



Report on front-runner cities' current expertise and experience in nature-based solutions

November 2018

DOCUMENT PROPERTIES

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1. Background

Nature-based Solutions (NbS) are living solutions inspired and supported by nature that simultaneously provide environmental, social and economic benefits and help to build resilience. These solutions bring more nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions. The idea of nature-based solutions has emerged as both a challenge and an opportunity to assist urban communities in the transition to greater sustainability and adaptation to climate change.

Nature-based solutions represent a complex problem for many city-makers, with barriers (capacity related, lack of understanding/policy, organisational, and pressures) still standing in the way of city-wide implementation. CONNECTING Nature recognises that cities globally hold much of the expertise and experience necessary to unlock these barriers. Individually, cities have been experimenting and testing countless site-specific solutions and strategies (from micro- to macro-scale) over the decades that continue to be living examples of effective urban transition strategies. The results and learning from these experiments represent a substantial pool of knowledge in relation to breaking down these barriers. CONNECTING Nature's ambition is to bring this diffuse experience together and combine it with new knowledge to create a global learning academy for city-making using nature-based solutions. By doing so, it will create a mechanism to support all cities through this process of up-scaling and out-scaling nature-based solutions.

With this overarching aim in mind, CONNECTING Nature identified three cities with a strong track record in delivering nature-based solutions. These cities were selected as:

- being representative of the range of scales of cities found across Europe and beyond;
- holding expertise in a range of aspects of Nature-based Solution delivery;
- facing a range of economic, environmental and social challenges that were typical of current global patterns.

The three cities, termed Front Runner Cities (FRCs), selected were Genk (Belgium), Glasgow (Scotland) and Poznań (Poland). Throughout the CONNECTING Nature project, these FRCs are working with the CONNECTING Nature consortium to unlock the barriers necessary to transition from their current status as Nature-based Solution experimenters to a status whereby Nature-based Solution planning, delivery and legacy management is interwoven and embedded into their economic, environmental and social city-making processes.

The first step along this developmental pathway was for the CONNECTING Nature consortium to work collaboratively with each FRC's CONNECTING Nature team to better understand each city's current status. This included promoting retrospection in, then sharing understanding of, their own city's context, experience, and challenges in relation to their legacy and future ambitions associated with Nature-based Solution delivery, up-scaling and out-scaling. This collaborative activity fell under Task 3.1 of the CONNECTING Nature project: **Capturing and sharing pre-existing front-runner city expertise** in delivering a scaled-up nature-based solution approach comprising multifunctional objectives. Led by UEL and closely supported by AMU and OSMOS, the Task involved capturing the pre-existing expertise developed by the learning-by-doing approach adopted by each FRC and the current context in relation to Nature-based Solution implementation.

This Deliverable represents a summary of the collaborative approach taken to generating this understanding and a dissemination mechanism for sharing this understanding within the CONNECTING Nature consortium, the global learning academy and beyond.

2. Objectives of Deliverable

The key objectives of the Deliverable are:

1. Detail the processes behind facilitating FRC retrospection and knowledge transfer in relation to Nature-based Solution delivery.
2. Capture and share understanding of each FRCs local context in relation to city challenges.
3. Capture and share typical examples of Nature-based Solution delivery in each of the FRCs, including the processes behind achieving planning, delivery and legacy (asset) management.
4. Develop an understanding of how the potential benefits of Nature-based Solutions align with the key strategic objectives of each FRC.
5. Develop an understanding of the governance framework within each FRC and where each FRC CONNECTING Nature team sits within this framework.
6. Provide data to underpin the development of the specific Nature-based Solution exemplar delivery programmes and scale-up opportunities in each FRC, with a focus on identifying barriers to delivery.
7. Begin the iterative capture and transfer of adaptive governance learning processes to Work Packages (WPs) 1 and 2 and, ultimately, fast-follower and multiplier cities through the global learning academy.

3. Modes of delivery

In order to achieve all of these objectives, a range of engagement and knowledge transfer techniques were implemented in partnership with the FRCs throughout the first 12 months of the project. A description of each of these processes is detailed below:

3.1 Interviews

Exploratory interviews were carried out in each of the Front Runner Cities. These were organised by the CONNECTING Nature team in the city, were led by an independent intermediary organisation (OSMOS), and were also supported by the WP academic lead (UEL). An intermediary organisation was utilised in a facilitating role as this has been found to be an effective mechanism for maximising the value of innovation extracted from stakeholders (Howells 2006). By adopting such an approach neither the academic partner nor local authority partner takes a dominant position in leading the collaborative learning process, ensuring an open and transparent platform for discussion.

Interviews were held with individuals within the city CONNECTING Nature team, their colleagues in the city council involved in Nature-based Solution delivery, and external colleagues from arms-length and collaborating organisations involved in Nature-based Solution delivery across the city. Each conversation lasted approximately one hour and was led by the OSMOS team with support from UEL. For the interviews in Poznań, a translator (Katarzyna Matschi) was also present. Notes and audio recordings were produced during the interview for the purpose of preparing a synthesis report. However, recordings and comments were confidential with respect to assigning quotes to specific individuals. The interview was loosely structured based on a questionnaire which included ten themes and a range of sub-questions for each theme related to Nature-based Solution delivery (Appendix 8.1). The themes were drawn from a review by UEL of the Eclipse framework and related documents, plus specific financial and economic development questions from Trinity College Dublin CONNECTING researchers.

The same themes were used to structure the synthesis report detailing the discussions following the interview process. Interviewers were also encouraged to make use of additional supporting materials: a stakeholder map (Figure 1) and a city map (Figure 2).

In addition to the interviews, A site tour was organised by each CONNECTING Nature city team to provide an opportunity for the OSMOS and UEL representatives to visit a range of urban renovation projects and emblematic green spaces to give greater context to the Nature-based Solution legacy of each city.

Objectives of the interview process were:

- Promote introspection in interviewees in relation to the local city context.
- Explore Nature-based Solution-type projects – learning about what made good projects a success and what led bad projects to be unsuccessful.
- Connect with the local actors face-to-face and allow the interviewees to have the chance to express themselves. Gain an overview of organisational conditions.
- Identify other relevant actors (both individuals and organisations) and their capacity/interest in contributing to CONNECTING Nature (within WP3 and for other WPs - 1, 2 and 4).
- Explore and define the general narrative driving Nature-based Solutions in the FRCs.
- Help define contacts and engagement strategies for stakeholders relevant to WP1-3 to ensure positive and constructive engagement with the project.

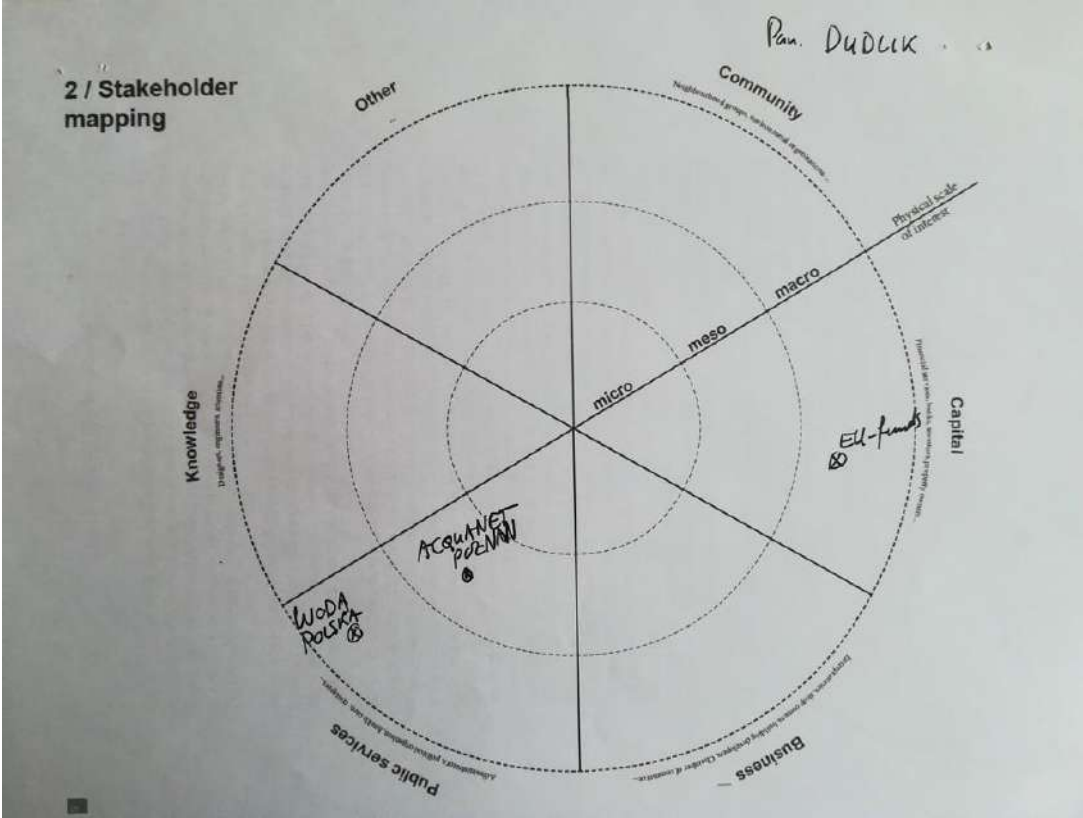


Figure 1. Example of stakeholder mapping tool for use during FRC interviews.

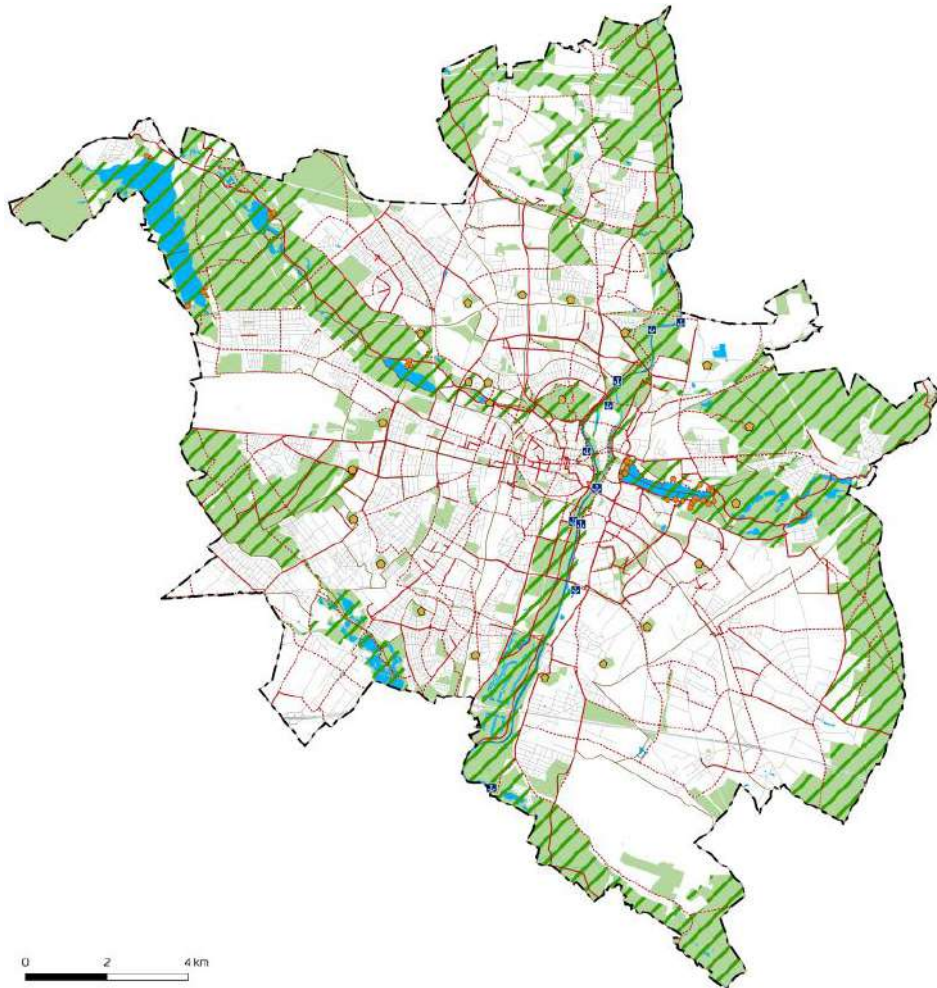


Figure 2. Example of a city map for mapping NBS projects during FRC interviews

3.2 Debrief workshop

From the results of the exploratory interviews, a draft Synthesis Report was produced that summarised the discussions and presented the Nature-based Solution context of each FRC. The report was then passed across to the FRC CONNECTING Nature team to review. Following this, a debrief workshop was planned in each FRC. The CONNECTING Nature FRC team were again leads for inviting colleagues and collaborators from across the city. Due to the format of the workshop (i.e. group discussions) there was more scope to invite a broader variety of contacts from across the city. The debrief workshops were led by OSMOS with support from the FRC team and the academic partners (UEL & AMU).

During the workshop several tools were used to engage the audience with the CONNECTING Nature process in the city. This included presentations from the CONNECTING Nature city team (introducing the CONNECTING Nature project), a presentation of the key themes from the exploratory interviews, presentations from nature-based solution stakeholders in the city, a Back to the Future group exercise (Figure 3) to examine past nostalgia and trauma, and future hopes and fears associated with Nature based Solution projects in the city, and a group project environment canvas exercise (Figure 4) to begin exploring the ideas and opinions within the multi-stakeholder in relation to the development of the CONNECTING Nature FRC exemplar.

“Nostalgia”

- The city’s system of green wedges and rings is a historic achievement that the people of Poznań are proud of.
- The presence of traditional allotment gardens at scale (ca 19,000 individual plots in Poznań provide food and health benefits to many families) is also a strong asset that has been developed in the past.

“Hopes”

- More social gardens and pocket parks will be created around the city.
- Post-industrial buildings will be transformed through attractive and mixed programmes (including housing as well as green/blue infrastructure).
- Civic budgets for social and environmental initiatives will be widely available.
- Rainwater problems will be solved (for instance through collection/use in new pocket parks).
- The available agricultural land (ca 8,500 ha) will be preserved and put to better use for the city.
- The city will solve the balance between the need for parking and greenspaces
-

“Trauma”

- Since the late 1990s, real-estate promoters have been engaged in a “race to development” that has reduced the system of green wedges and rings; a change in the national legislation in 2003 has exacerbated this “traumatic experience” by creating a temporary regulatory vacuum.
- A flood in 2010 created damage and showed the vulnerability of the city’s approach to rainwater management.
- Allotment gardens are only in theory open to the public: in practice the gardeners have tended to fence their individual plots in to prevent intrusion from outsiders.
- In the past it was hard for initiatives without institutional backing to access to civic budgets.

“Fears”

- Strong economic development of Poznań will continue to “eat into” the city’s green infrastructure. This fear manifests itself in different ways:
 - o Allotment gardens along major roads might be lost or moved out of the city
 - o Parking spaces create pressure on green space
 - o Urban sprawl and associated mobility problems will decrease quality of life
- Younger generations will not be sufficiently aware of sustainability issues

Figure 3. An example of a completed Back to the Future exercise.

Project	<p>Involved partners</p> <ul style="list-style-type: none"> - CN teams from AMU and City of Poznan (KPRM) - Other CN partners - Greenery Department at the Road Management Board - Urban planning experts (e.g. Lukasz Mikula) 	<p>Values</p> <ul style="list-style-type: none"> - Providing high quality of life for all Poznanians - Being a "city for everyone" - Allowing young families to live in the city center - Preserving and improving historical assets: <ul style="list-style-type: none"> o System of green wedges and rings o Allotment gardens o Agricultural land - Creating a thriving and dynamic city centre offering culture, leisure, shopping, etc - Provide better housing through NbS 	<p>Actions</p> <ul style="list-style-type: none"> - Plan and implement new social gardens, pocket parks and municipal beaches in dense areas lacking access to green space - Development of green wedge system within and beyond the city borders - Clarify/synthesize an integrated long-term development vision at the metropolitan scale - Engage real-estate developers, residential communities and NGOs in a constructive dialogue about the future of the city - Measure impact of small scale interventions regarding a range of potential benefits (quality of life, health, economic value of surrounding real estate, rainwater retention/infiltration, ecosystem quality, biodiversity, etc) - Develop educational activities on environmental benefits 	<p>Output</p> <ul style="list-style-type: none"> - Various small-scale NbS interventions around the city (including social gardens, pocket parks, municipal beaches or other forms of green space) - Clear and intelligible links between small-scale interventions and integrated development plans at larger scales (e.g. regarding rainwater management) - Broader alliance for improving all aspects of quality of life including different stakeholders (residential communities, large employers, real-estate developers, municipal agencies, etc)
	<p><i>"Integrating a diversity of small-scale nature-based solutions (such as pockets parks or social gardens) into dense neighborhoods will contribute to materialize a long-term vision of Poznan as a city of interconnected green spaces that reconcile high quality of life with sustainable infrastructures and the city's rapid economic development."</i></p>			
Environment	<p>Interest groups</p> <ul style="list-style-type: none"> - Real estate developers - Councils of residents - Young people in suburbs - Large private employers (e.g. Lech, VW, Glaxo, etc, etc) - Large public employers (City Hall and AMU) - Planning professionals (e.g. Piotr Kostka) 	<p>Needs</p> <ul style="list-style-type: none"> - Solutions to the city's mobility problems - More effective tools to limit urban sprawl and to protect green areas - Reconcile densification and quality of life in the city centre - Provide more affordable housing in the city centre - Better education on sustainability issues - Cost-effective solutions to flooding issues - Convince large employers of benefits from green and blue infrastructures at different scales - Less antagonistic relationship with real-estate developers (e.g. through win-win opportunities) - Clearer and more integrated long-term development vision at the metropolitan scale 	<p>Resources</p> <ul style="list-style-type: none"> - Green belt with agricultural land reserves and allotment gardens - New rainwater management strategy (March 2018) - Post-industrial sites in city center, (e.g. gas plant, slaughterhouse) - Civic budgets 	<p>Outcomes</p> <ul style="list-style-type: none"> - A more balanced development path that reconciles economic prosperity and environmental quality - A compact/dense city centre with less mobility problems and less flood risk - Green infrastructure providing measurable benefits to various social groups - Development model that preserves green belt and agricultural land around the city (containment of urban sprawl) - Coherence between small-scale interventions and large-scale development vision - More sustainable urban infrastructures

Figure 4. An example of a completed Project Environment Canvas.

The aims of the workshops were to:

- Introduce a broader diversity of FRC stakeholders to the CONNECTING project and present the aims and ambitions of the project for the city;
- Provide a platform for discussing the key points arising from the summary of the exploratory interviews. In so doing, provide a mechanism for checking how different stakeholders view the summary conclusions and identify any gaps in the knowledge captured;
- Explore in greater depth past examples of Nature-based Solutions in the FRC to understand past experiences that may help facilitate Nature-based Solution delivery and past traumas that may have led to barriers developing;
- Begin exploration of the CONNECTING Nature NBS exemplar development process in each FRC by exploring the key project dimensions associated with delivery both in terms of the project and the broader environment of the city;
- Identify three Nature-based Solution case studies within each FRC for deeper exploration in terms of planning, delivery and legacy management process.

Combined results from the exploratory interviews and debrief workshops are presented in the Synthesis Reports (see results section). In Poznań, in addition to these methods, two other exploratory activities were carried out by the academic partner (AMU). An online survey was developed to investigate how city partners (stakeholders) across the city of Poznań understand the term Nature-based Solutions, how they engage with Nature-based Solutions through their job role, and examples of Nature-based Solution projects that they are aware of in the city. Further details of the questionnaire and results from the process are presented in the Poznań Synthesis Report. The survey has since been translated into English (Appendix 8.14) and it is intended that comparative surveys will be carried out in other FRCs and Fast Follower Cities (FFC). The aim being to provide as a comparison of the approach to, and understanding of, NbS in different geographical contexts. AMU also carried out their own analysis of how the position of NbS-related actions in the urban policy documents of Poznań city. The results of this have been used to develop a peer-review publication that has been submitted (Appendix 8.16).

3.3 Synthesis report interrogation

Following the production of the synthesis report for each of the Front Runner Cities, the reports were interrogated to generate a list of the 'Facilitating Factors' and 'Barriers' associated with NbS delivery in each of the FRCs:

The synthesis reports provided an overview of the discussions from the interview and debrief sessions in each FRC. This provided an insight into the local context of each FRC from the point-of-view of a range of stakeholders from within the FRC city council and their associated partners in NbS delivery. This included an overview of the key facilitating factors within each FRC for designing, implementing and managing NBS. This also included an overview of the key challenges and barriers to delivery. A list of these assets and barriers was created for each FRC by identifying them and extracting them from the report text. The lists generated were then used as a knowledge transfer mechanism to transfer understanding between various partners and WPs within CONNECTING Nature:

- To promote introspective understanding within each CONNECTING Nature FRC team.
- To transfer understanding to partners working in WP1 to support the development of bespoke NBS indicators for each FRC.
- To transfer understanding of governance, co-creation processes, NBS case studies and organisational barriers to partners working in WP2.
- To transfer an understanding of the FRC local context and support needs to SMEs as part of a 'speed-dating' event to connecting SME partners within the project with individual FRCs to support the unlocking of barriers to exemplar delivery.
- To transfer understanding of the FRC context and experiences to the Fast Follower Cities (WP4) to align mentoring opportunities.
- To transfer good practice to the Global Learning Academy (WP5).

Results from this interrogation process are presented in Section 4.

3.4 FRC case studies

During the FRC interview and debrief process, a number of NBS projects were identified within the FRCs that represented examples of each FRCs diverse approach to NBS delivery and innovation. From these examples, three NBS case studies were selected for each FRC that were representative of a range of types, scales and approaches to NBS delivery. The case studies were selected for more detailed interrogation. They were selected in collaboration with each FRC during the debrief workshop.

In order to understand the processes behind the design, implementation and legacy management of these case studies, a questionnaire was developed that would explore the case studies in greater detail. The aim behind this process was to:

- Promote greater introspection from the FRCs in relation to projects they had delivered previously: what had worked well, what challenges there were, and how they had adopted NbS principles into the delivery;
- Provide a mechanism for knowledge transfer of the processes behind NbS delivery (with particular focus on transfer to FFCs).

The questionnaire was developed to capture an overview of the multiple processes involved in delivering NbS. This was based on a review of key literature related to NbS delivery and evaluation (Balian et al. 2016, Connop et al. 2016, Kabisch et al. 2016, Collier et al. 2017, Raymond et al. 2017, Xing et al. 2017). The review was carried out to generate an overview from published literature as to what is required to make NBS successful. The questionnaire was then constructed based on the results of this review to investigate for each case study, how closely these principles had been followed. The questionnaire was organised into fifteen categories: Challenges, Objective, Actions, Impacts, Multiple benefits, Ecosystems Covered, Integration, Key lessons, Stakeholder Participation/Participatory Planning and Governance, Potential for New Economic Opportunities and Green Jobs in the EU and in Global Markets, Success and Limiting Factors, Financing, Governance, Drivers, Monitoring and Evaluation. Within each of these categories, questions were structured around the three key delivery periods for NbS: planning, delivery and legacy.

Results from this interview process are presented below in Section 4.4. The results will also be presented on the CONNECTING Nature website. WP3 leaders are also currently working with CONNECTING Nature partner Oppla

to develop an interrogatable database for these NbS case studies on the Oppla NbS platform. This will enable case studies to be explored both by City/Case Study and by topic (e.g. Multiple benefits).

3.5 FRC strategic goals and NbS alignment

Analysis of FRCs' current experience of NbS identified through the experiential learning workshops and interviews described above indicated that the commonly cited barriers of 'silo working' and 'difficulties of partnership working with different institutions' exist within and external to the cities. To analyse the existing organisational culture that could facilitate a scaling-up and embedding of multifunctional Nature-based Solutions, a process was developed to identify how each FRC's policy environment could already be used to make connections to Nature-based Solutions. This is important because it can contribute to creating a strategic enabling culture within cities – moving beyond a focus that often rests primarily within one departmental team (for example, spatial planning or green space management) to include a suite of strategic services such as corporate policy, economic development, housing and regeneration, health and social care, transport and to harness the support of elected local politicians. The aim is that, by creating this enabling culture, there are opportunities to identify and mobilise the multifunctional benefits that can accrue from a scaled-up city approach to Nature-based Solutions, embedding them within a broad range of strategic goals, aligned with indicators that can deliver a coherent place-based framework for improved local places for residents and businesses.

As a consequence, a systemic process for aligning NbS with a city's key strategic priorities was co-developed with the FRCs and is explained in Milestone 9 attached (Appendix 8.15). The resulting process charts (Section 4.5), together with the city organisational structures mapped in the Milestone 9 will be used as a basis for developing the exemplar implementation plan in each city.

4. Learning Outputs

4.1 Interviews

Outputs from the interview process comprised recordings of the interviews, which are held on the CONNECTING Nature intranet site – Documenta. Due to the confidential nature of the interview (in relation to comments not being directly attributed to any individual interviewee) transcripts of the interviews are not presented within this document. Nevertheless, the key messages from the interviews formed the basis for the first draft of the synthesis documents that were presented during the debrief workshops (Section 4.2).

Images from the interviews and site visits that were held during the interview process are presented in Figures 5, 6 and 7).



Figure 5. Images from the Poznań FRC interviews. Clockwise from top left: Learning the orientation of the city from the top of the old colliery spoil mounds; a pop-up garden at the town hall; the best way to see Genk's Nature-based Solutions – by bike; The Stiemer Valley, the focus of Genk's NBS exemplar; Learning about the city governance and the exemplar vision; The Schansbroek – a new Nature-based Solution park in Genk developed through co-creation to deliver environmental, social and economic benefits. Images by Adrian Hill (OSMOS).

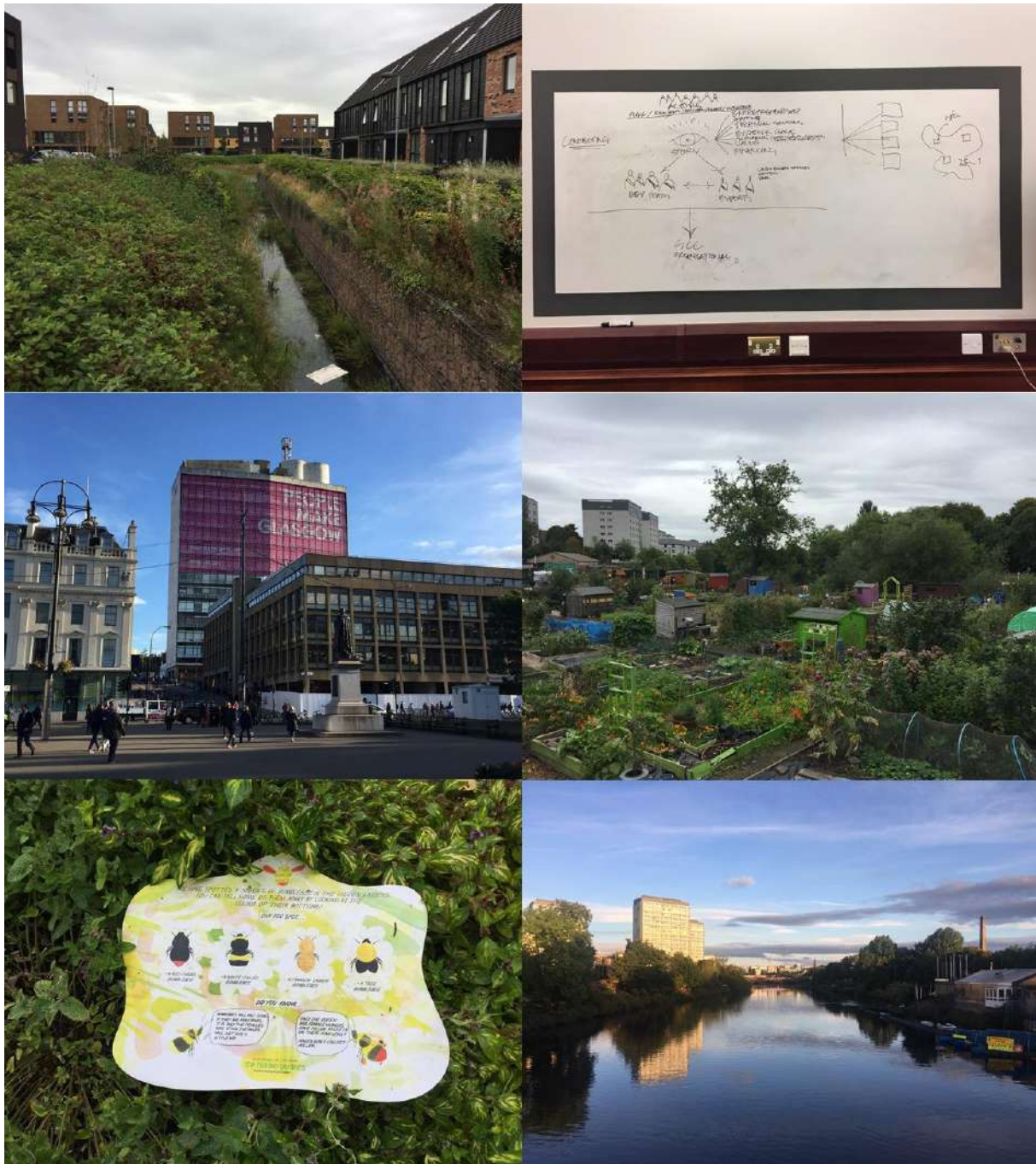


Figure 6. Images from the Glasgow FRC interviews. Clockwise from top left: Commonwealth Athletes Village – a new development in the City of Glasgow with Sustainable Drainage Systems (SuDS) fitted throughout the design; Exploring the city context with the Glasgow CONNECTING Nature team; Urban allotments in Glasgow; The Clyde – one of the key open spaces for the community in Glasgow but a space that the city has typically turned its back on; Information about pollinators in the city – building on a city-wide pollinator initiative; People Make Glasgow – a branding campaign to highlight the importance of co-creation processes in Glasgow city planning. Images by Adrian Hill (OSMOS).



Figure 7. Images from the Poznań FRC interviews. Clockwise from top left: CONNECTING Nature partner Agnieszka Osipiuk being interviewed by Stephan Kempleman (OSMOS) with the help of translator Katarzyna Matschi; Visiting Park Stare Koryto Warty, an example of a disused riverbed that has been turned into a multifunctional Nature-based Solution; the old town square in the centre of Poznań – an area identified as lacking greenspace and a target for Nature-based Solution implementation; The River Warta flood plains – large areas of the city suitable for seasonal Nature-based Solution creation; Park Cytadela – a large traditional park in the centre of Poznań with several social and ecological initiatives being delivered; The River Warta sustainable travel route – cycling and walking options next to the River Warta. Images by Stuart Connop (UEL)

4.2 Debrief workshops

The results of the Debrief workshops comprised:

- An overview of the city context including facilitating factors and challenges to NBS delivery, strategic aims of the city, NBS case studies, stakeholder collaboration
- A project environment canvas beginning to map each FRC's exemplar aims, objectives, resources, actors, etc.

These outputs were summarised in the synthesis report for each FRC. Synthesis reports are included in Appendices 8.2, 8.3 and 8.4.

4.3 Synthesis report interrogation

Facilitating factors and barriers associated with Nature-based Solution delivery in each of the FRCs identified during the interview and debrief workshop process are presented below. During the process of capturing this information, it was apparent that the facilitating factors and barriers could be sub-divided into further categories. For facilitating factors, these comprised:

- Assets;
- Opportunities;
- Organisational policy/practice.

For barriers, these comprised;

- Capacity related barriers
- Lack of understanding/policy
- Organisational barriers
- Pressures

These categories correlated with those reported in Connop et al. (2016)

Assets

- Stiemerbeek Valley
- Technical knowledge on innovative approaches to water management
- Community neighbourhood managers
- Lots of experience on large scale projects
- High-end tech knowledge connected to the Thorpark
- A large number of community based organisations.
- Lots of positive change in last 10 years in terms of urban projects
- Good knowledge of individual residents
- Previous focus on biodiversity in projects like Bee Plan
- The green spaces around industrial real estate in Genk Zuid
- Track record of successful community engagement transferable to environment
- Technological expertise at Thorpark
- Take risks: 'just go for it' approach

Opportunities

- Stiemerbeek not being driven by economics department provides new opportunities
- The landscape masterplan by Tractebel and Georges Descombes
- Regional, national, EU funding opportunities
- Municipal subsidies for decentralised water solutions
- Ethnic diversity an opportunity for attracting foreign talent
- Using environmental challenges for social cohesion (Passegata in Molenvijfer)
- Investments in the renewal of the sewage system are co-financed between the Flemish government
- Neighbourhood budget: 2500 euros
- Greater involvement for env department through NBS funding
- Economic opportunities around renewable energy and different types of "local economies" (e.g. maker community, new craft activities)
- Industrial companies see financial benefits in energy saving or industrial symbiosis

Organisational Policy/Practice

- Survey and landscape strategy was done for Genk Zuid identifying green spaces that could be turned into more diverse and connected areas
- Very successful in attracting co-financing in the past for large projects
- Municipal subsidy for households that disconnect rain water pipes from general sewage
- Several departments understand opportunities around Stiemerbeek
- Good understanding of NbS at strategic level
- LA focus on Inclusivity: ensuring representation from the diverse local community
- Lack of a necessity for evaluation of projects
- Fast moving decision-making (small gap between technical knowledge and decision-making)
- Strong experience in community engagement and neighbourhood management
- The city is fast to jump onto new concepts and ideas and has ambitious local administration
- Policy 15% of each industrial site has to be "green"
- Good collaborative approaches between some departments
- No measure of success allows LA to work dynamically

Figure 8. Facilitating factors for NBS delivery in the City of Genk. Factors were determined during the interview and debrief workshop processes of WP3. Factors are divided into the categories of Assets, Opportunities and Organisational Policy/Practice.

Capacity related

- Lack of experience of monitoring and evaluation
- Less experience on smaller, non-flagship, projects
- Need collaboration and shared vision with different city departments for pre-emptive buying to capture rise in property value
- No historic buildings, no 'heart'
- Lack of entrepreneurial attitude and optimism.
- Medium-smaller scale projects can be much harder to fund than large.
- Lack of business optimism and entrepreneurship.
- Huge cost of solving Stiemerbeek problem
- Brain drain
- Small city authority can lack expertise in cross-cutting disciplines
- Tendency for LA to jump on new projects without a long-term approach
- Expectation on city to make things happen

Pressures

- Poor water quality
- Negative perception of city (grey, poor, etc)
- Empty retail/business, lack of activity
- Brain drain
- Legacy of soil pollution from industrial past
- Land owners like current status quo
- Stakeholder fatigue (need quick wins)

Lack of understanding/policy

- Lack of understanding of the link between the Stiemerbeek and economic opportunities
- Need a clear communications strategy
- Car-centred mobility despite relatively good soft mobility network
- Technical solutions for SuDS not very accessible to public
- Focus of economic development strategy on conventional activities (development of shopping malls, car-centred retail, heavy industry)
- Fear of water/flooding
- Lack of clarity on the concept of NBS
- Shared responsibility between LA and community is a relatively new challenge
- Scaling at the level of the city would require a change in the governance of water infrastructure at the provincial or even regional level, and stronger financial commitment of the city of Genk, or alternative subsidies or funds from other sources
- No measure of success makes communication of success and building on experience difficult

Organisational barriers

- Silo working within projects
- Stiemerbeek not being run through finance department creates risk
- Some departments taking a more passive 'wait and see' approach to exemplar
- Uncertainty of upcoming political change
- Disconnected city
- Past mistakes in urban strategy
- Lack of impact of communities of previous flagship projects
- Governance challenge around privately owned land
- Trust issues between some departments
- Financing often through the Economics department then via sport, tourism or neighbourhood development. Environment department tends to have a defensive role.
- Many different stakeholders for a single project
- The environment department is understaffed and not involved at an early stage with projects

Figure 9. Barriers to NBS delivery in the City of Genk. Barriers were determined during the interview and debrief workshop processes of WP3. Barriers are divided into the categories of Capacity related, Pressures and Lack of understanding/policy and Organisational barriers.

Assets

- Substantial experience with green /blue networks and SuDS
- Vast range of physical interventions available across Glasgow
- Strong awareness of the significance of water management at the scale of the city and technical management solutions
- Good technical knowledge around green infrastructure
- Risk taking attitude: leap of faith / prepared to fail
- Vast amount of internal knowledge and skill within and associated with GCC
- Innovative schemes - Glasgow wildflower nursery
- GIS expertise and spatial datasets
- Social enterprises that already have some governance structure for community based mobilisation.
- Strong sense of place at neighbourhood scale
- Ambitious city
- Numerous potential academic and tech partners in city
- Glasgow Chamber of Commerce green business group

Opportunities

- Lots of sites with potential for NbS
- Up-scaling to an overall framework that identifies problems and opportunities and allows both public actors and community actors to drive change
- Genuine interest in using meanwhile spaces to provide multiple benefits including climate mitigation, air and noise quality, through better use of meanwhile spaces
- Lots of available open spaces, vacant spaces and contaminated land including city-owned land
- Scottish Water adopting SuDS schemes on public land if designed appropriately
- Government City Governance structure change plus new Strategic plan resulting in shift towards people: 'People make Glasgow'
- The City Deal – opportunities for one off investment
- NbS to address education disparities
- New low emissions zone

Organisational Policy/Practice

- Well developed city-scale approach to challenges
- Genuine interest in capturing multiple benefits including climate mitigation, air and noise quality, at a policy level
- Very little friction amongst colleagues from different sectors of the GCC
- Place Standard tool
- People Planning embedded in Local Authority culture
- Stalled Spaces and Community Empowerment Act
- Vacant derelict land database
- Scottish policies for grass-roots projects - evidence of government drive for community-led innovative solutions
- Broad range of NbS projects implemented

Figure 10. Facilitating factors for NBS delivery in the City of Glasgow. Factors were determined during the interview and debrief workshop processes of WP3. Factors are divided into the categories of Assets, Opportunities and Organisational Policy/Practice.

Capacity related

- A strong history of top down care for public environmental issues, has resulted in an expectation that the GCC also assume maintenance
- Little entrepreneurship focused on environment
- Short-term delivery funding is relatively easy, long-term maintenance funding is challenging
- Lack of maintenance capacity leads to NbS not functioning correctly – need for community involvement
- Lack of competences/capacities to identify key community relationships and build bridges
- Reduction in public budgets makes maintenance very difficult
- Challenge in retrofitting settled historic communities
- Lack of community environment for socio-innovation
- Lack of investment in bridge building organisations and community coordinators
- Lack of experience of community-orientated engagement processes
- Sometimes there is a lack of trust between GCC and community
- The ‘Glasgow Effect’, related to a significantly lower life expectancy

Pressures

- Socio-economic challenges
- Rubbish dumping in GI features
- Challenge of rebuilding in the post-industrial era
- Flooding – particularly in social deprived areas
- 40-50% staff reduction over last 5 years – maintenance particularly hit
- Sale of GCC assets due to management restructuring
- Glasgow is noticeably poor and a large portion of the city’s inhabitants are represented on the ‘Scottish index of multiple deprivation’
- Poor air quality
- Dwindling budgets
- Uncertainty around Brexit
- Most examples of NbS are larger, outside City Centre

Lack of understanding/policy

- Concept of NbS remains “vague” or “unclear” to some
- Focus on engineering solutions has led to missed opportunities for ecology, open space and health
- Community do not necessarily see the benefits of green/blue solutions
- Community fear of open water
- Green/blue infrastructure often seen as decoration or a waste of space
- More community-oriented approach to land management, challenging for the community without understanding of the benefits or value
- Relevance, value and care lacking from communities around NbS
- Lack of real-time long-term monitoring of SuDS is a barrier to understanding and lack of understanding of performance on private land
- Lack of monitoring/evaluation of in-situ NbS benefits
- Lack of cohesion between city and catchment scales
- Lack of understanding of the specific needs of location to feed into planning process
- Need new models for private funding to pay for public services
- Sense of place can create a barrier to change

Organisational barriers

- Independence of armslength organisations can result in different priorities than the core council group.
- Issues related to internal collaboration
- Difficult to deliver schemes with multiple benefits, when the benefits of schemes are owned by different individuals in different departments with different budgets
- Lack of communication and collaboration between different departments
- Questions of how to collaborate practically and in terms of the remit of different departments
- Aversion to taking on long-term management – risk averse
- Problems of silo working where cost is in one area and benefit in another (e.g. open space and health)
- Technically innovative but design and construction of NbS not always delivering vision.
- Responsibility for project development and maintenance is complex within GCC structure
- GCC Arm’s Length Organisations may prove challenging in terms of remit and responsibility
- Overarching city responsibilities often missed due to lack of departmental communication – need a common vision/communication mechanism

Figure 11. Barriers to NBS delivery in the City of Genk. Barriers were determined during the interview and debrief workshop processes of WP3. Barriers are divided into the categories of Capacity related, Pressures and Lack of understanding/policy and Organisational barriers.

Assets

- There are approximately 19,000 individual allotment plots across the city
- 8,500 ha agricultural land within the city boundaries
- Historical successes of NbS projects (e.g. the green wedges and Lake Malta)
- Community participation in small-scale projects (e.g. social garden projects)
- Lots of buy-in from different local authority departments
- There is a strong desire from the community for more provision of amenity in greenspace
- Traditional/Historical successes can be used to provide inspiration for new schemes
- The success of more recent flagship projects can provide a platform for more innovation

Opportunities

- A recent change in the political team in the city is providing new impetus for innovation
- There is a pressing need for cost-effective solutions to flooding particularly in the old city centre
- Poznań is a prosperous city fuelled by economic development
- A rainwater management strategy focusing on green solutions is being developed currently
- There has been a recent increase in social activity
- There are opportunities around using the open space of kindergartens
- Post-industrial sites across the city are also providing opportunities for beneficial re-use
- There is also a local opportunity around a national renaturalisation project associated with waterways
- Business opportunities exist around the River Warta

Organisational Policy/Practice

- City Hall is leading on project delivery
- There are transversal local authority teams working on regeneration issues, this helps to avoid silo working
- The local authority have experience of community consultation
- The Civic Budget programme has been a great success
- The new government has given a greater voice to the community
- The deputy President of Poznań is directly responsible for 'greenery', the development agency and the road board
- Past experience of community engagement has demonstrated that it is a mechanism for achieving greater value from developers
- Planning condition legislation for housing development defines a requirement for greenspace between roads and neighbouring developments

Figure 12. Facilitating factors for NBS delivery in the City of Poznań. Factors were determined during the interview and debrief workshop processes of WP3. Factors are divided into the categories of Assets, Opportunities and Organisational Policy/Practice.

Capacity related

- Cooperation between actors and stakeholders needs to be improved
- During the socialist period and ingrained dependence on state developed within communities
- The bounty of allotments within the city can mean that it is hard to find people to lead social garden projects. People interested in gardening already tend to have an allotment to look after
- There is a negative perception from previous poorly designed schemes (e.g. dust from permeable surfaces)
- There is little citizen-led activity beyond the civic budget
- There is little alignment between NbS and business interests
- There are strongly varying levels of social environmental engagement in different parts of the city

Pressures

- Pressure on zoning protection, with specific focus on historically designated green areas within the green wedge.
- Pressure on use of open space from booming housing market
- Need for heavy gritting in winter impacts on the survival of street trees exposed to high salinity levels
- Demand for development on high biodiversity value brownfield sites
- There is an increasing demand for parking spaces due to increasing numbers of commuters and poor public transport connections
- Challenge of finding space in compact city, particularly in the historic centre
- Illegal parking can negatively impact green space
- Conflict between grass roots organisations and developers

Lack of understanding/policy

- Additional regulations are needed to facilitate the work of specialist agencies
- There is a lack of coherence between local and regional spatial plans and strategies
- It is difficult to persuade the finance department to invest in NbS due to missing numbers and narratives that connect NbS to value for money
- There is a lack of policy around NbS implementation (e.g. green roofs and walls)
- Biodiversity is given a low priority in greenspace strategies
- Developers do not understand the value of NbS for re-sale
- Businesses and civil societies are not engaged
- There is a negative view of NbS by developers
- There is a lack of awareness of the benefits of NbS from decision-makers

Organisational barriers

- The selection process on public tendering/procurement over-emphasizes cost at the expense of good results in terms of benefits
- Lots of different city departments dealing with greenery can make decision-making dispersed
- There are overlapping and compartmentalised competencies and power regarding water management, creating a lack of a single coordinator
- The Senior policy-makers are not necessarily aware of the benefits of NbS. NbS can therefore be overlooked in strategic policies.
- There is a need for institutional backing to access the civic budget. This can lead to only projects aligned with city policy being funded and, thus, overlook NBS innovation

Figure 13. Barriers to NBS delivery in the City of Poznań. Barriers were determined during the interview and debrief workshop processes of WP3. Barriers are divided into the categories of Capacity related, Pressures and Lack of understanding/policy and Organisational barriers.

4.4 FRC case studies

The case studies selected for each of the Front Runner Cities were as follows:

Genk:

i) **Schansbroek – brownfield regeneration**

Schansbroek lies near the source zone of the Stiemerbeek River and near the coal mine of Waterschei. Former mining activities severely affected natural water management contributing to pollution and flooding for local residents. This was partly related to a change in the topography of the area caused by the mining operations. To protect local residences, rainfall and groundwater has had to be pumped into the Stiemerbeek River. The hydrological impact has also caused water shortage for natural wetland areas negatively impacting the biodiversity of these areas.

The Schansbroek area was also ‘adopted’ by local residents for unofficial grow-your-own activities. The area has since been redesigned in collaboration with local citizens/workers. The aim was to create a multifunctional neighbourhood park for recreation, biodiversity and to restore water management. The 2013 design plan included measures to recreate a ‘wet ecotope’ by restoring a natural dam and ponds, and transforming an artificial reservoir from the former mine. Local citizens requested allotments, children’s play areas, cycling/hiking trails, picnic and meeting areas which were all included in the design.

The new park created enhances the aesthetics of the area and strengthen links to the site making it more attractive to residents and workers at the neighbouring Thorpark. The model for community engagement will be scaled-up for the entire Stiemerbeek valley.

Multifunctional NbS benefits of the Schansbroek Park:

- **Green space management:** biodiversity/nature conservation
- **Climate resilience:** increased flood regulation
- **Water management:** reduced flooding/improved water quality
- **Participatory planning/governance:** community workshops promoting social cohesion and environmental stewardship
- **Public health and wellbeing:** reconnecting people with nature/improving mental/physical wellbeing through walking/cycling network, meet up places, allotments



Figure 14. Images of Schansbroek. Images © Stad Genk

The results of the Schansbroek NbS process questionnaire are presented in Appendix 8.5

*****Still to be provided*****

ii) Heempark – retaining agricultural heritage in a community-driven nature & sustainability park

Heempark is a community-driven nature and sustainability agriculture park established on disused land. The history of the park dates back to the 1970s when Genk City Council bought 5 ha of former agricultural land in order to expand Molenvijver City Park. Local citizens were consulted on the park development and expressed a desire to retain the natural character of the site rather than convert to 'formal' park greenspace. A collaborative city citizens model for 'Heempark' was developed. The model represented a small-scale model of the former agricultural landscape with a focus on environmental sustainability and conserving native flora and fauna. The site has demonstration gardens, small farm animals, beehives, hayfields, ponds, nature areas and a children's playground.

Heempark has about 90 members and approximately 35 active volunteers. Activities on site promote the reconnection of people to the environment, environmental awareness and engagement. This includes cooking classes, bee-keeping and activities targeting vulnerable groups (it houses 350 educational groups). From its establishment, visitor numbers grew (c.10,000 per annum) beyond the capabilities and resources of the volunteers. City personnel were made available, and an Environment & Nature Centre was established at Heempark in 1987. The park is now an umbrella organization for different local associations, uniting members of Velt Genk, Natuurpunt Genk, Natuurgidsen and local bee keepers.

Multifunctional NbS benefits of 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

The results of the Heempark NbS process questionnaire are presented in Appendix 8.6:



Figure 15. Images of Heempark. Images ©Stad Genk

iii) **LaBiomista** – *turning a disused zoo into a showcase for art and nature*

LaBiomista is a Nature-based Solution that is re-using a disused zoo to provide a studio, exhibition and public space. LaBiomista is a public-private partnership bringing art, wildlife and people together. The old zoo infrastructure and greenspaces are being retained to provide a unique environment in which to support people in understanding their relationship with the natural world around them and how they influence it.

Multifunctional NSB benefits of LaBiomista:

- **Green space management:** biodiversity/nature conservation
- **Climate resilience:** urban cooling, carbon storage
- **Air quality:** interception of pollutants
- **Water management:** provides water storage benefits compared to a hard infrastructure comparison
- **Public health and wellbeing:** reconnecting people with nature/improving mental/physical wellbeing
- **Potential for economic opportunities and green jobs:** potential to generate jobs and attract tourism to Genk

The results for the LaBiomista Nbs process questionnaire are presented in Appendix 8.7



Figure 16. The disused zoo infrastructure being transformed into LaBiomista. Image © Stad Genk

Glasgow

i) **Commonwealth Athletes Village** - *integrated SuDS development*

Developed as part of the 2014 Commonwealth Games in Glasgow, the Athlete's Village is a purpose-built, low carbon village. Set in Glasgow's East End, the site hosted athletes during the games but now provides homes for a new community. A site of approximately 35 hectares, post-games over a thousand homes were provided. In addition to public greenspace and private gardens, a comprehensive SuDS plan was developed for the site. Comprising, permeable paving, swales, rain gardens and balancing ponds, the athlete's village SuDS represents a comprehensive integrated stormwater management system that provides multiple benefits to the new community.

Multifunctional NbS benefits of the Commonwealth Athlete's Village:

- **Green space management:** biodiversity/nature conservation (not formal park)
- **Climate resilience:** urban cooling, carbon storage
- **Air quality:** interception of pollutants
- **Water management:** flooding buffer
- **Public health and wellbeing:** reconnecting people with nature/improving mental/physical wellbeing
- **Potential for economic opportunities and green jobs:** enhancing value of properties, SuDS management opportunities.

The results of the Commonwealth Athletes Village NbS process questionnaire are presented in Appendix 8.8



Figure 17. Artist's impression of the Commonwealth Athletes Village, Glasgow. Image © pp-d.co.uk

ii) Pollok Park Flower Power to the People - social cohesion wildflower nursery

Pollok Country Park is Glasgow's largest park and the only Country Park within Glasgow. Pollok House and Estate were gifted to the City in 1966. The park represents the rich natural, built and cultural heritage of the Pollok containing extensive woodlands and gardens. It has been awarded Europe's and Britain's Best Park and is listed as a nationally important landscape in Scotland

Housed within the park, Flower Power is a Nature-based Solution based around a social cohesion wildflower nursery. In response to the 97% loss of Britain's wildflower habitat, a community-run wildflower nursery was established as a collaboration with Glasgow City Council park rangers, TCV Scotland and Grow Wild. The nursery runs a year-round volunteering programme with a focus on social cohesion. They grow 10,000 locally-sourced, native wildflowers for parks, green spaces and community projects citywide. The nursery therefore provides a source of wildflowers for biodiversity projects across the city. As such, it provides a truly multifunctional focus by helping people and wildlife, reversing the decline of meadow and insect species.

Multifunctional NbS benefits of Pollok Park Flower Power:

- **Green space management:** biodiversity/nature conservation
- **Climate resilience:** Local plants better adapted to local conditions, provide suitable resources for other species at the right time, reduces carbon footprint from transportation of plants
- **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
- **Potential for economic opportunities and green jobs:** income generation and cost saving for Local Authority procurement

Results of the Pollok Park Flower Power NbS process questionnaire are presented in Appendix 8.9.



Figure 18. Images of the Pollok Park Flower Power nursery. Images © Glasgow City Council

iii) **Stalled Spaces** - *temporary community use of underused space*

Many 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 such land in a way which brings benefit to the community, when the contamination issues do not prevent such re-use. The community can choose to adapt the plots for uses such as pop-up gardens, urban gyms, play or art spaces. Many of these initiatives represent Nature-based Solutions. Over 100 sites taken over by local residents.

Multifunctional NbS benefits of 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

The results for the Stalled Spaces NbS process questionnaire are presented in Appendix 8.10.



Figure 19. An example of a Stalled Spaces project in Glasgow. Image © Creative Carbon Scotland

Poznań

i) **Jezyce District pocket park - co-developed greening**

The Jezyce District pocket park is an example of a co-developed urban greening project. The co-creation aspect of the project resulted in a greater Nature-based Solution outcome than would have been achieved had it not been co-created.

The pocket part was created in the Jezyce district of the city as part of a residential development project. As a condition of the planning consent, the developer was required to enhance a greenspace

in close proximity to the development. Design consultation with the local community, prior to the improvements being carried out, identified that residents wanted more than was being proposed. Working collaboratively between the local authority, developer and the community an agreement was reached whereby the developer would transfer the original costs of the redesign to the local authority and this would be combined with city funds to create an improved scheme.

Multifunctional NbS benefits of Jezyce District pocket park:

- **Green space management:** biodiversity/nature conservation complementing / strengthening the ecological structure of the city
- **Public health and wellbeing:** reconnecting people with nature to boost mental/physical wellbeing, providing residents with a better quality of life within housing estates through the introduction of unique solutions, designed by the residents themselves and adapted to their needs, increasing the attractiveness of living in the area of revitalization
- **Social justice/cohesion:** provide spaces for people to come together, taking care of social ties, strengthening social cohesion, stimulating the local community to be active and involved in developing and forming pocket gardens in neglected urban areas, the activation of local society in civic, cultural and economic life, shaping the responsibility of residents for the newly created, common green space, making residents aware of their role and possibilities in creating a neighbourhood
- **Climate Change resilience:** through Sustainable Drainage Systems and reducing urban heat island
- **Potential for economic opportunities and green jobs:** added value to developer contribution, more attractive live/work environment

Results of the Jezyce District pocket park NbS process questionnaire are presented in Appendix 8.11.



Figure 20. Jezyce District pocket park. Image © City of Poznań

ii) **Development of flood plain of Warta River - Wilda River Beach** - *re-connecting the city with the river*

By around 2010, increasingly vocalised perception had emerged through Poznań's citizens that the city had turned its back on the River Warta. Such was the extent of public opinion on this matter that a public consultation was carried out to develop strategy around connecting the city with the river. This came from a desire to re-connect with the river for recreation and to experience the ecosystem service benefits that such an ecosystem can provide.

The City of Poznań's reaction to this was to develop a series of interventions along the river banks that promote social engagement and stewardship. This led to the establishment of regeneration actions at various sites around the river with the city that are still ongoing. This included:

- The Wartystrada – a network of cycle and walking paths by Warta River that provide sustainable transport and exercise solutions;
- Development of the Old Warta Riverbed – a public amenity park space, designed to be sympathetic to, and mimicking, features of old river bed on top of which it is built. It represents a multifunctional social space;
- Municipal beaches - community run initiatives supported by cities that create temporary beaches for social cohesion. The beaches provide thermal comfort zones within the river corridor, a community events space, and re-connects people with the river.

The Wilda River Beach was one of these schemes, a multifunctional space that provided opportunities for the community to re-connect with the river and benefit from new social space and associated activities. The multifunctional NSB benefits of the development of flood plain of Warta River - Wilda River Beach include:

- **Green space management:** multifunctional use of greenspace associated with the river corridor, access to greenspace
- **Climate resilience:** provision of thermal comfort zones to avoid the thermal stress effects linked to the Urban Heat Island.
- **Participatory planning/governance:** community consultation, community-led management of municipal beaches
- **Public health and wellbeing:** reconnecting people with nature to boost mental/physical wellbeing, providing exercise opportunities
- **Social justice/cohesion:** attachment to place/sense of ownership
- **Potential for economic opportunities and green jobs:** beach management opportunities



Figure 21. Wilda beach development, part of the ‘Returning to the River’ Warta River regeneration programme. Images © City of Poznań

Results of the Wilda District Warta Riverside development NbS process questionnaire are presented in Appendix 8.12.

iii) **Community gardens** - social and open gardens on kindergarten land, city parks and housing estates

Residents in Poznań have a strong desire for more opportunities for social and physical exercise activity in greenspaces. To meet this demand, the local authority have been scoping opportunities for creating more public greenspace. As part of this programme, a series of social gardens (open gardens) have been established across Poznań. For each of these gardens, the community have been involved in the design, construction and management of the spaces. The focus of this initiative has been on unlocking new public spaces by using underused spaces such as kindergarten grounds, parts of city parks and housing estates as public play and social spaces. This provides added value to both the area managers, e.g. kindergarten (due to increased resources and activities), and the local community (due to unlocking of more public open space). The pilot actions have been very successful. This success has led to the idea being continued and further community gardens schemes are expanding the roll out across the city.

Multifunctional NbS benefits of the community gardens development:

- **Public health and wellbeing:** reconnect people with nature to boost mental/physical wellbeing
- **Social justice/cohesion:** provide spaces for people to come together and strengthen social ties
- **Green space management:** may enhance biodiversity/nature conservation

- **Public space management:** improve the quality of public space and increase its diversity
- **Climate Change resilience:** contribute to sustainable urban drainage and reduce urban heat island
- **Potential for economic opportunities and green jobs:** provide opportunities around management (e.g. cost effective use of existing space reduces cost compared to new greenspace creation)
- **Education:** raise environmental awareness through organizing workshops and meetings related to current environmental problems and challenges of sustainable development.

