

Call for Short Term Scientific Missions (STSMs)

**Quantifying resource streams for decision support of implementing NBS for circularity and reuse**

The COST Action on Circular Cities (CA17133) announces STSMs for describing the quantification of resource streams by using nature-based solutions (NBS).

**Deadline for pre-application May 27<sup>st</sup>, 2022**

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## Description of the STSMs

Selection of nature-based solutions (NBS) to minimize the resource inputs to and outputs from the city depends on the availability of resources as well as on available processing options enabling reuse. While on a qualitative level numerous possibilities for resource reuse exist, only a quantitative characterization of both, the required and the available resources can fully support the decision making on the implementation of NBS.

These STSMs will be interconnected and carried out within an interdisciplinary environment.

## Planned Research

The quantification approach follows a general methodology:

- Identification of available resource streams as inputs for the defined NBS units (NBS\_u) addressing a specific urban circularity challenge (UCC) (Langergraber et al., 2021).
- Identify design guidelines and minimum requirements for NBS\_u to provide a specific service.
- Set up input-output models to calculate the available stream quantity or the needed quantity for a particular service.
- Create decision support to choose a specific NBS\_u.

## The following topics are available and will be facilitated by specific institutions

- UCC1 - Rainwater management and reuse (University of Ljubljana, Slovenia).
- UCC2 - Wastewater generation and reuse, focusing on source separation, water quantity and treatment Aarhus University, Denmark).
- UCC3 - Nutrient recovery from wastewater and source separation (Université de Paris).
- UCC4 - Material and biomass recovery (alchemia-nova, Vienna, Austria)
- UCC5 - Biomass and Food production (University of Córdoba - UCO, School of Agricultural and Forestry Engineering - ETSIAM, Spain).
- UCC6 - Building and urban energy. (Energieinstitut an der Johannes Kepler University, Linz, Austria).
- UCC6 - Urban heat island and plant related cooling effects (University of Novi Sad, Serbia).

Each STSM should have a duration of 2 months and be finished before Sept. 15<sup>th</sup>.

The host institutions provide the necessary infrastructure and assistance to organize the fieldwork during the STSMs.

### The successful candidates:

- Shall be either a PhD or post-graduate student or a Post-Doc;
- Are fluent in English;
- Are familiar with the concept of NBS and circular economy;
- Have practice in ecological engineering design concepts, and;
- Are capable of using mathematical descriptions.

### Rules for application

General rules are described in the Annotated rules of COST ([pdf](#)). Here, the specific rules, as decided by the Action are outlined:

- STSMs have a maximum duration of 2 months and have to be finalized prior to Sept. 15<sup>th</sup> September 2022. We request candidates to submit a pre-application (see below).
- STSM grants are a fixed contribution based on the budget requested by the applicant and the evaluation of the application by the STSM Committee.
  - This grant will not cover all expenses; it is intended only as a contribution to the travel and subsistence costs of the participant.

### The calculation of this contribution for a STSM is based on the following rules:

- The COST Action CA17133 decided to offer a EUR 2,000 in total (including travel expenses) to the grantee for two months. The STSM has to be performed on-site at the Institution (no online options).
- Please note the grant will only be paid to the grantee after the STSM has been completed and the STSM report, which is submitted by the grantee, has been approved by the STSM coordinator and the Action Chair.

The pre-application for this call should contain:

- The deadline for Pre-Application is **27.05.2022**.
- A short CV and a letter of motivation by the applicant, stating the 2 preferred topics (first choice and second choice from the seven topics listed above).
- Send the pre-application files as an e-mail attachment to the STSM Coordinator Ranka Junge ([xjnn@zhaw.ch](mailto:xjnn@zhaw.ch)) and in cc to [bernhard.pucher@boku.ac.at](mailto:bernhard.pucher@boku.ac.at) and [ca17133@boku.ac.at](mailto:ca17133@boku.ac.at).

Online Application

- Once the application is pre-approved you can proceed to the online application.
- To complete the online application form you have to log in into e-COST and click on the STSM application tab (<https://e-services.cost.eu/stsm/apply/new>). The on-line registration tool will create a formal STSM application file, which the applicant can download.
- You will need to upload:
  - Work plan. As the work plan is defined by the call, this can be very short (1-2 pages).
  - Letter of agreement by the host scientist to accept and supervise the applicant to the STSM host institution. This letter should also contain a brief outline of the COVID-19 safety measures at the hosting institute and an outline of the current situation in international travel for the two countries (exit-entrance rules, testing & quarantine rules).
  - Letter of agreement by the sending institution.
  - CV.

### After the STSM

The grantee is required to submit a short scientific report to the host scientist, the Action Chair and the STSM coordinator for approval within 15 days after the end date of the STSM. The report (a template is provided in the e-COST system) contains:

- Cover page with applicant's name, affiliation address, e-mail, name of the host scientist and institute;
- Purpose of the STSM;
- Description of the work carried out and the main results obtained during the STSM;
- Future collaboration with the host institution (if applicable);
- Foreseen publications/articles resulting from the STSM;
- A letter of confirmation by the host scientist of the successful execution of the STSM.

In addition, the grantee should send the following information directly to the STSM coordinator. This information will be used to publish the results of the STSM on the Action Website.

- Abstract of the STSM (max 300 words).
- A picture of him/herself (for example during the field work).
- 5 lines describing why this STSM was beneficial for the Action.

The Action Chair and STSM coordinator are responsible for approving the scientific report. The failure to submit the scientific report PLUS additional information within 15 days will effectively cancel the grant. The most important criterion of assessment is how effectively the STSM will contribute to the scientific aims of Action CA17133. Once approved, payment of the STSM grant will be made by bank- to-bank transfer to the grantee.

NOTE: For the period of the STSM, neither the Grant Holder of the Action, Management Committee of the Action, etc., nor the COST Office may be considered as the employer of the grantee, and grantees must make their own arrangements for all health insurance, travel insurance, social security, personal security, and pension matters as may be needed and appropriate to the grantee.

## References

Langergraber, G., Castellar, J.A.C., Pucher, B., Baganz, G.F.M., Milosevic, D., Andreucci, M.B., Kearney, K., Pineda-Martos, R., Atanasova, N. (2021): A Framework for Addressing Circularity Challenges in Cities with Nature-based Solutions. *Water* 13(17), 2355; <https://doi.org/10.3390/w13172355>.