

## SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

**Action number: CA17133**

**STSM title: Nature-based solutions for circular cities, semi-qualitative interviews with different target groups on five topics, Vienna.**

**STSM start and end date: 02/08/2021 to 30/09/2021**

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### **PURPOSE OF THE STSM:**

Contemporary urban planning has to respond to phenomena like urban heat islands, flooding, treatment of waste- and runoff waters from different origins, and food provision at the same time.

The present short-term scientific mission (STSM) aims at exploring and understanding how city councils and local governments across Europe deal with these problems. The specific objectives of this STSM were to:

- Explore and understand how city council of Vienna and local government deal to address a complexity of environmental problems in contemporary urban planning. Such issues include heat islands, flooding, treatment of waste and runoff waters from different origins and food provision.
- Explore the factors influencing urban planning and city council policies, and formulates recommendations to introduce NBS at the local level.

### **DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS**

The research was based on literature review of planning documents and qualitative method by performing semistructured interviews with experts, urban planners, representatives of city councils, and civic organizations in Vienna. In parallel the same methodology was followed from other STSMs distributed in four selected European cities (Budapest, Iceland, Zurich, Spain).

#### **Target Groups of Vienna case:**

Eleven to 15 interviews were collected from five different target groups: City council of Vienna, Urban planners, citizen representatives, NGO, private sector enterprises related to environment, urban planning consultancy.

#### **Interview questions**

The interview were done physically at the organization or online. The first set of questions were related to:  
1) Introduction of the interviewee and their organization. 2) The role and functions of the organization and what are the NBS in their opinion.

The second part of interview was structured to receive information on 5 topics (water management, resource recovery, urban agriculture - gardening, build environment and climate chane mitigation & adaptation:

3) The role of the organization in (water management / resource recovery / urban agriculture / built environment / climate change mitigation).

- How does it appeared among the interviewee's tasks, how can he/she influence decisions?

- What influences water management (or resource recovery / urban agriculture / built environment / climate change mitigation)?
  - What are the main problems, possibilities, challenges in water management (or resource recovery / urban agriculture / built environment / climate change mitigation)?
4. What did the interviewee think the city will look like in 10 years? How did he/she see the role of NBS in the next 10 years?

#### **Analysis of the data collected for Vienna case**

- Once that the interviews were collected (pre-consent recording), they were transcribed using Otter.ai online software and analysed using a semi-open-coded method. For the analyses, a code structure (with key words) was developed jointly by the applicants and tutors from the host institution.
- The interpretation of the data was performed by the help of grouping the replies into coded words.
- The results from each city were then compared and discussed to each-other in terms of interview replies but also based on the literature review and current situation of NBS implementation and regulations in this cities. The final output is planned to be a peer-reviewed publication a comparative paper about the results of the STSMs.

#### **DESCRIPTION OF THE MAIN RESULTS OBTAINED**

The main results obtained from the interviews carried out during the short term scientific mission (STSM) are the following:

Vienna has already done progress toward implementation of NBS in city. Examples can be: Urban gardening, Danube Island for flood management, Green roofs and green facades, rain gardens, and unsealing the asphalt, etc. This starts with regulatory guidelines that encourage and in some cases make it mandatory to implement NBS in the city. An example, is the regulation that every new building should have a green roof and green wall. There are many initiatives also in the topic of urban gardening, where citizens are the primarily actors that initiated projects of urban gardening.

Interview insights - preliminary results

In Vienna, officials from city planning and environmental departments as well as researchers have been looking at which urban planning instruments are available to mitigate urban heat island effects in the city. The most referred regulation mentioned from all interviewees was the Urban Strategy Plan published by the Department of Environmental Protection (MA22) in Vienna in 2015. The Strategy Plan focuses on the role of water and green infrastructure in the city in alleviating UHI effects, both in terms of what existing structures already contribute to cooling, as well as what potential there is to increase green infrastructure into the build environment through planning instruments.

**Water management:** There is a discussion that every building should manage the rainwater, and such rainwater should not go in the sewer. This rule make developers and owners of the building to implement nature based solution and apply circular economy into the build environment, neighbourhood and city. Vienna had suffered floodings in the past and Danube Island is the largest example of a nature-based solution for flood management and recreational area.

**Resource recovery** – there is a good progress toward set regulations (related to safety, deposit) for the waste management from demolished buildings, or big construction works that produce a lot of soil (of new Metros, etc), and there are some more work to be done in re-using the soil for example (for NBS in build environment) and going into a more circular economy.

An interesting point that came out from the interviews is that in Vienna are the citizens themselves initiating and requesting **urban gardening** (urban farming) in their neighbourhoods. The office of Citizen representatives', (a team of urban planners, architects, social workers), are an important stakeholder to initiate and run urban gardening projects, which are managed afterwards from the citizens that subscribe to have a garden (Garden Club). Each family can keep a garden for up to 2 years, so everyone can have a chance for this experience. However the challenges are related to the costs and the water availability (costs) are sometime an issue. There are many urban gardening projects across the city, that vary in typology: from gardens to grow vegetables in a parcel (1m<sup>2</sup> – 15m<sup>2</sup>) for family, to growing plants/flowers along the streets in small boxes (often kindergartens and schools are involved).

In conclusion, this study was a very interesting experience and gave different perspectives from urban planners, city council, public transport, civic representative office, scientists.

**Planned Publications:**

- Short paper for the NBS in Vienna
- Comparative paper of NBS in five different cities across Europe
- A third paper on a parallel research I was performing during the STSM – at the Host institution on the Business Models of the best practices of implemented NBS for water management in cities

**FUTURE COLLABORATIONS (if applicable)**

This STMS has been largely successful in terms of present and future collaborations between the STMS applicant, and the Alchemia-nova as host institution. In addition the network with different stakeholders during the research to perform the interviews was an enriching experience and opens the door to further future collaborations. All the interviewees expressed the interest on the COST17133 and are looking forward to read the results derived from this study comprising the 5 cities across Europe. Finally Vienna has already done progress on the implementation of nature-based solutions in the city, and such examples the STSM will bring to her own country.