Results of the community gardens NbS process questionnaire - the example of Kolektyw Kąpielisko in Kasprowicza Park are presented in Appendix 8.13.



Figure 22. Social events and activities at the kindergarten community gardens in Poznań. Image © City of Poznań.

4.5 Process for aligning city strategic goals with NbS frameworks

A template was co-produced with the FRCs to capture key strategic goals and NbS frameworks. By identifying which strategic goal aligns with which NbS category, a city team wanting to make the case for NbS can map the multifunctional benefits of NbS within their city. The template can be adopted by any city and acts as a tool to promote reflection on how NbS fit within the broader strategic framework of the city. The FRCs completed the templates and the following process charts provide a key reference point for developing scaled-up NbS implementation plans and identifying relevant indicators and governance strategies. This supports horizontal and partner working both internally within the city administration and with external partners.

The following condensed process charts from the FRCs visually demonstrate the relevance of multifunctional NbS across the range of each city's strategic priorities.

GLASGOW STRATEGY PRIORITIES	EKLIPISE FRAMEWORK (2016)										UN SUSTAINABLE DEVELOPMENT GOALS										CONNECTING NATURE GOALS																
	Climate mitigation and adaptation	Water management	Coastal resilience	Green space management	Air quality	Urban regeneration	Participatory planning and governance	Social justice and social cohesion	Public health and wellbeing	Economic opps and green jobs	1 No poverty	2 Zero hunger	3 Good health and well-being	4 Quality education	5 Gender equality	6 Clean water and sanitation	7 Affordable and clean energy	8 Decent work and economic growth	9 Industry, innovation and infrastructure	10 Reduced inequalities	11 Sustainable cities and communities	12 Responsible consumption and production	13 Climate action	14 Life below water	15 Life on land	16 Peace, justice and strong institutions	17 Partnerships for the goals	Climate change adaptation and resilience	Health and well-being	Social cohesion	Economic development potential	Green business opportunities					
GLASGOW STRATEGIC PLAN																																					
Thriving economy:																																					
A resilient, growing and diverse economy where businesses thrive;																																					
The city and its citizens benefit from inclusive economic growth and are involved in economic decision-making through participatory budgeting;																																					
More Glaswegians are in work or training;																																					
Glasgow is rated highly for its business innovation and digital skills																																					
Vibrant city:																																					
Glasgow is a world class destination for tourism, culture, sport, events and heritage;																																					
Glaswegians are active and healthier;																																					
All citizens have access to the city's cultural life and its heritage;																																					
Glasgow acknowledges and promotes its history, heritage and culture																																					
Healthier city:																																					
Glasgow is healthier;																																					
Our services are focussed on prevention and early intervention;																																					
Citizens and communities are more self-reliant for their health and wellbeing;																																					
We have integrated services with health that support Glaswegians when they need it																																					
Excellent and Inclusive education:																																					
Our attainment levels improve across all of our schools so that all our children can fulfil their potential;																																					
children and young people benefit from early intervention and prevention approaches;																																					
equality and diversity is recognised and supported and human rights promoted																																					
Sustainable and low carbon economy:																																					
the city is clean and public spaces are well maintained;																																					
we have a low carbon footprint as a council and as a city;																																					
we have more sustainable, integrated transport networks across the city, and less congestion;																																					
citizens use active travel, including walking and cycling																																					
Resilient and empowered neighbourhoods:																																					
citizens and neighbourhoods can influence how services are developed and budgets spent;																																					
citizens can access good facilities, jobs and services locally;																																					
citizens' satisfaction with services is maintained or improved;																																					
Glasgow's housing meets the needs of its growing and diverse population																																					
Well governed city that listens and responds:																																					
the council has open and transparent decision making;																																					
citizens are more involved in local and citywide decision making;																																					
we listen to citizens and respond;																																					
we take account of equality issues and the impact of poverty in our decision making																																					
City Development Plan 2017																																					
High quality, healthy place																																					
Compact city form that supports sustainable development																																					
A vibrant place with a growing economy																																					
A thriving and sustainable place to live and work																																					
A connected place to move around and do business in																																					
A green place which is resilient, accessible and attractive																																					
Economic Strategy 2016-2023																																					
Raising health																																					
Skills for all																																					
Fairer Glasgow																																					
Supporting key sectors																																					
Innovation/high value employment																																					
Smart infrastructure investment																																					
Housing mix																																					
Supporting enterprise																																					
Linking education to employment opportunities																																					
Increasing the population																																					
Housing strategy 2017																																					
Promote area regeneration and enable investment in newbuild housing																																					
Manage, maintain and improve the existing housing stock																																					
Raise standards in the private rented sector																																					
Improve access to housing in all tenures																																					
Promote health and wellbeing																																					
Tackle fuel poverty, energy inefficiency and climate change																																					
Transport Strategy 2014-2024																																					
Improve health of citizens (increase walking, cycling, public transport)																																					
Support growth of economic vibrancy of city centre (accessibility)																																					
Enhance quality of main pedestrian spaces																																					
Reduce harmful traffic emissions and noise																																					
Enhance road safety and personal security for all city centre users																																					
Glasgow City Integration Joint Board Strategy 2016-19 (Health and social care)																																					
Responsive where health is poorest																																					
Supporting vulnerable people and promoting social well being																																					
Working with others to improve health																																					
Designing and delivering services around the needs of individuals, carers and communities																																					
transparency, equity and fairness in the allocation of resources																																					
Developing a competent, confident and valued workforce																																					
Striving for innovation																																					
Developing a strong identity																																					
Focussing on continuous improvement																																					
OPEN SPACE STRATEGY (consultation draft) - EXEMPLAR																																					
Outcome 1: A liveable Glasgow																																					
Open Space Access & Quality																																					
Open Space Quantity																																					
Setting and Amenity																																					
Views of the Public																																					
City Centre/Green Open Space																																					
Outcome 2: A Healthy Glasgow																																					
Play & Education																																					
Outdoor Sports																																					
Growing Spaces																																					
Walking & Cycling																																					
Air Quality & Pollution																																					
Outcome 3: A Resilient Glasgow																																					
Surface Water Management																																					
Protecting Sites and Species																																					
Connecting Habitats																																					
Mitigating Climate Change																																					
Blue Space																																					

POZNAN STRATEGY/ PRIORITIES	EKLIPSE FRAMEWORK (2016)									UN SUSTAINABLE DEVELOPMENT GOALS										CONNECTING NATURE GOALS																	
	Climate mitigation and adaptation	Water management	Coastal resilience	Green space management	Air quality	Urban regeneration	Participatory planning and governance	Social justice and social cohesion	Public health and wellbeing	Economic opportunities and green jobs	1 No poverty	2 Zero hunger	3 Good health and well-being	4 Quality education	5 Gender equality	6 Clean water and sanitation	7 Affordable and clean energy	8 Decent work and economic growth	9 Industry, innovation and infrastructure	10 Reduced inequalities	11 Sustainable cities and communities	12 Responsible consumption and production	13 Climate action	14 Life below water	15 Life on land	16 Peace, justice and strong institutions	17 Partnerships for the goals	Climate change adaptation and resilience	Health and well-being	Social cohesion	Economic development potential	Green business opportunities					
Priorities included in Development Strategy for the City of Poznań 2020+																																					
1. To make Poznań a green, eco-mobile city (easily accessible green areas)																																					
2. Improving the quality of life of all residents																																					
3. Improving the importance of Poznań on the international arena (Strong Metropolis)																																					
4. Modern entrepreneurship (modern economy in Poznań)																																					
5. Community and social dialogue																																					
Priorities included in Development Strategy of the Warta River in Poznań																																					
1. Restoring the river to the city																																					
2. Landscape and nature (maintaining the natural qualities of the "green cross" in Poznań)																																					
3. River safety																																					
4. Connections – slow traffic and car traffic (facilitate walking and cycling on the Warta zone)																																					
5. Living and working – build-up areas and open spaces (revitalizing neglected built-up areas, attract people to the river zone)																																					
6. Tourism and recreation																																					
7. Historical heritage (protect the valuable historical elements within the Warta area)																																					
Study of Conditions and Directions of Spatial Development of the City of Poznań																																					
1. A compact city with a framework communication system and a wedging system of greenery																																					
2. Ensuring a proper standard of living for residents (high-quality development parameters – spatial and environmental, network of technical infrastructure)																																					
3. Modern city (metropolitan center)																																					
4. European city with a high culture of everyday life and space (spatial conditions for improving the quality of life, improving the attractiveness of public spaces and the investment attractiveness of the city).																																					
Environmental Protection Program for the City of Poznań																																					
1. Improving air quality and climate protection																																					
2. Water management																																					
3. Geological resources protection																																					
4. Soil protection																																					
5. Waste management and waste prevention																																					
6. Natural resources (protection of biodiversity, creating protected areas)																																					
7. Water and sewage management																																					
8. Reducing the risk of major industrial and transport accidents																																					
9. Electromagnetic fields																																					
10. Noise pollution																																					
11. Ecological education and pro-environmental activities																																					
Municipal Revitalization Program for the City of Poznań – third edition																																					
1. Eco-mobility (increasing mobility of residents and spatial accessibility of the revitalization area and improvement of environmental conditions)																																					
2. Living conditions (improvement of housing conditions)																																					
3. Improving the acoustic climate and air quality																																					
4. Restoration of the continuity of urban structures and the aesthetics of urban space																																					
5. Public spaces and cultural heritage																																					
6. Green space and recreation																																					
7. Social and cultural activity																																					
8. Public services (strengthening social cohesion and increasing the attractiveness of living in the area of revitalization)																																					
9. Stopping the depopulation process																																					
10. Strengthening the economic, cultural and social activities																																					
Plan for Sustainable Development of Public Transport for the City of Poznań for 2014-2025																																					
1. Nature protection																																					
2. Quality and access to public transport																																					
3. Supporting people with disabilities																																					
4. Reduction of pollutant emissions																																					
5. Reduction of noise emission																																					
6. Countering the exclusion of poor people																																					
7. Reducing transport costs																																					
8. Attractiveness of industrial and service areas (increasing access by public transport to these areas)																																					
9. Planning public transport to ensure sustainable development (planning public transport in the Poznań Agglomeration for achieving ecological, social and economic objectives)																																					
Municipal Plan of Adaptation to Climate Change for the city of Poznań																																					
By the end of this year a municipal plan of climate adaptation will be created. The goals and challenges included in it will also be prioritized. The document will also include nature-based solutions that will help to mitigate climate change in the city.																																					
Strategy of rainwater and meltwater management for the City of Poznań																																					
The Strategy has already been prepared, but for now it is not yet an official document made public. At the moment, the Mayor of Poznań gets acquainted with the strategy and the results of analyses presented. For sure after the acceptance the document will be made public, probably also in the online version.																																					

5. Summary

This document represents a synthesis of the first year's work to review the current expertise and experience in Nature-based Solutions within the FRCs. This process of reflection and taking stock is crucial for the next steps towards implementation of the scaled-out exemplars in each city. It is also vital if the expertise and experience of the FRCs is to be shared with the Fast Follower Cities, Multiplier Cities and through the Global Learning Academy.

The next steps for achieving these aims include:

1. *Embed the learning into the development of the CONNECTING Nature Framework* – a reporting document and accompanying series of supporting guidebooks to enable cities to embed NbS at the heart of urban planning and sustainable development. The document and guidebooks will promote reflection and reporting on all aspects of NbS implementation along with support tools, process guidelines, methodologies and approaches to aid cities in developing and delivering city-wide NbS. In order to support this process, the questionnaires developed as part of the interview process and critical review of case studies for this Deliverable will be used to underpin a series of questions that will guide cities to consider NbS best practice in the shaping of their exemplars. Information gathered in this document relation to governance processes, technical implementation needs, evaluation requirements, and funding and entrepreneurship models will also be embedded into this process. This will be used to create a generic template for any city guiding them through the steps, planning processes and facilitating mechanisms for upscaling and out-scaling NbS. This will include the use of best practice case studies from landmark NbS initiatives in each of the FRCs and beyond to support all cities in completing the Framework.
2. *Provide evidence to underpin the development of the social, economic and environmental indicators for NBS evaluation (WP1)* - Evidence and understanding developed during these WP3 processes are now being used as part of a logic-based linear process to score and rank environmental, social and economic indicators in order to develop a set of key indicators for all FRCs. The logic process is being used to determine those indicators that would be of most value to the FRCs in order to build an evidence base between NbS benefits and the strategic objectives of the FRCs. A subjective process has been developed that scores potential indicators in terms of relevance to scale, the FRC exemplars, the FRC case studies, the FRC strategic objectives, and the United Nations Sustainable Development Goals. Data for the exemplars, case studies and strategic objectives comes for the outputs within this Deliverable.
3. *Support the FRCs with implementation of the exemplar* - the next step for WP3 is for the FRCs to begin the process of upscaling and out-scaling NbS by completing the CONNECTING Framework, embedding NbS into strategic policy at a city-wide level, and beginning the roll-out of the exemplars. In order to do this, it is necessary to address the 'capacity related', 'pressure', 'lack of understanding/policy', and 'organisational' barriers currently hindering rollout that were identified during the first 12 months of this WP3 process. The academic partners (UEL and AMU) will work with the cities to help them break through these barriers. In order to begin this process, a joint workshop will be held between the WP3 academic leads, the finance lead within WP2, and each CN FRC team. During the workshop, a synthesis of the barriers to delivery from the interviews and case studies will be used, along with the process charts, to identify and prioritise barriers that remain in relation to up-scaling and out-scaling NbS. This workshop will be used to develop a strategy and timeline for the 'enablers' to support the FRC CN teams in unlocking these barriers. A variety of mechanisms will be used to empower the FRCs in doing this including:

- Establishing city-to-city peer-to-peer learning mechanisms between the FRC (and subsequently the FFCs);
 - Establishing opportunities for city visits (for FRC CN teams and colleagues) to explore best-practice directly with the practitioners that have already addressed similar barriers in other cities across Europe;
 - Connecting cities to existing expertise within the consortium through academic, local authority and SME partners. To expedite connections with CN business and research institutes partners involved in WP3, the list FRC 'needs' in relation to exemplar delivery and monitoring were presented at the CN AGM. The FRCs were then provided with an opportunity to discuss these needs with each business and research institute WP3 partners during a 'speed dating' event. Partnerships are now being developed to target specific needs/barriers. As an output from this, a business partner and research institute expertise catalogue is being developed that will support the rollout of this expertise to FFCs and globally through the Oppla Marketplace platform.
 - Utilising the expertise and case studies generated within the finance and entrepreneurial innovation best practice review in WP2 to do develop new business model canvases for the exemplars;
 - Carrying out reviews of peer-reviewed and grey literature to identify good practice examples for barriers not addressed by research in WPs 1-3 thus far, and with no relevant expertise currently in the consortium.
4. *The Case Study questionnaires developed as part of this Deliverable will be used as a mechanism to share knowledge and partner expertise between the FRCs, each of the FFCs, and the Global Learning Academy* - This will underpin part of the mentoring process between the FRCs and the FFCs. Knowledge Transfer will be facilitated, in the first instance, by the sharing of this Deliverable within the consortium. This will then be followed by the development of FRC Case Study databases on the Connecting Nature Website and the Oppla NBS platform. It is intended that the databases will be able to be viewed both vertically (by city and case study) and horizontally (by theme, stage, or question). Using themes, stages and questions as key terms, it will be possible to interrogate the case study database by topic. For example, any city interested in Monitoring & Evaluation will be able to select for this and compare how each case study approached this theme, without having to read through each case studies' entire questionnaire to find the information. This will make the information generated during the questionnaire process more accessible and connect FFCs with FRCs with experience of dealing with similar challenges through the mentoring process.

Ultimately, it is intended that the information and understanding generated during the WP3 development process will support the unlocking, up-scaling and out-scaling of NbS across the FRCs, FFCs, Multiplier Cities, and cities globally through sharing with WPs 1, 2, 4, 5 and 6.

6. Acknowledgements

Compiling this information took a substantial time commitment from our Front Runner Cities. Each cities' CN team welcomed us with amazing hospitality, warmth and an open and transparent attitude to exploring their institutional and city-wide assets and barriers in terms of NBS implementation. Support was not just limited to the CN team, but also included colleagues from across the city council and collaborating partners external to the city council involved in NBS delivery. We would like to take this opportunity to thank all of the people that allowed us to interview them, attended our workshops, provided data during our many data requests, and supported the outputs detailed in this Deliverable. Without this support, such detailed exploration of city context would not have been possible.

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8. Appendices

8.1 Interview framework underpinning FRC interviews

Table 1. Questionnaire used for FRC interviews. Questionnaire was developed by UEL and was designed to cover areas of knowledge represented within each organisation in relation to NBS planning, delivery, legacy (asset) management, and evaluation.

1. About the city	
	Can you describe some of the major challenges / issues facing your city today? For example: jobs and employment, housing, skills availability, public space, air / environmental quality, climate change, noise pollution, social integration, mobility...
2. State of NBS	
	Based on the following definition, where are NBS opportunities in your city? <i>“Nature-based solutions are living solutions inspired and supported by nature that simultaneously provide environmental, social and economic benefits and help build resilience... through locally adapted, resource-efficient and systemic interventions”</i>
	Could you identify projects / plans /visions (built or in design phase) in relation to NBS in your city?
	Which do you consider to be other great examples of a success and which do you feel were very unsuccessful? Could you identify key aspects? This could be in terms of the quality of the communications process, the design, the construction period, unintended outcomes etc.
3. Relevant documents	
	Could you list documents (planning, strategy, development...) you find most relevant to the topic in your city?
	Can you choose 5-6 relevant documents that you consider important for NBS within your city? Please explain why you think these are useful.
Specific questions - only a selection of the following questions will be used during the interviews, based on the interviewee.	
4. Finance	
	How were city environmental challenges identified that NBS could address?
	How were NBS type projects determined to be implement? What benefits did you want to achieve?
	How was the scope of NBS defined?
	What was your city’s experience in financing NBS
	What different sources of finance were used and how did they work out? How did you justify the investment?
	Did your city run into any problems with financing NBS at any stage?

	How did they overcome these challenges?
	What KPI's and baselines were set?
	What would be your city's lessons learnt/recommendations be for future financing?
	Looking at NBS from a cost-benefit perspective: explore your city's perspective on potential financial benefits of NBS.
	What follow up studies were conducted?
	Were the results of the project those that had been hoped for? If not, why?
	How are the benefits of NBS being communicated?
	How scalable are the outcomes?
5. Business	
	How were city environmental challenges identified that NBS could address?
	How were NBS type projects determined to be implement? What benefits did you want to achieve?
	How was the scope of NBS defined?
	What was your city's experience in supporting businesses through NBS?
	What businesses emerged?
	Did your city run into any problems with businesses at any stage?
	How did they overcome these challenges?
	What would be your city's lessons learnt/recommendations be for future supporting local businesses?
	Looking at NBS from a cost -benefit perspective: explore your city's perspective on potential business/opportunities benefits of NBS.
	What follow up studies were conducted?
	Were the results of the project those that had been hoped for? If not, why?
	How are the benefits of NBS being communicated?
	How scalable are the outcomes?
6. Community	
	How were city environmental challenges identified that NbS could address?
	How were NBS type projects determined to be implement? What benefits did you want to achieve?
	How was the scope of NBS defined?
	What was your city's experience in supporting the local communities through the NBS
	What community organisations or groups emerged?
	Did your city run into any problems with community groups at any stage?
	How did they overcome these challenges?
	What would be your city's lessons learnt/recommendations be for future supporting local communities and community groups?

	Looking at NBS from a cost-benefit perspective: explore your city's perspective on potential business / social enterprise opportunities/benefits of NBS.
	What follow up studies were conducted?
	Were the results of the project those that had been hoped for? If not, why?
	How are the benefits of NBS being communicated?
	How scalable are the outcomes?
7. Knowledge-infrastructure-environment	
	How were city environmental challenges identified that NBS could address?
	How were NBS type projects determined to be implement? What benefits did you want to achieve?
	How was the scope of NBS defined?
	What was your city's experience in dealing with technical challenges on the site related to NBS
	Were there any particular novel solutions that emerged (particularly those for novel for your organisation)? How did you attempt to maximise co-benefits and minimise trade-offs?
	Did your city run into any problems with technical solutions?
	How did they overcome these challenges? Was the technical experience available inhouse?
	What would be your city's lessons learnt/recommendations be for future dealing with technical challenges?
	What KPI's and baselines were set?
	Looking at NbS from a cost-benefit perspective: explore your city's perspective on potential technical benefits of NbS.
	What follow up studies were conducted?
	Were the results of the project those that had been hoped for? If not, why?
	How are the benefits of NBS being communicated?
	How scalable are the outcomes?
8. Governance + decision making	
	What was your city's experience in dealing with policy and decision making for enacting NbS
	Were there any particular policy or governance outcomes that resulted?
	Did your city run into any problems with governance/policy/regulation that impacted NbS at any stage?
	How did they overcome these challenges?
	What is your opinion about governance, bureaucracy and institutional competences (and overlaps) in relation to NBS in your city?
	What would be your city's lessons learnt/recommendations for governance and policy?
	Looking at NBS from a cost-benefit perspective: please explain your city's perspective on potential governance/policy benefits of NBS.

	Is there a push for NBS in your city? Who is pushing it and why?
	Are planning conditions difficult or flexible NBS?
	Which are the effective policies and tools for driving NBS (IE laws and financing)?
	What internal structures supported the planning process?
	Were any governance structures set up to facilitate delivery?
	What follow up studies were conducted?
	Were the results of the project those that had been hoped for? If not, why?
	How are the benefits of NBS being communicated?
	How scalable are the outcomes?
9. Stakeholders > Mapping exercise: Stakeholders	
	What are the major actors related to NBS in your city?
	Is there any significant friction or relationships between certain actors? If so, between who?
	Which are the organisations you collaborate with?
	How were various stakeholders included in delivery?
	What main barriers did you experience with stakeholder engagement? How did you overcome these?
10. Driving themes for NBS	
	Could you describe 3-5 action areas that could help further develop NBS in your city?

8.2 Synthesis Report - Genk

The results of the Genk Interviews and Debrief Workshop are presented in a separate PDF document:
[Appendix_8_2_Genk_Synthesis_report](#)



Synthesis of exploratory interviews

GENK

August 2017

DOCUMENT PROPERTIES

Nature Document	Synthesis of Genk interviews
Work Package	WP3 task 3.1
Task Leader	UEL
Authors	OSMOS – Adrian Hill and Stephan Kampelmann
Dissemination level	Private – WP 1,2, 3 leads and co-ordinator
Version	20171031_CON_Genk_interviews_August_2017
Status of Document	Final
Deadline	31 October 2017

Synthesis of Genk interviews

WP	3 Task 3.1
Authors	Adrian Hill & Stephan Kampelmann (OSMOS)
Date of interviews	28-29 August 2017
Date of feedback session with members of CN consortium and interviewees	2 October 2017
Interviewers	Adrian Hill & Stephan Kampelmann (OSMOS), supported by Paula Vandergert (UEL), Peter Vos and Katrien van der Sijpe (City of Genk)
Interviewees	<p>Dirk Habils (head of neighbourhood development)</p> <p>Line Verbeke (project manager La Biomista)</p> <p>Els Welvaert & Bernd Bormans (project leaders Economy)</p> <p>Katrien Van De Sijpe (Head of Department Environment and Sustainable Development, City of Genk)</p> <p>Rudi Van Gulp (head of finances)</p> <p>Wim Vanhoof (project leaders spatial planning for example Het Kolenspoor)</p> <p>Gert Philippeth (project leader socio-cultural communities)</p> <p>Philippe Gelders (head of infrastructure)</p> <p>Peter Vos (Expert Sustainable Development, Department Environment and Sustainable Development, City of Genk)</p> <p>Ganaël Vanlokeren (Dienst Woonbeleid)</p> <p>Kathleen Monard (Afdelingshoofd Toerisme & Evenementen)</p>
Output	<p>Audio recordings of selected interviews</p> <p>Annotated city maps</p>

Completed stakeholder maps

Interviewer notes

Signed consent forms

Project canvas

Synthesis (this document)

Objectives of the interviews

1. Explore NbS type projects – learning about what made good projects a success and what led bad projects to be unsuccessful.
2. Connect with the local actors face to face and allow the interviewees to have the chance to express themselves.
3. Identify other relevant actors (both individuals and organisations) and their capacity/interest in contributing to Connecting (for WP1,2 + 4).
4. Explore and define the general narrative driving NbS in the subject city.

Setting and context

The notes presented in this document are based on interviews and field visits in Genk on 28-29 August 2017. These activities are part of Task 3.1: Capturing and sharing pre-existing front-runner city expertise in delivering scaled-up nature-based solutions approach comprising multifunctional objectives (Start: M1 End: M12. Lead Partner: UEL. Partners involved: All front-runner cities, Osmos). According to the Connecting Nature description of work, Task 3.1 will involve “exploiting the existing expertise developed by the learning-by-doing approach adopted by each front-runner city (partners 2,3 and 4). Partner 18 (AMU) will work with Poznan to capture their current exemplars. Partner 15 (UEL) will work with Glasgow and Genk to capture theirs. Support in GIS spatial analysis and capacity mapping will both be provided by partner 27 (GeoGraphic). This pre-existing capacity will be used for the development by UEL (partner 15) in partnership with front-runner city Partners (2,3 and 4) of a dissemination document to outline the specific nature-based solution exemplar delivery programmes and scale-up opportunities exploited in each front-runner city. In so doing, it will begin the iterative capture and transfer of adaptive governance processes to work packages 1 and 2 and, ultimately, fast-follower and multiplier cities. Outputs from this Task will feed into the knowledge mapped and systematised in Tasks 1.1 to 1.3, led by UDC (partner 16), and the co-development processes in Tasks 2.1 to 2.4, led by Drift (partner 14).”

The milestone that is associated with this task (Milestone 3.1) is a draft of the KPIs for the FRCs to be assessed using the Eklipse framework (due in M12); the deliverable (Deliverable 3.1) is a report on FRCs current expertise and experience in nature-based solutions based on a synthesis of experiential workshops and concluding with a process chart for transferrable KPIs approach to NBS (due in M16).

The interviews were organised by the Genk team (Peter and Katrien) based on exchanges with UEL (Paula) and Osmos (Adrian). In addition to the actual interviews, the Genk team also organised a visit of a repurposed coal mining facilities (C-mine and Thor Park); a visit to Schansbroek Park; a bike tour through the Stiemerbeek Valley; an informal meeting with Genk’s mayor Wim Dries and Gianni Cacciatore (responsible for neighbourhood development, participation, environment and neighbourhood development); and internal coordination sessions with the Connecting Nature partners.

Methodology

For this first round of exploratory interviews the Genk team invited colleagues from within the city administration (except for one project manager of a municipal project who works as a subcontractor). Each interview lasted approximately one hour and was conducted by one researcher (either Stephan or Adrian), who also produced notes/recordings during the interview. The interview was loosely structured on questions based on ten themes, with a range of sub-questions for each theme (see Appendix). The themes were drawn from a review by UEL of the Eklipse framework and related documents, plus specific financial and economic development questions from TCD. The same themes are used below to structure the synthesis of the discussions. Interviewers were encouraged to make use of additional supporting materials: a stakeholder map and a city map. Examples of how these documents were used are provided below.

Summary of results

All interviewees were aware of the Connecting Nature project thanks to prior information sessions by the Connecting Nature Genk team. Most were also familiar with the concept of nature-based solutions, but several interviewees remarked that **the idea of NBS** (and Connecting Nature in general) still remains **“vague” or “unclear”** to them. This meant that the answers to the more general questions about NBS were not the most fruitful, as the answers also remained rather general and not city- or project-specific. To direct the answers towards more specific and contextual ground, three strategies appeared to be useful:

- The use of **city and stakeholder maps** helped to **‘anchor’ the discussion** and made it more specific.
- The interviewer **directed the questions towards the work area and individual experiences of each interviewee**. In some cases, this brought up issues related to environmental questions so that the discussion could be linked back to NBS. In other cases discussions focused more on social issues, internal organisational conditions or other projects that offered a perspective of how NBS would related to Genk.
- The case of the Stiemerbeek Valley was used to reformulate the general questions on **NBS in a specific context/project that the interviewee was familiar with**.

All interviewees were aware of the strategic importance of the Stiemerbeek Valley for the city’s development in general, but also how innovative approaches to the Valley that could come out of the Connecting Nature project could be beneficial. This was especially the case for interviewees working on tourism, spatial planning, finance and infrastructure and to a lesser degree to those working on socio-cultural issues. A relatively weak link between the NBS potential of the Stiemerbeek Valley and the interviewee’s policy area was made by members of the economic department.

In the end, the interviews proved to be useful in gathering precious city-specific information about previous experiences with NBS on the different themes that were brought to the table; this information is summarised in the following pages. In a few cases, we also felt that the interviewees engaged more actively with the idea of NBS in the city’s future development. This was echoed in discussions with the financial department (head of department) and building and infrastructure department (head of department). We see two possible reasons for this higher level of engagement: the clearer link between the policy area and the NBS potential in the Stiemerbeek Valley, on the one hand, and the more senior position - and the associated more strategic and holistic perspective – of the two interviewees. Interviews with Peter Vos and Katrien Van De Sijpe explained another interesting dimension: as Connecting Nature is not funded through the economics / finance department, it is allowing the terms of the project to be defined differently and is both a big risk and opportunity for environment and sustainability to drive organisational change. Most other interviewees were clearly interested in the project and its future results, but remained more passive (“Let’s wait and see what comes out of this.”).

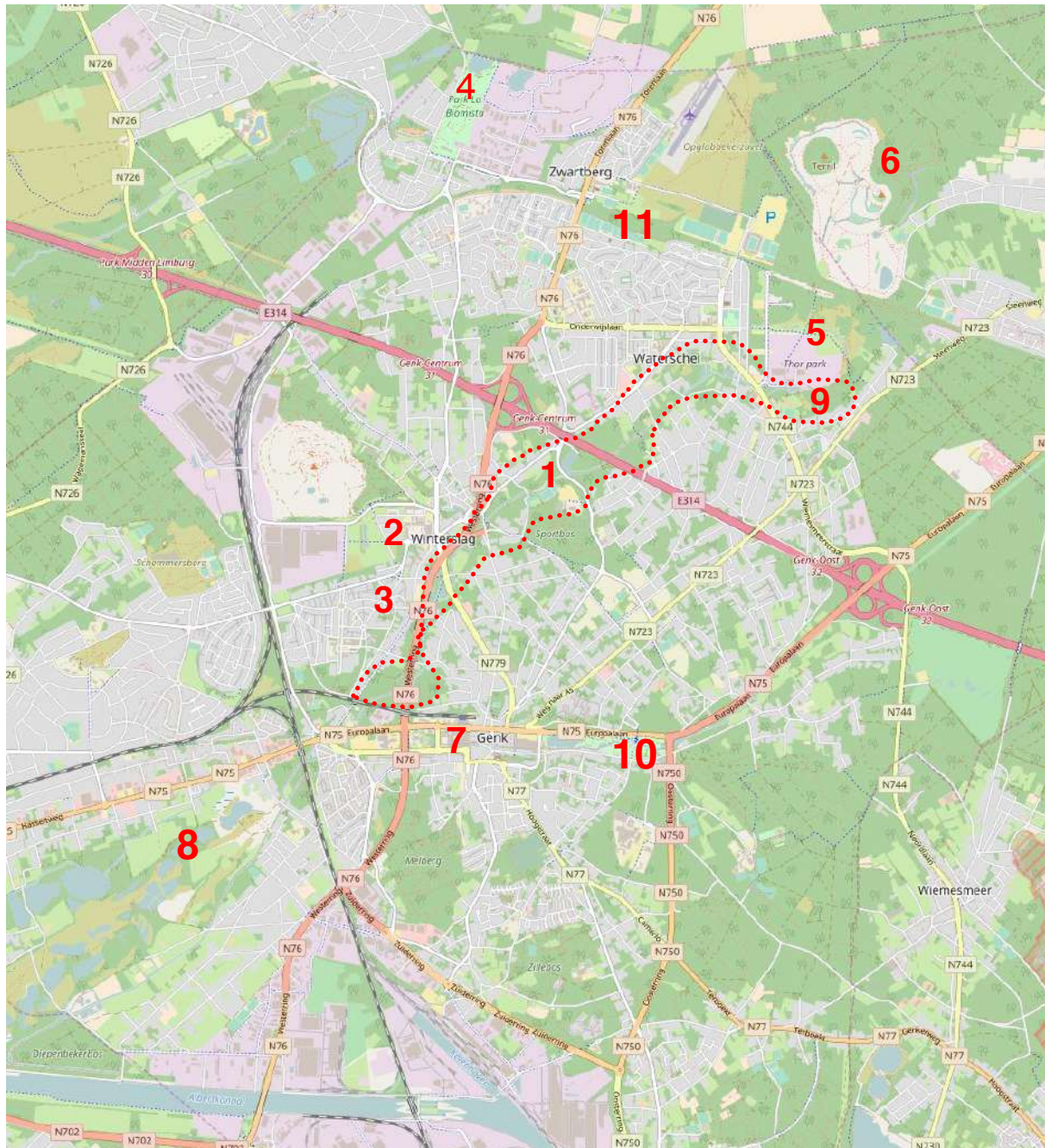
As progress in the Steimberbeek Valley depend on political support and with local elections looming in 2018, there are a lot of decisions that will occur only within the following months or after the elections. Furthermore, the outcomes of the landscape masterplan (by Tractebel and Georges Descombes) beginning of spring 2018. This will ultimately will bear some influence on the Connecting Nature project.

To conclude, it seems helpful to approach potential collaborators/stakeholders with questions/information on Connecting Nature that is directly linked to 1) their own area of interest and 2) a specific project or opportunity in their city that they can personally relate to. In this way, the project can be easier owned and reinterpreted by the interviewees, for instance when the name “Connecting Nature” is interpreted as the opportunity that “nature” (the Stiemerbeek Valley) can be a “connecting” element (e.g. through soft mobility between Thor Park, city centre and C-mine).

Project-Environment Canvas “Nature-based solution in the Stiemerbeek”

The table below has been elaborated by participants of the feedback session on October 2 2017. It summarises the information collected during the interviews according to key dimensions of the “project” (in this case NBS in Stiemerbeek) and its “environment”. For more information on the methodology of the Project-Environment Canvas visit: <http://osmosnetwork.com/project-environment-canvas/>

Project	<p><u>Involved partners</u></p> <ul style="list-style-type: none"> - City of Genk (departments: economics, environment, finance, spatial planning, neighbourhood policies) - Local politicians - VLM (Flemish Landscape Agency) - INBO (Flemish Research Agency on Environment) - VMM (Flemish Environment Agency) - Tractabel (masterplan for the STBK) - Aquafin (water and sewage management) and Infrac (Inter-municipal infrastructure) - Natuurpunt (nature based NGO) - Provincie Limburg (the Province) 	<p><u>Values</u></p> <ul style="list-style-type: none"> - Take risks: ‘just go for it’ approach - Inclusivity: ensuring representation from the diverse local community. - Embedded in identity: why people have spent time in the Stiemerbeek. - Genuine involvement: based on clear objectives. - Complexity: addressing interactions of various issues simultaneously. 	<p><u>Actions</u></p> <ul style="list-style-type: none"> - Engagement of local and regional public actors. - Engagement of home owners. - Activate community managers: so they can effectively communicate the water related issues. - Quick wins and results: pop-up interventions, expectation management and engagement. - Research of socio-technical water related options/solutions relevant to the STBK. - Bridge the gap between NBS and business. - Map local groups (first draft done). - Map financial opportunities: both short and long term. 	<p><u>Output</u></p> <ul style="list-style-type: none"> - Innovative solution for water management: managing water on both public and private lands. - A landscaped green/blue parkland including facilities and furniture. - A SUDS based decentralised water solution. - Monitoring system for water quality. - Safe continuous pedestrian and cycle path along the STBK between the city centre and Thor Park.
Environment	<p><u>Interest groups</u></p> <ul style="list-style-type: none"> - Local interest groups: sports, walkers, bikers, environmentalists - Resident groups: sometimes very informal groups. - Flagship development sites (C-Mine, Biomista, Thor Park...): access to the city and between other flagship sites. - Connections between functions. - Schools - Regional and national level public agencies: such as environment, health and ageing. - Funds: in a passive way organisations such as the EIB and other banks. 	<p><u>Needs</u></p> <ul style="list-style-type: none"> - Connecting financing and capacity for social entrepreneurship. - A clear communications strategy. - Financing strategy. - Impact / monitoring strategy: translating green/blue into tangible value. - Governance strategy: how to engage, develop and inform? - Blue-green connector between neighbourhoods and flagship sites. - Clean water 	<p><u>Resources</u></p> <ul style="list-style-type: none"> - Connecting Nature: expertise and experts (particularly the SMEs). - In-house experience: capturing larger funding sources. - NBS projects: there are already tangible examples found locally. - Previous studies: particularly on the STBK Valley. - Fast moving decision making (small gap between technical knowledge and decision-making). - High-end tech knowledge connected to the Thor Park. - Strong experience in community engagement and neighbourhood management. - A large number of community based organisations. - Municipal subsidies for decentralised water solutions. - NCFE funding. 	<p><u>Outcomes</u></p> <ul style="list-style-type: none"> - A stronger identity for the STBK Valley. - Reframing NBS: in terms of business, climate and participation. - Green mentality shared by users and residents. - Confidence in monitoring. - Innovative city-making process. - Water based leisure within the city. - Sustainability of the project over time. - A new inclusive development approach for infrastructure in terms of both Genks’ internal engagement process and relationship with external actors.



1. Approximate masterplan zone of the Stiemerbeekvallei
2. C-mine
3. Vennestraat
4. La Biomista
5. Thor Park
6. Klaverberg (and Hoge Kempen National Park)

7. City centre / Municipal offices
8. De Maten nature park.
9. Schansbroek Park
10. Heempark
11. Kolenspoor project

Theme-specific summary

1. About the city

1.1. Perceived current major challenges / issues

- The general negative image of Genk as grey, poor, too ethnically diverse (“in the eyes of many Flemish people”).
- **The different areas of Genk are too disconnected, no coherent city, not enough urbanity.**
- Unattractive and hard city centre - in contrast to the green surroundings. “The centre of Genk is grey in more than one way” (i.e. old population and mineral).
- Empty retail buildings in the city centre (around 25%) / lack of activity; lack of character.
- No historic buildings in the city centre results in having a sense that the city ‘has no heart’.
- Lack of entrepreneurial attitude and optimism: “why would you start something in Genk?”. While there are many local organisations, there is an expectation that the city will initiate things.
- **Post-industrial economy with low level of formal education among the population, relatively high unemployment (11%).**
- Problems with cyclical isolation of different communities (many residents cannot speak Dutch) – with poverty and unemployment it is resulting in radicalisation.
- There is a particularly mismatch between the available skills (particularly those based on industry and mining) and the skills offered by new jobs (high-tech R+D).
- Due to little demand for high-education jobs and Genk’s distance from other major centres, a ‘brain-drain’ has been almost inevitable. This has meant that a range of high-educated skills are not available locally.
- Past mistakes in urban strategy (development of commercial spaces along Hasseltweg, Shopping 1, 2 and 3).
- Car-centred mobility despite relatively good soft mobility network (for Flemish standards).
- Huge financial cost of solving certain infrastructure problems such as the Stiemerbeek Valley sewage system.
- Environmental impact on residential communities of Genk Zuid (air/soil pollution with heavy metals from steel factory)
- Technical discussion about sewage and water treatment not very accessible for participation.
- **Big projects (IE C-Mine and Thor park) have been good for the image of the city but have not (or have been slow to) have impact on the local community – result is a lack of ownership.**
- **Major investment in ‘satellite projects’ but few physical links between them.**

1.2. Perceived opportunities

- A lot of positive change over the last decade in terms of urban projects.
- The ethnic diversity could also be treated as a real opportunity as the new high-tech focus for Genk (Thor Park) means that foreign talent may be more easily attracted to live in the city.
- Being able to deal with an ethnically diverse and predominantly non-Flemish community.
- Individual residents have good knowledge about water that could be tapped into, through direct contact (house visits, group sessions), that could be organised through the neighbourhood manager.
- **The city is fast to jump onto new concepts and ideas – with an ambitious local administration, ideas can move quickly into action.**

- Genk has experience with innovative research projects, especially in the area of environmental change and transition research: DRIFT and the ARTS project has worked with Genk on a sustainability accelerator transition plan that incorporates NBS; the Life project Grey4Nature has financed activities in the Schansbroek and the Stiemerbeek Valley, including participatory planning; the Ecoplan project has used the Stiemerbeek Valley as a case study for ecosystem services.

2. State of NbS (and related projects)

2.1. Past projects that could be used as NbS exemplars

- **Stiemerbeek Valley** - There are several past activities related to the Valley that could be interesting as exemplar. The Ecoplan project has investigated the scope of ecosystem services in the Stiemerbeek Valley. The city also organised Day of the Park interventions in the framework of the participatory process linked to the Stiemerbeek Masterplan with interventions from civil society organisations, coordination by neighbourhood managers (cf. interview Dirk Nabils and Gert Philippeth): Oud-Waterschei, Bret, gelieren, Winterslag, Genk Centrum, Oud-termien. They did information sessions, they formed a small group of volunteers with activities in the Valley. There are also NBS opportunities to use the valley as soft mobility connection between C-Mine, the city centre and Thor Park that are being explored by Tractebel in the framework of the on-going Masterplan.
- **La Biomista** – one of the city’s lighthouse projects driven by the artist Coen Vanmechelen, with an aspect of NbS, is in development.
- **Schansbroek Park** – an area just at the head of the Stiemerbeek Valley that was redesigned with a special focus on community participation and innovative water management. Some of the activities in the Schansbroek were financed through Green4Grey (www.green4grey.be), a Life+ EU co-funded project focusing also on ‘De Wijers’ wetland zone and the Stiemerbeek Valley
- **Heempark** – a 5 ha park run by NGO with offer of educational and awareness-raising activities, especially about agricultural, gardening and landscaping activities.
- **Bee plan** – A project set up by the City of Genk to protect and enlarge their natural population of bees that was a case study of the ARTS project (see below). The city promises to put an effort in turning it’s green management into a ‘bee-friendly’ one and in making the subject a key issue during the annual ‘Day of the Park’ and ‘de Bebloemingsactie’ (grow flowers action), combined with citywide communication campaigns. Audience wise, ‘Het Heempark’ and its hall for bees will function as a central hub, a place where visitors can get information on how to support bees. Also, the local food service industry will be involved to put emphasis on the importance of bees and the derivative products. (<http://blog.acceleratingtransitions.eu/?p=2143>)
- **Molenvijver Park**. This park was very manicured. They decided to bring nature into the park. There is also a small river, put into a very narrow bed. They gave some space to the river, the banks around the river became a habitat to vegetation. Now people accept this concept. Picnic tables in the park.
- **Other municipal policies in favour of NBS**
 - o Policy 15% of each industrial site has to be “green”. A survey and landscape strategy was done for Genk Zuid; instead of lawns and green deserts the green spaces could be turned into more diverse and connected areas (the opportunities of this have not yet been fully explored).

- o Municipal subsidy for households that disconnect rain water pipes from general sewage (in addition to subsidy from province). So far, however, only few households with old buildings have made use of this subsidy. In Boxbergheide and other neighbourhoods' rainwater collectors were disconnected from the sewage in a systematic way, i.e. in the context of a neighbourhood programme. This appears to be a strategy that has disconnected more houses than the scheme providing subsidies for disconnection of rain water and black water that targets individual households.
- o Some social housing built in Kolderbos by Nieuw Dak uses rain water to flush toilets (but technical problems in the beginning)
- o There are nature guides and neighbourhood guide, for example in the Winterslag, organised by the tourism office.

2.2. Other opportunities for future NbS mentioned by the interviewees

- Using environmental challenges to bring communities of different ethnic origin together, for instance in parks (Passegata in Molenvijfer).
- Creating an attractive green surrounding for commercial developments around the Limburg Hal
- Exploit more systematically the green spaces around industrial real estate in Genk Zuid

3. **Relevant documents**

- **Stiernerbeek Valley**
 - o City of Genk. Projectdossier Open Oproep 2903 – Stadspark Stiernerbeekvallei
 - o Tractebel (2016) fase 1: ontwerphypothese
 - o GENK - The Stiernerbeek Valley Designing an innovative financial/governance instrument for Green-Blue infrastructure. Public pitch at the Dublin kick-off of Connecting Nature.
 - o Aquafin (2017). Zuiveringsgebied Genk toelichting hydronautstudie 210GK02.
 - o INBO (2017) Notes NCFE Interviews
 - o Ecoplan documentation on the Stiernerbeek (<https://www.uantwerpen.be/en/rg/ecoplan/>).
- Planning documents Slagmolen and Schanbrug projects (www.green4grey.be/en/project-zones project report on the Schansbroek Park)
- **Documentation about the Kolenspoor project**
 - o <http://www.projectkolenspoor.be/p/51.04720.5.24400>
 - o https://issuu.com/toplimburg/docs/new_gkc_160328_boekwerk_iabr
 - o <http://www.traderstalk.org/contribution/genks-economic-shift-from-mining-coal-to-mining-data/>
- Map of city with different neighbourhoods see Appendix 3
- Map of city with 7 different industrial areas (Genk Zuid etc)
- **Documentation of activities in Genk by the ARTS project**
 - o Accelerating sustainability . Cultivating the conditions for accelerating local sustainability dynamics in Genk.
 - o Gorissen et al (2017) Moving towards systemic change? Investigating acceleration dynamics of urban sustainability transitions in the Belgian City of Genk, Journal of Cleaner Production.
 - o GREENSPIRATION: GENK'S NATURAL CAPITAL AS A DRIVER FOR SUSTAINABLE VALUE CREATION, Report from Transition Platform Meeting

Specific questions

4. Finance

4.1. Experience in financing NBS

- Genk has been very successful in attracting co-financing in the past for large projects from a range of regional, state (Flemish), national, EU and private sources. This is focused on large projects (such as €70 million for C-Mine). Medium-smaller scale projects can be much harder to fund.
- Investments in the renewal of the sewage system are co-financed between the Flemish government (via Infrac; 80%) and the municipality (20%).
- Investments are justified with the need to avoid sewage overflow and water pollution
- There is neighbourhood budget: initiative by at least four people with a social objective (2500 euros); interesting tool for decentralised NBS projects
- NBS in the Stiemerbeek Valley could provide extra value for tourism, quality of life, mobility (Genk is close to the national park, there could be green corridors).
- Potential increase in the property value around the Valley could be exploited; in Waterschei but also close to the centre (land surrounding the Limburg Hal).
- On property structure and real estate value, there is expertise and knowledge in the Grondzaken department (one third of Genk is owned by the city, including a lot of open space).
- Financing in the past often comes through the Economics department which then trickles down to sport, tourism or neighbourhood development – which has also stipulated how the money was spent which means that the environment department ends up playing a rather defensive role. With NBS funding, the environment department may have greater influence on how the money is spent and how the brief is defined.

4.2. Scalability of results

- Finding larger sums of money for big infrastructure investment can be much easier than finding a relatively smaller amount for alternative solutions. This can be a trap of reaching for the larger budget rather than finding more innovative local solutions.
- Using provincial funding for a more general financial support of decentralised rainwater management interventions is difficult because this would oblige Infrac to apply the same funding rules in the whole of Limburg.
- Scaling at the level of the city would require a change in the governance of water infrastructure at the provincial or even regional level, a stronger financial commitment of the city of Genk, or alternative subsidies or funds from other sources
- Capturing rise on property value to finance NBS requires pre-emptive buying and changes in spatial planning (expertise of Ben Crabbe). This means a lot of collaboration and shared vision with different departments within the city.

5. Business

5.1. Environmental that NbS could address

- Analysis that renewable energy and different types of “local economies” (e.g. maker community, new craft activities), are promising areas of economic development (see Stadsfabriekjes project and noted in the interview with Els Welvaert).
- Industrial companies see financial benefits in energy saving or industrial symbiosis (example of fish production with water heated up by electrical power plant in Genk Zuid)

5.2. Supporting businesses through NbS

- So far the concept does not appear in economic or business policies; but sustainable technologies are central to the strategy of the Thor Park as leading research hub on sustainable energy in Flanders/ Europe.
- Some interviewees mentioned the opportunity to take advantage of the engineering skills from the Thor Park and apply them in Genk in living-lab type conditions. Moreover, the location of Thor Park adjacent to Schansbroek Park and the head of the Stiemerbeek provides a good 'co-location' opportunity for facilitating entrepreneurial innovation in NBS.
- De Andere Markt (www.deanderemarkt.be) is a new 'fabrication' space type initiative which is located in the Vennestraat and is linked with the University of Hasselt, it is a small project but is showing positive impact in terms of community generated ideas.

5.3. Problems related to businesses

- The Stadsfabriekjes project currently meets a relatively lukewarm response from potential entrepreneurs (lack of business optimism and entrepreneurship).
- Several strands of Genk's economic development strategy are geared towards conventional activities: development of shopping malls, car-centred retail, heavy industry and big industrial payers (Ikea, Esser, Mittal)

6. Community

6.1. Identified environmental challenges that NbS could address

- Successful engagement (workshops, site visits, guided tours etc) in the planning of the Stiemerbeek Valley Masterplan, the Schansbroek and other projects.
- Interesting reference Kathleen Monard to the best environments for social integration in Flanders were at flea markets (rommelmarkt), opportunity shops (kringloopwinkels) and allotment gardens (volkstuinten).
- Line Verbeke from the Biomista said it would only be a success when the local community had accepted it.

6.2. City's experience in supporting the local communities through the NbS

- Extensive experience in participation and community engagement in general; inspiration from the Deventer model of community outreach.
- This experience has only recently been used to environmental issues, but experience from the social area could be converted for participation in environmental policies. The manpower and

instruments (neighbourhood managers, neighbourhood teams, cultural and sport associations) are in place but need to be activated/interested in NBS

- In Waterschei, people have gardens towards the valley which they like it as it is (dogs, bikes, calm)
- **Schools: opportunity for open air class in the valley, in the north where the water is till pure, learn about water, flowers etc. There is a big project, according to Ganaël Vanlokeren, to bring together the secondary schools into a 'Campus College'.**
- Tuin van Betty community garden is situated in a very strategic location, they should be central to the redevelopment of the Valley; the garden is not so big in itself, but property of the city of Genk and very active. The neighbourhood manager had a role in activating this garden. A group of citizens runs it now. Garden could be an entry point into the valley; community running the garden could be ambassadors of the Stiemerbeek Valley
- Fishing association: fisher club in Winterslag (border with Genk centre), in a pond next to the Stiemerbeek Visvijver (fish pond), could be an asset for NBS projects related to water in the Valley

6.3. Challenges linked to communities in NBS projects

- Next to the Thor park, it will be difficult to turn what is now perceived as being “owned” by the people living next door. There are only few community organisations active in that area doing projects step by step and taking time to engage with local stakeholders.
- An outdoor swimming pool in the sport area could create tensions; while an attractive idea for recreation it could be a space that divides people due to ethical or cultural diversity (cf. Gert Philippeth).
- **The danger is that people get frustrated because there is nothing specific happening; one should shorten the time until realisation, or do really small interventions with quick wins (K Monard / L Verbeke).**
- In Waterschei people have gardens towards the valley, they like the area as it stands today (dogs, bikes, calm)
- Difficult to convince the people to do something in their backyard (ponds, rainwater retention): “People are afraid of water” with some houses flooding.
- Interests and needs of the community should be a focus. For example: no space for a playground in the neighbourhood, but there could be space along the Stiemerbeek.
- **Although the city owns a big share of land (around one third of Genk), the space needed for implementing NBS in the valley is privately owned, which provides a great governance challenge for NBS deployment**

7. **Knowledge-infrastructure-environment**

7.1. Environmental challenges identified that NbS could address

- There are three environmental zones: 1) external green areas that enter into the city (De Maten and Hoge Kempen NP), 2) green streets (predominantly the street trees) and 3) green internal zones such as parks or the Stiemerbeek. The environment department is under-staff and not involved at an early stage with projects therefore inner-city green spaces are treated as damage control based on plans coming from other departments.
- The poor water quality of the Stiemerbeek is a long-standing problem that has been identified by the municipal authorities, but also by citizens (bad smell). Also the imperfect soft mobility and a general disconnection between the different areas of the city is an issue that has been identified through formal and informal consultation processes.

- While the city has a good range of core staff, there is certain expertise that is outsourced simply due to the size of the city itself. This has impact on the kind of internal technical knowledge and particularly on cross-cutting NBS type outcomes.
- The responsibility for the management of the Stiemerbeek is very challenging and falls directly under a number of organisations:
 1. The embankments beside the stream are owned and managed by the City.
 2. The green areas beside the Stiemerbeek, those owned by the city, are managed by Natuurpunt (<https://www.natuurpunt.be>), a volunteer run environmental organisation.
 3. The stream itself is managed by the province (Limburg).
 4. The sewage pipes are managed by the regional agency Infrac.
 5. Other partners include private land-owners and the regional agencies managing roads.

7.2. The city's experience in dealing with technical challenges on the site related to NbS

- The infrastructure department has in-house technical knowledge on innovative approaches to water management (e.g. through decentralised infiltration).
- There are some experiments through the likes of the Green4Grey project.

8. Governance + decision making.

8.1. Experience in dealing with policy and decision making for enacting NbS

- There is a good cooperation between some departments, but friction with others. This is particularly the case where certain departments are left out of early conversations and/or are put in defensive positions. Work may be required to repair trust.
- The city does have a number of interesting collaboration methods at an operations level. One good example (offered by G Vanlokeren) was the pairing approach of colleagues with complimentary skills, such as spatial planning and social services for the Campus College project.
- There is good cooperation between the city and organisations at other levels of governance (for instance with Aquafin or Infrac at the Province of Limburg).
- There are some circumstances where power, decision making processes and internal collaboration has created friction.
- The neighbourhood policy has focused on social issues and is most active in deprived neighbourhoods (which are not green and therefore further away from NBS hotspots); but the neighbourhood development department works with all other departments, including urban planning and economic development, and is consulted for formal or informal advice
- The role of “neighbourhood manager” (ten positions funded through the city of Genk, managed by Dirk Habils) and the “neighbourhood team” could be a promising vehicle to take NBS issues into the neighbourhoods, although their previous experience is clearly on social or socio-cultural issues and not on the environment
- Decisions on environmental issues are mainly driven by the spatial planning and infrastructure department, driven by sports & recreation or tourism.
- The finance department plays a facilitating role to set up budgets and subsidy requests once that issues and content are defined by other departments. The same administration runs the budget of the City of Genk, the OCMW / AGB (Autonomo Gemeente Bedrijf), which could facilitate complex projects in which all three organisations intervene.

- However, as noted earlier, those responsible for accessing the financing also contribute to the scope of the project. Peter Vos noted that one of the most successful cross-department collaborations was the summer garden space behind the city's administration offices, driven by the Connecting team at Genk.

