

**Agricultural University of Athens (AUA), Department of Natural Resource Utilization and Agricultural Engineering, Athens, Greece**

Iera Odos 75, 11855, Athens, Greece  
Marie Skłodowska-Curie Actions, Doctoral Candidate  
**Deadline for applications: January 2<sup>nd</sup>, 2023**  
Expected starting date: April 30, 2024

**Job description:**

The job is a full time position for Doctoral Candidate (DC) in the field of urban infrastructure, greenhouse emissions and Life Cycle Assessment. The title of the project is: **Assessing benefits of green infrastructure on urban microclimate and GHG emissions using LCT (BREATHE)**. The goals are to estimate the GHG emissions and urban microclimate in order to be able to evaluate various green infrastructure strategies using holistic assessment through life cycle thinking approach. The proposed green solutions will be able to increase the sustainability level of urban environment.

**Job duration:** 36 months

**Main research field:** Environmental Engineering

**Research subfield:** Environmental performance and Life Cycle Assessment

**Institution description:**

The Agricultural University of Athens (AUA), established by law in 1920 (Law 1844/1920), is the third oldest university in Greece. AUA offers courses and programs leading to officially recognized higher education degrees such as bachelor degrees, master degrees, doctorate degrees in several areas of study. AUA has 6 Academic Schools and 12 different Departments and occupies more than 500 scientists. Besides the curriculum of each Department, the students are given the opportunity to acquire and develop knowledge and skills through educational courses or seminars. AUA is a founding member of the EU-CONEXUS European University for Smart Urban Coastal Development and acting as a regional hub for EIT-Food. AUA is currently running more than 50 H2020 projects in fields related to smart farming, sustainable agriculture, circular bioeconomy, food and health, biotechnology and resources management.

**Working place**

The project will take place at the Laboratory of Farm Structures (FSL) of the Agricultural University of Athens. The DC will have access to all the lab facilities and services as well as to the local Department administrative offices. A number of secondments in Italy (University of Bologna, UNIBO) are scheduled, within the group of Prof. P. Tassinari, working in the field of life cycle thinking and green sustainable solutions for sustainable urban green strategies. Other secondments are planned in the premises of the Greek ENVI private company/laboratory, with the group of S. Valchos that aims to contribute to data accessibility to emissions and air quality. The DC will take advantage of the company's knowledge and will identify and trained to reference state-of-the-art technologies and models for emission's monitoring.

**Project description**

The main objective of the project is to assess the urban microclimate and GHG emissions and continuously assess the resulting benefits from green infrastructure strategies in order to improve the existing conditions of urban environment using state-of-the-art strategies and green actions, by assessing the already existing situation. Life Cycle Thinking approach will be used in order to evaluate the urban microclimate and gas emissions considering both the existing vegetation and



proposing applicable solutions for the improvement of high dense urban areas.

The main expected and desirable results are:

- Screening of urban environment monitoring systems and specifications for quality sensing and data management.
- Key requirements for the decision support (DS) systems and integration of LCT indicators in the DS software, registering real-time performance and effects of adaptation.
- Design of a sustainability DS platform, to be used for integrated analyses with combined tools.

The DC will be required to undertake the following responsibilities and tasks:

- Review on state-of-the-art strategies concerning the evaluation of the sustainability level and GHG emissions in urban environments based on Life Cycle Thinking approaches.
- Laboratory testing of atmosphere emissions in the urban environment and development, evaluation and proposal of green strategies based on life cycle assessment (LCA), life cycle costing (LCC), and social LCA (S-LCA).
- Real scale testing and assessment of proposed solutions at ENVI by monitoring, reporting and verifying the carbon dioxide emissions in the urban network. In ENVI, the DC will understand the features in GHG emissions, installing and testing models in green strategies.
- Connections with the research activities and results in different urban environments. Adjusting and comparing the results at UNIBO's Laboratory. In UNIBO, the DC will identify the peculiarities in green urban environment, compare and adjust the green strategies and models, by evaluating and converting them into testing protocols for the real scale experiment in the cities.
- Full characterization of green infrastructure strategies for improvement of the urban microclimate retrofitting of existing systems. Development of an integrated decision-making platform to monitor and maintain GHG emissions and urban heat at desired levels.

