experience on specific topics, recognizing the importance of learning and knowing how to nurture it, [The Nature Conservancy](#) (TNC), a recognized international organization that supports Payments for Environmental Services’ programs, and the World Resources Institute (WRI) which promotes natural infrastructures and supports nature-based solutions through [Cities4Forests](#).

The ongoing EU framework programme for research and innovation Horizon 2020 has been offering opportunities for relevant Brazilian key stakeholders to collaborate in the development of new knowledge in the field of nature-based solutions. Through the H2020-funded nature-based solutions projects, especially Connecting Nature and CLEVER Cities, nature-based solutions are being strengthened in South America and multi-stakeholder networks are being created. One example is the ‘Multi-Actor Nature-based Solutions Group in Brazil’, which is supported by Connecting Nature by ICLEI SAMS and ICLEI Europe, with the engagement of key local partners in the nature-based



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solutions scene such as [Fluxus Design Ecológico](#), PUC-Rio's Professor Cecília Herzog, and CGEE. This is to be highlighted as an excellent example of what the UrbanByNature programme was able to ignite in the region, empowering local actors to drive the nature-based solutions agenda forward.

In Brazil, the Ministry of Science, Technology, Innovation and Communication (MCTIC) has been supporting the [EU-Brazil Sector Dialogues on Nature-based Solutions](#), having created the thematic programme of technologies for [sustainable cities](#), which aims to support cities in their transition towards more sustainable development with incentives for innovation and technologies in several fields. Another important actor and partner to promote nature-based solutions in Brazil is the already mentioned CGEE.

Regarding the organisational barriers to mainstream nature-based solutions, the short-term approach to face most urban challenges can be considered one of the most important challenges. Nature-based solutions are medium and long-term approaches for solving many of the issues mentioned above. The lack of evidence of their effectiveness in the Brazilian context and the quantification of their environmental, economic and social benefits can be highlighted as barriers to a wider application of nature-based solutions in urban settlements, leading also to the lack of nature-based public policy strategies for urban planning and sustainable development.

Financing and business models in Brazil

Although not fully explored and recognised as financial mechanisms for nature-based solutions, there are some financing instruments available in Brazil. Examples include environmental compensation funds, whereby ecologically harmful projects are compensated for by investment in restoring ecosystems in cities and rural areas. Another example is the payment for environmental services, which is already being used to maintain and enhance water sources in many Brazilian cities. And finally, there are tax incentives for projects that offer ecosystem services to urban environments, as for instance to build green roofs.

In Latin America there are several potential financing institutions, both national and international, that can provide financing for nature-based solutions. These include, but are not limited to, the [Brazilian Development Bank](#), the [Caixa Econômica Federal](#) (a Brazilian Financial Institution), the [World Bank](#), the [CAF](#) (Development Bank of Latin America), the [Inter-American Development Bank](#) and the [AFD](#) (French Development Agency).

In Brazil, State water resource funds could also finance the planning and implementation of nature-based solutions aimed at improving water quality in cities. The effectiveness of several typologies is recognised: constructed wetlands (CW), greenways, rain gardens and bioswales (See [Report](#), page 31). In addition, the '[Ecological ICMS instrument](#)' has already generated results in many cities by incentivising the protection and restoration of water sources and ecosystem fragments. It is a state tax transferred to cities in some Brazilian states to promote environmental protection.

Regarding private financing of nature-based solutions, despite the fact that the benefits of these solutions are recognised for being primarily addressed for public use and the perception of high implementation risks, what makes investment in the field less attractive for investors, there has been



some progress and different financing models have been developed for different types of urban nature-based solutions in the last years. For example, the visibility of the pocket forests in São Paulo has attracted a private company to finance the implementation of such a forest in front of its main office building on a very visible avenue on the margins of the Pinheiros River in São Paulo (see [Report](#), page 32).

Nature-based entrepreneurship in Brazil

Brazil is South America's most populous country and has the largest economy. Many cities are among the most economically developed in the region. However, Brazil also has large regional inequalities: incomes for the average individual in the Midwest and Southeast regions (the richest regions) are almost twice as high as in the Northeast (the poorest region). According to the [World Bank](#), cities in Brazil could be more productive if they tackled the negative externalities of density such as congestion, slums, crime and inequalities, and invested in institutions and infrastructure.

As mentioned before, MCTIC has been supporting cities in their transition towards more sustainable development with incentives for innovation and technologies in several fields. The importance of qualified information and guidance regarding nature-based solutions in order to promote and upscale its implementation in the Brazilian context needs to be highlighted, especially concerning technical, economical and regulatory aspects. On the other hand, there is a growing interest of the benefits of nature-based solutions from distinct sectors in Brazil (public, private, civil society, academia, etc.), which reinforces the argument for building a robust knowledge hub on this matter in the region.

Nature-based Entrepreneurship has also been stimulated in Brazil through the recognition of the private sector in the implementation and diffusion of nature-based solutions. However, there are still some difficulties such as the absence of legal incentives and the lack of interest of large companies in implementing alternative solutions to conventional ones. This reflects the recent growth in the number of small and medium-sized companies that are mostly located in southeastern Brazil.

The already mentioned Workshop on Nature-based Entrepreneurship in Brazil held during the III Nature-based Solutions International Seminar of the EU-Brazil Sector Dialogues in Brasília in March 2020 offered the opportunity for the Brazilian audience of UrbanByNature to better understand what a Nature-based Entrepreneurship (NBE) is, and how such organisations can help cities to deliver on the social, economic and environmental potential of nature-based solutions. Participants engaged in an interactive session and discussed the concept, getting sensitised to the economic, social and ecological values created by SMEs providing nature-based solutions as products and/or services, as well as to the faced challenges in the Brazilian concept. During the workshop, the participants saw a [video](#) from the Nature-based Solutions Cluster of Malaga (Spain), presented by Gerardo Gonzalez from BIOAZUL, which inspired first discussions about creating such a cluster within the Brazilian context. Indeed, as a result of the workshop, the Multi-Actor Nature-based Solutions Group in Brazil was created and is now being conducted in a joint effort by ICLEI SAMS, ICLEI Europe, Fluxus Design Ecológico, CGEE and PUC-Rio's Professor Cecília Herzog.



Figure 18. Impressions of the Nature-based entrepreneurship Workshop in Brasília, March 2020.

Co-production in Brazil

Multi-stakeholder co-production is decisive in the development of systemic and inclusive practices and policies that enable cities to build resilience and prepare for climate-change challenges. Nevertheless, the Brazilian legislation and related public procurement processes and governmental contracts usually do not encourage co-production and innovation solutions. Other instruments and acquisition regulations, for example within housing policies, do not incorporate nature-based solutions principles and lack technical knowledge to stipulate specifications in regards to nature-based solutions in bidding processes and public tender requirements. In this sense, an example in the local context is Belo Horizonte's 'Normative Instruction', which gives guidance towards the use of alternative urban drainage measures, such as a bioretention basins and bioswales.

On the national level, MCTIC is trying to work in a transdisciplinary manner, very much acting as an intermediary agent to strengthen the nature-based solutions agenda in Brazil. MCTIC has also been helping to disclose nature-based solutions for Brazilian cities by engaging with other ministries and secretaries such as the Ministry of Cities, the Ministry of Planning and Ministry of Environment. This doesn't configurate as co-production itself, but it opens the floor for co-productive processes amongst governmental bodies.



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Although most examples of co-production for the planning and implementation of nature-based solutions in Brazil were carried out by grass-roots movements, one example of a multi-stakeholder co-production for nature-based solutions deserves to be highlighted: the “Serrinha do Paranoá waters project”, located in Brasília (see [Report](#), page 76). This approach led to the rise of a transversal governance network between civil society, government and state institutions and to an international cooperation to ensure a long-term vision with lasting impacts, preventing government interruption of successful public policies. The new governance arrangement allows for projects to mature and flourish, creating new trustful relations between communities, NGOs and public administration staff, contributing to the renewal of participatory processes that build on previous experiences and develop local social innovation (see [Report](#), page 76).

Impact assessment in Brazil

Impact monitoring and evaluation of nature-based solutions are also lacking in Brazil, making this aspect one of the main challenges faced by decision-makers to mainstream nature-based solutions. There is one example of a [rain garden at the Fundação Progresso](#) in Rio de Janeiro, a project called “What is this rain?” (“Que chuva é essa?”), financed by the Brazilian National Council for Scientific (CNPq) with involvement of the University Veiga de Almeida (UVA), the [Project Meninas e Mulheres da RRD](#) and the Pontifical Catholic University of Rio de Janeiro (PUC-Rio). Monitoring activities in the implemented raingarden were planned in regards to various parameters such as water quality, air quality, biodiversity, number of insects, humidity, infiltration rates, etc., but unfortunately these had to be postponed due to lockdown measures related to the COVID-19 pandemic. In Belo Horizonte, the Municipal Environment Secretariat also aims at monitoring and evaluating the process of the [INTERACT-Bio demonstration project](#), which foresees the implementation of a bioswale. The implementation and its monitoring will be used as a basis to strengthen and encourage the city's Normative Instruction to guide the use of alternative urban drainage measures in the city of the Capital of Minas Gerais.

Reflexive monitoring in Brazil

Reflexing monitoring and the measuring of processual impact are still quite underdeveloped in Brazil. The topic has been used with a wider lens than nature-based solutions, in the area of biodiversity conservation, for the definition of conservation units and environmental protected areas. It would certainly be beneficial for the planning landscape in Brazilian cities to incorporate reflexive monitoring practices to enable innovative learning processes, the impact measurement of ongoing processes and necessary adjustments.



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6.2 - Caucasian Regional Hub: Reflections on the Implementation Conditions for Nature-based Solutions

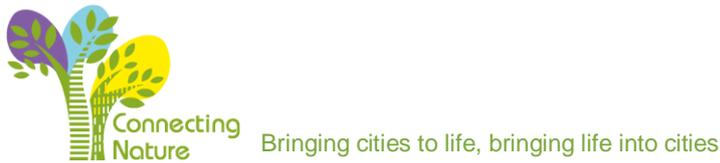
Technical solutions in the Caucasus

The Caucasus region is characterised by a mountainous and complex geography. Cities are generally located in the valleys of mountainous rivers. The South Caucasian cities of Yerevan and Tbilisi are quite different from one another in their geography, geology and their environmental contexts. Yerevan, the capital of Armenia, lies on a plain on the edge of the Ararat Valley at altitudes of 860-1,400m and is well known for its dry continental climate, with hot summers and cold winters with a lot of snowfall and a low annual rainfall (250-440mm). On the territory, Yerevan is prone to many natural disaster risks (landslides, stone falls, mud-flows, etc.), however, seismic risk represents the greatest threat for the city, affecting about 40% of the total population of Armenia ([Yerevan GCAP, 2017](#)).

Tbilisi, the capital of Georgia, covers an area of 720 km² and has a population of around 1.2 million. The city is spread along the banks of the Mtkvari River, surrounded by steep hills on three sides and due to its topography, it has developed in a linear direction along the river plain. The city's boundaries were substantially extended in 2009 to encompass several villages and significant areas of forested land. There is the risk of loss of green capital if the expansion is not governed adequately. Just outside of the city boundaries to the North-East, there is Tbilisi's reservoir, which is one of the main sources of water supply for the city, as well as a valuable recreational area. Tbilisi has a well-preserved historical centre, which is becoming an attractive tourist attraction. Georgia has experienced a period of economic decline after becoming independent in 1991. This decline has since been reversed, but it has led to the abandonment of many urban industrial sites which are now derelict areas or brownfields, some cases contaminated. The issue can also be seen as an opportunity for the planning and implementation of nature-based solutions in brownfield areas - about 30% of Tbilisi can be classed as brownfields ([Tbilisi GCAP, 2017](#)). Combined with regeneration of deforested and declining forests around the city, these areas represent clear opportunities for transforming Tbilisi into a green city, upscaling nature-based solutions with their plural benefits.

In general, large cities of the South Caucasus face many challenges such as environmental, social, and economic, which have notably increased over the last decades. This is due to numerous complex and rapidly changing urban dynamics such as migration, unplanned and unregulated land-use, climate change, etc.

According to [Yerevan's GCAP](#), the city's key environmental challenges concern air, soil and water quality. The poor air quality is conditioned with high concentration of dust particles mainly caused by deforestation. The concentrations of SO₂ and NO_x emissions are also significant. There are also several soil quality issues, for example, there is evidence of the presence of [heavy metals pollution levels in Yerevan's kindergarten soils](#). Other environmental problems related to soil are deforestation (tree cutting), which provokes soil erosion; Industrial solid and liquid waste and air emissions (particularly heavy metals); and municipal solid waste deposited in non-sanitary landfills. Efforts to achieve good environmental conditions are considered as key to improve the quality of life in Yerevan. In this sense, nature-based solutions may help to tackle the above-mentioned challenges. CENS Research Institution of the National Academy of Sciences of Armenia has performed an analysis in 2007-2008 aiming at providing a set of tree and shrub species to be planted in Yerevan parks and



squares based on the type and level of pollution of each urban site. It was relevant that the species would be resistant to gas pollution and to dust, and would also have metal cumulating properties (see [Yerevan Functional target tree planting Plan](#) with consideration of soil contamination).

In the case of Tbilisi, many of the city's environmental issues were highlighted in the Green City Action Plan ([Tbilisi GCAP, 2017](#)): air pollution; thermal stress linked to urban heat islands; inadequate building energy efficiency; lack of small-scale renewable energy initiatives; need for improvement of access and quality of urban greenspaces; risks of natural hazards including landslides and floods; and poor water quality of urban runoff; lack of sustainable transport options; loss of biodiversity. All these measures point to the need for planning and implementing nature-based solutions with multiple benefits in Tbilisi.

Regarding the main obstacles in implementing nature-based solutions, it is worth mentioning that the most relevant barrier relates to the novelty of the nature-based solutions concept in the region, which still needs to be digested by main players such as local authorities, SMEs, designers, the research sector, etc. This can also be noticed by the lack of specific catalogues on technical designs for nature-based solutions.

Governance in the Caucasus

In general, the notion of partnership is weakly developed in the region due to historic legacy. Therefore there are no relevant partnerships or networks fostering the implementation of nature-based solutions in the region. Connecting Nature can be considered a pioneer project in the region in this sense.

Despite this, it is worth mentioning that some cooperation frameworks are gradually emerging in the region at various levels. Good examples are professional networks of architects and planners, who have been promoting landscape architecture and the adoption of green solutions in the urban environment. Networking events are frequently organised e.g. by the Georgian Association of Landscape Architects (GALA), who are now collaborating with the Connecting Nature project through the partner GeoGraphic. The events are often realised in cooperation with the Tbilisi State Academy of Arts, Faculty of Architecture. There are a few recent examples of such networking events such as Erasmus + Exchange Symposium, who have been helping to [promote UrbanByNature's](#) activities in the Caucasus, such as the programme's launch in October 2019. Another related networking event that has been helping to promote the programme was an [International Conference on New Ecological Problems in Landscape Architecture](#), which had participants from Europe and the Caucasus. Another recent example of capacity-building opportunity was Tbilisi Municipal Services Development Agency training course called '[Designing Urban Parks](#)' (17-18 May 2019), which was attended by technicians from the Tbilisi City Hall, the Tbilisi Municipal Assembly, the District Administrations as well as the Tbilisi Botanical Garden. The training was conducted by a GeoGraphic/GALA team member who had knowledge in the field of nature-based solutions and the fieldwork was assisted by an expert of the Institute of Botany of the Ilia State University of Georgia.



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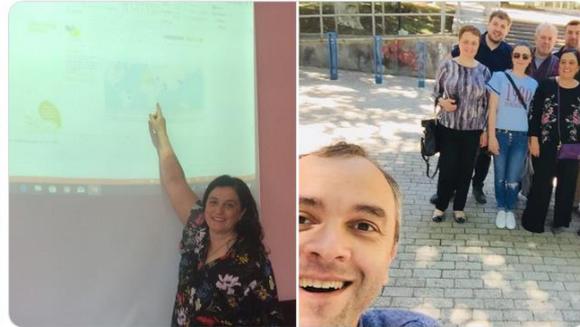
@TinatinKhim of GALA presenting @NBS_Georgia and promoting connectingnature.eu/UrbanByNature with @TbilisiCity Environment Service, lecturers & students of @artacademyeduge, scientists from Europe & Caucasus at international conference on New Ecological Problems in Landscape Architecture.



Training at MSDA 'Designing Urban Parks' (17-18 May 2019) with participants from @TbilisiCity, Tbilisi Municipal Assembly, District Administrations/Gamgeoba and Botanic Garden, conducted by @TinatinKhim of GALA and @NBS_Georgia.



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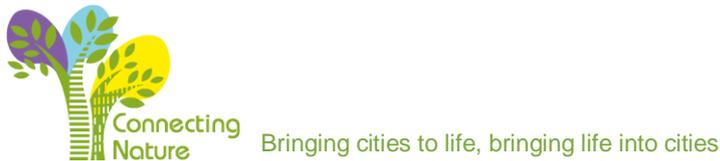
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Figure 19. Tweets about local promotion activities of the UrbanByNature programme in the Caucasus.

With regard to cooperation in the field of climate change in the Caucasus, a strong partnership has been emerging between scientists of six countries from the wider Caucasus Ecoregion (Armenia, Azerbaijan, Georgia, Iran, Russia and Turkey) in the format of a Scientific Network for the Caucasus Mountain Region, which already succeeded in developing a [Caucasus Regional Research Agenda](#) with the aim to address climate change. Two forums were organised in Tbilisi in 2016 and in Ankara in 2019. These events could provide a strong platform for disseminating and forwarding the concept of nature-based solutions, as well as the UrbanByNature programme in the wider Caucasian region. Moreover, the contact with the [CENN network](#) will help to disseminate the activities of the UrbanByNature programme in the Caucasus.

Last but not least, the [launch of the UrbanByNature Caucasian Hub](#) held in Tbilisi in 2019 has provided a strong impetus for networking and partnership building in the region, offering a valuable [knowledge-exchange and capacity-building](#) opportunity for actors in the region.

The mentioned partnerships and networks will help to foster the nature-based solutions agenda in the region. Nevertheless, there are some barriers that need to be taken into account. The main obstacle, as already mentioned, is that the concept of nature-based solutions as well as the process of co-production/co-design of nature-based solutions to foster the involvement of different urban social groups are not very well-known. During the UrbanbyNature Launch Workshop in Tbilisi, these and other questions were discussed: there is need for commitments from central/municipal authorities towards nature-based solutions and openness to sparkle and foster community bottom-up processes; there is need for land use master plans to guide urban development with nature-based solutions; there is a lack of strict sanctions and regulations to protect urban trees and green areas in cities; it would be of advantage if regulatory frameworks would allow for legally binding requirements towards nature-based solutions; the activation of voluntary nature-based solutions partnerships is welcome; there are insufficient financial resources to support nature-based solutions and related initiatives in the region (e.g., nature-based solutions grant schemes would be helpful); generally, there is a limited



environmental awareness of citizens and authorities; a lack of holistic approaches leads to the perpetuation of silo-thinking among municipal and central government departments; nature-based solutions is not part of the strategic urban thinking of municipalities in the region.

In the case of the implementation of nature-based solutions in a kindergarten in Yerevan, which was funded by Eurasia Charity Organization, the Municipality confirmed the many benefits of the interventions: Improvement of air quality; increase of accessibility to green open spaces; increase of awareness of nature-based solutions and their effectiveness; increase of social interaction and well-being; provision of health benefits. Now the Municipality of Yerevan has been discussing to scale out the interventions to other kindergartens. Therefore, this case shows that with a raise of the awareness on the co-benefits of nature-based solutions, governments might be more compelled to adopt the measures in future projects. In this sense, training and capacity-building is very welcome for the society to get introduced to the potential of nature-based solutions to tackle urban challenges. This would enable the main strategic goal of Yerevan's masterplan to be achieved: create better living conditions in the urban environment, fostering urban sustainable development and contributing to the challenges of urban resilience by using multidisciplinary approaches in which science and research can be integrated with planning policies and design applications. In this sense, the Connecting Nature project has created via UrbanByNature an excellent platform for the dialog between scientists-planners-designers and decision-makers not only to ignite reflections and the digestion of the concept of nature-based solutions, but also to assist with their implementation in line with the main objectives of current Yerevan Masterplan.

Financing and business models in the Caucasus

Until now, there are no business models or strategies for funding nature-based solutions in the Caucasus region. All the examples for Yerevan or Tbilisi were performed based on the random fundraising activities by CENS and GeoGraphic in Armenia and Georgia. For instance, the green wall in Yerevan's kindergarten was funded due to dedicated efforts of CENS to have the "Eurasia" Charity providing resources or a beneficial activity for the most sensitive group of the society: children. Nonetheless, this example has encouraged CENS to work with the Municipality and have them include the design and implementation of the green wall in the annual budget of the Municipality. Now the measure is expected to be applied in several kindergartens.

Key stakeholders in the Caucasus region for the planning and implementation of nature-based solutions would be the ministries of environment of the Caucasian countries. At the operational and implementation level, relevant stakeholders are local authorities and their departments, such as the [Tbilisi City Hall](#) and [Yerevan](#) Municipalities (and their units at city district levels), the Tbilisi City Hall and its [Municipal Department of Environmental Protection](#) and the Yerevan Municipality and its [Nature Protection Environment Department](#). The Municipal Services Development Agency of the Tbilisi City Hall, as well as the [National Botanical Garden of Georgia](#) are also potential supporters of nature-based initiatives in Tbilisi. Other local authorities potentially interested in nature-based solutions include [Gyumri](#) in Armenia, and [Kutaisi](#), [Batumi](#) and [Poti](#) in Georgia. Relevant stakeholders in the area of research are the [National Agency for Cultural Heritage Preservation of Georgia](#) (e.g. co-designing nature-based solutions with an interface to cultural heritage) and the [Center for Ecological-Noosphere Studies](#) (CENS in Armenia), as well as the [Institute of Botany of Ilia State University in Georgia](#). From



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the non-governmental sector, relevant stakeholders to promote nature-based solutions are the [Green Building Council of Georgia](#), the [Georgian Association of Landscape Architects \(GALA\)](#) and the [Georgian Union of Architects](#). In Yerevan, the [Eurasia Charity](#) Organization has contributed for the implementation of [nature-based solutions in a kindergarten](#), as already mentioned. Amongst educational institutions, there is the [Tbilisi State Academy of Arts](#), the [Georgian Technical University](#) and the [International Science and Education Centre of the National Academy of Sciences of Armenia](#). Private companies are important players as well, such as [GreenService](#), who is quite experienced in creating recreational areas, public gardens and green spaces, [GeoGraphic](#), who provides geospatial solutions in support of urban nature, and the [New Technology Center](#), who provides green building and development solutions, including nature-based solutions.

The [Green City Action Plans \(GCAPs\)](#), promoted methodologically by OECD and ICLEI, and implemented through investment actions by the [European Bank for Reconstruction and Development \(EBRD\)](#), have already been piloted in Armenia and Georgia, where at least four cities have completed their action plans: [Yerevan](#) and [Gyumri](#) (Armenia) and [Tbilisi](#) and [Batumi](#) (Georgia). There are relevant provisions for the implementation of components of nature-based solutions in current GCAPs. [Yerevan's GCAP](#) text even specifically mentions the Connecting Nature project and the term 'nature-based solutions', but there is no chapter devoted to nature-based solutions in the GCAPs, what would be desirable considering that it would help to disseminate the concept for future iterations of GCAPs in the Caucasus region. The term used in the text is "green infrastructure". If the GCAPs would have a chapter dedicated to nature-based solutions, these could better support local initiatives in the field and unpack the potential for investments in nature-based solutions, e.g. through international funding institutions such as EBRD, and others may follow. It is also worth mentioning that EBRD has made a major investment in the field of sustainable transportation in Tbilisi, and specifically in the field of energy efficiency and renewable energy in Yerevan. Similarly, nature-based solutions could be supported and financed via special investment instruments dedicated to them, in support of urban nature regeneration. The involvement of the European Investment Bank (EIB) through its [Natural Capital Financing Facility](#) in European projects could support urban resilience in the region via nature-based solutions. The Asian Development Bank (ADB) might also expand its NBS-related portfolio through studies for the [Livable Cities project](#) (see project documentation for 'Georgia: Preparing Integrated Solutions for Livable Cities').

Considering that an understanding of nature-based solutions is missing in the region, financing lines could contemplate the financing of pilots in Urban Living Labs to foster co-production and the development of local expertise in the field. New financing schemes that allow for exchange with an international knowledge base would also be quite interesting. In the governance level, if cities could develop department or administrative units dedicated to nature-based solutions, reuniting experts from various departments (environment, health, mobility, housing), joint funding of urban pilots could be more easily co-financed, in light of the simultaneous potential co-benefits and achievement of targets by several departments.

Considering the gaps in the field of co-production practices and citizen engagement, financing instruments could preview collaborations between the municipality, the civil society and nature-based enterprises to promote co-production at the local level. Also, crowdfunding could be interesting via the engagement of communities and volunteers.



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Considering the gaps in the region in relation to the planning of nature-based solutions, financing instruments could request the application of such solutions by developers, accelerating their implementation.

In general, there are many financial gaps to implement nature-based solutions in the region. There is a lack of funding resources for both implementation and maintenance, as well as for monitoring and evaluation. Some ways to address this would be to have municipalities tapping of International Funding Institutions (IFIs) resources (e.g. via GCAPs), green budgeting, regulatory demands for the implementation of nature-based solutions, promotion of PPPs for their implementation as well as citizen initiatives to directly finance and maintain them.

Nature-based entrepreneurship in the Caucasus

Some of the strategic objectives set in Tbilisi's GCAP show that transport, energy, water and waste are relevant targets. In the field of transport, the development of a Sustainable Urban Mobility Plan (SUMP) is on the top of the list, followed by the incorporation of a public road vehicle fleet with low levels of emissions and noise and high levels of safety, an optimised transport infrastructure network with prioritisation of public transport on roads and a city traffic management system including an achievable Intelligent Transport System. In the case of energy, Tbilisi's GCAP focus on efficiency renovation measures and in the use of renewables (public lighting, electrical equipment, small-scale urban renewable energy sources, data and DSS for energy consumption, tariffs, condition of buildings and investment costs). This is interesting for nature-based solutions as green roofs, for example, can be designed as an energy efficiency measure. Regarding water, programs and actions tend to focus on the reduction of water consumption and wastewater management, plus improvements to the water distribution system and surface water run-off and quality. Last but not least, the development of an umbrella Municipal Waste Management Plan is included amongst the objectives of the GCAP, alongside the minimisation of municipal solid waste generation and reduction of waste disposed in landfills, an efficient and environmentally friendly municipal solid waste collection system and the closure and remediation of existing illegal dumpsites.

In regards to traditional infrastructure to address GCAP strategic objectives, nature-based solutions could be applied, for example, to provide solutions for the protection and enhancement of biodiversity and integration of green walls in bus stops, or in spaces along urban transport corridors. Also, energy efficiency measures can be achieved through the implementation of nature-based solutions, such as green walls and green roofs. Further, wastewater treatment of urban facilities (e.g. schools, hotels, restaurants) could be realised through phytoremediation, applying nature-based solutions for wastewater treatment. Therefore, the priorities for economic sustainable development in the region would go hand-in-hand with the mentioned priority sectors for planning.

In addition to the transport, energy, water and waste sectors, a specific section of Tbilisi's GCAP concerns 'Land Use & Biodiversity', contributing to the vision of a city with extensive and attractive green spaces and a high level of biodiversity. This is relevant for the planning and implementation of nature-based solutions.

Many GCAP's strategic objectives are NBS-relevant - and hopefully the next update of the GCAPs will



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specifically make references to nature-based solutions. The GCAP objectives form a solid framework for entrepreneurs in the region to create businesses and enterprises for the delivery of nature-based solutions:

- Create and implement an up-to-date sustainable urban planning system for the future city development with the emphasis on green (and blue) spaces
- Develop new public parks & gardens and improve existing urban green spaces
- Improve & protect local flora & fauna in urban and suburban areas & along the river
- Provide new reforested areas on Tbilisi hills and surrounding areas to provide windbreaks and alleviate soil erosion, landslides and torrential floods

There are some innovative nature-based typologies that were applied in the region (e.g. the famous [Yerevan cascade](#) and the upgrade of some central streets in Tbilisi, where elements of green corridors were implemented), but there is a wide field that remains unexplored by entrepreneurs. There are green-minded developers, architects and planners in the region, but nature-based solutions are not yet considered as mainstream and therefore a local market is still lacking.

One of the steps made in the region to support the emergence of nature-based entrepreneurship was the UrbanByNature launch workshop in October 2019, where participants shared their knowledge of policies and ideas to stimulate nature-based solutions in the zone - the discussion was focused on Georgia:

- There are several examples of vertical walls, green roofs, pocket parks and greening projects in Tbilisi.
- An exemplar green building was recently completed and certified in Tbilisi (Ortachala area).
- There is an excellent initiative of Tbilisi municipality in some parts of the city to provide bicycle paths, including in new park spaces, combining mobility and green space solutions.
- Similar initiatives are under implementation in Poti (bicycle paths, cleaner urban transport).
- An environmental strategy was developed recently by the Kutaisi Municipality with some regulatory improvements for protection of green spaces in the city.
- Some pocket greening was provided in certain sections of Tbilisi's road network.
- A good example of greening of waterways is the [Leghvtakhevi stream area revitalisation](#), which can provide numerous opportunities for nature-based entrepreneurs.
- Kindergartens and schools are being equipped on a pilot basis with renewable and energy efficient solutions and nature-based solutions could be the next implemented interventions.

Co-production in the Caucasus

No co-production processes are being applied in the context of nature-based solutions in the region. There are rural programs funded by the central government in Georgia, in which local communities are given an opportunity to prioritise interventions by voting their preferred ones for implementation. This is not an example of co-production, but it might represent an entry point. It is also worth mentioning the newly established Environmental Assessment Code of Georgia, which harmonises with the legislation "European SEA Directive" related to strategic environmental assessment. The Environmental Assessment Code of Georgia introduces SEA for plans and programmes in the country,

including those related to land use. This provides an opportunity for the integration of co-production and nature-based solutions into land use and masterplans. An example of introducing nature-based solutions through the SEA process is the local master plan for the [Lebarde Resort](#), which is at its final stage of approval. A public hearing was recently performed and the issue of statutory opinions of the ministries of environment and health are pending. The SEA Lebarde Resort Land Use Plan includes, among other solutions, provisions and references for introduction of nature-based solutions into the development plan of the resort. Similar ideas are contemplated for other land use and master plans under development as well.

Overall, there are challenges for the co-production of nature-based interventions in the Caucasus towards co-production processes. Probably the main obstacle lies in limited experience and lack of capacity in providing urban interventions in a participatory manner. The inertia of traditional solutions also makes it more difficult to foster the implementation of nature-based solutions through the activation of collaborative governance models. In this sense, pilot implementations with special emphasis on co-production could be very helpful. It could be relevant to have co-funding schemes for nature-based solutions in the region that allow for community-driven pocket parks, nature-based solutions integration in school and kindergarten areas and alike.

Non-governmental organisations could play an important role in working with communities by identifying local priorities and areas for the most appropriate interventions. Universities and researchers could also provide support with needed studies and analyses, as well as with empowering communities to seek the best professional experts. Last but not least, private companies could also be engaged in processes of co-production, as these might have a more neutral role that inspires trust, because they would not be representing the interests of the public administration nor the interests of the local community, but create a neutral arena for an open communication and exchange in regards to all interests.