8.2. Problems with governance/policy/regulation that impacted NbS

- Between city and residents: there is a fundamental challenge in sharing initiatives and responsibilities for projects. While some collective spaces such as allotment gardens have been very popular, sharing responsibility for co-developing other public spaces (such as the Stiemerbeek) is a new opportunity for developing a relationship between the city, local residents and possible business interests.
- An interviewee noted that there is little overview of all the projects currently operating at across Genk, which could be a good indicator of departmental silos.
- **The ambitious nature of the city means that new ideas can be adopted quickly however the downside is also a tendency to jump to the next exciting project without having a long-term approach. This proves that quick-wins and immediate results are needed, while strong governance that avoids temptation for the city to shift focus and investment in a long-term project.**
- **There is no clear measure of success. While this allows the city to work dynamically and avoid the burden of focusing on targets, it also means that at the end of a project it is difficult to define if goals were met. It also makes communication of success to the local community less convincing however also allows for the city to observe possible unintended outcomes.**
- **Connecting may offer an opportunity to develop internal collaborative project management.**

9. Stakeholders

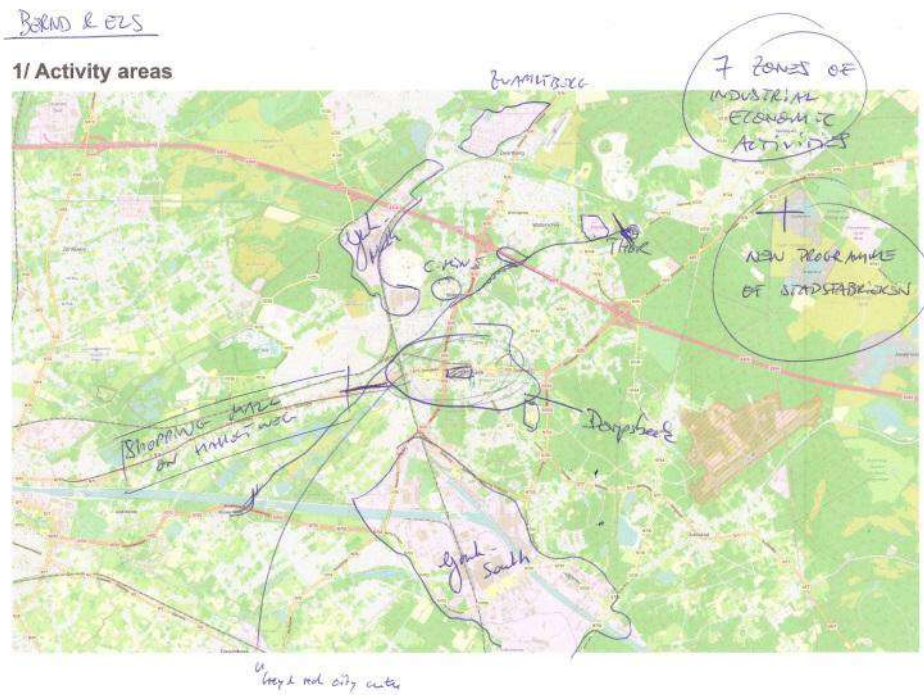
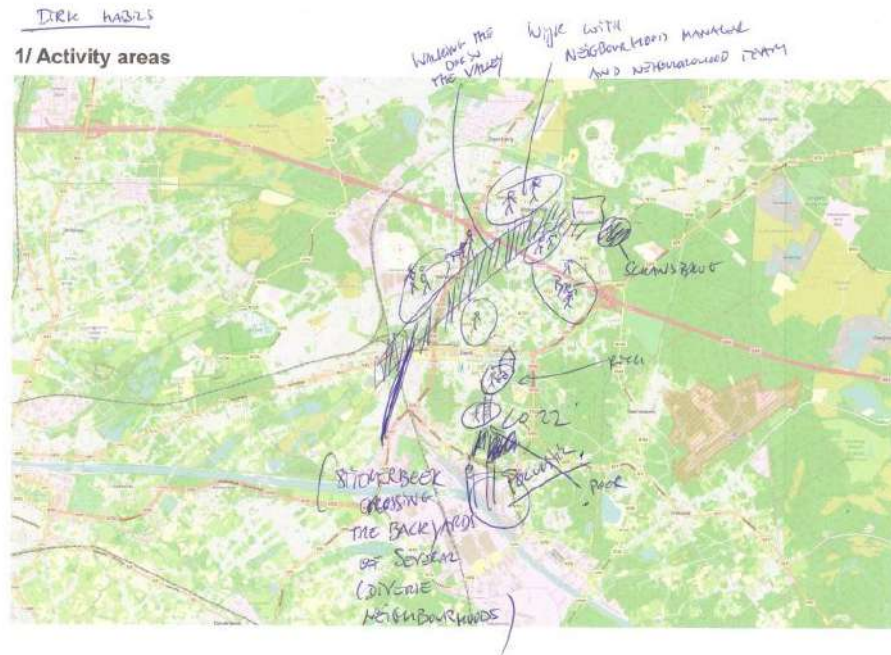
Generally the city appears to have good relations with inhabitants, business and regional actors. Generally the challenge, as noted earlier, is managing internal friction and mistrust between certain departments which appears related mostly to the internal process management. The following actors were identified in the interviews:

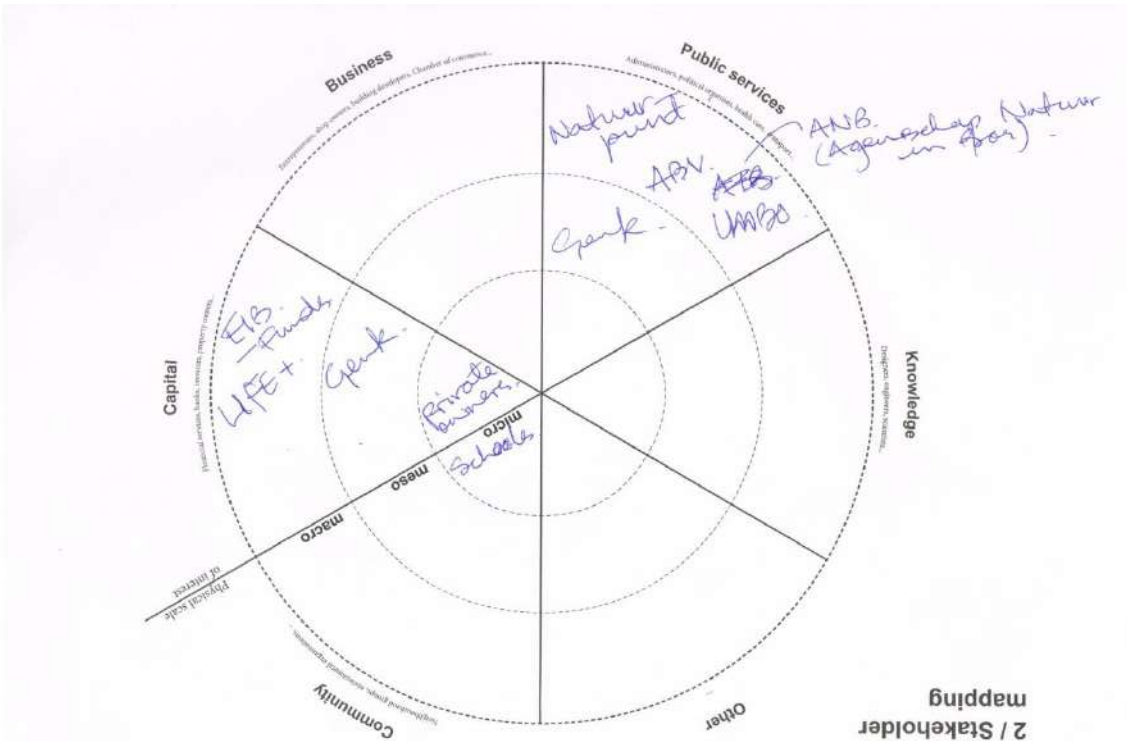
	Micro	Meso	Macro
Capital	Residents / land owners.	Genk (land and finance)	Life+ EU funding, EIB, Stads Vernieuwing, Limburg/Flemish tourism
Business	Thor Park	Housing developers	
Users + residents	Schools, Schansbroek action group, Tuin van Betty		Natuurpunt
Knowledge		Genk (relevant departments)	Aquafin, KU Leuven, Agenschap Natuur en Bos, ABV, UMBO
Public	Neighbourhood workers	Genk	Infrax, Aquafin

10. Driving themes for NbS

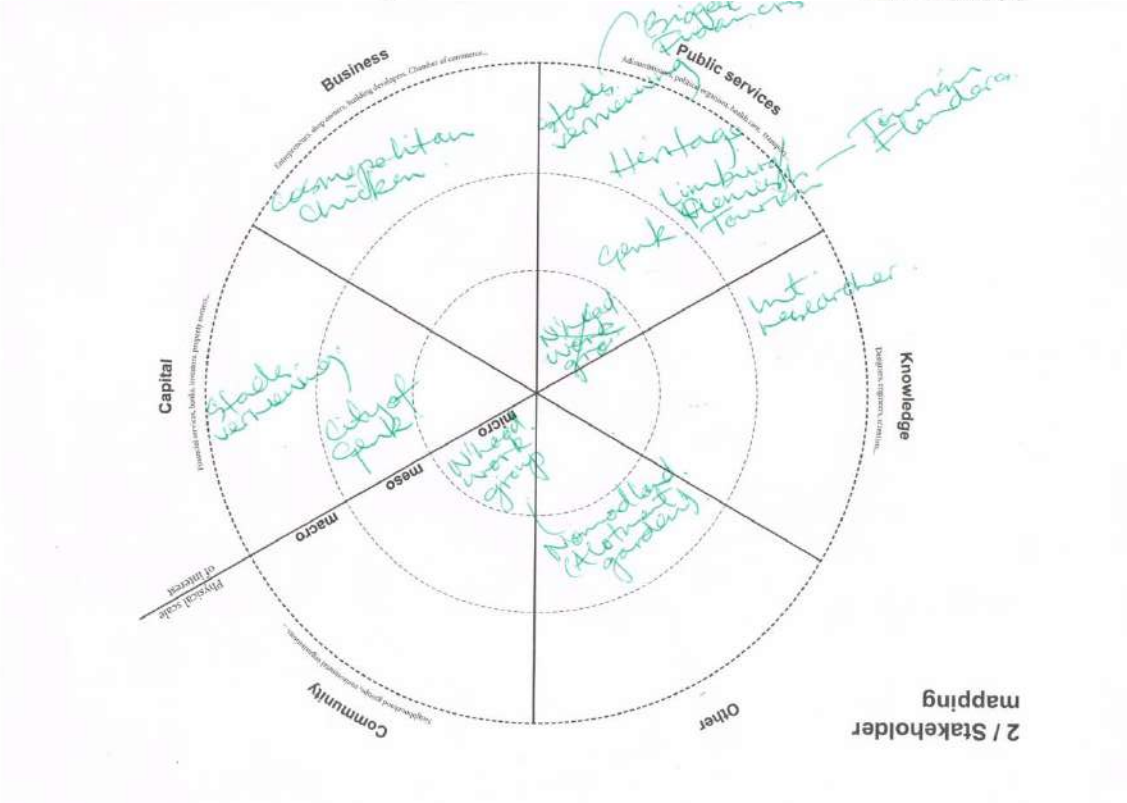
- Rainwater management through decentralised approaches.
- Using open spaces for softy mobility and connections between neighbourhood.
- Use of water and green spaces for recreation.
- Quick and visible wins to demonstrate benefits as a lot of impact will come from private property.
- Reframing NbS as potential economic development driver in the context of new real estate developments

Appendix 1: Examples of annotated city maps





2 / Stakeholder mapping



2 / Stakeholder mapping

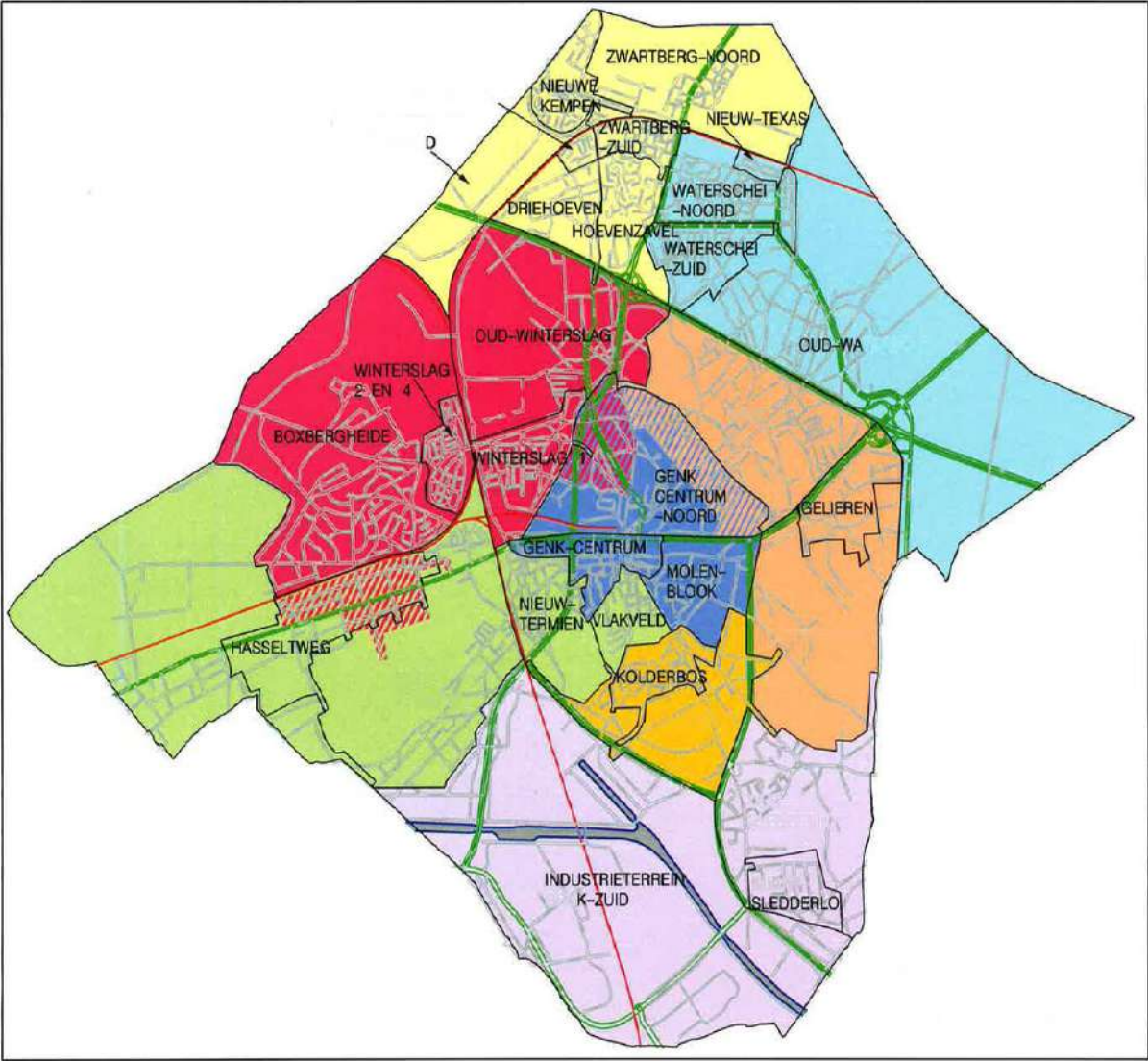
Appendix 2: Examples of stakeholder map

Appendix 3: Photos from site visits



TL - a 'bike highway'. TR - looking at the publicly displayed masterplan for the Stiemerbeek Valley (plan by Tractabel + Georges Descombes). ML - a small tributary to the stream, above the polluted zone. MR - a standard section of the stream with a bike/pedestrian path on one bank. BL - evidence of the sewage overflow with toilet paper marked on the embankment. BR - a stormwater inlet, water quality of the tributaries is unclear.

Appendix 4 City map with neighbourhoods



Appendix 6. Interview questionnaire

1. About the city

- Can you describe some of the major challenges / issues facing your city today? For example: jobs and employment, housing, skills availability, public space, air / environmental quality, climate change, noise pollution, social integration, mobility...

2. State of NbS

- Based on the following definition, where are NbS opportunities in your city?
*“Nature-based solutions are **living solutions inspired and supported by nature that simultaneously provide environmental, social and economic benefits and help build resilience... through locally adapted, resource-efficient and systemic interventions**”*
- Could you identify projects / plans /visions (built or in design phase) in relation to NbS in your city?
- Which do you consider to be other great examples of a success and which do you feel were very unsuccessful? Could you identify key aspects? This could be in terms of the quality of the communications process, the design, the construction period, unintended outcomes etc...

3. Relevant documents

- Could you list documents (planning, strategy, development...) you find most relevant to the topic in your city?
- Can you choose 5-6 relevant documents that you consider important for NbS within your city? Please explain why you think these are useful.

Specific questions

Only a selection of the following questions will be used during the interviews, based on the interviewee.

4. Finance (where relevant)

- How were city environmental challenges identified that NbS could address?
- How were NBS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NBS defined?
- What was your city's experience in financing NBS – what different sources of finance were used and how did they work out? How did you justify the investment?
- Did your city run into any problems with financing NBS at any stage?
- How did they overcome these challenges?
- What KPI's and baselines were set?
- What would be your city's lessons learnt/recommendations be for future financing?

- Looking at NBS from a cost -benefit perspective: explore your city's perspective on potential financial benefits of NBS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NBS being communicated?
- How scalable are the outcomes?

5. Business (where relevant)

- How were city environmental challenges identified that NbS could address?
- How were NBS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NBS defined?
- What was your city's experience in supporting businesses through NbS – what businesses emerged?
- Did your city run into any problems with businesses at any stage?
- How did they overcome these challenges?
- What would be your city's lessons learnt/recommendations be for future supporting local businesses?
- Looking at NbS from a cost -benefit perspective: explore your city's perspective on potential business/opportunities benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NBS being communicated?
- How scalable are the outcomes?

6. Community (where relevant)

- How were city environmental challenges identified that NbS could address?
- How were NBS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NBS defined?
- What was your city's experience in supporting the local communities through the NbS – what community organisations or groups emerged?
- Did your city run into any problems with community groups at any stage?
- How did they overcome these challenges?
- What would be your city's lessons learnt/recommendations be for future supporting local communities and community groups?
- Looking at NbS from a cost -benefit perspective: explore your city's perspective on potential business / social enterprise opportunities/benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NBS being communicated?
- How scalable are the outcomes?

7. Knowledge-infrastructure-environment (where relevant)

- How were city environmental challenges identified that NbS could address?

- How were NBS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NBS defined?
- What was your city's experience in dealing with technical challenges on the site related to NbS – were there any particular novel solutions that emerged (particularly those for novel for your organisation)? How did you attempt to maximise co-benefits and minimise trade-offs?
- Did your city run into any problems with technical solutions?
- How did they overcome these challenges? Was the technical experience available inhouse?
- What would be your city's lessons learnt/recommendations be for future dealing with technical challenges?
- What KPI's and baselines were set?
- Looking at NbS from a cost-benefit perspective: explore your city's perspective on potential technical benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NBS being communicated?
- How scalable are the outcomes?

8. Governance + decision making. (where relevant)

- What was your city's experience in dealing with policy and decision making for enacting NbS – were there any particular policy or governance outcomes that resulted?
- Did your city run into any problems with governance/policy/regulation that impacted NbS at any stage?
- How did they overcome these challenges?
- What is your opinion about governance, bureaucracy and institutional competences (and overlaps) in relation to NbS in your city?
- What would be your city's lessons learnt/recommendations for governance and policy?
- Looking at NbS from a cost-benefit perspective: please explain your city's perspective on potential governance/policy benefits of NbS.
- Is there a push for NbS in your city? Who is pushing it and why?
- Are planning conditions difficult or flexible NbS?
- Which are the effective policies and tools for driving NbS (IE laws and financing)?
- What internal structures supported the planning process?
- Were any governance structures set up to facilitate delivery?
 - What follow up studies were conducted?
 - Were the results of the project those that had been hoped for? If not, why?
 - How are the benefits of NBS being communicated?
 - How scalable are the outcomes?

9. Stakeholders

> Mapping exercise: Stakeholders (as necessary)

- What are the major actors related to NbS in your city?

- Is there any significant friction or relationships between certain actors? If so, between who?
- Which are the organisations you collaborate with?
 - How were various stakeholders included in delivery?
 - What main barriers did you experience with stakeholder engagement? How did you overcome these?

10. Driving themes for NbS

- Could you describe 3-5 action areas that could help further develop NbS in your city?

8.3 Synthesis Report - Glasgow

The results of the Glasgow Interviews and Debrief Workshop are presented in a separate PDF document:



Synthesis of exploratory interviews

GLASGOW

October 2017 (Updated February 2018)

DOCUMENT PROPERTIES

Nature Document	Synthesis of Glasgow interviews
Work Package	WP3 task 3.1
Task Leader	UEL
Authors	Adrian Hill (OSMOS) & Sam Jelliman (UEL)
Dissemination level	Private – WP 1,2, 3 leads and co-ordinator
Version	20180222_CON_Glasgow_interviews_Sept_2017
Status of Document	Final
Deadline	22 December 2017

Synthesis of Glasgow Interviews

WP	3 Task 3.1
Authors	Adrian Hill & Stephan Kampelmann (OSMOS)
Date of interviews	14-15 September 2017
Date of feedback session with members of CN consortium and interviewees	15 November 2017
Interviewers	Adrian Hill (OSMOS) and Sam Jelliman (UEL), supported by Frankie Barrett (City of Glasgow)
Interviewees	Amanda Waugh & Alan Duff (GCC open space strategy and local context) Duncan Booker (GCC sustainability and resilience - group manager) Larissa Naylar (GCC geographical and earth science - University of Glasgow) David Dunlop (GCC infrastructure and green networks) Max Hislop (GCV green Network) Rachel Smith (GCC parks) James Murray (MGSDP - flood management) Frankie Barrett (GCC sustainability and resilience / Connecting Nature) Cathy Johnson (GCC planning - group manager) Ewan Shannon (GCC roads) Gillian Dick (GCC planning / Connecting Nature) Chris Brace (Sustrans Scotland - Edinburgh)
Output	Audio recordings of selected interviews Annotated city maps Completed stakeholder maps Interviewer notes Signed consent forms Project canvas Synthesis (this document)

Objectives of the interviews

1. Explore NBS type projects – learning about what made good projects a success and what led bad projects to be unsuccessful.
2. Connect with the local actors face to face and allow the interviewees to have the chance to express themselves. Gain an overview of organisational conditions.
3. Identify other relevant actors (both individuals and organisations) and their capacity/interest in contributing to Connecting (for WP1,2 + 4).
4. Explore and define the general narrative driving NBS in the subject city.
5. Help define contacts and engagement strategies for stakeholders relevant to WP1-3 to ensure positive and constructive engagement with the project.

Setting and context

The notes presented in this document are based on interviews and field visits in Glasgow on 14 and 15 September. These activities are part of Task 3.1: Capturing and sharing pre-existing front-runner city expertise in delivering scaled-up nature-based solutions approach comprising multifunctional objectives (Start: M1 End: M12. Lead Partner: UEL. Partners involved: All front-runner cities, AMU). According to the Connecting Nature description of work, Task 3.1 will involve “exploiting the existing expertise developed by the learning-by-doing approach adopted by each front-runner city (partners 2,3 and 4). Partner 18 (AMU) will work with Poznan to capture their current exemplars. Partner 15 (UEL) will work with Glasgow and Genk to capture theirs. Support in GIS spatial analysis and capacity mapping will both be provided by partner 27 (GeoGraphic). This pre-existing capacity will be used for the development by UEL (partner 15) in partnership with front-runner city Partners (2,3 and 4) of a dissemination document to outline the specific nature-based solution exemplar delivery programmes and scale-up opportunities exploited in each front-runner city. In so doing, it will begin the iterative capture and transfer of adaptive governance processes to work packages 1 and 2 and, ultimately, fast-follower and multiplier cities. Outputs from this Task will feed into the knowledge mapped and systematised in Tasks 1.1 to 1.3, led by UDC (partner 16), and the co-development processes in Tasks 2.1 to 2.4, led by Drift (partner 14).”

The milestone that is associated with this task (Milestone 3.1) is a draft of the KPIs for the FRCs to be assessed using the Eklipse framework (due in M12); the deliverable (Deliverable 3.1) is a report on FRCs current expertise and experience in nature-based solutions based on a synthesis of experiential workshops and concluding with a process chart for transferrable KPIs approach to NBS (due in M16).

The interviews were organised by the Glasgow team (Frankie) based on exchanges with UEL (Paula) and Osmos (Adrian). A site tour was organised by Alan Duff and Frankie Barrett, visiting a range of open spaces and possible sites covering the west and north-west of the city.

Methodology

The Glasgow team invited both internal (from Glasgow City Council) and external (from NGOs and the University of Glasgow) colleagues covering a range of aspects focused on themes related to public space, environment, water management, mobility, planning and sustainability.

Each interview lasted approximately one hour and was conducted by Adrian with support from Sam, who also produced notes/recordings during the interview. The interview was loosely structured on a questionnaire including ten themes and a range of sub-questions for each theme (see appendix). The themes were drawn from a review by UEL of the Eklipse framework and related documents, plus specific financial and economic development questions from TCD. The same themes are used below to

structure the synthesis of the discussions. Interviewees were encouraged to make use of additional supporting materials: a stakeholder map and a city map. Examples of how these documents were used are provided below.

Summary of results

Most interviewees were aware of the Connecting Nature project thanks to internal communication and collaboration on the project proposal. Frankie and Gillian are part of two different teams - sustainable development and planning - which has meant that the project has been actively supported by a number of those interviewed.

Following experiences from Genk, most interviewees were familiar with the concept of nature-based solutions, particularly in terms of Blue/Green networks and the result of pioneering work by Glasgow City Council in SUDS (Sustainable Drainage Systems) or 'integrated green infrastructure'. Like in Genk, several interviewees remarked that the concept of NBS (and Connecting Nature in general) still remains "vague" or "unclear" to them.

Responses to examples of NBS were generally framed in terms of SUDS, which may or may not have necessarily been NBS however provided a concrete point of reference for discussions on a city covering some 175 km². Interestingly, when pressed on specific locations (using a map of the city - see Appendix 1) there were a diverse range of locations noted, with very few overlaps. This very quickly proved the vast range of physical interventions available across Glasgow that could be communicated by most of the colleagues, which have been developed particularly over the last 15 years. The interviewees were generally very aware of the significance of water management at the scale of the city and technical management solutions.

Unlike in Genk, Glasgow contains such a variety of sites (those representing NBS or sites with great potential for future interventions) that made it difficult to focus on pressing issues related to specific problems / challenges as each example raised new variables. Within the context of these interviews, comparing a single site would have eliminated the richness and complexity of a city-scale NBS approach, which appears to be the heart of Glasgow's contribution to Connecting Nature. An overall framework that identifies problems and opportunities and allows both public actors (the City of Glasgow and connected organisations) and community actors (social enterprises, community organisations and interest groups) to drive change.

While some interviewees were responsible for maintenance budgets, we missed input from both financing and city scale economics. We also missed input from social or community services which may have offered more insight into engagement with local community groups. Finally, as the city has recently been restructured and a new management structure has been created, a number of 'arms length organisations' have been created such as Glasgow Life (responsible for the 'People Make Glasgow' brand), City Property and MGSDP (Metropolitan Glasgow Strategic Drainage Partnership - www.mgsdp.org). These organisations have some independence and as a result are showing sometimes to have different priorities than the core council group.

While the technical knowledge communicated by the interviewees suggested that Glasgow was indeed very advanced in implementing Green/Blue infrastructure (and could be a useful point of knowledge exchange for the other Front Runner Cities), a few themes returned within the interviews, either stated or implied, that concern firstly internal collaboration and secondly the socio-economic aspects of NBS. These related to: 1) benefits, 2) value and 3) long-term care for interventions. This is a summary of feedback:

- *Benefits*. Until now, the focus of the benefits of water management has focused on engineering solutions rather than greater benefits in terms of ecology, open space and health. Until now, the GCC has played a heavy hand in caring for public environmental issues, however this has resulted in an expectation that the GCC also assume maintenance

responsibilities. With dwindling budgets due to austerity, this position requires a radical paradigm shift for the city.

- Value. Related directly to benefits, as the community do not necessarily see the benefits of green/blue solutions. For example, there is a fear of open water (asking for fencing around detention ponds) and water bodies fill with waste while other solutions simply stop working because of maintenance (such as in the Athlete's Village). Furthermore, the benefits of the green/blue infrastructure are lost on many residents and therefore often blend into the landscape or is seen as decoration or a waste of space.
- Care. One issue repeated by almost all the interviewees was the reduction in public budgets which makes maintenance extremely difficult. Increasingly ideas have been explored involving a more community-oriented approach to land management, however without the benefits or value, it may result in a challenging proposition for the community.
- Joined up working to deliver multiple benefits. The challenge of delivering schemes with multiple benefits, when the benefits of schemes are owned by different individuals in different departments with different budgets. There is however genuine interest in capturing multiple benefits including climate mitigation, air and noise quality, stalled spaces, temporary and so forth.

Like in Genk, the interviews proved to be extremely useful in gathering the broader perspective on opportunities for NBS and will be expanded on over the following pages. An important insight was that while there was very little friction amongst colleagues from different sectors of the GCC, there was a clear lack of communication and collaboration possibly due to institutional culture and simply questions of how to collaborate practically and in terms of the remit of their department. Experiences in Genk were quite different however and could offer grounds for staff knowledge exchange.

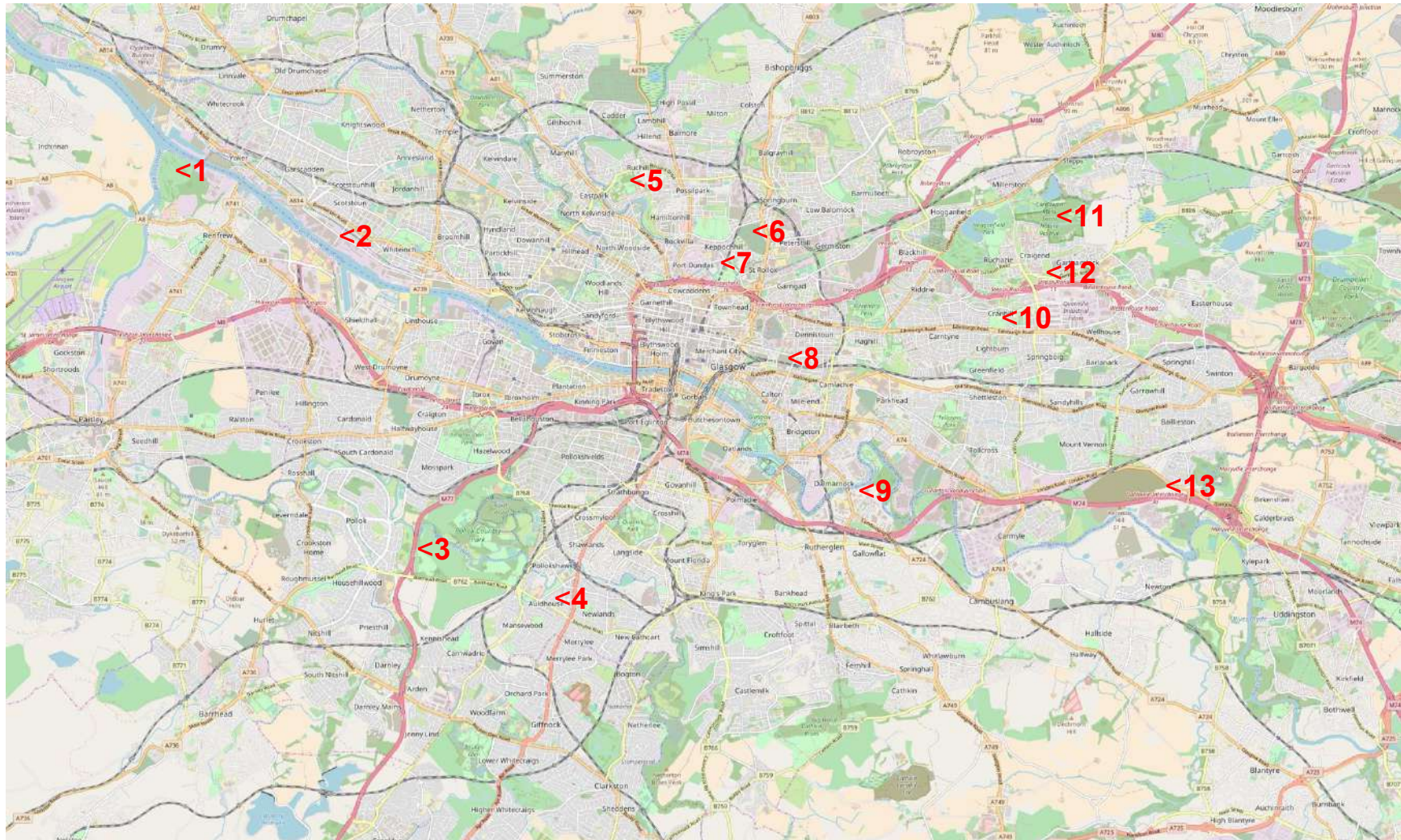
To conclude, it seems helpful to approach potential collaborators/stakeholders with questions/information on Connecting Nature that is directly linked to 1) their own area of interest, 2) a tangible project or opportunity in their city that they can personally relate to and finally 3) how they were collaborating with other colleagues. In this way, the project can be more easily owned and reinterpreted by the interviewees. While the question of mapping and stock-taking may be considered a priority for Glasgow's contribution to Connecting Nature, there is scope to frame this within a collaborative context that brings colleagues together and where a range of different perspectives can be a value-added rather than a hindrance for a project.

Project-Environment Canvas “Nature-based solution in the Glasgow”

The table below has been elaborated by participants of the feedback session on November 15 2017. It summarises the information collected during the interviews according to key dimensions of the “project” (in this case NBS in Glasgow) and its “environment”.

For more information on the methodology of the Project-Environment Canvas visit: <http://osmosnetwork.com/project-environment-canvas/>

Project	<p><u>Involved partners</u></p> <ul style="list-style-type: none"> - Arms-length organisations (Glasgow Life, City Property, MGSDP) - Community groups - Universities (Glasgow, Strathclyde, Caledonian) - Scottish Water - Independent community oriented organisations (GCV Green Networks, Sustrans...) - Greenspace Scotland 	<p><u>Values</u></p> <ul style="list-style-type: none"> - View Glasgow Open Space as a key asset rather than a liability/cost. - Move away from a culture of dependence - Risk taking attitude: leap of faith / prepared to fail - Take advantage of what is available: build on existing underused assets such vacant spaces, contaminated land and large open spaces. - Trust in the conversation process - Promote and support ‘People planning’ as a mechanism to empower communities. ‘People make Glasgow’ resource for bottom-up co-creation. - Open by default - Empowering communities -> sharing responsibilities 	<p><u>Actions</u></p> <ul style="list-style-type: none"> - Develop different forms of engagement: consultation, communication and bridge building. - Application of the place standard with greenspace Scotland lead on community needs. - Manage expectations and explore trade-offs through establishing new community / GCC trust relationships. - Concretely raise community aspiration and inspiration for quality open space development and ownership. - Develop location based needs analysis to underpin open space planning. - Define role for GIS app developer, once recruited analyse already available data and explore areas of data deficiency. - Research similar community oriented approaches (at a UK level). - Establish monitoring and evaluation protocols to support iterative learning. 	<p><u>Output</u></p> <ul style="list-style-type: none"> - Community developed plans. - Incubator for unlocking open space potential. Including: 1) Finance toolkit: innovative portfolio of mechanisms to support small to large-scale projects; 2) Spatial data: searchable per location based on needs analysis. 3) mechanisms for community engagement/empowerment. 4) Understanding of how to manage GCC Open Space assets - Enhanced community capacity tied into local context plan - Indicator set: simple to use. - Ongoing process per community, input on policies for change including renewed policy portfolio: 1) Open Space Strategy; 2) Supplementary Planning Guidance; 3) Local Context Plan (Stage 2) - Database of best practice - examples from easy to hard and simple to rich (multifunctionality).
Environment	<p><u>Interest groups</u></p> <ul style="list-style-type: none"> - Landowners within the Glasgow watershed. - Peel Port. - Conservation volunteers. - Glasgow centre for population health. - Business gateway. - Surrounding districts. - Metropolitan residents and businesses. - SEPA. - Social Enterprise Academy. - Others: SNH, SEPA, CSGN, Scottish Government, BGS 	<p><u>Needs</u></p> <ul style="list-style-type: none"> - Competences/capacities to: 1) identify key community relationships 2) build bridges: GCC <> community relationships through hosting relevant platforms, 3) provide community input in context planning and 4) translate / communicate data. - Community oriented environments for: 1) methods for collaboration (social-innovation), 2) to upload / download and visualise data / information, 3) communication to / with / between community groups and 4) provide context planning. - Strategic investment (capital) for: 1) non-GCC organisations especially for bridge builders and community coordinators, 2) projects and 3) maintenance, 4) investment in actions that provide multiple benefits 	<p><u>Resources</u></p> <ul style="list-style-type: none"> - Vast amount of internal knowledge and skill within the GCC, despite time limitations. - Non-GCC skills and knowledge, particularly from the university. - Innovative existing policy such as Stalled Spaces and Community Empowerment Act. - GIS Experts. - Existing spatial data sets. - Large amount of city owned land and vacant spaces – some stalled due to pollution (including the Vacant Derelict Land database). - Social enterprises that already have some governance structure for community based mobilisation. - Art and Drama School 	<p><u>Outcomes</u></p> <ul style="list-style-type: none"> - Incremental realisation of open space strategy around NBS. - Enhanced citizen capacity linked to local context plan. - A more effective approach for managing Glasgow’s open space assets (including GCC assets) embracing public, private and community oriented approaches to ownership and stewardship - Greater sense of local identity through placemaking. - Empowered communities across Glasgow taking responsibility for their local assets. - A more inclusive development plan. - Clustering of like-minded cities for experience sharing.



- | | | |
|---|---|------------------------------|
| 1. Newshot Island (climate adaptation 'renaturalisation') | 4. White Cart Water | 9. Athletes' village. |
| 2. Heart of Scotstoun Social Enterprise | 5. Rockhill Park (SUDS pond) | 10. Cranhill Park |
| 3. Integration with Pollok County Park | 6. Sighthill | 11. Easterhouse |
| | 7. Canal Partnership, overflow storage test unit. | 12. Seven Lochs Wetland Park |
| | 8. Former meat market | 13. Boghall Road (SUDS) |

Theme-specific summary

1. About the city

1.1. Perceived current major challenges / issues

Generally, one of the most repeated constraints was the fact that the city is struggling to find itself within its post-industrial era and many of the other issues are a subset of this major disruption to the city's DNA that made it UK's second city (and one of Europe's largest) for a period of time at its industrial peak.

- *Poverty.* Many parts of Glasgow are blighted by poverty. A large portion of the city's inhabitants are represented on the 'Scottish index of multiple deprivation'.
- *Health.* The 'Glasgow Effect', related to a significantly lower life expectancy, has dumbfounded researchers for some time. Some point to vitamin D deficiencies and the miserable weather (which is not much different from many other European cities). However anecdotally there is a lot to say about two endemic issues. Firstly, the slum clearance projects in the 1930's and 1950's, with the relocation of large portions of the urban poor out of the urban centres to sites particularly towards the north and north-east. Secondly the population left behind after the large-scale closure of industrial land from the post-WW2 period and particularly in the mid-1980's. Alcohol consumption, lack of fitness, poor diets and dependence on private mobility are side-effects. However, levels of dependence on private mobility are generally lower than the Scottish average.
- *Sense of place.* Possibly due to the disruptive nature of the slum clearing and the de-industrialisation of the workforce, the focus within some communities (particularly the very disadvantaged) has been increasingly focused down to the scale of a neighbourhood rather than at the scale of the city. This has both positive and negative side-effects. On the positive side, it may be easy to link a 'sense of place' and many people feel they belong to the neighbourhoods rather than the city of Glasgow. However as much of the 'sense of place' is defensive, it may require a paradigm shift to translate this into voluntarism in terms of environmental related issues or a 'sense of care for place'. For example, this was experienced in the Athlete's Village where SUDS ponds were filled with waste and the researchers were approached defensively/aggressively when taking photos of the site.
- *Staff reduction.* The last five years GCC has seen a loss of 40-50% of staff, which has also meant both a large reduction in institutional capacities and greater need to outsource. This is particularly noticeable in terms of maintenance. While the GCC has managed (and is capable of handling) new infrastructure projects, there is general apprehension from those involved in long-term management which is making it risk averse.
- *GCC management restructuring.* The restructure (due to austerity measures in public organisations) - while stated as aiming to make the city more competitive and entrepreneurial, the reality appears to be an undermining of local government and reduced dependence on the state, leading to unintended consequences such as sales of assets.
- *Metropolitan governance.* The GCC, like many cities, is not responsible for its catchment and therefore decisions are not necessarily coordinated (both environmental and planning). The natural suburbs and the wider landscape fall under separate political jurisdictions.

1.2. Perceived opportunities

- *New restructuring within the GCC.* A recent change in government and a new City Governance structure, together with a new Strategic plan is resulting in a shift in the political agenda within the city. The slogan 'People make Glasgow' is ambitious and could set the tone for a greater level of engagement.
- *Place-making initiatives.* There are several inspiring Scottish policies for grass-roots projects, including: 'Community Asset Transfer' and the 'Stalled Spaces Initiative'. We were told that neither has been heavily subscribed but they are proof that government is looking for

innovative solutions driven by the community.

- *Ambition*. Possibly due to its industrial heritage, Glasgow is ambitious and does punch above its weight in several areas such as culture and education despite several colleagues suggesting the city was risk-averse. However we should be conscious more recent risk aversion due to the significant reduction in staff resources that has occurred over the last decade.

2. State of NBS (and related projects)

2.1. Past projects that could be used as NBS exemplars

There are a vast number of projects that could fall into the NBS category in some capacity, therefore the following are simply a summary:

- **The Commonwealth Games Athletes' Village** (point 9 on the map) contains several SUDS type interventions from swales to detention/retention basins and stormwater fed tree pits (see photos in the appendix). The project has become a bit of a metric for future SUDS type projects as it exposed numerous design flaws and maintenance gripes. For example, the detention ponds easily catch plastic waste and are very hard to access making them look like an open tip. The tree pits clog easily. See more (<http://c-c-g.co.uk/project/commonwealth-games-athletes-village/>)
- **The White Cart Water project** (www.whitecartwaterproject.org) is one of the larger and more established catchment wide projects that aimed at dealing with serious floods.
- **Sighthill** is a project in the north of Glasgow in construction/development included several examples of SUDS. (<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=33446&p=0>)
- The **Easterhouse** redevelopment area is in design development and promises some 1000 new dwellings and the connected SUDS infrastructure. The community growth area Easterhouse and the Seven Lochs project are both part of a wider agenda for the area, with Seven Lochs providing access to the countryside for existing and future residents of Easterhouse.
- **Seven lochs** project, which now has Heritage lottery funding <http://sevenlochs.org/>
- Several development sites west of the Riverside Museum, which concerned the reparation of key-walls, that may be better given back to the river.
- There are numerous smaller installations scattered throughout the city such as Boghall Road.

The GCC development plan (www.glasgow.gov.uk/developmentplan) notes in Policy CDP 2 6 areas proposed to develop strategic development frameworks. These include Easterhouse, Inner East, North, City Centre, River Clyde and Partick / Govan.

2.2. Other opportunities for future NBS mentioned by the interviewees

- *Maintenance*. While Glasgow has a strong track record of experimenting and implementing technical opportunities across the city, there is a serious need to focus on mainstreaming the interventions and exploring ways for communities to not only value the importance of NBS but also to be part of both the long-term advocacy for and maintenance of them.
- *Polluted sites*. On the ground, former polluted and abandoned sites, coupled with community oriented policy, are opportunities. According to Jackie Duckett (Geotech), there are some 3000 assumed contaminated sites and very little demand for them from developers. Phytoremediation and infill uses could be interesting.
- *Climate change*. Generally accepted implications of climate change - increased projected rainfall and extreme events. The city has great potential to seek support from the three universities, in addition to the large number of tech companies located in the city, and explore environmental-tech innovations. The Climate Ready Clyde project (www.sniffer.org.uk/climatereadyclde) is exploring opportunities along the river. Refer also to the knowledge on shallow geology and deep geology within the city as part of CUSP (www.bgs.ac.uk/research/engineeringGeology/urbanGeoscience/clyde/)
- *Air quality* - there are some air quality hot-spots considered to be the worst in Scotland. GCC is working with Clean Air for Scotland (CAFS) and the Scottish Government / SEPA /

Transport Scotland on Low emission Zones. The GCC has also been involved in developing a technical version of the Place standard focusing on air quality (this is in test at the moment www.scottishairquality.co.uk/air-quality/CAFS)

- *Community driven projects.* The community asset transfer and stalled spaces initiatives noted earlier are a strong point for departure however they may not have been fully explored or poorly funded and therefore they are not seen as a priority.
- *Quantification.* While there are some measurements, it is hard to get real-time data particularly for the long-term benefit of SUDS installations. The question is if low cost monitoring could provide an opportunity for both monitoring and the development of new technology.

3. Relevant documents

- The Glasgow City Development Plan implemented in March 2017: www.glasgow.gov.uk/developmentplan
- Glasgow was one of the early signatories of the Rockefeller project, 100 Resilient Cities. The strategy is available here: <http://100resilientcities.org/strategies/glasgow/>
- There is a strong focus on GIS (see more information here: <http://glasgowgis.maps.arcgis.com/apps/PublicGallery/index.html?appid=3c7f76f9e9904ba4ab437809fo7eade8>). Baseline data available:
 - o Quality of open space.
 - o GIS based health related to purchase of prescription drugs
- “Green networks strategy for the Glasgow City Region” - GCV Green Network. Document available [here](#). Also refer to CSGN, with GCVGN delivering a component part <http://www.centralscotlandgreennetwork.org/>
- CEPA for SUDS related material.
 - o CIRIA SUDS Manual, 2015 ed.
 - o Scottish water guidelines [here](#).

Specific questions

4. Finance

4.1. Experience in financing NBS

- Glasgow has a strong track record in funding SUDS based projects, which means that they have both a good indication of installation costs but also maintenance.
- The biggest challenge is not in one-off CAPEX (capital expenditure) financing but rather in the long-term maintenance. This is because often the upfront costs come from infrastructure costs, which are relatively easy to access considering that Glasgow is a larger regional centre.
- Funding has been focused on UK and Scottish public sources such as the ‘City Deal’. The Commonwealth Games also provided a large amount of stimulation for infrastructure which has been oriented to some environmental infrastructure projects.
- SUDS based development on private property is a development condition and therefore must be done by developers. The only challenge is that SUDS installations are certified by private consultants, as public staff are under-resourced. This makes it difficult to know the performance of the SUDS installations on private land.

4.2. Scalability of results

- If we focus simply on SUDS, then the CAPEX of a lot solutions can easily be upscaled. Funding through the City Deal (and other sources) provide for one-off investment. The question here is whether this funding source is sustainable or if it will be cut due to further austerity measures. The City Deal is a one off UK Government process that loans councils money based on the expected increase in rates that they will be received. See more: www.glasgowcityregion.co.uk
- The GCC is also conscious that the priorities of public funding instruments may not necessarily directly address the priorities for place due to the conditions of the funding agencies. For example, local funding may focus on place-making in order to simultaneously solve a water issue - GCC will thus pitch their funding proposals to address various issues simultaneously.
- The biggest challenge for upscaling is in the OPEX (operational expenditure). Likewise, the organisations charged with commissioning the SUDS-related infrastructure are not necessarily involved or responsible for maintaining it. If new infrastructure is to be built, a strategic solution needs to be identified that is based on some private funding stream (to pay for public services) or based on maintenance by non-council based services. Long-term maintenance is one of the most significant challenges for innovative solutions.
- Scottish Water will maintain SUDS installation on public land, if it is done to its standards. More information available [here](#).
- Challenge for GCC's new structure creating silos in accounting – issues when cost is in one area and benefit in another, also need to find mechanism to offset cost of maintenance (a major issue) against benefit (e.g. flood prevention, health), also issue with budgets being pulled when project fails. For example the cost of provision and maintenance of open spaces sits mainly with councils, but the health benefits and reduction in paying out for reactive health care are felt by the health boards. The two budgets are not linked.
- The question of the BREXIT and larger scale long-term financing also surfaced. The UK has a number of research councils (such as NERC www.nerc.ac.uk) which are being told to look to new markets for co-financing outside of Europe. The last few years have brought uncertainty around certain funding streams and no guarantee that there will be any change to the internal UK funding sources. In fact, they could reduce as funding is directed to new markets in the far east and developing world.

5. Business

5.1. Environmental businesses that NBS could address

Generally, interviewees indicated that there is seemingly little entrepreneurship focused on environmental issues - with the exception to private contractors looking to take over public services. Exception to the rule would be Star refrigeration (www.star-ref.co.uk) with their work on heating and cooling. This point is useful to compare with community focused initiatives (such as the various social enterprises located across the city) that appear to be much more active in community activation based.

5.2. Supporting businesses through NBS

- From several interviews, the GCC and public authorities until now have played an interventionist hand in issues of health and wellbeing of residents. The shift to local business-focused entrepreneurship is not coming naturally. The context of post-industrial employment conditions, particularly for the disadvantaged, is to blame where in the past entrepreneurship was not encouraged (or necessary) for a significant portion of the population. Changing the entrepreneurship DNA for the disadvantaged may require a long-term support.

- The question here for GCC is the future role of public services within the context of entrepreneurship, business development and NBS.
- The Glasgow Chamber of Commerce does have a green business group that could be tapped into.

5.3. Problems related to businesses

- As noted above, the interviews suggested that entrepreneurship is challenging.

6. Community

6.1. Identified environmental challenges that NBS could address

- There is an extreme disparity in education levels from the very highly educated (some 120,000 students in the city) and the very poorly educated. NBS could be a clear place-based opportunity to explore education through hands-on learning.
- Currently flooding is an issue in deprived areas, where voices are less heard and whom a less likely to be insured against potential damages.

6.2. City's experience in supporting the local communities through the NBS

- Currently, much of the focus of NBS has been the responsibility of the GCC. However, there are some community-focused organisations such as the Glasgow Wildflower Nursery.
- While the GCC may not be focused on local entrepreneurship, there are certainly several 'social enterprises' (www.crns.org.uk) and community platforms which highlight community needs, for example the Heart of Scotstoun Social Enterprise (www.gusettlement.org/heart-of-scotstoun/) located in the West.
- The 'Hidden Garden' (see [here](#)) at the Tramway arts centre ([here](#)).

6.3. Challenges linked to communities in NBS projects

- Relevance, value and care are three aspects as noted earlier are critically missing (see page 4). Without making NBS relevant to local communities, there will be little value for them (and worse still potential vandalism – as noted in the Athlete's Village). With little value, it is highly unlikely that users or residents will take responsibility for the NBS projects. Conversely, with care for the NBS projects then both relevance and value are mutually enforced.

7. Knowledge-infrastructure-environment

7.1. Environmental challenges identified that NBS could address

- The city has access to three universities which means that there is great potential to link research and action in addition to strong links to British Geological Survey (www.bgs.ac.uk).
- Water is generally a major challenge that crosses land ownership and communities.
- Soil pollution is a serious issue that could be combined with education, research, SUDS and public space design.
- Maintenance, as noted earlier, is an ongoing challenge.
- GCC appears to be technically innovative but design and construction of NBS not always delivering vision.
- Responsibility for project development and maintenance is complex within the GCC and similar kinds of work can relate to various departments with different approaches (e.g. maintenance of public space related to roads and parks).

- Most examples of NBS are larger, outside City Centre – smaller inner-city spaces e.g. rain gardens are quick wins that encourage future engagement

7.2. The city's experience in dealing with technical challenges on the site related to NBS

- GCC has a strong and long track-record with developing green-blue infrastructure.
- A comment that was repeated by several people was that Glasgow was very good at attracting technology and infrastructure but not good at maintaining it.
- As a result of taking risks in exploring technical solutions for SUDS infrastructure, some technical issues have arisen which have meant that adaptations may have not been as designed. This learning experience has been useful, however the department responsible for maintenance is now apprehensive to so-called 'innovation' as it can lead to long-term unintended maintenance responsibilities.

8. Governance + decision making.

8.1. Experience in dealing with policy and decision making for enacting NBS

- KPIs have been made in terms of the Scottish Open Space Standards (see [here](#)).
- There are some constraints stipulated in terms of minimum distance to public space noted in the Glasgow City Development Plan.
- The new 'low emissions zone' may have a positive impact on the NBS story.
- WEWS Act 2011 ([here](#)) obliges public authorities to take responsibility for water-related issues.
- An interesting and important point for the management and maintenance of SUDS-related infrastructure is that if it is made to Scottish Water standard, they will maintain it (on private spaces).

8.2. Problems with governance/policy/regulation that impacted NBS

- Risks that NBS is focused only on large spaces but not on the inner-city and areas with high concentrations of users. There is also a serious challenge in retrofitting settled historic communities.
- There is very little evidence base for SUDS success. This leaves a problem for now having evidence, if the evidence suggests that SUDS have not been effective after years of investment.
- The new GCC Arm's Length Organisations may prove challenging in terms of remit and responsibility.
- GCC is generally risk averse and not comfortable about failure. Perception (fear) of open water as dangerous by the community is preventing community engagement with SUDS and creating eyesores out of infrastructure.
- Through the interviews, it was clearly noted that the GCC is very segmented. While this appears not to create serious friction between staff (with some minor exceptions), the interviews revealed the potential for potential for unintended consequences. Organisations within the council appear to have clear goals but overarching city responsibilities often missed due to lack of departmental communication – need a common vision/communication mechanism for GCC and associated organisations

9. Stakeholders

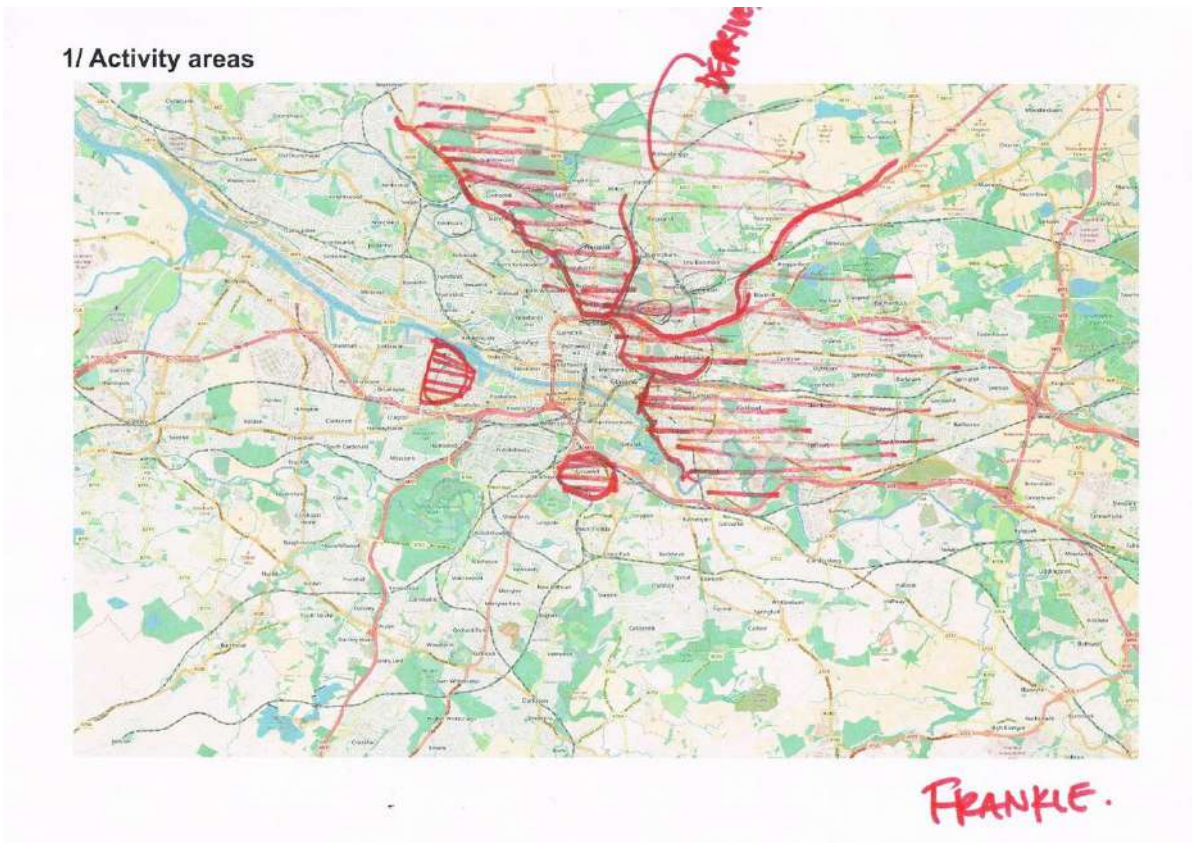
The city covers a large area, making it difficult to cover micro-scale stakeholders.