### **Marie Skłodowska-Curie Doctoral Network GreenNexUS**

In our increasingly anthropised planet, many cities are facing multiple societal and environmental challenges and the link between the characteristics of the urban green contexts and people's health and safety represents an emerging topic and of urgent importance. Air pollution and urban climate, reduced contact with nature, limited access to quality green spaces, and urban fabrics and infrastructure that discourage sustainable&safe mobility and active lifestyles, are threatening the mental and physical well-being of an aging society and increasing its social disparities. The GreenNexUS project proposes a novel and multidisciplinary approach to promote urban greening, territorial regeneration and safety/accessibility/walkability of urban infrastructures, as key strategies to face those challenges, while addressing climate change and preventing pandemics from exacerbating inequalities in disadvantaged/vulnerable groups. The GreenNexUS participants (20 institutions from 9 European countries) are joining forces to offer a collaborative Training-through-Research programme involving universities, research centres, companies, NGOs, and local authorities that share this new vision of fostering greener, healthier and safer urban realms of Europe's cities and towns. This will drive the GreenNexUS process to train specialists, whose cutting-edge and intersectoral expertise will be developed and managed through a challenging general programme of training that combines and integrates the various fields of innovative knowledge of the GreenNexUS' participants, and also includes career planning, entrepreneurship and soft skills training. In terms of research, 10 specific and multidisciplinary topics will be addressed by 10 Doctoral Candidates, who are envisaged to spread the GreenNexUS approach beyond the project's scope and duration, under the guidance of a supervisory group of academic and non-academic experts.

### **Candidate profile**

The candidate is required to have, at the time of recruitment, a master degree in Civil, Architecture or Environmental Engineering giving access to the PhD school and NOT to hold any PhD degree.



Previous research experience, (which must be no longer than 4 years), although appreciated, is not mandatory. Good oral communication skills in English is compulsory. Willingness to travel internationally for the purpose of research, training and dissemination is mandatory.

### Eligibility requirements

DC appointments are full-time fixed term for 36 months. Candidates matching the required profile will be evaluated until a successful candidate is appointed. There are strict eligibility rules associated with the recruitment of Doctoral Candidates in MSCA Doctoral Networks.

**Career:** At the time of recruitment, the DC must hold a Master degree or similar degree giving access to PhD and not more than 4 years of previous research activity. A PhD degree in any field is not compatible with this DC position.

**Mobility:** Transnational mobility is an essential requirement of Marie Skłodowska-Curie Doctoral Networks. At the time of recruitment, the DC must not have resided in Greece for more than 12 months in the 3 years immediately prior to the recruitment date and not have carried out in Greece his/her main activity (work, studies, etc.). Applicants must be prepared for a secondment for a total of 4 months at UNIBO (Italy), and another secondment for at least 2 month at ENVI in Greece.

**Language:** A good knowledge of spoken and written English is required and will be evaluated during the selection process.

### How to apply

Applicant shall provide the documentation listed in the corresponding Application Form. The documents shall be sent by e-mail to the three following addresses: [cesare.sangiorgi4@unibo.it](mailto:cesare.sangiorgi4@unibo.it) (Project Coordinator), [Thomas Bartzanas - t.bartzanas@aua.gr](mailto:t.bartzanas@aua.gr) (Main Supervisor) and Dafni Avgoustaki – [dafni\\_av@aua.gr](mailto:dafni_av@aua.gr). A confirmation message will be sent upon submission.

### Evaluation and interview

The selection process will consist of CVs, motivation and records evaluation and an interview (additional interviews could be required). The interview to assert the skills, the motivation and the fluency in English, will take place at the host institution or, for those candidates who are not able to travel to Athens (Greece), by internet connection. The candidates will be ranked according to both their records and the interview. The candidate at the highest ranking position will be offered the position. If, for any reason, the selected candidate will decline the offer or will fail to comply with the requirements for enrolment in the position, the one following in the list will be selected. More details on the selection process could be found on <https://greenexus.unibo.it/> and on <https://euraxess.ec.europa.eu/>.

### Rights and responsibilities of researchers participating in Marie Skłodowska-Curie Actions

The European Charter for Researchers is a set of general principles and requirements, which specify the roles, responsibilities and entitlements of both researchers and the employers and/or funders of researchers. The aim of the Charter is to ensure that the nature of the relationship between researchers and employers or funders is conducive to successful performance in generating, transferring, sharing and disseminating knowledge and technological development and to the career development of the researchers. It is obligatory for applicants to read and understand the detailed information regarding the rights and responsibilities of researchers engaged in a Marie Skłodowska-Curie Doctoral Network. The European Charter for researchers can be accessed at: <https://euraxess.ec.europa.eu/jobs/charter/european-charter>

### Employment contract and remuneration

The selected candidate will be enrolled for a 36-months full-time contract as external partner self-employment, as foreseen by the Greek national legislation. The remuneration will be compliant with



the rules of the MSCA-DN, as by the Marie Skłodowska-Curie Actions Work Programme 2021-22, 'European Union Contribution and Applicable Rates'. The gross amount per year of the allowances includes the salary (33.292,8 €), the mobility allowance (7.200€) and 75% of the full Family allowance (5.940€), if eligible. In fact, the amount of #5,940.00#€ corresponds to 75% of the full amount of #7,920.00#€ per year of the Family Allowance (660€/month as described in the corresponding Horizon Europe MSCA Work Programme. The remaining 25% of the Family Allowance shall be paid to the eligible candidate during the second financing phase of the project. These gross amounts include all allowances not paid within the first financing period and all compulsory deductions under national applicable legislation (taxes depend on the country of the host institution).