Impact assessment in the Caucasus

Research is currently underway within Connecting Nature to develop a comprehensive set of nature-based solutions indicators and to test their applicability for cities in the Caucasus. Currently, however, there are no indicator frameworks in place to specifically assess nature-based solutions in the region, e.g. measuring parameters prior to and after the implementation. At the same time, there are ongoing efforts to introduce indicators following the methodological framework of the GCAPs in Yerevan and Tbilisi. In Tbilisi's GCAP, some indicators could be used for nature-based solutions as well:

- State indicator: Total Suspended Particles (TSP) including concentrations of PM_{2.5} and PM₁₀
- Pressure indicator: Absence of green building standards and other environmental certifications
- Response indicators: Improving resilience to flood risks and other climate related pressures

The application of the State-Pressure-Response set of indicators resulted in a Monitoring Action Plan provided in Annex 5 of the Tbilisi GCAP, which includes the following selected measures under the 'Land Use and Biodiversity section' - probably of relevance for nature-based solutions:

- Tbilisi Land Use Master Plan (plan approved and includes NBS-type measures)
- Urban land use and green spaces monitoring system (developed/operational)
- Supporting home and balcony gardening (promotion, awards scheme)
- Remediation of grey and brownfield spaces (progress and financial reports)
- Improvement of the state of publicly available green spaces (progress and financial reports)
- Creating green corridors across the city (green corridors along the river created)
- Programs for bird, animal, plant biodiversity (approved programmes as part of action plan)
- Improvement of stream retention structures (retention structures and SUDS constructed)

The Land Use & Biodiversity section of Tbilisi’s GCAP, contributing to a vision towards a “city with extensive and attractive green spaces and a high level of biodiversity”, lists the following key strategic objectives, which are also NBS-relevant:

- Create and implement an up-to-date sustainable urban planning system for the future city development with the emphasis on green and blue spaces
- Development of new public parks & gardens and improvement of existing urban green spaces
- Improvement & protection of local flora & fauna in urban and suburban areas & along the river
- New reforested areas on Tbilisi hills and surrounding areas to provide windbreaks and alleviate soil erosion, landslides and torrential floods

One example to be mentioned on how cities in the Caucasus region have been working with indicators for nature-based solutions can be found within the Connecting Nature project. Tbilisi has attempted to perform a geolocation survey of citizens on what they think about the urban environment. The results can be considered as relevant for measuring NBS-relevant citizen perception at various scales (See [Survey Form](#) and its [Results](#), in both English and Georgian languages). These indicators are easy and cost-effective to measure and they could provide an excellent addition to a set of indicators within the framework of the GCAP. The survey could be complemented with questions related to participatory processes to periodically assess their opinions and georeferenced responders. This could be useful at both macro (city) and micro (neighbourhoods or even superblock) scales.

Reflexive monitoring in the Caucasus

The examples and approaches mentioned in the co-production section could be extended concerning learning-by-doing and reflexive monitoring processes. It would be an interesting idea to integrate such approaches in municipal planning processes, encouraging more cooperative design planning practices as well as cooperative implementation, evaluation and monitoring.

In Georgia, the Environmental Assessment Code provides opportunities for professional communities and citizens for the inclusion of nature-based solutions and fostering of co-production in planning processes. It also provides mechanisms for participation in the implementation and monitoring phases, which can be quite beneficial for the achievement of objectives and continuity of projects related to urban nature beyond political mandates.

When applying reflexive monitoring, it is recommended to consider specific tools. Selecting and



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adapting the reflexive monitoring tools is an important first step. In the design of the reflexive monitoring process, the local institutional setup of urban governance has to be taken into account. Reflexive monitoring is a parallel process to conventional policy evaluation. It can be applied based on the existing arrangements and dedicated structures within the municipal administration. The monitoring process will include reflecting upon these existing structures to ensure that nature-based solutions can be approached from an integrative perspective, which e.g. requires different departments to collaborate in novel ways. Reflexive monitoring ensures timely adjustments in these structures and related critical thinking, allowing for independence of usual paths.

6.3 - Korean Regional Hub: Reflections on the Implementation Conditions for Nature-based Solutions

Technical solutions in Korea

Nowadays, 90% of Koreans live in urban areas. Most Korean cities are located in coasts of around an estuary, connected by the sea or basins located in a mountainous terrain in the middle and lower reaches of rivers, showing inland urban characteristics.

To face environmental, social and economic challenges, Korean local governments are asked to submit their own strategy and action plans to the Korean Green New Deal. The Korean Green New Deal was released June 2020 and covers topics of space and transition to green infrastructure (Smart Green city) as well as green industry and renewable energy dissemination. Investment and transition are indispensable concepts for the further development of Korean cities. In June this year, 226 out of 228 local governments in Korea announced their participation in the Declaration of Climate Emergency. It was indeed the first in history that practically all local governments in a single country have simultaneously declared climate emergencies. In particular, Korea ranked No. 1 in carbon emissions growth among OECD countries as of 2019, making it necessary for the planning framework to create a plan such as the Korean Green New Deal, which entails pan-governmental and pan-sector actions. In addition, Korea understands fine dust as a social disaster, apart from it being a serious environmental challenge. Therefore, emergency reduction measures to avoid the high-concentration levels of fine dust, especially in the Seoul metropolitan area during spring and fall, are usually taken by the government such as parking restrictions, driving restrictions under the vehicle grading system, and events restrictions. The air pollution problem is considered an urgent one that has implications for public health, causing social health problems such as depression, as well as lung diseases and dementia.

Unfortunately, there are no catalogues on technical designs for nature-based solutions in the region, but according to a recent announcement by Sejong City, a plan will be proposed to solve challenges related to fine dust in the urban area using nature-based solutions. Wind paths are foreseen to be created in parks as well as in large shopping malls, apartment complexes, and major intersections, and along these wind paths, trees will be planted to block fine dust. Sejong city has been prioritising



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planting schemes with tree species that have high fine dust absorption capacity: evergreen, oak, ginkgo, etc. Furthermore, the city plans to install green walls on public buildings, pedestrian overpass and underground roads, as well as on parking lots and road structures. To foster rainwater retention, low-impact development techniques (LIDs) are planned to be applied to new developments such as Haemily (6-4 apartment complexes) in the city, which will have a positive impact on water quality as well, as the LIDs will also have plant filter systems. Some solutions were designed for roads with high levels of fine dust, such as intersections: sprinklers linked to rainwater reservoirs should be installed to control air pollution (See [news article](#) for reference, in Korean).

The main barrier for the implementation of nature-based solutions relies on the novelty of the concept in Korea. Some examples seem to be mentioned in the field of landscape architecture (engineering aspects) and the term has been used referring to eco-engineering by mentioning green rooftops, ecological architecture and urban agriculture. In the field of eco-psychological approaches, nature-based solutions are related to healing approaches and “nature therapies”.

There are entry points in Korea for the further development of technologies related to nature-based solutions, but accurate scientific data in the Korean context is still missing. In order to shift the usual Korean grey infrastructure-oriented perception and allow for a policy framework encouraging nature-based solutions, it would be necessary to have some solid implementation examples verified by scientific evidence.

Traditional knowledge of natural and social interactions with nature and tacit knowledge on ecological functions could be considered as a valuable asset. Still, there seems to be technical difficulties encountered by experts who conducted actual NBS-related implementation. Therefore, the provision of projects stimulating more technical knowledge in this field is highly appreciated.

Governance in Korea

There are several partnerships and networks in Korea, which could help to foster nature-based solutions in the region. As public institutions/national institutions there is the [Institute for Environmental Policy Evaluation](#), the [National Institute of Ecology](#) and several cities have their own local research institutes, as for example [Ulsan with its Ulsan Research Institute](#). Among relevant Korean civic organisations, the [Korean Society of Landscape Architecture](#), the [Environmental Justice Institute](#), the Green Infrastructure Committee, the [Forest for Life](#) and the [Agenda 21 network](#) can be mentioned, being the latter the one dealing with an overall picture of sustainable development. Currently, Agenda 21 has been renamed as the [Sustainable Development Council](#), which operates in the form of a public-private cooperation. Among the mentioned research institutes there are those that deal with issues related to rooftop greening and Seoul-ro (formerly abandoned railroad tracks) in terms of eco-engineering, such as the [Sungkyunkwan University's Department of Construction and Environment Engineering](#).

As already mentioned, probably the one of the biggest governance-related barriers to the planning and implementation of nature-based solutions in Korea is the fact that the country's economic growth-oriented development does not prioritise the value of nature and ecosystem services. Development



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has been happening at a fast pace and at the cost of nature, what can be seen by the number of developments in the last years that have accelerated the degradation of ecosystems with air pollution, water shortages, drinking water contamination, freshwater and marine pollution, deforestation, climatic disasters, which represent serious threats to the health and well-being of people in urban areas. However, related activities such as raising awareness, research initiatives and pilot projects are being made to shift the focus from a pure economic growth model towards a model of sustainable development. One of the most recognised tools to cope with the sustainable development agenda is good governance. An instrument was created for developers whose projects have significant negative ecosystem impacts and for businesses whose activities decrease biodiversity to pay for 'ecosystem conservation cooperation funds'. These funds are directed to the national government first and then distributed to local governments for them to take local actions for environmental restoration, protection and promotion of environmentally friendly planning methods. In this sense, Korean municipalities have been receiving funds from the central government to prevent further degradation, however, there are still concerns about the risks and consequences of reckless and purely market-oriented development and at the same time, the limited autonomy for restoration poses a challenge.

There is much to be learned from environmentally friendly traditions, considering that the traditional culture of East Asia used to be sustainable. If land use can be further planned from an ecological point of view, presenting the territory's productivity and environmental stability, nature-based solutions can be a very relevant topic to help achieve sustainable strategic goals in the region. In the case of Jeonju City, five goals were set through a comprehensive ecological city master plan. Among these goals, there are guidelines proposed by the plan to create specialised green spaces supporting pedestrian routes, contributing to the concept to "expand the forest" by creating urban ecological corridors, establishing new green spaces between main roads, providing open spaces, connecting parks, and creating natural soft mobility trails integrated to historical landscape resources. It is also about improving awareness through the greening of degraded areas. In addition, existing parks, urban forests, and surrounding streams are designated in the plan as scenic zones and as critical for the protection of the ecological environment. The plan also previews the creation of an urban agricultural park in the city with small farms and community gardens to be frequented by citizens on weekends - these are called 'weekend farms'. Such plans can serve as an inspiration for other municipalities to create a governance environment with NBS-friendly planning frameworks.

Financing and business models in Korea

There are several examples of how operational costs of nature-based solutions have been financed to date in cities in the region. One of them is the [Gwangju 'Greenway'](#), which has a total length of 8.08km. A private promotion group was formed for dissemination of the project. The project is mainly funded with public national and city resources. Another example is the joint efforts of the [Green Trust](#) and the Seoul Forest Conservancy organisation, who engaged for the operation of the [Seoul Forest Park](#), which is the first park in Korea in which not only citizens were involved in the planning, but also developers as part of urban programmes. From 2003 to 2005, the Seoul Green Trust raised 5 billion won with the involvement of 5,000 citizens and 70 companies to create the Seoul Forest. Various financial support systems were elaborated to fund diverse elements and activities related to the park such as a regular patronage programme, bench donation, temporary donation by credit card, search



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engine point donation (Naver is one of the largest search engines in Korea - the user gets points called 'Happy beans' when the search engine is activated), a corporate sponsorship and volunteering and social contribution activities for the park. Furthermore, under the National Trust Act in Korea, the National Nature Trust was established as a system for the acquisition, preservation and management of natural and cultural heritage assets worth preserving through private-level fundraising activities and donations. The financial acquisition methods of the National Nature Trust includes sponsorship and insurances related to ecological measures.

Most of the above-mentioned key stakeholders involved in financing nature-based solutions in Korea are targeted at civil society and non-governmental organisations, or linked to government subsidies and services, or originate from the private sector.

Concerning challenges related to financing and business models for nature-based solutions in the region, there is a lack of management and maintenance after construction works due to financial shortfalls, a lack of guarantees for financial continuity in the long-term, and the fact that many projects only get “one-time fundraising”. Continuity can be considered an overall challenge to be addressed in Korean projects, as the schemes are not well designed for long-term public-private funding frameworks. The absence of existing financing initiatives through new platforms such as crowdfunding is another handicap. In addition, cooperative and participatory processes are still lacking in the Korean planning landscape - the discussion of planning and implementation of nature-based solutions through the collaboration amongst various stakeholders is still lacking.

Nature-based entrepreneurship in Korea

Recently, in June 2020, the Korean government announced the Korean Green New Deal to foster a green transition of infrastructure through fields such as green energy; ICT-based smart water and sewage management system; the creation of innovative ecosystems for green industries; and the spread of low-carbon distributed energy aligned with a renewable energy transition. South Korea has more than half of its domestic facilities located in the South Chungcheong Province, where energy distribution in each region is a challenging issue due to an energy generation model based on coal-fired power plants. In this regard, it would be recommended to introduce nature-based solutions in a more holistic way in the region, instead of simply seeing it as a “technical switch” to convert grey infrastructure into green. It is utterly relevant that the Korean government does not miss the opportunity to value the plural co-benefits of nature in cities. Nature-based solutions are precisely a valuable approach to implement the Korean Green New Deal. Further, a number of entrepreneurship opportunities can pop up from such a more holistic approach via the delivery of nature-based solutions.

Nevertheless, the innovation environment in the region requires advocacy work to disseminate the concept to the wider civil society, public officials and SMEs. In this sense, research towards new policy frameworks that allow for the prompting of nature-based planning in Korea are highly recommended. The fact that Korea local governments have joined the recent Declaration of Climate Emergency points out that there is room for entrepreneurship with nature-based solutions. Cities are demanding actions to counteract the current situation, which offers opportunities for the provision of



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NBS-related products and services.

In general, individual implementation cases of nature-based solutions are likely to take place through the drive of local governments combined with the cooperation of further local stakeholders. In government-led cases, usually links between the public hand and private companies are sought, considering that private companies might have the technical expertise for their delivery. Other partners are non-governmental organisations as well as the civil society.

In the case of universities, there are opportunities for collaborations with research institutes and investigation programmes. The Seoul Metropolitan Government recently planned to purchase plots of land through land compensation instruments in response to the Urban Park's sunset provision - a measure within a statute, regulation or other law that provides that the law shall cease to have effect after a specific date, unless further legislative action is taken to extend the law. The sunset provision was due by July this year, so the urban green area, which was promised as a park but not developed as such for 20 years, is now likely to be developed by landowners, following the usual dynamics of conventional urban development.

Among the policies that cities have implemented to stimulate and support the emergence of nature-based entrepreneurship, the case of Gangdong-gu can be mentioned. In 2016, this autonomous district in Seoul won the [Green Apple Awards "Golden Award"](#), an excellent initiative to reward environmental practices, for its urban agriculture model. From this initiative, wide and diverse business models related to urban agriculture were created, led by the Gangdong Municipality. There are various ongoing programmes related to urban agriculture, such as in the category of agricultural technology; professional training; traditional food; beekeeping; local food production in connection to day-care centres, local children's centres and welfare facilities; production of medicinal herbs; practices related to ecology, etc. Besides these, there is a model that takes into account the virtuous cycle of local resources, e.g. projects related to the food supply and waste composting containers. Many green jobs could be created through these practices, which are usually led either by local governments or by community and citizen-led activities in the field of procurement of food and environmental education.

Co-production in Korea

Co-production is not a common practice in Korea. An example to be mentioned within the Korean context that might show an entry point for co-production for nature-based solutions is the [Tongyeong Sunchon Village Marine Waste Purification Project](#). A budget of 500 million won for a period of 3 years was granted to the Community Chest of Korea in a competitive bid. More than 70% of the funding has been paid by residents' (remuneration for participating citizens), creating jobs and enabling the collection of a higher volume of marine waste than the volume usually collected within government-led projects. This initiative, which counted on the engagement of local citizens, led to an increased natural capital. In addition, through the residents' system, the trust and the dialogue between residents of the area have increased, which contributed to the designation of marine reserves, leading to an increased social capital. Another interesting example of co-production lies in the already mentioned Gwangju Greenway project, in which a green roadway with bicycle and pedestrian paths was created in an abandoned site. A new green road [park advisory committee](#)



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formed by citizens, social organisations, university professors and city councils was established, creating a productive environment of discussion and reflection, reflecting plural opinions of various groups. Because citizens were seen as the main beneficiaries and future users of the green road park, the project was conceived to encourage citizen affection towards the green road park by establishing a participatory framework to guide decision processes until the designation of the areas as a greenway was decided.

The tools and methods used to promote co-production vary according to the projects. In the case of Tongyeong, it takes place through the public/private fund Tongyeong Geoje Environmental Movement Union, which secured the provision of equipment by the Suhyup ([National Federation of Fisheries Cooperatives](#)) and the [Tongyeong City Hall](#) to support residents to carry out cleanup actions in the area. In the case of the mentioned Gwangju Greenway project, an advisory committee was also formed to manage the project, consisting of experts in business planning with the participation of a private corporation.

Impact assessment in Korea

In Korea, processes of implementation, feasibility tests, and the monitoring of implemented projects are usually ordered by the public hands from the private sector or affiliated organisations. In many cases, goal setting and impact assessment are conducted by collecting opinions from various local stakeholders, including citizens, to set up plans under the initiative of local governments. In restoration projects, monitoring parameters usually consider the number of species, population, water quality, as well as parameters related to the satisfaction level of users of the restored areas.

Reflexive monitoring in Korea

Local and central governments take most of the opportunities for learning and monitoring processes related to nature-based solutions forward by activating affiliated agencies. The main actors involved in learning and reflection processes are citizens through surveys led by the public sector. It would be desirable to integrate reflexive monitoring practices within the municipal planning framework, so that public administration staff can learn from their processes, avoid [path dependence](#) and adjust them in future projects, creating helpful protocols for new projects.

6.4 - Chinese Regional Hub: Reflections on the Implementation Conditions for Nature-based Solutions

Technical solutions in China

China is a large country with continental proportions with a diversified range of geographical conditions and associated climatic zones (mountains, deep river valleys, basins, high plateaus, rolling plains, terraced hills, desert, etc.). Accordingly, Chinese cities also have quite diverse



geographies. In general, the mountainous scale decreases from west to east of China, and water resources are richer in the south and scarcer in the north of China.

Given the diversified Chinese context, the challenges that cities or neighbourhoods face are varied, being the most prominent ones related to floods, air pollution, agriculture and liveability in cities. Considering that, cities become more developed with time, sustainable urban regeneration processes are required to avoid vicious consumption patterns and degradation.

It is relevant to mention that while there are many relevant catalogues related to nature-based solutions, as for example the catalogues associated with [Sponge Cities Programme](#) (see "[Guiding Opinions of the General Office of the State Council on Advancing the Construction of Sponge Cities](#)", issued by the Chinese State Council), there are no specific catalogues using the term "nature-based solutions". Indeed the uptake of the term in China only started after the [2019 UN Climate Summit](#), when a cross-sectoral platform has been established to carry out more studies on the topic. In the Chinese context, a clear set of policy guidelines and practice guidance tools are needed for mainstreaming NBS-related implementation. The economic benefits related to the application of nature-based solutions are also difficult to capture, which explains why in China a wider technical knowledge in the field is still missing. Nature-based solutions are usually seen as an approach to deliver multiple goals, what on one hand is beneficial for more holistic and sustainable urban planning practices, but on the other hand, multifunctionality may also distract stakeholders and create distrust for ideas looking too loose or for the perception of a lack of scientific rigour, as a solid evidence base is more difficult to be achieved when variables are so complex and when a high number of interdependencies and synergies need to be considered.

Governance in China

Other barriers related to the planning and implementation of nature-based solutions in China related to the context of governance. There are challenges for nature-based solutions associated with governance due to lack of experience with public participation and acceptance; lack of funding lines and long-term financing support; and high complexity and difference between Chinese cities. [The Institute of Climate Change and Sustainable Development of the Tsinghua University \(ICCSU\)](#) recently established a [cooperation platform for nature-based solutions](#) to tackle climate change. On a national level, China and New Zealand have been co-leading the [Nature-based Solutions Coalition](#) with a variety of members from national governments, the private sector, civil society organisations, etc. On the subnational level, ICLEI East Asian Secretariat intends to roll out the [CitiesWithNature](#) initiative in China alongside with UN CBD COP15, planned to take place in May 2021.

Despite these partnerships and initiatives, there are still considerable organisational barriers for realising nature-based solutions in China. Arguably, the biggest barrier would be the difficulty to integrate different departments related to urban planning. Under the current system in China, multiple ministries/bureaus have conflicting interests in regards to the use of urban spaces, so cross-departmental cooperation can be an issue. Another aspect is that for new concepts, the Chinese national government usually takes the approach of rolling out several pilot cities/regions first. So resources are usually channelled to these pilots, leading non-pilots to lack political support and



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resources. So far, such pilots addressed to the planning and delivery of nature-based solutions are missing. One of the considerations is that many nature-based solutions take a long time to show their benefits, which is seen as critical in the current political landscape in which political leaders are interested to see short-term benefits for their own promotion purposes.

Financing and business models in China

The majority of operational costs of nature-based solutions are funded by the local governments themselves, on initiatives such as “[Sponge Cities](#)”, or along programmes for ecological restoration and the establishment of urban parks. Usually there is a regular public budget for urban greenery.

Regarding key stakeholders involved in the financing of nature-based solutions, local governments are usually the main financiers. If local administrations are part of a wider national pilot on a relevant topic, the Chinese national government might provide co-funding. Some private developers may take up a certain role in incorporating nature-based solutions in property development with the aim to increase liveability and promote property valorisation. Foundations and philanthropies may also sponsor some single projects but many of them might be located outside of cities, or be only small-scale demonstration projects, or even for education purposes. Usually there are no large-scale nature-based solution projects financed by private foundations or philanthropies.

Among the challenges related to financing and business models for nature-based solution projects in China is the quantification of benefits in economic (and monetary) terms. Other challenges relate to the underestimation of maintenance and monitoring costs and the immature practice of public-private-partnerships (PPP) in the Chinese context. On the other hand, some enablers can be mentioned such as the relative low start-up costs that nature-based enterprises have in China in comparison to other more costly infrastructure projects.

Finally, there is a need to better understand the benefits of nature-based solutions in environmental, social and economic terms, especially considering the throughout lifecycle by the use of established tools and methodologies. Further, there need to encourage capacity building in the field as well as to foster mechanisms for the experimentation of more advanced practices of PPP, in line with the Chinese political context.

Nature-based entrepreneurship in China

In China, the economic development landscape is rather uneven. In general, the East and the South are more developed with a denser population, while the North and the West are less developed. The more developed cities are, the more they seek to maintain their resilience and strengthen the service sector while some other cities known to be more important for their manufacturing industries (secondary industry) are under pressure for a green transition. As China continues to develop, there is a rise in the costs for hosting factories. So many Chinese cities are aiming at technology innovation, with a vision to create more jobs and new industrial sectors.



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The extent to which nature-based solutions can contribute to the sustainable development in China depends on the priorities that cities have. Nature-based solutions can certainly create new (job) opportunities, but many cities still do not recognise this potential. Especially in developed and populated cities, nature-based solutions can lead to an improvement of the urban liveability and foster new trends (e.g. urban farming), creating new service and product opportunities. For less developed cities, the possibility of creating jobs can also be tempting, as these can solve many of the existing urban and environmental issues, contributing to a new palette of jobs and occupations.

In general, both national and local governments in China encourage innovation. However, the focus on technological aspects tends to suppress investments in the social or cultural fields. In order for nature-based solutions to be successful in China, it would be recommended that studies show how solutions can deliver unique benefits and cost advantages. The main actors in the innovation sector are usually businesses that have the highest tendency towards innovation. So low-tech nature-based solutions might not be so attractive. To change this perspective amongst entrepreneurs, advocacy and dissemination work would be needed. In addition, many of the businesses in the innovation sector are either large size or with strong linkage to the government, so that they can operate in a large scale and/or receive privileged support whenever new policies are released. Therefore, the stimulation and support of nature-based entrepreneurship in China so far is rather limited. The uptake is stronger at government and NGO levels. The nature-based industry has been developing rather slow and organically, without support from the central government. Therefore, advocacy work could help the sector to gain governmental stimulus as well.

Co-production in China

Considering the political environment in China, co-production is not a common practice and it is not foreseen in current policy frameworks. Division of labour is often emphasised, usually leading to a segregated labour landscape.

Taking general urban planning as an example, government officials are the ones to set up urban plans that pass through high-level decision making-processes, then the Chinese research institutes associated with the government take up the further technical development of the plans. In this part of the process related to technical detailing and implementation, participative activities could be foreseen, having specialists and researchers reaching out to different stakeholders such as the civil society and SMEs for interviews. The results of consultation works could feed into the research and technical processes, improving results. Research products such as reports and survey analyses could be further communicated to governmental officials for them to consider the integration of raised ideas in the feasibility of further implementation. In the Chinese context, it might be more appropriate to consider several bilateral processes rather than a multilateral co-production process. For local governments to understand the differences between co-production and traditional participative processes, it would be recommended awareness raising events on the benefits of co-production.

In the specific context of nature-based solutions, co-production is not seen as mainstream. Nature-based solutions usually involve combined and sometimes complex nature-oriented processes as



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well as a large number of design applications, constructions detailing and eco-techniques, which altogether cover wide and fragmented fields of knowledge. There is a need for a more solid library of knowledge for decision makers to grasp the potentials. Local governments and different stakeholder groups in China are lacking capacity building in nature-based solutions - the state-of-art might be only scratching the surface. Furthermore, government officials usually ignore the importance of creating multi-actor teams to work together on the topic. The limited current knowledge landscape reduces public acceptance and participation interest in nature-based solutions. The wider public can be distrustful of any government's actions in planning and implementing nature-based solutions because there is lack of communication of their co-benefits and multifunctional potential to address a number of urban challenges.

Co-production might be more likely to occur in community projects than in large-scale projects, e.g. within the implementation of small-scale urban gardens at the neighbourhood level, where stakeholders are closer to the solutions and see themselves in a more equal position.

Impact assessment in China

Concerning monitoring and assessment, rather than a specific set of indicators for nature-based solutions, there are various indicators for national and local initiatives within the scope of the [“Sponge Cities”](#) national government programme, as well as for urban greenery and urban parks. Indeed, in the Chinese context indicators are seen as important components for evaluating the impacts of projects. Any government initiatives would lead to strong interests in creating corresponding indicators. In the Chinese context, stakeholders are more interested to measure and evaluate the results and impacts of implemented solutions, rather than to measure the process itself. However, it might be relevant to measure processes, as governments might include recommendations for the improvement of ongoing processes by releasing official planning guidelines.

Two examples to be mentioned are the setup of evaluation [indicators for Sponge Cities](#), and the indicators for cities to draw their “ecological red lines”, which are areas meant for strict protection. For the evaluation of Sponge Cities, some indicator categories are the percentage of wastewater treatment, the percentage of areas fulfilling national standards on flood prevention, the construction completion rate, the implementation of “guarantee measures”, and degree of public satisfaction. For the drawing of “ecological red lines”, many technical indicators are used during the process, such as indicators related to water retention, wind erosion, biodiversity importance, etc.

Reflexive monitoring in China

Usually, local government officials tend to see learning and monitoring as quite separate from one another. Governments are interested in creating diverse learning opportunities for their officials, including overseas learning, peer city exchanges or staff capacity-building workshops. For monitoring, however, Chinese cities usually have a more siloed approach, which focuses on result-oriented indicators related to the tasks performed by technical research institutes. Therefore,



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reflexive monitoring is usually not a common practice within local governments. An awareness raising work for the usefulness of the approach would be necessary to raise the interest of local governments.

For setting goals and measuring the impact of nature-based solutions, Chinese cities mostly follow national policies, which already define a number of goals and objectives. Public officials ask their public affiliated institutes to perform research, acknowledging the stipulated goals and objectives. It is worth noting that some Chinese cities are more open to accepting new approaches than others, and NGOs might have a relevant contribution to sparkle innovation if they are able to interfere at an earlier stage and provide some alternative angles for the city authority to consider.

7. Recommendations for the Delivery of Nature-based Solutions in the Regional Hubs

Upon the reflections of the Connecting Nature regional partners on their local contexts in regards to content and processes, this chapter presents recommendations for the planning, delivery and stewardship of nature-based solutions in the regional hubs of Brazil, the Caucasus, Korea and China.

The UrbanByNature programme has been contributing to the exchange of cities within these regional hubs and Connecting Nature cities on ambitions, processes, policies, financing options and business approaches on how to solve urban development challenges with nature-based solutions. The programme has been supporting collective action towards a sustainable, inclusive, healthy and resilient future for cities and towns, making tools, methods and approaches that support the planning, delivery and stewardship of nature-based interventions accessible to them via the UrbanByNature programme. This has been strengthening the collective action of local and sub-national governments in moving towards global sustainable development and climate goals such as the United Nations [Sustainable Development Goals](#) and the [Paris Climate Agreement](#).

See in the next sections the recommendations considering each context.

7.1 - Brazilian Regional Hub: Recommendations for Delivery of Nature-based Solutions

In order to foster nature-based solutions in Brazil, it is important to comprehend that the 'nature-based solutions' terminology is not as widespread as in Europe. One barrier for planning, designing, managing and financing nature-based solutions is the lack of knowledge about the concept and its interlinkages with more well-known concepts such as 'green infrastructure'. Focusing on ecological education and awareness raising is as important as promoting training opportunities for professionals in all areas related to cities about the role of nature and biodiversity in urban contexts. National and subnational governments are in need of technical knowledge to be in a position to approve, implement and evaluate investments in nature-based solutions. It is also critical to stimulate more in-depth cross-sectoral research involving local universities, especially regarding monitoring



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and evaluating techniques. Furthermore, there is an urgent need to recognise that green, soft solutions can be more efficient and cost-effective than many conventional grey infrastructures. Still, there is a need for greater availability of professionals as well as the need to foster demand itself within municipalities. On the part of contractors, governments or companies, a long-term vision of the effects of nature-based solutions is also still lacking in the Brazilian context.

Brazilian institutions that provide funding could include NBS-related innovation and technology as a priority to transform cities, reducing their vulnerability to extreme weather events, and helping them to adapt to climate change challenges. There is also the potential for setting up beneficial connections with other emerging fields such as 'circular economy' to promote more systemic approaches towards urban sustainability (see [report](#)).

As mentioned before, another reason that affects negatively the delivery of nature-based solutions in Brazil is the absence of a legal incentive and regulatory framework. The short-term perspective and the interests of large companies that aim to generate faster profits are also barriers, as these tend to not be interested in alternative solutions and tend to do business as usual to avoid any risks. Large companies also tend to influence public authorities, who follow established standards that hinder innovation. So awareness raising and the dissemination of ongoing planning frameworks such as the European Green Deal and the EU Biodiversity Strategy 2030, which both support nature-based solutions in cities, are ways to encourage Brazilian decision-makers to search for more knowledge in the field and support the planning and implementation of nature-based solutions in the future.

The UrbanByNature programme has largely contributed to heat up a critical group of multi-actors interested in nature-based solutions, enabling a MoU to be signed between key stakeholders such as CGEE and ICLEI. Together, these institutions have been establishing a joint work plan to enable the launch of a Brazilian platform and catalogue on nature-based solutions. It is expected that these materials will be largely disseminated amongst Brazilian municipalities and decision-making spheres.

Brazil can be a very strategic regional hub, as it has the potential to inspire and export the gathered know-how applied under its unique circumstances to other urban contexts with similar climate/urbanisation/political conditions, as for example to other countries in Latin America. This has already shown to be a reality as attendees from some South-American cities have been identified in UrbanByNature's webinars.

A recommendation to continue supporting the planning, delivery and stewardship of nature-based solutions in Brazil would be to encourage UrbanByNature Brazilian registrants to make use of the CN Framework. The different actors could choose working at first with a selection of elements of the CN Framework and slowly include others. From the reflections of the regional partners, the element of nature-based entrepreneurship seems to be of interest for the Brazilian audience, what is also reflected on the ongoing articulations within the Brazilian NBS Multi-Actor Group and the interest of eight Brazilian enterprises to participate in the OSMOS mentoring programme for nature-based enterprises.

In the interest to raise the outreach of the guidebooks produced by the Connecting Nature project (Technical Solutions Guidebook, Reflexive Monitoring Guidebook, Nature-based Enterprises Guidebook, Governance Guidebook, Impact Assessment Guidebook, Financing and Business



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Models Guidebook, and the Co-Production Guidebook) within the Brazilian regional hub, it is highly recommended that these be translated to the local language, Portuguese. Starting from the Connecting Nature Framework Guidebook, the translated PDFs would increase the reach of the project's knowledge in Brazil, considering that not all stakeholders working with and interested in nature-based solutions are fluent in English, especially these working within local governments.

