**Indicators of Agri-environmental performance for urban green spaces:**
**Contribution to build a decision-making tool for European stakeholders**

**Context and challenges**
Vegetation in urban areas provides many benefits for humans (health and well-being, social bond and identity), i) through ecological processes (biodiversity, thermal regulation, air quality, water flow and soil protection), and ii) through economy (development of buildings and green waste recycling, urban agriculture, attractiveness of the territory).

Development and management of urban green spaces require integrating numerous environmental, agronomic, ecological and sociological parameters in order to provide adapted and optimal nature-based solutions for the human well-being. Thus, decision-makers and green spaces managers need multicriteria decision-making tools integrating indicators to prioritize and select nature–based solutions.

The H2020 project “Nature4Cities” (2016-2020) brings together 26 European partners who have the ambition to create a decision-making tool working with multi-functional and multi-scale complex vegetation systems. The project concept is based on 4 pillars:
- Building a database according to scientific literature on nature-based solutions.
- Developing a global methodology to evaluate nature-based solutions focusing on preexisting indicators.
- Adapting existing technologies to manage urban data and promoting citizens support for sciences.
- Co-developing and demonstrating of the nature-based tool with partner cities.

The missions for the post-doctoral candidate will be centered on the 1st and 2nd pillars detailed above. More specifically, the candidate will have to evaluate the performance of nature-based solutions that requires selecting relevant indicators. It also requires defining properties for evaluating i) the environment of the plant (soil, bioclimatology and climatic conditions) and ii) vegetation services (urban landscape ecology, dynamics of biodiversity, plant ecology, water and pollution managements).

**Expected tasks**
The mission for the candidate will specifically focus on the following tasks:
- Bibliographic research on the preexisting indicators to assess the performance of nature-based solutions for urban areas (new indicators will be proposed at the end of this work). This research will focus on:
  - Soil: physico-chemical and biological quality, pollution/remediation
  - Vegetation: ecology, biodiversity, shoot and root development
  - Atmosphere: microclimatology, bioclimatology
- Selecting the most relevant indicators (find the required parameters to evaluate these indicators and the formalism permitting to describe these indicators) and defining performance thresholds.
- Testing these indicators with databases provided by the partners, and databases obtained from sampling and field surveys (possibly during the post-doctoral period), and evaluating of the performance of nature-based solutions.
The post-doctorate will interact with the European partners and will attend virtual and plenary meetings. Writing scientific papers is an expected and important goal in this mission as well as leading coordination and animation in workshops during plenary meetings (every 6 months).

**Practical**
The post-doctoral student will be located at Agrocampus Ouest, in Angers, within the EPHor research unit (Environmental Physics and Horticulture). EPHor specifically focuses on gas and water transfers between the plant and its environment in both horticultural and urban contexts. In particular, EPHor develops its activity on the agronomic quality of urban soils and on the plant transpiration and the distribution of climatic components around plants.

He / She will work in strong interaction with the other partners of the project located in Angers and Nantes cities:
- The ecological research team in Angers (UMR BAGAP - Biodiversity, Agroecology and Landscape Management, INRA, Agrocampus Ouest, ESA).
- The Laboratory of Planetology and Geodynamics of the University of Nantes (UMR CNRS 6112).
- The Water and Environment Laboratory, IFSTTAR in Nantes.

Contract type: Fixed-term contract for 18 months (or more, depending on funding) - Start of contract on May 1st, 2017
Gross salary: 2200 € / month + reimbursement of travel expenses

**Required profile:**
PhD thesis in environmental sciences.
Affinity for multi-partner teamwork
Capacity to lead a workshop/animation
Ability for synthesis
Fluent English is mandatory

**How to apply:**
Send a detailed CV and a cover letter to:
Patrice Cannavo, Agrocampus Ouest: patrice.cannavo@agrocampus-ouest.fr,
phone: +33 (0) 2 41 22 55 11

>> **Deadline to candidates: February 10th, 2017**
>> **Booked interviews: February 27th, 2017.**