UMR 1248 AGIR
AGroécologie, **I**nnovations & te**R**ritoires
Centre de Recherches de Toulouse-Occitanie

48-month post-doctoral proposal: project animation, data management and simulation of GES/C sequestration in farming systems

The National Research Institute for Agriculture, Food and the Environment (INRAE) is a public research establishment bringing together a working community of 12,000 people, with 268 research, service and experimental units, located in 18 centers throughout France. INRAE is positioned among the world leaders in agricultural and food sciences, plant and animal sciences. Our research aims to build solutions for multi-performance agriculture, quality food and sustainable management of resources and ecosystems.

Climate change is a serious concern for Europeans. However, to attain at least 50% reduction of GHG-emissions by 2050 compared to1990 levels, and to increase carbon sequestration and C storage in soils, a strong systemic approach is required. The **ClieNFarms** project is built on 20 demonstration case studies (I3S) where systemic innovative (mitigation) solutions will be tested and evaluated using up-to-date modelling approaches and multi-criteria assessment tools. These case-studies cover the diversity of major EU production systems (e.g. crops, cattle, dairy, special crop productions, etc) and along divers geographical situations (from East to West and North to South of Europe, plus one in New-Zealand). The tested solutions will be co-designed with farmers and the surrounding ecosystem (i.e. R&D, finance, supply chain, etc.) through creative arena in a living-lab like structure. Including both, finance and supply chain, will help to generate an environment for farmers allowing to co-design and empower the transition towards climate-neutral farms. Succeeding (acquired) solutions will be documented in the **ClieNFarms** data hub in order to provide an accessible catalogue of climate mitigation solutions in the agricultural sector. Furthermore, the project foresees to release numerous guidelines, digital tools and services will be part of the outputs of the projects. **ClieNFarms** gather 33 partners and will last 4 years.

We are seeking for a post-doctoral fellow who will be in charge of two main tasks:

1. **Database management and analyses of model performance and simulations of GHG emission and C sequestration at farm level (scientific task)**.

Under the supervision of K. Klumpp (INRAE, work package leader) and with help of project partners, the successful candidate will be in charge of the database management of recorded and simulated farm data comprising meta-data, as well as GHG emissions and C-sequestration and other. This database will be the centre of the biophysical farm assessment of the technical and agronomical mitigation innovations. The project will test different models varying in model structure and complexity (e.g. empirical vs. mechanistic) and data input requirements (i.e. variables, scales, time steps). In relation with the modellers, the candidate will i) set up a catalogue of strengths and weaknesses of currently used tools/models/approaches, ii) will create the database (input/output), iii) format, and harmonise the data, and iv) participate to the simulation chain. The post-doctoral fellow will also participate to the scientific valorisation of the different works.

2. **Project (co) animation**

In collaboration with JE Bergez (project coordinator), the successful candidate will help animating and coordinating the project. He/she will work closely with INRAE Transfert in charge of the general supervision and monitoring of the project (administrative part) and with the financial INRAE team to gather the requested information to perform the mandatory reporting. In more detail, the work comprises contribution to report

INRA Centre de Recherche de Toulouse
UMR 1248 AGIR
Chemin de Borde Rouge – Auzeville - CS 52627 – 31326 CASTANET TOLOSAN cedex - France
Tél. : 33 (0)5 61 28 50 29 - Fax : 33 (0)5 61 73 55 37

writing, setup/contribution of annual and work meetings, keep in touch with the different partners and report to the project coordinator. This work will account for 30% of the contract.

EXPERIENCE ET REQUIRED SKILLS

Required training: You should have a recent doctorate with a solid background in agronomy or environmental sciences**.**

Required knowledge: You must have strong expertise in biostatistics (statistical programming language R) and or modelling, C and GHG fluxes.

Experience appreciated: Skills in database managemen, project/group animation (stakeholder meetings,…), synthesis work

Desired skills: motivated to work in a team and as part of a collective project, curiosity, scientific rigor, adaptability, autonomy, and a sense of organization. Communication (oral and written), English.

Post	Application
Work group : INRAE, AGIR **Location** : near Toulouse (Auzeville-Tolosan) **Duration** : 24month (extended to 48 month) **Start** : earliest 1st of January 2022 **Salary**: 2371 to 2516€/month gross wage according experience.	**Cover letters and CVs** are to be sent to: Jacques-Eric Bergez (jacques-eric.bergez@inrae.fr) and -Katja Klumpp (katja.klumpp@inrae.fr) before **31/12/2021.** **Final selection**: interviews are organized in **January 2022** for the shortlisted candidates