EXPRESSION OF INTEREST FOR A HORIZON 2020 PROJECT

## Title of the targeted call for proposals and Topic of interest:

Horizon 2020 Green Deal Call
Topic: LC-GD-6-1-2020

## Contact details

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| Country | FRANCE |
| Name of the organisation | Aix-Marseille University (AMU) |
| Laboratory | IMBE |
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## Short description of AMU:

Aix-Marseille University (AMU) was created in 2012, resulting from the merger of the University of Provence, the University of the Mediterranean and Paul Cézanne University. It has more than 78,000 students including 10,000 international students, 7,680 faculty and staff members, 12 doctoral schools and nearly 3,300 PhD students. AMU is the coordinator of the Erasmus + European University Alliance "CIVIS". AMU has been involved in more than 100 FP7 projects and until now 102 H2020 projects.

## Laboratory involved:

IMBE UMR 7263 AMU CNRS IRD
LPED UMR 151 AMU IRD
TELEMME UMR 7303
LPS EA 849
LCE UMR 7376

## Areas of potential contribution:

A consortium from IMBE and other research units of Aix Marseille University (cited above) has emerged and has already interacted to gather knowledge and expertise for a project about environmental transition in agriculture and more particularly concerning vineyard, a culture which has a huge economical importance. We could aim at producing i) biocontrol compounds (BCC) from *Trichoderma* spp to limit propagation of phytopathogens such as mildew and ii) a new amendment based on forest litter (concept of "efficient microorganisms"). Both products are based on solid-state fermentation using agricultural by products (lignocellulosic material, whey, bran ...) in order to be made by farmers themselves. At present, there are still very few alternatives to the use of pesticides

or copper sulphate in the agricultural context, while the European Union has further reduced the thresholds of CuSO4 concentrations per ha and per year. Thus, the production of BBC and of a biofertilizer (whose safety would be controlled), while recycling agricultural by-products within the framework of a circular, local and autonomous economy, is important to promote. This project fits perfectly with the theme 'From Farm to forket".
Our consortium has expertises in soil sciences, biotechnology, plant ecophysiology, chemometric and toxicology (genotoxicity). All together we can address questions about defining suitable agricultural practices to control pests and to define amendments and their effects on soil and on the ecophysiological state of the plants. We have indeed solid expertises that could be used to understand how certain practices such as amendements and biocontrol compounds may modify soil properties (both biological i.e. microbiology, mesofauna and chemical i.e. Infrared spectroscopy, soild-state NMR of 13C characteristics) and plant fitness (using phytometabolites analyses and the chemical holistic approaches previously cited). We can also assess the genotoxicity of new biocontrol compounds and produce them since our consortium includes biotechnologists. Moreover, we have partners in psycho-social sciences to help in the process of acceptance by the farmers of new solutions in agriculture practices which is of course of tremendous importance for the success of such approaches. We have also developed partnership with several INRAE research Units in Avignon (Dr Y. Capowiez, CR INRAE specialist in earthworms), in Dijon (Dr Steinberg, DR INRAE microbiologist, specialist in *Fusarium* spp.) an in Bordeaux (Dr J.M. Savoie, DR INRAE, specialist in mycotoxins). Expertises in mycology to perform tests with phytopathogens would be appreciated.

Involved persons:

| Research Unit | Last name | Firstname | Function | Expertise |
|---|---|---|---|---|
| IMBE | Farnet Da Silva | Anne Marie | Associate Professor | Soil Microbial ecologist |
| IMBE | Dupuy | Nathalie | Pr | Chemometric |
| IMBE | Christen | Pierre | CR IRD | Biotechnologist (fermentation) |
| IMBE | Orsière | Thierry | IR | Genotoxicology |
| IMBE | Foli | Lisa | Technician | Microbial Ecology Biochemistry |
| IMBE | Folzer | Hélène | Assistant Professor | Plant ecophysiology |
| IMBE | Martinez | Martine | Technician | Soil science |
| IMBE | Perrin | Jeanne | Professor | Ecotoxicity Genotoxicology |
| IMBE | Molinet | Josiane | Assistant Professor | Chemistry Infrared spectroscopy |
| IMBE | Tassistro | Virginie | Assistant engineer | Genotoxicology |
| INRAE | Capowiecz | Yvan | Senior researcher CR HDR INRAE | Soil Science |
| INRAE | Pelosi | Céline | Researcher CR INRAE | Soil science |
| LPS | Bertoldo | Raquel | Assistant | Psychosociology |

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| | | | Professor | |
| LPS | Zouhri | Bouchra | Assistant Professor | Psychosociology |
| TELEMME | Minvielle Larousse | Paul | Associate Professor | Geography |
| LPED | Laffont-Schwob | Isabelle | Professor | Plant ecophysiology |
| LPED | Labrousse | Yoan | Assistant engineer | Plant ecophysiology |
| LCE | Boudenne | Jean-Luc | Professor | Environmental Chemistry |
| LCE | Prudent | Pascale | Associate Professor | Environmental Chemistry |
| LCE | Ravier | Sylvain | Assistant engineer | Environmental Chemistry |
| LCE | Vassalo | Laurent | Assistant engineer | Environmental Chemistry |