Post-doc in modelling economic and health impacts of European food policies

General information

Workplace: Rennes, France

Type of contract: FTC Scientist

Contract period: 18 months

Expected date of employment: April 2022

Proportion of work: Full time

Remuneration: 2 500 euros gross per month

Desired level of education: PhD

Experience required: -

Work context

The post-doctoral researcher will be recruited as a staff of the SMART unit (Structures et Marchés Agricoles, Ressources et Territoires). This Research Unit brings together some 60 people from INRAE's Ecosocio department and Institut Agro Rennes-Angers. SMART is a research and teaching group in economics of agriculture, agri-food and environment, with a scientific project giving priority to four themes: the behavior of agricultural producers and public regulations; Markets, agriculture and development; Industrial strategies of agri-food enterprises in a globalized economy; Organization and performance of agricultural and food chains.

The post-doctoral researcher will work with a team of 3 scientists of the SMART Unit (1 senior researcher and 2 research assistants), dedicated to developing modelling tools with the aim of assessing the impacts of changes in agri-food systems, be they induced by public policies or from other origins, at the global level. This team has developed a partial equilibrium model of the world agri-food markets and trade, with a focus on land use change. This model is named MATSIM-LUCA and is the core of a medium-term modelling project, which objective is to articulate it with 3 bio-technical modules: a greenhouse gas (GHG) emission module, a terrestrial biodiversity module and a NCD (nutrition-related chronic diseases) risk assessment module. Through this modelling project, the SMART Unit wishes to provide a modelling tool that is able to assess both the economic, environmental and health impacts of changes in agri-food systems in various parts of the world.

In the framework of this medium-term modelling project, the post-doc researcher will carry out the modelling and simulation work intended to articulate the market and trade model MATSIM-LUCA to a NCD risk assessment model in order to be able to simulate the economic and health impacts of European Union (EU) agricultural and food policies. She/he will work under the responsibility of the senior researcher of the SMART modelling team, supported by a nutritional epidemiologist of the EREN Unit (INRAE, INSERM, CNAM, Université Sorbonne Paris Nord, Equipe de Recherche en Epidémiologie Nutritionnelle) and a professor in nutrition of the PNCA Unit (AgroParisTech, INRAE, Physiologie de la Nutrition et du Comportement Alimentaire). The post-doc researcher will work in close collaboration with both the research assistants of the SMART modelling team and may take advantage of existing competences in both the EREN and PNCA Units.

Missions / Activities

The post-doc researcher will carry out the following tasks:

- Literature review on available NCD risk assessment models and well-founded choice of one model
- Adaptation of the NCD risk assessment model to the MATSIM-LUCA product/commodities nomenclature and application of the NCD risk assessment model to the EU: model re-specification and data collecting
- Adaptation of the MATSIM-LUCA model to the population nomenclature of the NCD risk assessment model: model re-specification of the food demand side (e.g., several representative consumers of different age groups instead of the current one representative consumer) and data collecting
- Coupling of both models and validation of the coupled model
- Simulation and analysis of results of one scenario with variants: EU Farm to Fork and biodiversity strategies, without and with additional food policies
- Draft scientific papers

Skills

The candidate must have a PhD thesis in modelling in the field of market and trade (economics) or NCD risk assessment (nutrition, epidemiology).

She/he must be open and have some experience in multidisciplinary approach.

She/he must master the GAMS software. She/he should ideally master the R or the Python language, as well as the programming language used in the NCD risk assessment model that will finally be chosen for the coupling with MATSIM-LUCA.

She/he must have proven that she/he is able to draft scientific papers (list of publications in CV).

Application

Applicants are invited to send a Curriculum Vitae and cover letter to: Chantal.le-mouel@inrae.fr
Before April 8, 2022.