7.2 - Caucasian Regional Hub: Recommendations for the Delivery of Nature-based Solutions

There is a need for education on nature-based solutions in the region. The civil society is lacking a proper introduction to the concept, what has been changing since the UrbanByNature started its activities in the Caucasus. Some of the recommendations gathered here in this document were elaborated during the launch of the UrbanByNature programme in the Caucasus, at the World Cafés sessions (all details can be found in the workshop report). These recommendations will be further developed as the completion of the webinars for the Caucasus Stream take place. Further, the physical workshop in Yerevan scheduled for 2021 will allow for new recommendations taking into account the Armenian reality as well.

Some of the findings from Tbilisi's UrbanByNature launch workshop (October 2019) are:

- Free spaces available in the city could be used for nature-based solutions and multi-functional parks, instead of for conventional property development.
- It would be beneficial to support local food and greenery markets from nearby rural areas around urban centres.
- A catalogue with local nature-based solutions exemplars would be highly recommended, for city officials, decision-makers and relevant non-governmental stakeholders to better plan and implement nature-based solutions.
- Such a catalogue could be developed and used as an instrument for voluntary self-selection for the implementation of nature-based solutions as part of rehabilitation/reconstruction projects.
- It is recommended that master plans be assessed in the SEA process in compatibility with nature-based solutions.
- The region is in need of guidance materials on nature-based solutions. It would be helpful to have the CN Framework translated to the local languages, as well as the other guidebooks being generated within the Connecting Nature project: Technical Solutions Guidebook, Reflexive Monitoring Guidebook, Nature-based Enterprises Guidebook, Governance Guidebook, Impact Assessment Guidebook, Financing and Business Models Guidebook, and the Co-Production Guidebook.
- It would be interesting to provide NBS-related curricula and study materials for universities and urban stakeholders (formal and informal education).
- It would be helpful to have a programme allowing for business internships of 1-2 weeks duration (for all types of stakeholders) or even study tours for Caucasian stakeholders to see good examples of implemented nature-based solutions.
- One-to-one study tours are also highly recommended for city governance practitioners and SMEs.
- A guidance on how to tap IFI and other funding resources to finance nature-based solutions would be helpful.
- It would be beneficial for the Caucasus region to develop NBS-related procurement documentation (covering the whole process from initiation to closure). Such material could be



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shared with local authorities, from feasibility studies to implementation and handover, so that local stakeholders could develop such a procurement process adjusting it to local situations.

- Implementation unit(s) in local authorities/cities for the delivery of nature-based solutions are recommended.
- 'Brownfield' redevelopment/renaturing poses a good opportunity for local nature-based solutions initiatives.
- Universities could be valuable partners to support co-production processes (e.g. organising multi-actor workshops, performing case studies).
- Condominiums could also be engaged to increase the implementation opportunities of nature-based solutions in the region (e.g. 'pocket parks instead of parking lots').

7.3 - Korean Regional Hub:

Recommendations for the Delivery of Nature-based Solutions

It would be recommended to provide case-based webinars to inform local governments of the potentials of nature-based solutions as well as their link to climate responses through implemented examples. Furthermore, methodologies targeting the delivery of nature-based solutions are also of interest - but these would need to be adjusted to the Korean reality.

In particular, it is recommended to invite stakeholders involved in a specific case to talk about their own experiences in regards to planning and implementation processes. Further, it would be highly recommended to provide various communication opportunities between European municipalities with experience in the delivery of nature-based solutions and Korean municipalities, promoting a city-to-city exchange. Korean participants are usually interested in practical and in-depth and technical content, rather than in general and theoretical content.

7.4 - Chinese Regional Hub:

Recommendations for the Delivery of Nature-based Solutions

The recommendations for the delivery of nature-based solutions in the Chinese hub are to:

- Support and enhance the uptake of the national government's momentum on nature-based solutions, especially considering that NBS-implementation needs long time to have its benefits visualised;
- Harness the opportunities posed by the upcoming UNCBD COP15 in China to promote cross-departmental synergies towards a wider acceptance of planning and implementation of nature-based solutions in Chinese cities;
- Create a strong synergy to [China's Ecological Civilization](#) principle so as to foment a positive political environment for the planning and delivery of nature-based solutions;
- Tap into rapid urbanisation and urban regeneration opportunities (depending on the region).
- Conduct robust nature-based solutions cost-benefit analyses to inform stakeholders
- Create assessment and monitoring guidelines to contribute to a more practical approach, taking consideration the existing initiatives such as the Sponge Cities programme
- Disseminate successful nature-based solutions cases that deliver multiple impacts, especially with consideration to economic aspects
- Categorise the different types of nature-based solutions offerings considering the diversity of Chinese cities



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- Provide a series of capacity-building activities via UrbanByNature to government officials and practitioners, on aspects covered also in the previous chapter;
- Expand nature-based solutions knowledge transfer channels considering the Chinese context, as these networks are lacking in China.

8. Conclusions and Final Considerations

This report shows how the UrbanByNature programme was set up to be a long-term capacity-building and knowledge exchange initiative to bring to the world, in the format of webinars and face-to-face workshops, the elements of the CN Framework, which builds on inputs from the project's cities and partners. More than to serve the dissemination of knowledge coming from the Connecting Nature project, the programme was also designed to reflect a co-productive approach, in which not only principles and methods are shared, but cities and participants from the regional hubs are invited to work together and actively engage in making cities and towns more resilient towards water and climate change challenges and in transforming their neighbourhoods.

The series of webinars of the UrbanByNature programme were and still are being designed via a co-creative approach tailored to the needs and demands of each regional hub. It would have been ideal to perform such an assessment as this report delivers prior to the design of the webinar series and local workshops in each region. However, the CN Framework only recently became mature for practical use and related dissemination in the regional hubs. Still, the Work Package for global outreach always tried to assess the situations of the regional hubs and to understand their local needs and demands prior to offering Connecting Nature's outputs. It would have been an easier task to simply communicate and disseminate the project's outputs to the four regional hubs. Nevertheless, the preferred approach was to give birth to an open and inclusive exchange at eye level, understanding the contexts of nature-based solutions in the regional hubs and framing the interaction as a win-win for all sides, in the interest of knowledge exchange rather than knowledge transfer.

The main achievement of this report probably lies in the reflections of the regional partners themselves towards the implementation conditions of nature-based solutions in each of the four regional hubs. Connecting Nature seems to be the only NBS H2020-funded project so far to assess the entry points of nature-based solutions beyond Europe, considering the wide range of elements contemplated within the CN Framework. The elements of the CN Framework, a process tool developed by the project to help cities and other organisations navigate the path towards NBS large-scale implementation, consider three distinct phases of development for a nature-based solution: planning, delivery and stewardship. The work done within the regional hubs so far reflects more on planning and delivery than on stewardship, considering that stewardship relates to ownership of the nature-based solutions and demands a certain amount of engagement from the users and their willingness to 'take care' of them. Therefore, this would usually compose a rather later stage of nature-based development.

Drawing from the comprehensiveness of the CN Framework as a tool, the process to assess the situation of the elements within the regions occurred by a joint work by DRIFT and ICLEI to elaborate questions based on the CN Framework, which were submitted to the Connecting Nature partners in Brazil, the Caucasus, Korea, and China. By responding the questionnaire, the partners could point

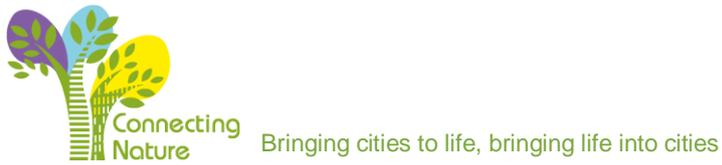


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out to a certain extent the readiness for regional work considering the different elements of the CN Framework in regards to planning, delivery and promotion of local stewardship of nature-based solutions. The information gathered from each regional hubs will feed into a process to further design and adjust the interaction of the Connecting Nature project with the stakeholders of the regional hubs.

Furthermore, UrbanByNature's activities have substantially contributed to the local work with nature-based solutions, empowering local actors to take ownership of the processes. In Brazil, for example, a "Brazilian NBS Multi-Actor Group" was established and now local stakeholders interested in nature-based solutions have been meeting via local webinars in Portuguese and engaging in interactive digital workshops using tools such as Mural and Miro to discuss on topics relevant for the nature-based solutions agenda in the region. This has been taking place via the engagement and commitment of local actors such as PUC-Rio, CGEE and the Brazilian nature-based enterprise Fluxus. To corroborate the rise of the Brazilian local work on nature-based solutions, a Memorandum of Understanding was signed between ICLEI and CGEE (Brazilian Ministry of Science, Technology and Innovation) to make sure that the collaboration to strengthen the nature-based solutions agenda will be long-term. This group will continue to engage in activities to assist CGEE with publishing in a Technical Catalogue for Nature-based Solutions in 2021. Further, a local platform that will feature nature-based solutions in Brazil is under development by CGEE.

Considering that there is need for resources to make it possible for material to be translated to local languages, also considering the importance of local language for inclusion and for the empowerment of local actors and in the organisation of local events, the project has undertaken action to understand the co-funding potential in the hubs to obtain mirror-funding to support UrbanByNature's activities. Unfortunately, mirror funding still remains a challenge as funding bodies in Brazil, Korea, China and the Caucasus tend to focus on traditional science and technology fields in which nature-based solutions are usually not placed. Still, the Work Package for the global outreach of Connecting Nature succeeded in carrying out the launches of the UrbanByNature programme in three of the four regional hubs, building on regional opportunities such as key events related to the field and considering the activities of sister nature-based solutions H2020-funded projects. The fourth launch of the UrbanByNature programme in China needed to be postponed due to the COVID-19 pandemics. However, the launch will happen still this year during the fourth High-Level International Forum on Sustainable Urban Development in Chengdu, in November (see agenda with partly confirmed speakers in the ANNEX). The event will take place from 16-18 November 2020 and will allow for in-person attendance at the national level as well as virtual attendance for international participants. By encompassing both a high-level conference component with national and UN-level contributions as well as a series of workshops, the forum has in previous years gathered 300-500 participants including participants from local governments and their linked institutes. As such, it presents a unique opportunity to display Europe's leading expertise in the field of nature-based solutions to a national as well as sub-national audience, especially considering the uncertainty in regards to restrictions during COVID times. Therefore, the kick-off of UrbanByNature in China has been co-designed by both the Connecting Nature and the [CLEVER Cities](#) H2020-funded projects. Joining forces with the CLEVER Cities project will allow for the roll-out of a robust training programme spanning nature-based solutions for urban resilience (Connecting Nature) as well as for urban regeneration (CLEVER Cities) – thus complementing each other thematically.



The UrbanByNature programme is also realising joint work with the recently launched Connecting Nature Enterprise Platform by co-organising and delivering a webinar series for the platform’s audience. Considering that one of the major achievements of the UrbanByNature programme was to ensure its longevity beyond the conclusion of the Connecting Nature project, it is rather fortunate that the Connecting Nature Enterprise Platform was also designed to outlive Connecting Nature. It is likely that the joint work will continue throughout time, strengthening both initiatives in a win-win scenario.



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9. ANNEX

Dissemination Strategy for the UrbanByNature Programme

Drawing from a long-term experience in organising events and promoting them, ICLEI Europe has designed a dissemination strategy for the UrbanByNature programme, considering physical and online events.

Physical Events - Timeline and checklist

3 months prior to the event:

- Check for dates, time (full day, half day), part of another event,
- venue and catering
- Objectives and expected outcome of event
- Topic and themes to be covered in the event
- No. of participants expected
- Type of participants expected
- Potential Speakers
- Contacts inside the project for speaking slots
- Contacts outside the project for speaking slots
- List of people to be invited, if any available (else communication channel- previous events, webinars etc.)
- Budget for venue, catering, logistics(projector, controller, microphone, flipcharts, pens and cards), travel and accommodation (also for speakers)
- Registration form outline
- "Save the date" date to send invites finalized
- Tweet#1 "Save the date"

2 Months/8 weeks prior to the event:

- Date, time, venue, catering, budget and logistics
- Save the date invite
- Speakers List
- Programme draft v.1
- Registration form
- Newsbit#1- save the date and registration link, draft programme v.1
- Book tickets and hotel accommodation
- Speakers - potential themes and questions for discussions v.1
- Ongoing social media work to promote the event

6 weeks prior to the event:

- Programme v.2
- MailChimp invitation finalise
- Personalized invites drafted for local government authorities
- Event Listing finalized and on project website



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- Communication channel reviewed
- Questions v.2 for discussions developed further
- Speakers confirmed
- Logistics and other arrangements checked
- Catering
- Internal Screenplay v.2
- Ongoing social media work to promote the event

1 month prior to event:

- Finalise programme and speakers
- Send formal invitations-Mailchimp
- Tweet#2 Final programme and Registration Link
- Review comm. channel and invite
- Newsbit#1
- Send newsbit#1 and Tweet#1 and #2 to project partners to promote event
- Speakers presentations
- Speakers CV
- Reconfirm venue, catering, logistics

3 weeks prior to event:

- Tweet#3
- Invitations
- Prepare start and end slides
- Internal Screenplay v.2

2 weeks prior to event:

- Tweet#4 and Newsbit#2 - send to project partners
- Registration List - participants List
- Consent List (for pictures and storage of info.)
- USB and Laptop booked
- Name badges

1 week prior to event:

- USB:- i.) Ppts (own and speakers), ii.) Programme final, iii.) Participants List, iv.) Consent List, v.) Travel and acc details, vi.) Video, if any
- Banners, Flyers (other projects), Moderation kit check
- Tweet#4 - Tag all

3 Days prior to event:

- Print : i.) Participants List, ii.) Consent List, iii.) Program, iv.) Internal Screenplay
- Check USB, check venue, catering, logistics etc.



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During the Event:

- Set up registration desk and ensure CN website
- participants sign the participants list
- Social media work during the event
- After the event
- Send out thank you email and additional information – how to stay informed re the project, share the presentation slides/event photos, etc.
- Produce a report based on the event / news bite on the event for project/partner/ICLEI website(s) – where relevant
- Travel/accommodation reimbursement forms, if needed.

Online Events – Checklist

With the aim to promote a wide attendance of UrbanByNature’s online events, ICLEI ES has been disseminating them through many channels and platforms. These are the used means of communication: the Connecting Nature website, ICLEI Europe’s website, ICLEI’s global website (whenever possible), ICLEI AS, OPPLA, CLEVER Cities’ website, ProGReg’s website, GrowGreen’s website, Connecting Nature’s Twitter, ICLEI Europe’s Twitter, Sustainable Cities’ Twitter, ProGReg’s Twitter, CLEVER Cities’ Twitter, EURESFO’s Twitter, CitiesWithNature’s and Connecting Nature’s Youtube channels, ICLEI Europe’s Newsletter, CLEVER Cities’ Newsletter, ProGReg’s Newsletter.

The online promotional platforms that have been used are: [GlobalUrbanist](#), [EUagenda](#), [Climatealliance](#) and [EU-events](#).

UrbanByNature webinars of the Brazilian stream

See below the list of all nine thematic webinars (more than 30 videos) that took place in the Brazilian regional hub:

- Kick-Off Webinar (UrbanByNature STEP 1, lead ICLEI Europe)
“Introducing UrbanByNature”
Scheduled for April 23, 2019 at 10-11.30 AM (BRT), 3-4.30 PM (CEST)
Speakers:
 - Tiago Freitas, European Commission, DG RTD, Brussels, Belgium
 - Cecilia Herzog, urban landscape designer, specialist in environmental preservation of cities and professor at the Pontifical Catholic University of Rio de Janeiro (PUC-RJ, Brazil)
 - Marcus Collier, Project Coordinator, Trinity College Dublin, Ireland
 - Peter Vos, Sustainability expert, City of Genk (Belgium), Katrien Van De Sijpe, Head of Department of Environment and Sustainability, City of Genk (Belgium) and Mien Quartier, Expert in Social Innovation, City of Genk (Belgium)
 - Erika Mielke, Director of Research and Monitoring of the Environment Secretary of Curitiba, Brazil
 - Daniela Rizzi, ICLEI Europe

Youtube link (6 videos): <https://www.youtube.com/watch?v=HNDZxgOoGM0&list=PLR0PkyQ540TV-rz2iTcmgO2fUnNN0pvTd>



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- Webinar #1 (UrbanByNature STEP 2, lead UEL)
“What are your city's needs and experiences on NBS?”
Scheduled for May 29, 2019 at 10-11:00 AM (BRT), 3-4:00 PM (CEST)
Speakers:
 - Dr. Stuart Connop, Senior Research Fellow - Sustainability Research Institute, University of East London (UK)
 - Stephan Kampelmann and Adrian Hill, OSMOS (Belgium)
 - Natalia Madajczyk, Head of Unit for Interdisciplinary Projects, City of Poznań (Poland); Agnieszka Dziubała, Connecting Nature Project Officer, City of Poznań (Poland); and Agnieszka Osipiuk, Chief Specialist for Interdisciplinary Projects, City of Poznań (Poland)

Youtube link (3 videos):
<https://www.youtube.com/playlist?list=PLR0PkyQ540TXL3k1O0ala9BV7JHhCaZX3>
- Webinar #2 (UrbanByNature STEP 3, lead DRIFT)
“How to co-create nature-based solutions?”
Scheduled for July 11, 2019 at 10 -11:00 AM (BRT), 3 -4:00 PM (CEST)
Speakers:
 - Katharina Hölscher (Research Fellow) and Marleen Lodder (Research Fellow), Dutch Research Institute For Transitions (DRIFT), Rotterdam (Netherlands)
 - Mien Quartier (Expert in Social Innovation) and Gerarda Lamerichs, City of Genk (Belgium)
 - Ana Clara Pellegrino and Raquel Cruz, Secretary of Environment, Water Resources and Sustainability of Niteroi, Department of Urban Ecology and Climate Change, City of Niterói (Brazil)

Youtube link (3 videos):
<https://www.youtube.com/playlist?list=PLR0PkyQ540TUavVQFphaH1xTU4hQ4eS24>
- Webinar #3 (UrbanByNature STEP 3, lead UDC)
“How can cities develop indicators to assess impacts of nature-based solutions?”
Scheduled for September 23, 2019 at 10:00-11:00 AM,(BRT), 3:00-4:00PM (CEST)
Speakers:
 - Adina Dumitru, Director of the Sustainability Specialization Campus at the University of A Coruña (Spain)
 - Gillian Dick, Spatial Planning Manager – Research & Development, Development Plan Group, Development & Regeneration Services, Glasgow City Council (Scotland) & Laura Mowat, Project Officer – Connecting Nature, Development Plan Group, City of Glasgow (Scotland)
 - Sean Kelly, Senior Project Officer, Connecting Nature, City of Glasgow (Scotland)
 - Maria Silvia Rossi, Subsecretary of Territorial Environmental Management, Environment State Secretariat of Distrito Federal, Brasília (Brazil)
 - Raiza Fraga and Monique Pinheiro, Center for Strategic Studies and Management (CGEE), Brasília (Brazil)

Youtube link (4 videos):
https://www.youtube.com/playlist?list=PLR0PkyQ540TXROv49nIWErZ9_r2hUXrbe
- Webinar #4 (UrbanByNature STEP 4, lead TCD)
“How to finance nature-based solutions in the urban environment?”
Scheduled for October 19, 2019 at 10:00-11:00 AM, Brasília Time (2:00-3:00 PM CET)
Speakers:
 - Siobhan McQuaid, Head of Innovation, Centre for Social Innovation of Trinity College Dublin, TCD, Ireland
 - Ian Goodman, MyParkScotland Project Manager and Emma Halliday, Programme Manager, Scotland
 - Juliana Ribeiro, Senior Analyst, Grupo Boticário, Curitiba, Brazil

Youtube link (3 videos):
<https://www.youtube.com/playlist?list=PLR0PkyQ540TVKin1O9OHqw7TSTztI9Yui>
- Webinar #5: (UrbanByNature STEPS 5, lead UEL)
“Technical Nature-based Solutions: Urban stories of widening roll-out”



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Scheduled for December 5, 2019 at 10:00-11:00 AM, Brasília Time (2:00-3:00 PM CET)

Speakers:

- Stuart Connop, Senior Research Fellow - Sustainability Research Institute, University of East London (UK)
- Rania Sermpezi, GIS Technical Project Officer – H2020 Connecting Nature
- Sven-Oliver Knabe, Market Development Manager, Helix Pflanzen
- Cristiano Budreckas - Agronomist, Hidrobotanica Ambiental, Brazil

Youtube link (4 videos):

https://www.youtube.com/playlist?list=PLR0PkyQ540TWpz65CwWmNjFhVcqj_mObn

- Webinar #6: (UrbanByNature STEPS 4, lead TCD)

“Nature based Entrepreneurship”

Scheduled for January 29, 2019 at 10:00-11:00 AM, Brasília Time (2:00-3:00 PM CET)

Speakers:

- Siobhan McQuaid, Head of Innovation, Centre for Social Innovation, Trinity College Dublin, TCD, Ireland
 - Gerardo González, R&D&i Project Manager, Bioazul, Spain
 - Guilherme Castagna, Civil Engineer and Permaculture Designer, Fluxus Design Ecológico, Brazil
- Speakers:

Youtube link (3 videos):

<https://www.youtube.com/playlist?list=PLR0PkyQ540TXXp5ZZcTQudWn5IEa8t-bx>

- Webinar #7: (UrbanByNature STEPS 6, lead DRIFT and UDC)

“Reflexive Monitoring and Process Indicators for NBS”

Scheduled for March 5, 2020 at 10:00-11:00 AM, Brasília Time (2:00-3:00 PM CET)

Speakers:

- Adina Dumitru, Director of the Sustainability Specialization Campus at the University of A Coruña (Spain)
- Marleen Lodder, Research Fellow of the Dutch Research Institute For Transitions - DRIFT (The Netherlands)
- Peter Vos, Sustainability Expert of the City of Genk (Belgium)

Youtube link (3 videos):

https://www.youtube.com/playlist?list=PLR0PkyQ540TX_gODkqtkvFXwRd1oQZJKb

- Webinar #8: (UrbanByNature STEPS 7, lead TCD)

“Upscaling: different methodologies to scale up NBS and transfer them to other cities”

Scheduled for June 18, 2020 at 9:00-10:30 AM, Brasília Time (2:00-3:30 PM CEST)

Speakers:

- Paula Vandergert, Senior Research Fellow - Sustainability Research Institute, and Pauline Georgiou, Research Assistant, University of East London (UK)
- Ms. Nermina Suljevic, City of Sarajevo, Ms. Lejla Beslagic, City of Sarajevo and Belma Pasic, Sarajevo Economic Region Development Agency (SERDA) (Bosnia and Herzegovina)
- Ana Clara Mourão, Coordinator of the Geoprocessing Laboratory at the School of Architecture, Federal University of Minas Gerais, UFMG (Brazil)
- Marcus Collier, Connecting Nature Project Coordinator, Trinity College Dublin (Ireland)

Youtube link (4 videos):

<https://www.youtube.com/playlist?list=PLR0PkyQ540TW8SHSvpdIPreMnCiqvouK6>

UrbanByNature webinars of the Caucasus stream

See below the list of the 6 thematic webinars designed for the Caucasus regional hub:



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<ul style="list-style-type: none"> ● Webinar #1 (UrbanByNature STEP 1, lead ICLEI Europe) <p>Kick-off webinar “Introducing UrbanByNature” Held on Jul 10, 2020 at 16:00 GET/ 2pm CEST Speakers: - Tiago Freitas, Policy Officer, European Commission, DG RTD, Brussels, Belgium - Marcus Collier, H2020 Connecting Nature Project Coordinator, Trinity College Dublin, Ireland - Daniela Rizzi, Officer, Sustainable Resources Climate and Resilience, ICLEI, Germany</p> <p>- Mamuka Gvilava, GIS and RS Consulting Center "GeoGraphic", Tbilisi, Georgia</p> <p>- Lilit Sahakyan, Center for Ecological-Noosphere Studies (CENS), Yerevan, Armenia</p> <p>Youtube link (5 videos): https://www.youtube.com/watch?v=8wVZ52RD-2Y&list=PLR0PkyQ540TVknpOi0BV1RWto0N00_eRn</p>	<ul style="list-style-type: none"> ● Webinar #2 (UrbanByNature STEP 2, lead UEL, UK) <p>What are your city's needs and experiences on NBS? Held on Sept 4, 2020 at 16:00 GET Speakers: - Stuart Connop, University of East London, London, UK - Agnieszka Osipiuk, Project Coordination and Urban Regeneration Office of the City of Poznań, Poznan, Poland - Shushanik Asmaryan, Deputy Director for Science & Head of GIS and Remote Sensing Department, Center for Ecological-Noosphere Studies NAS RA, Yerevan, Armenia</p>
<ul style="list-style-type: none"> ● Webinar #3 (UrbanByNature STEP 3, lead DRIFT, The Netherlands): <p>Is there a framework for nature-based solutions in your city? Scheduled for Oct 2, 2020 at 16:00 GET Speakers: Kato Allaert, DRIFT, The Netherlands Cristian Garcia-Espina Adank, ProMalaga, Malaga, Spain Saba Pipia, Deputy Head, Department of Environment, Tbilisi City Hall, Georgia</p>	<ul style="list-style-type: none"> ● Webinar #4 (UrbanByNature STEP 3, lead UDC) <p>Indicators to assess impacts of Nature-Based Solutions in your cities Tentatively scheduled for Dec 4, 2020 at 16:00 GET Speakers tbc.</p>
<ul style="list-style-type: none"> ● Webinar #5 (UrbanByNature STEP 4, lead ICLEI Europe) <p>Green city Action Plans (GCAP) as strategies for urban resilience Tentatively scheduled for Feb 5, 2021 at 16:00 GET Speakers tbc.</p>	<ul style="list-style-type: none"> ● Webinar #6 (UrbanByNature STEPS 4 and 5, lead TCD, Ireland) Nature-Based Entrepreneurship and Nature-Based Enterprises (NBE) Tentatively scheduled for Apr 2, 2021 at 16:00 GET Speakers tbc.



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Set of questions submitted to UrbanByNature's 4 regional hubs

Technical solutions

1. What are the cities' landscape context (e.g. watershed, ecosystems, geology) in your region?
2. What challenges do cities or neighbourhoods in your region face (environmental, social, economic) that nature-based solutions can help tackle?
3. Are there any catalogues on technical designs for nature-based solutions in your region? If so, please elaborate.
4. Are there any technical barriers in implementing nature-based solutions in your region? If so, please elaborate.

Governance

1. Which relevant partnerships or networks to foster nature-based solutions exist in your region?
2. What are the urban challenges that nature-based solutions can help address in cities in your region?
3. Which organizational barriers for realizing nature-based solutions are cities in your region facing?
4. Can you identify city strategic goals that nature-based solutions help to achieve in the cities in your region?

Financing and business models

1. How have ongoing operational costs of nature-based solutions been financed to date in cities in your region? Can you give us some examples?
2. Which are the key stakeholders involved in financing nature-based solutions in your region?
3. What are the main challenges and enablers to financing and business models for nature-based solutions in your region?
4. Which skills and knowledge are cities in your region currently lacking, if any, regarding financing and business models of nature-based solutions?

Nature-based entrepreneurship

1. What are the priorities for economic development of cities in your region? E.g., priority sectors for development, priority geographical areas for economic development, and other economic priorities.
2. How can NBS contribute to these economic development priorities?
3. How is the innovation environment in the region when it comes to nature-based solutions?
4. Which are the main actors in this innovation environment, considering college & universities, industrial sector, NGOs, government, investors & funders?
5. Please describe any policies that cities in your region have implemented to stimulate and support the emergence of nature-based entrepreneurship.

Co-production

1. Please give examples of co-production for nature-based solutions or for other projects that are used in cities in your region.
2. Which tools and methods are cities in your region using for co-production?
3. What are the results of existing co-production processes in cities in your region?
4. What are the challenges and enablers regarding co-production for nature-based solutions that cities in your region are facing?



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Impact assessment

1. Are there indicators in place for the cities to measure and evaluate the impacts of nature-based solutions?
2. Are there indicators in place for the cities to measure and evaluate the process of nature-based solutions?
3. Can you give some examples of how cities in your region work with indicators for nature-based solutions?

Reflexive monitoring

1. How do cities in your region create opportunities for learning and monitoring while planning and delivering nature-based solutions?
2. How do cities in your region set goals and measure the impact of nature-based solutions?
3. Which actors are involved in learning from the realization process and in monitoring nature-based solutions?



Launch of the Academy on Nature-Based Solutions by the Connecting Nature project in Brazil
as part of the EU-Brazil Sector Dialogue
2nd International Seminar for Nature-Based Solutions
Brasilia, 9-10 July 2018

Report on the workshops on co-creating and using the potential of nature-based solutions in Brazilian cities
August 2018





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1. Introduction

The 2nd International Seminar on Nature-Based Solutions (NBS) was held in Brazil from 9th to 10th of July as part of the [EU-Brazil Sector Dialogue on Nature-Based Solutions](#). The event was co-organised by the [ICLEI European Secretariat](#) on behalf of the [Connecting Nature project](#), the [ICLEI South America Secretariat](#), and the [European Commission's Directorate-General for Research and Innovation](#). On the Brazilian side, co-organisation was carried out by the [Center for Strategic Studies and Management \(CGEE\)](#) and the [Ministry of Science, Technology, Innovation and Communication \(MCTIC\)](#), with support of the [Global Environment Facility \(GEF\)](#).

The seminar brought together Brazilian and European cities, researchers, non-governmental organisations (NGOs), businesses and practitioners to share experiences, learn from one another and have a dialogue about how the planning, co-implementation and maintenance of nature-based solutions can contribute to making sustainable cities.

Over the past years, the EU-Brazil Sector Dialogue has been contributing to strengthening EU-Brazil relations, focusing on a range of themes of mutual interest linked to four pillars a) competitiveness, growth and jobs, b) global challenges, c) human rights, peace and international security and d) networking including people-to-people contacts and cultural exchanges. Most themes go beyond the bilateral interests, embracing regional and global challenges in Brazil and Europe.

EU-Brazil Sector Dialogue on Nature-Based Solutions

The **EU-Brazil Sector Dialogue on Nature-Based Solutions** provides a platform for the exchange of experiences and good practices as well as mutual learning on developing cities more sustainably by using nature as a solution to tackle urban challenges.

The **2nd International Seminar on Nature-Based Solutions** was carried out in Brasília in July 2018 as part of the Sector Dialogue, resulting from a cooperation starting in 2015 between the Brazilian Ministry of Science, Technology, Innovation and Communications (MCTIC) and DG Research and Innovation in the area of nature-based solutions, in partnership with the Centre for Management and Strategic Studies (CGEE). The objective of the seminar was to consolidate a growing cross-regional collaboration



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network around nature-based solutions.

The seminar intended to present the concept of nature-based solutions to Brazilian stakeholders and contribute to the discussions on integrating nature-based solutions into Brazilian city-making. Examples of nature-based solutions in the European Union (many of which are funded under the Horizon 2020 working programme) and Brazil were presented and their role in addressing environmental, social and economic challenges and in increasing resilience (e.g. to water stress and climate change) were explored. The cost-effectiveness of these solutions and the multiple benefits they provide were highlighted as was their contribution to the Sustainable Development Goals (SDGs). The seminar also explored how the business case for nature-based solutions as means of cost-effectively addressing societal challenges.

See the agenda of the event in ANNEX 1.

Connecting Nature project

The **Connecting Nature** project is a 12 million Euro project running from 2017 to 2021, funded by the European Commission's Horizon 2020 Work Programme. With 33 project partners from local authorities, regional and civil society organisations, companies and research institutes in 16 countries, Connecting Nature, led by Trinity College Dublin, is developing innovative planning processes in 11 European cities, from which Genk (BE), Glasgow (UK) and Poznań (PL) are front-runner cities, and A Coruña (ES), Bologna (IT), Burgas (BG), Ioannina (GR), Nicosia (CY), Malaga (ES), Sarajevo (BA) and Pavlos Melas (GR) are fast-follower cities.

The project is analysing the impact of large scale nature-based interventions in these cities with regards to climate change adaptation, health and well-being, social cohesion and sustainable economic development at local level. Peer-to-peer learning, capacity building and knowledge exchange are fostered among cities, both those who are already more experienced in implementing nature-based solutions as well as those who have the wish to realise them but still lack capacity.

The project also provides the opportunity for cities and businesses around the globe to join its **Academy on Nature-Based Solutions** as a global knowledge sharing and outreach program for cities aiming to better, sustainable, resilient and liveable futures.