	Micro	Meso	Macro
Capital	Owners of contaminated inactive sites.	Glasgow Chamber of Commerce - Green Business Network, GCC (land)	Private Sector (e.g. Housing Associations, private developers,), City Deal funds, large-scale finance delivery mechanisms (e.g. REITs).
Business		Glasgow Chamber of Commerce - Green Business Network, GCC (land)	
Users + residents	Community oriented organisations focusing on a specific site: - Tramways / Hidden Garden - Social enterprises - Easterhill	City scale social enterprises	
Knowledge		GCC (relevant departments)	University of Glasgow, University of Strathclyde, and other higher education institutes in the City, Sustrans
Public	Community centres and social services.	GCC MGSDP	GCV Green Network,

10. Driving themes for NBS

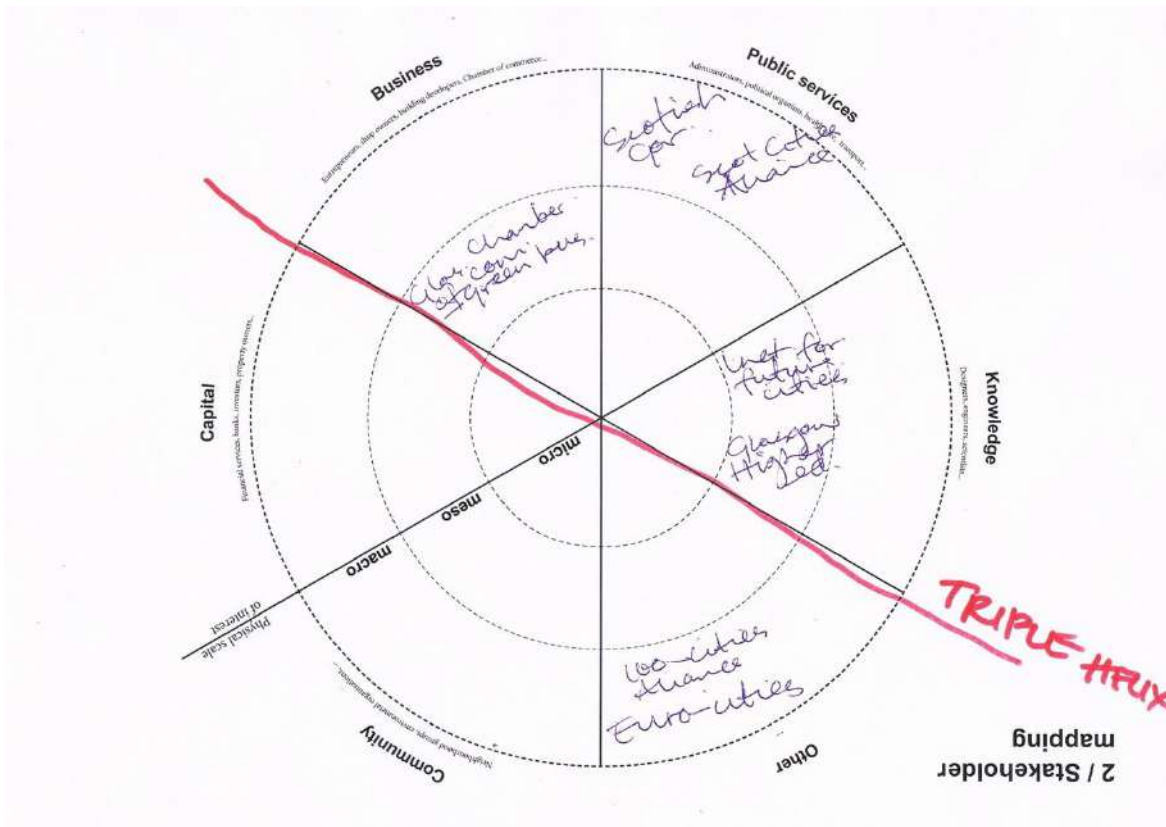
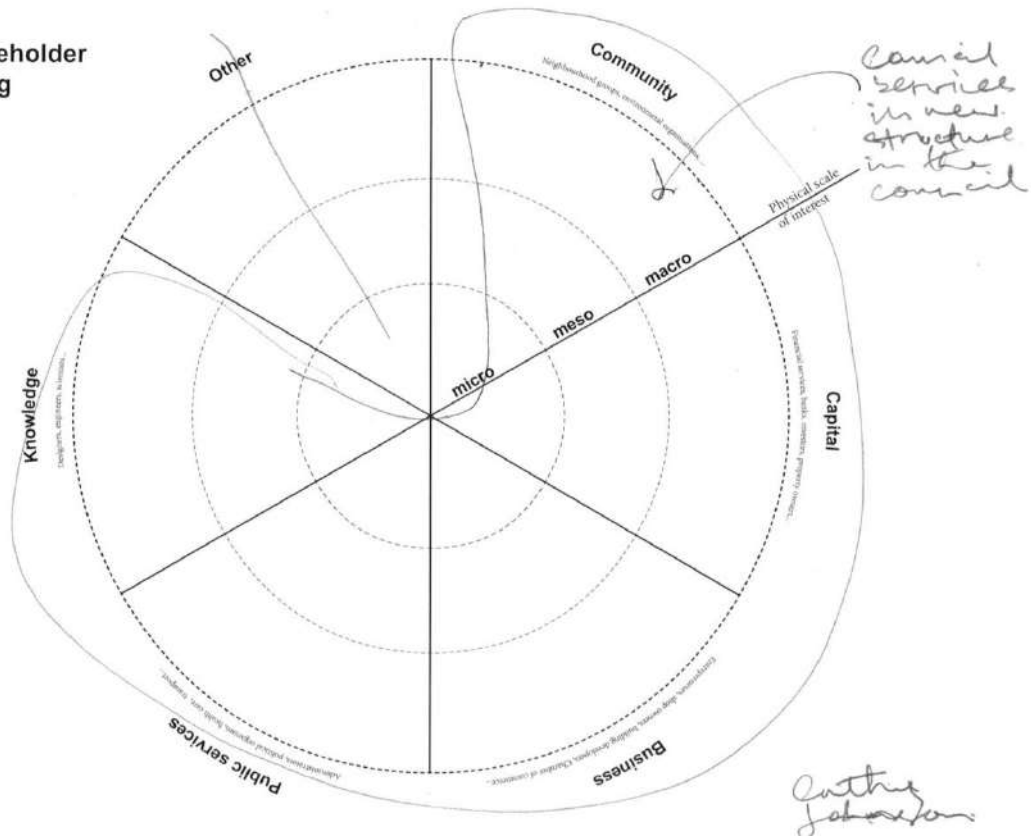
- Making NBS relevant to the community.
- Innovating long-term maintenance strategies for SUDS infrastructure. Need a mechanism to see open spaces as a positive asset that are cost neutral/profitable.
- Need to address areas for community driven action – distribution of both care the environment and responsibility for maintenance of NBS. For example, use health as a leverage for funding NBS projects.
- Ensuring common vision for the GCC and associated organisations (i.e. avoid City Property from unnecessarily selling off important tracts of land).

Appendix 1: Examples of annotated city maps



Appendix 2: Examples of stakeholder map

2 / Stakeholder mapping



Appendix 3: Photos from site visit



Top left/right - two of Glasgow's best respected parks: Glasgow Green and Kelvingrove Park.

Middle left - the Hidden Gardens, a community drive initiative in the former Tramway sheds.

Middle right - Pollok Country Park

Above left/right and left - the athlete's village and the state of SUDS interventions.

8.4 Synthesis Report - Poznań

The results of the Poznań Interviews and Debrief Workshop are presented in a separate PDF document:
[Appendix_8_4_Poznan_synthesis_report](#)



Synthesis of exploratory research



Photo: RoyalHaskoningDHV

POZNAN

January 2018

*Akceptuję dokument
od str. 1 do 42*

**PEŁNOMOCNIK PREZYDENTA
DS. FUNDUSZY EUROPEJSKICH**

Grzegorz Kamiński

ZASTĘPCA DYREKTORA

Agnieszka Górczewska

DOCUMENT PROPERTIES

Nature Document	Synthesis of exploratory research in Poznan
Work Package	WP3 task 3.1
Task Leader	UEL
Authors	OSMOS (Eric Haas and Stephan Kampelmann) AMU (Lidia Poniży and Iwona Zwierzchowska)
Dissemination level	Private – WP 1,2, 3 leads and co-ordinator
Version	20180227_Summary of exploratory research WP3
Status of Document	Draft
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Table 1. Synthesis of exploratory research in Poznan

WP	3
Authors	Eric Haas and Stephan Kampelmann (Osmos), Lidia Poniży and Iwona Zwierzchowska (AMU)
Fieldwork period	The survey was sent out in August 2017. The interviews were carried out on 20-21 November 2017. The workshop was held on 16 January 2018.
Interviewers	Eric Haas and Stephan Kampelmann (Osmos), Lidia Poniży and Iwona Zwierzchowska and (AMU), supported by Stuart Connop (UEL), Agnieszka Dziubała, Agnieszka Osipiuk and Marta Czaplińska (City of Poznan) and translator Katarzyna Matschi
Interviewees	Włodzimierz Dudlik (Aquanet) Maja Jaroszewska (Road Management Board in Poznan) Magdalena Garczarczyk – Kolektyw Kąpielisko Agnieszka Górczewska (City of Poznan) Grzegorz Kamiński (City of Poznan) Agnieszka Osipiuk (City of Poznan) Lidia Poniży (Adam Mickiewicz University) Julia Syska - Wieczorek (Municipal Greenery Management Board in Poznan) Magdalena Żmuda (The Regional Water Management Board in Poznan) Wojciech Potapowicz (Department of Environmental Protection)
Output	Audio recordings of interviews Annotated city maps Completed stakeholder maps Interviewer notes Signed consent forms Photos from meetings and site visits Synthesis (this document)

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Objectives of the exploratory research

1. Explore NbS-type projects:
 - a. identifying NbS that are planned or implemented in Poznań;
 - b. learning about what made good projects a success and what led bad projects to be unsuccessful.
2. Connect with the local actors face-to-face and allow them to have the chance to express themselves. Gain an overview of organisational conditions, including collecting information about knowledge of NbS among civil servants from Poznań City Hall and related units and organisations.
3. Identify other relevant actors (both individuals and organisations) and their capacity/interest in contributing to Connecting (for WP 1, 2 and 4).
4. Help define contacts and engagement strategies for stakeholders relevant to WP1-3 to ensure positive and constructive engagement with the project.
5. Explore organizational and financial mechanisms of NbS creation in Poznań.
Explore NbS potential in solving urban problems of Poznań and define the general narrative driving NbS in this city.

Setting and context

This document is based on two main sources: firstly, exploratory research based on a survey carried out by AMU during the second half of 2017. Carried out in collaboration with the City of Poznań, the survey focused on NbS in Poznań City Hall and related budgetary units, companies in which the City of Poznan has a share, and associations of which City of Poznan is a member. Secondly, exploratory interviews carried out by Osmos on November 20-21 2017. The latter interviews were organised by the Connecting Nature team from the City of Poznan.

These activities are part of Task 3.1: Capturing and sharing pre-existing front-runner city expertise in delivering scaled-up nature-based solutions approach comprising multifunctional objectives (Start: M1 End: M12. Lead Partner: UEL. Partners involved: All front-runner cities, AMU). According to the Connecting Nature description of work, Task 3.1 will involve “exploiting the existing expertise developed by the learning-by-doing approach adopted by each front-runner city (partners 2,3 and 4). Partner 18 (AMU) will work with the City of Poznan to capture the city’s current exemplars. Partner 15 (UEL) will work with Glasgow and Genk to capture theirs. Support in GIS spatial analysis and capacity mapping will both be provided by partner 27 (GeoGraphic). This pre-existing capacity will be used for the development by UEL (partner 15) in partnership with front-runner city Partners (2,3 and 4) of a dissemination document to outline the specific nature-based solution exemplar delivery programmes and scale-up opportunities exploited in each front-runner city. In so doing, it will begin the iterative capture and transfer of adaptive governance processes to work packages 1 and 2 and, ultimately, fast-follower and multiplier cities. Outputs from this Task will feed into the knowledge mapped and systematised in Tasks 1.1 to 1.3, led by UDC (partner 16), and the co-development processes in Tasks 2.1 to 2.4, led by Drift (partner 14).”

The milestone that is associated with this task (Milestone 3.1) is a draft of the KPIs for the FRCs to be assessed using the Eklipse framework (due in M12); the deliverable (Deliverable 3.1) is a report on FRCs current expertise and experience in nature-based solutions based on a synthesis of experiential workshops and concluding with a process chart for transferrable KPIs approach to NbS (due in M16).

The interviews were organised by the CN team of the City of Poznan based on exchanges with Osmos (Eric Haas, Adrian Vickery Hill and Stephan Kampelmann). A site tour was organised by the city of Poznan, visiting a range of urban renovation projects and emblematic green spaces in Poznan.

Methodology

Interviews

The team from the City of Poznan invited both internal (i.e. from the city council) and external (from other public organisations or NGOs) colleagues covering themes related to public space, environment, water management, mobility, planning and sustainability.

Regarding the interviews carried out in November 2017, each conversation lasted approximately one hour and was conducted by Eric and Stephan with support from Stuart (UEL) and Kasia (translator). Notes and audio recordings were produced during the interviews. The interview was loosely structured by a questionnaire including ten themes and a range of sub-questions for each theme (see Appendix). The themes were drawn from a review by UEL of the Eklipse framework and related documents, plus specific financial and economic development questions from TCD. The same themes are used below to structure the synthesis of the discussions. Interviewers were encouraged to make use of additional supporting materials: a stakeholder map and a city map. Examples of how these documents were used are provided below.

Survey of NbS in Poznań City Hall and related organisations

A questionnaire on existing NbS experiences was prepared by AMU and consulted by the Project Coordination and Urban Regeneration Office (City of Poznań). The questionnaire was supplemented with introductory information about the CONNECTING Nature project. To facilitate good understanding of questions, a definition of NbS together with an open list of NbS examples were provided. Respondents were asked to fill in internet-based or standard paper forms. The questionnaire included questions concerning facts and respondents' opinions. It consisted of general as well as detailed questions concerning NbS exemplars.

The questionnaire was distributed by email to 20 different departments of Poznań City Hall and related organisations, companies and associations in August 2017. 'Representatives from the following organisations replied to the questionnaire:

1. Office of the Mayor of the City (Gabinet Prezydenta)
2. Aquanet S.A.
3. Road Management Board in Poznan (Zarząd Dróg Miejskich w Poznaniu)
4. Department of Transport and Greenery (Wydział Transportu i Zieleni)
5. Palm House (Palmiarnia Poznańska)
6. Zoological Garden (Ogród Zoologiczny)
7. Metropolis of Poznań Association (Stowarzyszenie Metropolia Poznań)
8. Poznań Town Planning Office (Miejska Pracownia Urbanistyczna)
9. Municipal Transport Company in Poznań (Miejskie Przedsiębiorstwo Komunikacyjne w Poznaniu)
10. Department of Environmental Protection (Wydział Ochrony Środowiska)
11. Department of Economic Activity and Agriculture (Wydział Działalności Gospodarczej i Rolnictwa)
12. Department of Urbanism and Architecture (Wydział Urbanistyki i Architektury)
13. Department of Real Estate Management (Wydział Gospodarki Nieruchomościami)
14. Municipal Greenery Management Board in Poznan (Zarząd Zieleni Miejskiej)
15. The Board of Municipal Residential Resources (Zarząd Komunalnych Zasobów Lokalowych sp. z o. o.)
16. The Project Coordination and Urban Regeneration Office (Biuro Koordynacji Projektów i Rewitalizacji Miasta) (4 questionnaires)

Data collected was analyzed using standard descriptive statistics and is summarised in green boxes throughout this document.



Executive summary

Our exploratory research confirmed Poznan's status as a European frontrunner for Nature-based Solutions (NbS). This conclusion is not only based on an inventory of many small-scale environmental projects, which often involving a participatory element, which the city authorities initiated or accompanied over the last 5 years; it also accounts for the fact that Poznan features a rare example of a visionary, ambitious and large-scale NbS that has been maintained over decades. It is a solution that improves the quality of life of many Poznanians every single day by providing cleaner air to breathe and access to vast recreational green spaces in the vicinity of their homes, while also creating habitats for many species of plants and animals. We refer of course to the city's elaborate system of green rings and wedges whose inception goes back to the work of urbanist Hermann Joseph Stübben, but which owes its current form to the ideas that the architect Wladyslaw Czarnecki together with the naturalist Adam Wodziczko developed in the 1930s.

Many of the conversations we led in November 2017 that are summarized below evolved in some way or another around this historic "Nature-based Solution" in Poznan. Many interviewees expressed concern that the system of green wedges and rings is coming under untenable pressure from Poznan's booming housing market, with new developments eating into preserved green spaces. Others argued that the system still offers room for improvement, for instance in the dense city center where the wedges become narrower and high-quality green space is scarce. One interviewee also referred to the "innovative" approaches to rainwater management that were implemented in Poznan during the first half of the 20th century and that could serve as inspiration for finding (nature-based) solutions to the city's current flood risk. Almost a hundred years after its inception, the system also offers opportunities that could not have been foreseen, such as the use of the green corridors for improving the bicycle mobility around the metropolitan area.

Against the backdrop of this impressive historical achievement, a series of recent projects and initiatives complement the picture of Poznan current standpoint in terms of NbS. First, there are several large-scale projects with potential relevance for the objectives of Connecting Nature: an ambitious city-wide rainwater strategy is currently being developed; the **Warta Riverside development in the Wilda district**, including an urban beach and the bicycle path "Wartostrada"; several city parks will be renovated or created; and sizable post-industrial areas redeveloped over the course of the next years. Second, we identified a surge of initiatives at the local level: these concern the creation of pocket parks (such as the **Jezyce Pocket Park**), green roofs, **social gardens** and other small-scale initiatives whose combined impact could be just as large as the city-wide flagship projects.

Like in other European cities, it seems that the City Hall and its related departments and organizations are very much central to the development of NbS in Poznan. Other stakeholders, such as civil society organisations and businesses, seem to have played a less visible role so far. This being said, the relatively recent creation of civic budgets and the timid but increasing proliferation of collective gardening and other activist-based environmental initiatives are indicators that the development of NbS could become more of a co-creational process between different types of stakeholders. A key challenge in this regard seems to be finding ways to align NbS with business interests. Indeed, Poznan's business community has yet to identify opportunities in this area. More worrisome it that powerful economic players – such as real estate developers – are considered by many interviewees as opponents rather than partners. This is all the more problematic as Poznan's success as one of Poland's fastest developing and most prosperous cities, is chiefly an economic one. This success fuels some of the above mentioned NbS projects: a prosperous local economy also means a prosperous municipality that can invest in green infrastructure, or successfully attract European funding and subsidies for such investments. Conversely, the successful implementation of NbS could also affect positively real estate values, thereby creating the scope of win-win situations between real estate developers and advocates of NbS interventions. This being said, Poznan's historic achievement of maintaining a fully-fledged nature-based solution – the system of green wedges and rings – over such a long timespan could become a victim of the city's economic expansion.

Map with projects/sites

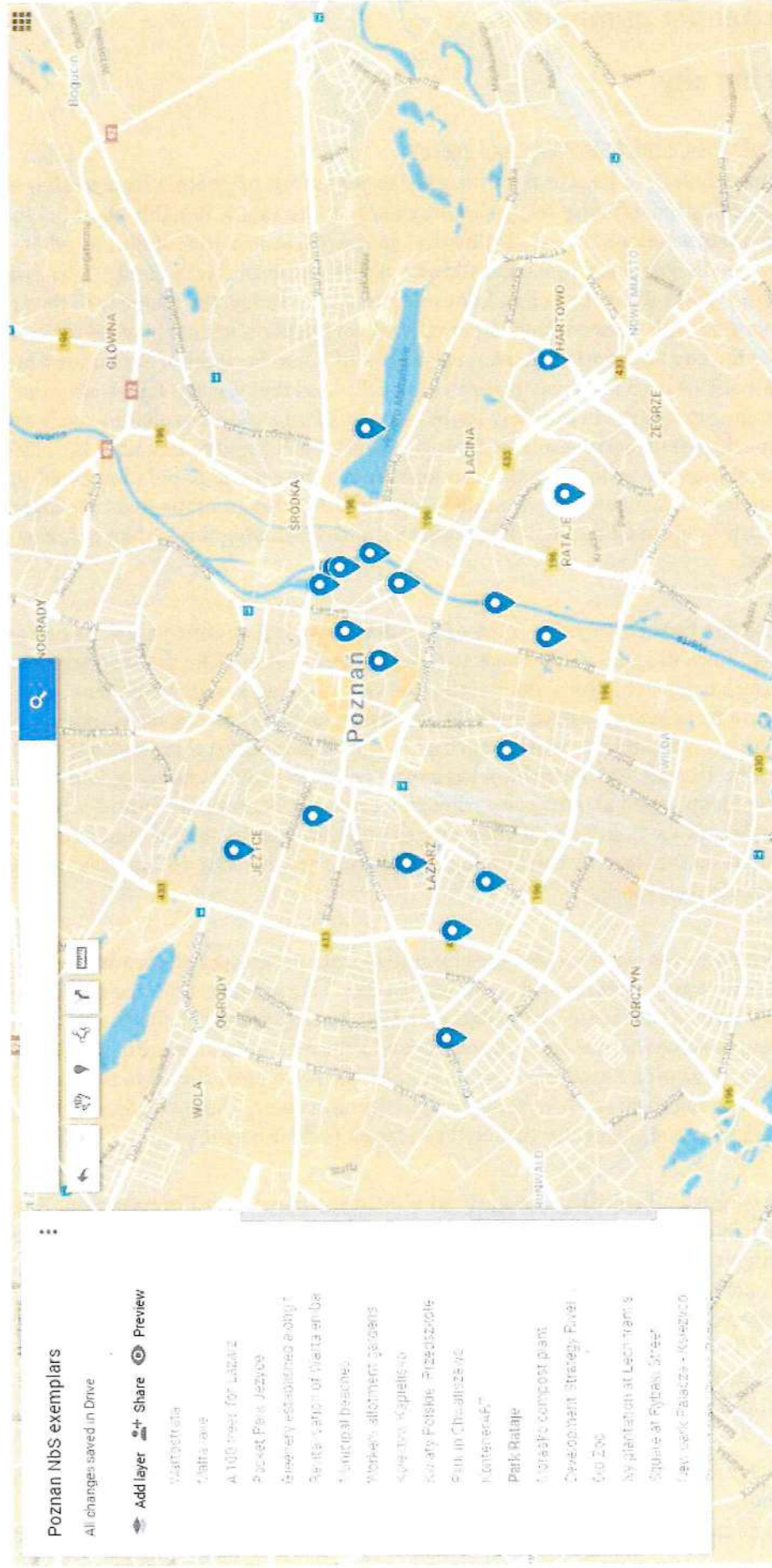


Figure 1. Map of Poznan with project sites.

Source and link: <http://bit.ly/2muuoUm>

Theme-specific summaries

1. About the city

1.1. Perceived current major challenges / issues

- The morphology of Poznan is still marked by **a system of green rings and green wedges** proposed by the urbanist Wladyslaw Czarnecki in the 1930s. Roughly speaking the system of green wedges follows the existing natural geographical structure of the city where smaller rivers (the Bogdanka, Cybina and Główna as well as the Głuszykna and Michałówka) meet up with the Warta River streaming from south to north. Today, the majority of the green wedges are covered with forests which under current zoning plans cannot be used for construction. Inside the city boundaries, there are also around 8,500 hectares of agricultural land that can potentially be used for development - especially land that was left fallow after the collapse of collective agriculture in the early 1990s. Almost all interviewees spontaneously referred to the Czarnecki system and commented positively on its value and function for the city of Poznan. There also seems to be a strong awareness among the general population about the value of this system. The interviewee from the Greenery Department of the Road Management Board explicitly mentioned the goal of maintaining and developing this system of green rings and wedges.
- The system has come **under a lot of pressure during recent years**. As one interviewee put it: "Since the mid-1990s a race to development started". The problem seems to be one of striking a balance between maintaining the green wedges system while also catering to the pressure from the real estate market that pushes towards housing development. New housing also comes with other pressures, such as the need for additional parking space, increased rainwater run-off, etc. There have been local petitions against changing zoning rules in favour of new construction and for preserving green zones; halting urban sprawl is also one of the priorities of City Hall. Several interviewees said that Poznan should reinforce its plans and strategies so that the city can develop and provide new housing without disrupting the historic system of green spaces.
- The interviewees reported that the city suffers from urban sprawl, creating quite substantial problems caused by increased commuter traffic. Like in other cities the **main drivers for urban sprawl** are noise and pollution in the city center, but chiefly the considerable gap in real estate values between the city center and suburban areas. According to the director of the city's revitalization department, some people who previously moved to the suburbs are affluent enough and ready to come back to the city center. There are also a number of vacant plots close to the city center that could be developed for housing.
- More generally, **mobility is a central challenge for many Poznanians**. Road congestion is high and there is a strong pressure to increase the number of parking spaces, mostly due to the large number of commuters. It is difficult to commute into the city center from the North; residents of that area would like to see a new tram connection. One interviewee pointed out that there has been a lot of efforts to improve mobility within the city center, especially around Święty Marcin Avenue. However, the park & ride system could be improved. A clear challenge for the city seems to be finding ways to reconcile car mobility (parking, congestion, roads, pollution) and greenery.
- **The city of Poznan is relatively compact**; this is perceived as positive but makes it also difficult to identify and develop new green areas. According to some interviewees, there are grounds that could be put to better use in the city center, which is perceived as not being green

enough. Some mentioned a desire to extend the “biologically active areas”, an objective that still needs to be defined and operationalised. Better use of open space has the potential for achieving this aim.

- The freshwater and sewage systems are currently being renovated and in the phase of completion. The water quality in the river has improved over time, but the **problem of rainwater management** has yet to be resolved. Especially if one takes into account further urban development (buildings, parkings, etc) and the challenges caused by climate change. Rainwater currently flows into a combined sewage system. In total, around 12 water channels feed into the Warta River that runs through Poznan (these streams are managed by the province of Wielkopolska, a situation that creates a governance challenge at the city level). The issue of rainwater management has been underestimated in the past. The areas of Wilda and Jezyce experienced water absorption problems (also for trees, who stand in water because it cannot infiltrate). During episodes of strong storms, like those that occurred in the summer of 2010, Poznan can become flooded. The cost of increasing the capacity of a pumping station after the events in 2010 were reported at 40 million PLN. It is unclear whether the pumping stations will be able to cope in 5 or 10 years, which means that the current configuration does not represent a permanent and sustainable solution. Aquanet –the city’s official body responsible for the water and sewage infrastructure - estimates that there are 40 locations in permanent risk of (pluvial) flooding. The problem is not the Warta River itself, but rather the rest of the system. There were natural water courses and very old water retention systems; but, following the massive development of housing and the associated impermeabilization of agricultural land and disappearance and canalisation of natural watercourses , this system partly lost its efficiency.
- It should be noted that water-related challenges and problems are quite location specific, with rainwater management being acute in the west of the city, whereas issues with groundwater/snow water melt appear in the southeast. It is likely that this requires adaptive solutions based on the needs of specific location (as opposed to one-size-fits-all).
- According to some interviewees, the city is marked by **high temperature swings** (although, in fact, Poznań’s UHI (Urban Heat Island) is moderate in comparison with other cities of similar size). In the city center, heat island effects are reported during the summer; there were several winters without snow, but the regular dispersion of salt on streets when temperatures drop below zero exerts pressure on local vegetation, and especially trees, due to highly saline run-off of salt from gritting in winter. This phenomenon appears to exacerbate problems with soil degradation in the centre. As a consequence, many street trees are reported to have been unable to collect enough water during the winter. The interviews revealed a perception that this problem seems to be more salient in Poznan than other Polish cities. The large fluctuations in water and temperature levels render the management of the river’s embankment both important and difficult. In the 1970s, a concrete embankment was built along the Warta river in some areas of the city center. Currently, a large-scale project developed by the Water Management Board tries to renaturalise the embankment, aiming at natural retention and infiltration of water in a larger area. The embankments are being more and more used by Poznanians and tourists; people spend more time there. The renaturalisation of the concrete embankments foresees recreation facilities, but only in areas where the embankment can be made accessible through stairways.
- It should be noted that **greenspace is not evenly distributed throughout the entire area of Poznan**: there is more greenspace in peri-urban areas compared to the old city centre. This is possibly a result of the green wedge system (i.e. wedges get narrower the closer one moves to the centre). The relative lack of green space in the city centre seems to drive the perceived need to insert green pockets back into the dense centre where many of the above challenges/issues are exacerbated by the lack of greenspace. Moreover, biodiversity

considerations appear to have received a relatively low priority in current greenspace strategies.

1.2. Perceived opportunities

- Aquanet/City Hall want to go in the **direction of a nature-based solution to flood risk**, to use nature in an intelligent and innovative solution. They will establish a spatial planning solution that will allow the natural infrastructure to cope with predicted rises in volume and intensity of rainfall events. This will turn rainwater into an opportunity. Three categories of retention have been identified: attenuated flows, retention on the spot and a combination with greenery. The goal is to generate projects that will show that it is possible to combine green and blue infrastructure solutions. Moreover, Aquanet/City Hall are currently working on a water management strategy with Arup Polska. The latter are mapping resources, for instance what kind of management tools and instruments could be enabled. Both specialists from the municipality and from Aquanet are involved in this work. In the framework of this study, a mathematical simulation of very high rainfalls will be developed.
- The Road Department is exploring the possibility of **using microspaces or small patches of land for greening the city center**. This being said, they think that parks and gardens would be a better location for big NbS projects, but this would be the realm of other departments. For several years, the Road Board has been cooperating with the Housing Estate Associations and private individuals to create “pocket parks”.
- In the 1960s the Warta river was still extensively used for water transport; but nowadays freight traffic on the river has nearly dropped to zero. However, some shift is apparent as a new strategy for inland waterway navigation is prepared at a national level in order to prepare the rivers for inland freight transport. **This forces Poznan to think more about the use of the river and water**, which will be turned into part of the network of international waterways.
- There are recent initiatives of **cooperation at the scale of the metropolitan area** (which includes a number of municipalities around Poznan). This is a promising development, especially with regards to mobility policies. Respondents of the survey also pointed to NbS that could be applied on a broader, supralocal scale, such as building a network of regional connections.
- There has been intensive **international cooperation** between City of Poznan, the Greater Poland Voivodenship (Wielkopolska Province) and the province of Drenthe (and the City of Assen). Agnieszka Osipiuk, a member of the CN team from the City of Poznan, worked for this partnership. What is more, a consortium including several Dutch consultancy companies produced a Development Strategy for River Water in Poznan in 2012. These water-related cooperations between Poznan and The Netherlands are an asset that could perhaps be reactivated for NbS in CN. There has also been cooperation with the Senate of Berlin regarding the methodology and design of public spaces; Berlin is also cited as a reference for community garden projects both by representatives of the grassroots movements and the City Hall.
- There are some **post-industrial areas with big potential for redevelopment** into multifunctional areas (commercial, housing, green spaces). Examples include the slaughterhouse (privately owned), the old gas plant (the city has a minor share; different public state gas companies, apparently also Aquanet holds a share) and a 200 acre area besides the Poznan central station (previously used for train maintenance). The former gas plant is still used by some companies, but these are expected to leave within the next 5 years: a

negotiation about the future of the site will sooner or later start. The slaughterhouse will be sold and redeveloped with a mixed program (housing + commercial) to a consortium of parties. The city expects this to happen over the course of the next year. Currently the city already has supported some young entrepreneurs to use the site temporarily, thereby taking the lead in place-making. As for the railway redevelopment plot, the timeline so far is not known, but the areas are recognised for their development potential as well. The revitalization of the post-industrial areas will require new mobility infrastructures (new roads, new pedestrian bridge) and additional parking spaces.

- The city of Poznan has established an instrument to **facilitate bottom-up initiatives**, in accordance with the city's policies. This system consists of **civic budgets** (to a maximum of around 30k EUR (120k PLN) to be allocated to specific projects after a public voting process (the population votes for projects of their interest and preference) after they first pass an internal "due diligence" test that serves to check whether the proposed project are in-line with local policies and regulations. Some projects included activities like urban gardening, new public greenspace, etc. The selection process has evolved to react to a bias towards larger projects that was apparent in the early stages. There are now two scales of funding: larger (city scale) and smaller (local scale) projects.
- **Roof space and wall spaces** were identified as opportunities for greening that are not currently being exploited to a great extent. There is an awareness about this opportunity but, so far, no strategy/policy has been developed. Green roofs can be included in the spatial planning process. In general, according to Polish national law, green roofs can be considered in spatial planning as biologically active surfaces. In practice, however, this can be difficult since sometimes green roof surfaces can be used to replace ground-based green spaces, which have a different biological quality. Overall, green roofs and/or walls need to be better integrated into spatial planning, for instance into the master plans approved by the spatial development committee.
- Another area of potential opportunity are the **Warta embankments in the city center of Poznan**. One section is already planned for renaturalisation (see below), but there may be further opportunities for introducing innovative NbS in additional sections.
- **Protection and preservation of biodiversity and creation of a network of protected areas**. Natural areas protected by law in Poznan do not form a connected network, therefore it is necessary to increase the cohesion of the protected areas system as well as to ensure the continuity and spatial cohesion of ecological corridors. Biological invasive alien species pose a threat to biodiversity conservation, in addition to the loss of habitats. They are a problem, especially in protected areas, where they displace native plant species for the protection of which these areas have been created. In order to protect and sustainably use biodiversity, and thus maintain the appropriate status of species and natural habitats, it is necessary to strive to maintain the continuity of the natural systems of the city with the regional, European system, undertaking rational actions. The achievement of the objective will enable the creation and development of a network of valuable nature areas and the designation of new protected areas, management and restoration of habitats of the most endangered species.




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2. State of NbS (and related projects)

2.1 Past projects that could be used as NbS exemplars

Data collected in the exploratory survey among City Hall departments and related organizations indicates that 90% of respondents had previously heard about Nature-based Solutions and green infrastructure. More than half of them (63%) reported that the activities of the department in which they work contribute to the emergence of NbS. A summary of the actions identified by respondents that are undertaken in their respective units is presented in Figure 2.

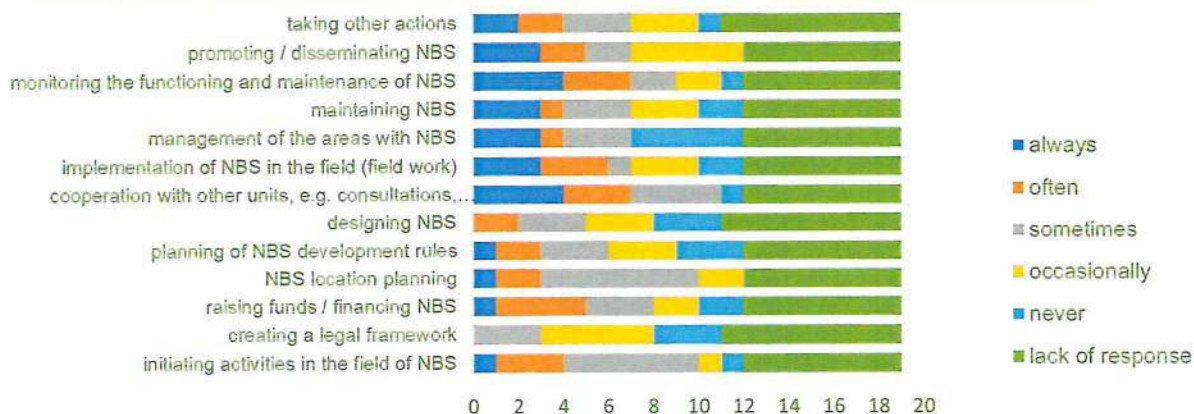


Figure 2. Actions in the field of NbS undertaken by the City Hall and related units.

The representatives of surveyed entities mentioned a number of projects related to NbS, some of which are planned, some are in the implementation phase and some of them have already been implemented (respectively 39%, 33%, 28%).

- The **historical green wegde system in the city of Poznan** could be considered as an NbS exemplar. It designates corridors that are ecological links between the areas of the wedge-shaped greenery system of the city. A current project aims at identifying corridors to ensure the continuity of greenery as well as to indicate attractive areas for pedestrians and bicycle mobility through the corridors. Related to this are different initiatives aimed at **improving the soft mobility infrastructure of Poznan**, for instance, **new cycling connections between Poznań and the Swarzędz commune**. Using the location in the green wedge in the east of the city, the planned infrastructure should encourage residents of both cities to choose a bicycle as an alternative means of transport. The **project “Wartostrada”** consists of the construction of a pedestrian and cycle system along both banks the Warta river valley on the floodplain and embankment. Wartostrada as a bicycle route has the function of an alternative system of commuting that supplement the public transport system.
- There are no recent experiences with nature-based water management projects, except a few small-scale water gardens. But Aquanet has been able to identify and characterize the historic approach to rainwater management; **in the Solacz area** to manage groundwater, three beautiful ponds were built, a recreational lake and a bypass. Developed in 1910, then in the 1930s there were nice villas developed in the same area. This became one of the most desirable areas to live in Poznan. The **Malta lake and the ponds close to Antonin**, which clean the water of the Cybina River that flows into the Malta Lake, were cited as examples of recreational areas created in the late 1940s early 1950s.

- **“A 100 trees for Lazarz”**: a bottom-up project started in autumn 2016 and financed through the civic budget (ca 110.000 zlotys, including one year of maintenance). The project is being carried out in cooperation with the Road Board.
- **“Pocket Park Jezyce”**: created in 2015 on public ground. There were new building conditions placed on the housing developer by the Road Department with regards to a certain greenery area between the street and the building. Inhabitants participated, were consulted on the project: they wanted something else, a more social aspect of the space, an organized, formalized park. The park included high diversity, different types of plants. Different types of surfaces, less pavement. Furniture, table, natural formed greenery. The housing developer did not erect the final version; the project that came out of the citizen participation was more expensive and was not fully financed by the developer. The city supported this project, and the real estate developer donated the money that was budgeted for the green area to the Road Board to co-fund the development of the space. The space is managed by the Road Board.
- **Greenery established along the Stablewskiego Avenue**. This was an important project. After illegal parking on strips of greenspace, strong pressure was applied by the hospital for extra parking places. They introduced a compromise, using a surface that could absorb rainwater. They use crushed stones (gravel) on the sidewalks and coarser gravel in the parking. They combined this with retaining the greenspace.
- **Revitalisation of Warta embankment in the city center of Poznan**. The restructuring of 4 kilometers of embankments in the city of Poznan has been designed. The plan is to use stone baskets (gabions) that are to be covered by soil and grass. There are several functions to the system, including avoiding erosion and flooding. The system would also enable water infiltration and retention. This project is in the status of the last administrative decisions. The Water Management Board has developed the construction design and is now seeking ways to finance the operation. A part of the project is likely to be financed, notably a pilot section between two bridges 2 kilometers apart in the city center (20 million zlotys for this part). The project could potentially result in more maintenance of the grass layer in the beginning; but after several years, they need to be maintained only twice a year. Reference projects are: Wroclaw (Odra) and projects along the Prosna river. Estimate for flow in the Warta in the case of extreme water events: 800 m³/s. Normal flow: 40 m³/s.
- **Municipal beaches**. Around 2010, there was a general atmosphere in city for a need to reconnect with the river. Popular slogans that appeared in the media were “Poznan forgot about the river” or “The city turned its back on the river”. This was partly meant as an accusation against the city administration. There was a perceived need by Poznanians for recreation in a green environment, close to the city. This led to a regeneration process of the river banks that is still on-going. The municipality reacted by developing different interventions along the banks of the Warta river (CN colleague Marta was closely involved in this process): It started with the temporary use of art (see KontenerArt) in that area. Since 2012, from June until August the municipal beaches operate in Chwaliszewo. Every year the city council improved the management of the beaches; there has been an evaluation and adjustment of the procedures. There is an annual public tender for receiving a subsidy; parts of the activities proposed by the winning bid should be free and the consumption of alcohol is regulated. The annual events on the banks of the Warta River are mostly related to recreation and sport during the summer and target various age groups. In 2018, there will be one big location with a public beach show-casing NbS. The idea is to create a location in which “a part of the countryside is brought into the city”.

- **Workers allotment gardens.** Most of them are situated along the Warta in the south, which are the cheapest green areas in the city and some of them situated on areas at flood risk. There are 92 allotment gardens, with ca 100-1000 plots in each of them. In total, they account for almost 19,000 individual plots, which means that a relatively large number of Poznanians has access to this type of green infrastructure. The law on allotment gardens was changed in 2013 and regulates how the Polish Association of Allotment Gardens operates. While they should be in principle open to the public, some gardens are relatively closed; there might be scope for opening them up more to non-gardeners to improving the way the gardens are managed.

- Partly based on examples of **collective urban gardening** in other European cities (especially Berlin), at least three initiatives of “**social gardens**” have appeared in Poznan in recent years. One of them is carried out by the “**Kolektyw Kąpielisko**”, a non-profit organisation founded by a group of landscape architects, architects, designers and gardeners. Kolektyw Kąpielisko (Bathing Pool Collective) was formed in the framework of the “Generator Malta”. The group was interested in social gardening as a means of urban revitalisation. This collective runs a social garden situated next to an old outdoor swimming pool (hence the name) in the Kasprowicza Park. The city administration wants to identify more spaces for **social and collective gardening**. One strategy is to open existing gardens schools and preschool/kindergarten to the public. This is happening in the context of a **pilot project in Kindergarten Nr. 42** run by Magdalena Garczarczyk (one of the interviewees). This project will involve the establishment of an open garden in the Wilda district, an area that is struggling with low access to greenery. As part of the project, an existing garden will be modernized based on the concept of a "natural playground", and part of area will be accessible to residents as a place of rest for parents and a place to play for children. There will also be a social garden that residents and pre-school children will be able to use. Initially, the garden will be open during the kindergarten’s working hours, but with time it will also be open on weekends and holidays and will be available to the general public. The garden is planned to hold educational workshops related to gardening, as well as special events such as birthdays, picnics, and festivities. The interviewees insisted that the function of social gardens is to activate the neighborhoods; they have an influence on the city’s development. Most of them are more about making social connections than the production of food. One challenge associated with developing social gardens is the strong presence of more traditional allotment garden sites that are widespread in Poznan (see above). Typically, people interested in managing social gardens are already managing their own allotments and, as a consequence, are less inclined to engage in new projects. On the other hand, new residents that move to Poznan from elsewhere might be interested in joining community gardens. In kindergardens, gardens are being modernized in such a way as to make use of natural solutions, in contrast to ready-made structures installed on playgrounds. For example, the gardens are equipped with earth mounds, tunnels, labyrinths with bushes, wicker shacks, sensory paths with the use of natural materials, meadows as a place of nature observation, houses for insects and birds, barrels for rainwater, composters, etc. In addition, training and promotional activities are carried out in the field of creating natural playgrounds, e.g. workshops for pre-school staff and a catalogue of good practices in the area of pre-school garden arrangements.

- **Park in Chwaliszewo:** The water course of the Warta River had been changed in the 1960s/1970s. The northern part of the area was used for circus and fairs and as a temporary car park; a buffer car park. It was realized that this area had deteriorated. The project involved the construction of the park "Old Warta River Bed" in the area of Czartoria - Chwaliszewo – Mostowa streets. The park is a big success: winning second best project in a national competition for public space. They organized workshops bringing together experts and citizens; they developed together the guidelines of what is needed, what should be done. Local residents and people from the area were taken into account: the residential community was

consulted and influenced, for example, the design of the Wartofrajda equipment for which parents and children expressed their needs with respect to the playground in this area

- The finalised design was informal, completed by architects of the 1050 Architecture Studio. The River Bed Park takes inspiration from the old river bed, and there is an element of water management in the park; gravel patches alongside paths for water absorption. The gravel patches were retrofitted this year, after observation of the opportunity for water retention. The **KontenerART** (“mobile culture center”) started in the Jezyce district in 2010. Since 2012 it has been situated at the edge of the in Park in Chwaliszewo. One of the interviewees stressed that residents are not completely happy about the KontenerART (level of noise, high traffic). The residents assumed there would be two or three events during the summer; they welcomed the idea of small events. The reality has been a much more intensive programming. Instead of the KontenerART project, residents appear to favour a playground to be situated on that spot. The Wartofrajda playground has been recently established in the Summer 2017. The principle of renovation of parks is to get back to historical values, but without necessarily going back to the initial design. In the 1950s and 1960s, there was less variety in species. Today more varieties are introduced in the parks. One interviewee pointed out a change in mentalities and expectations regarding green spaces: “People used to look at plants, now they want to use the green spaces: playgrounds, workout, recreational places. Now people are expecting more and more facilities in parks, we have to reintroduce green again.”
- **Consolidation of the park area in the Rataje district.** This area was initially planned in the 1970s and is now in secondary planning stage. The Rataje Park covers almost 15 ha of undeveloped land in the vicinity of housing estates built in the 70s and 80s of the 20th century consisting of 5 and 10 storey buildings. So far there seems to be no clear overriding concept for the entire space. There were no participatory workshops in the beginning of this project. Partly related to the complicated legal status, different plots. There was no focus on rainwater. The surface of the park should be as diverse of possible. The municipality introduced species that are better able to retain water. The municipality employed a “water management inspector”: due to this, water consumption could be reduced by 30% and information about water absorption and irrigation was gathered. The municipality wants to integrate the entire irrigation activities. Irrigation systems exist in 13 parks, and the water management inspector was in charge of all of them. There has not been any coordination yet between Aquanet (Dudlik) and the water inspector.
- For the last two or three years there has been a **compost plant run by a PPP in Morasko**; the subcontractors bring the organic material to this plant. The organic waste of households appears to go to this plant. The compost is not systematically used in the city’s parks. In November 2017, the city council prepared a law for segregate waste bin.
- In 2012, the city cooperated with international partners for the “**Development Strategy River Water Poznan**”. The study is summarised by the Rotterdam Center for Resilient Delta Cities as follows: “In recent years the Polish City of Poznan has experienced heavy floods from the River Warta which revealed the necessity for interventions to improve the river safety. Also in the last decades the City of Poznan has turned its back to the river resulting in the river zone being an unattractive area in the center of this appealing city. The Development Strategy combines water safety measures with interventions to increase the attractiveness and socio-economic strength of the city. The financial and economic feasibility of the proposed interventions have been integrated in the strategy.”
 - o <https://www.royalhaskoningdhv.com/en-gb/projects/development-strategy-river-water-in-poznan-poland/6025>
 - o <http://rdcroterdam.com/projects/development-strategy-for-river-warta-in-poznan/>

- Another interesting project is the **creation of a honey garden** in the Old Zoo. The aim of the project is to create a living environment for pollinating insects and to increase their populations in the agglomeration of the City of Poznan. It would consist in designating plots and sowing annual pollen and nectar-rich plants every year. The plots would be sown by children from Jezyce schools, thus participating actively in the project. Suitable perennial plantings have been used to attract butterflies to the park. Moreover, In the Old Zoo it is also planned to build a rainwater collection system from the aviary building and then directing it to the ponds located within the Zoo. The ponds now are supplied with water from the municipal sewage system - a planned system of bringing rainwater to the ponds would enable Zoo to reduce costs of water. Another element is the completion of works related to the improvement of aesthetic values of the Old Zoo by planting boxwoods and roses in the park area and by removing unnecessary bushes.
- **Also in the Old Zoo a revitalization of herbal garden is planned.** The present herbal garden will be divided thematically into protected Polish plants and herbs (spicy, medicinal and used in cosmetics). The current herbal garden is located in the area of the Old Zoo between Bukowska Street and Zwierzyniecka Street, Gajowa and Kraszewskiego Street.
- **Installation of nesting boxes for birds** reducing insect pests - flies, black flies, mosquitoes, using natural control methods by enhancing swift populations. Swifts are birds that do not build standalone nests in vegetation. Instead they settle in any large enough and safe crevice. Formerly inhabiting rock crevices, swifts adapted to the conditions prevailing in cities, when high stone buildings with numerous holes and crevices appeared. They have been able to utilise both old construction and new-build made from concrete slabs. When the insulation of buildings began, their number decreased.
- **Planting of ivy at the "Lech" tram stop** at the level of the entry to the tram tunnel of the "Franowo" route. On the retaining walls of the entrance to the tunnel, spray painted graffiti appears. To improve the aesthetics and to limit the graffiti painting, it was decided to plant ivy on the walls of the tunnel that have access to sunlight and rainfall.
- **Square at Rybaki Street** - Changing a city square that was regularly gridlocked with cars into an oasis of greenery. As part of the renovation of the square, decorative flowerbeds were created and stone bands of granite blocks were made. An interesting solution is the possibility of crossing the square among greenery on granite slabs. The newly established greenery consists of trees, shrubs and perennials. Apart from benches, baskets, bicycle stands or posts, a chess table was also mounted. Square at Rybaki Street is another element of the transformation of Poznan's street greenery, which will be an ongoing process for over 10 years.
- **Construction of a park in the location of Palacza - Księżycowa – Hevelius streets** that covers almost 4 hectares of undeveloped area surrounded by multi-family buildings.
- **The competition "Green Poznań"** is implemented as an initiative of the Mayor of Poznan since 1994. The competition is developed for Poznan residents, institutions, establishments and social organizations. Participants can submit their projects to the competition in five categories: balconies, home gardens, urban green spaces, plots within the Family Allotment Gardens and green belts.

Respondents of the survey were asked to assign the NbS exemplars to defined fields of actions (Fig. 3). Most activities are related to leisure and recreation, followed by urban green space and health and well-being issues.

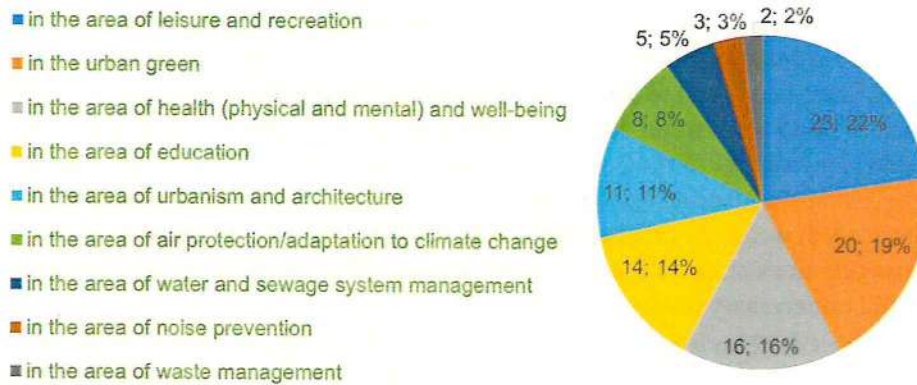


Figure 3. Areas in which the NbS is implemented.

Despite the declarations of the respondents that they had heard about the nature-based solutions/green infrastructure it seems that the concept of NbS is understood differently and various activities that improve the quality of the city's environment and the quality of residents' life are perceived as NbS. Some of the respondents indicated that NbS activities and projects included: the construction of a rainwater collector that will contribute to improving the quality of Warta water, establishment of a traffic-calmed zone, aerators assembly on the system of connected Wilson Park ponds, installation of foggers and water curtains that are used during high temperatures in the summer and installation of new night lighting. Those surveyed also reported that activities and projects associated with raising the environmental awareness of residents were NbS. However, most of those surveyed were able to assign actions they undertook or projects which are planned according to the concept of NbS.



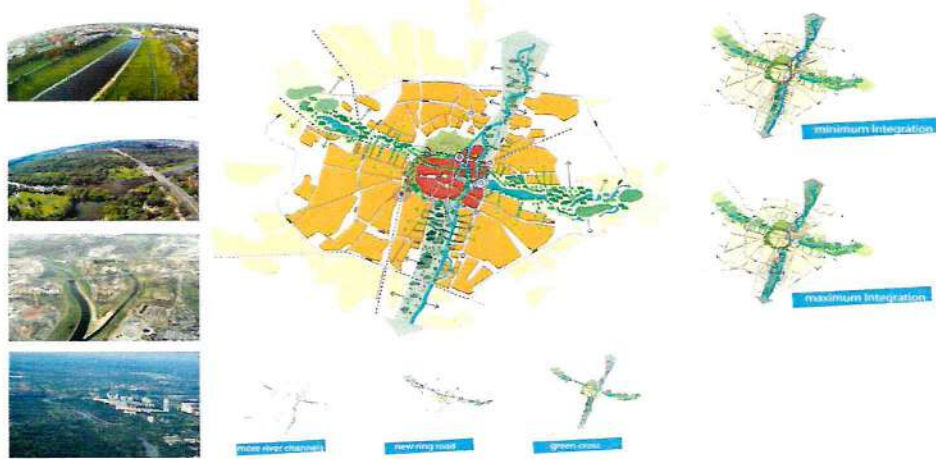
Photo: Stephan Kampelmann



Photo: Stephan Kampelmann



Source: Rotterdam Center for Resilient Delta Cities



Source: KuiperCompagnons.

2.2 Other opportunities for future NbS mentioned by the interviewees

- The **“Refill Project”** is an innovative and participatory solution to Poznan’s empty spaces. The project was mainly concerned with post-industrial real estate that could be converted to other purposes. This type of cooperation and participatory approach could probably be activated for NbS.
- A perceived opportunity is the creation of **new green areas in old, dense parts of Poznan**. The municipalities want to focus on pilot projects (pocket parks). The new rainwater strategy could be related to the developing of green spaces. The scope of the strategy is the entire city, but the most urgent interventions are located in the old city. There is some potential for using green spaces for rain water management in public spaces.
- **The open areas along the Warta River are another opportunity for future NbS development**. For example, by creating recreational areas, sports and active leisure zones. These areas could also provide a transport function (soft mobility, cycling paths). The area could also host a harbour for boats and ships (there will be a marina in the old town). New interventions in these areas would continue the work of projects related to the river, such as municipal beaches, revitalization of the Dom Kultury #1; smaller projects like three new playgrounds near kindergardens. They are also in line with the project of renaturalisation of the concrete embankments of the Warta river which the city supports.
- There is some **potential for green walls and green roofs for insulation**. The city has a lot of flat roofs (although no detailed review has been carried out); one interview saw higher potential for green roofs compared to green walls because of the latter’s higher costs in terms of energy and maintenance.
- **Innovative mobile greenery in Lazarz**. There is a lack of greenery in this high density area, which could be used as a testing ground for innovative mobile greenery.
- More generally, the **change of the political team after the last election** seems to have provided renewed energy for transition projects and a greater emphasis on a participatory approach in city development.

To recognize the possibility of including NbS in the work of those surveyed, respondents were asked about potential fields of inclusion (Fig. 4). All respondents declared willingness to cooperate in the field of NbS with other units. The smallest potential was identified in the field of creating a legal framework and raising finances or financing NbS.

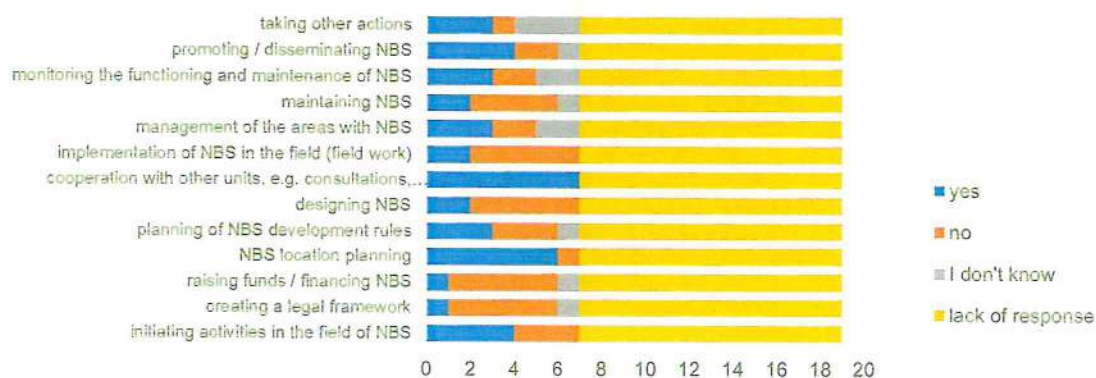


Figure 4. The fields of possible inclusion of NbS in the work of the Department

3. Relevant documents

- Current research project commissioned to Arup Polska on water management strategy. The strategy document will be published in March 2018. The research has produced a map with 160 critical intervention points, 40 of which of key importance for the city. They are in a process of final diagnosis
- Study of Condition and Direction of Development adopted by resolution No. LXXII / 1137 / VI / 2014 of 23 September 2014. <http://www.mpu.pl/plany.php?s=6&p=294>
- Municipal Revitalisation Program for City of Poznań adopted by resolution No. LVI/1021/VII/2017 of 07 November 2017
- Spatial development concept of the Poznan Metropolis (KONCEPCJA KIERUNKÓW ROZWOJU PRZESTRZENNEGO METROPOLII POZNAŃ) 2016.
https://drive.google.com/file/d/oB8ZDvmog4d_VeUtzQThDeFQ1cVk/view
- GREEN SURGE (2015). Poznan, Poland. Case Study City Portrait. FP7 GREEN SURGE project. http://greensurge.eu/products/case-studies/Case_Study_Portrait_Poznan.pdf
- Documentation on the:
 - (from Greenery Department of Road Management Board)
 - Extensive documentation (including photographs) on realized projects by the Greenery Department of Road Management Board:
 - o Jezyce pocket park (from Greenery Department of Road Management Board)
 - o “A 100 trees for Lazarz”
 - Designs for 4 kilometers of embankments from the Water Management Board.
- Development Strategy River Water Poznan, Poland.
 - o <https://www.royalhaskoningdhv.com/en-gb/projects/development-strategy-river-water-in-poznan-poland/6025>
 - o <http://rdcrotterdam.com/projects/development-strategy-for-river-warta-in-poznan/>
- A study by the MPU (2012) including participatory methods on city development. The study showed the value of the green belt.
- The “Anty-bezradnik” guide on how the residents can participate in the development of the city (My Poznaniacy); greenery is not only recreation, but also improved living conditions, especially in dense and compact areas. Greenery provides for democratic spaces.
- The city currently prepares a “Urban climate change adaptation plan” (commissioned to the Environmental Institute of Wroclaw University).
- Future of allotments in Poznan <https://www.degruyter.com/view/j/quageo.2017.36.issue-1/quageo-2017-0009/quageo-2017-0009.xml>
- Poznan urban bee study <https://link.springer.com/article/10.1007/s13592-017-0554-y>
- Ancient forests and urban biodiversity in Poznan <https://www.sciencedirect.com/science/article/pii/S161886671730078X>
- Conservation of vascular plant diversity in Poznan <https://link.springer.com/article/10.1007/s11252-016-0625-2>
- Floral biodiversity of allotment gardens <http://geokompleks.amu.edu.pl/data/floral.pdf>
- Assessing the synergies and trade-offs between ecosystem services provided by urban floodplains: The case of the Warta River Valley in Poznań, Poland <http://www.sciencedirect.com/science/article/pii/S0264837717307901>

Other resources of relevance to Poznan challenges

- Forestry commission - De-icing damage to trees [https://www.forestry.gov.uk/pdf/pathology_note11.pdf/\\$file/pathology_note11.pdf](https://www.forestry.gov.uk/pdf/pathology_note11.pdf/$file/pathology_note11.pdf)
- Space engagers Dublin <https://spaceengagers.org/>
- Re-using Dublin <https://www.reusingdublin.ie/>
- <http://www.turas-cities.org/pilot/12>

4. Finance

4.1. Experience in financing NbS

- The **Civic Budgets** instrument described above is a potential source of financing of NbS. It can therefore be seen as a co-creation mechanism to fund large and small-scale projects.
- A financial analysis is currently being carried out to understand whether it could be cheaper to direct rainwater from the city centre to the old bed of the Warta.
- The investment in the new rainwater management programme is likely to be financed by external sources of funding; two main EU funds (about water retention and biodiversity, respectively) could be used.
- According to some interviewees, the city budget allocated to greenery is not sufficient.
- Regarding the renaturalisation of the concrete embankments of the Warta river in the city center, the Water Management Board and the City of Poznan will apply for regional financing; regional tender was scheduled for December 2017. The Water Management Board is also in favor of applying for European funding, including the EIB. If there is a signature on the regional financing agreement by mid-2018, then by early 2020 the first stretch of the renaturalisation of the Warta embankment could be completed.
- It appears to be difficult to convince the financial department to make the investment in NbS due to missing numbers or narratives.
- In one example of a new housing development, the community participation has led to the design of a new greenspace with higher costs. Under this scenario the developer donated budget to the district which topped up the amount required.

