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**Partner search**

**Date (03-09-20)**

* **(\*) Indicate numbers of relevant topics for Green Deal call:**

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| **LC-GD-6.C: Testing and demonstrating systemic innovations for sustainable food from farm to fork** |

* **Quick description of the project**

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* **(\*) Do you intend to apply as ? :**

**Coordinator: No**

**Participant: Yes**

**(\*) Either Description of the expertise requested (up to 1000 characters) - *specify which points of the "expected impact" of the call you are targeting***

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| **Xxxxxxxxx**  **+ key words :** |

**Or Description of the expertise proposed (up to 1000 characters) - *specify which points of the "expected impact" of the call you are targeting***

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| **We are interested in participating to a project applying to the Call AREA 6: Farm to Fork and the following challenges ‘Reducing the dependence on contentious pesticides and antibiotics; reducing the use and increasing the efficiency of fertilisers; reducing the losses of nutrients from fertilisers, towards zero pollution;’. We have expertise from more than 30 years in studying plant-beneficial, symbiotic and pathogenic microorganisms and their interactions with host plant (e.g. impacts on plant growth, development and metabolism) and plant microbiota. We have developed expertise in deciphering microbial interactions either facilitation or competition. Moreover, we are taking into account the impact of plant in modulating such interactions and the consequences on plant health. We have developed in our laboratory microbial-based solutions (of TRL>5) for controlling parasitic weeds and microbial diseases on crops. We aim to test these solutions under field conditions involving farmers and demonstrating trials, when well formulated and used with proper plant varieties and culture systems (combinatorial optimization). In addition, we have expertise in studying the composition of plant-associated communities, the in situ expression of plant-beneficial and plant-deleterious functions as well as the interaction networks between populations within the microbiota.**  **+key words : Plant-beneficial microorganisms; biocontrol; biostimulants; P and N cycles; metabolomics; metagenomics, transcriptomics, bacterial genetics, plant physiology** |

**Organisation information**

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| **Organisation and country:**  **LEM, University Claude Bernard Lyon 1, FRANCE** |
| **Type of organisation:**  **□ Enterprise □ SME ■ Academic □Research institute □ Public Body □ Other: Association** |
| **Former participation in FP European projects?**  **□ Yes ■ No** |
| **Web address:** **http://www.ecologiemicrobiennelyon.fr/** |
| **Description of the organisation:**  **The Microbial Ecology laboratory (LEM) is a French research unit composed of 8 research groups, teaming up together around 80 teachers and researchers from various institutions : CNRS (Centre National de la Recherche Scientifique), Université Claude Bernard Lyon 1, INRA (Institut National de la Recherche Agronomique), and VetAgro Sup (campus vétérinaire de Lyon).**  **Objectives: We aim to propose efficient biological solutions to improve the growth and health of plants, using zero pesticide and reducing significantly the use of fertilizers (Topic 6 subtopic C). Our objective is to contribute, by our research on plant-microbe interactions and root-associated microbial communities, to the supply of concrete green solutions for growing crops. We believe that combining microbialepiphytic and endophyticconsortium and plant-treatment x ancient crop varieties x new culture systems such as agroforestry, we would maintain high crop yields to feed healthily the growing European and world populations and reduce ecological impact of agricultural practices. We are interested in all projects aiming to provide i) biocontrol solutions against parasitic weeds and/or microbial- or pest-plant diseases, ii) biostimulant plant solutions to reduce the use of fertilizers and gaz emission (via nitrogen and carbon fixation, phosphate solubilisation, etc) and iii) microbial amendment to reduce remaining organic pollution in agricultural soils.**  **Activities and skills: Our laboratory, the Microbial Ecology unit, is renowned for its expertise in**  **studying soil biodiversity and fertility, and analysing plant-associated microbial communities and functional groups (metabarcoding and metagenomics) and the biotic and abiotic factors controlling their structure (e.g. impact of plant cultivars), functions and activities on plant and soil.**  **In addition, our skills concern the investigation of the plant and microbial molecular and genetic mechanisms of interactions (by using metabolomics approaches both on plants and on microbes, bacterial genetics, monitoring soil bacterial populations and gene expression level using real time-PCR, analysing tissue localisation by confocal microscopy, customizing synthetic communities, experimental evolution, isotope probing, biological screening, antimicrobial activity bioassays, purification and characterization of bioactive compounds etc.).**  **We also manage a proprietary collection of more than a thousand microbial isolates (biocontrol and biostimulant or bacterial pathogenic targets) that can be used to develop pilot applications and innovative products for sustaining green agriculture.**  **We are interested in working with:**  **-plant breeders and plant researchers with interest in reintroducing ancient varieties or landscape varieties, more rustic, less susceptible to plant diseases and with expertise in GWAS analyses, in plant immunity and in plant development.**  **-plant pathologists with interest in the study of parasitic weeds, fungal pathogens or pests.**  **-biopolymer material physicists with interest in bioinoculant formulation**  **-economists with expertise in testing scenarios for the development of economically profitable green solutions to agriculture** |

**(\*) Contact details**

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| **Country** | **FRANCE** |

**(\*) –Mandatory**