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Its co-creative, integrated programme will enable participants to learn from each other and from the Connecting Nature experience to plan and use the benefits urban nature provides better. ICLEI together with DRIFT will lead on devising and implementing the Academy for the Connecting Nature project.

ICLEI – Local Governments for Sustainability

ICLEI – Local Governments for Sustainability, founded in 1990 as the International Council for Local Environmental Initiatives, is the world's leading network of local and regional governments committed to sustainable development. ICLEI believes that local action drives global change and the leadership of local and regional governments can make a major difference in addressing complex environmental, economic and social challenges. ICLEI promotes joint action, peer learning, and strong partnerships between civil society, business leaders and all levels of government to accelerate local sustainable development and make real change on the ground.

Since 1992, the ICLEI European Secretariat (ICLEI ES) has been closely working with ICLEI network cities in Europe, North Africa, the Middle East and West Asia, other European networks, the European Commission, the Committee of the Regions, and many others. Within the Connecting Nature Project, ICLEI ES is in charge of making the project's findings go global, supporting the establishment of regional partnerships and facilitating the knowledge exchange of nature-based solutions with cities through the Academy on Nature-Based Solutions, with a particular focus on EU-neighbouring countries in the Caucasus as well as cities in Brazil, China and South Korea.

The South America Secretariat (ICLEI SAMS), based in São Paulo in Brazil, connects more than 60 associated governments in 8 countries, encouraging local governments to take actions towards sustainability. ICLEI SAMS will support the activities of the Academy in the Brazilian context.

In the 2nd International Seminar for Nature-Based Solutions, ICLEI ES and ICLEI SAMS supported the event's programme development and launched the Academy on Nature-Based Solutions in Brazil, bringing together potential multiplier cities, regional research partners and SMEs in two workshops.



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DRIFT – Dutch Research Institute For Transitions, Erasmus University Rotterdam, The Netherlands

At the Erasmus University of Rotterdam, [DRIFT](#) is the leading research institute in sustainability transitions. Drift combines cutting edge research at the intersection of theory and practice with high-level advisory and training programs for governmental institutions, civil society, businesses and intermediary organisations. Founded in 2004 at the Erasmus University Rotterdam, DRIFT has rapidly gained recognition as an internationally oriented institute with worldwide networks, projects and contributions in the fields of transition theory and sustainability transitions.

DRIFT has two interrelated objectives. First, it is constantly advancing transition theory. Transdisciplinary and interdisciplinary research enables Drift to develop new insights into complex societal system dynamics. Through research projects Drift aims to advance the understanding and gain insights on how sustainability transitions can be explained, initiated and governed. Second, Drift aims to influence transitions towards more sustainable pathways and accelerate the pace of change. It pursues this objective by publishing essays on transition management, by providing academic and professional training, and by providing support to transformative agents across society.



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2. Academy on Nature-Based Solutions

What could be behind the Academy on Nature-Based Solutions? A platform to learn, share lessons, enrich and reflect on lessons learnt about the 'nature' of nature-based solutions, about how to design, co-create, implement, plan and monitor them. Simply, an opportunity to an open learning experience with a global community of practice on nature-based solutions on-line, and in specified places over time.

The Academy on Nature-Based Solutions for Brazil was officially launched at the seminar. It will be established in up to four regional hubs, namely in Brazil, China, South Korea and the Caucasus. The Academy will provide the European project cities and businesses as well as international cities and businesses an opportunity to share experience on planning and implementing nature-based solutions with cities and businesses and get inspired by each other's policies, initiatives and activities related to nature-based solutions.

Through the Academy, Brazilian cities and businesses can:

- learn with European cities on different phases of nature-based solutions planning and how they overcome hurdles and challenges throughout;
- share own experiences on their technical, governance, business and financing approaches towards planning and realising nature-based solutions with European and other Brazilian cities;
- can co-develop the questions and the agenda of webinars and on-line interactions and leverage knowledge from the European examples of nature-based solutions;
- have access to valuable guidance developed by the project to start developing an action plan on nature-based solutions to tackle water and climate challenges.

The first concept of the Academy and its curriculum were presented and will be finalised by the beginning of 2019, taking into account the insights, needs and interests gathered from the event in Brazil as well as its launch in other non-European contexts in near future.

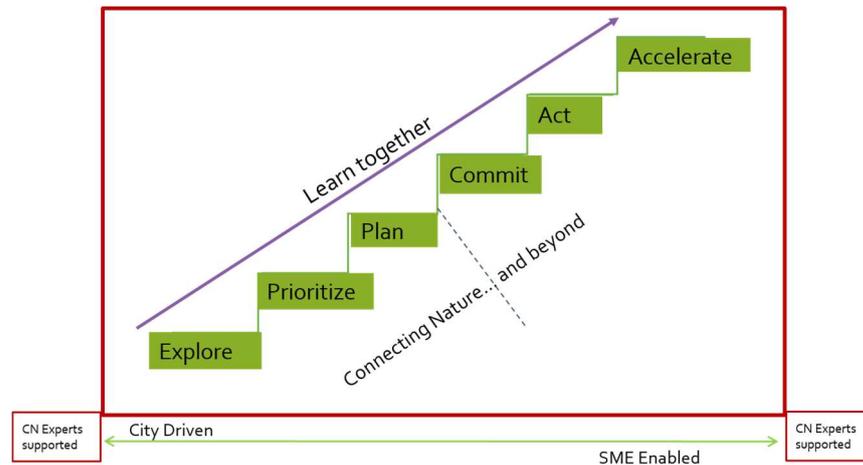


Figure 1: Main steps of the Academy on Nature-Based Solutions as shared in the workshop in Brasilia. Source: ICLEI Europe

The planning cycle for nature-based solutions (NBS) consists of six steps. The Academy will focus on the first three steps and enable cities to realise the last three steps as well¹.

The steps of the Academy, as presented in Brasilia, were:

1. **EXPLORE** the local situation: In this step, participating cities will map the local context to understand enablers and barriers in implementing nature-based solutions. Activities will include, inter alia, to see which terms are being used, check which strategic urban plans are supporting NBS, map stakeholders to see who is affected and who has an impact, map the existing innovations led by the city or other social actors (e.g. civil society, businesses, SMEs) to evaluate which of those innovations can be linked to nature-based solutions, identify gaps in instruments and policy needs as well as explore institutional knowledge, skills, networks, and partnerships available.

2. **PRIORITISE**: Cities will identify areas of interest, envision goals and set objectives. In this step, for example, cities will identify particular NBS themes to focus on, needs

¹ The concept and steps of the Academy are being updated throughout 2018 based on the insights gained during the kick-off meetings in all four regions. A final programme for the Academy will be available by the beginning of 2019.



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for technical solutions, policy development objectives, suitable governance structures, financial needs and/or business models. Further, cities will be encouraged to articulate to which policy/strategic objectives of the city the NBS links up and is set to deliver. Different ways on strategic anchoring of the nature-based solution to urban agendas are to be found and showcased.

3. PLAN: Taking into account the local implementation conditions for nature-based solutions as well as the chosen priorities in line with local goals and targets, elaborate an action plan on NBS by May 2012, supported by Connecting Nature's knowledge package shared in the Academy. The package will include, inter alia, guidance on developing indicators and setting up a reflexive monitoring process for NBS, planning NBS co-creatively, sharing technical NBS combined with fitting financing, business and governance and fostering entrepreneurial activities using NBS.

The Academy on Nature-Based Solutions offers learning and exchange programme for cities and businesses during these three initial planning phases. For the three additional steps, which go beyond the scope of the Connecting Nature project and are related to the actual implementation of the developed action plan, the project will support cities in preparing for them.

4. COMMIT: City authorities commit to the implementation of the action plan for nature-based solutions.

5. ACT: Cities proceed with the implementation of the action plan agreed upon.

6. ACCELERATE: Participants will learn about how to facilitate the replication and uptake of solutions and identifying further areas of interest.

The interaction in the Academy will be needs-dependent and thus tailored to cities' and businesses' interests. Moderation formats will include e.g. surveys, workshops, webinars, on-site consultations (general and targeted) as well as e-consultations (general and targeted). Cities will be able to identify fitting nature-based solutions by observing and exchanging on good NBS practices of the EU project cities, technical NBS, governance mechanisms, policy/ regulations landscape and financial instruments.

As figure 1 shows, cities will be more intensely involved in the first three planning steps of the Academy. Thereafter, SMEs will also be invited to join the Academy. The Academy



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will support the exchange between Brazilian and European SMEs, helping green businesses to extend their portfolio, increase knowledge on NBS implementation by accompanying the implementation process in front-runner cities and launch partnerships for global NBS outreach. They will be set up in such a way to increase the chances of them continuing to be partners beyond the duration of the project, opening up long-term market opportunities.

The Academy's programme will be shaped around city-to-city exchanges, business-to-business interactions and project partner-to-city support to facilitate the development of action plans for nature-based interventions. It will focus on the following aspects of planning and implementing nature-based interventions:

- Identifying business models and enable the setting up of enterprise offering nature-based products and services
- Developing and establishing a process to co-plan and co-create locally suitable nature-based solutions
- Devising financing models and mechanisms to ensure selected nature-based interventions can be financed long-term
- Design governance models to include different actors in a city in planning, realising and maintaining nature-based interventions
- Planning a suitable monitoring and evaluation process (incl. indicators)
- Nature-based technological and construction examples

Connecting Nature will, for example, offer the following products within the Academy programme:

- Technical NBS exemplars
- Co-creation guidebook
- Exemplary governance models
- Guidance on financing nature-based interventions and developing fitting business models
- Guidance on setting up a monitoring and evaluation process



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By taking part in the Academy of the Connecting Nature project, cities and businesses will receive support to elaborate actions plans over a period of two years from end of 2018 to mid 2021.

3. Workshops supporting the launch of the Academy on Nature-Based Solutions

Two workshops, organised by ICLEI, helped lay the ground for establishing the programme with Brazilian cities, and focused on:

- WORKSHOP 1: Co-creating nature-based solutions – Ways of involving the urban community through the Academy on Nature-Based Solutions
- WORKSHOP 2: The potential for nature-based solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-Based Solutions

In the workshops Brazilian cities, researchers and practitioners shared their experience related to nature-based solutions and explored what the Academy should offer in terms of nature-based solutions to help solve environmental, societal and economic urban challenges in the Brazilian context.

The workshops saw the participation of cities (city staff and residents), researchers, professionals, representatives of non-governmental organisations, companies, as well as international guests from European projects and institutions, accounting to more than 40 attendees. Government representatives from the following cities were present: Belo Horizonte, Brasília, Campinas, Goiás, Londrina, Rio de Janeiro, Sorocaba and Vitória. There were city residents from Florianópolis and São Paulo.

The workshops were conducted in Portuguese and English.



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3.1 Workshop 1: Co-creating nature-based solutions – Ways of involving the urban community through the Academy on Nature-Based Solutions

Local governments often engage citizens in planning nature-based interventions, but rarely co-plan, co-design, co- implement or even co-maintain them in their cities. Yet, co-creating nature-based interventions, enables cities to really use the potential of these projects and initiatives and turn them into a nature-based solution. Co-created nature-based solutions fit the needs of urban dwellers as well as the local context better, as knowledge is shared and innovative approaches are fostered. Applying co-creative planning processes also brings people together. In this workshop, the participants were encouraged to share their own experiences with co-creating nature-based solutions, explore principles of co-creation processes developed by the Connecting Nature project. see how the Academy on Nature-Based Solutions could offer a platform to exchange on good co-creative planning processes.

For the programme of the conducted workshop, see ANNEX 2. For the presentation given by ICLEI within the workshop, see ANNEX 3.

The workshop's main outcomes and messages are described in the next pages.



Figure 2: Impressions from the workshop on co-creation. Source: ICLEI Europe.

Connecting Nature's Understanding of co-creation and its principles

ICLEI presented Connecting Nature's understanding of co-creation, before sharing the principles of co-creation project partners developed to guide the European cities in

planning and implementing their nature-based interventions². The project uses this definition:

Co-creation is “the active engagement of actors who hold different types of knowledge and resources with the aim to generate collaboratively outcomes openly defined by the facilitators of the process. Outcomes can vary and can include vision narratives, new understandings of problems and opportunities, hybrids of solutions, agendas or other”. (Voorberg et al., 2014)³

Connecting Nature assumes that an efficient knowledge-co-production depends on how open the process is to new knowledge, information and actors **[principle of OPENNESS]**, on how it brings together multiple types of knowledge and expertises **[principle of INCLUSIVITY]** and on how reliable and credible the knowledge input into the discussions is **[principle of LEGITIMACY]**.

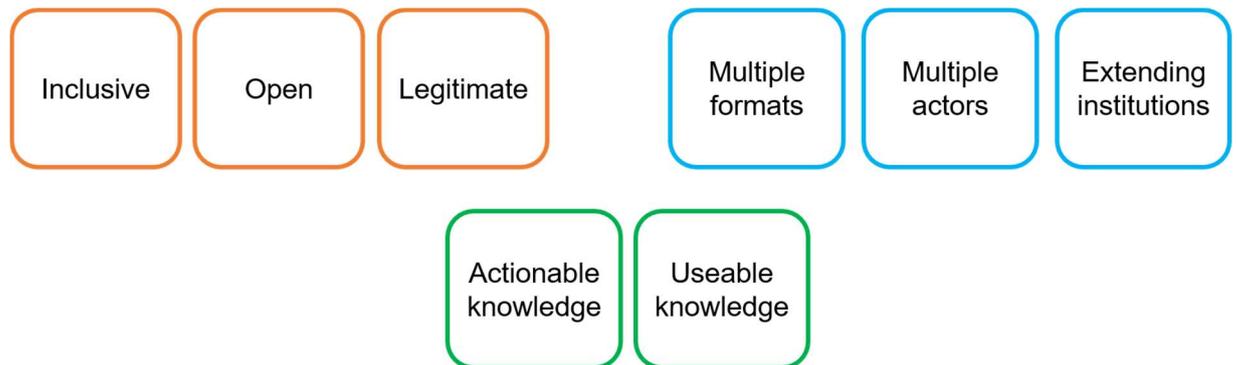


Figure 3: Co-Creation principles in Connecting Nature: What do we consider principles for successful co-creation processes? Source: DRIFT

On the other hand, the uptake of the collective generated knowledge depends on the level of its usability in dealing with real world problems, directly influencing, for example, decision and policy making **[principle of USABLE KNOWLEDGE]**, as well as on its

² The source of the guiding principles for co-creation are building and extending the framework presented in: Frantzeskaki, N., and Kabisch, N., (2016), Designing a knowledge co-production operating space for urban environmental governance – Lessons from Rotterdam, the Netherlands and Berlin, Germany, Environmental Science and Policy, 62, 90-98.

³ Voorberg, W. H., Bekkers, V. J. J. M., and Tummers, L. G., 2014, “A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey”, Public Management Review, volume 17, issue 9, pp. 1333 – 1357.

level of dissemination between multiple beneficiaries, what can be fostered for example by the diversified interaction networks of policy officers, scientists and business **[principle of ACTIONABLE KNOWLEDGE]**.

Further, co-created knowledge can be consolidated by finding adequate formats for dissemination according to different contexts, through for example scientific presentations and publications, videos and policy briefs for officers and planners as well as on simple presentations or social media formats for a broader public such as practitioners, NGOs and civil society groups **[principle of MULTIPLE FORMATS]**, and by addressing all spheres of society, such as civil servants (e.g. policy officers, urban planners, city ecologists, social workers, neighbourhood/district managers), experts (e.g. researchers, advisors, consultants), city residents, NGO representatives or other civil society group representatives as well as the private sector (e.g. entrepreneurs, companies, small-medium enterprises) **[principle of MULTIPLE ACTORS]**. It is also desirable that co-production processes operate in the margins of institutions, offering solutions that work as intermediaries across actors and governance levels they **[principle of EXTENDING INSTITUTIONAL BOUNDARIES]**.

Understanding of and experience with the concept of “co-creation” by Brazilian cities

After having presented Connecting Nature’s understanding of the co-creation concept and its principles, ICLEI invited the participants to share their own interpretations of what co-creation means. Some definitions focused more in the importance of ensuring the diversity of actors and transdisciplinarity:

- ✓ Co-creation is about involving different actors
- ✓ Co-creation is about transdisciplinarity

Other participants drew special attention to importance of local knowledge:

- ✓ Co-creation is about involving the local communities
- ✓ Co-creation is about local empowerment
- ✓ Co-creation is about valuing the local knowledge

Some highlighted the relevance of good communication skills:



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- ✓ Co-creation is about empathy
- ✓ Co-creation is about interacting fairly with one another
- ✓ Co-creation is about listening
- ✓ Co-creation is about overcoming communication difficulties

Most participants mentioned the importance of the collective process:

- ✓ Co-creation is about identifying the problem together
- ✓ Co-creation is about creating new solutions together, and not only about consultation
- ✓ Co-creation is about shared ownership
- ✓ Co-creation is about shared-knowledge and know-how
- ✓ Co-creation is about discovering synergies together
- ✓ Co-creation is about focusing in the process

Co-creation was also seen as a good way to address challenges:

- ✓ Co-creation is a good way to go about social, environmental and economic issues



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Assessing the idea behind Connecting Nature's co-creation principles with Brazilian cities

The co-creation principles presented in the previous section, which are under continuous development within Connecting Nature, were discussed with the workshop's participants in an effort to do a "reality check", testing these principles in the Brazilian context.

Participants wrote down messages related to each co-creation principle, showing that some found resonance and were understood more easily, whilst others were too abstract for participants to work with.

Openness

- ✓ Openness is about creating forms of communication that reaches all actors
- ✓ Openness is about non-bureaucratic processes
- ✓ Openness builds trust
- ✓ Open-minded researchers are needed

Openness was understood by the participants as being related to open communication processes directed at reaching a diversified range of actors. This relates to the understanding of the principle according to Connecting Nature, which calls the attention to how data is used and how it can influence the planning process, ranging from informing about plans to a reflective and collaborative planning culture with an open attitude for citizens and private sector participation. According to the project, there are different levels of openness of data and findings.

Inclusiveness

- ✓ An inclusive process values diversity
- ✓ Practice empathic listening, people put themselves in other people's shoes
- ✓ Involve people that usually would not be involved in the planning process

The participants highlighted the importance to value diversity by bringing actors with

different backgrounds. This matches with Connecting Nature's understanding of the principle of inclusiveness. Further, the project highlights that tacit knowledge and expert knowledge should be equally appreciated and considered in the process. Empathy was pointed out by the Brazilian group as necessary for inclusiveness to take place by avoiding the devaluation of different opinions and promoting respect.

Legitimacy

- ✓ Prepare sufficiently to meet/work with people, checking the credibility of sources
- ✓ Get facilitators and mediators into discussion rounds to make discussions impartial and reliable

The credibility of researchers and research processes as a guarantee that the input and co-produced knowledge can be trusted is seen by Connecting Nature as being relevant. The Brazilian group related legitimacy to the need for participants to check the credibility of the information provided in the co-creation process. In both contexts, within the project and within the workshop's group, the need for trust in the impartiality of initiators and mediators was mentioned.

Usable Knowledge

- ✓ Identify and take into account perceptions and preferences of end-users
- ✓ Confront the public administration by demanding their responsiveness
- ✓ Value the local knowledge and listen to what local people have to say
- ✓ Understand together the local conditions of the territory

This concept was not easily understood by the workshop's group, who associated it to knowledge of the local context and to knowledge of the needs to end-users. Within Connecting Nature, the principle relates to the usability of scientifically produced knowledge for policy makers.

Actionable Knowledge

- ✓ Co-create together a long-term vision that can be achieved by numerous mini-steps



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- ✓ Have access to data, diagnoses, technical monitoring reports to be able to apply actionable knowledge

Participants of the workshop saw actionable knowledge as the one that can immediately be applied, for example through the access of easy-to-understand data and technical expertise. Small steps that can promptly be taken were mentioned in the framework of a long-term vision. In the context of Connecting Nature, actionable knowledge is related to it being applicable and relevant for policy action as well as to its spreading in different networks, enabling for example that policy officers and scientists benefit from a continuous interaction.

Multiple Formats

- ✓ Take risks: experiment with new ideas and try artistic approaches to reach different groups in creative ways
- ✓ Examples of interesting formats: face-to-face workshops, apps, tactical urbanism, go to the streets
- ✓ Make data open source
- ✓ Share information on technologies
- ✓ Share information on how to do evaluation and diagnosis
- ✓ Share methodologies to do community mapping and identify people to represent the community

Art was pointed out by the participant group as a desirable format to do co-creation. A more “hands-on” approach was mentioned through the suggestion of co-creation processes that “go to the streets” or that promote “D.I.Y. urbanism” through low-cost, experimental temporary changes to the built environment. Face-to-face workshops and apps were also mentioned as valid to promote co-creation. Within the European project, the multiple formats, whatever they are, shall be carefully designed to enable that a diverse palette of stakeholders (different age, education, cultural background, etc.) and hierarchies join the co-creation process.



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Multiple Actors

- ✓ Give all stakeholders a voice and try to reach groups that are usually not involved, listen to “invisible actors”
- ✓ Try to bring as many new actors to the process as possible
- ✓ Look for impartiality towards different interest groups

The need for involvement of multiple actors was immediately captured by workshop’s attendees as desirable and helpful for a co-creation process to work, just as this is the case within the European project.

Extending Institutions

There were no comments related to this principle by the attendees of the workshop. The concept was seen as very abstract. If the principle had been presented as being “Extending institutional boundaries”, it would probably have been easier for participants to relate.



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3.2 Workshop 2: The potential for nature-based solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-Based Solutions

In this workshop, representatives of Brazilian cities explored how urban nature can offer solutions towards water and climate-related challenges. In an interactive set-up, the participants shared their experiences with applying nature-based solutions, outlining success stories as well as mentioning hindering factors or less successful experiences. Participants also identified supportive strategic plans and limiting regulations in their contexts. ICLEI presented what the Academy on Nature-Based Solutions by the Connecting Nature project and its European project cities can offer (e.g. planning processes, financing and business models). The participants discussed what they as Brazilian cities could learn from and contribute to the Academy over the next four years.

Participants explored the concept of nature-based solutions and explained which terms they usually use in their cities. Successful examples of nature-based solutions and associated positive and negative factors were discussed. Further, strategic plans and policies related to the topic of nature-based solutions were highlighted, and the group pointed out if these were rather enabling or disabling the application of nature-based solutions.

After the group explored the implications of NBS in the context of Brazilian cities using them, the concept and preliminary structure of the Academy on Nature-Based Solutions were presented. Cities were asked to talk about their interests and needs towards the Academy and to point out the formats in which they would like to engage in the Academy, so they could meet their knowledge exchange expectations.

For the programme of the conducted workshop, see ANNEX 4. For the presentation given by ICLEI within the workshop, see ANNEX 5.

The main outcomes and messages from the workshop are described as follows.



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Connecting Nature's understanding of nature-based solutions

The project works with nature-based solutions as defined by the European Commission: *“Nature-based solutions are actions which are inspired by, supported by or copied from nature. Many nature-based solutions result in multiple co-benefits for health, the economy, society and the environment, and thus they can represent more efficient and cost-effective solutions than more traditional approaches”* (EC, 2015)⁴.

Connecting Nature recognizes the positive impact that can result from the interplay between biodiversity, ecosystem services and urban green infrastructure, with respect to social capital networks, perceived and actual wellbeing, physical and psychological health, and productive, egalitarian and democratic livelihoods. The project aims to promote the implementation of nature-based solutions across cities while maximising the multiple benefits arising from them.

What are nature-based solutions for Brazilian cities?

The workshop started with participants being asked about their understanding of the concept of nature-based solutions. The main messages were:

- ✓ nature-based solutions help to foster water supply security, water drainage, food security (agro-ecology)
- ✓ nature-based solutions have the potential to foster a fair interaction between nature and society
- ✓ nature-based solutions can work as conflict/problem solvers
- ✓ nature-based solutions put nature in the centre of urban planning processes, lowering anthropic impacts and enhancing natural services and goods
- ✓ nature-based solutions are related to biodiversity and natural heritage protection

⁴ EC (European Commission): Towards an EU Research and Innovation policy agenda for nature-based solutions and Re-Naturing Cities. Edited by. Brussels: DG Research and innovation; 2015:73.



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- ✓ nature-based solutions can deliver ecosystem services and co-benefits
- ✓ nature-based solutions can create healthier environments

The group had a broad understanding of the concept, which embraces relevant topics such as water supply security, water drainage and food security (agro-ecology). The social notion popped up in more than one moderation card, linked to the message of nature-based solutions as capable of mediating a fair interaction between nature and society, as well as of solving conflicts. Being in the centre of urban planning processes, nature-based solutions were seen as in a good position to actually lower anthropic impacts and enhance natural services and goods. For the group, biodiversity and natural heritage conservation are part of the concept as well. In accordance with the Connecting Nature approach to the concept, ecosystem services and co-benefits were mentioned, as well as the capacity of green solutions to effectively create healthier environments.

What nature-based solutions-related terms are used in Brazilian cities?

- ✓ Apart from Brasília, Brazilian cities usually do not use the term "nature-based solutions"
- ✓ Cities use other terms such as "Ecosystem-based Adaptation" (ABE - Adaptação Baseada em Ecossistemas) and "green infrastructure", which are part of the city's environmental planning processes
- ✓ In the university, the terms LIDs, SUDs, BMPs and WSUDs are used

From the terms usually applied in the Brazilian planning context, one sees how nature-based solutions are associated with conservation, sustainable management and restoration of ecosystems to help adapt to the impacts of climate change. As defined by IUCN, the term "Ecosystem-based Adaptation" (EbA) relates to nature-based solutions that harness biodiversity and ecosystem services to reduce vulnerability and build resilience to climate change. Such concepts also appeared in the section that investigated the understanding of the group towards nature-based solutions.

Sustainable urban drainage is also seen as related to nature-based solutions, especially in the academic environment, in which American (LIDs) and European (SUDs) acronyms are used.

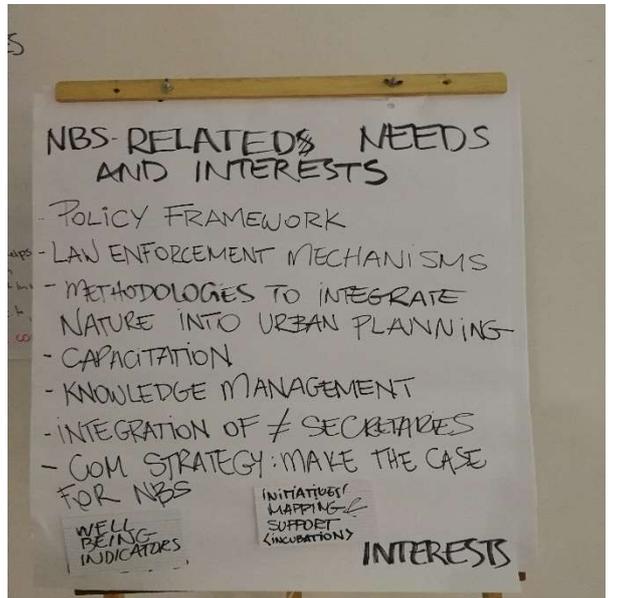


Figure 4: Impressions of the workshop on the potential of nature-based solutions in Brazilian cities. Source: ICLEI Europe.

What are nature-based solutions-related needs and interests for Brazilian cities?

- ✓ Need for technical capacity and knowledge of the city staff
- ✓ Need for knowledge management
- ✓ Need for integration between different secretaries
- ✓ Need for methodologies to integrate nature-based solutions into existing urban planning practices
- ✓ Need for an overall policy framework
- ✓ Need for a commercial strategy: make the case for nature-based solutions
- ✓ Need for law enforcement mechanisms
- ✓ Interest for well-being indicators related to nature-based solutions
- ✓ Interest for a mapping of the existing initiatives in order to support them (incubation)

The needs of Brazilian cities to better plan and implement nature-based solutions can be clustered in themes. Cities mentioned demand for technical and managerial capacitation of the city staff, in order to integrate nature-based solutions into existing planning processes, promote more integration between different governmental sectors and embed initiatives into an overall framework to guide the integrative planning phases. Also related to management, participants pointed out the need to learn more about knowledge management, in order to enhance the innovation of nature-based solutions, promote the sharing of lessons learned and foster continuous improvement. The cities are also interested in developing communication strategies to be in the position to make the case for nature based solutions. To get the best out of planning efforts, the need for effective law enforcement mechanisms to prevent environmental illegal practices was mentioned. The cities also expressed interest to know more about developing well-being indicators.

Finally, attention was drawn to the business side of nature-based solutions, with cities having showed interest in approaches on how to better incubate existing green initiatives, giving them the needed support to thrive.

What are successful nature-based solutions cases in Brazilian cities?

The group did a brainstorming on successful cases in their cities. Some cases appeared in more than one city (please see brackets):

- ✓ Linear Parks (cases mentioned by all cities).
- ✓ Upgrading of riverbanks or lakefronts with nature-based solutions (e.g. Brasília, São Paulo, Rio de Janeiro).
- ✓ Rain gardens and ecological street drains (e.g. São Paulo).
- ✓ Ecological corridors (e.g. Brasília, Belo Horizonte, São Paulo).
- ✓ Greening of open spaces in the city by local residents (e.g. São Paulo, Rio de Janeiro).
- ✓ Implementation of urban tree-planting plans (all cities).
- ✓ Shared community gardens, urban agriculture and “medicine yards” (e.g. Sorocaba, Belo Horizonte, São Paulo and Goiás).
- ✓ Agroforest systems (e.g. Campinas).
- ✓ Inner-city organic fairs and markets for sustainable products (e.g. Belo Horizonte, Sorocaba and Goiás).
- ✓ Urban composting garbage plant (e.g. Florianópolis).
- ✓ Biodigester tanks (e.g. Campinas).

Linear parks are seen by many Brazilian cities as a major opportunity to apply nature-based interventions in the urban environment, solving a number of challenges and creating co-benefits. All present cities mentioned that their cities are planning and building linear parks, which are parks places along watercourses, helping their recovery and rehabilitation through the greening of the adjacent environment, whilst also serving as gathering places for people to meet, do sports or contemplate nature. Likewise, the upgrading of waterfronts, riverbanks or lakefronts was mentioned by many cities as successful cases of nature-based solutions, because they create multiple opportunities for ecological restoration and conservation of biodiversity, storm water management, historical and cultural identity strengthening, and new recreation opportunities (e.g.

Brasília, São Paulo, Rio de Janeiro). Also related to storm water management, cases of rain gardens and ecological street drains were mentioned in the city of São Paulo, where the devices provide reduction of urban run-off speeds and on-site treatment of storm water. Ecological corridors were mentioned as successful cases in cities such as Brasília, Belo Horizonte and São Paulo. Apart from having the potential to promote better storm water management and recreation alternatives, these have been showing positive outcomes for urban biodiversity and wildlife.

The greening of urban spaces by local residents and activists was mentioned by the cities of São Paulo and Rio de Janeiro as positive examples of nature-based solutions. Small plots get transformed by self-organized groups and grassroots initiatives into “pocket forests” or “pocket parks”, providing mitigation against increasing temperatures and the urban heat island effect, which in cities with tropical and sub-tropical climates and large masses of building elements are more severe. The greening of open spaces provides fresher environments due to shading and evapotranspiration from trees, as well as a better air quality. Still related to the greening of cities, all present participant mentioned tree planting urban plans of their city administrations. These are seen as positive examples of nature-based solutions, because they deliver ecosystem services such as improvement of air quality with a significant positive impact on human health, regulation of microclimatic conditions, carbon sequestration, etc.

Another group of nature-based solutions mentioned by the Brazilian cities relates to urban agriculture. Cities such as Sorocaba, Belo Horizonte, São Paulo and Goiás, named shared community gardens and “medicine yards” as ways to help reducing food insecurity in urban environments, whilst also delivering ecosystem services and promoting the feeling of belonging and ownership. Likewise, agroforest systems were framed as a positive example of nature-based solution as it contributes to biodiversity protection, a number of ecosystem services and for fostering food security. Lastly, cities such as Belo Horizonte, Sorocaba and Goiás mentioned inner-city organic fairs and markets for sustainable products as positive examples of nature-based solutions, because these offer people more sustainable and alternative consumer habits that promote biodiversity protection and food security in the long run. Cities even mentioned financial lines that support these initiatives. However, recently a polemic “Poison Bill” has been approved in Brazil relaxing the safety requirements to introduce new agrochemicals in the country, speaking against food security.