According to the survey data, the financing of NbS is currently mainly from the City's budget (Fig. 5)

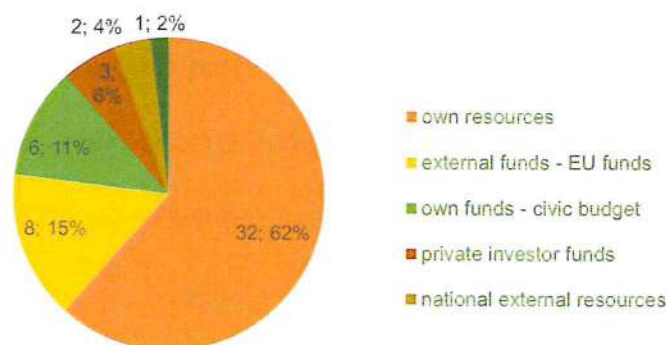


Figure 5. Sources of financing NbS exemplars.

5. Business

5.1. Environmental businesses that NbS could address

- There could be a role of real estate developers for nature-based rainwater management; but today's projects will be smaller compared to the historical projects, there will probably be smaller and medium retention centers ("miniparks"). The permits do not currently sufficiently specify water management issues.

- There has been regular cooperation between the greenery department of the Road Management Board and housing developers. There are regulations on developers to compensate for the loss of greenspace (for instance if a development requires cutting down trees).
- The development of the Warta as a waterway could provide business opportunities of different kinds. A number of places for future ports have been identified, these could be developed with the help of public-private partnerships.

5.2. Problems related to businesses

- According to some interviewees, the housing developers want to get as many buildings on the ground as possible, often removing trees and existing greenery. It seems to be particularly difficult to incite developers to create high-quality green spaces.
- There has not been a lot of cooperation between grassroots movements and housing developers in Poznan. The developers are seen to build on spaces that have not been used for a long time and often harbour rich biodiversity (e.g. the new and gigantic Shopping Mall Posnania).

6. Community

6.1. Identified environmental challenges that NbS could address

- Need for recreation areas in the vicinity of the city (“urban comfort zones”)
- Soft mobility.
- 'Greenspace' parking

6.2. City's experience in supporting the local communities through NbS

- The socialist period was presented by one interviewee as a very unfavourable climate for bottom-up initiatives, which more or less died out. On the other hand, people were faced with difficult situations, and they started to develop solutions individually instead of relying on collective interventions.
- Several interviewees noted that the inhabitants of Poznan are interested in nature; this can also be inferred from the orientation of many projects financed through the civic budget that were related to the environment. It seems that **inhabitants have increased their input on environmental issues** and city-making in general over the last years (since around 2010). The internet helped to consolidate grassroots movements and the social economy.
- One of the tools for engagement of citizens in city-making has been **the use of the civic budget tool** that is mainly targeted at small bottom-up projects.
- Poznan is changing quickly and there seems to be more potential today for social activity: “there has always been a lot of civic activities, but now it’s getting stronger”. There has been some involvement of citizens in city making, for example in the “**Kolektyw Kapielisko**”.

“My Poznaniacy” is a local NGO that developed views on city development. A number of local councilors are members of the organization. The existence of citizen-driven organisations is a value to the city that is often underestimated. Everybody is trying to get something out of the space. Moreover, next to the new park on the old Warta bed there is an civic initiative **“KontenerArt”**, which is mainly concerned with cultural or festive events but whose members also join in greenery activities. There is also a new exhibition space.

6.3. Challenges linked to communities in NbS projects

- The intensity with which communities have been engaged on environmental issues differs across the city. In the city center, Lazarz and Wilda, for example, there are a lot of people who want to get involved in projects and initiatives. On the other hand, there are districts like Piątkowo (in the North) which are more difficult to engage in participatory processes due to various reasons (lack of time, interest etc).
- Demand for parking/transport solutions.

7. Knowledge-infrastructure-environment

7.1. Environmental challenges identified that NbS could address

- Regarding innovative rainwater management, the first thing that needs to be changed is the awareness of the decision makers. For this purpose, Aquanet is using the example of Poznan’s traditional water management system and past realisations to show that NbS-type approaches were working in the past.
- In terms of rainwater management NBS can be more difficult to design, but do not require process control (nature itself regulates the flow of energy and matter). Operation of NBS requires effort /work, but technically is simpler than for example modernization of some advanced technical installation.
- The envisaged rainwater management system can potentially be designed to direct the rainwater away from the sewage. The strategy document by Arup Polska is expected by March 2018. The authorities (the city council of City of Poznań) can then adopt this document and develop a range of projects of different size (such as removal of certain pipes); the programme should be finished by the end of 2018.
- Urban heat island is becoming a greater issue with increase in impermeable surfaces and climate change impacts.

7.2. The city’s experience in dealing with technical challenges on the site related to NbS

- Problems of de-icing roads and impacts on trees.
- Years of urban tree planting and maintenance experience, including the new 100 tree planting initiative.
- Issues with delivering permeable paths, roads and public perceptions associated with dust from substrate-based systems.



8. Governance and decision making

8.1. Experience in dealing with policy and decision making for enacting NbS

- By and large, the policy of the city is perceived to be very much greenery oriented. However, several interviewees argued that more needs to be done to convince senior policymakers about the usefulness of NbS, or even to create awareness about NbS. There also seems to be a lack of more specific expertise on biodiversity related to urban green spaces.
- The City is using transversal “revitalization committee” and multidisciplinary “teams” including different departments of the City Council that helped to identify and develop areas in need of regeneration. There are a number of such “teams” in which coordination is happening. For instance, there is a team working on the revitalization of Sw. Marcin Avenue, which reports to the Deputy President of the City.
- The Deputy President of Poznan is personally in charge of greenery, and also in charge of the development agency, and the roads board. There are many different departments that are dealing with greenery in Poznan, enabling each of them to specialize. But, on the other hand, this means that decision-making is dispersed. How to coordinate all these important tasks related to questions such as the optimal number of parking spaces or introduction of new nature-based solutions is perceived as a challenge. Several interviewees stated this would call for additional regulations (ordinance) at the city level (or even at the national level) that would facilitate the work of the specialized agencies.
- There is an agreement and cooperation between the City of Poznan and the Water Management Board regarding the financing of the renaturalisation of the Warta embankment. Initially, the project was less about recreation. The City Hall developed the idea that the community would be directed to certain specific areas through the inclusion of stairways for access.
- It appears that participatory processes were strengthened after the elections in 2014. The new city government seems to give more voice to the citizens, for instance through the civic budgets (implemented at the level of the cabinet). The grassroots movements are increasingly becoming partners of the city in developing new visions and solutions.

8.2. Problems with governance/policy/regulation that impacted NbS

- Several interviewees noted that local spatial development plans can be incoherent with regional plans and strategies.
- There are some overlapping and compartmentalized competences and power regarding water management.
- Lack of one coordinator with cross-cutting knowledge from various city units dealing with the issue of water management.
- The selection process in public tenders tends to over-emphasize price criteria, which does not always lead to good results in terms of quality, performance and effectiveness.
- Cooperation between actors and stakeholders needs to be improved to meet common goals in a wider perspective.
- Higher levels of administration should be committed to innovative concepts such as green roofs, green walls.

9. Stakeholders

- **Biuro Koordynacji Projektów i Rewitalizacji Miasta (KPRM - the CN partner at city hall):** this department of the City of Poznan initiates and implements a number of city development projects. It is notably in charge of urban revitalisation and European projects, but the scope of activities is very broad (environmental, socio-economic, mobility, educational projects). The department reports to the First Deputy President of the City.
- **Aquanet:** a commercial organisation owned by the City of Poznan and 9 municipalities, serving ca 850000 inhabitants. 95% of inhabitants covered by Aquanet services; the other 5% is not (yet) connected to the grid.
- **Greenery department of the City's Road Management Board:** team of 10 people focusing on the green areas along the streets. This Board is an "urban entity" reporting directly to the authority of city administration; the people in the department on greenery on roads are mainly gardeners and landscape architects.
- **Water Management Board:** a governmental organization responsible for the basin of the Warta River. They work on the spatial development plans; they work on preventing flooding, water retention tanks. Aquanet takes water from the Warta River, and the sewage discharge goes into the river.
- **Municipal Greenery Management Board:** department of the city in charge of parks and green spaces, street greenery; the department designs, implements and maintains green spaces (maintenance is often subcontracted to external companies). Most of the parks in the city center underwent renovation over the last decade or so.
- **Local community councils (Rady osiedli);** has their own budgets (from the municipality).

Most of NbS are created in cooperation with other units of the City Hall (33%) or in collaboration with local communities (25%). Cooperation with NGOs or associations takes place in 10% of cases. The least popular is cooperation with volunteers and private investors.



Figure 6. Cooperation in implementing the NbS.

10. Driving themes for NbS in Poznan

- Maintaining and improving the system of green wedges and rings
- New small-scale green spaces in dense neighbourhoods
- Rainwater management
- Soft mobility and recreation

To recognize the potential of listed NbS to solve urban problems, respondents were asked their opinion on whether exemplars provided a contribution to climate change adaptation, health and wellbeing of residents, social cohesion and economic development and development of green jobs. The results suggest that NbS in the city focus mainly on social issues. Economic potential of NbS is still not yet discovered.

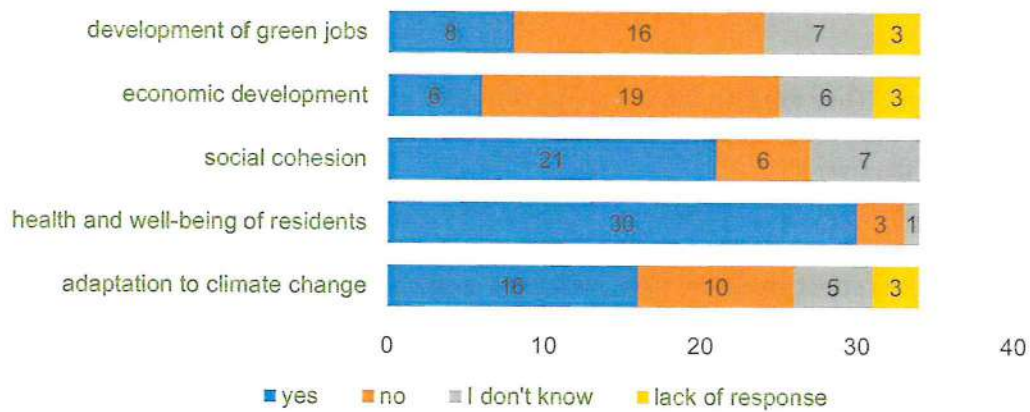


Figure 7. NbS exemplar impact according to selected Key Performance Indicators.

Nature-based Solutions and Connecting Nature in Poznan: where do we stand?

Conclusions from the CN workshop on January 16 2018.



To conclude this report, this section provides a summary of the discussions and ideas that emerged during a workshop on January 16 2018 that brought together CN partners, the interviewees that were met in November 2017, and some new local stakeholders from the City Council Board (Łukasz Mięka), a residential council in the Jezyce District (Michał Czepkiewicz), the NGO Fundacja Inspirator (Agnieszka Zdunek), the Municipal Urban Planning Office (Joanna Zomerska), the think tank Centrum Otwarte (Andżelika Jabłońska), the Department of Urban Planning and Architecture in the City Hall of Poznań (Katarzyna Podlewska), and Wielkopolska Investment Support Center Ltd. (Joanna Maciaszczyk).

During this workshop, the participants were provided with a summary of the exploratory research undertaken under WP3 under the lead of UEL by AMU and Osmos. The group also learned about a pocket park that was created in the “Gorczyzewskiego Skwer”; this allowed “zooming” into an interesting small-scale NbS project so as to provide a better understanding of how environmental projects unfold in the cultural, institutional, and social-political context of Poznań. The redesign process “Gorczyzewskiego Skwer” was presented by Maja Jaroszevska (from the Greenery Department of the Municipal Road Board) and Michał Czepkiewicz (from the Council of residents of the Jezyce District), who participated in all phases of the creation of this pocket park.

An important objective of the workshop was to create a common understanding about where Poznań stands at this point with respect to the NbS project(s) that will be developed in the framework of Connecting Nature. This section is an attempt to capture and summarize this common understanding. It could therefore facilitate the link between the exploration of previous experiences and available resources regarding NbS under WP3, on the one hand, and the planning of NbS interventions that will be conducted under WP2, on the other hand. In the specific context of Poznań, it is also an opportunity to ensure the commitment of higher levels of authority with the City Hall who will officially sign off the content of this document.

We use two relatively simple devices to summarize “where we stand” today with respect NbS in Poznań: the “Back to the Future” and the “Project-Environment Canvas” tools.¹

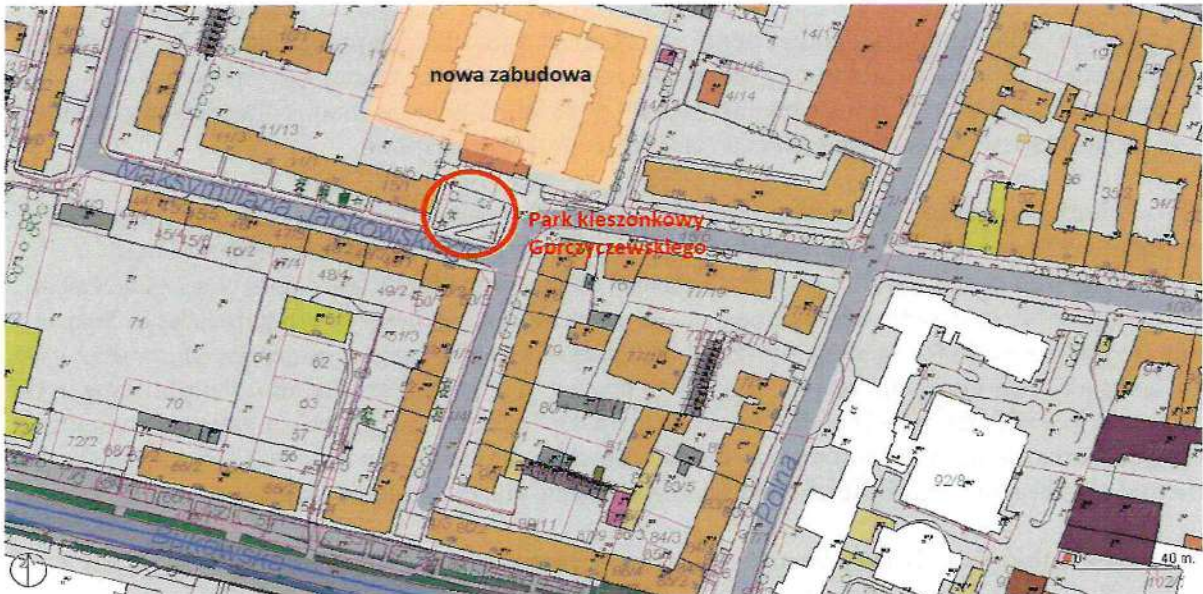
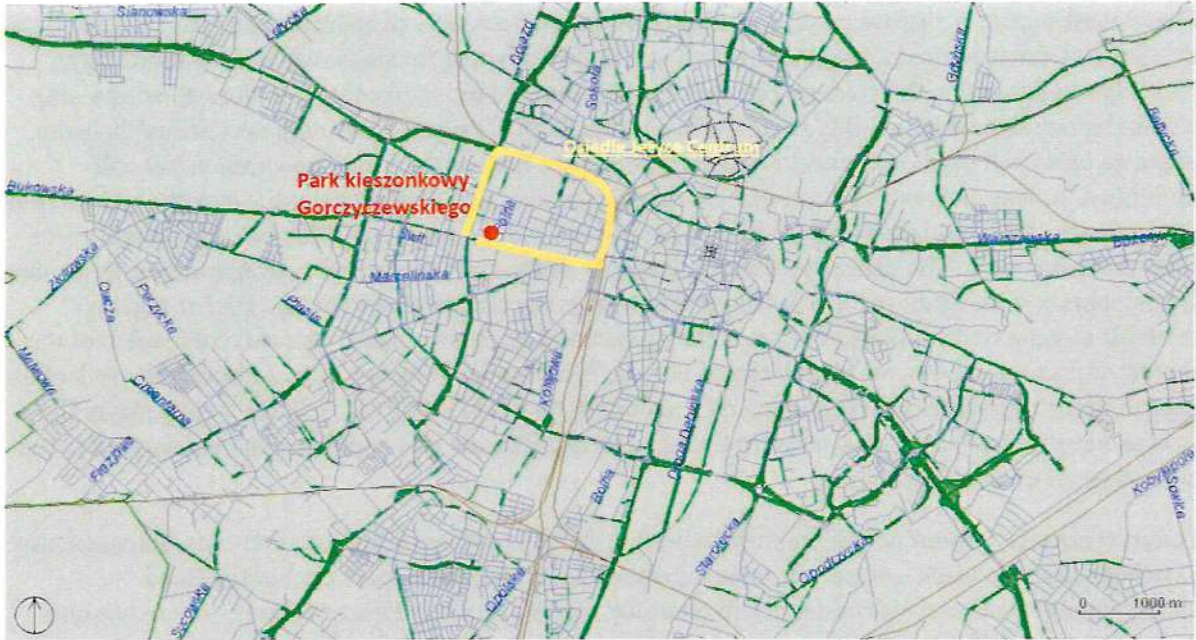
The “Back to the Future” tool has the purpose of organizing general attitudes and feelings in a group regarding key issues in the past and the future; it is a way to capture “the bigger picture” of attitudes toward NbS in Poznań without going into the details of individual projects or initiatives. The remarks that appeared to us as the most relevant and representative of the discussions during the workshop are shown in Table 2. Regarding a positive attitude towards the past (“**nostalgia**”), it seems clear that the historical configuration of the Poznanian urbanism is seen as a great achievement with enduring

¹ For more information on the methodology of these tools visit: <http://osmosnetwork.com/category/tools/>

positive effects on both the city’s population and the environment: although some Poznanians might not spontaneously refer to the system of green wedges and rings, they are likely to find certain specific spaces within the overall system as being relevant for their quality of life, such as the Malta lake, the extensive agricultural land or numerous allotment gardens. The “**hopes**” that were expressed for the future of NbS in Poznań are, at least at this stage, more diffuse: they concern specific ideas of interventions (such as pocket parks or post-industrial conversion projects), policy instruments (broader access to civic budgets), and more encompassing policy objectives at the regional or metropolitan scale (rainwater management; preservation of agricultural land). We also identified negative attitudes related to past events (“**trauma**”). They chiefly concern the environmental impact of the “race to development” that started in the decade after the end of Poland’s socialist period, reached its height in the early 2000s but is still ongoing today. This, however, is not the only negative experience that influences the attitudes towards NbS: others include the flood in 2010 and perceived problems in the way allotment gardens and civic budgets have functioned in the past. Some of these negative experiences have developed into “**fears**” for the future: Poznanians are concerned that the development might continue to “eat into” the city’s green infrastructure that they cherish. Another fear is that insufficient attention will be paid to instill sufficient awareness about the benefits of and need for sustainable urbanism among younger generations.

Table 2. Back to the Future: attitudes about the past and present of NbS in Poznań.

“Nostalgia”	“Hopes”
<ul style="list-style-type: none"> - The city’s system of green wedges and rings is a historic achievement that the people of Poznań are proud of. - The presence of traditional allotment gardens at scale (ca 90,000 individual plots in Poznań provide food and health benefits to many families) is also a strong asset that has been developed in the past. 	<ul style="list-style-type: none"> - More social gardens and pocket parks will be created around the city. - Post-industrial buildings will be transformed through attractive and mixed programmes (including housing as well as green/blue infrastructure). - Civic budgets for social and environmental initiatives will be widely available. - Rainwater problems will be solved (for instance through collection/use in new pocket parks). - The available agricultural land (ca 8,500 ha) will be preserved and put to better use for the city. - The city will solve the balance between the need for parking and greenspaces
“Trauma”	“Fears”
<ul style="list-style-type: none"> - Since the late 1990s, real-estate promoters have been engaged in a “race to development” that has reduced the system of green wedges and rings; a change in national legislation in 2003 has exacerbated this “traumatic experience” by creating a temporary regulatory vacuum. - A flood in 2010 created damage and showed the vulnerability of the city’s approach to rainwater management. - Allotment gardens are only in theory open to the public: in practice the gardeners have tended to fence their individual plots in to prevent intrusion from outsiders. - In the past it was hard for initiatives without institutional backing to access civic budgets. 	<ul style="list-style-type: none"> - Strong economic development of Poznań will continue to “eat into” the city’s green infrastructure. This fear manifests itself in different ways: <ul style="list-style-type: none"> o Allotment gardens along major roads might be lost or moved out of the city o Parking spaces create pressure on green space o Urban sprawl and associated mobility problems will decrease quality of life and reduce biologically active areas - Younger generations will not be sufficiently aware of sustainability issues



Gorczyzewskiego Skwer in Jezyce before and after the intervention that was studied during the workshop. Local residents represented by the Council of residents participated actively in the redesign.

The second summary tool we employed to capture the current state of reflection on NbS in Poznań was the “Project-Environment Canvas”. This tool was inspired by the “business canvas” methodology, which is widely used in the start-up community, but adapted to incorporate the more encompassing angle of integrated sustainability projects. In a nutshell, the “Project-Environment Canvas” helps to organize ideas and opinions in multi-stakeholder groups that work towards a common but still undefined project. It does so by collecting information on essential features of the specific actions that are envisaged (the “project”) without losing sight of the wider context in which the project will occur (the “environment”). The canvas provides a snapshot of the state of ideas at a given point in time; since all elements will inevitably evolve as things take shape, the canvas should be updated at regular intervals to keep track of the evolution of the project and its environment. The current version of the Project-Environment Canvas for the city of Poznan is shown on Table 3 below. Although the reflection regarding the project definition and specific actions to be taken is still at a relatively early stage, the Canvas nevertheless suggests a series of themes and suggestions that could be explored further in the next phase of Connecting Nature.

The **partners involved** are still mainly limited to the CN partners, although first outreach measures have been taken to work towards a cooperation with the Greenery Department of the Road Management Board and individual urban planning experts (notably Lukasz Mikula, who is not only part of the CN AMU team but also a member of the City Council Board and expressed interest to continue the collaboration). We think it will be key for the success of the CN project in Poznań to intensify the collaboration with other municipal agencies and urban planning experts like Mr Mikula as they represent valuable additions of competences and roles to the CN team. Moreover, we encourage the inclusion of private organizations – especially businesses and civil society organizations – as project partners so as to give them a voice in the project conception.

The **underlying values** that were expressed by the project partners still refer to relatively general principles. This being said, these values are sufficiently specific to identify key objectives that Connecting Nature and the NbS projects in Poznań should strive for. These values concern foremost the quality of life in the city, which appears to be a central driving theme of urban policies in Poznań, followed by a concern for equality and social inclusion of less affluent groups expressed in values such as “being a city for everyone” and the concern to provide young families with affordable housing in the centre. In line with the results of the “Back to the Future” exercise (see above), preserving and putting historical urban assets to a better use is another central value. The participants also expressed that they valued the social and cultural amenities of a thriving and dynamic city centre.

The **actions** that should or will be undertaken are perhaps the most direct expression of what a project is all about. In the case of the CN project in Poznań, the actions listed in Table 3 suggest that we are looking at a project involving a combination of scales and themes. Indeed, there is strong interest for intervening at the local level through small-scale interventions such as pocket parks or social gardens; but these small-scale interventions should be integrated into a broader development strategy at the scale of the entire city or even the metropolitan area, especially in light of their contribution to the preservation and improvement of the wider systems of green rings and wedges. We therefore suggest that future CN actions should be pursued at the local level through small-scale interventions, but that complementary actions should focus explicitly on how these local interventions relate to the preservation and improvement of green systems at the urban/metropolitan scale. This could require a clarification and/or synthesis of an integrated long-term development vision at the metropolitan scale, as a lack of such a vision could render small-scale interventions ineffective or even counterproductive. In addition to the reflection around the scale of physical interventions of the CN project in Poznań, other suggested actions are related to activities that could support the physical interventions. These concern for example the establishment of a constructive dialogue with real-estate developers and other representatives of the housing industry; at this point, the relationship between advocates of green space and real-estate businesses seems to be mainly conflictual in Poznań. Given the massive impact and power of real-estate development and a strong demand of Poznanians for

more and better quality housing, means that such a dialogue is indeed necessary to have a significant impact on how the city will evolve. There is even scope for win-win opportunities between NbS and real estate development, as the successful implementation of NbS could lead to increases in the market value of the building in its vicinity. Other supporting actions relate to the measurements of NbS benefits as well as educational activities that both could consolidate the impact of the envisaged small-scale interventions. An interesting hypothesis of how the link between local and metropolitan scales could be achieved is to focus on the theme of rainwater management. The City of Poznań is currently engaged in a reflection process on how to improve rainwater management to avoid floods such as the one that occurred in 2010. Small-scale interventions could include local rainwater management solutions such as water retention and infiltration that can be linked to this wider plan; educational activities and impact assessments could help to explain and monitor how small-scale rainwater management initiatives contribute to city-wide objectives.

If these actions were to be pursued successfully, **the output** of the CN project in Poznan could therefore include various small-scale NbS interventions around the city (including social gardens, pocket parks, municipal beaches or other forms of small green spaces); clear and intelligible links between small-scale interventions and integrated development plans at larger scales (e.g. regarding rainwater management); and a broad alliance for improving all aspects of quality of life including different stakeholders (overcoming the antagonism between conservationists and developers).

We now turn to the essential features of the broader environment in which the CN project needs to be embedded. The first of these features concerns **interest groups**, i.e. individuals or organizations that will be affected by the outcome of the project. Given that these groups have a stake in the project's success or failure we recommend that they should at least be consulted; if possible, some of them could become full-fledged partners of the project. At this point, broad categories of interest groups have been identified. In addition to the real-estate developers we already mentioned, these include residential communities and their representative bodies, and in particular the Councils of residents that appear to play a central role in urban projects at the local level that was underlined by the case study on the "Gorzyczewskiego Skwer" in the Jezyce District. Other important interest groups are large employers (such as universities and corporate groups) as these organizations are potential allies in a quest for a healthier and greener city due to their concern for retaining, attracting and motivating their employees. An interest group that has currently not been included in the discussion are private planning professionals; the latter are likely to become involved partners as soon as physical interventions need to be planned by architects, landscape architects, urbanists, etc. We therefore recommend to reach out to this interest group as soon as possible; a potential contact point for this purpose could be Piotr Kostka, a Poznań-based architect who also serves as the President of the Poznań-branch of the Polish Association of Architects. Finally, other municipal agencies that are not full-fledged partners should at least be considered as an interest group that will be affected by future NbS projects and whose cooperation conditions the projects' success.

The next item of the Canvas is concerned with **the needs of the thus identified interest groups**. Given that CN has yet to engage in a direct dialogue on NbS with these groups, the list of needs in Table 3 should be interpreted with caution and requires validation through the different participatory processes that are foreseen in the next stages of the project. Bearing this caveat in mind, it appears that among the central needs of the most relevant interest groups are solutions to the city's mobility problems (mainly a need of the residential population and their employers); more effective tools to limit urban sprawl and to protect green areas (arguably a need of conservationists and the residential population whose quality of life depends on access to green spaces); the need to reconcile densification, quality of life and the provision of more affordable housing in the city centre (a need of citizens eager to live in the city centre without sacrificing quality of life); better education on sustainability issues (a general need that was expressed by members of the municipality); the need to convince large employers and real estate developers of benefits from green and blue infrastructures at different scales (a "strategic need" of NbS advocates who need the buy-in from powerful actors in order to implement NbS in Poznań); and a less antagonistic relationship with real-estate developers and

clearer and more integrated long-term development vision at the metropolitan scale (which are also “strategic needs” of NbS advocates).

The resources that could be mobilized for the project depend very much on the specific actions that will be carried out. Since these actions still need to be fleshed out in more detail, only a few broad resource categories have been identified at this stage. These refer to the city’s vast agricultural land reserves (including the impressive number of allotment gardens) that could be useful for providing the physical space for NbS interventions. If these interventions focus on the theme of rainwater management (as we recommended above), the city’s new rainwater management strategy that is scheduled to be presented to the city council in March 2018 would also be a useful asset for providing a planning framework and a link to existing policy discussions in Poznan. Other resources of the city that could be useful for NbS implementation are post-industrial real estate (such as the former gas plant or the slaughterhouse) as well as the tool of civic budgets. As the actions undertaken by CN in Poznań will become more specific, more resources could certainly be added to this list.

Finally, **the overall outcomes** from which the larger community would benefit could include a more balanced development path that reconciles economic prosperity and environmental quality; green infrastructure providing measurable benefits to various social groups; a development model that preserves green belt and agricultural land around the city (i.e. containment of urban sprawl). If the above suggestions regarding a focus on coherence across scales and the theme of rainwater management are confirmed, potential outcomes could also include a stronger coherence between small-scale interventions and large-scale development vision (for instance in the form of a spatial NbS and connectivity strategy), more sustainable urban infrastructures and a compact city centre with less flood risk and better infrastructure for cyclists.

If one was to summarize the current iteration of Poznan’s Project-Environment in one sentence it could read as follows: “Integrating a diversity of small-scale nature-based solutions (such as pockets parks or social gardens) into dense neighborhoods will contribute to materialize a long-term vision of Poznań as a city of interconnected green spaces that reconcile high quality of life with sustainable infrastructures and the city’s rapid economic development.”

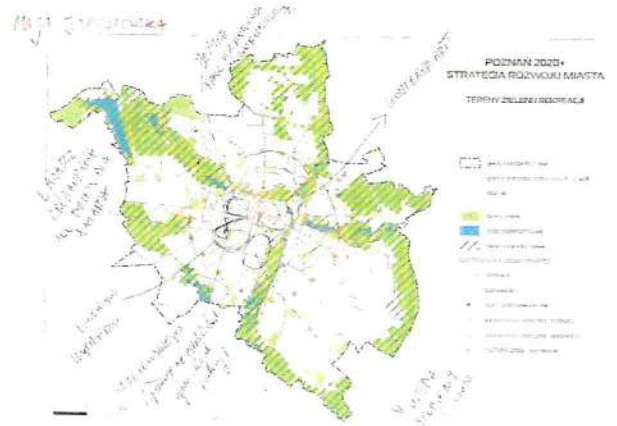
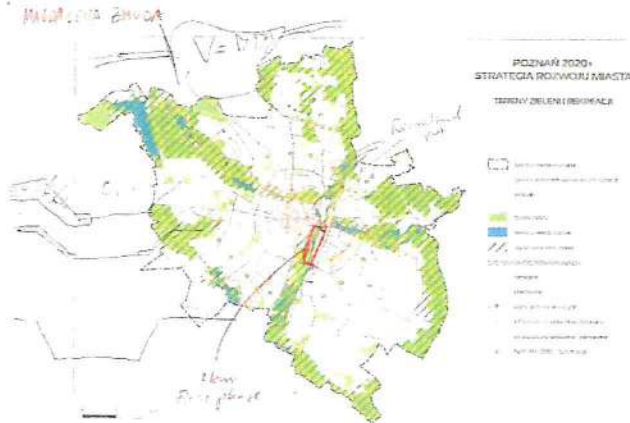
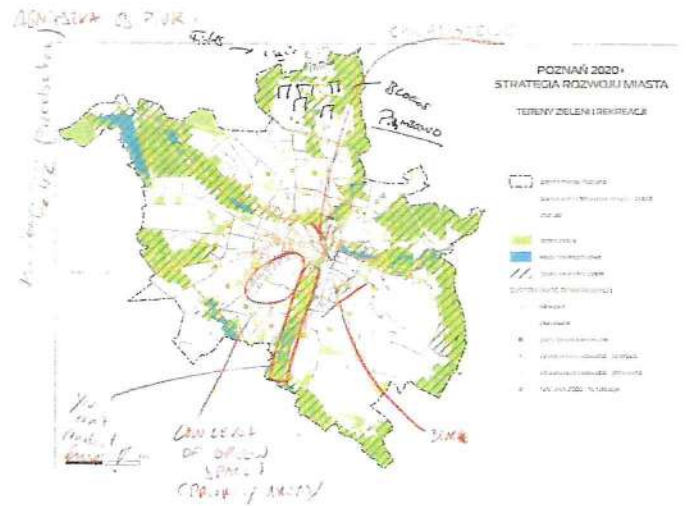
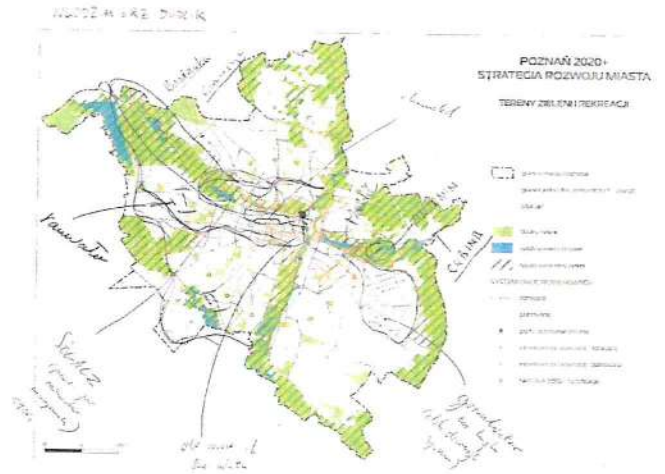
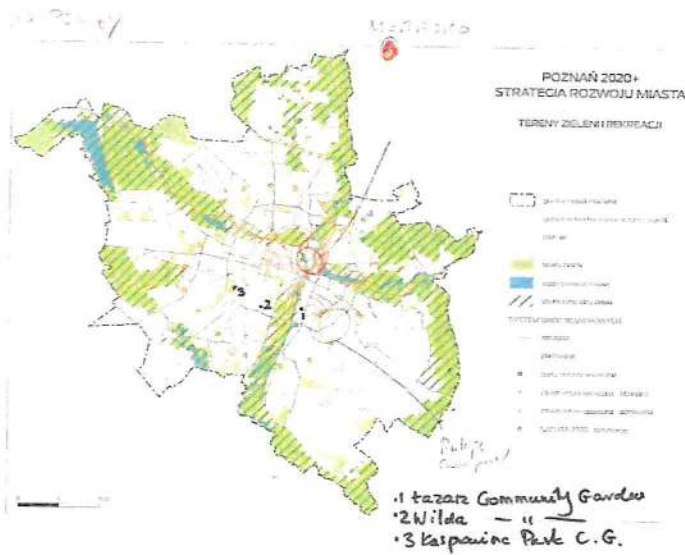


Table 3. Project-Environment Canvas for NbS in Poznań²

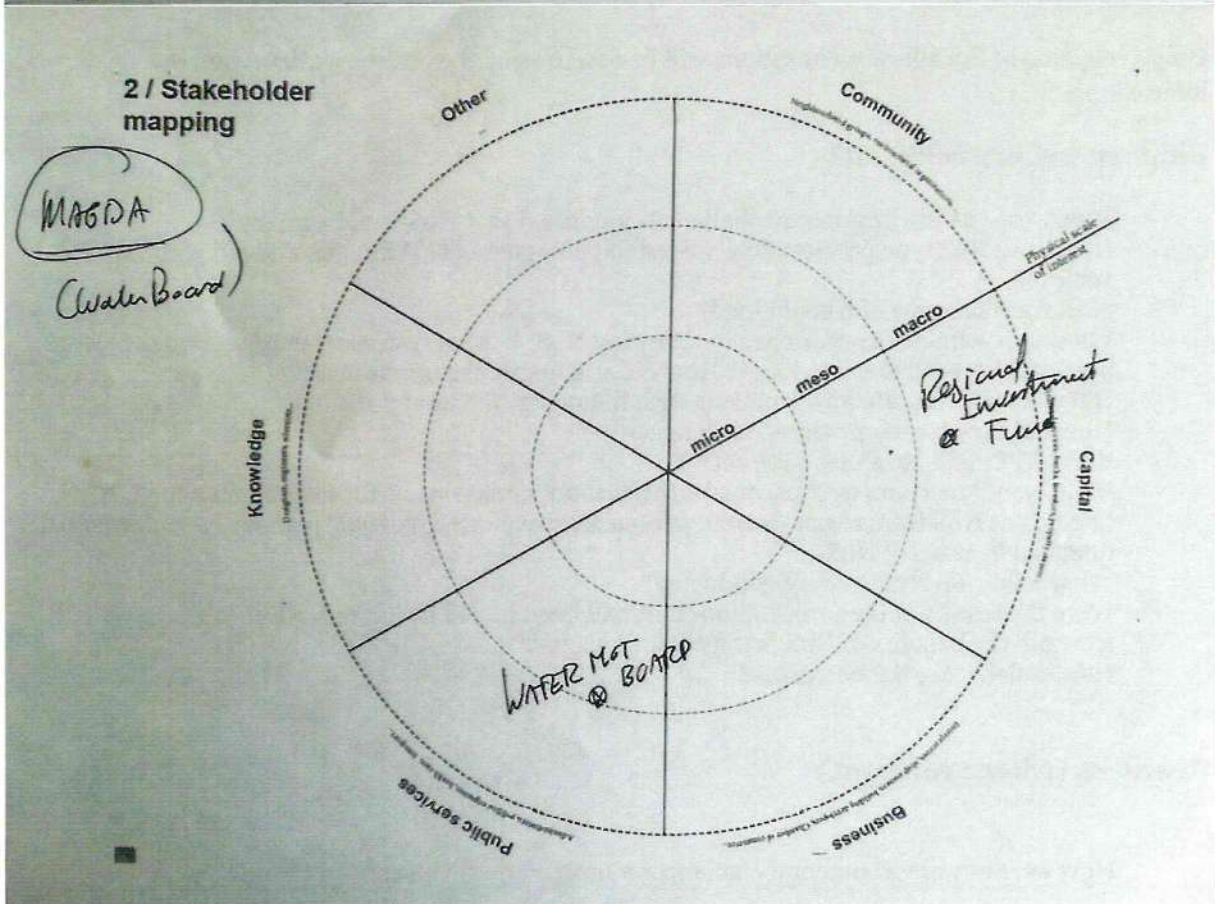
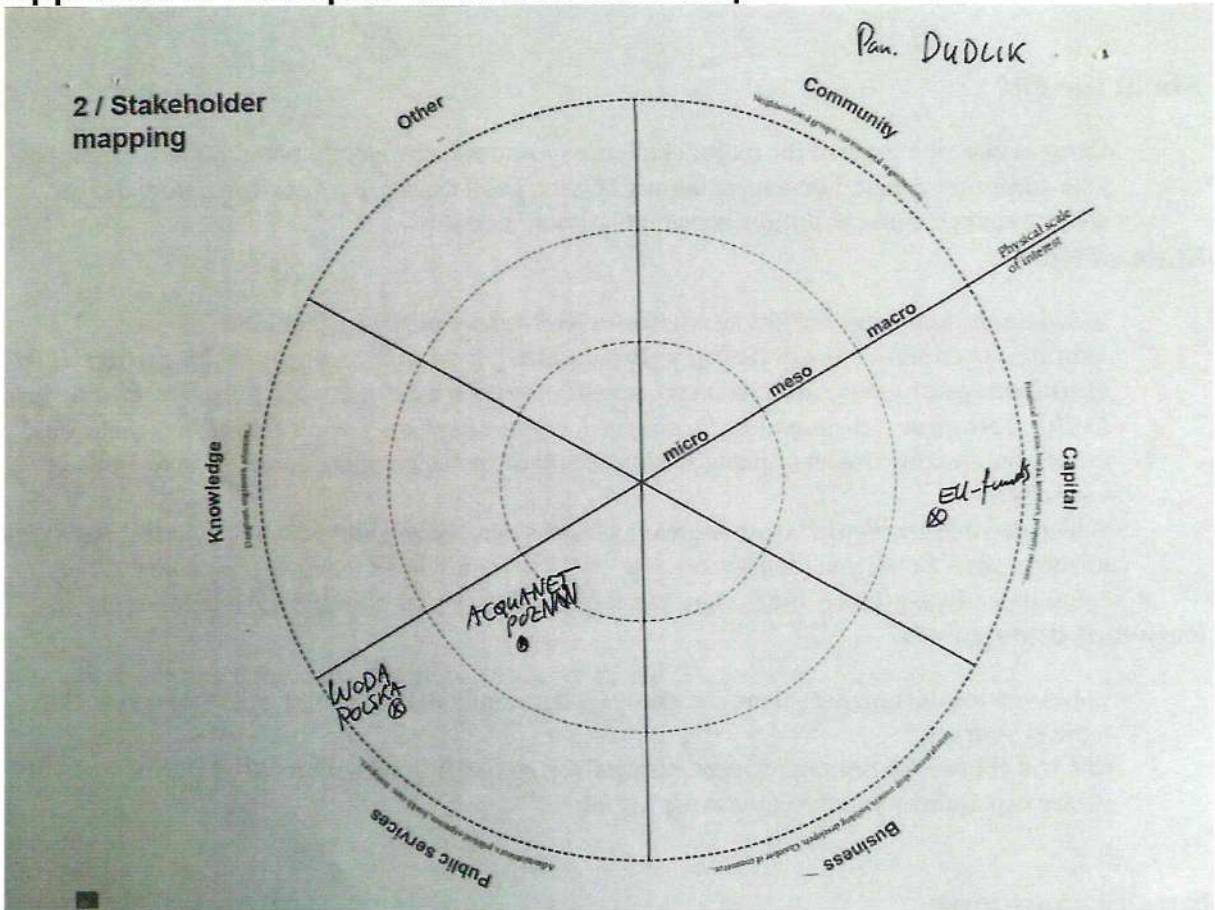
<p>Project</p>	<p>Involved partners</p> <ul style="list-style-type: none"> - CN teams from AMU and City of Poznań (KPRM) - Other CN partners - Greenery Department at the Road Management Board - Urban planning experts (e.g. Lukasz Mikula) 	<p>Values</p> <ul style="list-style-type: none"> - Providing high quality of life for all Poznanians - Being a "city for everyone" - Allowing young families to live in the city center - Preserving and improving historical assets: <ul style="list-style-type: none"> o System of green wedges and rings o Allotment gardens o Agricultural land - Creating a thriving and dynamic city centre offering culture, leisure, shopping, etc - Provide better housing through NbS 	<p>Actions</p> <ul style="list-style-type: none"> - Plan and implement new social gardens, pocket parks and municipal beaches in dense areas lacking access to green space - Development of green wedge system within and beyond the city borders - Clarify/synthesize an integrated long-term development vision at the metropolitan scale - Engage real-estate developers, residential communities and NGOs in a constructive dialogue about the future of the city - Measure impact of small scale interventions regarding a range of potential benefits (quality of life, health, economic value of surrounding real estate, rainwater retention/infiltration, ecosystem quality, biodiversity, etc) - Develop educational activities on environmental benefits 	<p>Output</p> <ul style="list-style-type: none"> - Various small-scale NbS interventions around the city (including social gardens, pocket parks, municipal beaches or other forms of green space) - Clear and intelligible links between small-scale interventions and integrated development plans at larger scales (e.g. regarding rainwater management) - Broader alliance for improving all aspects of quality of life including different stakeholders (residential communities, large employers, real-estate developers, municipal agencies, etc)
<p>Environment</p>	<p>Interest groups</p> <ul style="list-style-type: none"> - Real estate developers - Councils of residents - Young people in suburbs - Large private employers (e.g. Lech, VW, Glaxo, etc, etc) - Large public employers (City Hall and AMU) - Planning professionals (e.g. Piotr Kostka) 	<p>Needs</p> <ul style="list-style-type: none"> - Solutions to the city's mobility problems - More effective tools to limit urban sprawl and to protect green areas - Reconcile densification and quality of life in the city centre - Provide more affordable housing in the city centre - Better education on sustainability issues - Cost-effective solutions to flooding issues - Convince large employers of benefits from green and blue infrastructures at different scales - Less antagonistic relationship with real-estate developers (e.g. through win-win opportunities) - Clearer and more integrated long-term development vision at the metropolitan scale 	<p>Resources</p> <ul style="list-style-type: none"> - Green belt with agricultural land reserves and allotment gardens - New rainwater management strategy (March 2018) - Post-industrial sites in city center, (e.g. gas plant, slaughterhouse) - Civic budgets 	<p>Outcomes</p> <ul style="list-style-type: none"> - A more balanced development path that reconciles economic prosperity and environmental quality - A compact/dense city centre with less mobility problems and less flood risk - Green infrastructure providing measurable benefits to various social groups - Development model that preserves green belt and agricultural land around the city (containment of urban sprawl) - Coherence between small-scale interventions and large-scale development vision - More sustainable urban infrastructures
<p><i>"Integrating a diversity of small-scale nature-based solutions (such as pockets parks or social gardens) into dense neighborhoods will contribute to materialize a long-term vision of Poznań as a city of interconnected green spaces that reconcile high quality of life with sustainable infrastructures and the city's rapid economic development."</i></p>				

² This canvas has been elaborated by participants of a WP3 feedback session on January 16 2018. It summarises the information from the interviews and discussions during the feedback session according to key dimensions of the "project" (in this case NBS in Poznań) and its "environment".

Appendix 1: Annotated city maps



Appendix 2: Examples of stakeholder map



Appendix 3. Questionnaire used for interviews

About the city

- Can you describe some of the major challenges / issues facing your city today? For example: jobs and employment, housing, skills availability, public space, air / environmental quality, climate change, noise pollution, social integration, mobility...

State of NbS

- Based on the following definition, where are NbS opportunities in your city?
*“Nature-based solutions are **living solutions inspired and supported by nature that simultaneously provide environmental, social and economic benefits and help build resilience...** through locally adapted, resource-efficient and systemic interventions”*
- Could you identify projects / plans /visions (built or in design phase) in relation to NbS in your city?
- Which do you consider to be other great examples of a success and which do you feel were very unsuccessful? Could you identify key aspects? This could be in terms of the quality of the communications process, the design, the construction period, unintended outcomes etc...

Relevant documents

- Could you list documents (planning, strategy, development...) you find most relevant to the topic in your city?
- Can you choose 5-6 relevant documents that you consider important for NbS within your city? Please explain why you think these are useful.

Specific questions

Only a selection of the following questions will be used during the interviews, based on the interviewee.

Finance (where relevant)

- How were city environmental challenges identified that NbS could address?
- How were NbS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NbS defined?
- What was your city’s experience in financing NbS – what different sources of finance were used and how did they work out? How did you justify the investment?
- Did your city run into any problems with financing NbS at any stage?
- How did they overcome these challenges?
- What KPI’s and baselines were set?
- What would be your city’s lessons learnt/recommendations be for future financing?
- Looking at NbS from a cost -benefit perspective: explore your city’s perspective on potential financial benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NbS being communicated?
- How scalable are the outcomes?

Business (where relevant)

- How were city environmental challenges identified that NbS could address?

- How were NbS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NbS defined?
- What was your city's experience in supporting businesses through NbS – what businesses emerged?
- Did your city run into any problems with businesses at any stage?
- How did they overcome these challenges?
- What would be your city's lessons learnt/recommendations be for future supporting local businesses?
- Looking at NbS from a cost -benefit perspective: explore your city's perspective on potential business/opportunities benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NbS being communicated?
- How scalable are the outcomes?

Community (where relevant)

- How were city environmental challenges identified that NbS could address?
- How were NbS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NbS defined?
- What was your city's experience in supporting the local communities through the NbS – what community organisations or groups emerged?
- Did your city run into any problems with community groups at any stage?
- How did they overcome these challenges?
- What would be your city's lessons learnt/recommendations be for future supporting local communities and community groups?
- Looking at NbS from a cost -benefit perspective: explore your city's perspective on potential business / social enterprise opportunities/benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NbS being communicated?
- How scalable are the outcomes?

Knowledge-infrastructure-environment (where relevant)

- How were city environmental challenges identified that NbS could address?
- How were NbS type projects determined to be implement? What benefits did you want to achieve?
- How was the scope of NbS defined?
- What was your city's experience in dealing with technical challenges on the site related to NbS – were there any particular novel solutions that emerged (particularly those for novel for your organisation)? How did you attempt to maximise co-benefits and minimise trade-offs?
- Did your city run into any problems with technical solutions?
- How did they overcome these challenges? Was the technical experience available inhouse?
- What would be your city's lessons learnt/recommendations be for future dealing with technical challenges?
- What KPI's and baselines were set?
- Looking at NbS from a cost-benefit perspective: explore your city's perspective on potential technical benefits of NbS.
- What follow up studies were conducted?
- Were the results of the project those that had been hoped for? If not, why?
- How are the benefits of NbS being communicated?
- How scalable are the outcomes?

Governance + decision making. (where relevant)

- What was your city's experience in dealing with policy and decision making for enacting NbS – were there any particular policy or governance outcomes that resulted?
- Did your city run into any problems with governance/policy/regulation that impacted NbS at any stage?
- How did they overcome these challenges?
- What is your opinion about governance, bureaucracy and institutional competences (and overlaps) in relation to NbS in your city?
- What would be your city's lessons learnt/recommendations for governance and policy?
- Looking at NbS from a cost-benefit perspective: please explain your city's perspective on potential governance/policy benefits of NbS.
- Is there a push for NbS in your city? Who is pushing it and why?
- Are planning conditions difficult or flexible NbS?
- Which are the effective policies and tools for driving NbS (IE laws and financing)?
- What internal structures supported the planning process?
- Were any governance structures set up to facilitate delivery?
 - What follow up studies were conducted?
 - Were the results of the project those that had been hoped for? If not, why?
 - How are the benefits of NbS being communicated?
 - How scalable are the outcomes?

Stakeholders

> Mapping exercise: Stakeholders (as necessary)

- What are the major actors related to NbS in your city?
- Is there any significant friction or relationships between certain actors? If so, between who?
- Which are the organisations you collaborate with?
 - How were various stakeholders included in delivery?
 - What main barriers did you experience with stakeholder engagement? How did you overcome these?

Driving themes for NbS

- Could you describe 3-5 action areas that could help further develop NbS in your city?

8.5 Schansbroek Case Study Questionnaire results - Genk

***** to be added*****

8.6 Heempark Case Study Questionnaire results - Genk

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium		
Theme - Challenges	Stage - Planning	<p>What challenges does the city face as a whole?</p> <ul style="list-style-type: none"> • Genk is seen as grey (city Centre is dominated by hard infrastructure) • Poverty, lack of education and unemployment <ul style="list-style-type: none"> • Genk is ethnically diverse • Areas within Genk are spatially disconnected - cog city <ul style="list-style-type: none"> • Car-centred mobility • urban development and green preservation are competing <ul style="list-style-type: none"> • Water quality issues • Lack of community participation/sense of ownership • Lack of entrepreneurship (projects mostly top-down, city led)
		<p>How were challenges identified?</p> <p>There was a need for preserving the former landscape and green in an industrial city. The original plan was to extend the neighbouring park which is a more cultural and less natural landscape.</p>
		<p>How was the scale of the challenge identified?</p> <p>Defined by the available space and building.</p>
		<p>How was local context considered ? (From neighbourhood up to city scale)</p> <p>Local residents convinced the City to preserve the former agricultural landscape characteristics of the local area instead of extending the neighbouring park</p>

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme - Challenges

Stage - Legacy

How were outcomes linked back to original challenges?

- Lack of community participation/sense of ownership
- Poverty, lack of education and unemployment
- urban development and green preservation are competing

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

At that time no targets or indicators were defined, only the preservation of the area and heritage.

What scale were targets aimed at?

Started out as local but now attracts 10,000 visitors a year, has 90 members, 35 active volunteers, so citywide.

Stage - Legacy

To what extent are changes in local context being evaluated?
(From neighbourhood up to city scale)

Too little for this scale of evaluation

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme - Objectives

Stage - Legacy

To what extent is resilience to future climate change built into the NBS design?)

- Flooding buffer
- Biodiversity conservation zone
- Showcases environmentally sustainable/organic food growing practices

Theme - Impacts

Stage - Planning

Which impacts were considered ?

- Green space management (biodiversity conservation)
 - Public health & wellbeing (education/reconnecting citizens with nature)

How were timescales of impacts considered ?

Not considered

What geographical scale of impact is being addressed?

City wide

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme - Impacts

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

It is unknown.

Legacy

Did you see the expected outcomes?

Yes

Impacts

Stage - Legacy

Did you see outcomes in the timescales expected?

No timescales defined - organic evolution over the years

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

- 'Water management' - flood relief
- 'Climate resilience' - urban cooling, carbon storage, biodiversity
- social impact: education, wellbeing, relaxation, intercultural meetings

Did you see any trade-offs as a result of the schemes?

- Social justice/cohesion - members, users or supporters are predominantly white/well-educated
- Heempark has a citywide task in nature education and sensibilisation, but outreach is often limited

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme – Multiple benefits

Stage - Planning

In what way were multiple benefits sought to be maximised and trade-offs minimised?

Not actively examined in this ongoing organic evolution

Were any benefits not considered/ explored? Why?

Green economy: the gap between the Heempark (structural and cultural) and businesses is too big.

Was a cost/benefit analysis carried out?

No

How was an understanding of the local needs for each of these benefits understood during the planning process?

There was no real planning process.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme – Multiple benefits (continued)

Stage - Planning

How did you deal with comparisons between monetary and non-monetary benefits?

There is no monetary benefit: the city pays the personnel, the building, the activities because of the non-monetary benefits.

How did you consider the change in benefits over time?

From a citizen initiative toward a nature education centre: a positive evolution

Was baseline data used to inform design?

None

Stage - Delivery

Were any co-benefits lost/reduced during delivery?

Social justice/cohesion - targeted marginalised groups but members, users or supporters are predominantly white and well educated

Were any co-benefits added/enhanced during delivery?

Participatory planning and governance (the Heempark supports other initiatives such as Velt Genk, Compost Masters) - ARTS: het Heempark as a base for different nature and sustainable development oriented initiatives

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme – Multiple benefits (continued)

Stage - Delivery

Were there any changes to cost/benefit during delivery?

The scheme grew beyond the capabilities/resources of volunteers and the City made personnel available and established the Environment & Nature Centre at Heempark in 1987. Now E&N is part of the Dept. of Environment & Sustainable Development of the City. The Heempark also supports other initiatives such as Velt Genk and other nature/eco cooperations

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

Challenge to keep on innovating and engage new volunteers and citizens

How will future schemes be combined with existing schemes to maximise benefits?

We will deal with this when future schemes pop-up

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Themes – Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

- Former agricultural land
- City park/greenspace
 - Wetland
 - Urban systems

Why were these areas chosen as the site for the NBS scheme?

The original plan was to expand the existing adjacent city park, but residents wanted to retain its natural character

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

Education, social goals, green preservation, hot spot for nature lovers

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Very: a lot of freedom and space, but on the other hand, lack of manpower, think-power, change-power to fully use this freedom and space.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Themes – Integration

Stage - Legacy

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

This should be a goal. The Heempark could inspire other spots in the city, but Genk is too small for a second Heempark. We'd prefer cooperations between Heempark and other initiatives than copying the model. Combining forces to reach citywide goals.

How geographically scalable are the schemes?

This is not understood

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

Not understood

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Themes – Key lessons

Delivery

What were the barriers to realising the design?

Unknown

Legacy

How can future barriers which result in descoping (compromise on delivery) be better foreseen?

The city ambitions are sometimes hard to match with the ambitions of the volunteer group. High level and seeking for innovation versus pragmatic and conservative.

How has the cities' delivery method changed over the course of the project?

Over the years, we see an evolution of a 100% citizen initiative towards a 50/50 city-citizen initiative, towards a 80/20 cooperation today. Risk that the city takes over too much control - > decrease of ownership and engagement by volunteers.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Stakeholder Participation/participatory planning and governance

Stage - Planning

What methods of stakeholder engagement were adopted?

- local volunteers/community maintain Heempark and organise related events
 - skills training/workshops for volunteers/local community reconnect them with nature
- the availability of a cafeteria for meetings, where other ideas and initiatives can grow and meet"

Which stakeholder groups were involved in the design process?

Local volunteers

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

Continuous search for new networks and initiatives in the city, that can be linked to the Heempark. This follow up is more qualitative, and is not actively being monitored at this moment.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

- Self employed cafeteria
- Homebase of the 5 nature workers of the city, responsible for the citywide nature management
- 2 FTE city personnel: 1 ecology expert (responsible for city-wide nature management; team lead of the nature workers); 1 coordinator/educational expert and 1 administrative worker

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

In the past: not aware of those. In the present: mismatch between ambitions (see higher)

How did you identify potential barriers?

Unknown

What processes or methods were used to overcome barriers?

No specific method used. Changes in the surroundings and infrastructure of the park (new playground, new mural, bridge mural, renovation of the bee hall) will hopefully trigger existing and new volunteers to think out of the old box.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme – Financing

Stage - Delivery

How were schemes funded?

City budget, in the past small grants (province, regional), substantial ongoing regional grant for the nature workers, murals by private company and artistic governmental organisation

How did you justify spend of funds? Did you need to?

We didn't, it wasn't necessary at all.

Legacy

What funding was put in place to ensure legacy?

No particular funding

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

A private investor to strengthen the image and outreach of the Heempark through the cafeteria (commercial with a social-ecological twist) would give the Heempark a boost.

Governance

Planning

What staff were involved with this project?

Once it exceeded volunteer capacity the City supported Heempark with personnel, infrastructure and educational programs. Eventually the Environment and Nature Centre was established at Heempark which incorporated the Dept. of Environment and Sustainable Development of the City.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Governance

Planning + Delivery

What internal structures supported the planning / delivery of the project?

Unknown

What internal structures presented barriers to planning / delivery?

We don't feel any internal barriers at this moment. Maybe because the scale is quite small; we don't compete with the other big strategic projects and the Heempark's image is positive within the city council

What processes were implemented to facilitate planning / delivery?

A department was made responsible for the management of the park. The continuous cooperation and periodic meetings between city and volunteers are important. Fun factor is important for volunteers, so we have to keep it low key, not too professionalised.

Was there any gap in expertise that if present, would have improved the success of the project ?

The forward-thinking toward possible future opportunities is limited.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme - Governance

Planning + Delivery

What mechanisms are in place to help achieve multiple benefits?

The presence of meeting rooms. The strategic location in the city centre. The maintenance of the park is a cooperation between volunteers and nature workers of the city.

Stage - Legacy

How will the relevance or importance of the schemes be maintained?

The educational activities are our core business and will remain relevant, since all Genk schools are visiting the park.

How will future schemes and scale-up be fostered / incubated?

Very careful exercise in abstract thinking and dreaming with the volunteers, step by step, small changes

What structures/processes will remain in place/dissolve after scheme completion?

The Heempark should be constantly evolving and growing, there's no end point defined.

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme - Drivers

Stage - Planning

What initiated the NBS project?

City of Genk purchased land to enlarge the city park, local residents convinced the City to preserve a miniature model of the former agricultural landscape and retain its natural character

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

The strategic goals of the city enable the Heempark objectives, give the Heempark plenty of possibilities.

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

We count the number of visitors (educational programme and events - not playground)

At what stage of the project was M&E put in place?

When the city became a partner

NBS Case Study Process Questionnaire – Heempark, Genk, Belgium

Theme – Monitoring and evaluation

Planning + Delivery

What KPI targets were put in place?

Number of visitors

What baseline data did you have available?

None

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

Qualitative screening the profiles of visitors, volunteers, initiatives

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

Yes

8.7 LaBiomista Case Study Questionnaire results - Genk

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium		
Theme - Challenges	Stage - Planning	<p>What challenges does the city face as a whole?</p> <ul style="list-style-type: none"> • Genk is seen as grey (city Centre is dominated by hard infrastructure) <ul style="list-style-type: none"> • Poverty, lack of education and unemployment • Genk is ethnically diverse • Areas within Genk are spatially disconnected - cog city <ul style="list-style-type: none"> • Car-centred mobility • urban development and green preservation are competing <ul style="list-style-type: none"> • Water quality issues • Lack of community participation/sense of ownership • Lack of entrepreneurship (projects mostly top-down, city led)
		<p>How were challenges identified?</p> <p>The project isn't in response to particular challenges</p>
		<p>How was the scale of the challenge identified?</p> <p>It is not clear that the project is developed to address specific challenges</p>
		<p>How was local context considered ? (From neighbourhood up to city scale)</p> <p>Not known</p>

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme - Challenges

Stage - Legacy

How were outcomes linked back to original challenges?

No outcomes yet. Still in delivery

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Nothing to suggest they do

What scale were targets aimed at?

City (educational) "micro and macro"

Stage - Legacy

To what extent are changes in local context being evaluated? (From neighbourhood up to city scale)

It is not known

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme - Objectives

Stage - Legacy

To what extent is resilience to future climate change built into the NBS design?)

It is not known

Theme - Actions

Stage - Planning

Which NBS benefits were prioritised?

- Sustainable living education
 - Public wellbeing
- Social justice / cohesion

Stage - Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints)?

Not yet delivered

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme - Impacts

Stage - Planning

Which impacts were considered ?

- Educational
- Cosmopolitanism
- Art as community development
- Socioeconomic value
- Tourism

How were timescales of impacts considered ?

It is not known

What geographical scale of impact is being addressed?

City level

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

Too early to tell

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme - Impacts

Legacy

Did you see the expected outcomes?

Case Study is not yet open

Did you see outcomes in the timescales expected?

Case Study is not yet open

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

- Educational
- Nature restoration and conservation (Black Stork nesting site)
- Protection of Red List species"

Did you see any trade-offs as a result of the schemes?

It is not known

In what way were multiple benefits sought to be maximised and trade-offs minimised?

It is not known

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme – Multiple benefits

Stage - Planning

Were any benefits not considered/ explored? Why?

It is not known

Was a cost/benefit analysis carried out?

It is not known

How was an understanding of the local needs for each of these benefits understood during the planning process?

Through community working group and regular public consultation

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme – Multiple benefits (continued)

Stage - Planning

How did you deal with comparisons between monetary and non-monetary benefits?

It is not known

How did you consider the change in benefits over time?

Not considered

Was baseline data used to inform design?

It is not known

Were any co-benefits lost/reduced during delivery?

Project not yet delivered

Were any co-benefits added/enhanced during delivery?

Project not yet delivered

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme – Multiple benefits (continued)

Stage - Delivery

Were there any changes to cost/benefit during delivery?

Cost have changed during planning and delivery

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

Fairly inflexible due to hard engineering which is expensive to change. Some flexibility in the use of space but not realistically outside of educational purpose.

How will future schemes be combined with existing schemes to maximise benefits?

It is not known

Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

- Brownfield (Ex-Mine)
- zoo site

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Themes – Ecosystems covered

Stage - Planning

Why were these areas chosen as the site for the NBS scheme?

Developed alongside 2 other ex-mining sites in the city. Represent key opportunities for redevelopment and regeneration

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

Connected with Genk urban policy on cosmopolitanism

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Very: a lot of freedom and space, but on the other hand, lack of manpower, think-power, change-power to fully use this freedom and space.

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Themes – Integration

Stage - Legacy

How geographically scalable are the schemes?

Not very scalable as it is a tourist attraction

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

It is not known

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

Cost effectiveness was considered, however plans changed during the planning process due to spiralling costs. The initiative changed from a publicly accessible space to a ticketed attraction.

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Themes – Key lessons

Delivery

What were the barriers to realising the design?

Rising costs was a key barrier. Other barriers are unknown

Legacy

How can future barriers which result in descoping (compromise on delivery) be better foreseen?

It is unknown

How has the cities' delivery method changed over the course of the project?

It is unknown

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Stakeholder Participation/participatory planning and governance

Stage - Planning

What methods of stakeholder engagement were adopted?

- Involvement of community working group
 - Regular consultations

Which stakeholder groups were involved in the design process?

- Community working group
 - Artist
 - Architects

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

Scheme not yet realised

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

- Architects / construction roles
- Contributing to socio-economic improvements over longer term
 - Urban agriculture
 - Organic market
 - Revival of local shops
- Involvement of local residents in management and delivery of projects
 - Boost to leisure economy
- Revival of local entrepreneurship
- Direct creation of new jobs for the functioning of the attraction

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

It is not known.

How did you identify potential barriers?

Involvement of local community would have aided in this.

What processes or methods were used to overcome barriers?

It is not known.

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme – Financing

Stage - Delivery

How were schemes funded?

- Total 20.6M Euros
- €8M from private partner
 - €8M from city of Genk
 - € 4.6M from Flanders government (Heritage - € 900K, Urban renewal - € 3.1M, Tourism € 600K)

How did you justify spend of funds? Did you need to?

Urban policy on cosmopolitanism

Legacy

What funding was put in place to ensure legacy?

The project will generate its own funding to cover operational costs

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

Public-private partnership investment. Collaborative funding across local government departments aligned with the multifunctional benefits of NBS

Governance

Planning

What staff were involved with this project?

It is not known.

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Governance

Planning + Delivery

What internal structures supported the planning / delivery of the project?

It is not known

What internal structures presented barriers to planning / delivery?

It is not known

What processes were implemented to facilitate planning / delivery?

Set up and inclusion of community working group

Was there any gap in expertise that if present, would have improved the success of the project ?

It is not known

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme - Governance

Planning + Delivery

What mechanisms are in place to help achieve multiple benefits?

Collaborative partnership between the local authority and private partner for the project planning, delivery and management.

Stage - Legacy

How will the relevance or importance of the schemes be maintained?

Rolling exhibitions

How will future schemes and scale-up be fostered / incubated?

It is not known

What structures/processes will remain in place/dissolve after scheme completion?

There is currently no end point envisaged for the scheme.

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme - Drivers

Stage - Planning

What initiated the NBS project?

It is not known

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

The strategic goals of the city support the aims of the project. Particularly around tourism and regeneration.

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

It is not known

At what stage of the project was M&E put in place?

It is not known

NBS Case Study Process Questionnaire – La Biomista, Genk, Belgium

Theme – Monitoring and evaluation

Planning + Delivery

What KPI targets were put in place?

It is not known

What baseline data did you have available?

It is not known

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

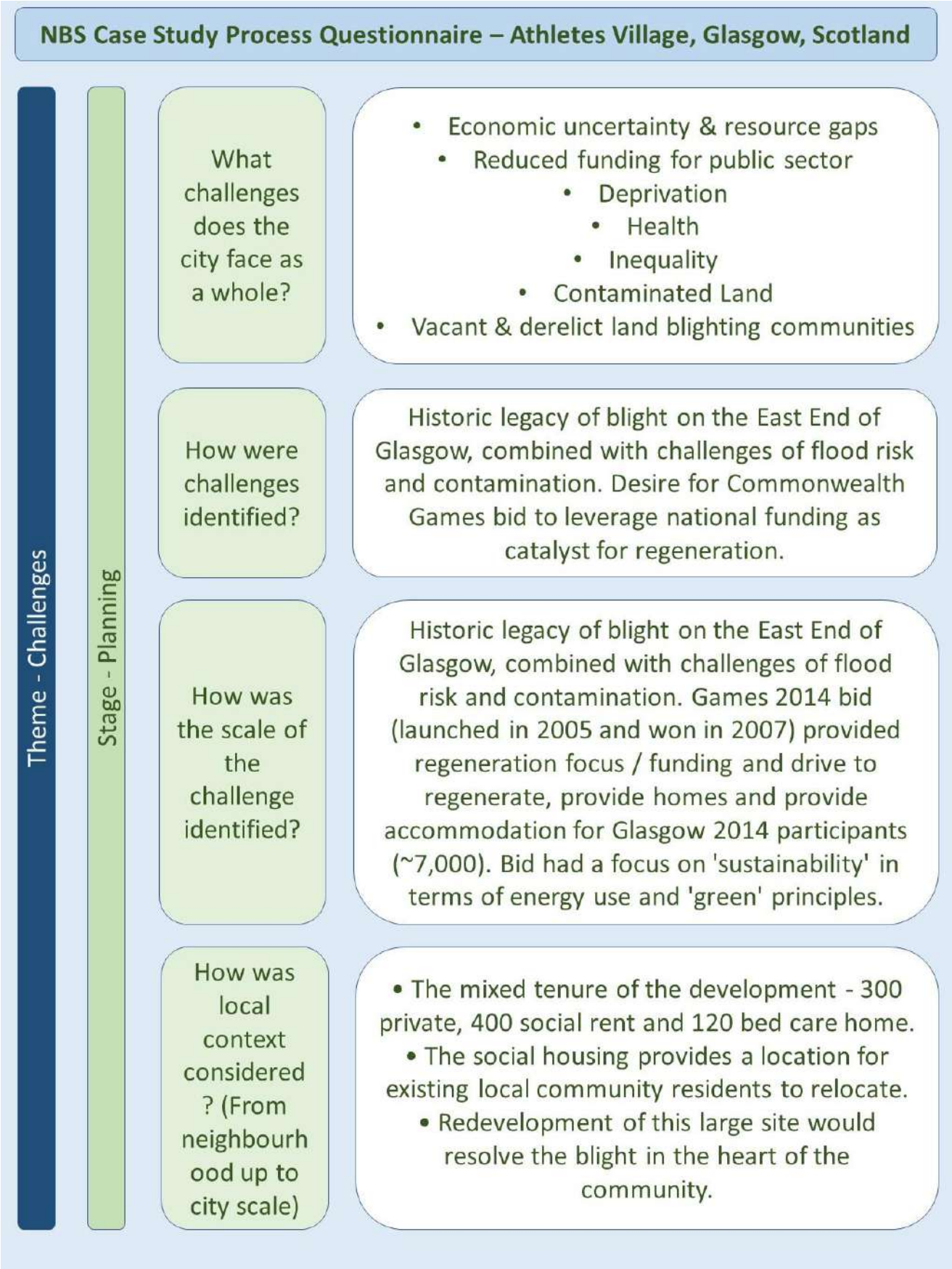
The project has not yet been delivered

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

It is not known

8.8 Commonwealth Athletes Village Case Study Questionnaire results - Glasgow



NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Challenges

Stage - Legacy

How were outcomes linked back to original challenges?

Regeneration of the local area, in a sustainable manner and helping to facilitate Glasgow 2014 were the key drivers.

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Commonwealth Games Sustainability Plan

Healthier lifestyles (Encouraging outdoor activity and active travel through enhanced streetscapes / green space), Climate Change (Carbon Reduction), Enhance local ecology, Bring people closer to nature, Sustainable design (SuDS) to reduce flood risk, Promote environmental conditions which improve health, Designs resilient to effects of climate change (increased storms / flooding), Adaptation to effects and impacts of climate change, Carbon emission reduction, Sustainable drainage provision, Link habitat network, Protect and enhance biodiversity, Improve ecological value of venues

Glasgow Legacy Framework 2014

Aspire to be Europe's most sustainable city within 10 years, Enhance biodiversity, Enhanced green spaces, Sustainable place transformation, Increase economic activity, Develop community capacity, Increased physical activity, Improve people's perceptions of Glasgow nationally and internationally., Increased number of Green Spaces in the East End, Waste water management Climate Change Action Plan

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme - Objectives

Planning

What scale were targets aimed at?

Local / Neighbourhood

Stage - Legacy

To what extent are changes in local context being evaluated?

They are not being formally evaluated, though some studies have sought to use the site as a case study to gather feedback from residents. The main benefit has been to transform vacant / derelict / contaminated land into a new community with affordable housing, following sustainable principles.

To what extent is resilience to future climate change built into the NBS design?)

- Design incorporated SUDS to reduce / mitigate urban flooding effects
- New properties have been constructed above the 200yr + CC level.
- Hot water / heating is provided by a district heating system, and many properties have solar PV panels
- Properties also have high standard of insulation.

Theme - Actions

Planning

Which NBS benefits were prioritised?

- Flood water attenuation
 - Improved quality of runoff water
- SuDS mandatory in new developments from WeWS Act 2003. SuDS provided through sustainable surface water management interventions - ie swales, ponds, basins, raingardens and permeable paving - rather than just large pipe / tanks below ground. Public health / wellbeing benefits through providing 'green' interventions managing surface water above ground.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme - Actions

Stage - Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints) ?

No, not significantly.

Impacts

Planning

Which impacts were considered ?

- Flood water attenuation
- Improved quality of runoff water
- Surface water attenuation.
 - Flood risk.
 - Water quality.
- Regeneration of vacant / derelict (blighted) land.
- Climate change / fuel poverty - use of district heating system, solar panels, high insulation standards.

How were timescales of impacts considered ?

Impacts would be delivered from the time when the construction was completed.

What geographic scale of impact is being addressed?

Local / Neighbourhood

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme - Impacts

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

No

Legacy

Did you see the expected outcomes?

Yes

Did you see outcomes in the timescales expected?

Yes

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

- Assuming core benefits are flood risk reduction and water quality, then:-
 - Habitat creation for biodiversity.
- Urban cooling and air quality (though the site is right next to the river corridor already).

Did you see any trade-offs as a result of the schemes?

No.
 However, it was recognised that the vacant & derelict land was beneficial to some extent for wildlife, as the land was effectively 'wild'. However, this was not planned / intended, and was of low quality.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme – Multiple benefits

Stage - Planning

In what way were multiple benefits sought to be maximised and trade-offs minimised?

Multiple benefits were recognised as being delivered through sustainable surface water management - ie using blue-green infrastructure, rather than large pipes / tanks below ground.

Were any benefits not considered/ explored? Why?

Don't think so

Was a cost/benefit analysis carried out?

No. SuDS were required and a core part of the Glasgow 2014 bid was to deliver a 'sustainable' games, so there was a commitment to delivering.

How was an understanding of the local needs for each of these benefits understood during the planning process?

Water environment and flood act legislation drove the requirement for SuDS and compensatory flood storage. Effectively, a whole new community area was being created. There was broad community support for doing something to remedy the blight that was the vacant & derelict land.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme – Multiple benefits (continued)

Stage - Planning

How did you deal with comparisons between monetary and non-monetary benefits?

Non-monetary nature / biodiversity / health benefits were not formally assessed, however, it was recognised that these would be positive overall. Monetary benefits were in terms of regeneration and creating new homes - both social housing and private - which would have economic benefit.

How did you consider the change in benefits over time?

The benefits were considered as being delivered from the time when the construction was completed. However, it is acknowledged that as vegetation establishes / matures, the benefits would increase.

Was baseline data used to inform design?

The only baseline data was that the land was vacant / derelict and contaminated. The development has effectively scrubbed the pre-existing site clean and re-built from new, so there was no comparable baseline .

Delivery

Were any co-benefits lost/reduced during delivery?

No

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme – Multiple benefits (continued)

Stage - Delivery

Were any co-benefits added/enhanced during delivery?

No

Were there any changes to cost/benefit during delivery?

No

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

The SuDS / flood management has been designed for the community that has been delivered, using design principles that were applicable at the time, including an allowance for climate change. Climate change allowances are, however, increasing with time. The SuDS basins to the south end of the site allow for future housing development to the west to be connected-in.

How will future schemes be combined with existing schemes to maximise benefits?

The Games Village site has been completed, however the SuDS basins to the south end of the site allow for future housing development to the west to be connected-in.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Themes – Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

- Residential
- Open space (unspecified)
- Vacant & Derelict Land

Why were these areas chosen as the site for the NBS scheme?

The vacant & derelict land was lying empty, partly due to ground contamination, and was therefore a significant area of blight for the wider neighbourhood. A suitably sized area of land was also required to support the Glasgow 2014 bid which proposed regeneration of the East End that winning the Games would help to prioritise. If Glasgow hadn't won the Games, then the regeneration would likely still have happened, but at a much slower rate as there would have been substantially less funding available.

How does NBS integrate with other city objectives/plans/strategies?

- Commonwealth Games Sustainability Plan
 - Glasgow 2014 legacy Framework
 - Glasgow Climate Change Action Plan
- Glasgow City Development Plan (2017) and Supplementary Guidance promotes sustainable surface water practice and flood risk management.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Themes – Integration

Stage - Planning

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

10 Year Economic Development Strategy

The Glasgow City Development Plan and Supplementary Guidance are very useful for promoting a more sustainable approach for the natural environment and delivery of multiple benefits. Glasgow is also pushing for more sustainable travel routes, though these are failing, so far, to aid delivery of nature based solutions.

Stage - Legacy

How geographically scalable are the schemes?

Nature based SuDS for flood risk management are very scalable across the whole city region, both for new build and for retrofit.

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

The Actions defined in the Local Flood Risk Management Plan, with the aid of City Deal funding, are driving the implementation of nature based interventions across the city. Planning policy, and the requirement for SuDS, is also driving implementation.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

The main benefits in terms of surface water management are recognised and quantifiable.

Challenges remain in terms of monetising the additional benefits of nature based interventions - specifically in terms of air quality, urban heat (not a big issue in Glasgow) and public health. There are also challenges in that the benefits for these areas do not directly accrue for the organisation making the investment - ie GCC is pay for the project, but the NHS or Social Services are getting the benefit. Challenges also remain due to the perception that nature based solutions add cost to developments, or take up too much space - neither of which is the case.

Delivery

What were the barriers to realising the design?

The main challenge in terms of design and delivery has been understanding the maintenance requirements and ensuring that an adequate plan is in place to undertake maintenance in light of cuts to budgets.

Legacy

How can future barriers which result in descoping (compromise on delivery) be better foreseen?

- Ensure that the baseline requirements for provision of nature based solutions is set out early and very clearly.
- Get early agreement - in writing - on the principles of maintenance (i.e. who will do what and when).
- Ensure all key stakeholders (particularly maintenance) sign off on the designs in a phased manner as the process progresses.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Key lessons

Stakeholder Participation/participatory planning and governance

Legacy

How has the cities' delivery method changed over the course of the project?

The process of scoping and designing has become more inclusive through recognising the need for better/earlier engagement with key stakeholders to key buy-in. The importance of design detailing and construction standards / inspection is more clearly understood and should provide learning / benefits for subsequent scheme (resources allowing!).

Stage - Planning

What methods of stakeholder engagement were adopted?

- Key stakeholder joint design meetings and review of proposals.
- Formal Planning process.

Which stakeholder groups were involved in the design process?

There was not much community engagement as a new 'community' was being created. Key stakeholders such as Planning, Scottish Water and Council Roads Maintenance involved in the design process. The design process was jointly led by GCC, Housing Associations and private housing developers, and undertaken by consultants.

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

Community feedback is gathered through residents groups, Housing Association officers and one-to-one contact with residents. This feedback is used to develop lessons learned and inform feedback for design of other projects / interventions.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

The design and construction phases were undertaken by existing companies which have benefitted from exposure to delivering nature based solutions. Valuable lessons are being learned in terms of maintenance, however, again this is being done by existing organisations.

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced ?

- Perception that nature based solutions would cost more and take up valuable space that could be used for additional housing.
- Lack of willingness to adopt a nature based approach over the traditional approach.
- Concern over how onerous maintenance would be.

How did you identify potential barriers?

Potential barriers were identified from work on other, similar, but smaller scale projects. Feedback was also provided in early design meetings.

What processes or methods were used to overcome barriers?

- Examples from projects in other locations were used to illustrate the proposals.
- The timeline associated with being ready for Glasgow 2014 helped to drive the project forward.
 - Joint design meetings were held.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme – Financing

Stage - Delivery

How were schemes funded?

- 80% Scottish Government / 20% Glasgow City Council
- Partnership between public and private sector in terms of mixed tenure housing delivered.

How did you justify spend of funds? Did you need to?

The need to deliver on the promises made in the Games 2014 bid. Regeneration of the East End of Glasgow to establish a thriving, **sustainable**, community, that would in turn lift the economy of the area and wider city.

Legacy

What funding was put in place to ensure legacy?

Mix of public bodies - Scottish Water and GCC LES to maintain SuDS and open space through revenue budgets. Housing Association factors also undertake some maintenance. District heating system is maintained under a term contract.

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

Where possible responsibility for maintenance, and the funding thereof, should rest with a public body - either Scottish Water or Council - as this means it is more likely to be sustained long term. Some activities may be undertaken by private contractors, paid by ScW or the Council. If the maintenance is the responsibility of a private organisation or a community / volunteer group, there is low confidence that it will continue long term.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Governance

Planning

What staff were involved with this project?

- Council Roads Design, Roads Maintenance, Planning, Design, Landscaping, Flooding and Housing Teams.
- Scottish Water drainage and development representatives.
- Consultants for design and contractors for the implementation.

What internal structures supported the planning / delivery of the project?

Formal structures / departments clearly identified stakeholders to be consulted with.

What internal structures presented barriers to planning / delivery?

Formal structures / departments meant that there were multiple stakeholders to be consulted with.

What processes were implemented to facilitate planning / delivery?

Stakeholder engagement and design meetings were held to share information, review and gather feedback.

Planning + Delivery

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme - Governance

Stage - Planning + Delivery

Was there any gap in expertise that if present, would have improved the success of the project ?

Having experience of the construction and performance of similar projects elsewhere would have helped to be aware of potential challenges and provide greater confidence in the performance and maintenance of what was being proposed.

What mechanisms are in place to help achieve multiple benefits?

No mechanisms as such, but it is recognised that nature based interventions bring multiple benefits. Proper maintenance of assets should help to ensure that these benefits are delivered.

Stage - Legacy

How will the relevance or importance of the schemes be maintained ?

The Games Village is often used as a case study site visit to review what has been delivered and to talk about what is good and what is not so good, to share learning and benefit future schemes.

How will future schemes and scale-up be fostered / incubated?

Legislation and Council SDP / Planning policy will continue to drive the delivery of nature based interventions. Games Village feedback / lessons learned will guide design and implementation of future schemes, including surface water management plans.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme - Governance

Stage - Legacy

What structures/ processes will remain in place/dissolve after scheme completion ?

The immediate project team will move on to other projects, taking their knowledge with them. Internal Council structures will remain in place. The process of agreeing designs / maintenance with other parties, specifically Scottish Water, have been refined to incorporate lessons learned from this and other projects.

Theme - Drivers

Stage - Planning

What initiated the NBS project?

- Commonwealth Games
- Flood risk amplified by Climate Change
- Regeneration of the East End of Glasgow.
 - The need for new housing.

How useful are the current objectives/ plans/strategies/programmes in facilitating the implementation of NBS?

SuDS are mandatory for new developments. Glasgow City Development Plan (2017) and Supplementary Guidance promote sustainable surface water practice / flood risk management, with a focus on nature based interventions, through the Planning process.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

No formal M&E is in place, other than feedback from residents and from maintenance visits which should document any issues.

At what stage of the project was M&E put in place?

At the end of the construction phase. Mostly informal process, which is a definite gap / failing in the project delivery.

What KPI targets were put in place?

No KPIs were put in place for the nature based interventions at the Games Village.

What baseline data did you have available?

None really, as the site was vacant / derelict prior to development, which substantially altered the pre-existing site, so there was no baseline that was applicable to be applied against the development post-implementation.

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

Effectiveness of the delivered components has not been formally measured / assessed.

NBS Case Study Process Questionnaire – Athletes Village, Glasgow, Scotland

Theme – Monitoring and evaluation

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

Monitoring and evaluation has / is not being formally done, other than feedback from residents or what is picked up during site maintenance visits. The simple observation would be that the systems are operating as intended, with no evidence to the contrary, other than some poor construction standard challenges. The vegetation for the nature based interventions is flourishing - in some places perhaps a bit too much and could do with some maintenance.

8.9 Pollok Park Flower Power Case Study Questionnaire results - Glasgow

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Challenges

Stage - Planning

What challenges does the city face as a whole?

- Economic uncertainty & resource gaps
- Reduced funding for public sector
 - Deprivation
 - Health
 - Inequality
- Contaminated Land

How were challenges identified?

Bottom up issues and citywide strategies. Think Global act local approach. Issues such as officer time spent on seeking grants to buy non local provenance wildflowers, long transport distances affecting the quality of the product and contributing to climatic change. Training and employability. Healthy living and a refugee population. Desire to create an outlet to Nurture People as well as plants.

How was the scale of the challenge identified?

Simple but concerning Biodiversity indicators such as pollinator decline in the past 50 years. Number of apprentices in Scotland who secure full time work. Natural Health service stats and nature deficit disorder in children.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Challenges

Stage - Planning

How was local context considered ? (From neighbourhood up to city scale)

The project is simple and harnesses volunteers of all ages and backgrounds to grow local provenance native wildflowers, from seeds gathered in local parks to deliver the Biodiversity LBAP actions and the Pollinator Plan for Glasgow. Wildflower species are grown on-demand to provide the larval & nectar food plants for Glasgow's declining local butterflies and insects. Many of these species could not be sourced from wildflower nurseries south of the border. So it is filling a gap and meeting very local needs. The 'meadow making' in parks and green spaces citywide, enhances biodiversity locally and up to the city scale and potentially beyond the city. In addition, training and employability was an important element, nurturing people as well as plants; a local lad & former Work Experience degree student with the countryside ranger team was employed for a year under TCV Natural Networks programme (revenue refunded) and seconded to Glasgow's Flower Power to the People project supervised by the Senior Countryside Ranger. The capital funding for the polytunnel came from a grant from Grow Wild, Kew Gardens national initiative in its 5th year. https://www.growwilduk.com/project-map?field_geofield_distance%5Bdistance%5D=25&field_geofield_distance%5Bunit%5D=6371&field_geofield_distance%5Borigin%5D=G43+1AT. Pollok Park became a training hub, 'Growing your skills' for other 11 Grow Wild projects across Glasgow. Local communities, ASL colleges, schools & nurseries and refugee participate through a year-round volunteer programme undertaking various tasks related to the scheme. This enhances Community Cohesion and build skills life for life in a group with employability issues.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Challenges

Stage - Legacy

How were outcomes linked back to original challenges?

- Number of wildflowers grown. Number of species grow. Area in metres square enhanced, ie planting. No of volunteer hours per year. % of grant income now spent of buying in wildflowers. No of different schools nurseries and colleges engaged.

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Yes, Land & Environmental Services, the host service of the Countryside Ranger team has Annual Strategic Targets, the KPI's link through the LBAP and Pollinator Plan to NBS targets. SDG3, SDG4 & SDG15 which were the key targets.

What scale were targets aimed at?

Local with potential for wider reaching regional & national outcomes on Biodiversity indicators, small but reduced national transport movements.

Stage - Legacy

To what extent are changes in local context being evaluated? (From neighbourhood up to city scale)

Surveys in Glasgow parks & greenspaces by partners such as Butterfly Conservation & Buglife to record trends insect species numbers and frequencies. Bioblitz run by the Countryside ranger team each year.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Objectives

Stage - Legacy

To what extent is resilience to future climate change built into the NBS design?)

Locally sourced seed is better adapted to grow in that area, is more likely to provide resources for other species at the right time, and more likely to be able to cope with environmental stresses such as increased temperatures and decreased rainfall from climate change. Using locally sourced/grown plants reduces carbon footprint from transportation.

Theme - Actions

Planning

Which NBS benefits were prioritised?

- Green space management (nature conservation)
- Participatory planning/governance (is described as a community-led initiative which is based within NbS)
- Public health and wellbeing (target to reconnect people with nature and to boost mental/physical wellbeing)
- Social justice/cohesion (activities for vulnerable groups? i.e. low income, elderly; free training boosts skills and attachment to place/sense of ownership?)

Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints)

No in fact because it had 3 key partners from very different but complimentary fields, a local authority Glasgow Countryside Ranger team, a Trust for Conservation Volunteers (TCV) and private sector Grow wild, Kew Gardens it managed to deliver free training and resources including the Hours for Flowers Bank Book (like a customer/community loyalty card) which was never conceptualised at the start. It evolved and grew naturally.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Impacts

Stage - Planning

Which impacts were considered ?

- Green space management (biodiversity conservation)
- Public health & wellbeing (education/reconnecting citizens with nature, Depression/stress)
- Participatory planning/governance (community-run project)
 - Employability and training/skills for life
- Social Cohesion (targeting refugees and ASL groups)

How were timescales of impacts considered ?

Annually and seasonally to reflect corporate reporting and seasonal changes.

What geographical scale of impact is being addressed?

Local and city scale

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

Not between multiple schemes but between multiple partners from different sectors. It was enhanced as everyone was investigated towards success and brought different & complimentary resources.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Impacts

Stage - Legacy

Did you see the expected outcomes?

Yes and few more. The hours for flower bank book scheme and Hub training events. Growing your skills days.

Did you see outcomes in the timescales expected?

Yes primary and secondary outcome targets have been met.

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

We couldn't have done it without the tripartite cooperation of our partners. TCV - revenue funding of post holder to get it started. Initial capital resources of Grow wild to build the structure and then resources to run training days and events. Ongoing resources of the countryside ranger team to supervise and steer the project on day to day basis and continue after the partners have stepped back.

Did you see any trade-offs as a result of the schemes?

No

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Multiple benefits

Stage - Planning

In what way were multiple benefits sought to be maximised and trade-offs minimised?

It was all about human relationships. Nurture people which by-product was nurturing plants. If the dynamic and drive between the officers in partnerships has not been so good we could not have achieved so many benefits. It was with human will and vision and hope for common good/goal.

Were any benefits not considered/ explored? Why?

Yes as above. Hub training days Growing your skills days. Hours for flower Bank Book. They evolved naturally as the project took shape. The project allowed the scope for creativity and organic working.

Was a cost/benefit analysis carried out?

No

How was an understanding of the local needs for each of these benefits understood during the planning process?

Local community needs were known as the Countryside Ranger work in person with many of the target groups already and understand the challenges and needs. Then the groups were engaged and their needs assessed dynamically as we went along, on a day by day basis. The biodiversity needs were known because the countryside ranger team are involved in writing the Local Biodiversity action plan and pollinator strategy and collating the data through surveys.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Multiple benefits

Stage - Planning

How did you deal with comparisons between monetary and non-monetary benefits?

Knowing the cost of everything and the value of nothing. I was cautious this was not going to be the Flower Powers fate, so I deliberately stayed clear of monetary values as didn't wish to place monetary value on the plants nor allow plants to be bought. Thus created the in-kind "Hours for Flowers" community bank book to buy flowers with hours not money. I had witnessed other facilities in the council being closed down because the books didn't balance but in no way took account of the invisible values to community health, wellbeing, biodiversity and cohesion and crime.

How did you consider the change in benefits over time?

I knew the benefits could be long lasting if executed properly. The Natural Network Trainee has secure a fulltime job in green sector straight after his 1 year contract was finished. The wildflower nursery grows more plants year on year as we learn how to stagger its seasonal bounty and demands. And the volunteer engagement are only limited by the number of 'supervisors' available.

Was baseline data used to inform design?

No

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Multiple benefits (continued)

Delivery

Were any co-benefits lost/reduced during delivery?

No

Were any co-benefits added/enhanced during delivery?

Yes as above. Hub training days Growing your skills days. Hours for flower Bank Book. They evolved naturally as the project took shape. The project allowed the scope for creativity and organic working.

Were there any changes to cost/benefit during delivery?

The capital cost were more but we managed to recycle a lot of materials from other locations to make up the shortfall.

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

Its is citywide wildflower nursery is deliberately located in a popular Country Park formal gardens with good public transport links, only the development of the Pollok Country Park Master plan and Courtyard restoration might affect the access and use of the wildflower nursery in the future..

How will future schemes be combined with existing schemes to maximise benefits?

Hopefully the present project could be enhanced by the Pollok Park courtyard restoration and a Community Growing could have kitchen and preparation space for growing & cooking of vegetables, similar to that of Dumfries House.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Themes – Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

- City parks/woodlands/greenspaces
- Local Nature Reserves (for seed collection)

Why were these areas chosen as the site for the NBS scheme?

It was in fact the second site chose, as this was more ideal for public transport/accessibility and was highly visible in the formal gardens of Pollok Country Parks; highly popular visitor destination with its dedicated staff of countryside rangers and gardeners the only Park with its own staff in Glasgow. so the project would have continuity and resources.

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

- City Development Plan 2017
- City Strategic Plan 2017-2022
- Glasgow Parks and Open Spaces Strategic
- Best Value Review and Implementation Plan
- Glasgow Climate Change Action Plan
- Glasgow Local Biodiversity Action Plan
 - Glasgow Pollinator Plan
- L.E.S Strategic Targets and Countryside
 - Ranger Annual Work Plan

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Themes – Integration

Stage - Planning

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Useful for reporting on value/significance.

Stage - Legacy

How geographically scalable are the schemes?

The scheme is scalable across the city, though this is a citywide project already and has nurturing People at its core. Constrained by the amount of land available to repurpose and the rate at which this goes on to be developed.

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

Not very robust I suspect, it could be incorporated possibly into the allotments strategy for example.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

The capital and revenue costs were not huge and easily calculated. The cost effectiveness came from the number of volunteer hours in-kind which went into constructing and managing its set up and on-going use.

Delivery

What were the barriers to realising the design?

The physical design was an out-of-catalogue polytunnel. But had to be large enough to accommodate special needs groups and wheelchairs on a site that had a slope and slabs.

Legacy

How can future barriers which result in descope (compromise on delivery) be better foreseen?

There weren't many in truth, but could have been if we hadn't had certain pre-existing knowledge and resources to draw upon. Share experiences with the industry and other countryside ranger services across Scotland through networking days and conferences.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Themes – Key lessons

Legacy

How has the cities' delivery method changed over the course of the project?

We no longer buy so many wildflowers from suppliers. We therefore do not spend so much money on buy in wildflowers and potentially diseases. So Bio security is better. We have no problems meeting our Volunteering annual targets.

Stakeholder Participation/participatory Planning and governance

Stage - Planning

What methods of stakeholder engagement were adopted?

- Community-run project with input from Glasgow City Countryside Rangers, TCV and Grow Wild (part of Kew Gardens)
- volunteer opportunities such as seed collecting/sowing/planting
 - volunteer work days e.g. habitat management in nature reserves
- skills training/workshop for volunteers - meadow management, wildlife ID skills etc
- Volunteer as a Community Volunteer Co-ordinator/Role

Which stakeholder groups were involved in the design process?

ASL and 50+ group. Butterfly Conservation.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Stakeholder Part./part. Plan. and govern.

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

- Through an annual formal program of monthly volunteer days (i.e. Tuesday & Saturdays)
- Through Facebook site promoting ideas and volunteer days
- Through engagement of schools, colleges and nurseries in Curriculum for excellence education days
- Through the Friends of Pollok Country Park & The Park Run additional volunteer days
- Through "Butterflies & Blooms" annual ranger-led public event in July
- Annual stats collation and feedback into LES and LBAP KPI's'

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

- TCV Natural Network Trainee placement for 1 year at the very start of the project to get it built and up and running. The Trainee securing a full time job soon after the contract ended, after struggling up till that point.
- Growing your Skills community training day days run jointly with Grow wild for Glasgow Grow wild projects and later Scotland wide Grow wild projects, to build community capacity and sharing of learning and experiences.
- ASL college students gaining skills for life in gardening and sustainable resource management by weekly volunteering.
- the flower Power Volunteer Co-ordinator securing a full time job in a neighbouring council as Ranger.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

Unknown dynamic of 3 partners working together, 1 totally new. Capability of the Trainee (but this was partly known due to him being a work placement for 8 weeks). Skilling up staff, though the council has expertise to draw from its formal nursery garden staff.

How did you identify potential barriers?

Knowing my audience/target group before it started, through personal contact. Been familiar with citywide targets and strategies but also having a pragmatic on the ground role. I was a keen amateur gardener with love for our natural world.

What processes or methods were used to overcome barriers?

Being well connected in the industry and having 25 years of experience in the field. Having a shared vision and passion and relaying that to others including in the supervisory role. Taking the approach where's there a will there's a way. No hurdle too high to jump.

Theme – Financing

Stage - Delivery

How were schemes funded?

1. Capital funding - £4K from Grow Wild, Kew Gardens
2. Revenue funding - TCV Natural Networks Trainee
3. Revenue funding - Glasgow City Council/Countryside Ranger Team
4. 1000 of Volunteers hours

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Financing

Stage - Delivery

How did you justify spend of funds? Did you need to?

To funders yes. In an annual report. Local Biodiversity Action Partnership (LBAP) deliverables.

Legacy

What funding was put in place to ensure legacy?

The existing funding behind a dedicated Countryside Ranger staffing for Pollok Country Park to keep the project running and volunteer program supported.

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

All it spreads the risk and benefits

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Governance

Planning + Delivery

What staff were involved with this project?

Glasgow City Council's Natural Environment Team - park rangers

What internal structures supported the planning / delivery of the project?

My supportive and keen line manager David Marshall, Manager Parks and development who had spent 55 years in the council and had a wealth of experience, strategic oversight and project management. He was also a keen gardener.

What internal structures presented barriers to planning / delivery?

Not internal but external. The TCV Trainee was stressed by reporting to 2 partners and using 2 different system of management and reporting.

What processes were implemented to facilitate planning / delivery?

Weekly reporting on progress. Quarterly reporting on stats delivery towards Strategic targets,. Annual report.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Governance

Planning + Delivery

Was there any gap in expertise that if present, would have improved the success of the project ?

Yes the project was being delivered by a trainee who was effectively learning on the job - it was his pet project. He was Learning by doing. The senior ranger had never understood such a complex project with so many variable and partners, it was new ground. The project was about transferring skills from the existing rangers in post to the trainee and volunteers, but most of the rangers were no actually gardeners and had never grown from seed, nor collected and stored seed. Grow wild supplied lots of expertise and guidance and Glasgow's Gardening Staff was also on hand to fill the knowledge gap. We asked questions and knew who to go to find the answers.

What mechanisms are in place to help achieve multiple benefits?

3 partners with different expertise working together. The mechanism was personal working relationships and common passion and vision and desire to make it a success.

Stage - Legacy

How will the relevance or importance of the schemes be maintained ?

By always growing to meet the need (i.e. the species that Glasgow's pollinators require to thrive). By engaging local people and giving them sense of purpose, community and achievement.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme - Governance

Stage - Legacy

How will future schemes and scale-up be fostered / incubated?

Sharing successes with the industry.

What structures/processes will remain in place/dissolve after scheme completion?

Working with TCV and Grow Wild will be retained by working across new and different projects.

Theme - Drivers

Planning

What initiated the NBS project?

Frustration that what the way were working was cumbersome, time consuming and didn't produce the best outcome for local results. That we could do it better by making it very local and be more joined up, sustainable and more effective. By keeping it simple, and redirecting time spent on grant and form filling to managing people and skills transfer. Desire to do things better for the greater good.

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

The Pollinator Plan & LBAP are very targeted.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

Quarterly and annual reporting on KPI's

At what stage of the project was M&E put in place?

Before the start & at the grant application stage.

What KPI targets were put in place?

- Number of wildflowers grown.
 - Number of species grow.
- Area in metres square enhanced (ie planting).
 - No of volunteer hours per year.
- % of grant income now spent of buying in wildflowers.
- No. of different schools nurseries and colleges engaged.

What baseline data did you have available?

Our yellow cards going back 11 years which is raw data collated on daily activities of countryside ranger team for interrogating for annual reports, LBAP, APSE and LES strategic targets. Grow wild 4 year of previous Grow wild projects. TCV previous Natural Networks Trainee program 2 years before.

NBS Case Study Process Questionnaire – Flower Power, Glasgow, Scotland

Theme – Monitoring and evaluation

Planning + Delivery

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

Collated volunteer testimonials, photographs, kept a monthly time line of photographic progress, and hard stats of number of volunteer hours, wildflowers grown, planted out and area improved.

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

Yes or the funding wouldn't have been forthcoming.

8.10 Stalled Spaces Case Study Questionnaire results - Glasgow

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Challenges

Stage - Planning

What challenges does the city face as a whole?

- Economic uncertainty & resource gaps
 - Reduced funding for public sector
 - Deprivation
 - Health
 - Inequality
 - Contaminated Land

How were challenges identified?

- Bi-annual survey of residents
- Future Glasgow public consultation
- Economic Commission consultation
 - Equality group consultation
 - Staff consultation events

How was the scale of the challenge identified?

- Scottish annual survey of Vacant & Derelict Land
- High incidence of stalled developments after economic downturn

How was local context considered ? (From neighbourhood up to city scale)

The scheme is open to community groups and local organisations for spaces across the entire city of Glasgow

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Challenges

Stage - Legacy

How were outcomes linked back to original challenges?

- By measuring number of projects supported & amount of stalled / underused open spaces improved and activated through the programme.
- By measuring share of supported projects lying in areas of extreme deprivation (using SIMD)

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Majority of projects targeted towards NBS such as temporary greening, supporting native species, promoting wildlife, growing food locally, developing rain gardens, imparting environmental education, engaging communities with nature and supporting such community-led green projects in diverse parts of the city

What scale were targets aimed at?

City scale

Stage - Legacy

To what extent are changes in local context being evaluated? (From neighbourhood up to city scale)

- Annual monitoring of supported projects is part of the programme structure
- Through this process the following area measured:
 - Number of projects supported & successfully delivered
 - Amount of stalled/underused open spaces improved and activated
 - Community engagement and volunteer hours dedicated to project
- Distribution of projects across areas in the city and demographics
 - Additional funding generated / received by supported projects after initial seed funding from the programme to scale up and maintain project

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Objectives

Stage - Legacy

To what extent is resilience to future climate change built into the NBS design?)

- Resilience is integral to the programme through efforts to:
 - Reduce food poverty and promote access to locally grown food
 - Promote development of green spaces that enhance local drainage and help reduce urban heat effects in addition to other health and well-being impacts
 - Empower communities to take on local issues and deliver projects to benefit the area
 - Build local capacities and promote networking and knowledge sharing among communities and local organisations

Theme - Actions

Planning

Which NBS benefits were prioritised?

- Reduction in poor environmental conditions (ground contaminates)
 - Wellbeing of local residents
 - Social cohesion

Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints)

No, continued emphasis on local regeneration.

Theme - Impacts

Stage - Planning

Which impacts were considered ?

- Pollution control
- Climate adaptation
- Health and wellbeing
 - Social cohesion

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Impacts

Stage - Planning

How were timescales of impacts considered ?

Alternative use of disused spaces is intended to be temporary, until the land is commercially viable to be developed.

What geographical scale of impact is being addressed?

City scale.

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

No.

Stage - Legacy

Did you see the expected outcomes?

Yes, Primary outcome targets have been met.

Did you see outcomes in the timescales expected?

Yes.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

- Biodiversity
- Pollution control
- Health and Wellbeing
- Social cohesion

Did you see any trade-offs as a result of the schemes?

No

In what way were multiple benefits sought to be maximised and trade-offs minimised?

It was understood that where possible, projects should be linked with other local initiatives to maximise local benefits, e.g. linking with local schools.

Were any benefits not considered/ explored? Why?

No

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Multiple benefits

Stage - Planning

Was a cost/benefit analysis carried out?

No

How was an understanding of the local needs for each of these benefits understood during the planning process?

It was intended that local residents determined the temporary use of the space, which could vary according to local demand or need.

How did you deal with comparisons between monetary and non-monetary benefits?

Most benefits were non-monetary or hard to quantify monetarily - such as volunteers trained in developing and managing projects, impacts to local health and well-being through participation, dissemination of environmental education and awareness, among others

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Multiple benefits (continued)

Stage - Planning

How did you consider the change in benefits over time?

It was always planned that some of the benefits would be temporary, as the use of the land by resident groups is a temporary measure. Lasting benefits will include and health benefits.

Was baseline data used to inform design?

Yes, data on extent of vacant and derelict land in the city

Delivery

Were any co-benefits lost/reduced during delivery?

No

Were any co-benefits added/enhanced during delivery?

All of them

Were there any changes to cost/benefit during delivery?

N/A

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Multiple benefits (continued)

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

- The temporary use of the space is flexible to demands as it will be possible to repurpose land as there is minimal infrastructure involved.
- The long term use of that space may not be flexible as increasing land prices will result in the development of the land plots.

How will future schemes be combined with existing schemes to maximise benefits?

More area-based schemes are being developed, along a similar model but responding to more specific needs of those areas, e.g. stalled spaces schemes for town centres, etc.

Themes – Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

Brownfield

Why were these areas chosen as the site for the NBS scheme?

Areas of ground pollution making them currently too expensive to decontaminate and develop

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

The aims and objectives of the programme are in line with all the sustainability and urban regeneration principles as laid out in the city Development Plan

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Partially. Programme specifically targeted towards stalled/underused open spaces

Stage - Legacy

How geographically scalable are the schemes?

The scheme is scalable across the city, constrained by the amount of land available to repurpose and the rate at which this goes on to be developed.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Themes – Integration

Stage - Legacy

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

Partially. It would be useful to develop planning policy . The local development plan supports the project with supplementary planning guidance

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

Seed funding to encourage adaptive re-use of abandoned open spaces, the benefits outweigh the monetary investment through the programme.

Delivery

What were the barriers to realising the design?

Access and permission to use privately owned stalled/underused open spaces.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Themes – Key lessons

Legacy

How can future barriers which result in descoping (compromise on delivery) be better foreseen?

- Better understanding of the programme and its objectives across private owners, local developers and reassurance to them with regards to property rights.
- Use of community empowerment act and other tool to improve community access to such spaces.

How has the cities' delivery method changed over the course of the project?

- Maximum funding increased over time to reflect increasing costs and decreasing funding opportunities elsewhere.
- Other area-based schemes rolled out to address area-specific issues and requirements.

Stakeholder Part./part. Plan. and gov.

Stage - Planning

What methods of stakeholder engagement were adopted?

It was understood that in order for the spaces to be effective the community must champion the project

Which stakeholder groups were involved in the design process?

- Resident groups
- Local organisations
- Communities of interest

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Stakeholder Particip./particip. Plan. and governance

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

- Resident groups, local organisations or communities of interest manage the temporary use of a space and conduct any physical works. These users benefit from using the space in the way in which they have designated.
- Programme feeds into planning policy through the City Development Plan as well as to the Strategic Plan of the Glasgow City Council

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

Skills increase and voluntary work may have been useful in increasing job prospects of the young and unemployed.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

- Confusion in understanding from public that the use of land was temporary
- Not all vacant land can be used (Lack of community capacity or unwillingness of landowner to participate)
- It can take a while to get all stakeholders to understand how they can contribute to the stalled spaces initiative.

How did you identify potential barriers?

Case by case basis

What processes or methods were used to overcome barriers?

Each land plot must be treated individually as there are many differing factors between plots

Theme – Financing

Stage - Delivery

How were schemes funded?

- On an annual basis:
- £35K allocated from Glasgow City Council
 - £15K allocated from Glasgow Housing Association
 - Other match funding generated by applicants through other sources

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Financing

Stage - Delivery

How did you justify spend of funds? Did you need to?

By demonstrating and emphasising the benefits and co-benefits of the programme as highlighted through the annual monitoring process.

Legacy

What funding was put in place to ensure legacy?

- Not clear that any physical infrastructure will survive in the long term as the repurposing of the space is intended to be temporary.
- Legacy will include increased community capacity however it is not clear what role they will play when the land is developed and whether finances will be available for any schemes.

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

Not sure...

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Governance

Planning + Delivery

What staff were involved with this project?

The programme involves three key officers in addition to support by officer across other teams in the council:

- One planning officer to manage the delivery of the programme
 - One greenspace / community support officer
- One administrative support / monitoring support officer

What internal structures supported the planning / delivery of the project?

Overall support and funding from the planning department and additional support from other teams across the council including - development planning, development management, land and environmental services, economic development, community planning partnerships, property and land services, among others.

What internal structures presented barriers to planning / delivery?

Remit for generating revenue from council-owned surplus property presented a barrier to getting permission for the temporary use of such spaces by community groups for no cost.

What processes were implemented to facilitate planning / delivery?

Process in place for delivery of 2 funding cycles for the programme annually

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Governance

Planning + Delivery

Was there any gap in expertise that if present, would have improved the success of the project ?

Varies from project to project, programme helps signpost and link with other resources available locally but still gaps remain

What mechanisms are in place to help achieve multiple benefits?

The delivery of the programme itself in its current form helps deliver multiple benefits

Stage - Legacy

How will the relevance or importance of the schemes be maintained ?

Through continued support for and championing of the programme from the council and other supporting organisations.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme - Governance

Stage - Legacy

How will future schemes and scale-up be fostered / incubated?

Through continued support for and championing of the programme from the council and other supporting organisations.

What structures/processes will remain in place/dissolve after scheme completion ?

Continued support from council for community-led improvement and activation of stalled/underused open spaces in the city

Theme - Drivers

Planning

What initiated the NBS project?

Acknowledgement of the extent of vacant and derelict land in the city, lack of proposals for long-term redevelopment of these sites and acknowledgement of the deleterious impacts of such spaces on the overall health and well-being of local communities they were prevalent in.

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Very. Detailed in previous section.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

Annual monitoring of projects supported that year and general evaluation of the programme.

At what stage of the project was M&E put in place?

Once the project has been delivered/ implemented and funding spent.

What KPI targets were put in place?

- Includes:
- Volunteer hours spent
 - Demographics of participants to highlight groups impacted
 - Match funding generated
 - Qualitative assessment of outcomes and benefits
 - Quotes from participants, etc.

What baseline data did you have available?

Extent of vacant and derelict land in the city.

NBS Case Study Process Questionnaire – Stalled Spaces, Glasgow, Scotland

Theme – Monitoring and evaluation

Planning + Delivery

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

Qualitative assessment through monitoring information received.

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

Yes

8.11 Jezyce District Pocket Park Case Study Questionnaire results - Poznań

NBS Case Study Process Questionnaire – Pocket Park, Jezyce District, Poznań, Poland

Theme - Challenges

Stage - Planning

What challenges does the city face as a whole?

Main challenges: to make Poznań green, for example by creating green areas for recreational purposes (parks, gardens, squares, etc.), in order to improve the quality of life of all residents; to counter the exclusion of people, friendly settlements, community and social dialogue (to encourage participation); protection against development of the existing natural potential (natural capital) and stopping the expansion of urbanization processes into green areas; raising awareness of the shared responsibility for the quality of the environment; restoration of the continuity of urban structures and the aesthetics of urban space

How were challenges identified?

Stage I - community consultations - identification of the needs and visions of the residents for park development through an Internet-based survey; Stage II - meetings with the residents, organized by activists from the Jezyce District. This created a platform to discuss the 'park development project'. Students of Design and Art Schools were also involved in the preparation of the project.

How was the scale of the challenge identified?

Local scale/district scale - the space intended for development was an object of interest mainly for the residents of the Jezyce housing estate

How was local context considered ? (From neighbourhood up to city scale)

The revitalization of the space meets the local needs of the residents and is in line with the task of creating green spaces in the city for recreational purposes, to improve the quality of life of all residents

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme - Challenges

Stage - Legacy

How were outcomes linked back to original challenges?

The Pocket Park was created in a city district characterized by neglected high density housing with a small proportion of greenery. The revitalization resulted in a newly created greenspace, which serves as a meeting, rest and recreation place for the residents. In addition, it resulted in an increase in the landscape aesthetics of the district. Involving the local community in discussions about the square development project was an impulse to stimulate the residents' participation and responsibility for the newly created green space and made them aware of their role and opportunities in creating a neighbourhood.

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Yes, in particular in relation to Social Cohesion, Health & Wellbeing and as part of the green infrastructure for Climate Change & Resilience

What scale were targets aimed at?

Local scale/district scale

Stage - Legacy

To what extent are changes in local context being evaluated? (From neighbourhood up to city scale)

Evaluation is based on ordinary observation of number of users and participants who take part in the events. It is also based on media mentions. However, this is informal assessment, without a systemic approach. Evaluation is also based on decision-makers' general perception of improved access to greenspaces and quality of greenspaces for recreational purposes.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme - Objectives

Stage - Legacy

To what extent is resilience to future climate change built into the NBS design?)

Observation of the frequency of use of the square by the residents (number of visits). However, this is an informal assessment, without a systemic approach.

Actions

Planning

Which NBS benefits were prioritised?

Creation of an aesthetically pleasing greenspace for recreation and as a place for congregation of the housing estate residents (Social Cohesion, Health & Wellbeing)

Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints)

No, constraints were taken into account during the planning phase.

Theme - Impacts

Stage - Planning

Which impacts were considered ?

While creating an attractive space for congregation and rest, careful considered was made of how to shape and strengthen good social relations between the residents of the estate and how to increase the quality of life in a densely built-up city space. The aspect of expanding the proportion of green infrastructure in the city was also taken into account.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme - Impacts

Stage - Planning

How were timescales of impacts considered ?

The long-term impact of the project was considered.

What geographical scale of impact is being addressed?

The targeted geographical scale of impacts is local, but this does not exclude the possibility of the park being used by inhabitants from across the city.

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

During delivery, the schemes were developed with new solutions that make optimal use of the NBS

Stage - Legacy

Did you see the expected outcomes?

Yes, the pocket park has become a meeting place for the residents of Jeżyce housing estate.

Did you see outcomes in the timescales expected?

Yes, since the opening of the pocket park, it is being frequently visited by the local community.

NBS Case Study Process Questionnaire – Pocket Park, Jeźyce District, Poznań, Poland

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

The local community has a sense of responsibility for the maintenance of the park and its protection against degradation. The creation of the park together with the inhabitants stimulated their activity and involvement in local initiatives and strengthened the process of building a cultural identity related to the Jeźyce District.

Did you see any trade-offs as a result of the schemes?