A last group of positive experiences with nature-based solutions gathers urban composting garbage plants and biodigester tanks. Composting garbage stations were mentioned by the city of Florianópolis, which help reducing the volume of waste in landfills, reducing thus methane emissions. Furthermore, these promote the aeration of the urban soil and add nutrients to it by breaking down organic matter for plant use. Biodigester tanks, mentioned by the city of Campinas, convert organic waste into gas through the process of bacterial anaerobic digestion. The gas can be captured and burned to generate electricity, delivering market benefits such as cheaper energy generation and sale of emissions credits. Non-market co-benefits would be environmental and health gains and fertilizer uses. The city of Campinas also mentioned that biodigesters can be used as an environmental compensation under the Brazilian law.

Less successful nature-based solutions according to Brazilian cities

- ✓ Green Walls that are not using native species are seen as problematic due to very high maintenance costs (e.g. São Paulo)
- ✓ Green Roofs need to be properly designed and dimensioned in order to maintenance costs to be reasonable
- ✓ Regeneration of springs do not work if the governance process is top down (e.g. Belo Horizonte)

It was mentioned that in the city of São Paulo green walls were built in an extensive manner along an urban highway and that maintenance costs are exorbitant. So the nature-based solution cannot be outlined as a successful example. Similarly, participants mentioned, without naming specific cities, that green roofs might be a negative example if these are not properly dimensioned and maintenance costs foreseen from the beginning of planning.

In Belo Horizonte, a spring regeneration project was carried out through a top down planning process, which proved to be ineffective. There is demand to conduct such projects involving the local community.



Which Brazilian strategic plans support nature-based solutions?

Brazilian cities commented on strategic plans, policies and regulations related to nature-based solutions in Brazil

- ✓ Generally, nature-based solutions get little support by local, regional and national governments
- ✓ Environmental compensation laws are in place to compensate for unavoidable environmental damage
- ✓ Tax compensation for green conservation areas are a good instrument (ICMS verde)
- ✓ Green Taxing is also a good tool: property owners get a tax reduction if they can show they applied sustainable measures (IPTU verde)
- ✓ There is a strong "cooperative" culture in Brazil that can make pressure for nature-based solutions in all governance levels (local, regional and national)
- ✓ Many cities have solid waste plans, which is seen as a good thing, since the way waste management is carried out is seen as relevant for nature-based development in the Brazilian context

From the messages obtained by this session, there are enabling and disabling policies and strategies towards nature-based solutions. Under enabling strategies, the group mentioned environmental compensation instruments to compensate for unavoidable environmental damages, tax compensations for the conservation of green areas as well as tax reduction for property owners that can attest for applied sustainable measures in their plots. Further, the existence of many “cooperatives” in Brazil was seen as a positive factor that can help force local, regional and national governments to foster nature-based solutions in their planning agendas. Finally, the existence of waste management city plans is seen as a catalyst for nature-based development.

As a limiting factor in the policy environment, the it was mentioned that nature-based solutions get a far too insignificant support compared to other agendas, which are considered more primordial.



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How could the Academy work for Brazilian cities?

What are the interests and needs of your city towards the Academy? What formats would be useful for the exchange of information?

- ✓ Mapping of nature-based solutions case studies
- ✓ Mapping of nature-based solutions management processes
- ✓ Organisation of webinars
- ✓ Use of apps for sharing knowledge
- ✓ Use of online forms to perform surveys
- ✓ Production of short documentaries, sharing of local stories
- ✓ Promotion of city exchange events
- ✓ Promotion of technical visits
- ✓ SME mentoring to foster business development and help start-ups to thrive

The participating cities mentioned many different formats to launch and promote the exchange with the European cities and involved experts of Connecting Nature through the Academy on Nature-Based Solutions. This shows that there is a sensible interest in engaging in the knowledge exchange. Some cities mentioned that they would like to formalize in a letter of interest their engagement in the Academy.



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ANNEXES

ANNEX 1: Final Dissemination Agenda

ANNEX 2: Programme of the workshop on co-creation

ANNEX 3: Presentation by ICLEI in the workshop on co-creation

ANNEX 4: Programme of the workshop on the potential for nature-based solutions in Brazilian cities

ANNEX 5: Presentation by ICLEI in the workshop on the potential for nature-based solutions in Brazilian cities

II International Seminar on Nature-Based Solutions (NBS): Promoting Urban Nature for more Resilient Cities. Examples from Brazil and Europe

Museu da República, Brasília, 9 and 10 July 2018

PROGRAM – 9 JULY

08:00 - 09:00	Registration
09:00 - 10:00	Opening and Welcoming <ul style="list-style-type: none"> - Welcome and introduction – Marcio Miranda, CGEE President - Introducing EU’s NBS approach – João Cravinho, EUD Ambassador - NBS in the Brazilian context – Savio Raeder, SEPED/MCTIC - EU-Brazil Sector Dialogues Support Facility – Marcos Ricardo dos Santos, Ministry of Planning, Development and Management - Ministry of Cities – Ariel Pares and Diana Motta - Ministry of Environment – Salomar Mafaldo - NBS in urban areas – Rodrigo Perpetuo, ICLEI SAMS
10:00 – 10:40	The EU’s approach to Nature-based Solutions – Introduction <ul style="list-style-type: none"> - Introduction to the EU’s approach to NBS and its landscape of projects – Tiago Freitas, European Commission DG RTD - Eclipse NBS Impact Evaluation Framework – Carlo Calfapietra - Oppla – Paul Mahony
10:40 - 11:10	Coffee Break
11:10 - 12:10	The EU’s approach to Nature-based Solutions – On-going Projects <ul style="list-style-type: none"> - Naturvation – Sandra Naumann - UnaLab – Carmen Antuña Rosado - Connecting Nature – Alice Reil - URBiNAT – Gonçalo Moniz - Clever Cities – Daniela Rizzi
12:10 - 12:30	Questions and answers
12:30 - 13:30	Lunch

13:30 - 14:10	Social participation and community mobilization <ul style="list-style-type: none"> - JRC policy lab (videoconference) – Fabiana Scapolo - Co-creation of Nature-Based Solutions (videoconference) – Niki Frantzeskaki - Learning from Urban Living Labs: opportunities for replicating and scaling up context dependent lessons – Ellen van Bueren - Urban revival supported by the creative economy: Case Centro Sapiens – Salomão Ribas Gomez 	
14:10 - 14:30	Questions and answers	
14:30 - 15:10	Sector Dialogue Brazil-EU <ul style="list-style-type: none"> - NBS case studies in Brazil – Cecília Herzog - NBS examples from the EU: adaptation to the Brazilian context – Carmen Antuña Rozado 	
15:10 - 15:30	Questions and answers	
15:30 - 16:00	Coffee Break	
16:00 - 17:15	NBS-related projects in Brazil <ul style="list-style-type: none"> - City of Recife (videoconference) – Guilherme Cavalcanti - City of Brasília: programme for river basin revitalisation based on NBS – Nazaré Soares and Maria Silvia Rossi - City of Belo Horizonte – Maria Caldas - City of Londrina – Roberta Queiroz - INTERACT-Bio – Ângela Guirao - Restoring Streams in Cities: NBS for Urban Watersheds in São Paulo – Paulo Pellegrino - Local Protected Areas – Johanna Kirchner - OpenNEss – Moara Canova 	
17:15 - 17:45	Questions and answers	
17:45 - 19:30	Workshop 1: Co-creating nature-based solutions – Ways of involving the urban community through the Academy of Nature-based Solutions [Moderated by Katia Fenyves, ICLEI SAMS, Alice Reil and Daniela Rizzi, ICLEI Europe] Room: annex 1 st floor	Workshop 2: Horizon 2020 Opportunities – including the flagship topic on NBS in CELAC [Moderated by EU funded projects INCOBRA and ENRICH – Brazil] Room: plenary
19:30	Cocktail	

PROGRAM – 10 JULY

09:00 - 9:15	<p>Opening</p> <ul style="list-style-type: none"> - The GEF Project and the Sustainable City Innovation Observatory – Guilherme Wiedman and Cristiano Cagnin 		
09:15 - 10:15	<p>The potential of NBS to contribute to the Global Agendas</p> <ul style="list-style-type: none"> - NBS and the SDGs – Denise Hamu, UNEP Brazil - Global Covenant of Mayors and both EU-LA city and region cooperation in the NBS Context – Lise Pate, EC FPI - The potential of NBS to Implement Global Agendas in Cities – Kátia Fenyves, ICLEI SAMS - Low Carbon Business Action in Brazil – Albert Bano - SDGs in Brazilian Cities – Oded Grajew, PCS - SDGs and Regional Development – Antônio Galvão, CGEE 		
10:15 - 10:30	Questions and answers		
10:30 - 10:45	<p>European cities sharing lessons learnt on NBS</p> <ul style="list-style-type: none"> - Vitoria-Gasteiz and lessons learnt for Brazil – Iñigo Bilbao 		
10:45 - 11:00	Questions and answers		
11:00 - 11:30	Coffee Break		
11:30 - 11:40	The Connecting Nature Transition Academy on NBS - Exchanging on NBS experience with Brazilian cities and businesses – Alice Reil		
11:40 - 11:45	Explanation of the Workshop Dynamics – Daniela Rizzi		
11:45 - 13:30	<p>Workshop 3: The potential for Nature-based Solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-based Solutions</p> <p>[Moderated by Katia Fenyves, ICLEI SAMS, Alice Reil and Daniela Rizzi, ICLEI Europe]</p> <p>Room: annex ground floor</p>	<p>Workshop 4: City challenges, associated solutions and the role of NBS and indicators for sustainable cities</p> <p>[Moderated by Cristiano Cagnin, Monique Pinheiro and Raiza Fraga, CGEE and SCIO – GEF]</p> <p>Room: annex 1st floor</p>	<p>Workshop 5: Business participation in NBS</p> <p>[Moderated by Tiago Freitas, DG RTD and Cecilia Herzog, PUC-RJ]</p> <p>Room: plenary</p>

13:30 - 14:30	Financing NBS <ul style="list-style-type: none"> - Valuing ecosystem services – Manuela Reinhard - Valuing ecosystem services: learning from the business sector – Mariana Xavier Nicolletti - Public and private funding of NBS for climate adaptation – Tom Wild - Roundtable discussion with representatives from national and international financial institutions
14:30 - 15:00	Closing
15:00 - 17:00	Lunch and World Cup Match

PROGRAM – 11 JULY

08:00 - 12:30	Optional field trip to watersheds
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WORKSHOPS

Workshop 1 (9 July, 17:45 - 19:30): Co-creating nature-based solutions – Ways of involving the urban community through the Academy of Nature-based Solutions [Moderated by Katia Fenyves, ICLEI SAMS, Alice Reil and Daniela Rizzi, ICLEI Europe]

Short description: Local governments often engage citizens in planning nature-based interventions, but rarely co-plan, co-design, co- implement or even co-maintain them in their cities. Yet, co-creating nature-based interventions, enables cities to really use the potential of these projects and initiatives and turn them into a nature-based solution. Co-created NBS fit the needs of urban dwellers as well as the local context better as knowledge is shared and innovative approaches are fostered. Applying co-creation processes also brings people together. In this workshop – organised by Connecting Nature – the participants from Brazilian cities will share their own experiences with co-creating NBS, explore principles of co-creation processes applied by Connecting Nature and identify what they would like to learn in the Academy of Nature-based Solutions on the topic with European cities.

Objectives: The Brazilian cities supported by ICLEI Europe and South America will explore their own experiences with co-creation and learn about principles to make co-creation processes work.

Target audience: Mainly local authorities, but researchers, professional, and companies are also welcome.

Workshop 2 (9 July, 17:45 - 19:30): Horizon 2020 Opportunities – including the flagship topic on NBS in CELAC [Moderated by EU funded projects INCOBRA and ENRICH – Brazil]

Short description: EU and CELAC representatives will introduce on-going projects and opportunities under the Horizon 2020.

Objectives: Discuss possible partnerships for upcoming opportunities under Horizon 2020.

Target audience: Mainly researchers.

Workshop 3 (10 July, 11:45 - 13:30): The potential for Nature-based Solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-based Solutions [Moderated by Katia Fenyves, ICLEI SAMS, Alice Reil and Daniela Rizzi, ICLEI Europe]

Short description: In this workshop – powered by Connecting Nature’s Academy on Nature-based Solutions – representatives of Brazilian cities will explore how urban nature can offer solutions towards water and climate-related challenges. In an interactive set-up, the participants will share the experience they have made in applying nature-based solutions, outline successes and identify what they still need to plan and implement urban nature and use it to its fullest potential. The Academy on Nature-based Solutions will outline what the European cities participating in Connecting Nature can offer (e.g. planning processes, financing and business models) and discuss with the Brazilian cities what they can learn from and contribute to the Academy over the next four years.

Objectives: The Brazilian cities supported by ICLEI Europe and South America will understand the local context and needs to realise nature-based solutions better, sketch the opportunities of participating in the Academy and enable the cities to voice their wishes, ideas, needs and interests towards the Academy.

Target audience: Representatives of Brazilian cities.

Workshop 4 (10 July, 11:45 - 13:30): City challenges, associated solutions and the role of NBS and indicators for sustainable cities [Moderated by Cristiano Cagnin, Monique Pinheiro and Raiza Fraga, CGEE and SCIO – GEF]

Short description: this interactive workshop will enable participants with different expertise and background to come together and discuss ways in which we can better contextualize both city challenges and related solutions in the Brazilian territory. Challenges related to mobility, housing, clean water, solid waste and energy will be proposed for debate. Participants will help different personas created for the purpose and representing different communities to ideate solutions able to ameliorate given challenges. Also, to identify variables or specific indicators able to help decision makers to better understand and represent such challenges in the Brazilian territory. Hence, departing from an immersion into the future and life of each persona participants shall identify or prototype nature-based solutions to the challenges at hand as well as how these can be contextualized in the Brazilian territory.

Objectives: participants will actively participate in shaping the Sustainable City Innovation Observatory (SCIO) to be developed by CGEE within the frame of the Global Environment Facility (GEF) project. To do so, participants will jointly debate and identify specific nature based solutions to challenges Brazilian cities face. This exploratory exercise will also connect the mentioned challenges to indicators contextualized in the Brazilian territory and aligned with the SDG’s. Ultimately, the aim is to initiate the development of the SCIO advisory board.

Target audience: R&I community, local authorities, businesses, representatives of international organisations and overall citizens interested in shaping the future of their cities.

Workshop 5 (10 July, 11:45 - 13:30): Business participation in NBS [Moderated by Tiago Freitas, DG RTD and Cecilia Herzog, PUC-RJ]

Short description: In this workshop participants will share their experience in participating in nature-based solutions, outline success stories and identify what they still need to ensure a stronger participation of businesses in NBS projects. Starting with brief presentations by the moderators, the workshop will follow with a tour de table of the attendees and then presentations of companies active in Brazil (e.g. Phytorestore). Then the workshop follows in an interactive set-up with an open discussion on issues ranging from the need to value ecosystem services for a better businesses case of NBS; the different roles businesses can play in NBS and businesses' specific needs; opportunities for businesses in co-creation, implementation and monitoring of NBS; cooperation opportunities, e.g. with public authorities and the research community; translating non-Brazilian technologies and innovations into the Brazilian contexts; to the role of financing.

Objectives: To tease out the different roles businesses can play in NBS in Brazil and beyond and outline the business opportunities offered by NBS. To gauge what is still needed to ensure a stronger participation of businesses in NBS projects.

Target audience: Businesses, local authorities, R&I community and representatives of international organisations.



II International Seminar on Nature-Based Solutions (NBS): Promoting Urban Nature for more Resilient Cities. Examples from Brazil and Europe

Museu da República, Brasília, 9 and 10 July 2018

July 9th - Workshop 1: *Co-creating nature-based solutions – Ways of involving the urban community through the Academy of Nature-based Solutions*

[Moderated by Katia Fenyves, ICLEI SAMS, Alice Reil and Daniela Rizzi, ICLEI Europe]

Short description: Local governments often engage citizens in planning nature-based interventions, but rarely co-plan, co-design, co-implement or even co-maintain them in their cities. Yet, co-creating nature-based interventions, enables cities to really use the potential of these projects and initiatives and turn them into a nature-based solution. Co-created NBS fit the needs of urban dwellers as well as the local context better as knowledge is shared and innovative approaches are fostered. Applying co-creation processes also brings people together. In this workshop – organised by Connecting Nature – the participants from Brazilian cities will share their own experiences with co-creating NBS, explore principles of co-creation processes applied by Connecting Nature and identify what they would like to learn in the Academy of Nature-based Solutions on the topic with European cities.

Objectives: The Brazilian cities supported by ICLEI Europe and South America will explore their own experiences with co-creation and learn about principles to make co-creation processes work.

Target audience: Mainly local authorities, but researchers, professional, and companies are also welcome

Co-creating nature-based solutions – Ways of involving the urban community through the Academy of Nature-based Solutions	
	Welcome and introduction to workshop (5') (Objectives, agenda, introduction staff)
	Introduction of participants – Who’s in the room? (5') <i>Who is from a local government/ administration, regional/ national government, business, civil society organization, other? Participants raise hands.</i>
	Part 1: What is and why do co-creation? <ul style="list-style-type: none"> > Presentation on CN’s understanding (5') > Brainstorming with participants on reasons for co-creation: Why do co-creation? (10') > Presentation on CN’s interpretation of benefits (5')
	Part 2: How did you start co-creation? <ul style="list-style-type: none"> > Group exercise: How did you start co-creation processes? (25')



Part 3: Do these co-creation principles make sense?

- > Presentation on co-creation principles by project (10')
- > Group exercise: Do the principles make sense in reality? (20')

Part 4: Offer of Academy on Nature-based Solutions

- > Presentation on offer of Academy, examples of co-creation and link to workshop on Day 2 (15')



Co-creating nature-based solutions

Ways of involving the urban community through the Academy of Nature-based Solutions

Alice Reil and Daniela Rizzi, ICLEI Europe
Katía Fenyves, ICLEI South America

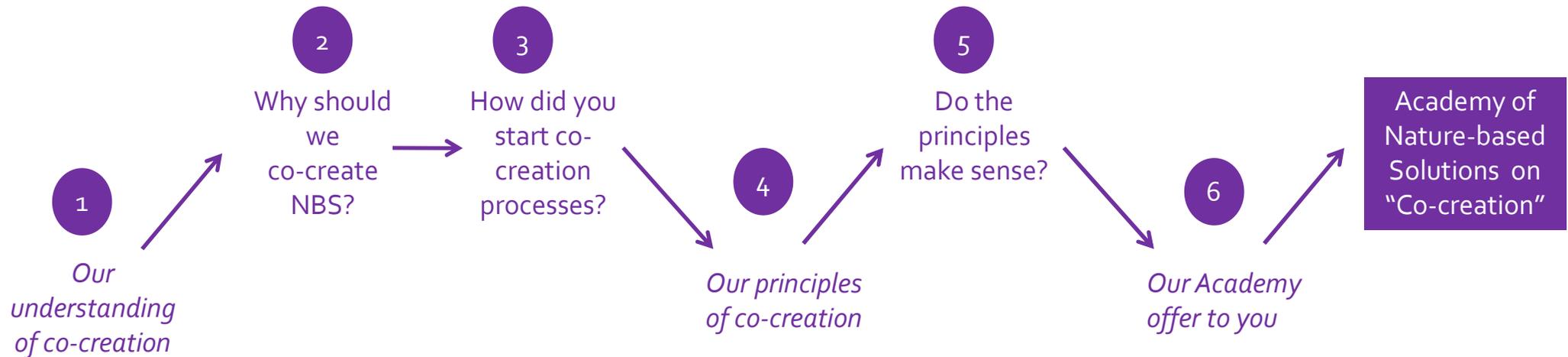
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cities to life,
Bringing life
into cities.



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Welcome!



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Bringing life into cities.

Explore your own experiences with co-creation, learn about principles to make co-creation processes work and see how the Academy on Nature-based Solutions can offer you a platform to exchange and learn with other cities.



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Who's here today?

Bringing
cities to life,
**Bringing life
into cities.**

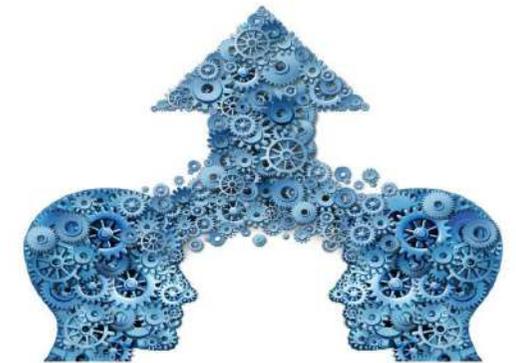


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What do we understand as co-creation processes?

"the active engagement of actors who hold different types of knowledge and resources with the aim to generate collaboratively outcomes openly defined by the facilitators of the process. Outcomes can vary and can include vision narratives, new understandings of problems and opportunities, hybrids of solutions, agendas or other."



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✓ E.g. projects, processes, coalitions

drift
for transition

ICLEI
Local
Governments
for Sustainability



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What do we understand as co-creation processes?

Informing

“the city tells what is best”

Co-creation

“we want to go there and we would like your (experts, residents, ngo’s) help with it”

Consulting - Advising – Assessing - Deciding

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Over to you:

Why do co-creation?

Take a card, talk to your neighbour about the point of co-creation and write point(s) down

(5 minutes)

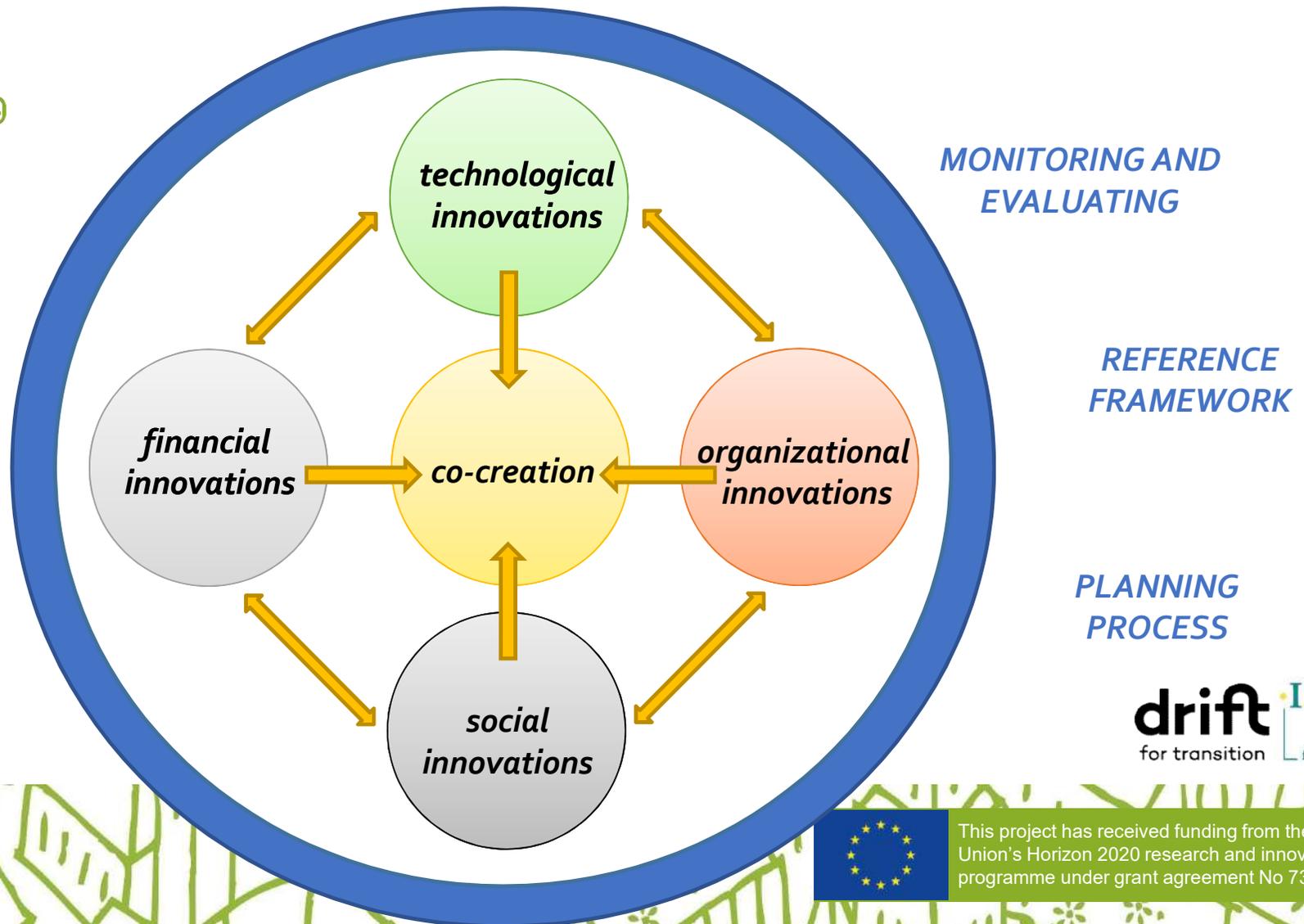
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What's the benefit of co-creation?



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Over to you:

How did you start co-creation processes?

Split in groups, discuss what was necessary for you to start a co-creation process and write down conditions/ requirements on cards.

(15 minutes)

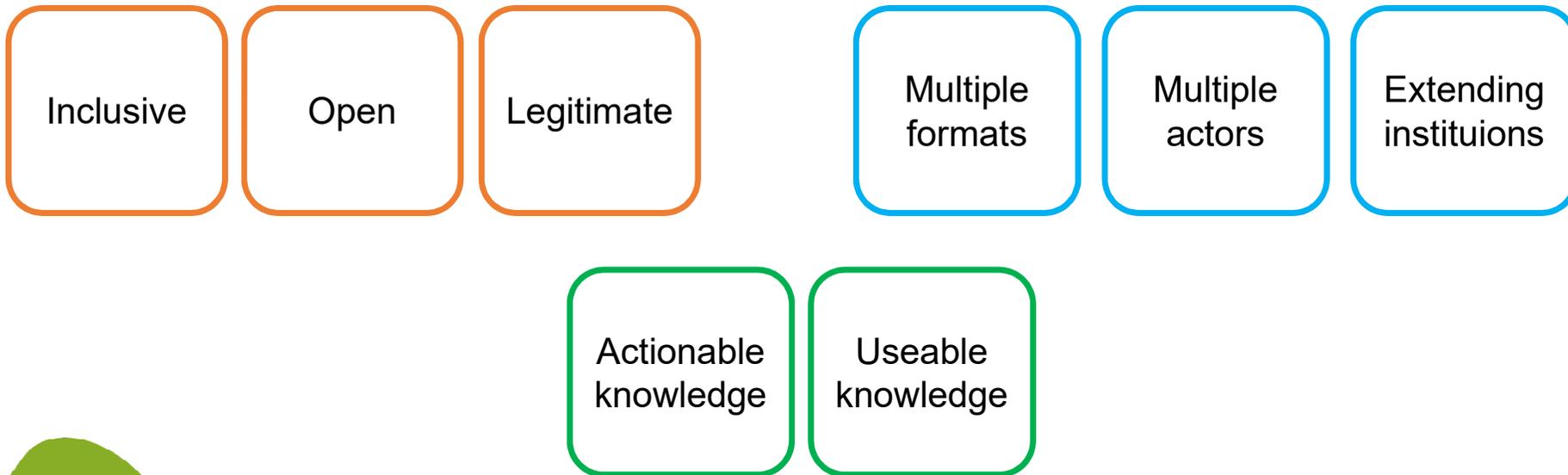
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What do we consider principles for successful co-creation processes?



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Inclusive

- brings together multiple types of knowledge

- ✓ Tacit knowledge (knowledge that comes from experience)
- ✓ Civic-tacit knowledge (knowledge that comes from involved and active residents)
- ✓ Expert knowledge



Openness

- process open to new knowledge, information and actors throughout

- ✓ With whom will you share the data and knowledge?
- ✓ What will happen with this new knowledge in terms of influencing public policy and planning?



Legitimacy

- brings in legitimate and reliable knowledge in the process
- ✓ Check the reliability of the sources (e.g. to avoid fake news discussions)?
- ✓ Credibility of researchers and research processes
- ✓ Participants have trust on the co-production process



Actionable knowledge

- knowledge co-produced is immediately planning relevant
- ✓ Shape new institutions including new practices of planning, new practices in engaging citizens/stakeholders and/or new planning strategies
- ✓ Add knowledge to a proposed solution and its adoption
- ✓ Result in a new solution or new planning action / strategy?



Usable knowledge

- knowledge co-produced is valuable to multiple participating actors

- ✓ Shape new institutions including
 - ✓ new practices of planning
 - ✓ new practices in engaging citizens/stakeholders
 - ✓ new planning strategies
- ✓ Add knowledge to a proposed solution and its adoption
- ✓ New solution or new planning action/strategy?



Multiple formats

- process is adaptable and designed to fit local situation

- ✓ Type of actors involves
 - ✓ Age
 - ✓ Education
 - ✓ Cultural
 - ✓ Etc.
- ✓ Single or mixed groups
 - ✓ Hierarchy
 - ✓ Existing power dynamics



Multiple actors

- actors from all spheres of society participate in the process

- ✓ Civil servants (e.g. policy officers, urban planners, city ecologists, social workers, neighborhood/district managers),
- ✓ Experts (e.g. researchers, advisors, consultants),
- ✓ Residents, NGO representatives or other civil society group representatives,
- ✓ Private sector (e.g. entrepreneurs, companies, small-medium enterprises).

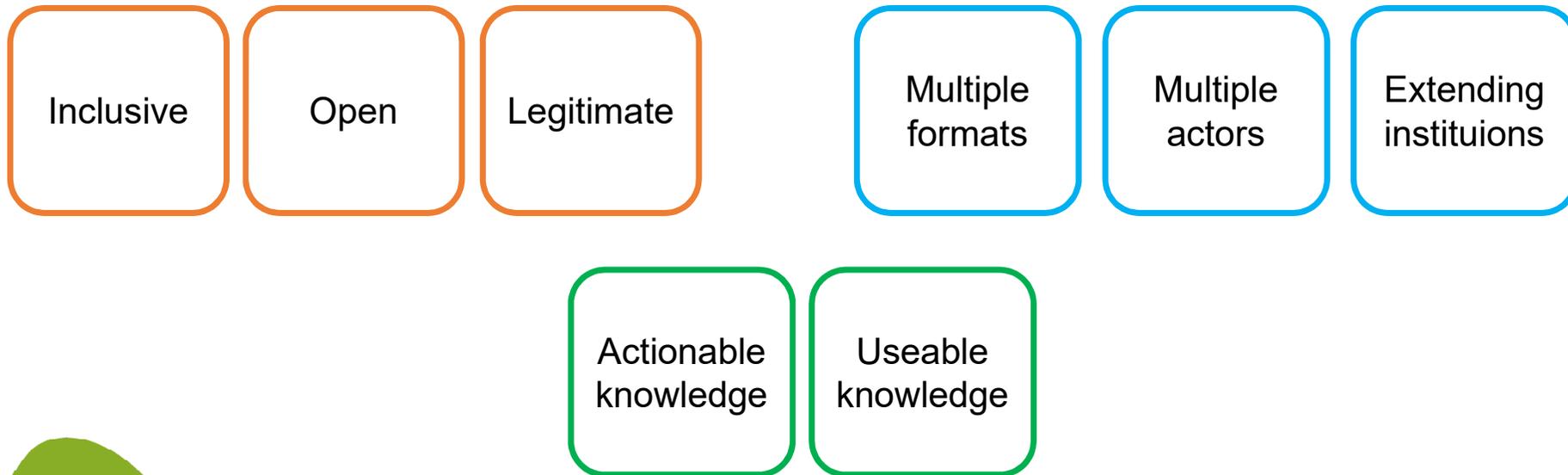


Extending institutions

- knowledge co-produced relates to multiple planning strategies
- ✓ process create space for new discussions related to but also different from the starting issues
- ✓ (e.g. a co-creation process on energy strategy ended up including also a discussion or solution on food strategy for the city)



What do we consider principles for successful co-creation processes?



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Over to you:

Do the principles make sense in reality?