The surprising result of the project was that the trade-off resulted in financing an “optimal use of a Nature Based Solution” rather than reaching a compromise on using a cheaper, lower quality solution, that would perhaps have been the outcome had the developer been the project lead rather than the co-creational approach that was adopted.

In what way were multiple benefits sought to be maximised and trade-offs minimised?

These activities were based on a well conducted public consultation and openness to discussion of the actors involved in the project

Were any benefits not considered/ explored? Why?

Observation of the use of the pocket park by the residents indicates that it met their expectations and needs.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme – Multiple benefits

Stage - Planning

Was a cost/benefit analysis carried out?

The Jeżyce District Council decided to subsidize the project after taking into account the benefits the park will provide for the residents.

How was an understanding of the local needs for each of these benefits understood during the planning process?

At the planning stage, the expected benefits were determined on the basis of an analysis of the needs of the local community.

How did you deal with comparisons between monetary and non-monetary benefits?

Priority benefits related to the creation of the park have mainly an intangible and social dimension, hence financial benefits and comparisons have not been made.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme – Multiple benefits (continued)

Stage - Planning

How did you consider the change in benefits over time?

Based on the observed use of the pocket park by the residents - supply of benefits from this NBS is changing over time. Most benefits are provided in spring and summer, less in autumn and winter (phenological changes, characteristics of climate).

Was baseline data used to inform design?

Yes, all the assumptions of the project and residents expectations were communicated and consulted during design process.

Were any co-benefits lost/reduced during delivery?

The problem of loss of profit does not apply to this project.

Were any co-benefits added/enhanced during delivery?

Yes, the residents of the estate introduced exclusively Nature Based Solutions (permeable surfaces, greenery richly diversified in structure and species) to the original project design. These were focused on the aesthetics of the area, and proposed to equip the park with facilities that encouraged recreation

Were there any changes to cost/benefit during delivery?

Yes, the financial costs of the park development were higher than those in the original project proposal. However, in relation to the opinion of the residents, the additional benefits obtained were deemed to be proportional to the additional benefits obtained

Delivery

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme – Multiple benefits (continued)

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

The example of Pocket Park Jeżyce shows that the core of the NBS scheme/strategy is the identification of needs and conditions, as well as cooperation and discussions among stakeholders. The NBS scheme/strategies should be flexible and the preparation of a rigid framework for the NBS prevents success.

Stage - Legacy

How will future schemes be combined with existing schemes to maximise benefits?

Good practice - best practices from successful schemes should be adopted for future schemes

Themes – Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

The Pocket Park interacts with communication routes and the area of dense urban buildings (the area of urban development). It was previously a low quality amenity grass lawn.

Why were these areas chosen as the site for the NBS scheme?

The area was vacant land between the buildings and the street, neglected, covered with low a quality and diversity amenity grass lawn, ruderal vegetation and concrete surfaces.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

The NBS concept is taken into account in urban documents (plans/strategies/programmes) in different areas. The provisions concerning the directions of activities and tasks are of a general nature, but with great potential for the application of NBS, as well as the form of specific tasks, which indicate, directly, the use of green infrastructure and blue infrastructure in solving urban problems.

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Among the municipal documents (plans/strategies/programmes), the most useful for the implementation of NBS are the programme and planning documents. These, on the basis of the strategic documents, define detailed directions of activities and specific tasks for the implementation of the urban environmental policy. Tasks related to Climate Change Adaptation & Resilience, Health & Wellbeing and Social Cohesion areas are focused on increasing the share of green areas in the development of the city's ecological system, for recreation and education, for the management of rainwater, or for the use of green areas for protection and isolation.

Stage - Legacy

How geographically scalable are the schemes?

Pocket Park solutions can be scaled up throughout the city and agglomerated.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Themes – Integration

Stage - Legacy

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

The Pocket Park projects are clearly in line with the main objectives, directions of activities and tasks defined in the municipal documents for the implementation of the environmental policy in the city.

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

The level of understanding and measurability of effectiveness of schemes by stakeholders can be assessed as high.

Delivery

What were the barriers to realising the design?

In the first phase of the project, a conflict of interest between the developer, who was interested in minimising the costs of park development, and the expectations of the residents was a barrier.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Themes – Key lessons

Legacy

How can future barriers which result in descope (compromise on delivery) be better foreseen?

Identify the interests and expectations of all stakeholders during a public consultation prior to beginning the design with the developers

How has the cities' delivery method changed over the course of the project?

It not known.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Stakeholder Participation/participatory planning and governance

Stage - Planning

What methods of stakeholder engagement were adopted?

Collecting residents' opinions through questionnaires and direct interviews, discussion with residents on an Internet forum conducted by the Jeżyce District Council, contact with residents through social media, meeting with residents, workshops - joint design of Pocket Park development and elements of small architecture by residents, architects, designers and students of design and art schools.

Which stakeholder groups were involved in the design process?

Residents, Jeżyce District Council, Developer, Municipal Green Management Board, Students of the School of Form, University of Fine Arts and Poznań University of Technology of Poznań

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

Jeżyce District Council and residents keep the park clean and protected from damage. The Urban Green Authority takes care of the condition of the greenery and irrigation.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

Pocket Park Project was implemented by the Municipal Green Management Board in cooperation with a horticultural company providing one-off employment, thus the functioning of Pocket Park may not contribute to the development of green business. The maintenance of the Pocket Park is the responsibility of the Jeżyce District Council.

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

The clash of interests between a developer, who was interested in minimizing the costs of park development and the expectations of residents

How did you identify potential barriers?

The problem was not identified before taking action and appeared at the stage of the Pocket Park development project.

What processes or methods were used to overcome barriers?

Discussion and mediation, which led to a compromise on the issue of project financing. The residents of the housing estate agreed to participate financially in the development of Pocket Park

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme – Financing

Stage - Delivery

How were schemes funded?

The implementation of Pocket Park was financed by the developer, and the additional costs, resulting from the development of the park in accordance with the expectations of the residents, were covered by the residents from their own funds.

How did you justify spend of funds? Did you need to?

The park's project contained a detailed cost estimate based on which the funds were released. Accounting documents (invoices) constituted the evidence for confirmation of the financial operations.

Legacy

What funding was put in place to ensure legacy?

It is unknown. Probably no funds were put in place to ensure legacy.

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

Implementation of projects within the framework of the Public-Private Partnership; obtaining grants for the implementation of projects; financing projects from the so-called civic budget.

NBS Case Study Process Questionnaire – Pocket Park, Jezyce District, Poznań, Poland

Theme - Governance

Planning + Delivery

What staff were involved with this project?

The residents, Jezyce District Council, Developer, representatives of the Municipal Green Board, Students of the School of Form, University of Arts and Poznań University of Technology, horticultural company.

What internal structures supported the planning / delivery of the project?

The Jezyce District Council and Road Management Board in Poznań.

What internal structures presented barriers to planning / delivery?

The role of the developer in the planning process

What processes were implemented to facilitate planning / delivery?

Discussion, participation of residents, mediation, open workshops

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Governance

Planning + Delivery

Was there any gap in expertise that if present, would have improved the success of the project ?

Yes. Lack of awareness of the importance of public consultations before the execution of projects targeted (dedicated) to the local society

What mechanisms are in place to help achieve multiple benefits?

Discussion, participation of residents, mediation, open workshops

Stage - Legacy

How will the relevance or importance of the schemes be maintained ?

By showing the results that can be achieved through commitment, working together and taking initiatives

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme - Governance

Stage - Legacy

How will future schemes and scale-up be fostered / incubated?

By demonstrating the achieved benefits, using experiences and good practices and transferring them to new projects

What structures/processes will remain in place/dissolve after scheme completion ?

On the basis of the observations, it can be assumed that the created structures (greenery, park equipment) have a permanent character and are still developing (new plantings, new objects of small architecture). The processes in the area of S.C. and H&W initiated by the creation of the park are also observed and are still developing.

Drivers

Planning

What initiated the NBS project?

The need to create a green space in the area of dense housing, the need to create a meeting place for the residents, a place for recreation and rest. The initiative was taken by the Jeżyce District Council in response to the process of increasing the number of housing estates in the district.

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme - Drivers

Stage - Planning

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

Among the municipal documents (plans/strategies/programmes), the most useful for the implementation of NBS are the programme and planning documents. These, on the basis of the strategic documents, define detailed directions of activities and specific tasks for the implementation of the urban environmental policy. Tasks related to Climate Change Adaptation & Resilience, Health & Wellbeing and Social Cohesion areas are focused on increasing the share of green areas in the development of the city's ecological system, for recreation and education, for the management of rainwater, or for the use of green areas for protection and isolation.

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

Monitoring covers two aspects 1. frequency of park use by residents (number of visits), 2. monitoring of park condition, maintenance of greenery and equipment.

At what stage of the project was M&E put in place?

At all stages.

What KPI targets were put in place?

Residents wellbeing, social cohesion

NBS Case Study Process Questionnaire – Pocket Park, Jeżyce District, Poznań, Poland

Theme – Monitoring and evaluation

Planning + Delivery

What baseline data did you have available?

Data concerning the use of the park by the local community

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

The effectiveness is measured on the basis of observations (number of visits, number of visitors).

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

Yes, M&E was conducted as agreed by the Jeżyce District Council and coordinated by the Council..

8.12 Development of flood plain of Warta River - Wilda River Beach Case Study Questionnaire results - Poznań

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme - Challenges

Stage - Planning

What challenges does the city face as a whole?

How were challenges identified?

Poznań faces a depopulation process. It is particularly visible in central districts where the urban population is concentrated. Those areas are characterized by densely built-up structures inhabited by a high number of residents with diverse economic status. The challenge is to revitalize the area to improve the quality of life.

At the same time urbanization pressure is still high with demand to transform previously open or green spaces into new built-up areas. This creates a deficit of high quality, multifunctional green public spaces in some parts of the city, including the city centre.

In contrast, in the city center the main parts of city's green infrastructure "green wedges" are located. These are located along the Warta River and its tributaries. These spaces are often neglected or not adapted for recreational use. It is important to consider, however, that along the Warta River there are areas at risk of flooding. These flood risk zones limits the possiblity for development in these zones.

The following resources and methods were utilized to identify the challenges:

1. Population trend is visible in the statistical and census data.
2. Results of environmental and social diagnosis is a foundation for city and metropolitan policy documents. In particular the Development Strategy of the River Warta 2012-2030 is focused on the subject of riverside areas.
3. Ongoing public debate about "bringing the river back to the city", including many activities such as exhibition presenting the development projects of the Warta riverbed (2006), public debates about development of the Warta riverbed, discussions in the media.
4. In 2001, the Management of the City of Poznań initiated the survey "Quality of life in Poznań". Among different indicators, sport and leisure activity of residents was monitored.
5. Flood hazard maps presenting areas with a defined probability of flood occurrence:
 - areas, in which the probability of flood occurrence is low and amounts to 1 in 500 years (Q 0,2%);
 - areas, in which the probability of flood occurrence is medium and amounts to 1 in 100 years (1%),
 - areas, in which the probability of flood occurrence is high and amounts to 1 in 10 years (Q 10%),
 are available at <http://www.isok.gov.pl/en/flood-hazard-maps-and-flood-risk-maps>.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme - Challenges

Stage - Planning

How was the scale of the challenge identified?

The situation in Poznań was recognized at the city or district scale. The Warta River Valley runs south to north through the whole city, including areas in the city centre. However, particular attention was put to centrally located districts that are targeted for urban regeneration.

How was local context considered? (From neighbourhood up to city scale)

The local context resulted from the environmental conditions (Warta River location and its limitations on development possibilities). Also from the very dense urban structure in the city centre. Distribution of population and density of population was also important.

Stage - Legacy

How were outcomes linked back to original challenges?

Improving the quality of greenspace and enriching it in relation to recreational facilities, together with creation of a cultural place where different events and actions are organized that contribute to a better quality of life in the city centre. It creates space that attracts residents from different age groups, including young inhabitants and students. Development of the Warta River that runs through the whole city creates a more attractive place for tourists also. The area which cannot be developed due to flood risk can still be used for social activities.

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Development of the Warta beach was focused on citizen wellbeing and social cohesion through regeneration of neglected greenspaces within dense urban structure. As the green river valley was already a key feature of the urban infrastructure, delivering various regulating ecosystem services, the idea was to try to avoid trade-offs through temporary development and enhance synergies. By transforming the neglected space into a location that attracts people, it is expected that well design greenspace will deliver also economic benefits.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme - Objectives

Planning

What scale were targets aimed at?

Development of Wilda river beach is a local scale intervention within the main axis of the city green infrastructure. The cycle path developed along the Warta River can also be consider as a local scale intervention that is part of the city scale cycle paths. It also forms part of a network of cycle paths at the city scale

Stage - Legacy

To what extent are changes in local context being evaluated? (From neighbourhood up to city scale)

Evaluation is based on ordinary observation of number of users and participants who take part in the events. It is also based on media mentions. However, this is informal assessment, without a systemic approach. Evaluation is also based on decision-makers' general perception of improved access to greenspaces and quality of greenspaces for recreational purposes.

To what extent is resilience to future climate change built into the NBS design?)

Well equipped and attractive recreation spot within large green system is naturally cooler and more humid place for residents to relax during hot summer days. This is especially important in the areas of densely built-up city centre. The area in danger of flood is prone to climate change. However, the character of development on the Wilda beach is mainly temporary and can be removed in a case of flood danger. Additionally bicycle path "Wartostrada" is designed to be resistant to seasonal flooding of the river.

Actions

Planning

Which NBS benefits were prioritised?

Citizens health and wellbeing, social cohesion.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Actions

Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints)

No, constraints were taken into account during the planning phase.

Theme - Impacts

Stage - Planning

Which impacts were considered ?

Citizens health and wellbeing, social cohesion, economic development.

How were timescales of impacts considered ?

Development of the river beaches was an experimental activity that was developed in using a model of learning-by-doing. As such, it was difficult to establish strict timescale planning as this would be dependent upon the success of the scheme. Due to the climatic conditions in Poznań, urban beaches are seasonally open only during summer. This gives flexibility in decision making and introducing the opportunity for changes each year dependent upon the environmental and social needs. The first river beach in Poznań was opened in 2012. It became commercially independent (i.e. without the need for financial support of Poznań City) in 2018. The Wilda beach was initially run in 2015 and it has successively developed since.

What geographic scale of impact is being addressed?

Particular attention was focused on the local neighborhood community. However, the beach is part of a larger river development, therefore it was expected to attract citizens from the whole city as well as tourists.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme - Impacts

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

In the case of Wilda Beach it has not been noticed that the relationship between multiple schemes has changed during delivery.

Stage - Legacy

Did you see the expected outcomes?

Yes, the new arranged place is popular among community and guests. The number of people visiting and using Wilda Beach is increasing. New equipment planned for the new season is expected to attract more people.

Did you see outcomes in the timescales expected?

It was expected that Wilda beach would attract residents and become more and more popular each year. In this sense, the newly arranged place is becoming more popular among community and other visitors each year.

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

Aesthetic - a neglected area became attractive for visitors and users.
 Social - a lot of people from different social and age groups benefited from free sport and cultural events organized at the beach.
 Economic - an underused space became a place where small businesses associated with organised cultural events could develop.
 Increase of multifunctionality - area that previously delivered mainly regulating ecosystem services provides also diverse cultural services.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme – Multiple benefits

Stage - Planning

Did you see any trade-offs as a result of the schemes?

Social - previously unused space become vibrant cultural spot that can generate noise and waste that is not welcomed by part of community.
Environmental - flood protection limited the scope of the development; it allows for only seasonal use - e.g. during winter season the sand needs to be removed, location of permanent lighting is prohibited.

In what way were multiple benefits sought to be maximised and trade-offs minimised?

Social - events and activities are provided for free thus ensuring that everyone could participate. Equipment and activities are designed for different target age groups; cleaning service, the operator is also obliged to guarantee quiet hours after 22:00, as well as provide sanitary facilities, including toilets.
Environmental - adjustment of possible development according to flood protection regimes: temporary equipment that is removed after summer season; portable (mobile) equipment; application of technologies and materials resistant to temporary flooding.

Were any benefits not considered/ explored? Why?

Definitely yes. These kinds of actions are multifunctional and can (co)produce plenty of benefits. They contribute in many different ways to human wellbeing and city resilience.

Was a cost/benefit analysis carried out?

No. The creation of the city beach was the city's activity for the residents and corresponds with the city authorities' approach to the policy "Return to the River". This action was not intended to bring financial benefits, so they were not considered and analyzed. The intervention is supposed to bring mainly social benefits (recreation, social cohesion, wellbeing and health) and environmental benefits (new green areas, improvement of the urban climate, climate resilience).

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme – Multiple benefits (continued)

Stage - Planning

How was an understanding of the local needs for each of these benefits understood during the planning process?

The needs of locals focused on having a new and green place for recreation, meetings, a new space for events, workshops and so on. These benefits and locals' needs were considered as the main reason for implementation of this NBS. So the future benefits were always linked to these needs.

How did you deal with comparisons between monetary and non-monetary benefits?

The idea behind establishing and developing Wilda beach was mainly to increase the wellbeing of residents. The activity has been planned each year within certain city budget provided for this aim. The decision about financial expenses is made by the City Management and accepted by the City Council Board.

The monetary and non-monetary benefits are not compared with each other in systemic manner. Non-monetary benefits are generally qualitatively assessed by observation of popularity of the place and events, but it is not recorded and measured in organized way.

The economic benefits are expected to appear in the future when the beach will be put into commercial use. Economic benefits will be measured by land lease offers. However, monetary benefits are treated as an additional benefit in addition to non-monetary benefits.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme – Multiple benefits (continued)

Stage - Planning

How did you consider the change in benefits over time?

Social benefits - since urban beaches are seasonally re-opened each year, it is possible to retrofit them systematically. Due to the temporary character of the equipment, increase in facilities or changes in recreation opportunities, aesthetic values over time can be adjusted to users' needs, actual budget and environmental conditions. In this way the number of benefits and the quality of them may increase. As observed Wilda Beach has become more popular each year benefitting more people.

Economic - the City of Poznań financed development of the beach. It leased the area to the organization that proposed the best program of attractions for the residents. In the future it is expected that this activity will be run without financial support from the city.

The main goal is also to avoid having a negative impact on the regulating ecosystem services. For this reason, future development of the beach will take into consideration existing river valley ecosystems, thus avoiding overexploitation.

Was baseline data used to inform design?

Development of Wilda Beach in 2015 was based on the experience from Chwaliszewo Beach developed in 2013.

The condition under which the beach could be developed was subject to an administrative decision (Water Permit). An important contribution came from engaged City Hall Staff responsible for developing the beach.

Delivery

Were any co-benefits lost/reduced during delivery?

It was not noticed that any co-benefits were lost during delivery.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme – Multiple benefits (continued)

Stage - Delivery

Were any co-benefits added/enhanced during delivery?

Every year, new amenities are added on the city beach (e.g. showers, jacuzzi, hammocks), and the range of workshops and events is broadening, which makes the beach a more attractive place for both adults and children.

Were there any changes to cost/benefit during delivery?

The Wilda beach is open for a third time this year (2018), each year the financial budget for this NBS is decided by the City Management and approved by the City Council Board. The activities are organized within a planned budget and cannot exceed the financial plan. In relation to benefits, the beach becomes more and more popular, therefore the number of beneficiaries increases. It is expected that development of the place will bring economic benefits in the future.

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

It is very flexible. River beaches can be developed and adapted for people and environmental needs since most of equipment is mobile and retrofitted seasonally.

Stage - Legacy

How will future schemes be combined with existing schemes to maximise benefits?

The Wilda beach is going to have the addition of a social garden to enhance social cohesion. The beach will also be equipped with a water floating garden that increase aesthetic value.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Themes – Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

Urban beach in Wilda district is located in the Warta River floodplain terrace. It was established on land without current use, covered mainly with grass along the river valley.

Why were these areas chosen as the site for the NBS scheme?

The areas along the Warta River were neglected and unused for a very long time. Residents did not want to spend time along or on the river, so the city authorities changed the approach called "Back to the River". So, urban beaches were created. The Wilda Beach is located close to the city centre in densely built-up district targeted for urban regeneration. The location provides very good potential to attract people and improve the quality of space important for many people. The presence of the Warta River valley that has retained a relatively natural character allows for the creation of a recreational spot, that is part of a large open space not used for other purposes. The River Valley is naturally cooler and more humid than surrounding urban areas making it a valuable recreational site during summer. The selection of the location is also related to land ownership rights enabling the intervention. In addition, there were no serious limitations in arranging the space e.g. protection under the Environmental Protection scheme.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

Development of the river beach is part of the Warta River Development Strategy included in urban policy documents. Particular emphasis on this topic can be found in the "Development Strategy of the River Warta 2012-2030". Among the aims within this

Strategy are:

1. Creating boulevards along the river - the creation of public boulevards will give people the opportunity to enjoy the River Warta and its open space and nature in the city.
2. Installing river-related services - a (seasonal) programme/calendar with a variety of activities in the Warta zone will intensify the use of this magnificent area in Poznan. Local activities, and also large-scale touristic events, can have the large open river areas as their venue.
3. Providing neighbourhood playgrounds in various city districts connected to the river - by locating neighbourhood playgrounds near the Warta, the young people of Poznan can be brought into contact with this large natural and healthy environment.

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

The policy documents are useful at the initial phase of NBS creation since they show the general direction of development and the vision of the city. However, implementation requires very detailed local arrangements that often exceed the general level of the policy documents.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Themes – Integration

Stage - Legacy

How geographically scalable are the schemes?

The beach can be organized in different places and it can also be developed in scale by enlarging recreational equipment along the river valley or lake shore.

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

They are very useful since they show general direction for development justifying creation of NBS across the city.

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

Such detailed observations / measurements are not carried out. Cost effectiveness in the case of a city beach can be expressed by a small ratio of money spent to the beach and a high impact on improving the quality of life of the city's residents. The beach, its equipment and a wide range of workshops and events are very positively evaluated by the city dwellers (source: media, facebook, so on). On the beaches in 2018, less money was deducted in comparison with previous years, due to a greater proportion of the cost being 'commercialised'. Even so, the beach has been created and provides many services for residents.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Themes – Key lessons

Delivery

What were the barriers to realising the design?

Flood protection requirements - acquiring necessary permits; project adaptation to limited possibilities;
Environmental conditions - shallow ground water level; organic soil; changes in ground and river water level with seasonal flooding;
Legal - administrative procedures that are time consuming.

Legacy

How can future barriers which result in descope (compromise on delivery) be better foreseen?

Experience with developing urban beaches is very valuable to understanding how to overcome the barriers. Knowledge about necessary administration procedures and available technical, social and organizational solutions is fundamental for establishing new urban beaches and efficient management.

How has the cities' delivery method changed over the course of the project?

It has not changed.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Stakeholder Participation/participatory planning and governance

Stage - Planning

What methods of stakeholder engagement were adopted?

Officials asked residents for proposals. The best projects were selected by a commission consisting of the employees of the City Project Coordination and Regeneration Office, the Real Property Management Department and the Public Procurement Office. Then, a tender will probably be announced. Consultations take the form of a technical dialogue. It can be attended by people who already have experience in running a gastronomic activity or organization and promotion of cultural, recreational and sports events.

Which stakeholder groups were involved in the design process?

City Hall representatives
City Council Board
State Water Farm. Polish Waters.
Citizens
Beach operator.

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

Wilda Beach is organized each year by the City Hall of Poznań.
City Council Board organized debates concerning Warta River development, beach location and expected facilities and attractions. It also makes formal decision accepting the budget for this purpose.
State Water Farm. Polish Waters. issues Water Permit - decision describing conditions and rules under which the beach can be run.
Citizens could expressed their expectations concerning development of the river beaches during public debates preceding the location of the beach Each year City Hall organizes a new tender, which is modified based on the previous experience.
Potential beach operators make offers for beach management. The most attractive offer in line with the city's requirements and containing the most interesting offer of attractions for residents is chosen and financed.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

New economic opportunities and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

Such kind of jobs were not created. It is an open question whether a function/service like an operator who organizes the city beach, equips it, runs workshops and events, can be considered as a "green job/business".

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

Flood protection requirements - acquiring necessary permits; project adaptation to limited possibilities;
Environmental conditions - shallow ground water level; organic soil; changes in ground and river water level with seasonal flooding;
Legal - administrative procedures that are time consuming.

How did you identify potential barriers?

The technical and organizational barriers are identified mainly by experience. In addition, knowledge of existing law and legal acts is essential to understand administrative barriers.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Success and limiting factors

Planning + Delivery + Legacy

What processes or methods were used to overcome barriers?

Collaboration with relevant stakeholders.
Flexible approach allowing for project adaptation to current conditions e.g. water level changes.
Organization of the opening of the beach well in advance, enabling the task to be carried out on time.

Theme – Financing

Stage - Delivery

How were schemes funded?

The Wilda city beach is financed by the City Council's budget similar as other beaches in the first phase of development. It is expected that later it will be run commercially bringing economic benefits to the City (without financial support from the City budget). Part of Warta River development is Wartystrada - bicycle route along the river. Partly it was funded within City Budget Scheme.

How did you justify spend of funds? Did you need to?

The amount of money for the purpose of development of the city beach is set annually by the City Council Board. Within this budget the Wilda City Beach is developed and managed. Justification of spending money is based on common rules concerning public money.

Legacy

What funding was put in place to ensure legacy?

It is unknown. Probably no funds were put in place to ensure legacy.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme – Financing

Stage - Legacy

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

Valuable mechanism for upscaling the NBS is financing development of the place until it becomes popular and liveable place allowing beach operators to gain economic benefits from running the beach. At this stage of development the beach will become commercially independent (without financial support of Poznań City).

Theme - Governance

Planning + Delivery

What staff were involved with this project?

Staff from Project Coordination and Urban Regeneration Office were mainly involved with the project of Wilda Beach, along with the operator who organizes the city beach.

What internal structures supported the planning / delivery of the project?

Development of the Warta River was important action for City Mayor. Highly engaged staff responsible for project development were also crucial to overcoming organizational barriers and recognizing an entirely new topic.

What internal structures presented barriers to planning / delivery?

Limited experience in this kind of actions that required learning by doing and flexibility in approach..

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Governance

Planning + Delivery

What processes were implemented to facilitate planning / delivery?

Public consultation regarding location and equipment of the beach were organized.

Was there any gap in expertise that if present, would have improved the success of the project ?

Yes, there are many gaps, especially with regards to organizational, administrative and legal structures. Polish water law and Polish public procurement law limit temporary activities on flood plains, there are no provisions that would facilitate "soft" activities/projects. The number of documents required for the implementation of the beach was not sufficient for this project - it is only temporary, seasonal. However, despite the overall cost of beaches becomes higher every year - the proportion of this that comes from the council stays the same annually on the launch of the Wilda beach and its closure after the summer season.

What mechanisms are in place to help achieve multiple benefits?

Availability of space, operator's observations, which can be improved, open workshops, the opportunity to issue an assessment by issuing opinions on the beach in social media

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme - Governance

Stage - Legacy

How will the relevance or importance of the schemes be maintained ?

By showing to all stakeholders the effects of Municipal Warta Beach at Wilda District (strengthening the social cohesion, benefits from greenery, improving health and wellbeing, etc.).

How will future schemes and scale-up be fostered / incubated?

By using of current experiences and new knowledge co-produced with stakeholders in all stages of this NBS (transfer of experience and knowledge) and by demonstrating the achieved benefits, using experiences and good practices.

What structures/ processes will remain in place/dissolve after scheme completion ?

It is hard to say. A project such as a city beach is a seasonal, temporary solution. After the summer period, the area where the beach is annually created is cleaned. However, every year beach equipment is developed and improved in the same way in order to provide a wider range of events and workshops on the beach.

Drivers

Planning

What initiated the NBS project?

Public debate and the will of City Management "to bring back the River Warta to the city". It was based on the public awareness that valuable greenspaces that could provide multiple benefits are not used for recreational and leisure purposes.

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme - Drivers

Stage - Planning

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

The most valuable is the experience of staff responsible for urban beach development. The policy documents show the direction for spatial development. They emphasize the importance of protection of green infrastructure along river valleys which creates a basis for arranging locations such as urban beaches. However, it should be considered that recommendations formulated in those documents are rather general.

Theme – Monitoring and evaluation

Planning + Delivery

What M&E was put in place?

No regular or systemic monitoring or evaluation was planned.

At what stage of the project was M&E put in place?

No regular or systemic monitoring or evaluation was planned.

What KPI targets were put in place?

Citizens wellbeing, social cohesion, improving the quality of life of residents

NBS Case Study Process Questionnaire – Warta River, Poznań, Poland

Theme – Monitoring and evaluation

Planning + Delivery

What baseline data did you have available?

Data from field visit (photographic documentation of neglected space that is not commonly used by residents). Environmental and social diagnosis from urban policy documents such as: Urban Regeneration Programme, Strategy Development for Warta River.

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

The information comes from media releases and general observations. There are not quantitative survey.

Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

No regular or systemic monitoring or evaluation was planned.

8.13 Community gardens NbS process questionnaire - the example of Kolektyw Kąpielisko in Kasprowicza Park Case Study Questionnaire results - Poznań

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland			
Theme - Challenges	Stage - Planning	What challenges does the city face as a whole?	The main challenges connected to the scheme: to make Poznań a green, eco-mobile city; to improve the quality of life of all residents; to counter the exclusion of people; friendly settlements; community and social dialogue (to support participatory planning); protection against development on the existing natural potential (natural capital) and stopping the expansion of urbanization processes on green areas; raising awareness of the shared responsibility for the quality of the environment; restoration of the continuity of urban structures and the aesthetics of urban space; reducing greenhouse gas emissions.
		How were challenges identified?	By observation, dialogue with different stakeholders (members of associations, local inhabitants, representatives of the City Hall, other NGOs, activists) and participatory analysis of the issues and the needs of local society in the Łazarz district.
		How was the scale of the challenge identified?	The community garden was created as an answer to the local needs/challenges which are similar to the challenges of whole city.
		How was local context considered ? (From neighbourhood up to city scale)	Probably as part of a dialogue between interested parties, i.e. members of the association, inhabitants of Łazarz District, with representatives of the Poznań City Hall.
	Stage - Legacy	How were outcomes linked back to original challenges?	The Community Garden was created in the city district which was characterized by a low proportion of greenspace. The arrangement of the garden resulted in a newly created greenspace, which serves as a meeting, rest and recreation location for the residents. This contributes to multifunctional use of Kasprowicza Park. Creation and maintenance of the garden was a catalyst to stimulate the residents' participation and responsibility for the newly created greenspace and to make them aware of their role and opportunities in creating a neighbourhood.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme - Objectives

Stage – Planning

Did KPIs feed into NBS targets?

Yes. NBS targets are in line with urban policy and help to solve urban problems. KPIs adopted in urban policy documents feed into NBS targets.

What scale were targets aimed at?

Targets were aimed at site scale (district scale).

Stage - Legacy

To what extent are changes in local context being evaluated? (From neighbourhood up to city scale)

Changes in local context were evaluated by the intensity of participation/inclusion of neighbourhood community measured with the frequency of visits in the garden and improvement of public space quality.

To what extent is resilience to future climate change built into the NBS design?)

The resilience to future climate change is built into the NBS design by strengthening the multifunctionality of greenspace. For example the management of community garden focused on establishing a high diversity of greenery in the garden and on conducting workshops to educate locals about the importance of using environmental resources in a sustainable way.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme - Actions

Planning

Which NBS benefits were prioritised?

Benefits from strengthening social cohesion and citizens wellbeing in the neighbourhood. Also development of community participation by the caring for a communal garden and taking part in local events and workshops.

Stage - Delivery

Did the NBS delivered differ from the original design? (e.g. due to constraints)

No, delivered NBS did not differ from the original design - there were no constraints.

Theme - Impacts

Stage - Planning

Which impacts were considered ?

Impact on local community (social cohesion), on wellbeing, on education (workshops as one of main actions).

How were timescales of impacts considered ?

The garden was created on an unused and abandoned area. In 2013, the Kolektyw Kąpielisko Association turned to the city asking for temporary lease of land for rent. Kolektyw Kąpielisko received the area under a fixed-term contract. The social garden has been operating since 2014. In 2018, the duration of the contract expires, and they must move the garden to a different location.

What geographic al scale of impact is being addressed?

Local scale (district, city) and, indirectly, the scale of all urban zones in Poland (information about this NBS and actions took under this project have been disseminated via websites and by social media).

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme - Impacts

Stage - Delivery

Did the relationship between multiple schemes change during delivery?

It is unknown.

Legacy

Did you see the expected outcomes?

Yes, community engagement and number of visitors inform about usefulness of this place.

Stage - Legacy

Did you see outcomes in the timescales expected?

Yes. Social garden has attracted residents and become more and more popular among residents from Łazarz District and other visitors.

Theme – Multiple benefits

Stage - Planning

What co-benefits does the scheme have?

This NBS provided additional benefits like new experiences and knowledge of members of Kolektyw Kąpielisko related to administration and management of a community garden. Moreover, it is possible to consider this kind of schemes as an action contributing to the prestige of the city.

Did you see any trade-offs as a result of the schemes?

Yes. Trade-off or competition between different possible directions of recreational development of the plot were observed. There were some opinions (e.g. on social media) that the use of this plot as a community garden is not the best solution for this space, for example in relation to circumstances that negatively impact on the surrounding area (e.g. increased noise levels during the events in garden). However, the majority of the opinions of local inhabitants were positive.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme – Multiple benefits

Stage - Planning

In what way were multiple benefits sought to be maximised and trade-offs minimised?

By openness, transparency in implementation and management of this garden, transparency of actions, high level of involvement.

Were any benefits not considered/ explored? Why?

Definitely yes. These kinds of actions are multifunctional and can (co)produce numerous benefits. They contribute in many different ways to human wellbeing and city resilience. Because of that some of benefits can't be predicted on the planning level.

Was a cost/benefit analysis carried out?

No. The idea behind establishing and developing social garden was mainly to increase health and mental wellbeing of residents. In this case only social benefits were analysed.

How was an understanding of the local needs for each of these benefits understood during the planning process?

The needs of locals focused on having a green place for recreation, meetings, strengthening social ties, education and relaxation were considered as main reason for implementation of this NBS. So the future benefits were always linked to these needs.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme – Multiple benefits (continued)

Stage - Planning

How did you deal with comparisons between monetary and non-monetary benefits?

Activity of this community garden was never focused on monetary benefits, so this kind of comparison was never made.

How did you consider the change in benefits over time?

Supply of benefits from this NBS will change over time. They are predominantly provided in spring and summer, less in autumn and winter (phenological changes, characteristics of climate).

Was baseline data used to inform design?

It is unknown.

Stage - Delivery

Were any co-benefits lost/reduced during delivery?

It was not noticed that any co-benefits were lost during delivery.

Were any co-benefits added/enhanced during delivery?

Yes. New benefits were produced as a result of implementation of new solutions (e.g. garden equipment such as mud kitchen, orchard) in the garden.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme – Multiple benefits (continued)

Delivery

Were there any changes to cost/benefit during delivery?

It was not noticed that any cost or benefits were changed during delivery.

Stage - Legacy

How flexible is the NBS scheme/strategy to future demands?

This kind of NBS is very flexible for future demands. It was created as a solution to the demands of local community and has the flexibility to change over time in relation to new demands.

Stage - Legacy

How will future schemes be combined with existing schemes to maximise benefits?

This NBS and all of the experiences from the implementation and exploitation stages can be transferred and scaled in new locations as good practice.

Ecosystems covered

Stage - Planning

Which land use types or ecosystems did schemes interact with?

Related land use types: green urban areas, sport and leisure facilities (type of urban ecosystem). The community garden was created in part of the Kasprowicza Park.

(source - Urban Atlas)

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Ecosystems covered

Stage - Planning

Why were these areas chosen as the site for the NBS scheme?

The "Kolektyw Kąpielisko" (ang. Collective Beach House) Community Garden was established as a response to the closing of the seasonal bathing pool in Łazarz District (a place that had importance as a place of meetings and recreation for locals). This place was chosen for an NBS scheme to stop the process of degradation of public space in the area, to re-open the bathing pool in a new attractive form and to develop an unused part of the urban green area as a community garden.

Themes – Integration

Stage - Planning

How does NBS integrate with other city objectives/plans/strategies?

Implementation of this scheme combines well with current urban policy. In many different urban policy documents it is quite easy to find aims, directions of actions, tasks referring to nature-based solutions. There are particularly numerous tasks which have the potential to be implemented as NBS. Development of community gardens is now one of the key themes in development of the City of Poznań.

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

There is still a lack of complex inclusion of NBS and green infrastructure approaches, including this terminology, in the urban policy documents. However, there are relevant areas providing the potential for introducing NBS into urban policy and implementing current tasks in strategic documents through a form of NBS. A great opportunity for making improvements in relation to this is the participation of the City of Poznań in the CONNECTING Nature Project.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Themes – Integration

Stage - Legacy

How geographically scalable are the schemes?

Community gardens are easy to scale in new locations (including in new geographical regions, which have different environmental conditions). These schemes are very scalable.

How suitable are objectives/plans/strategies/programmes in order to facilitate the scaling of similar projects across the city?

They are quite suitable but there are still some difficulties (see the answer located two rows above).

Themes – Key lessons

Stage - Planning

How well understood and quantifiable were the cost effectiveness of schemes in the planning process?

Quite well.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Themes – Key lessons

Delivery

What were the barriers to realising the design?

There were not many barriers in realising the NBS. Most important were: the cooperation/communication between stakeholders (members of association, city dwellers, local authorities), organisational aspects (also related to raising external funds).

Legacy

How can future barriers which result in descopeing (compromise on delivery) be better foreseen?

By identification of current and future needs and risks related with the schemes by each group of stakeholders. The rules of cooperation and management of NBS need to be worked out in dialogue with all groups of stakeholders.

How has the cities' delivery method changed over the course of the project?

Don't know. Maybe the city is now more open for this kind of initiatives and that is why the cooperation in implementation of NBS is more effective.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Stakeholder Participation/participatory planning and governance

Stage - Planning

What methods of stakeholder engagement were adopted?

Meetings with stakeholders and open discussion (participatory based methods).

Which stakeholder groups were involved in the design process?

Mainly members of association and locals.

Legacy

How do different stakeholders continue to interact with the schemes? Is this being monitored and fed back into the strategy?

Stakeholders use this community garden and participate in development of this place. This is not specially monitored.

Economic opps and green jobs

Planning + Delivery + Legacy

How were green businesses or jobs created through the planning, delivery or legacy of the schemes?

These kind of jobs were not created. This initiative (community garden) is a grassroots idea and was realised by associations acting without financial benefits. It can be said that the jobs in the Project Coordination and Urban Regeneration Office in Poznan City Hall partly have the character of green jobs.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme – Success and limiting factors

Planning + Delivery + Legacy

What barriers were experienced?

The barriers that have been experienced may be related to financial, system and organizational problems.

How did you identify potential barriers?

By investigation of similar solutions implemented in other locations (including other cities).

What processes or methods were used to overcome barriers?

Financial barriers were overcome partly by cooperation with local authority and local enterprises. They supported this initiative by financial support from the Department of Culture (Poznań City) and by work in the garden or giving some funding and in return they received a place to advertise.

Theme – Financing

Stage - Delivery

How were schemes funded?

City of Poznań granted a plot located in the Kasprowicza Park (in lease form). Part of the funding was granted from the contest "Centrum Warte Poznania" for the development of an outdoor cinema (from City of Poznań budget). A lot of works, internal initiatives was funded from own funds of members of association and locals.

How did you justify spend of funds? Did you need to?

Yes, especially public funds from the City of Poznań budget (contest "Centrum Warte Poznania"). We could spend funds only for the expenditures which were included in the financial schedule. For each cost, expenditure we must have a special accounting documents, e.g. invoices.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme – Financing

Legacy

What funding was put in place to ensure legacy?

It is unknown. Probably no funds were put in place to ensure legacy.

Which of the funding mechanisms used or not used would be appropriate for upscaling NBS projects?

Mechanism for awarding funds under competitions (ensuring high quality of projects).

Governance

Planning

What staff were involved with this project?

Members of association, inhabitants, city officials.

Governance

Planning + Delivery

What internal structures supported the planning / delivery of the project?

Internal structures of Kolektyw Kąpielisko Association.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Governance

Planning + Delivery

What internal structures presented barriers to planning / delivery?

It is unknown.

What processes were implemented to facilitate planning / delivery?

Openness and participatory approach.

Was there any gap in expertise that if present, would have improved the success of the project ?

Yes. There were some gaps, e.g. gaps referred to administrative and formal conditions of obtaining funds or preparing the lease.

What mechanisms are in place to help achieve multiple benefits?

Openness and participatory approach.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme - Governance

Stage - Legacy

How will the relevance or importance of the schemes be maintained ?

By showing to all stakeholders the effects of community garden (strengthening the social cohesion, influence on social ties in neighbourhood, benefits from greenery, sense of place, etc.).

How will future schemes and scale-up be fostered / incubated?

Probably by use of current experiences and new knowledge co-produced with stakeholders in all stages of this NBS (transfer of experience and knowledge).

What structures/ processes will remain in place/dissolve after scheme completion ?

It is very difficult to say. The lease contract ended at the beginning of 2018. The future of the social garden Kolektyw Kąpielisko is uncertain. It may be moved to another location.

Drivers

Planning

What initiated the NBS project?

Local demand for a place for meetings, relaxing, activation of locals, observed and identified by members of association. The Association initiated the action as an answer for demand from local community.

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme - Drivers

Stage - Planning

How useful are the current objectives/plans/strategies/programmes in facilitating the implementation of NBS?

There is still a lack of complex inclusion of NBS and green infrastructure approaches, including this terminology, in the urban policy documents. However, there are relevant areas providing the potential for introducing NBS into urban policy and implementing current tasks in strategic documents through a form of NBS. A great opportunity for making improvements in relation to this is the participation of the City of Poznań in the CONNECTING Nature Project.

Theme – Monitoring and evaluation

Planning + Delivery

What Monitoring & evaluation (M&E) was put in place?

Monitoring is focused on the intensity of participation/inclusion of neighbourhood community measured with the frequency of visits in the garden and improvement of public space quality (quality of urban green) (see "Objectives" section).

At what stage of the project was M&E put in place?

At all stages.

What KPI targets were put in place?

Citizens wellbeing, social cohesion, increasing biodiversity by planting various plants, improving the quality of life of residents

NBS Case Study Process Questionnaire – Community Garden, Poznań, Poland

Theme – Monitoring and evaluation

Planning + Delivery

What baseline data did you have available?

Data (from observations) related to use of Kasprowicza Park by local community and other dwellers of city.

To what extent did you measure the effectiveness of delivery components (e.g. community engagement success)?

See "Objectives" section.


Stage - Legacy

Was the Monitoring and Evaluation carried out as planned?

Yes. Observation of users, their behaviour, frequency of visits in the garden, the level of satisfaction were identified during discussion and observation.

8.14 NBS survey

The survey developed by AMU for assessing the understanding and participation in NBS delivery across FRC employees and stakeholders:

 Online surveys

Front Runner City Survey multiple NBS examples - Glasgow (TEST)

Showing 1 of 1 responses
Showing **all** responses
Showing **all** questions
Response rate: 1%

1 What organisation and department do you work for?
No responses

2 What stage(s) of development of the NBS example were you involved in?

Planning or design	0
Implementation in the field	0
Asset management (post-installation management, maintenance, monitoring)	0

3 Specify the main drivers for which the NBS was/is being implemented:

1 / 6

urbanism and architecture	0
urban greenspace	0
leisure and recreation	0
water and sewage system management	0
waste management	0
noise prevention	0
air quality/adaptation to climate change	0
education	0
health (physical and mental) and well-being	0
Other	0

3.a If you selected Other, please specify:

No responses

4 Enter the name of the NBS

No responses

5 Enter the location of the NBS (address).

No responses

6 Enter a short description of the NBS

No responses

7 What stage of implementation is the NBS currently?

Planned project	0
Implementation in the initial stage	0
Implementation in an advanced stage	0
Project completed	0

8 Who do/did you collaborate with in implementing the NBS example (several answers are possible):

A department with Glasgow Council	0
An organisation associated with Glasgow Council	0
A national government association or other regional body	0
Another public institution	0
A private investor	0
A non-governmental organization or association	0
Volunteers	0
The local community	0
Other	0

8.a If you selected Other, please specify:

No responses

9 What funding sources were used to finance the NBS (you can give more than one source)?

Own resources	0
Own funds (e.g. a civic budget that external organisations/groups can bid into)	0
National external resources	0
External funds (EU funds)	0
External funds (other foreign funds)	0
Private investor funds	0
Funds obtained by sponsors (Sponsorship)	0
Other	0

9.a If you selected Other, please specify:

No responses

10 Who or what initiated the NBS realization (multiple choice possibility)?

Legal requirement	0
Glasgow Council	0
Other local government unit	0
Inhabitants of Glasgow (e.g. with a local authority civic budget)	0
Non-governmental organization or association	0
Private investor	0
Other	0

10.a If you selected Other, please specify:

No responses

11 Do you think this project will contribute to

11.1 Adaptation to climate change

Yes | 0
No | 0
I don't know | 0

11.2 Health and well-being of residents

Yes | 0
No | 0
I don't know | 0

11.3 Social cohesion

Yes | 0
No | 0
I don't know | 0

11.4 Economic development

Yes | 0
No | 0
I don't know | 0

11.5 Development of green jobs

Yes | 0
No | 0
I don't know | 0

12 Do you wish to enter another example of NBS?

Yes - go to multiple examples | 0
survey (see invite to this
survey for logon details)

No (end survey) | 0

8.15 Milestone 9

Milestone document is presented as a separate PDF document: [Appendix_8_15_Milestone9](#)

8.16 NbS in Poznań City strategic documents

The below represents a summary of the analysis by AMU of the position of NbS in the current strategic documents of the City of Poznań:

THE POSITION OF NBS-RELATED ACTIONS IN THE URBAN POLICY DOCUMENTS OF POZNAŃ CITY

Authors: Iwona Zwierzchowska, Katarzyna Fagiewicz, Lidia Poniży, Piotr Lupa, Andrzej Mizgajski

The described results are presented in the manuscript “Introducing nature-based solutions into urban policy - facts and gaps. Case Study of Poznań.” submitted for publication in Land Use Policy Journal.

INTRODUCTION

Poznań is in the transition process towards sustainable innovations through participation in the CONNECTING Nature Project under HORIZON 2020 in which, as a front-runner city, it leads actions on NbS for being ‘Smart and Sustainable’.

Poznań's strategic goal to “improve the quality of life of all residents and the importance of Poznań internationally” is expressed in the Development Strategy for the City of Poznań 2020+ (DSW, 2017). The city take various actions to improve living conditions, however, it has not been recognized to what extent it make use of the potential of green infrastructure, which if planned, designed and managed to face environmental, social and economic challenges can be understand as a Nature-based Solution (NbS).

In order not to limit city initiatives to a single NbS-related actions, they must be included in the urban policy and planning documents. Integrating nature-based solutions into policy and investments is crucial towards realising the potential of nature and developing progressive, thriving and resilient cities (Schweitzer et al. 2018).

Against this background the objectives of the work are: 1) assessing of current position of green infrastructure as NbS in the tasks and directions of planning, strategic and programming documents of Poznań City; 2) determining the potential of including NbS in the local policy.

We believe that to support large-scale nature-based solutions implementation in cities, the crucial step is to bring them into the local urban agenda. An evaluation of urban policy documents based on the presented approach can serve as a guideline for identifying gaps and potentials for NbS inclusion. As a result, it can help the better organisation of urban policy and harmonisation of different sectors through NbS.

MATERIAL AND METHODS

Procedures of NbS identification in policy documents

In order to achieve defined goals, we developed an operational definition of nature-based solutions and criteria of their identification in the urban policy documents. We assumed that the nature-based solutions are the activities that increase the potential of green infrastructure for the provision of ecosystem services and solving urban problems through creating its new forms, strengthening its quality and/or multifunctionality and through using it in various ways (Fig. 1).

We treated the directions of development and tasks in the document as related with NbS, when the contents of the provisions clearly showed that their execution is based on green infrastructure (group A). We distinguished activities, in which new green areas were introduced and, as a result, the surface of green

infrastructure was increased (subgroup A1). Such solutions include, for example, creating new parks, tree planting or soil unsealing, for example, through replacement of artificial surfaces within tramway tracks with the lawns. Another NbS subgroup (A2) includes the activities that lead to changes in existing green infrastructure in order to make them more multifunctional or to improve the quality. As a result of the implementation of such solutions, qualitative changes within GI occur, for example, creating rain gardens and absorptive hollows extending water cycle. Within this subgroup, the surface of GI may be slightly decreased, for example, through building bicycle and pedestrian lanes in the green areas. The last subgroup (A3) covers the activities that do not cause direct qualitative and quantitative changes of green infrastructure through various ways of using green areas and popularisation of using them among inhabitants. An example of such activity can be organising or promoting leisure in the green areas.

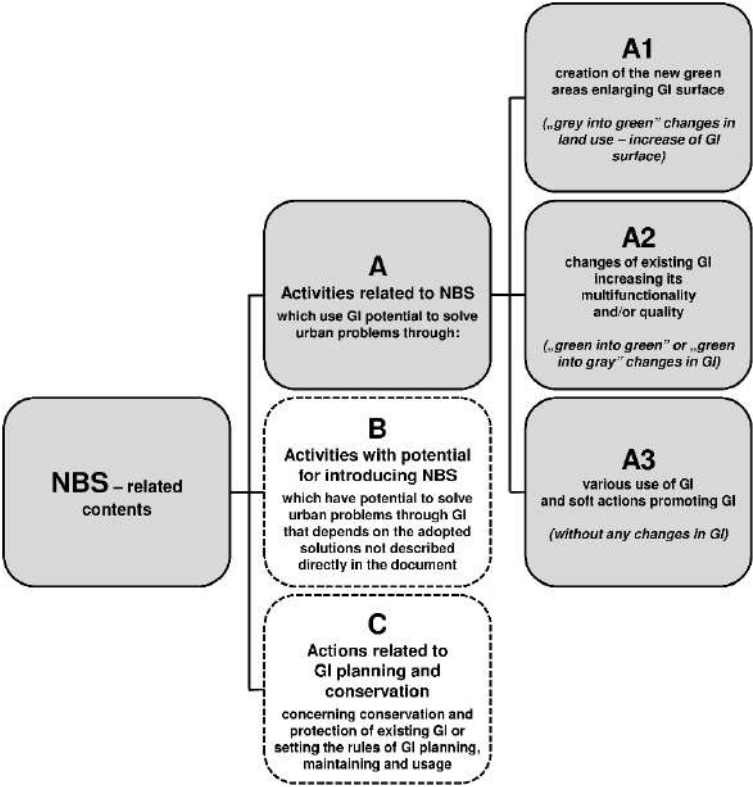


Fig. 1. Classification of NbS-related content in urban policy documents.

Source: own elaboration

The directions of the activities and tasks that have the potential to use NbS (group B) were also identified in policy documents as NbS-related contents. As such, we identified provisions, which do not indicate the use of green infrastructure, but on the basis of expert-based knowledge are well known that can be realised as NbS. An example of such tasks is thermo-modernisation of the buildings that may include the use of green roofs and vertical greenery systems, but such solutions are not explicitly present in the documents.

The group C encompass the provisions concerning formulating the rules of protection and shaping GI and aimed at maintenance of its state. Formulating such provisions in the urban policy documents shows the approach of the policymakers to green infrastructure and NbS.

Methods of policy documents analysis

The identification process was based on the document analysis by skimming (superficial examination), reading (thorough examination) and interpretation (Bowen, 2009). A popular variant of this method is content analysis (see Graneheim and Lundman, 2004; Hsieh and Shannon, 2005; Kabisch et al., 2015; Mączka et al., 2016). In this work, we analysed documents through identification of contents concerning nature-based solutions in

accordance with specified criteria (Fig. 1). The next stage of the research procedure was a selection of urban policy documents for analyses.

Urban policy documents

We focused on planning, strategic and programming documents referring to various aspects of management of the environment, which are particularly important for practical implementation of the nature-based solutions. Ten urban documents concerning urban policy of Poznań were reviewed (Table 1).

Table 1. Reviewed urban policy documents.

Source: own elaboration

No.	Name and acronym	Publication year/ obligation to elaborate	Thematic scope
1	Development Strategy for the City of Poznań 2020+ (DSP)	2017 mandatory	The framework program for the municipal development policy focused on ensuring the sustainable development, socio-economic cohesion, regional and spatial cohesion, raising the competitiveness of the economy and creating new jobs in the City of Poznań. The legal basis of elaboration – art. 19 of the Act of 6 December 2006 on the principles of development policy.
2	Development Strategy for the River Warta in Poznań (DSRW)	2012 voluntary	The DSRW is linked with the Development Strategy for the City of Poznań. It serves to enhance the attractiveness of Poznań by restoring the river to the city.
3	Study of Conditions and Directions of Spatial Development of the City of Poznań (SCDSD)	2014 mandatory	The SCDSD defines the spatial policy of the city. It is linked to the city development strategy and local programming documents and also planning documents of a higher order. The legal basis of elaboration – art. 9 of the Act of 27 March 2003 on planning and spatial development.
4	Environmental Protection Program for the City of Poznań (EPP)	2013 mandatory	The EPP forms the basis for the functioning of the environmental management system that links all environmental and nature-related activities and documents at the city level. Hence the main purpose for the elaboration of EPP is the implementation of environmental policy. The legal basis of elaboration – art. 17 of the Act of 27 April 2001 Environmental Protection Law.
5	Municipal Revitalisation Program for the City of Poznań (MRP)	2017 voluntary	The MRP aims at strengthening or regenerating the socio-economic, cultural and aesthetic functions appropriate for a given place through comprehensive investment and non-investment activities.
6	Environmental Protection Program against Noise for City of Poznań (EPPN)	2013 mandatory*	The EPPN defines actions for reducing noise emissions from different sources to urban environment towards a better quality of living in the city. The legal basis of elaboration – art. 119 of the Act of 27 April 2001 Environmental Protection Law.
7	Air Protection Program against PM10 and B[a]P for zone Poznań Agglomeration (APP)	2015 mandatory*	The APP outlines the major sources of air quality standards breaches and identifies effective and feasible measures to reduce pollution to at least the permissible or target levels. The legal basis of elaboration – art. 91 of the Act of 27 April 2001 Environmental Protection Law.
8	Low Carbon Economy Plan for City of Poznań (LCEP)	2016 voluntary	The LCEP sets out actions aimed at reducing energy consumption, increasing the use of renewable energy and reducing emissions in Poznań, together with an eco-economic assessment of their efficiency.
9	Plan for Sustainable Development of Public Transport for the City of Poznań for 2014-2025 (PSDPT)	2014 mandatory	The PSDPT defines guidelines and actions for sustainable development of public transport in the City of Poznań taking into account local and regional conditions. The legal basis of elaboration – art. 9 of the Act of 16 December 2010 on public transport.
10	Long-term Financial Forecast for the City of Poznań for 2013-2031 (LFF)	2017 mandatory	LFF is a tool for a long-term financial planning in local government units. LFF includes among others a forecast of the current and financial revenues and expenditures from the budget.

* Elaboration of the document is mandatory if the levels of permissible concentrations of pollutants are exceeded.

RESULTS

Nature-based related content in urban policy

The documents defining the urban policy of Poznań have different levels of specificity, refer to the activities in various time periods and spatial scales – from citywide to local. In total, 395 provisions referring to the nature-based solutions were distinguished from the contents of the analysed documents that were grouped according to analysis criteria (Fig. 3).

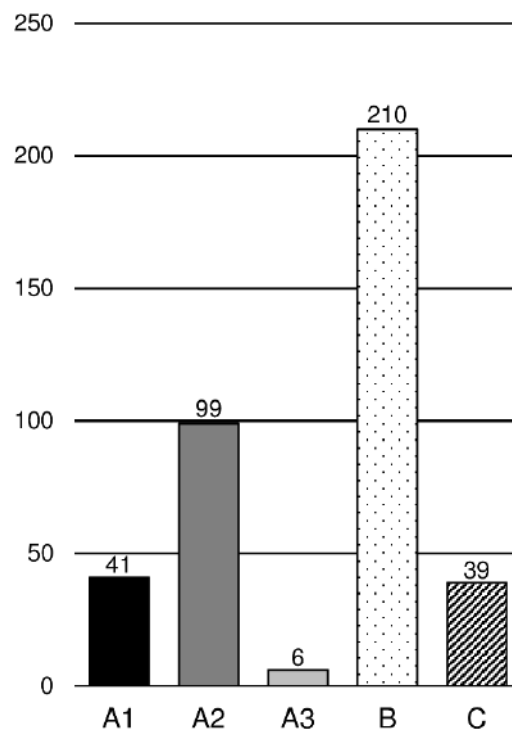


Fig. 3. The diversity of NbS-related contents in analysed urban policy documents in Poznań.

Source: own elaboration

146 (37%) provisions proposing solutions with the use of greenery (group A) were identified including:

- 41 provisions refer to the creation of new green areas (A1),
- 99 provisions refer to the transformation of green areas (A2),
- 6 provisions refer to the activities that include using or promoting the use of existing greenery (A3).