See if any of your conditions cards to sound similar to a co-creation principle and stick it on the poster or develop a new principle.

(10 minutes)

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What can the Academy on Nature-based Solutions offer on co-creation?

- ✓ Sharing of co-creation experiences of European cities* and vice versa
- ✓ 'Co-creation guidebook':
 - ✓ Guidelines and principles for setting up co-creation processes for NBS
 - ✓ Compilation of good quality criteria for co-creation processes
- ✓ Support in setting up a reflexive monitoring process for co-creation

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Understanding local context

* Genk NBS case study 1: The Heempark



- Genk City Council bought 5 ha of former agricultural land in the 1970s in order to expand Molenvijver City Park
- Local citizens consulted – desire to retain natural character rather than convert to 'formal' park greenspace
- Collaborative city citizens model for 'Heempark' developed
- A small-scale model of the former agricultural landscape with a focus on environmental sustainability and conserving native flora and fauna
- Demonstration gardens, small farm animals, beehives, hayfields, ponds, nature areas and a children's playground



Genk NBS case study 1: The Heempark



- Heempark has about 90 members and ~ 35 active volunteers
- Activities to promote reconnection of people to the environment, environmental awareness and engagement
- Cooking classes, bee-keeping and target vulnerable groups, it houses 350 educational groups
- Visitor numbers grew (c.10,000 per annum) beyond capabilities/resources of volunteers.
- City personnel made available, established an Environment & Nature Centre at Heempark in 1987
- Park now an umbrella organization for different local associations, uniting members of Velt Genk, Natuurpunt Genk, Natuurgidsen and local bee keepers



Genk NBS case study 1: The Heempark



- **Green space management:** biodiversity/nature conservation (not formal park)
- **Climate resilience:** urban cooling, carbon storage
- **Air quality:** interception of pollutants
- **Water management:** flooding buffer
- **Participatory planning/governance:** community-led initiative
- **Public health and wellbeing:** reconnecting people with nature/improving mental/physical wellbeing
- **Social justice/cohesion:** activities target vulnerable groups i.e. low income, autistic children; skills training
- **Potential for economic opportunities and green jobs:** small enterprise opportunities, professional training



FRC Glasgow NBS case study: Stalled Spaces



- Land plots across Glasgow currently have contamination issues which prevent housing or commercial developments from taking place due to the cost of remediation.
- The Stalled Spaces project gives communities the opportunity to temporarily use a plot of land in a way which brings benefit to the community.
- The community can choose to adapt the plots for uses such as pop-up gardens, urban gyms, play or art spaces.
- Over 100 sites taken over by local residents



FRC Glasgow NBS case study: Stalled Spaces



- **Green space management:** biodiversity/nature conservation
- **Participatory planning/governance:** community-led initiative
- **Public health and wellbeing:** reconnecting people with nature to boost mental/physical wellbeing
- **Social justice/cohesion:** activities for vulnerable groups; free training boosts skills and attachment to place/sense of ownership
- **Bioremediation**
- **Potential for economic opportunities and green jobs:** value of under-used space unlocked, green job and entrepreneur opportunities



What can the Academy on Nature-based Solutions offer on co-creation?

- ✓ Sharing of co-creation experiences of European cities* and vice versa
- ✓ 'Co-creation guidebook':
 - ✓ Guidelines and principles for setting up co-creation processes for NBS
 - ✓ Compilation of good quality criteria for co-creation processes
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Thank you!

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II International Seminar on Nature-Based Solutions (NBS): Promoting Urban Nature for more Resilient Cities. Examples from Brazil and Europe

Museu da República, Brasília, 9 and 10 July 2018

Workshop 2 (11:45-13:35): *The potential for Nature-based Solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-based Solutions*

[Moderated by Katia Fenyves, ICLEI SAMS, Alice Reil and Daniela Rizzi, ICLEI Europe]

Short description: In this workshop – powered by Connecting Nature’s Academy on Nature-based Solutions – representatives of Brazilian cities will explore how urban nature can offer solutions towards water and climate-related challenges. In an interactive set-up, the participants will share the experience they have made in applying naturebased solutions, outline successes and identify what they still need to plan and implement urban nature and use it to its fullest potential. The Academy on Nature-based Solutions will outline what the European cities participating in Connecting Nature can offer (e.g. planning processes, financing and business models) and discuss with the Brazilian cities what they can learn from and contribute to the Academy over the next four years.

Objectives: The Brazilian cities supported by ICLEI Europe and South America will understand the local context and needs to realise nature-based solutions better, sketch the opportunities of participating in the Academy and enable the cities to voice their wishes, ideas, needs and interests towards the Academy.

Target audience: Mainly local authorities, but researchers, professional, and companies are also welcome

		<i>The potential for Nature-based Solutions in Brazilian Cities – Exploring experiences and challenges through the Academy on Nature-based Solutions</i>
11:45		Welcome, Objective, Agenda and Introductions (10')
-		
11:55		
11:55		Part I: Exploring the potential of NBS in Brazilian Cities
		1st Exploration/Inquiry Round (20'):
11:55		• What does the NBS concept mean for your city? (10')
-		
12:15		Join Up (10'):
		• Question to all: Is the term NBS used in your city? What other terms do you use?
		2nd Exploration/Inquiry Round (30'):



<p>12:15 - 12:45</p>	<ul style="list-style-type: none"> • Could you point out successful examples of NBS, examples which could have been better, examples which didn't succeed in your city? (10') • Can you identify successful factors and constraining factors for these cases? (10') <p>Join Up (10'):</p> <p>Allocation to 6 Connecting Nature Themes (positive and negative factors)</p> <ul style="list-style-type: none"> <i>o Impact (Monitoring, Evaluation, Indicators)</i> <i>o Governance</i> <i>o Co-Creation</i> <i>o Technical Solutions</i> <i>o Business Models</i> <i>o Financing</i>
<p>12:45 - 13:05</p>	<p>3rd Exploration/Inquiry Round (20'):</p> <ul style="list-style-type: none"> • Are there strategic plans in your city that support NBS? (10') <p>Join Up (10'):</p> <p>Are these policies and regulations supportive or non-supportive of NBS?</p>
<p>13:05</p>	<p>Part 2: Setting the Scene for the Academy to work for your City, Expectations towards the Academy</p>
<p>13:05 - 13:10</p>	<p>Academy for Nature-based Solutions: Concept in more detail (5'):</p>
<p>13:10 - 13:30</p>	<p>4th "Walk through the Room" Round (20'):</p> <ul style="list-style-type: none"> • What are the interests and needs of your city (e.g. access to experts, access to data?) • What formats would be useful (webinars, face-to-face seminars, e-consultations, guidebooks, toolkits)? • Do you want your city to contribute to the Academy? In what manner could we stay in contact?
<p>13:30 - 13:35</p>	<p>Part 3: Closing Session</p>
<p>13:35</p>	<p>Closing Session</p> <p>Wrap Up and Next Steps</p>

- The potential for Nature-based Solutions in Brazilian Cities



Objective of the workshop:

Get a picture of what the Brazilian cities understand under NBS, their experiences, drivers and barriers towards interventions in the cities

● The potential for Nature-based Solutions in Brazilian Cities

Agenda:

Part 1: Exploring the potencial of NBS in Brazilian cities

1st Round: What does NBS could mean for your city?

2nd Round: Examples of NBS in your cities

3rd Round: Urban Strategic Plans



Part 2: Setting the Scene for the Academy to work for your City

Interests and needs of your city

● The potential for Nature-based Solutions in Brazilian Cities

PART I

Exploring the potential of NBS in Brazilian cities

- The potential for Nature-based Solutions in Brazilian Cities

1st Exploration/Inquiry Round:

- **What does NBS could mean for your city? (10')**

● The potential for Nature-based Solutions in Brazilian Cities

Join up:



- **Sorting out in clustering themes (5')**

● The potential for Nature-based Solutions in Brazilian Cities

Join up:



- **Is the term NBS used in your city? What other terms do you use? (5')**

- The potential for Nature-based Solutions in Brazilian Cities

2nd Exploration/Inquiry Round (10’):

- **Could you point out successful examples of NBS, examples which could have been better, examples which didn’t succeed in your city? (10’)**



- The potential for Nature-based Solutions in Brazilian Cities

2nd Exploration/Inquiry Round:

- **Can you identify successful factors and constraining factors for these cases? (10')**



● The potential for Nature-based Solutions in Brazilian Cities

Join up:



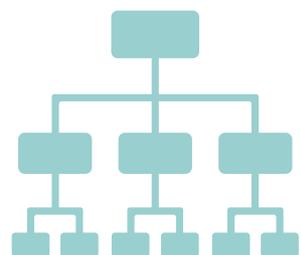
CN relevant themes and +/- Factors (IO’):

- **Impact (Monitoring, Evaluation, Indicators)**
- **Governance**
- **Co-Creation**
- **Technical Solutions**
- **Business Models**
- **Financing**

- The potential for Nature-based Solutions in Brazilian Cities

3rd Exploration/Inquiry Round:

- **Are there strategic plans in your city that support NBS? (10')**



● The potential for Nature-based Solutions in Brazilian Cities

Join Up:



- **Are these policies and regulations supportive or non-supportive of NBS? (10')**



- The potential for Nature-based Solutions in Brazilian Cities

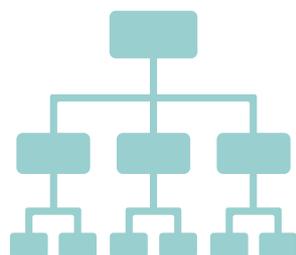
PART 2

Setting the Scene for the Academy to work for your City

- The potential for Nature-based Solutions in Brazilian Cities

4th “Walk-through the Room” Round (20’)

- **What are your city’s interests and needs?**
- **What formats would be useful?**
- **Do you want your city to contribute to the Academy?
In what manner could we stay in contact?**





UrbanByNature
The Global Programme for Urban Nature Pioneers

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Launch of the UrbanByNature Programme in Korea: Nature-based Solutions for more sustainable cities, New approaches to promote urban biodiversity

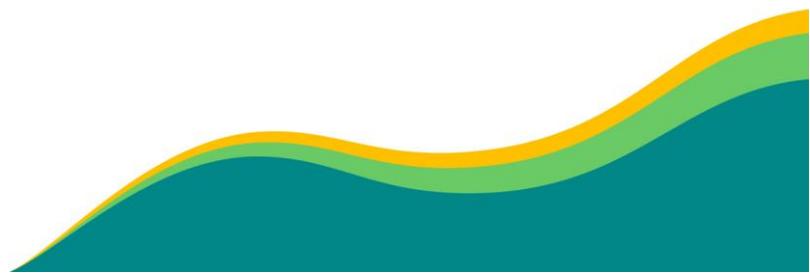
September 18-20, 2019 at KINTEX, Goyang City, Gyeonggido Province

Report

Authors: ICLEI Korea and ICLEI Europe



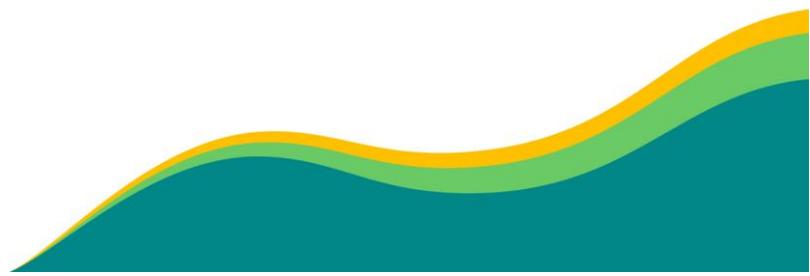
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730222





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1. Introduction

The launch of the UrbanByNature programme occurred back-to-back to the '1st DMZ Forum September 19-20, 2019. This forum was held by Gyeonggi Province aiming to provide continuous discussions with domestic and overseas intellectuals, specialists and other participants about redefinition of the meaning and significance of DMZ in both ecological and political facets.

In the DMZ Forum, Daniela Rizzi from ICLEI Europe chaired the session "Domestic and International Cooperation to Preserve Biodiversity in DMZ", having talked about the "Importance of 'Nature-based Solutions' to Protect and Enhance Urban Biodiversity: Identifying Opportunities for Collaboration between European and Korean Local Governments", along with two speakers:

- Robert BIWER (First Vice Chair, The European Committee of the Regions), presentation: "The European Union Perspective on Cross-border Cooperation Towards Biodiversity Protection and Conservation"
- KIM Seungho, President (DMZ Ecology Research Institute), presentation: "How South and North Korea can Share DMZ Eco-Resources"

And three panelists:

- PARK Yeonhee (Director, ICLEI Korea Office ICLEI - Local Governments for Sustainability)
- KIM Ohseok (Research Fellow, Korea Environment Institute)
- JEON Seongwoo (Professor, Korea University)

Robert BIWER was invited to the UrbanByNature launch event at Kintex, in which he gave a speech as the Rapporteur for Opinion of the European Committee of the Regions on the Contribution of European cities and regions to the CBD COP14 and the Post-2020 European Biodiversity Strategy. His speech highlighted that subnational authorities can play a key role in implementing biodiversity measures that need to be taken to halt the loss of biodiversity. Also, attention was drawn to the importance of engaging in sustainable urban planning. Three types of horizontal measures were mentioned as relevant: financing, partnerships and knowledge base. The Committee of the Regions has been calling on the European Commission to intensify research and innovation activities exploring the potential of nature-based solutions and green and blue infrastructures for regenerating urban nature.

Also, Marco NEUBERT, a senior scientist of the Leibniz Institute of Ecological Urban and Regional Development (Germany), who spoke in the DMZ Forum about "Landscape Development as a Result of



Separation and Reunification – Experiences from the Inner-German Border”, was invited to the UrbanByNature launch event at Kintex, in which he has participated.

The event had about 20 participants. It was held with simultaneous translation in Korean and in English. There were officers from Gyeonggi-do Province, Chungcheongnam-do Province, Dobong-gu (Seoul’s Municipality), Goyang Council for Sustainable Development, Suwon city, Ulsan City (Ulsan Environmental Ecology Dept.) and researchers from Chungnam Research Institute, Ulsan Research Institute, Gyeonggi Research Institute and Korea Environment Institute, as well as a senior scientist from the Leibniz Institute of Ecological Urban and Regional Development, Germany.

See the agenda of the DMZ Forum biodiversity session in ANNEX 1 and the agenda for the Launch of the UrbanByNature Programme in ANNEX 2.

Connecting Nature project

The **Connecting Nature** project is a 12 million Euro project running from 2017 to 2021, funded by the European Commission’s Horizon 2020 Work Programme. With 33 project partners from local authorities, regional and civil society organisations, companies and research institutes in 16 countries, Connecting Nature, led by Trinity College Dublin, is developing innovative planning processes for adoption and mainstreaming of nature based solutions in 11 European cities, of which, Genk (BE), Glasgow (UK) and Poznań (PL) are front-runner cities, and A Coruña (ES), Bologna (IT), Burgas (BG), Ioannina (GR), Nicosia (CY), Malaga (ES), Sarajevo (BA) and Pavlos Melas (GR) are fast-follower cities.

The project is analysing the impact of large scale nature-based interventions in these cities with regards to climate change adaptation, health and well-being, social cohesion and sustainable economic development at local level. Peer-to-peer learning, capacity building and knowledge exchange are facilitated among cities: those which are already more experienced in implementing nature-based solutions as well as those which have the wish to realise nature-based solutions but still lack capacity and resources.

The project provides a unique opportunity for cities and businesses around the globe to join **UrbanByNature**, a global knowledge sharing and outreach program for cities aiming to proceed towards, sustainable, resilient and liveable futures. Its co-creative, integrated programme enables participants to learn from each other and from the Connecting Nature experience to plan and use the benefits urban nature provides in a better way.



ICLEI – Local Governments for Sustainability

ICLEI – Local Governments for Sustainability, founded in 1990 as the International Council for Local Environmental Initiatives, is the world's leading network of local and regional governments committed to sustainable development. ICLEI believes that local action drives global change and the leadership of local and regional governments can make a major difference in addressing complex environmental, economic and social challenges. ICLEI promotes joint action, peer learning, and strong partnerships between civil society, business leaders and all levels of government to accelerate local sustainable development and make real change on the ground.

Since 1992, the ICLEI European Secretariat (ICLEI ES) has been closely working with ICLEI network cities in Europe, North Africa, the Middle East and West Asia, other European networks, the European Commission, the Committee of the Regions, and many others. Within the Connecting Nature Project, ICLEI ES is in charge of making the project's findings go global, supporting the establishment of regional partnerships and facilitating the knowledge exchange of nature-based solutions with cities through UrbanByNature programme, with a particular focus on South Korea, China, Brazil and the Caucasus.

The Korean ICLEI Office, based in Suwon in South Korea, connects more than 59 associated governments, encouraging local governments to take actions towards sustainability. ICLEI Korea will be supporting the activities of the UrbanByNature programme in the Korean context.

ICLEI ES and ICLEI Korea co-developed the agenda for the launch of the UrbanByNature programme in Korea, bringing together potential multiplier cities and regional research partners in a workshop. The event was co-moderated by both ICLEI offices with Robert Biber, First Vice Chair of the European Committee of the Region, as a speaker as well as a commenter during the workshop at the event.

2. UrbanByNature Programme

What is behind the [UrbanByNature](#) programme? A facilitated expertise-sharing and capacity-building programme for local governments all around the world to be empowered to harness the boundless potential of nature for sustainable urban development. An opportunity for local governments, civil society and businesses to co-create a sustainable and resilient urban future using nature's innovative potential. Participants get to share lessons, learn from one another, enrich the knowledge base and together reflect on how to lift the barriers to urban nature to set our cities and towns on a new green and blue course.

The programme brings established and aspiring urban nature pioneers together in facilitated capacity-building webinars and workshops. It is built on an integrated planning and management approach, which has been used by local governments part of the ICLEI network and beyond. It accounts for the complex combination of departments, sectors and organisations involved in sustainable urban



planning. The programme is designed to be flexible and adaptable to the questions and expertise participants and contributors bring to the table from their diverse backgrounds and regions in relation to nature based solutions.

The UrbanByNature programme in the regional hub of Korea provides local cities and businesses an opportunity to exchange with European cities and businesses on ambitions, processes, policies, financing options and business approaches on how to solve urban development challenges with urban nature, planning and implementing nature-based solutions for and with citizens. It is about supporting collective action towards a sustainable, inclusive, healthy and resilient future for cities and towns of all sizes, locations, budgets and capacities. Via UrbanByNature, cities, researchers, communities and businesses gain access to tools, methods and approaches that support the planning and implementation of nature-based interventions. It is about strengthening the collective action of local and sub-national governments in moving towards relevant environmental goals such as the [United Nations Sustainable Development Goals](#) and the [Paris Climate Agreement](#).

UrbanByNature's curriculum reflects a co-creative approach, in which not only principles and methods are shared, but participants work together to actively engage in making cities and towns more resilient towards water and climate change challenges and in transforming their neighbourhoods. Within this programme, powered by [ICLEI Europe](#) with contributions by more than 30 partners (cities, researchers, practitioners and experts) from the [Connecting Nature project](#) and hosted by [CitiesWithNature](#), participants of the Korean stream will be guided through seven steps during approximately one year. They will be listening into thematic modules that cover a range of aspects relevant for planning and realising green and blue cities. Face-to-face events are also planned.

UrbanByNature's integrated planning process is structured around a 7-step cycle. Each step offers different content to the participants.

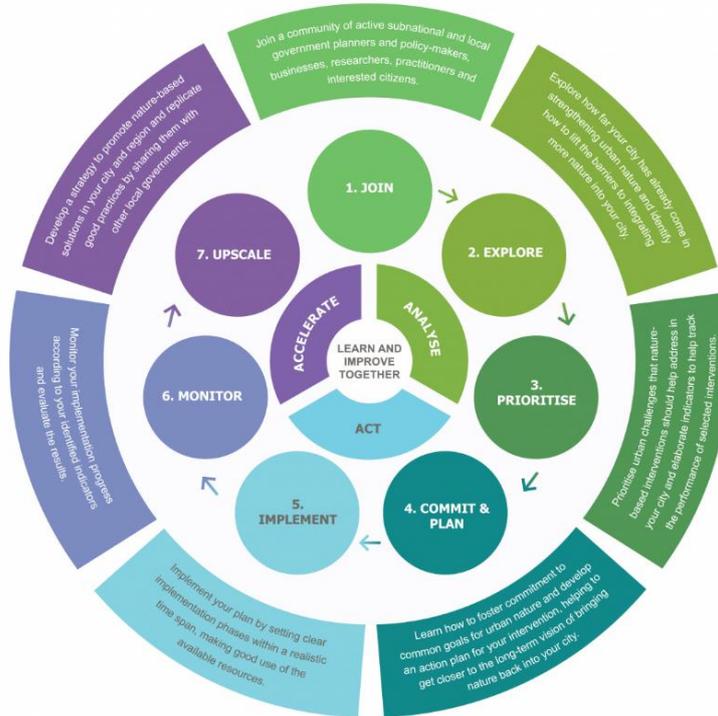


Figure 01: Integrated management approach of the UrbanByNature programme.

STEP 1 | JOIN

Join a community of active subnational and local government planners and policy-makers, businesses, researchers, practitioners and interested citizens.

Engage in shaping and participating in a facilitated process to share your own expertise and learn with and from committed peers with the ambition to create a greener, more sustainable and resilient future in your city. Join hands with others who are equally eager to use the potential urban nature has to offer and take a step closer to your city’s urban development.

Step 2 | EXPLORE

Explore how far your city has already come in strengthening urban nature and identify how to lift the barriers to integrating more nature into your city.



Consider your local urban fabric, its particularities and challenges. Explore and identify existing strategic objectives within your city, relevant urban policies and plans in place to see where your city or town is starting from and understand what might be possible in terms of space, decision-making and engagement. We support you in understanding current roles and responsibilities of local urban actors. Learn how to better identify opportunities to make your city more resilient and spot opportunities for creative investment!

Step 3 | PRIORITISE

Prioritise urban challenges that nature-based interventions should help address in your city and elaborate indicators to help track the performance of selected interventions.

Prioritise the themes or urban challenges on which you want to focus on while participating. Learn how to also do this together with citizens as users and supporters of urban nature. In this step, other cities share how they selected their approach and engaged with citizens. Cities and partners from the project support you in identifying indicators to help you track the impact of your efforts.

Step 4 | COMMIT & PLAN

Learn how to foster commitment to common goals for urban nature and develop an action plan for your intervention, helping to get closer to the long-term vision of bringing nature back into your city.

Get support in convincing local decision and policy-makers to commit to common goals. This step facilitates outlining an action plan, in which priority topics and intervention areas are developed together with citizens, responsibilities are assigned, and feasibility is accounted for as far as possible.

Step 5 | IMPLEMENT

Implement your plan by setting clear implementation phases within a realistic time span, making good use of the available resources.

Use the potential of nature-based solutions to address urban development challenges. This step invites public and private authorities and companies offering nature-based products and services to navigate the interests and offers of both and facilitate the implementation of the planned interventions. Participating companies get to learn from companies already in the nature-based solutions market on how to extend their portfolio.



Step 6 | MONITOR

Monitor your implementation progress according to your identified indicators and evaluate the results.

Track and evaluate how your planning and implementation process is progressing and use your assessment to adjust and improve your approach where necessary. Learn how the project's European cities approached evaluation beyond the use of indicators, and particularly evaluation of the soft process of co-creation. Monitoring and evaluating a process is not about measuring everything that changes, but measuring what you want to change and understanding the dynamics driving it.

Step 7 | UPSCALE

Develop a strategy to promote nature-based solutions in your city and region and replicate good practices by sharing them with other local governments.

Prepare the grounds to replicate and adapt nature-based solutions across your city and share your experience with other cities and towns in your region. Learn to check the transferability of your solution to another place or planning process, so it fits the new local context in terms of its spatial features and needs as well as the types of partners that could be involved. You hear from other local governments how they went about applying their interventions elsewhere in their city. And you can share your experience with upscaling as well.

Within the stream of the UrbanByNature programme in Korea, cities will be more intensely involved in the first three steps of the management cycle, whilst small and medium enterprises (SMEs) will be more active towards the following steps of the cycle. The programme will support the exchange between Korean and European SMEs, helping green businesses to extend their portfolio, increase knowledge on NBS implementation by accompanying the implementation process in front-runner cities and launch partnerships for global NBS outreach. They will be set up in such a way to increase the chances of them continuing to be partners beyond the duration of the project, opening up long-term market opportunities.

The UrbanByNature programme will be shaped around city-to-city exchanges, business-to-business interactions and project partner-to-city support to facilitate the development of action plans for nature-based interventions. It will focus on the following aspects of planning and implementing nature-based interventions:

- Identifying business models and enabling the setting up of enterprise offering nature-based products and services
- Developing and establishing a process to co-plan and co-create locally suitable nature-



based solutions

- Devising financing models and mechanisms to ensure selected nature-based interventions can be financed long-term
- Design governance models to include different actors in a city in planning, realising and maintaining nature-based interventions
- Planning a suitable monitoring and evaluation process (incl. indicators)
- Nature-based technological and construction examples

Connecting Nature, for example, offers the following inputs within the programme:

- Technical NBS exemplars
- Co-creation guidebook
- Exemplary governance models
- Guidance on financing nature-based interventions and developing fitting business models
- Guidance on setting up a monitoring and evaluation process

3. Workshop with launch of the UrbanByNature Programme in Korea

The European Commission defines nature-based solutions as solutions that are *“inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience.”* Nature-based solutions protect, sustainably manage and restore natural or modified ecosystems, which address challenges facing humanity (e.g. climate change, food and water security or natural disasters). At the same time nature-based solutions can also benefit human well-being, health and social cohesion, particularly if a biodiverse urban nature is fostered.

In this event for the launch of the UrbanByNature programme in Korea, representatives of Korean cities and other participants explored how urban nature can offer solutions towards urban water and climate-related challenges. In an interactive set-up, the participants shared the experience, approaches and success stories they have made with strengthening and benefitting from urban



nature. They have also identified their needs to plan and implement nature-based interventions, as well as enabling and constraining factors.

Within the workshop, UrbanByNature was presented. Korean cities shared their insights and actions, with which they can contribute to and learn from the programme over the upcoming year. And the expertise of European cities participating in Connecting Nature was outlined, to show Korean cities what they can get in return for their engagement (e.g. planning processes, financing and business models for urban nature).

Objectives of the Workshop:

- Introduce nature-based solutions as a new approach for building sustainable cities
- Learn and share cases of leading cities in nature-based solutions from Europe
- Understand the local context and needs of Korean cities to realise nature-based solutions better and sketch out opportunities arising from participating in the UrbanByNature programme
- Voice and gather Korean cities' wishes, ideas, needs, interests and contributions towards the UrbanByNature programme

Target audience: Mainly local authorities, local government experts and NGOs

The workshops saw the participation of cities (city staff and residents) and researchers, accounting to 21 attendees. Government representatives from the following cities were present: Gyeonggi-do (Province), Chungnam-do (Province), Suwon city, Ulsan city (Metropolitan city), Dobong-gu (Municipality of Seoul Metropolitan Government).

Time	Activity	Moderator/Speaker
9:30-10:00	Registration	ICLEI Korea taking registrations
10:00-10:20	Welcome + Objective + Agenda	Yeonhee Park, ICLEI KO
10:20-10:40	Presentation 1: Biodiverse nature as a solution for urban and regional challenges. EU's vision and action for the post-2020 biodiversity framework.	Roby Biwer, Committee of the Regions
10:40-11:10	Presentation 2: UrbanByNature, the global programme for urban nature pioneers	Daniela Rizzi, ICLEI ES
11:10 - 12:10	World Café 1	ICLEI ES and ICLEI Korea
12:15	LUNCH	All
12:45-13:45	World Café 2	ICLEI ES and ICLEI Korea
13:45-14:00	Closing	Yeonhee Park, ICLEI KO and Daniela Rizzi, ICLEI ES



Figure 02: Participants in the UrbanByNature launching session in Korea

3.1 World Café, session 1: Exploring the situation of nature-based solutions in your city.

World café 1 had three different tables (themes); 1) Enabling Factors and Constraining Factors, 2) Good examples of strategy and policy-making and 3) Good examples of action on urban nature.

Participant could choose two theme consecutively and for each theme they had 20 minutes to get together and share their insights and experiences.

For the first theme “**Enabling Factors and Constraining Factors**”, participants were asked specific questions such as - Could you point out successful factors for the planning and implementation of nature-based solutions in your city? Could you point out constraining factors for the planning and implementation of nature-based solutions in your city?

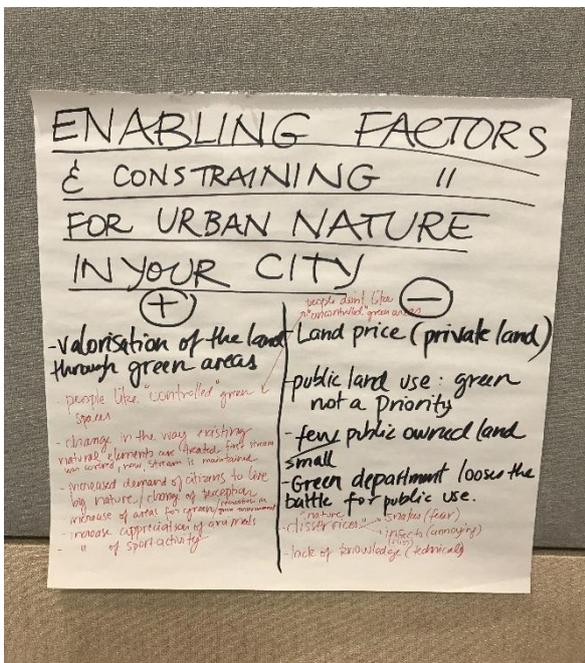
Participants answered as below.

Constraining Factors:

- Due to the private land value rising, land appropriation to public purpose that can be applied with nature based solution cost much.
- Less future public plan for land afforestation or conservation



- Departments in charge have less influence on finance and policy change
- disservice that nature give human e.g. snake (danger), insect such as fly (annoying)
- Lack of technical know-how on NBS
- Lack of expertise of endemic and alien species
- Citizens don't like unplanned wild nature
- Green area in cities come to a crisis due to Sunset provision on unimplemented city park site, which will come into effect from June 2020



Enabling Factors

- Re-use of land in conjunction with green area(demand rising of nature conservation)
- Trend change toward nature friendly lifestyle
- improvement of leisure sports in and/or by means of nature
- Animal right and gratitude for creature are rising

Figure 03: Material produced during the UrbanByNature launching session in Korea

For the second theme “Good examples of action on urban nature”, participants highlighted the following:

Economic examples:

- some ideas about what could a result of NBS be and the possible benefit NBS can draw were shared.
- The structure of gaining financial benefit should be settled by NBS e.g.) the closer the nature, the higher the value buildings have.





- Ulsan National Garden was designated on July 12 and it will have official ceremony on October 23. It is expected to promote local tourism sector of Ulsan.
- Research on effect of NBS should be expanded

Social examples:

- Educational and spiritual service through eco-playground and eco-park.
- Greening of parking lot
- Ecology of the wetlands
- Most of afforestation and greening are applicable to this.

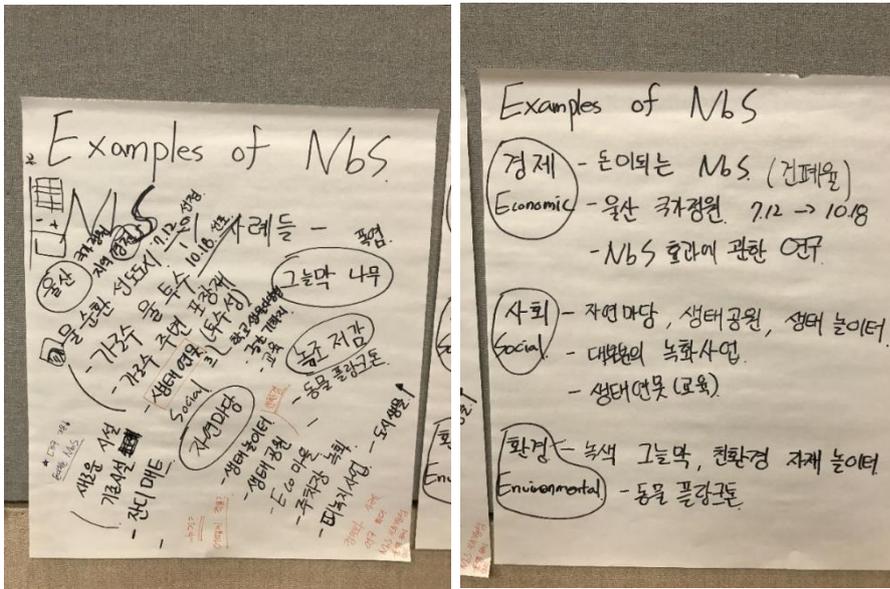


Figure 04 and 05: Material produced during the UrbanByNature launching session in Korea

Environmental examples:

- shade by trees, Play park made with eco-friendly materials
- Reduction of algal boom through plankton
- Ulsan committed as 'Water Circulation City' using green infra and changing packing material around trees along streets in order to increase water permeability
- Small green place along with street trees increase urban biodiversity



For the third theme “**Good examples of strategy and policy-making**” answers were sought with questions such as “Are there strategic plans, policies or regulations in your city that support NBS? Who initiated them?” For these, participants came up with below.