53 % of expressions of general character, not indicating the type of solution (grey or green) were identified as having the potential to include NbS. As many as 210 provisions have been included in group B. Whereas, group C contains 41 (10%) provisions referring to planning and caring for GI.

The number of provisions and their structure differed depending on the document. General documents such as Study of Conditions and Directions of Development and Development Strategy contain a relatively small number of provisions; however, recommendations are of citywide character, determining the directions of development. The largest number of the provisions was included in the Environmental Protection Program that contains detailed tasks to be executed in this field. The documents are diversified in terms of the structure of NbS-related contents (Fig. 4)

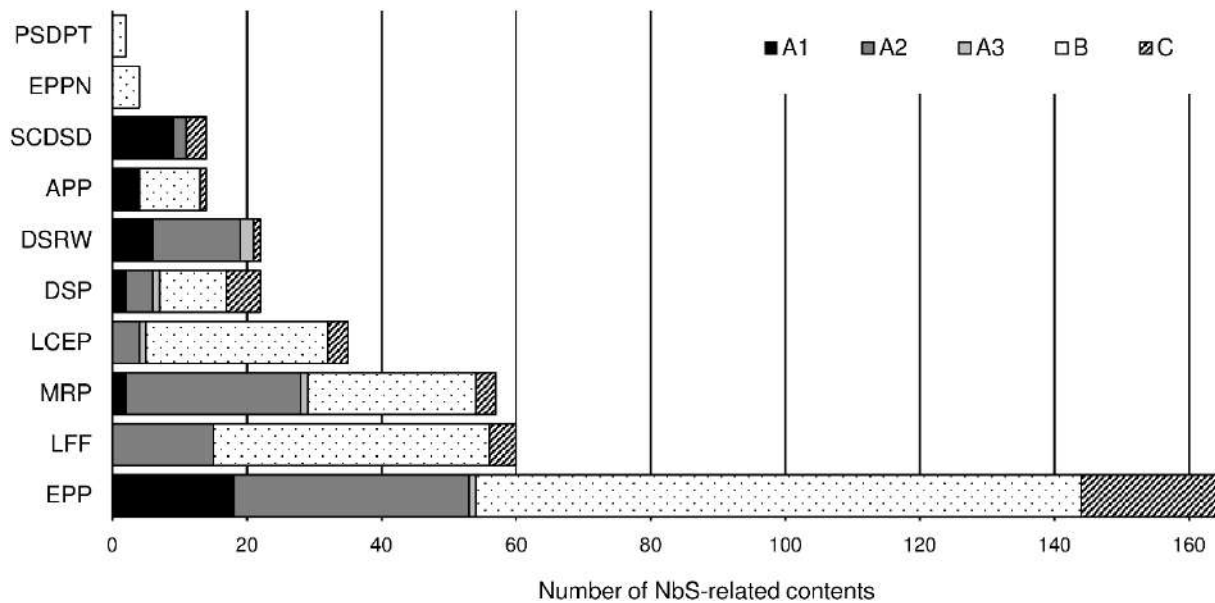


Fig. 4. Number and structure of NbS-related contents in analysed documents.

Source: own elaboration

NbS-related activities (group A) and activities with potential for NbS inclusion (group B) most often occur in the Environmental Protection Program and in Municipal Revitalisation Program. Actions related to planning and caring of GI occur most often in the Environmental Protection Program and Development Strategy 2020+.

The provisions concerning the activities related to NbS (group A) showing the role of GI and NbS in the development of the city are thematically diverse. The most diverse are activities transforming green areas (subgroup A2). High thematic diversity can be seen also in group B, which shows the potential to extend the role of GI and NbS in the urban policy.

NbS based on the creation of new green areas (subgroup A1)

The provisions increasing the share of green areas towards the development of an ecological system refer to the city scale. Here, the activities refer to:

the reconstruction of continuity and strengthening the existing elements of ecological system, mainly green wedges, through increasing the surface of green areas and maintaining their connections in the particular urban units (creating parks, squares, lawns, tree planting along streets – especially in the city centre). Other provisions refer to afforestation of areas not suitable for agricultural production, wasteland and reclaimed areas and creating and supplementing street and mid-field tree and bushes planting, which has anti-erosion functions.

Increasing the surface of greenery is treated in the documents as a way of solving urban problems resulting from functional and spatial conflicts, accumulation of air pollution and acoustic discomfort. The activities in this regard are focused on:

- introducing screening greenery in the housing areas located along the streets, tramway routes and railway tracks,
- planting trees in the avenues,
- creating green belts along traffic routes and separating bicycle lanes and pavements from the roadways with trees, bushes or lawns,
- indicating the need to introduce sound-screening greenery in the form of green walls or green acoustic screens (to improve the acoustic climate).

The provisions classified in subgroup A1 include increasing the share of green areas for recreational and educational purposes. Such NbS include:

- creating new parks in the city that form the sequence of connections, combining attractive recreational areas around urban lakes with the largest residential areas,
- introducing cultivated greenery (district and housing estate parks, squares) to the areas of residential and service development,
- increasing the acreage of the forests and creating school gardens,
- adaptation of green areas associated with the fortification objects for recreational purposes as parks (the activities specific to Poznań).

In the provisions of the documents, shaping the hydrographic network of the city through solutions based on increasing retention space of existing rivers, creating additional watercourses in the floodplains carrying water in the periods of swelling, restoring historical watercourses are also important.

In subgroup A1, we identified the actions related to NbS concerning the development of green infrastructure for the purposes of rainwater management, aimed at increasing absorptive surfaces providing infiltration of rainwaters and meltwaters to the ground.

NbS are the least present in remediation. One provision in the EPP concerned grass seeding and planting trees in the landfill site.

NbS through changes of existing GI (subgroup A2)

The provisions concerning NbS, classified to subgroup A2, mostly refer to the changes in the development of existing green areas, with particular emphasis on their revival and restoration. The activities in this regard are, on the one hand, of general character and refer to green areas in the city, indicating, among others, the need of restoration, revitalisation and development of urban parks, areas near the Warta River and lakes, or the need of protection, maintenance and reconstruction of habitats of the species. On the other hand, the activities refer to specific locations, for example, restoration of Kasprowicz Park, Warta Park or revival of the square near Garbary. In terms of frequency of occurring in the documents, another group of the provisions concerning NbS is a development of a network of bicycle lanes, bicycle and pedestrian lanes, tourist and didactic trails running through green areas. Just like in the previous group, the provisions are of general character, referring to the scale of the city and specific locations. The activities in this regard show the need of development of a system of didactic trails in the forested areas, development of a system of bicycle and walking lanes, the need of building new footbridges and bridges for the cyclists in the riverside areas. The provisions referring to the development of waterside areas and restoration of watercourses are also important in the documents. The goal of the following activities: building marinas, development of waterside infrastructure, river transport, an organisation of beaches near the lakes and Warta, is to develop leisure and recreation on the basis of blue infrastructure. Only in the two analysed documents (EPP, LFF) can we find NbS-related activities connected with water purification, remediation and modernisation of water reservoirs. The activities in this regard concern mainly modernisation and rebuilding water reservoirs to improve the quality of water and their retention. The activities related to development and modernisation of sports facilities in the green areas, included in DSRW, also belong to subgroup A2. Finally, one provision in this subgroup refers to the use of NbS in agriculture and concerns the reclamation to obtain optimal water conditions for agriculture through retention.

NbS through soft actions (subgroup A3)

Much less NbS were recognised in a subgroup A3. They are connected with supporting the active use of green infrastructure. They refer to:

- promoting an active way of spending time in the riverside areas,
- strengthening tourist traffic in this area

- using the forts in order to create new tourist routes.

The provisions supporting activation and social integration through execution of research and application projects connected with green infrastructure, e.g. CONNECTING Nature (MRP) were also identified.

Single NbS-related provisions concerning the possibility of using GI to reduce organic waste landfilling by use of compost from maintaining green infrastructure (LCEP) are also part of subgroup A3.

The potential for implementation of NbS (group B)

Within social tasks, the urban policy assumes supporting the mental and physical health of the inhabitants, activation, and integration of society, ecological education, as well as the promotion of the development of innovativeness. They are undoubtedly areas of activities, in which, apart from standard solutions, NbS can be broadly applied.

The provisions concerning the development of infrastructure with the potential to apply NbS include both building industry and transport. It is a group of activities, in which NbS can be broadly applied, but they have not been popularised yet. Within the scope of building industry, NbS can be included both in building and modernisation, including thermo-modernisation of the buildings.

The provisions concerning road infrastructure are focused both on road investments and creating bicycle and pedestrian lanes. The location of bicycle and pedestrian lanes in the green areas or introducing greenery along existing communication routes that shall provide various regulating and cultural services are a combination of technical and natural solutions, therefore, they have premises to be classified as NbS. Moreover, the development and modernisation of road network provide an opportunity to introduce sustainable stormwater management facilities such as bioswales and rain gardens as an alternative to grey stormwater infrastructure.

An important area of activity in the city, of significant potential of application of NbS is spatial development, including space restoration and revitalisation, especially on the wasteland such as post-military and post-industrial areas. Undeveloped wasteland areas may be transformed into new multifunctional green space.

Single provisions, in which NbS would be used include species protection of animals, management of rainwaters and meltwaters, protection of air and acoustic climate, as well as development of using renewable sources of energy (including organic matter made of GI) and reduction of waste landfilling.

Actions related to planning and conservation of green infrastructure (group C)

Among provisions classified in this group, the majority of them refer to protection and maintenance of green spaces. The activities in this regard are focused on tending existing green infrastructure in the city, including screening greenery, and on the maintenance and protection of forested surfaces, trees and bushes and open greenery in order to provide the places for recreation. We often found NbS-related contents referring to the protection and maintenance of the ecological system in the scale of the whole city. They concern the protection of green areas against building development, especially within wedges and green rings in order to provide proper ventilation of the city. Other provisions in this group show the need of strengthening the system of protected areas and providing their spatial cohesion, as well as protection of river valleys as important ecological corridors.

We often identified provisions thematically connected with formulating the rules of shaping and managing green spaces in the city. Most of them refer to adopting a sustainable policy of development of green areas in spatial planning and administrative proceedings. It includes the need of keeping the balanced structure of green areas and increasing their share, as well as developing projects for new recreational places for the inhabitants. Some of the identified NbS-related contents refer to the maintenance and protection of waters, protection of absorptive surfaces in order to support management of rainwaters and meltwaters. This task appears only in EPP, indicating the needs within the scope of avoiding soil sealing, increasing the share of permeable surfaces and including the issues of retention and infiltration of waters in the planning documents.

The role of NbS in selected urban challenges

The documents were also analysed in terms of perceiving the impact of the activities related to NbS classified to group A on the resilience & climate change adaptation (R&CCA), health and wellbeing (H&W), social cohesion (SC) and economic development potential (EDP) (Fig. 5). The provisions directly expressing the contribution of NbS in solving urban problems were identified, and each of them could refer to more than one area of impact.

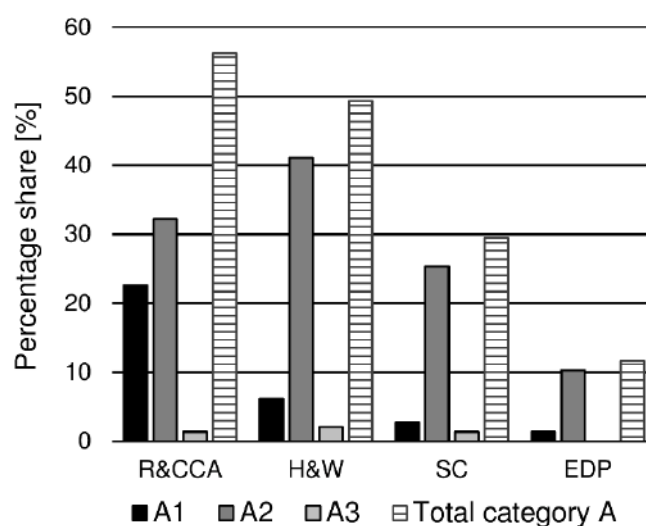


Fig. 5. The role of particular NbS subgroups in solving urban problems according to analysed areas of impact.
Source: own elaboration

The contribution of NbS to resilience (56%) and health and wellbeing (49%) is most often included in the urban policy. The use of NbS for supporting social cohesion (39% of identified provisions) was less visible. The references to economic development potential were identified only in 12% of the provisions. The biggest emphasis in solving urban problems by NbS is put on the changes in green infrastructure (subgroup A2); the lesser emphasis is put on the creation of new green areas (subgroup A1) and the lowest on various use or promotion of existing greenery (subgroup A3).

CONCLUSIONS

Poznań looks for solutions to tackle contemporary challenges. Striving for development is expressed in planning, strategic and programming urban policy documents. The analysis of Poznań urban policy shows that documents contain a wide range of proposition for improvements. However, the presence of NbS-related contents is related mainly to certain topics. The main findings shows that:

- 1) significant attention and a number of actions are targeting existing green infrastructure and focus on changes towards its multifunctionality and/or better quality. This illustrates the great role of NbS in urban regeneration and the revitalisation of existing urban spaces,
- 2) despite the already high share of GI in the city, intensive development and limitation in space availability, new green spaces are still planned to be created,
- 3) there is a gap in recognising NbS combining nature and technology, e.g. in transportation or in construction, which are beneficial especially in densely built-up areas with a limited space of GI,
- 4) the role of GI as NbS in urban resilience is well recognised,

- 5) the adaptation to climate change is at a relatively low priority for the city, however the awareness is rising and the preparation of a climate adaptation plan is in progress,
- 6) linkages between green infrastructure and the wellbeing of inhabitants are well-visible and understood. The health issues are less obvious,
- 7) the possibility to build and strengthen social cohesion based on GI as NbS is rather marginally noticed,
- 8) the influence of NbS on the economic development potential is the least recognised.

The willingness to apply solutions based on green infrastructure expressed in the policy documents is a key driver to stimulate further directions for development. Including NbS in city document contents is an important signal that can accelerate the transformation of the city towards the use of GI and NbS. It is also evidence for the awareness of policy makers about the usefulness of such solutions.

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DOCUMENT PROPERTIES

Nature Document	Progress report on linkages between FRC strategic goals and NBS goals to inform city plan and indicator development for FRC exemplars
Work Package	WP3 Task 3.2
Task Leader	Paula Vandergert
Authors	Paula Vandergert, Sam Jelliman City data provided by Genk, Glasgow, Poznań and AMU
Dissemination level	Internal - Project steering committee
Version	Draft 1.0
Status of Document	Milestone 9. Submitted 31 May 2018
Deadline	31 May 2018

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1. Introduction

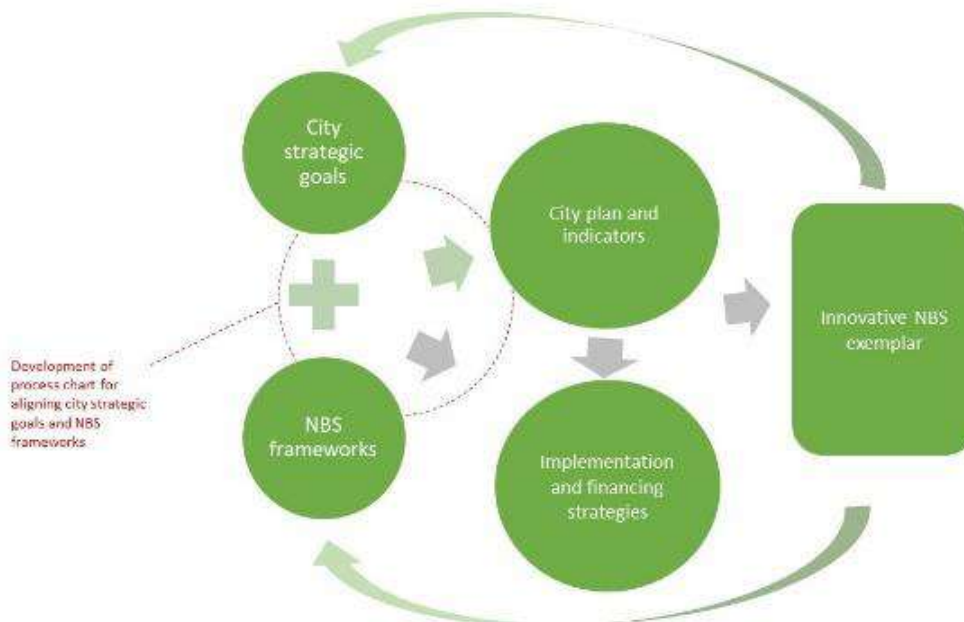
To facilitate a scaling up and embedding of multifunctional nature-based solutions, it is important to create a strategic enabling culture within cities – moving beyond a focus that often rests primarily within one departmental team (for example, spatial planning or green space management) to include a suite of strategic services such as corporate policy, economic development, housing and regeneration, health and social care, transport and to harness the support of elected local politicians. By creating this enabling culture, there are opportunities to identify and mobilise the multifunctional benefits that can accrue from a scaled-up city approach to nature-based solutions, embedding them within a broad range of strategic goals, aligned with indicators that can deliver a coherent place-based framework for improved local places for residents and businesses.

The milestone is a draft document that reports on progress to identify linkages between the Connecting Nature front runner city strategic goals and nature-based solutions goals to complement city plan and indicator development and to inform the exemplar implementation process. The analysis of this work will be incorporated in Deliverable 8, a report on front-runner cities' current expertise and experience in nature-based solutions based on a synthesis of outcomes from experiential learning workshops and concluding with a process chart for a transferrable key performance indicators approach to nature-based solutions. The scope of the milestone is to provide a working draft of existing front runner city organisational culture, in order to identify opportunities to embed indicators for nature-based solutions in the city strategic context.

2. Methodology

This report summarises three existing frameworks that provide opportunities to identify multifunctional nature-based solutions at a strategic level: Eclipse, Connecting Nature categories of influence and the UN Sustainable Development Goals. It then summarises the existing organizational structures and headlines from strategic documents in each of the front runner cities, Genk, Glasgow and Poznań. Year 1 of Connecting Nature has involved taking stock of current expertise and experiences in the front runner cities as well as working with them to co-create indicators and processes for planning effective exemplars to scale-up nature-based solutions in their cities. This report therefore draws on a synthesis of interviews and collaborative feedback sessions, analysis of front runner city strategic documents and organizational structures. Figure 1 indicates how these aspects can be aligned to support implementation and innovation processes at the city scale.

Figure 1 Framework for aligning city strategic goals and NBS frameworks to develop NBS

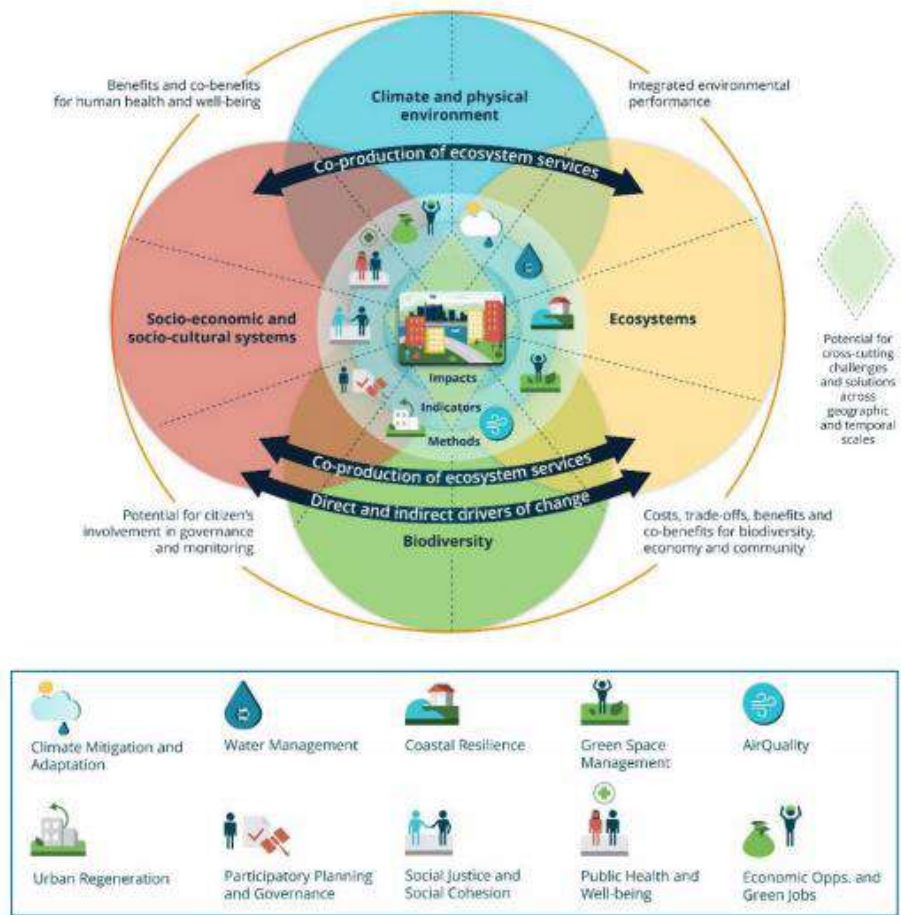


3. Nature-based solutions frameworks

3.1 Eclipse framework

The Eclipse framework provides a framework for the assessment of nature-based solutions across various challenge areas, highlighting the opportunities of nature-based solutions to address multi-dimensional and complex themes faced by cities across Europe. This work has been important for the evolution in thinking from a green infrastructure approach focused on ecosystem service provision, to a multi-dimensional understanding of why enhancing nature in cities is an opportunity for city administrations to provide multiple benefits for citizens and business in an integrated way (Balian et al 2016; Raymond et al 2017).

Figure 2 below illustrates the Eclipse assessment framework, systemic analysis and 10 challenge areas.



Source: Raymond et al, 2017

3.2 Connecting Nature categories of influence

As the authors of the Eklipse work recognize, their work provides a starting point for understanding nature-based solution opportunities at a city scale. The next iteration is being undertaken by other Horizon 2020 projects, including Connecting Nature. Connecting Nature has identified five key categories of influence for nature-based solutions which provide a basis for developing suites of city indicators, see figure 3 below.

Figure 3: Connecting Nature categories of influence

Categories of influence	Assessment criteria
Climate change adaptation and resilience (sustainable use of resources)	Cost-effectiveness
Health and wellbeing (physical and psychological)	Inclusivity
Social cohesion	Policy-embeddness
Economic development potential (or being 'open for business')	Stakeholder endorsement
Green business opportunities (or 'creating our own business')	

3.3 UN Sustainable Development Goals and nature-based solutions

In 2015 the UN General Assembly passed the 17 Sustainable Development Goals as an agenda for sustainable transformation by 2030. As the UN Sustainable Development Goals represent an international consensus, their alignment with nature-based solutions provides a powerful narrative for cities around the world to understand how nature-based solutions can be embedded across a range of policies. Stockholm Resilience Centre have analysed the UN Sustainable Development Goals and how they align with food, see figure 4 below. This provides an example of how SDGs can also be linked to nature-based solutions.

Figure 4: Analysis of SDGs and food



Source: Stockholm Resilience Centre 2016

The Eklipse framework challenge areas, the Connecting Nature categories of influence and the UN SDGs provide a complementary thematic approach within which cities can identify how their own strategic goals align with opportunities to embed nature-based solutions. See figure 5 below for a summary of these three frameworks for situating NBS at the city scale.



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Figure 5 Frameworks for situating potential NBS opportunities within city strategic priorities

Eclipse Framework	UN Sustainable Development Goals	Connecting Nature categories of influence
Climate mitigation and adaptation	No poverty	Climate change adaptation and resilience (sustainable use of resources)
Water management	Zero hunger	Health and wellbeing (physical and psychological)
Coastal resilience	Good health and wellbeing	Social cohesion
Green space management (including enhancing/conserving urban biodiversity)	Quality education	Economic development potential (being 'open' for business)
Air/ambient quality	Gender equality	Green business opportunities ('creating our own businesses')
Urban regeneration	Clean water and sanitation	
Participatory planning and governance	Affordable and clean energy	
Social justice and social cohesion	Decent work and economic growth	
Public health and wellbeing	Industry, innovation and infrastructure	
Potential for new economic opportunities and green jobs	Reduced inequalities	
	Sustainable cities and communities	
	Responsible consumption and production	
	Climate action	
	Life below water	
	Life on land	
	Peace, justice and strong institutions	
	Partnerships for the goals	



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4. Front Runner City Strategic Visions and Priorities

A key first step in scaling up nature-based solutions within the corporate culture of a city administration is to align the high level strategic aspirations of a city with a nature-based solutions approach.

Whilst at national and international scales, legal and policy frameworks support nature-based solutions, including the Water Framework Directive, Convention on Biological Diversity, Eu Climate Adaptation Strategy and Paris Climate Accord, implementation often needs to happen at local scales. The city is an important unit of analysis for this. This is reflected in the international significance of networks such as ICLEI, C40 and 100 Resilient Cities.

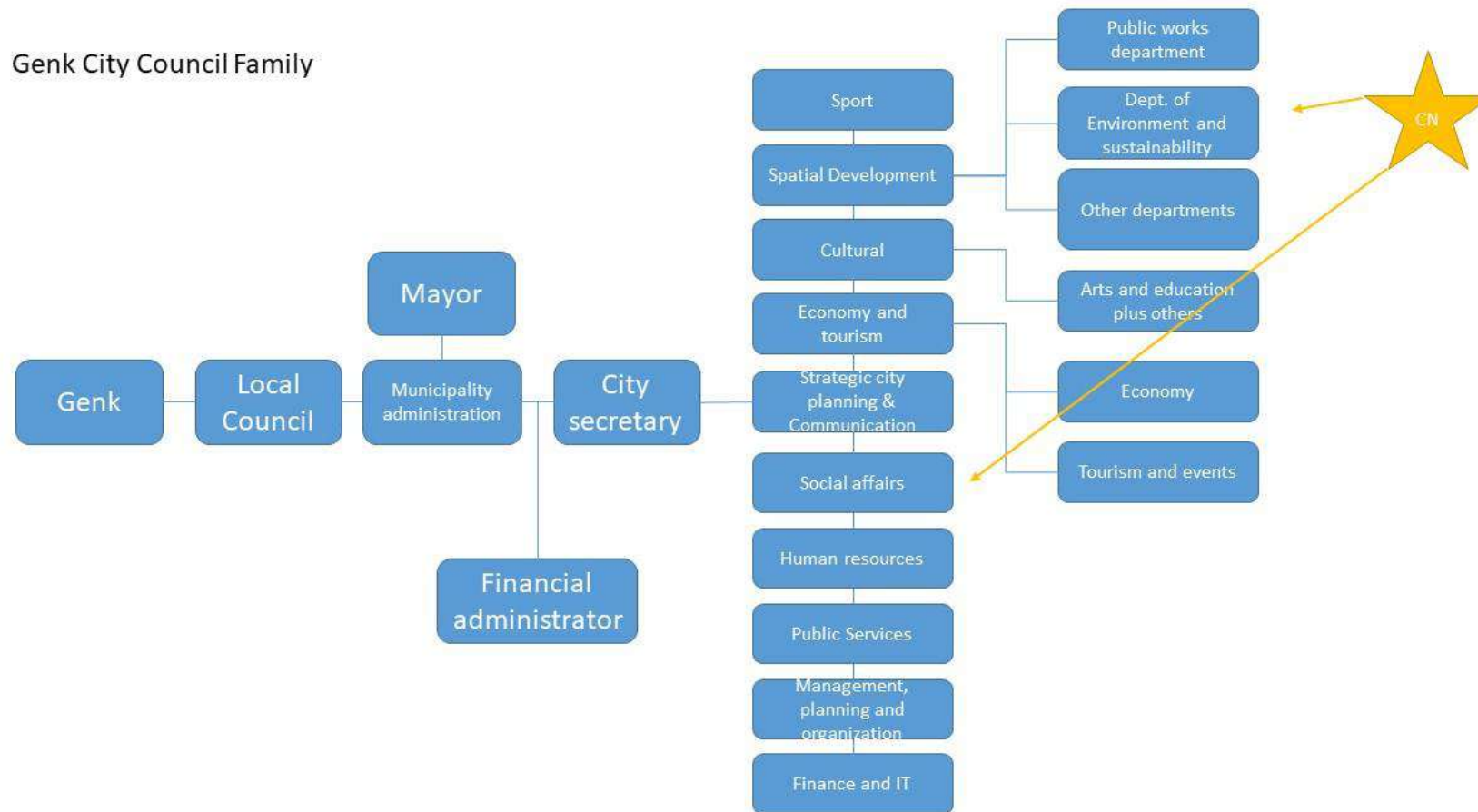
Evidence from Milestone 8 (previously Milestone 1.1) analysis of nature-based case studies suggests that most nature-based solutions are designed for mono- or bi-functional goals. In order to fulfill and scale out the full spectrum of multifunctional opportunities represented by nature-based solutions (summarized in figure 5 above), cities may need to develop innovative governance models that provide horizontal rather than vertical/siloed ways of working.

However, preliminary analysis from the three Connecting Nature Front Runner Cities – Genk, Glasgow and Poznań (representing different scales and types of cities in Europe) – indicates that there is a common challenge around breaking down city departmental silos and making the case for nature-based solutions being relevant across departments. This provides a practical challenge to planning and implementing scaled up exemplars of nature-based solutions and the embedding of indicators for multifunctional benefits.

A possible starting point for overcoming some of these governance challenges, and work towards innovative governance practice, is to analyse the key city visions and priorities that have political support and act as transversal goals across departments to see how nature-based solutions offer opportunities for delivery. We can see how the Stockholm Resilience Centre have started to do this with food in figure 4 above. Whereas many nature-based solutions are developed and implemented by communities at a local level, scaling up and scaling out means that the strategic significance of nature-based solutions also needs to be embedded in the city corporate culture to create the enabling governance environment required. Austerity measures might provide impetus for this as multifunctionality of solutions can provide efficient delivery of goals with limited resources.

A way to explore the governance environment of a city is to look at its organizational structure and its strategic vision and priorities. The following sections provide these two elements for each of the three front runner cities. The high level visions, themes, priorities set at the corporate level are usually then cascaded to subsidiary service goals and action plans. The location of the Connecting Nature team is indicated by a star in each of the organizational structures.

4.1 Genk organizational structure



4.2 Genk strategic vision and priorities

City program Meaningful city	City Program City Together	Policy theme Entrepreneurial city	Policy theme Ecological city	Policy theme Residential Town	Policy theme Caring city	Policy theme Talented city	Policy theme Experience for everyone
Genk develops, in relation to the surrounding regions, a laboratory function for drawing up a sustainable spatial, economic and social society model for Genk as an atypical city in which hardware and software are synergistic.	Genk city policy is a participative policy. The city engages optimally its residents and various actors in the city, both in policy developments and actions by informing them, allowing them to think, to be advised, to be communicated with, to cooperate, to co-create	Genk allows companies to start and grow by supporting entrepreneurs 360 ° in realizing and implementing their plans with the aim of retaining and attracting employment	Genk, together with the inhabitants and other actors, focuses on nature and experience green. The ecological network is anchored in spatial planning and a master plan for nature and experience green that responds to the needs and expectations of the wider society is developed and implemented in consultation with the other actors	Genk is a city with an affordable, sustainable, qualitative and innovative housing supply for everyone, which pays attention to the preservation of its valuable neighbourhoods and, through its housing policy, strengthens the urban character of the city and the growth towards a balanced population mix.	In order for each Genk resident to lead a dignified existence, Genk takes control of the realization of an accessible social service provision, care and care offer, tailored to the care and welfare issues of the inhabitants and meeting a maximum quality. This offer is set up within a social infrastructure of cooperation, coordination and innovation with various partners	More Genk residents achieve the highest possible qualification and participate in lifelong and broad learning and the appeal of Genk education to both Genk and non-Genk students is increased.	Genk knows how to attract more and more people through the versatile experience in the city.
Genk develops supra-local recruitment power, based on strong sites with synergistic function clusters that reinforce the multifaceted offer of the city, between which strong cross-pollinations arise and which	Genk is a city where more and more inhabitants and actors are getting a taste for taking all kinds of initiatives in the city, for each other and for others.	Genk activates its function as an economic and logistical gateway for Flanders by setting up strong sites that realize sustainable employment, for the highly skilled and the low-skilled, in future-oriented sectors and to develop a strong	Genk is committed to sustainable management of energy, water, air, soil and materials. Genk aims to reduce CO ₂ emissions on its territory in collaboration with all stakeholders (city services, residents and businesses) by increasing energy	Genk develops liveable living environments where people can live for life, stimulate and reinforce solidarity	Genk is a city where children grow up in warm and powerful families and builds a strong family and educational support policy for this purpose	The city council strives, in addition to education, for a broad, maximum talent development * of children, young people and adults, with attention for the development of creative innovative and enterprising talents.	Genk functions as an open innovation lab for the co-creation of new small and large experiences that are inspired by the specificities and new developments in the city, involving as much as possible the own talent of the city.



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actively interact with their environment.		cross-fertilization between themselves.	efficiency on the one hand and by using renewable energy sources on the other. In the longer term, Genk aims for climate neutrality.				
Genk is building a powerful city network that connects the city districts, with clear lines of movement where the scenic quality and green structure are the foundation for the entire city, enriched with artistic and creative route elements and supported by a future-oriented mobility network.	Genk is growing as a city with self-responsible residents, organizations and city actors. The city pursues its policy on the principle that people should be given every opportunity and care to live fully, and it is also expected that people use their capacities to take maximum responsibility for themselves and their immediate environment.	By developing distinctive qualities, Genk strengthens its identity as a modern shopping and catering destination as the basis for realizing employment in this sector. Genk uses knowledge in the field of creative design and design, social media and digitization, artistic creation and event creation in the city and integrates city characteristics such as green, multiculturalism, ...	Genk is committed to sustainable and integrated mobility based on the STOP principle, which stands in order of importance for walkers and cyclists, Public transport and Private transport, and stimulates the most sustainable forms of mobility.				Genk gives participation opportunities and space to initiatives of residents, associations, who want to develop their own offer in the city that is open to others.
Genk is perceived in a broad region as a dynamic contemporary city with a strong identity and a meaningful city supply.	Genk remains committed to social cohesion and interaction between residents and communities.	Genk profiles itself as a fascinating city of experiences for day and overnight tourists and develops an offer that links an interesting experiential value to the support of the					



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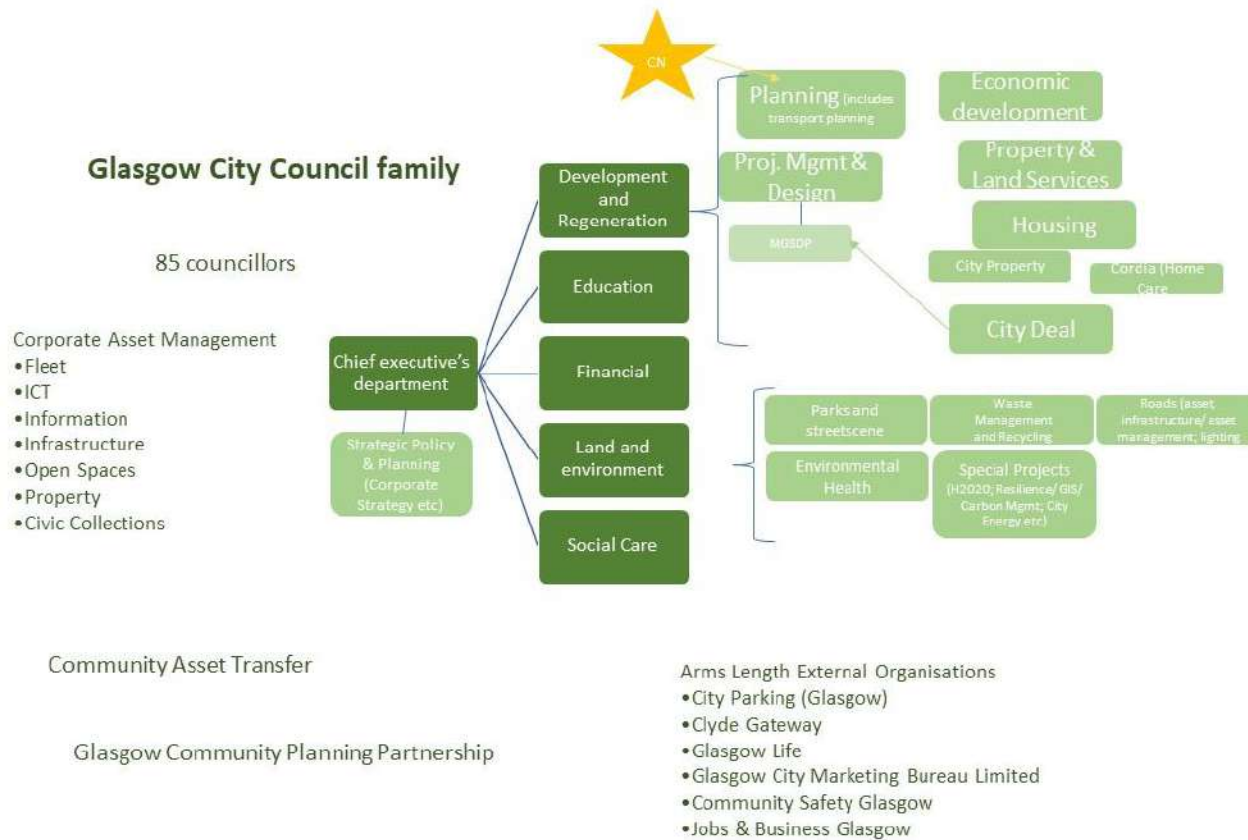
		local economic fabric					
		<p>Genk strives to ensure that everyone can exercise their right to work and to this end pursues an active employment policy aimed at reducing the high unemployment among the Genk people. Through a multifaceted and powerful entrepreneurial policy, the city encourages the maintenance and development of new jobs. Through the employment policy, the city supports the employment of the Genkenaren in jobs in their own city and region.</p> <p>The city tries to reduce the distance between the various players on the labour market by making links between those who are part of this Genk 'labour network' and those who are job</p>					



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seekers, employers,
intermediaries and
role models.

4.3 Glasgow organizational structure





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4.4 Glasgow strategic vision and priorities

City Strategic Plan 2017-22	City Development Plan 2017	Economic Strategy 2016-23	Housing strategy 2017	Transport strategy 2014-24	Glasgow City Integration Joint Board Strategy 2016-19 (Health and social care)
Thriving economy <ul style="list-style-type: none"> ➤ A resilient, growing and diverse economy where businesses thrive; ➤ The city and its citizens benefit from inclusive economic growth and are involved in economic decision-making through participatory budgeting; ➤ More Glaswegians are in work or training; ➤ Glasgow is rated highly for its business innovation and digital skills 	Healthy high-quality place	Raising health	Promote area regeneration and enable investment in newbuild housing	Improve health of citizens (increase walking, cycling, public transport)	Responsive where health is poorest
Vibrant city <ul style="list-style-type: none"> ➤ Glasgow is a world class destination for tourism, culture, sport, events and heritage; ➤ Glaswegians are active and healthier; ➤ All citizens have access to the city's cultural life and its heritage; ➤ Glasgow acknowledges and promotes its history, heritage and culture 	Compact city form that supports sustainable development	Skills for all	Manage, maintain and improve the existing housing stock	Support growth of economic vibrancy of city centre (accessibility)	Supporting vulnerable people and promoting social well being
Healthier city: <ul style="list-style-type: none"> ➤ Glasgow is healthier; ➤ Our services are focussed on prevention and early intervention; ➤ Citizens and communities are more self-reliant for their health and wellbeing; ➤ We have integrated services with health that support Glaswegians when they need it 	Vibrant place with growing economy	Fairer Glasgow	Raise standards in the private rented sector	Enhance quality of main pedestrian spaces	Working with others to improve health
Excellent and Inclusive education:	Thriving and sustainable place to	Supporting key sectors	Improve access to housing	Reduce harmful traffic	Designing and delivering



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<ul style="list-style-type: none"> ➤ Our attainment levels improve across all of our schools so that all our children can fulfil their potential; ➤ children and young people benefit from early intervention and prevention approaches; ➤ equality and diversity is recognised and supported and human rights promoted 	live and work		in all tenures	emissions and noise	services around the needs of individuals carers and communities
<p>Sustainable and low carbon economy:</p> <ul style="list-style-type: none"> ➤ the city is clean and public spaces are well maintained; ➤ we have a low carbon footprint as a council and as a city; ➤ we have more sustainable, integrated transport networks across the city, and less congestion; ➤ citizens use active travel, including walking and cycling 	Connected place to move around and do business in	Innovation/high value employment	Promote health and wellbeing	Enhance road safety and personal security for all city centre users	transparency, equity and fairness in the allocation of resources
<p>Resilient and empowered neighbourhoods:</p> <ul style="list-style-type: none"> ➤ citizens and neighbourhoods can influence how services are developed and budgets spent; ➤ citizens can access good facilities, jobs and services locally; ➤ citizens' satisfaction with services is maintained or improved; ➤ Glasgow's housing meets the needs of its growing and diverse population 	Green place which is resilient, accessible and attractive	Smart infrastructure investment	Tackle fuel poverty, energy inefficiency and climate change		Developing a competent, confident and valued workforce
<p>Well governed city that listens and responds:</p> <ul style="list-style-type: none"> ➤ the council has open and transparent decision making; ➤ citizens are more involved in local and citywide decision making; 		Housing mix			Striving for innovation

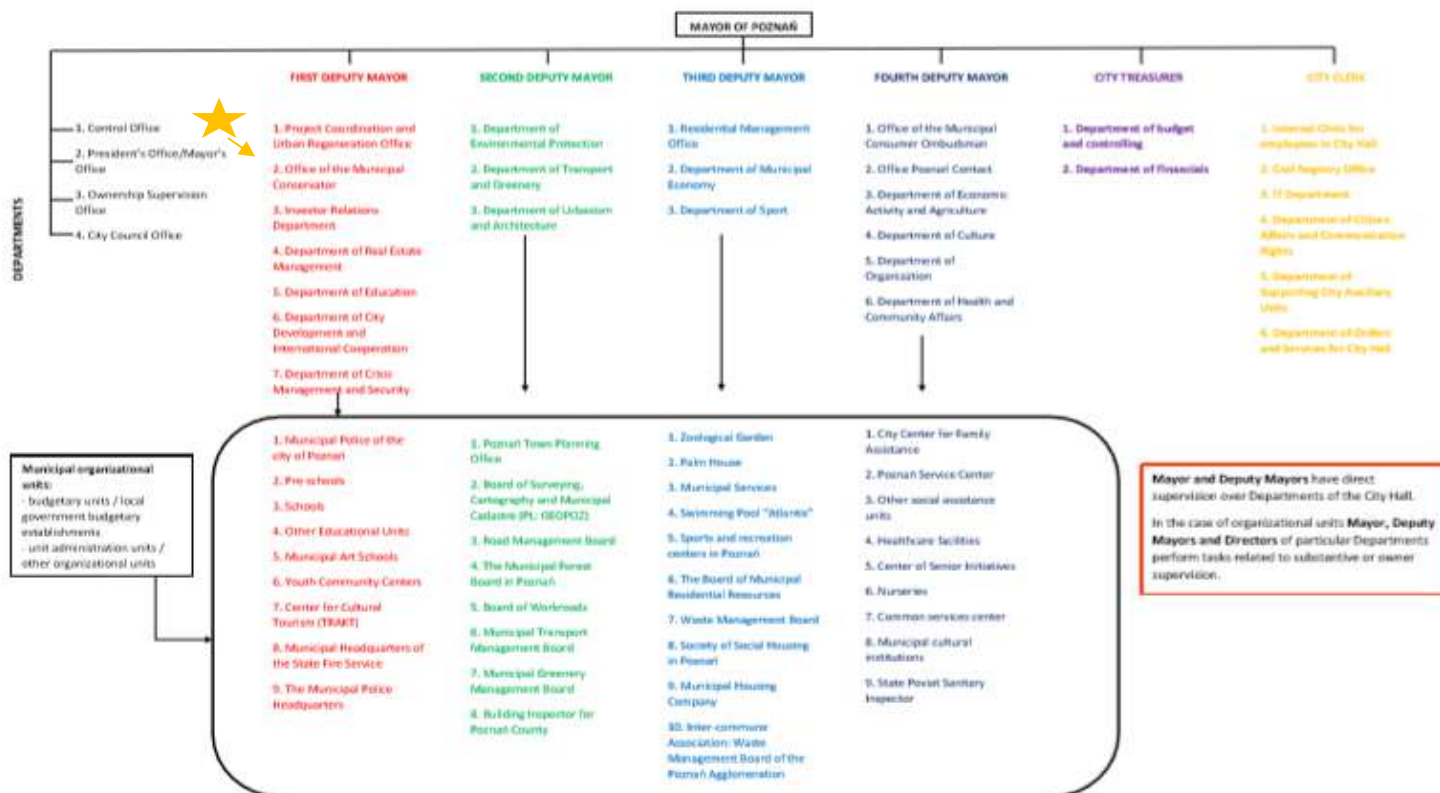


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<ul style="list-style-type: none"> ➤ we listen to citizens and respond; ➤ we take account of equality issues and the impact of poverty in our decision making 					
		Supporting enterprise			Developing a strong identity
		Linking education to employment opportunities			Focussing on continuous improvement
		Increasing the population			

4.5 Poznań organizational structure

THE ORGANISATIONAL STRUCTURE OF THE CITY OF POZNAŃ



„Metropolis Poznań Association“

MAYOR OF POZNAŃ

FIRST DEPUTY MAYOR is in charge of real estate management, education, public safety and city revitalisation

SECOND DEPUTY MAYOR is in charge of spatial policy, transport and environmental protection

THIRD DEPUTY MAYOR is in charge of municipal and housing economy and sport

FOURTH DEPUTY MAYOR is in charge of social assistance and health care, cooperation with social organizations and business and culture

CITY TREASURER is responsible for: preparation of assumptions and implementation of the City's financial policy, coordination of work related to the development of City budget projects, supervision over the implementation of the budget, the size and enforcement of local taxes and fees, accounting and financial records.

CITY CLERK is responsible for: ensuring organizational and technical conditions enabling efficient implementation of the Office's tasks, ensuring that departments and offices adhere to the existing administrative procedures and constantly improve the quality of the Office's work, establishing and terminating the employment relationship with the employees of the Office, computerization of the Office's units

Strategy for the Development of the City of Poznań 2020+

The vision of Poznań included in the Strategy states that: "Poznań in 2030 is a multi-generational community of people living in green, friendly and well-communicated settlements. Its residents - enterprising and socially involved, pursuing their dreams and aspirations - are satisfied with the living conditions they create city, and proud that it is recognized in the country and abroad thanks to its historical, cultural and academic heritage as well as contemporary, unique achievements. A favorable business climate and social cohesion policy allow all residents to fully participate in the city life."

The strategic goal is: "Improving the quality of life of all residents and the importance of Poznań in the international arena."

Five strategic priorities are used to implement the Strategy's objectives:

1. Strong Metropolis
2. Modern entrepreneurship
3. Green, mobile city
4. Friendly settlements
5. Community and social dialogue

COMPANIES WHERE THE CITY HAS PARTICIPATION

- Business Service Center
- Municipal Transport Company in Poznań
- World Trade Center in Poznań
- Modertrans Poznań
- Poznań – Ławica Airport
- Loan Guarantee Fund in Poznań
- Municipal Investments in Poznań
- Society of Social Housing in Poznań
- Remond's Sanitech Poznań
- Markets Company
- Thermal Baths in Poznań
- Wielkopolska Center for Supporting Initiatives
- The Board of Municipal Residential Resources
- Waste Management Board

37 councillors

+

42 District Councils represented by District Councillors (map)





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4.6 Poznan strategic vision and priorities

Development Strategy for the City of Poznań 2020+	Development Strategy of the River Warta in Poznań	Study of Conditions and Directions of Spatial Development of the City of Poznań	Environmental Protection Program for the City of Poznań	Municipal Revitalization Program for the City of Poznań – third edition	Low Carbon Economy Plan for City of Poznań	Plan for Sustainable Development of Public Transport for the City of Poznań for 2014-2025	Environmental Protection Program against Noise for City of Poznań and Air Protection Program against PM10 and B[a]P for zone Poznań Agglomeration
<p>To make Poznań a green, eco-mobile city (easily accessible green areas and an environmentally friendly, sustainable transport)</p>	<p>Restoring the river to the city (to create the desired maximum integration between the river and the city)</p>	<p>Creation of such conditions for managing the environmental resources that will ensure sustainable development of the city, higher quality of life for residents, and increase the tourist attractiveness of Poznań</p>	<p>Improving air quality and climate protection Achieving good quality of air and quality of life for residents</p> <p>Water management Rational use of water resources, protection against flood, drought and water deficit</p> <p>Geological resources protection Protection of mineral deposits</p> <p>reducing the pressure exerted by mining</p> <p>Soil protection Improving the quality of soil</p> <p>Waste management and waste prevention Ensuring a sustainable waste management system</p>	<p>Eco-mobility (Increasing mobility of residents and spatial accessibility of the revitalization area and improvement of environmental conditions through the promotion of ecological means of transport and offloading of transport routes)</p>	<p>Reducing greenhouse gas emissions (by 30% till 2040 in comparison to the level from 2010)</p> <p>Reducing greenhouse gas emissions (by 20% till 2020 in comparison to the level from 2010)</p> <p>Reducing energy consumption (by 20% compared to forecasts for 2020)</p> <p>Increasing use of green energy (increasing the share of energy from renewable sources to 15% in final energy consumption by 2020)</p>		<p>Lowering the noise level in environment (main aim)</p> <p>Elimination of exceedances of acceptable sound levels (main aim)</p>



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			Ensuring constant and reliable environmental monitoring				
	Landscape and nature (maintaining the natural and ecological qualities of the "green cross" in Poznan)	A compact city with a framework communication system and a wedge-ring system of greenery	Natural resources Protection and conservation of biodiversity and creation of a network of protected areas			Nature protection (protection of valuable natural areas in the aspect of transport infrastructure development)	Restoration of high air quality standards (main aim) (and thus improvement of living conditions of residents, enhancement of standards of civilization and better quality of life in the city)
	River safety (to create more space for the water to absorb peak flows after mainly heavy rains)		Water and sewage management Improvement of water quality, development of water and sewage infrastructure				
						Quality and access to public transport (increasing the quality and access to public transport for the residents from communes surrounded Poznań)	
						Supporting people with disabilities (increasing access to public transport for people with disabilities)	
Improving the quality of life of all residents Friendly settlements	Connections - Slow traffic (facilitate and promote walking and cycling for creating attractive	Ensuring a proper standard of living for residents (through implementation of high-quality development	Reducing the risk of major industrial and transport accidents	Living conditions (Improvement of housing and environmental conditions)		Reduction of pollutant emissions (resulting from transport)	



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<p>(To provide residents with high quality of life within housing estates that have their own unique character)</p>	<p>environment in the city center and Warta zone)</p>	<p>parameters -nspatial and environmental, guarantee equal access to services for all residents, enabling access to the network of technical infrastructure and communication system.)</p> <p>Protection and shaping of the urban landscape by including in local plans the most important landscapes of the city</p>		<p>Improving the health level, taking care of social ties and increasing the attractiveness of living in the area of revitalization</p>		<p>Reduction of noise emission (generated in transport)</p>	
	<p>Connections - car traffic (preventing pollution and disturbing car traffic in the city center and the Warta areas)</p>		<p>Electromagnetic fields Maintaining the emission level of electromagnetic fields below the acceptable level</p> <p>Noise pollution Achieving a good acoustic climate, without exceeding admissible limits noise standards</p> <p>Reducing traffic noise in urban space</p>	<p>Improving the acoustic climate and air quality</p>			
	<p>Living and working - Build-up areas (revitalizing neglected built-up areas and generating funds to increase the attractiveness of the Warta zone)</p> <p>Historical heritage (to protect and revitalize the valuable historical elements within the Warta area)</p>			<p>Restoration of the continuity of urban structures and the aesthetics of urban space</p> <p>Public spaces and cultural heritage (Revaluation of the public spaces and historic buildings to strength local identity, ensuring a high level of public safety and stimulating</p>		<p>Supporting people with disabilities (increasing access to public transport for people with disabilities)</p> <p>Countering the exclusion of poor people (countering the exclusion of poor</p>	



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				<p>entrepreneurship and employment in the tourism, gastronomy, culture and entertainment sectors)</p> <p>Green space and recreation (Improving the level of health, nurturing social ties and increasing the attractiveness of living in the area of revitalization through the development of sports and recreation infrastructure and revalorization of public green areas.)</p>		<p>people from using public transport)</p>	
	<p>Living and working - Open spaces (to attract people to the river zone by creation living and working open spaces)</p>			<p>Social and cultural activity (Overcoming the threat of social degradation through the activation of local communities in civic, cultural and economic life)</p> <p>Public services (Strengthening social cohesion and increasing the attractiveness of living in the area of revitalization)</p>		<p>Reducing transport costs</p> <p>Attractiveness of industrial and service areas (increasing the attractiveness of industrial and service areas by increasing their access to public transport)</p>	
<p>Improving the importance of Poznań on the international arena (main aim)</p> <p>Strong Metropolis (To develop the cohesion of the Poznań Metropolis and to increase its role on the international arena)</p> <p>Modern entrepreneurship</p>	<p>Tourism and recreation (development of the overall touristic and recreational potential of the attractive Warta zone)</p>	<p>Modern city (metropolitan center) that is friendly to permanent residents and at the same time interesting for visitors, young people learning, the world of business and tourists</p> <p>European city with a high culture of everyday life and space</p>		<p>Stopping the depopulation process</p> <p>Post-industrial, post-military and post-railway areas (The use of post-industrial, post-military and post-railway areas to reverse the processes of depopulation, enrich the social structure of residents and acquire new locations for economic</p>			



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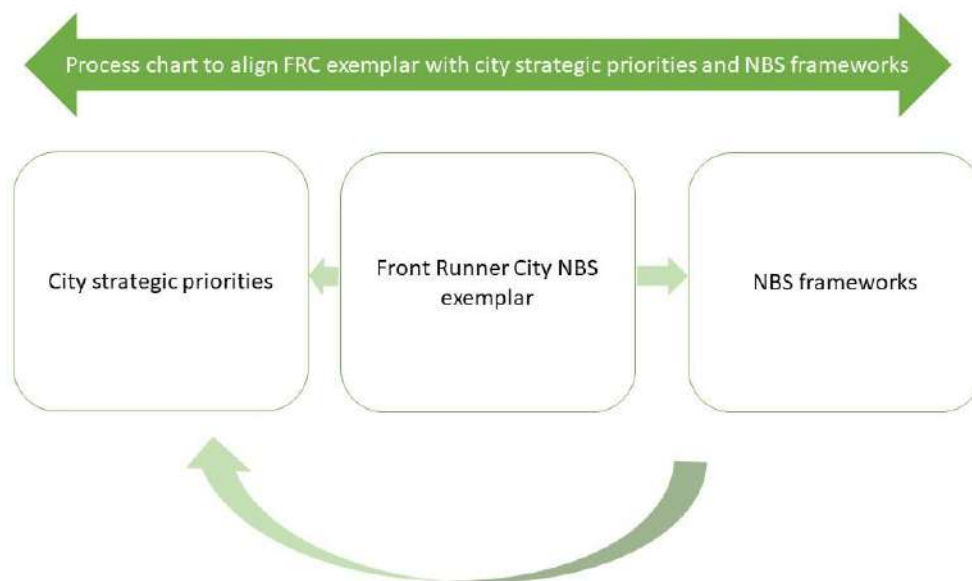
<p>(To develop a diverse, strong and modern economy in Poznań)</p>		<p>Creating spatial conditions for improving the quality of life, improving the attractiveness of public spaces and the investment attractiveness of the city.</p>		<p>activity and social infrastructure) Strengthening the economic, cultural and social activities</p>			
						<p>Planning public transport to ensure sustainable development (main aim) (planning public transport in Poznań and surrounding communes to ensure sustainable development of transport in the Agglomeration for achieving ecological, social and economic objectives)</p>	
<p>Community and social dialogue (Create new and develop existing mechanisms, forms of support and activities that allow residents to responsible co-decision about the city's development)</p>			<p>Ecological education and pro-environmental activities Raising awareness of shared responsibility for the quality of the environment</p>				

5. Next steps

Creating a shared understanding of nature-based solutions and integrating them into existing policies has been identified as a significant challenge across Horizon 2020 projects (Clustering event, A Coruna, May 2018). Moreover, Genk, Glasgow and Poznań all report challenges of working across silos within their city structures. A key recommendation by strategic management analysts for organisations who want to use Key Performance Indicators effectively is to align them with top level strategic goals (PWC 2017) .

The next step in this task is to work with the front runner city teams to align their nature-based solution exemplar with nature-based frameworks and with relevant city visions and priorities. Figure 6 below summarises the alignment process. The resulting process chart will be incorporated in Deliverable 8 (due month 18).

Figure 6 Aligning city priorities, NBS frameworks and the city exemplar



Aligning at the strategic level provides a multidimensional focus through which city teams can make the case for nature-based solutions and transversal working within and beyond the city administrations. This task also provides a method to inform and integrate with indicator development appropriate to each city's priorities (WP1), to feed into the operationalization of the city plan making process (WP2), to underpin the development of implementation and financing strategies (WP3), and to transfer to fast followers, multipliers and the global learning academy (WPs 4 and 5).



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