Chungchungnam-do Province

- ‘Prevention of birdstrike programs’ with Ministry of Environment is planned to start soon. In the effort to be effective, existing infrastructure and tape all scheduled instalment and go through consultation beforehand.
- Preservation of endangered species, restoration of Suwon Tree Frog, conservation and management of habitats.
- Urban Ecological Status Map (‘17-’20, 2nd version) development through BioBlitz, investigation of nature environment is going on and discovery of more ecological values with designation of conservation area is tried.
- Detailed research on invasion species status

Gyeonggi-do Province

- In accordance to Ecosystem conservation cooperation charge, ecosystem damage are chargeable/punishable.
- Application of local context when develop standard of Environmental effects evaluation. e.g.) Recommendation to avoid stream area in construction
- Charge is refundable when used for restoration
- West coast salt field turn into wetland, Sihwa Lake in Siheung city is open to the public.
- Restoration of Suwon stream by official purchase of residents’ area. It affects greening of neighbouring place and conservation of endangered species, afforestation. It is kept going with monitoring by citizen.

Ulsan Metropolitan City

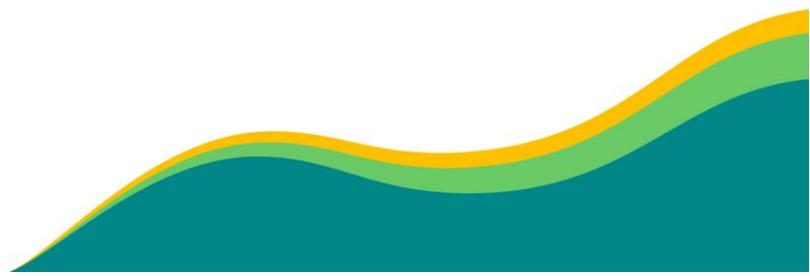
- Urban Ecological Status Map
- Working on the project that Sipri (4km) bamboo forest turn into Beakri (40km)



- Healing project called 'Study tour in Forest village' is going on
- Rook programme (migration bird exhibition hall, bird group dance, etc.)
- Improvement of water quality in Taehwa river, National Garden designation (with partial national fund), By the way, it may cause destruction of nature, waste and parking problems.
- Forest village community rehabilitation with abundant forest resource (Yeongnam Alpse)
- Ulju-gun (Municipality of Ulsan) create forest management, turning forest resource into useful asset, self-energy reliance, turning biomass in to electric and heat energy, etc.



Figure 06: Impressions of the UrbanByNature launching session in Korea



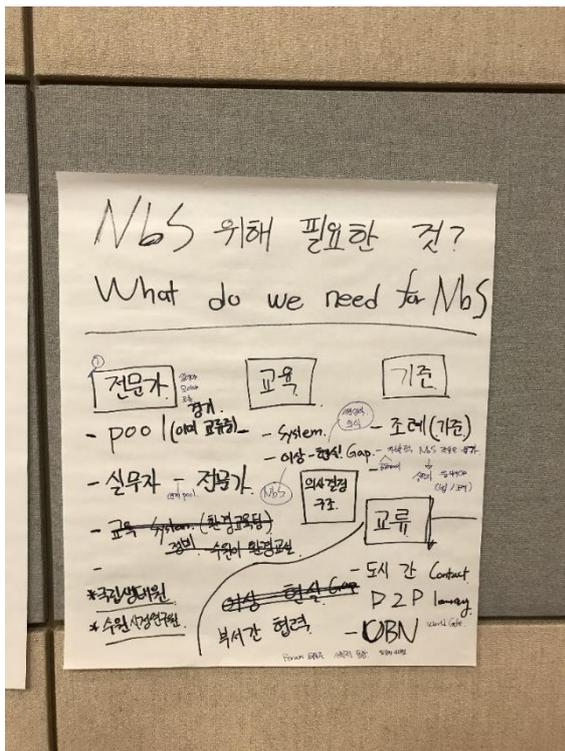


3.2 World Café, session 2: Setting the Scene for the UrbanByNature programme in Korean cities

World café 2 had three different tables (themes) as well; 1) What are the interests and needs of your city in regards to nature-based solutions? 2) What UrbanByNature formats would be useful? 3) Do you want your city to contribute to the UrbanByNature programme? What are your expectations towards the programme? In what manner could we stay in contact?

Participant could choose two theme consecutively and for each of theme they could get together and talk for about 15 minutes.

For the first theme “**What are the interests and needs of your city in regards to nature-based solutions?**” Participants answered as below.



Experts are necessary and must get together

- Gyeonggi said they have communicated with them but should pool them.
- Need pool for connection between practitioners and experts e.g.) National Ecology Institute and Suwon Research Institute

Figure 07: Material produced during the UrbanByNature launching session in Korea

Education

- Bridging gap between reality and ideals.
- NBS course needed



Ordinance

- Voluntary application of NBS in public sector impossible. To make practitioners take an action, law/ordinance is indispensable.
- Alternative green space designation – In case of Chungcheongnam-do Province, they need to map green area to prevent the decrease of green area.

Network and Communication

- Communication among local governments
- Learning
- World café like what we are doing now
- Cooperation among different divisions/departments
- Forum and event in which actual discussions took place.
- Opportunity to collect integrated discourse openly.

For the second theme “**What UrbanByNature formats would be useful for you**”, participants highlighted as below.

Small discussion based face to face event in different regions: This format gets participants be honest and actively participate. Forum effect is otherwise little and makes people find it difficult to share their thoughts freely. Small groups can make people deep dive into their specific theme. SNS is good in view of promotion globally (time difference). After commitment, it should be implemented sustainably.

Webinar: It costs less but doubtful about loyalty of same participants

Webinar and face to face event: While making up for each other’s opinion is possible in F2F events, webinars make it possible to communicate with global participants.

SNS+ additional citizens’ participation /opinion collection





3) Expectation

- Integration of various examples from cities all around the world through UbN
- Raising best /leading practices
- Local examples throughout in Korea can be collected through UbN

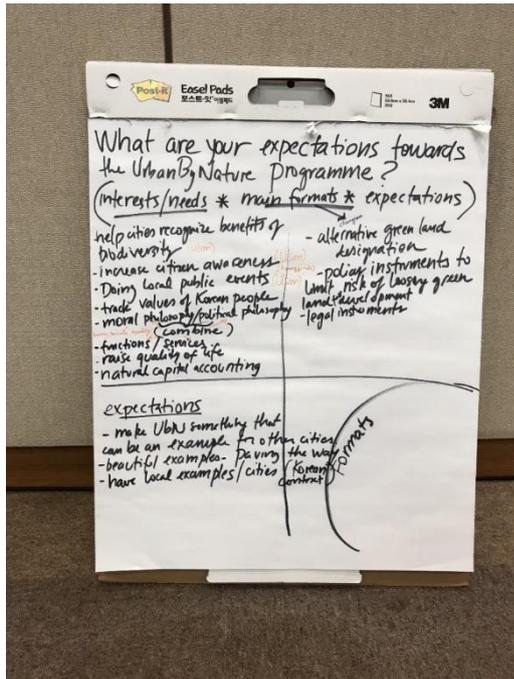


Figure 09: Material produced during the UrbanByNature launching session in Korea

4. Final Remarks

Based on the presented outcomes of the launch event, the webinars of the Korean stream will be designed by ICLEI Europe and ICLEI Korea. The interaction within UrbanByNature shall be needs-dependent and thus tailored to Korean cities' and businesses' interests. Formats include mainly webinars, but also face-to-face interactions.

Korean cities are invited as well as researchers as speakers, alongside European actors from the Connecting Nature project and beyond. The list of webinars' topics and related timeline will be communicated to the interested participants as well as to a wider Korean public.

Because of the fact that usually Korean cities are not accustomed to webinar structure, ICLEI Korea will try to promote webinars actively in Annual Korean member assembly in upcoming early New Year.



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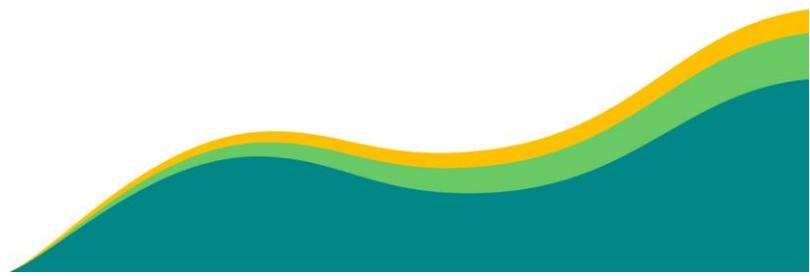
Also, the UrbanByNature programme consists of cyclical series of contents so it might be collaborated with other local project and events such as small world café and Local Biodiversity Forum in order to make UBN easier to access and promote to broader stakeholders.

Since NBS and nature policy is not mainstream policy theme in Korean cities, awareness raising for practitioners is regarded as a priority.

ANNEXES

ANNEX 1: Agenda of the Session in the DMZ Forum 2019

ANNEX 2: Agenda of the Workshop for the launch of UrbanByNature in Korea



세션1
세션2
세션3
세션4
세션5
세션6
특별세션

SPEAKERS



PROGRAM



SPEAKERS



REGISTRATION

기획세션 Parallel Session 2-1

기획세션 Parallel Session 2-2

기획세션 Parallel Session 2-2

Domestic and International Cooperation to Preserve Biodiversity in DMZ

DMZ 생물의 다양성을 위한 국내외 협력

- Red-crowned cranes fly in and out of DMZ. The responsibility to protect migratory birds is shared by all countries, including Korea. Otherwise the species will become extinct. Therefore, in order to ensure biodiversity in DMZ, cooperation within and beyond countries is essential. One way to do so is to nominate and manage DMZ as a Biosphere Reserve, which is an area internationally recognized for the purpose of biodiversity conservation. The purpose of this session is to present ideas of how South and North Korea can utilize shared eco-resources of DMZ. It is also to explore roles and areas for cooperation among South and North Korea and the international society as a whole to preserve biodiversity in DMZ.
- 두루미는 DMZ를 넘나든다. 월새는 다른 나라에서 잘 보호해도 우리가 보호하지 못하면 멸종한다. DMZ의 생물다양성을 위해서는 국가 내에서 그리고 국가 밖에서도 서로 협력해야 한다. DMZ를 국제적인 보호조치인 생물권보호지역으로 지정하고 관리하는 방안도 필요하다. 남과 북이 DMZ라는 생태적 공유자원을 어떻게 활용하는 것이 좋을지도 제시한다. 남과 북 그리고 국제 사회가 DMZ의 생물다양성을 위해 누가 어떤 부분을 협력해야 하는지를 강구한다.

과 장	<p>The Importance of 'Nature-based Solutions' to Protect and Enhance Urban Biodiversity: Identifying Opportunities for Collaboration between European and Korean Local Governments</p> <p>도시 생물다양성을 보호하고 향상을 위한 '자연 기반 해결책'의 중요성 : 유럽과 한국지방정부 간 협력 기회 탐색</p> <p>Daniela RIZZI 다니엘라 리찌 </p> <p>Natural Based Solution Project Expert, ICLEI - Local Governments for Sustainability</p> <p>이클레이 유럽사무소 전문위원</p>
발 계	<p>The European Union Perspective on Cross-border Cooperation Towards Biodiversity Protection and Conservation</p> <p>1 생물다양성 보호와 보전에 관한 EU의 관점</p> <p>Robert BIWER 로버트 비베르 </p> <p>First Vice Chair, The European Committee of the Regions 유럽지역위원회 수석부회장</p>
	<p>How South and North Korea can Share DMZ Eco-Resources DMZ생태자원의 남북공동이용 방안</p> <p>2 KIM Seungho 김승호 </p> <p>President, DMZ Ecology Research Institute DMZ 생태연구소 소장</p>
토 론	<p>1 PARK Yeonhee 박연희 </p> <p>Director, ICLEI Korea Office ICLEI - Local Governments for Sustainability 이클레이 한국사무소 소장</p>
	<p>2 KIM Ohseok 김오석 </p> <p>Research Fellow, Korea Environment Institute 한국환경정책·평가연구원 부연구위원</p>
	<p>3 JEON Seongwoo 전성우 </p> <p>Professor, Korea University 고려대학교 교수</p>



Side event: New approaches to promote urban biodiversity – Using Nature-based Solutions for more sustainable cities (including launch of UrbanByNature programme), SEPTEMBER 20 (Fri)

Date: 20 September 2019

Time: 10:00 – 14:00

Venue: Kintex 1, 2nd floor, 207B / Goyang City, Gyeonggido, Korea

Time	Activity	Moderator/Speaker
9:30-10:00	Registration	ICLEI Korea taking registrations
10:00-10:20	Welcome + Objective + Agenda	Yeonhee Park, ICLEI KO and Daniela Rizzi, ICLEI ES
10:20-10:40	Presentation 1, Biodiverse nature as a solution for urban and regional challenges. EU's vision and action for the post-2020 biodiversity framework.	Roby Biwer, Committee of the Regions
10:40-11:10	Presentation 2, UrbanByNature: the global programme for urban nature pioneers	Daniela Rizzi, ICLEI ES
11:10 - 12:10	World Café 1	ICLEI ES and ICLEI Korea
12:15	LUNCH	All
12:45-13:45	World Café 2	ICLEI ES and ICLEI Korea
13:45-14:00	Closing	Yeonhee Park, ICLEI KO and Daniela Rizzi, ICLEI ES

Co-moderation by Yeonhee Park (ICLEI KOREA) and Daniela Rizzi (ICLEI Europe)

European Committee of the Regions presentation: "Biodiverse nature as a solution for urban and regional challenges. EU's vision and action for the post-2020 biodiversity framework" by Roby Biwer

ICLEI Europe: "Presenting the UrbanByNature Programme" by Daniela Rizzi

Workshop in World Café format: "Korean and European cities joining forces on biodiversity and urban nature action"





Short description:

The European Commission defines nature-based solutions as solutions that are “inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience.” Nature-based solutions protect, sustainably manage and restore natural or modified ecosystems, which address challenges facing humanity (e.g. climate change, food and water security or natural disasters). At the same time nature-based solutions can also benefit human well-being, health and social cohesion, particularly if a biodiverse urban nature is fostered.

In this event, representatives of Korean cities and other participants will explore how urban nature can offer solutions towards urban water and climate-related challenges. In an interactive set-up, the participants will share the experience, approaches and success stories they have made with strengthening and benefitting from urban nature. They will also identify their needs to plan and implement nature-based interventions even better.

The [UrbanByNature programme](#), powered by the European Commission funded [Connecting Nature](#) project, will be launched. In the workshop the programme will be presented, outlining the expertise European cities participating in Connecting Nature can share with Korean cities (e.g. planning processes, financing and business models for urban nature). In turn, ICLEI will discuss with the Korean cities what insights and actions they can contribute to and learn from the programme over the upcoming year.

Objectives:

- Introduce nature-based solutions as a new approach for building sustainable cities
- Learn and share cases of leading cities in nature-based solutions from Europe
- Understand the local context and needs of Korean cities to realise nature-based solutions better and sketch out opportunities arising from participating in the UrbanByNature programme
- Voice and gather Korean cities' wishes, ideas, needs, interests and contributions towards the UrbanByNature programme

Target audience: Mainly local authorities, local government experts and NGOs





		“New approaches to promote urban biodiversity - Using nature based solutions for more sustainable cities”
9:30-10:00	<u>Registration</u> (coffee provided)	
10:00-10:20	<u>Welcome + Objective</u> <u>Agenda</u> (incl. introduction of participants)	
10:20-10:40	<u>Biodiverse nature as a solution for urban and regional challenges. EU’s vision and action for the post-2020 biodiversity framework</u> by Roby Biwer, Committee of the Regions	
10:40-11:10	<u>Presenting the UrbanByNature Programme:</u> by Daniela Rizzi, ICLEI ES	
11:10-12:15	<u>WORLD CAFÉ 1, What is the role of nature in your city?</u> (10’ explanation, 20’ per table, participants may chose only two tables, total 65’ incl. join up and question to all)	
12:15-12:45	<u>LUNCH: Finger food</u>	
12:45-13:50	<u>WORLD CAFÉ 2, Setting the Scene for the UrbanByNature programme in Korean cities</u> (10’ explanation, 20’ per table – participants get to choose table 1 or 2, but table 3 is for all, total 65’ incl. join up)	
13:50-14:00	<u>Closing Session (10’)</u>	





UrbanByNature
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Launch of the UrbanByNature Programme in the Caucasus: Nature-Based Solutions for more sustainable cities

October 8, 2019 at the National Parliamentary Library of Georgia, Tbilisi, Georgia



Workshop Report

AUTHORS: Daniela Rizzi, ICLEI Europe; Shushanik Asmaryan, CENS; Mamuka Gvilava, GeoGraphic; Tina Khimshiashvili, GALA; Nana Shakarishvili, IliaUni Institute of Botany



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730222





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1. Introduction

The UrbanByNature programme is part of the European Horizon 2020 Connecting Nature project with partners from an interconnected community of cities and businesses, fostering a transdisciplinary capacity-building process in implementing Nature-Based Solutions (NBS) across front-runner and fast-follower European cities, and scaling out European NBS experience to multiplier cities globally, including in the Caucasus Region. In this region the European Neighbouring Countries of Armenia and Georgia, with the capitals Yerevan and Tbilisi, are taking the lead in preparing grounds for implementation of NBS, as well as in the replication of experiences to fellow cities throughout the Caucasus countries.

The launch of the UrbanByNature programme in the Caucasus took place on October 8th 2019 at the National Parliamentary Library of Georgia, Tbilisi, Georgia.

The event hosted the following speakers and moderators:

- **ICLEI Europe – Local Governments for Sustainability**, Germany:
Dr. Daniela Rizzi, Officer for Nature-Based Solutions and Green Infrastructures – speaker and overall moderator
- **Tbilisi City Hall, Georgia**: Mr. Saba Pipia, Deputy Head of Municipal Department of Environmental Protection – speaker
- **Yerevan Municipality**, Armenia: Dr. Gevorg Navasardyan Head of Environment Department, a.i. – speaker
- **University of East London (UEL)**, UK: Dr. Stuart Connop, Senior Research Fellow, Sustainability Research Institute – speaker
- **Centre for Ecological-Noosphere Studies (CENS)**, Armenia:
Mrs. Shushanik Asmaryan – speaker and moderator
- **GIS and RS Consulting Center GeoGraphic (GeoGraphic)**, Georgia:
Dr. Mamuka Gvilava (GeoGraphic), Prof. Tinatin Khimshiashvili (GALA),
Dr. Nana Shakarishvili (IliaUni Institute of Botany) – speaker and moderator



In addition to representatives of Tbilisi and Yerevan, the event engaged representatives of Georgia's second largest city Kutaisi, port city of Poti and the old capital Mtskheta, as well as some other European cities, see Fig. 1 illustrating geography of participants and speakers.



Figure 1: Map of registered participants from 5 cities of Caucasus (Georgia and Armenia) & speakers from Germany and UK.

The event had 39 participants. It was conducted in English, with parallel translation in Russian, a familiar language to participants from Armenia and Georgia.

See the agenda of the event in ANNEX 1.



Connecting Nature project

The **Connecting Nature** project is a 12 million Euro project running from 2017 to 2021, funded by the European Commission's Horizon 2020 Work Programme. With 33 project partners from local authorities, regional and civil society organisations, companies and research institutes in 16 countries, Connecting Nature, led by Trinity College Dublin, is developing innovative planning processes for nature based solutions in 11 European cities, from which Genk (BE), Glasgow (UK) and Poznań (PL) are front-runner cities, and A Coruña (ES), Bologna (IT), Burgas (BG), Ioannina (GR), Nicosia (CY), Malaga (ES), Sarajevo (BA) and Pavlos Melas (GR) are fast-follower cities.

The project is analysing the impact of large scale nature-based interventions in these cities with regards to climate change adaptation, health and well-being, social cohesion and sustainable economic development at the local level. Peer-to-peer learning, capacity building and knowledge exchange are fostered among cities, both those who are already experienced in implementing nature-based solutions as well as those who intend to realise them but still lack capacity.

The project also provides the opportunity for cities and businesses around the globe to join **UrbanByNature**, a global knowledge sharing and outreach programme for cities aiming for a better, sustainable, resilient and liveable future. Its co-creative, integrated programme enables participants to learn from each other and from the Connecting Nature experience to plan and use the benefits urban nature provides.



ICLEI – Local Governments for Sustainability

ICLEI – Local Governments for Sustainability, founded in 1990 as the International Council for Local Environmental Initiatives, is the world's leading network of local and regional governments committed to sustainable development. ICLEI believes that local action drives global change and the leadership of local and regional governments can make a major difference in addressing complex environmental, economic and social challenges. ICLEI promotes joint action, peer learning, and strong partnerships between civil society, business leaders and all levels of government to accelerate local sustainable development and make real change on the ground.

Since 1992, the ICLEI European Secretariat (ICLEI ES) has been closely working with ICLEI network cities in Europe, North Africa, the Middle East and West Asia, other European networks, the European Commission, the Committee of the Regions, and many others. Within the Connecting Nature Project, ICLEI ES is in charge of making the project's findings go global, supporting the establishment of regional partnerships and facilitating the knowledge exchange of nature-based solutions with cities through UrbanByNature programme, with a particular focus on South Korea, China, Brazil and the Caucasus.

ICLEI ES together with GEOGRAPHIC and CENS co-developed the agenda for the launch of the UrbanByNature programme in the Caucasus, bringing together potential multiplier cities and regional research partners in a workshop. The event was co-moderated by the partners mentioned above.



GEOGRAPHIC, Georgia

GIS and Remote Sensing Consulting Centre "GeoGraphic" (<http://geographic.ge>), founded in 1998, is the leading company offering geospatial solutions in Georgia. More specifically, GeoGraphic is devoted to create and deliver corporate and specialized geospatial solutions, flexible data management tools, reliable and high-quality cartographic production, and applying GIS and remote sensing technologies to multiple sectors, such as environment and natural resources, land use planning, urban revitalisation and redevelopment, transport and communications, infrastructure, education, municipal management, healthcare & social, cultural heritage preservation, as well as the nature-based solutions, striving at achieving multifunctional benefits in an integrated manner, exploiting geospatial tools and solutions. GeoGraphic is the Georgian partner of the European H2020 Connecting Nature Project and local organiser of the UrbanByNature launch event for the Caucasus in Tbilisi, Georgia.

CENS, Armenia

CENS, the Centre for Ecological-Noosphere Studies of the National Academy of Sciences of the Republic of Armenia (<http://CENS.am>), founded in 1993, carries out multidisciplinary investigations oriented to the complex assessment of ecological state of territories and development of scientific and methodological fundamentals of ecological expertise and optimization of natural resource management. CENS includes laboratories and research teams in environmental geochemistry, biogeochemical cycles, bioenergy, landscapes and land-use planning, GIS & Remote Sensing. Multidisciplinary research developments and services of CENS are of special interest to state-governmental and municipal authorities (such as Yerevan) for decision-making, as well as international organizations. CENS research expertise is applied on a permanent basis in master planning of Yerevan for optimization of the planning structure and reduction of environmental and human health risks. CENS is the Armenian partner of the European H2020 Connecting Nature Project and promoter of the UrbanByNature programme for the Caucasus in Armenia.



2. UrbanByNature Programme

What is behind the [UrbanByNature](#) programme? A facilitated expertise-sharing and capacity-building programme for local governments around the world to be empowered to harness the boundless potential of nature for sustainable urban development. An opportunity for local governments, civil society and businesses to co-create a sustainable and resilient urban future using nature's innovative potential. Participants get to share lessons, learn from one another, enrich the knowledge base and together reflect on how to overcome barriers to urban nature to set our cities and towns on a new green and blue course.

The programme brings established and aspiring urban nature pioneers together in facilitated capacity-building webinars and workshops. Built on an integrated planning process, that has been used by local governments part of the ICLEI network and beyond and that accounts for the complex combination of departments, sectors and organisations involved in sustainable urban planning, the programme is designed to be adaptable to the questions and expertise participants and contributors bring to the table from their diverse backgrounds and regions.

The UrbanByNature programme in the regional hub of the Caucasus provides local cities and businesses opportunities to exchange with European cities and businesses on ambitions, processes, policies, financing options and business approaches on how to solve urban development challenges with urban nature, planning and implementing nature-based solutions for and with citizens. It is about supporting collective action towards a sustainable, inclusive, healthy and resilient future for cities and towns of all sizes, locations, budgets and capacities. Via UrbanByNature, cities, researchers, communities and businesses gain access to tools, methods and approaches that support the planning and implementation of nature-based interventions. It is about strengthening the collective action of local and sub-national governments in moving towards relevant environmental goals such as the [Sustainable Development Goals](#) and the [Paris Climate Agreement](#).



UrbanByNature’s curriculum reflects a co-creative approach, in which not only principles and methods are shared, but participants work together to actively engage in making cities and towns more resilient towards water and climate change challenges and in transforming their neighbourhoods. Within this programme, powered by [ICLEI Europe](#) with contributions by more than 30 partners (cities, researchers, practitioners and experts) from the [Connecting Nature project](#) and hosted by [CitiesWithNature](#), participants of the Caucasian stream will be guided through seven steps in approximately one year, taking part in thematic modules that cover a range of topics relevant for planning and realising green and blue cities. Face-to-face events are also planned.

UrbanByNature’s integrated planning process is structured around a 7-step management and planning cycle. Each step offers different content to the participants.

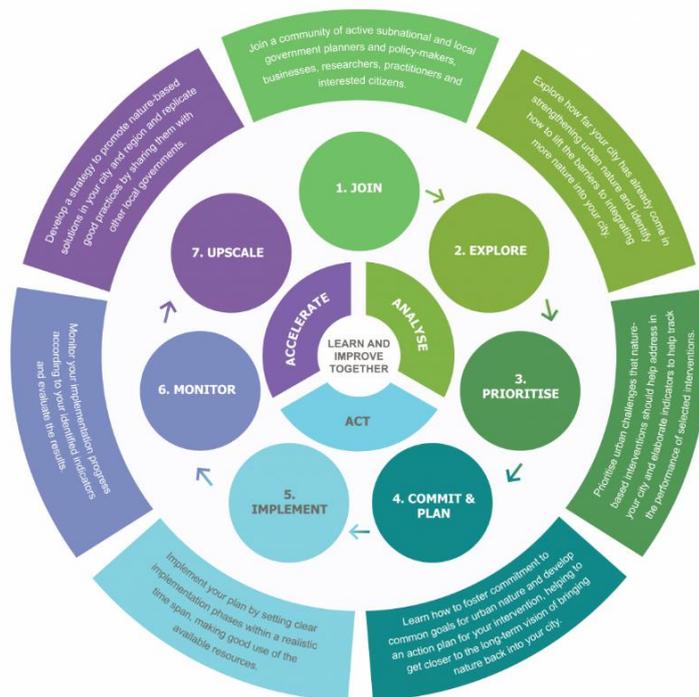


Figure 2: Integrated management approach of the UrbanByNature programme.



STEP 1 | JOIN

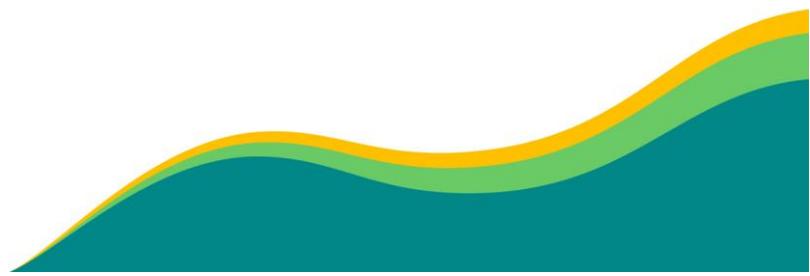
Join a community of active subnational and local government planners and policy-makers, businesses, researchers, practitioners and interested citizens.

Engage in shaping and participating in a facilitated process to share your own expertise and learn with and from committed peers with the ambition to create a greener, more sustainable and resilient future in your city. Join hands with others who are equally eager to use the potential urban nature has to offer and take a step closer to your city's sustainable urban development.

Step 2 | EXPLORE

Explore how far your city has already come in strengthening urban nature and identify how to lift the barriers to integrating more nature into your city.

Consider your local urban fabric, its particularities and challenges. Explore and identify existing strategic objectives within your city, relevant urban policies and plans in place to see where your city or town is starting from and understand what might be possible in terms of space, decision-making and engagement. We support you in understanding current roles and responsibilities of local urban actors. Learn how to better identify opportunities to make your city more resilient and spot opportunities for creative investment.





Step 3 | PRIORITISE

Prioritise urban challenges that nature-based interventions should help address in your city and elaborate indicators to help track the performance of selected interventions.

Prioritise the themes or urban challenges on which you want to focus on while participating. Learn how to also do this together with citizens as users and supporters of urban nature. In this step, other cities share how they selected their approach and engaged with citizens. Cities and partners from the project support you in identifying indicators to help you track the impact of your efforts.

Step 4 | COMMIT & PLAN

Learn how to foster commitment to common goals for urban nature and develop an action plan for your intervention, helping to get closer to the long-term vision of bringing nature back into your city.

Get support in convincing local decision and policy-makers to commit to common goals. This step facilitates outlining an action plan, in which priority topics and intervention areas are developed together with citizens, responsibilities are assigned, and feasibility is accounted for as far as possible.

Step 5 | IMPLEMENT

Implement your plan by setting clear implementation phases within a realistic time span, making good use of the available resources.

Use the potential of nature-based solutions to address urban development challenges. This step invites public and private authorities and companies offering nature-based products and services to navigate the interests and offers of both and facilitate the implementation of the planned interventions. Participating companies get to learn from companies already in the nature-based solutions market on how to expand their portfolio.



Step 6 | MONITOR

Monitor your implementation progress according to your identified indicators and evaluate the results.

Track and evaluate how your planning and implementation process is progressing and use your assessment to adjust and improve your approach where necessary. Learn how the project's European cities approached evaluation beyond the use of indicators, and particularly evaluation of the soft process of co-creation. Monitoring and evaluating a process is not about measuring everything that changes, but measuring what you want to change and understanding the dynamics driving it.

Step 7 | UPSCALE

Develop a strategy to promote nature-based solutions in your city and region and replicate good practices by sharing them with other local governments.

Prepare the grounds to replicate and adapt nature-based solutions across your city and share your experience with other cities and towns in your region. Learn to check the transferability of your solution to another place or planning process, so it fits the new local context in terms of its spatial features and needs as well as the types of partners that could be involved. You hear from other local governments how they went about applying their interventions elsewhere in their city. And you can share your experience with upscaling as well.



Within the stream of the UrbanByNature programme in the Caucasus, cities will be intensely involved in the first three steps of the management cycle, whilst small and medium-sized enterprises (SMEs) will be more active towards the subsequent steps of the cycle. The programme will support the exchange between the Caucasus and European SMEs, helping green businesses to extend their portfolio, increase knowledge on NBS implementation by accompanying the implementation process in front-runner cities and launch partnerships for global NBS outreach. They will be set up in such a way to increase the chances of them continuing to be partners beyond the duration of the project, opening up long-term market opportunities.

The UrbanByNature programme will be shaped around city-to-city exchanges, business-to-business interactions and project partner-to-city support to facilitate the development of action plans for nature-based interventions. It will focus on the following aspects of planning and implementing nature-based interventions:

- Introducing potential business models and enabling the set-up of an enterprise that offers nature-based products and services.
- Developing and establishing a process to co-plan and co-create locally suitable nature-based solutions.
- Devising financing models and mechanisms to ensure selected nature-based interventions can be financed long-term.
- Design governance models that include different actors of a city in planning, implementing and maintaining nature-based interventions.
- Planning a suitable monitoring and evaluation process (incl. indicators).
- Nature-based technology and construction examples.



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Connecting Nature, for example, offers the following inputs within the programme:

- Technical NBS exemplars
- Co-creation guidebook
- Exemplary governance models
- Guidance on financing NBS interventions and developing fitting business models
- Guidance on setting up a monitoring and evaluation process



3. Workshop with launch of the UrbanByNature Programme in the Caucasus

The European Commission defines nature-based solutions as solutions that are *“inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience.”* Nature-based solutions protect, sustainably manage and restore natural or modified ecosystems, which address several challenges facing humanity (e.g. climate change, food and water security or natural disasters). At the same time nature-based solutions can also benefit human well-being, health and social cohesion, particularly if a biodiverse urban nature is fostered.

In this event for the launch of the UrbanByNature programme in the Caucasus, representatives of Georgian and Armenian cities and other participants explored how urban nature can offer solutions towards urban water and climate-related challenges. In an interactive set-up, the participants shared the experience, approaches and success stories they made with strengthening and benefitting from urban nature. They also identified their needs to plan and implement nature-based interventions, as well as enabling and constraining factors.

Within the workshop, the UrbanByNature programme was presented. Georgian and Armenian cities shared their insights and actions, with which they can contribute to and learn from the programme over the upcoming year. Additionally, the expertise of European cities participating in Connecting Nature was outlined, to show Georgian and Armenian cities what they can get in return for their engagement (e.g. planning processes, financing and business models for urban nature).



Objectives of the Workshop:

- Introduce nature-based solutions as a new approach for building sustainable cities
- Learn and share cases of leading cities in nature-based solutions from Europe
- Understand the local context and needs of Georgian and Armenian cities to realise nature-based solutions better and sketch out opportunities arising from participating in the UrbanByNature programme
- Voice and gather Georgian and Armenian cities' wishes, ideas, needs, interests and contributions towards the UrbanByNature programme



Figure 3: Launch of the UrbanByNature programme at National Parliamentary Library of Georgia in Tbilisi, October 8, 2019.



Target audience: Mainly local authorities, local government experts and NGOs.

The workshops saw the participation of cities (city staff and residents) and researchers, as well as educators and master students, accounting to 39 attendees (including organisers). Government representatives from the following cities were present: Yerevan from Armenia, Tbilisi, Kutaisi, Poti and Mtskheta from Georgia (Batumi registered, but could not attend). Participants, in particular, included Acting Head of Environmental Department of Yerevan Municipality, Deputy Head of Municipal Department of Environmental Protection from Tbilisi, Chief Resilience Officer of Tbilisi, Assistant to Mayor of Poti on Infrastructure, Senior Specialist at Department of Infrastructure of Kutaisi City Hall, Greening Service of Mtskheta.

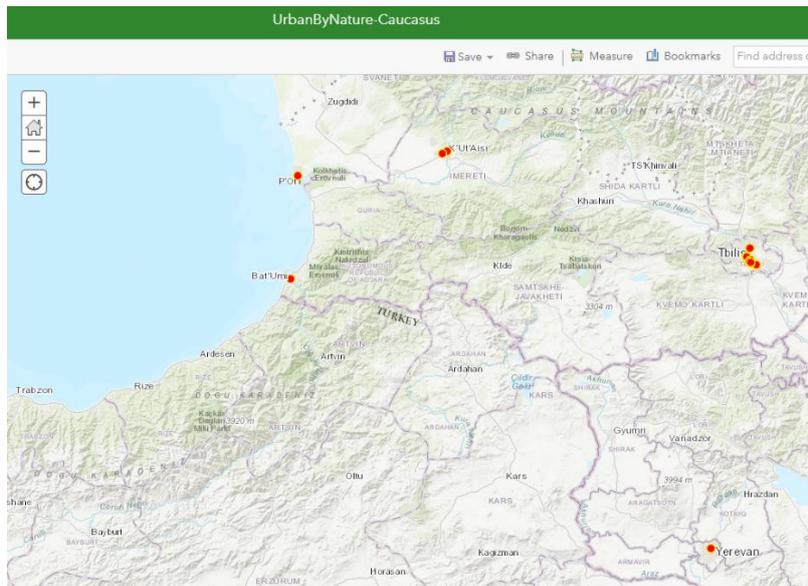


Figure 4: Map of participants from 5 cities of Caucasus (Georgia and Armenia)

Speakers and presenters:

At the inception of the meeting welcome addresses were kindly delivered by Mr. Saba Pipia, Deputy Head of Municipal Department of Environmental Protection Tbilisi City Hall and Dr. Gevorg Navasardyan Head of Environment Department, i.e. Yerevan Municipality.



They introduced participants into various initiatives carried out by both Tbilisi and Yerevan authorities which are of potential interest in relation to Nature Based Solutions.

The next speaker was Dr. Stuart Connop, Senior Research Fellow, Sustainability Research Institute University of East London (UEL), connected via Skype, first introduced participants to the H2020 Connecting Nature Project and shared European NBS experiences implemented in project's front runner cities Genk (Belgium), Glasgow (UK) and Poznań (Poland), as well as first hand experiences from flagship NBS projects implemented by UEL in London, UK.

Dr. Daniela Rizzi, Officer for Nature-based Solutions and Green Infrastructures ICLEI Europe – Local Governments for Sustainability, Germany, as the moderator of the event, provided a detailed presentation explaining how the UrbanByNature Programme plays out and what the programme offers to participants and cities from the Caucasus region.

There were presentations with NBS-type exemplars from Yerevan and from Tbilisi, respectively, by Mrs. Shushanik Asmaryan, Centre for Ecological-Noosphere Studies (CENS), Armenia and by Dr. Mamuka Gvilava, GIS and RS Consulting Center GeoGraphic, Georgia.

Workshop events included morning and evening sessions and a visit to the nearby Aleksandre's and Orbeliani Gardens. The visit included analyses of NBS at these historic and natural heritage sites of Tbilisi regarding their strengths and weaknesses. The visit was led by Prof. Tinatin Khimshiashvili of GALA and assisted by Dr. Nana Shakarishvili of IliaUni Institute of Botany regarding the topic of biodiversity.

The highlights of the workshop included two structured participant discussion sessions using the World CAFÉ format that covered the following topics relevant to the participating cities of Tbilisi, Poti, Kutaisi, Mtskheta (Georgia) and Yerevan (Armenia) in the UrbanByNature context:

1st WORLD CAFÉ: Role of urban nature in cities in the Caucasus region, enabling & constraining factors.



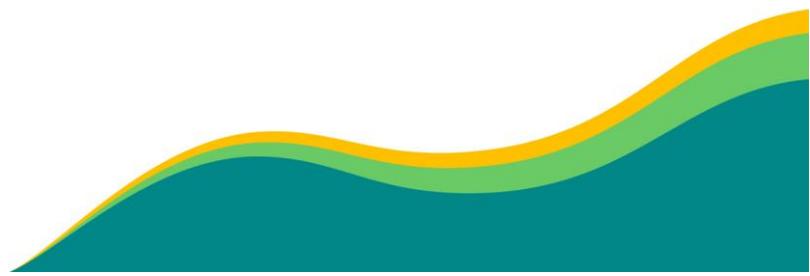
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2nd WORLD CAFÉ: Setting the Scene for UrbanByNature programme in cities in the Caucasus region.

Results of these discussions in detail are presented in the next few pages of this report.





World Café, session 1: Exploring the situation of nature-based solutions in your city.



Figure 5: Presenting UrbanByNature programme to participants of the Caucasus launch workshop.

World Café session 1 participants were divided into three groups, with 20 participants in each session.

1. The 1st group of questions answered in World Café 1 was: Enabling and constraining factors for urban nature in your city

The following enabling and success factors for the planning and implementation of nature-based solutions were mentioned for the cities of Caucasus/Georgia:

Relatively mild climate. Quite capable human resources. Availability of natural resources.

Availability of land use master plan for Tbilisi, with long term vision (10-15 years) combined with short-term and long-term goals.



Political commitments with regard to environmental and social outcomes.

Bottom-up initiatives in society (need for the government to stimulate and support).

Need to stimulate local leadership and to encourage local environmental champions.

Trainings. Sustainable urban campaigns.

Political awareness/campaigns.

The following constraining factors for the planning and implementation of nature-based solutions were pointed out for the cities of Caucasus/Georgia:

No clear distinction between short term and long-term outcomes.

Environmental issues, such as poor urban air quality; lack of proper WWTP (waste water treatment plant); tree cutting.

Central/municipal govt. commitments needed for NBS (no top-down initiatives today).

Absence of land use master plan for Kutaisi to guide proper urban development.

Absence of urban planning in Poti hence lack of legally binding documents.

Insufficient financial resources to support NBS-type initiatives (Poti).

Limited environmental awareness of citizens and authorities.

Lack of holistic approaches.

Silo-thinking among municipal and central government departments.

No strict sanctions and no strong regulations to protect trees and green areas.

NBS not part of strategic urban thinking.



2. The 2nd group of questions answered in World Café 1 was: Good examples of action in urban nature in your city (implementation, physical solutions).

The following examples of implementation of NBS-type solutions were mentioned:

There are several examples of vertical walls, green roofs, pocket parks, greening projects.

An exemplar green building was recently completed and certified in Tbilisi (Ortachala area).

Excellent initiative of Tbilisi municipality in some parts of the city to provide bicycle paths, bus lanes, to stimulate electric and hybrid vehicles (no tax on import, no-cost registration), provide charging stations for electric vehicles (limited numbers, free so far). Bus fleet renovated with gas and EU6 diesel powered cleaner and more comfortable vehicles (EBRD support).

Similar initiatives are under implementation in Poti as well (bicycle paths, cleaner urban transport).

Environmental strategy developed recently for Kutaisi, some regulatory improvements.

Some pocket greening was provided in certain sections of urban road network in Tbilisi.

New cable car provided in historic centre with nearby pedestrian bridge and green spaces (park of Rike).

River Mtkvari in Tbilisi is now being used by boats for tourist activities, but river could develop into transport artery as well.

Good exemplar of greening of waterways is the Leghvtakhevi stream area revitalisation.

Recent pilot project of household waste separation schemes is a welcome development.

Kindergartens and schools are being equipped on a pilot basis with renewable and energy efficient solutions.



Some problematic issues were also mentioned:

Redevelopment of floodplains in the gorge of river Vere (site of major flash flood very recently) and along river Mtkvari in Dighomi area.

Air ventilation is problematic due to mountain depression topography of Tbilisi, but not properly addressed in the master plan.

Lack of adequate financing for environmental needs in city of Kutaisi was also highlighted.

Rainwater harvesting approaches not being used in Kutaisi and elsewhere.

Landscape protection zones of Tbilisi are being developed in violation of regulations.

Wildlife poaching is still practiced in peri-urban areas.

Flood risks in coastal port city of Poti, inadequate storm-water systems. Same issues mentioned for Kutaisi and Tbilisi as well.

The development of a sports arena and its neighbourhood can be a clear example of how an NBS-type development wasn't taken forward.

Illegal constructions in protected zones was stressed, other chaotic developments in Tbilisi.

Pollution of river Mtkvari.

High noise levels in Tbilisi.

There is an issue with plant irrigation using drinking water (too expensive and inappropriate solution), needs to be addressed if NBS is to be successful and viable.

Following potential initiatives/ideas were proposed for NBS during discussions:

Free spaces available could be used for NBS, parks, instead of fill-in property development.

Rich natural assets - such as the sea, lakes, rivers – constitute an NBS opportunity in Poti.



Supporting local food and greenery market from nearby rural areas around Tbilisi.

Some green financing ideas were proposed, such as crowdfunding, green taxing schemes.

3. The 3rd group in World Café 1 addressed the following governance questions: Good examples of good strategy and policy-making in your city - are there examples of strategic plans, policies or regulations in your city that support NBS/urban nature?

Group members considered that there are following key actors relevant for the NBS: the state sector, NGO sector, private sector, other sectors as well, such as science & education.

State instruments concerned in Tbilisi include: protected areas, sanitary protection zones, Botanical Garden, other nature protection establishments.

Master Plan has been developed and approved for Tbilisi (greening is part of it, landscape zones, recreation zones, no specific mentioning of NBS though).

Other statutory and/or non-statutory strategic/policy/planning documents mentioned for Tbilisi included: Environmental Strategy for Tbilisi (2015), Green City Action Plan (GCAP, 2017, EBRD initiative following ICLEI methodologies, <http://www.tbilisi.gov.ge/page/green-city>), Tbilisi Resilience Strategy, Covenant of Mayors initiative. Energy Efficiency Law is under consideration, as well as initiative to join Natura 2000 equivalent Emerald Network. It was concluded that various strategies and planes are not properly interconnected and cross-referenced with each other. Strategies, plans, policies not enforced and/or monitored.

Green Building Council of Georgia operates on a voluntary basis, but statutory schemes could be warranted. Example of green building in Ortachala area of Tbilisi was mentioned in this respect, e.g. with no light pollution among other exemplar green features. Compatibility with respective European Directive on green buildings would be highly desirable (legislation initiative plus enforcement).

Order of Municipality of Tbilisi was mentioned stimulating green buildings.



Waste management RRR scheme development regulation was also mentioned.

Kutaisi Greening Strategy mentioned. Contains certain regulatory protections for green areas, saving trees from damage.

Net metering in Georgia is yet another excellent but underused initiative, in support of residential alternative energy generation schemes in urban and rural areas (<100 kilowatt).

Mulching is now used intensively in Tbilisi (example is more relevant for another group).

Electric chargers installed in several locations. Regulations were mentioned for Tbilisi prioritising hybrid and electric vehicles ownership through taxation.

New low pollution gas powered busses were very much welcomed, participants strongly advocating for electric busses as well. Electric taxi iCar application (Tbilisi, Batumi) was mentioned as a good practice.

Bicycle and bus lanes enforced. Even traffic improved (personal experience of a participant).

No legally binding nature of many plans, <http://www.tbilisi.gov.ge/page/green-city> can be mentioned as an example in this respect (developed but apparently not yet approved by Tbilisi City Hall Government, but just adopted as a project output). NBS is not directly indicated in any policy document. Urban protected areas not provided for in Georgian legal system (London National Park initiative was mentioned in this context, that protected areas in urban environment are possible).

No data on current conditions. No good inventory of green spaces. Inventory and reporting of good exemplars from Georgia requested into European and Global repositories, e.g. in European NBS database by <https://Oppla.eu> and other European projects and initiatives.

Tbilisi Architecture Service (<http://TAS.ge>) of Tbilisi City Hall operates well – let's introduce NBS there, e.g. in the form of the NBS Catalogue (this could be a regulatory instrument for



voluntary self-selection for implementation of NBS solution(s) listed in the catalogue, once applying for new developments and/or for building/area rehabilitation/reconstruction).

Institutional arrangements are still weak. Competences, roles and responsibilities should be clarified when taking NBS-type decisions.

World Café, session 2: Setting the Scene for the UrbanByNature programme in the Caucasus



Figure 6: Participants in an interactive session during the Launch of the UrbanByNature programme for the Caucasus, held at the National Parliamentary Library of Georgia in Tbilisi, October 8, 2019.

World Café session 2 participants were divided into two groups, with 10's for each session.



1. The 1st group of questions answered in World Café 2 was: What are interests and needs of your city in regards to nature-based solutions? What UrbanByNature formats would be useful for you? What kind of content do you need? (Examples: access to experts, access to data, showcase of local cases to the rest of the world, etc.)

NBS should be legally and institutionally introduced.

Strategic approach needed by the government.

It is difficult to do bottom-up only, top-down approaches are needed as well.

Monitoring needed at national level NBS and/or UrbanByNature is implemented or not.

Integrate with existing tools e.g. SEA not to introduce extra administrative burden.

Master plans could be assessed in SEA process on compatibility of plan contents with NBS.

Business internship 1-2 weeks (for all types of stakeholders) or study tours recommended.

Study tours e.g. for city governance practitioners one to one, SMEs one to one, and alike.

To make NBS exemplars catalogue available for city officials, decision makers, stakeholders.

Availability of reference materials (make it available in local language either).

Curricula and study materials for universities and urban stakeholders as well (formal and informal education).

NBS Guidance materials (e.g. NBS framework under preparation by CN could be used).

Standardised procedure for needs assessment and feasibility and implementation plan.

Guidance on how to tap IFI and other funding resources to finance NBS.

Engage private sector supporting NBS marketing both on demand side and on supply side.



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Webinar format is not very widespread in Georgia, but this 1-hour event weekly organised followed by 1-hour face to face discussion format in separate space, not in working place.

Would be useful if colleagues could share contacts from their network on who could be interested in such webinars to invite additional people from larger network.

People serving municipal Infrastructure (water and other utilities) would be necessary to involve. There are good engineers there, but they are usually ignored and not involved in such activities. Specific technical solutions would be good to consider on webinars.

Procurement documentation (covering whole process from initiation to closure) would be good to have fully available, from feasibility study to implementation and handover into operation. Such procurement documentation could be adjusted to local condition of cause.

Implementation units are needed in local self-governance authorities/cities to develop NBS initiatives (use existing units extending their mandate to NBS, or if possible, even to establish new units specifically for NBS).

Following up on previous point, 'Brownfield' redevelopment/renaturing could be good place to start for NBS initiatives. 'Greenfield' areas might have many stakeholders, while 'brownfields' initiatives might be easier due to less interest from third parties.

Municipality/city representative expressed some caution with regard to 'brownfield' areas as this may spark conflicts from 'hidden' stakeholders.

Universities could be good co-creators for this process (e.g. organising workshops based on actual case studies). 'Brownfield' redevelopment with NBS could be good case to start with. Universities can help identify and resolve those 'hidden' conflicts referred to above.

Condominiums can also be engaged (e.g. 'parks instead of garages' in case of Tbilisi).



2. The 2nd group of questions addressed in World Café 2: What UrbanByNature formats would be useful for you? E.g. webinars, face-to-face seminars, e-consultations, guidebooks, toolkits? What kind of knowledge? More scientific? More tacit knowledge?

Group talked a lot about urban gardening, community group tree planting. For example, municipal authorities of Tbilisi allocating land plots for community planting engagement.

There are other creative ways of involving community, e.g. NBS marketing promotion, marathon for NBS, NBS events such as big festival to exchange good practices.

Ultimate goal and purpose of NBS should be communicated and public participation promoted. To that end, questionnaires could be used to ask citizens on their preferences, as well as even holding public hearings.

As abbreviations are not used in Georgian language, it was proposed to market/promote NBS in similarly sound Georgian equivalent way, such as 'გნ-ბო-ეს-ო' or simply 'გნბოესო'.

Discussed was also need for 'technical' as well as 'managerial' specific study tours.

In that respect there are also opportunities for internships, such as city to city, business to business, NGO to NGO exchanges. There could be scientific exchanges as well, such as university to university, scientific exchange years or exchange semesters.

Group talked about tools for engaging children in NBS for learning from very young age.

There is a need also for neutral facilitators to reach common ground within the communities to find commonly agreed NBS solutions.

Different groups need different formats. Initiate them and mix various formats.

Excellent way to involve wider public is to go to TV, show webinars, deliver podcasts, social advertising. Citizens could be reached through NBS apps as well.

Location enabled surveys could also be used to periodically ask citizens their opinion on provided NBS solutions and about the quality of local environment (e.g. survey.ge).

Sharing of good practices for cities. Short internet lectures for students.



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Need to spread NBS to mountains, so that very small villages and communities can be reached as well with NBS ideas and approaches.

Touristic pressures can be targeted as well (e.g. mountain villages), as big hotels may not be respecting landscapes, historic and natural heritage values.

We need to address reach cultural heritage of Georgia and NBS can be used to protect the cultural and natural heritage. Format involving museums/heritage institutions useful.

There is also need to talk not only about good practices, but also about weak practices, to talk about examples that did not work out well.

Study visits are good to have mixed delegations for exchanges, composed of community, city government, science, businesses representatives etc., but also to have not mixed specialised groups for exchange visits.

There is a need to have strong links between scientists and hands-on city practitioners so that NBS interventions are based on sound science and simultaneously are practical and can indeed be implemented.

Promote dialogues to exchange ideas between different groups. Consultation tools needed for the planning process.

Webinars and guidebooks needed on where to get NBS financing from.



4. Ecoshow on Georgian TV Channel: Nature-Based Solutions explained



Figure 7: Georgian TV programme: Connecting Nature partners talking about nature-based solutions and the launch of the UrbanByNature programme in the Caucasus.

An excellent example of disseminating Nature-Based Solutions as well as communicating objectives of UrbanByNature programme, particularly in the Caucasus to the general public was the participation of Daniela Rizzi, ICLEI ES and Mamuka Gvilava, GeoGraphic in the popular TV program 'Green Georgia' (see <https://www.facebook.com/GeorgianChannel>), hosted by GeoGraphic's Connecting Nature team member Tinatin Khimshiashvili of GALA (Georgian Association of Landscaping Architects).



5. Final Remarks

Based on the presented outcomes of the launching event, the webinars of the Caucasian stream will be designed by ICLEI Europe, GEOGRAPHIC and CENS. The interaction within UrbanByNature shall be needs-dependent and thus tailored to Georgian and Armenian cities' and businesses' interests. Moderation formats include mainly webinars, but also face-to-face events.

Participation in webinars would be practical both for individual (e.g. personal connection to webinar from office/home environment), as well as collective modalities, e.g. gathering in digital class environment and following up webinar sessions with group discussion session immediately afterwards. Participants would be primarily sourced from capital cities, but certainly participants from any other urban and rural municipalities are more than welcome. It is anticipated, that each webinar would be of one-hour duration, while periodicity of editions would be around one webinar in one-two months.

Georgian and Armenian cities, as well as researchers and local actors are invited as speakers, alongside European partners from the Connecting Nature project and beyond. The list of webinars' topics and related timeline will be communicated to the interested participants as well as to a wider public in the Caucasus.



6. ANNEXES

Annex 1: Programme of the Workshop for the launch of UrbanByNature in the Caucasus

Time	Activity	Speaker/moderated by
9:30-10:00	Registration with coffee	All
10:00-10:20	Welcome Words + Objectives + Agenda	Tbilisi City Hall Yerevan Municipality ICLEI Europe, CENS, Geographic
10:20-10:30	Who is in the room today?	ICLEI Europe
10:30-10:55	The Connecting Nature Project. Nature-based solutions from the project's Front Runner (FR) cities and from the UK	University of East London (UEL) (with translations to Russian)
10:55-11:05	UrbanByNature Programme: what does the programme offer to you?	ICLEI Europe
11:05-11:20	Coffee Break	
11:20-11:35	NBS-type example from Yerevan	CENS
11:35-11:50	NBS-type examples from Tbilisi	GeoGraphic
11:50-12:30	Visiting nearby Tbilisi NBS places	Moderator: GeoGraphic
12:30-13:30	LUNCH	
13:30-14:50	1st WORLD CAFÉ Session: Role of urban nature in Georgian/Armenian cities, enabling and constraining factors	Cities: Tbilisi, Batumi, Poti, Kutaisi, Mtskheta (Georgia) and Yerevan (Armenia) Moderators: ICLEI Europe, GeoGraphic and CENS
14:50-15:05	Coffee Break	
15:05-15:20	UrbanByNature Programme: how the programme plays out.	ICLEI Europe
15:20-16:40	2nd WORLD CAFÉ Session: Setting the Scene for the UrbanByNature programme in Georgian/Armenian cities	Cities: Tbilisi, Batumi, Poti, Kutaisi, Mtskheta (Georgia) and Yerevan (Armenia) Moderators: ICLEI Europe, GeoGraphic and CENS
16:40-17:00	Closing	ICLEI Europe and GeoGraphic
17:00	Coffee	All



Speakers/Moderators:

- **ICLEI Europe - Local Governments for Sustainability**, Germany: Dr. Daniela Rizzi, Officer for Nature-based Solutions and Green Infrastructures
- **Tbilisi City Hall**, Georgia: Mr. Saba Pipia, Deputy Head of Municipal Department of Environmental Protection
- **Yerevan Municipality**, Armenia: Mr. Gevorg Navasardyan, Head of Environmental Department, a.i.
- **University of East London (UEL)**, Sustainability Research Institute, UK: Dr. Stuart Connop, Senior Research Fellow
- **Centre for Ecological-Noosphere Studies (CENS)**, Armenia: Mrs. Shushanik Asmaryan
- **GIS and RS Consulting Center GeoGraphic (Geographic)**, Georgia: Dr. Mamuka Gvilava (GeoGraphic), Prof. Tinatin Khimshiashvili (GALA), Dr. Nana Shakarishvili (Institute of Botany, Ilia State University)

Nature-based Solutions (NBS) for more sustainable cities

Date: 8 October 2019

Where: Conference Hall of the National Parliamentary Library of Georgia

Time: 10:00-17:00

Workshop: "Nature-based Solutions (NBS) for more sustainable cities: How to plan NBS co-creatively?"

Short description:

The European Commission defines nature-based solutions as solutions that are “inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience.” Nature-based solutions protect, sustainably manage and restore natural or modified ecosystems, which address challenges facing humanity (e.g. climate change, food and water security or natural disasters). At the same time nature-based solutions can also benefit human well-being, health and social cohesion, particularly if a biodiverse urban nature is fostered.

In this event, representatives of Caucasus cities and other participants will explore how urban nature can offer solutions towards urban water and climate-related challenges. In an interactive set-up, the participants will share the experience, approaches and success stories they have made with strengthening and benefitting from urban nature. They will also identify their needs to plan and implement nature-based interventions even better.

[UrbanByNature programme](#), powered by the European Commission Horizon-2020 funded [Connecting Nature](#) project, will be launched. In the workshop the programme will be presented, outlining the expertise European cities participating in Connecting Nature can share with Caucasus cities (e.g. planning processes, financing and business models for urban nature). In turn, ICLEI will discuss with the Georgian/Armenian cities what insights and actions they can contribute to and learn from the programme over the upcoming year.

Objectives:

- Introduce nature-based solutions as a new approach for building sustainable cities
- Learn and share cases of leading cities in nature-based solutions from Europe
- Understand the local context and needs of Caucasus cities to realise nature-based solutions better and sketch out opportunities arising from participating in the UrbanByNature programme
- Voice and gather Georgian and Armenian cities' wishes, ideas, needs, interests and contributions towards the UrbanByNature programme

Target audience: Mainly local authorities, local government experts and NGOs



Enhance Urban Resilience in Green and Healthy Approaches Introducing Nature-based Solutions and the UrbanByNature programme as a Means

Draft Agenda

Date: 17th November 2020

Time: 15:00 - 18:00 CST / 8:00 - 11:00 CET

Location: Chengdu, Sichuan Province

Language: Chinese & English

Event form: mixed onsite-online

Introduction

The global outbreak of the novel coronavirus COVID-19 makes it clearer than ever that human and planetary health are closely connected. The health of an ecosystem fundamentally impacts its ability to provide services that humans vitally rely on. And as COVID-19 outbreak demonstrates, cities are on the frontline of pandemics and residents are facing devastating health and economic impacts. Today's crisis creates an urgent need for an in-depth reflection on the relationship between human beings and nature, and how we can build cities that value nature as the central source of human well-being and environmental health.

The international community has increasingly recognized the value of nature in strengthening our society's and economy's resilience. In particular, the European Commission has made nature-based solutions (NBS) an integral part of its Horizon 2020 program for research and innovation. ICLEI – Local Governments for Sustainability is working with cities, academia and civil society to implement NBS projects funded under the framework of Horizon 2020 such as [Connecting Nature](#) and [CLEVER Cities](#). While the Connecting Nature project focuses on leveraging NBS for urban water and climate resilience, the CLEVER Cities project uses NBS as a means to improve public health, enhance social cohesion and increase economic opportunities.

ICLEI is delighted to take the opportunity of the 4th High-Level International Forum on Sustainable Urban Development held in Chengdu in November 2020 to share with city

leaders, practitioners and researchers from China and worldwide the cutting-edge NBS knowledge and practice in order to achieve more sustainable and resilient cities. In addition, participants will be introduced to UrbanByNature – a facilitated capacity-building programme for aspiring urban nature pioneers. The programme is powered by ICLEI with contributions by more than 60 partners (cities, researchers, practitioners and experts) from both Connecting Nature and CLEVER Cities projects, and hosted by [CitiesWithNature](#).

Successfully launched and implemented in Brazil, Korea and the Caucasus, UrbanByNature was designed with funding of the Connecting Nature project and will be further developed within the CLEVER Cities project. This event will inaugurate the programme's roll-out in China to support local governments in co-creating, delivering and integrating NBS into urban planning, policy-making, investment opportunities and existing infrastructure to enhance urban resilience and maximize synergies between ecosystem conservation and human well-being. The results of the panel discussion will be used to tailor the UrbanByNature programme to the particular needs and interests of Chinese local governments and other stakeholders. Participants are invited to share their experiences concerning the current status quo of NBS proliferation in their cities.

Objectives

- Introducing nature-based solutions (NBS) as a new approach in improving urban resilience and sustainability
- Connecting European and Chinese cities in NBS innovation and implementation via good practice sharing and interactive discussions on policy development around NBS and green infrastructure
- Analyzing enablers and obstacles of applying NBS in Chinese urban contexts and integrating NBS into local agendas
- Inviting participants to join the UrbanByNature programme

Organized by: ICLEI - Local Governments for Sustainability (ICLEI) East Asia
Secretariat

In coordination with: China Center for Urban Development (CCUD) & United Nations Human Settlements (UN-Habitat)

Supported by: ICLEI World Secretariat & ICLEI European Secretariat

Participants: Local governments, enterprises, academia and NGOs

Expected number of participants: 40-50

Workshop Agenda

<i>“Nature-based solutions as an innovative approach to urban resilience and regeneration”</i>	
November 17th	
14:30 – 15:00 CST / 07:30 – 08:00 CET	Registration
15:00 – 15:05 CST / 08:00 – 08:05 CET	Welcome remarks Speaker & session moderator : Boyang Mao , Programme Manager, ICLEI EAS
15:05 – 15:25 CST / 08:05 – 08:25 CET	Opening speech Speakers: <ul style="list-style-type: none"> • NN, Deputy mayor, City of Chengdu, China • Bernard Florent, Policy Officer for China of the International Directorate of Directorate-General for Research and Innovation of the European Commission (tbc)
15:25 – 15:40 CST / 08:25 – 08:45 CET	Presenting ICLEI’s work on NBS in China Speaker: Shu Zhu , Regional Director, ICLEI EAS
15:40 – 15:55 CST / 08:40 – 08:55 CET	NBS as an innovative solution to build resilient and healthy cities Speaker: <ul style="list-style-type: none"> • Tiago Freitas, Policy Officer, Sustainable Management of Natural Resources, DG Research & Innovation, European Commission
15:55 – 16:55 CST / 08:55 – 09:55 CET	NBS in use to enhance urban resilience and regeneration: Good practices from Europe and China Speakers:



	<ul style="list-style-type: none"> • Marcus Collier, Connecting Nature Coordinator, Trinity College Dublin, Ireland • Martin Krekeler, CLEVER Cities Coordinator, City of Hamburg, Germany • Chinese city representative (Chengdu or another relevant Chinese city) • Jocelyn Bleriot, Executive Officer, Ellen MacArthur Foundation (tbc)
16:55 – 17:05 CST / 09:40 – 10:05 CET	Q&A
17:05 – 17:15 CST / 10:05 – 10:15 CET	Tea break
17:15 – 17:50 CST / 10:15 – 10:50 CET	<p>Panel discussion: Exploring the application of NBS in Chinese urban contexts and the integration of NBS into local agendas</p> <p>Facilitator: Boyang Mao, Programme Manager, ICLEI EAS & CCUD</p>
17:50 – 18:00 CST / 10:55 – 11:00 CET	<p>Closing remarks & invitation to join UrbanByNature</p> <p>Speaker : Boyang Mao, Programme Manager, ICLEI EAS</p>