

Ad hoc support

A three-country network for agri-food chain modeling applied to durum wheat

ABSTRACT

Analyzing and handling agri-food chains for sustainability purposes can hardly be driven by an experimental approach exclusively. Increasing attention is paid to predictive, modeling approaches that allow simulation on the basis of current knowledge, with the perspective of future societal challenges. Moreover, such approaches need to be interdisciplinary, so as to deal with various multi-criteria concerns such as food safety, adaptation to climate, environmental impact, economic competitiveness, nutrition, sensorial quality, customers' habits, etc. In this project, we focus on modeling methods that allow capturing the organization of food chains: which actors are involved, which properties characterize them, which are the inputs and outputs of their activities, what do they exchange with other actors (information, products, money, ...), which are their priorities and goals, how is the current organization, which are its pros and cons, which novel ideas could be proposed, which arguments are exchanged, what kind of balance could be found, etc. Existing approaches are very partial and separated from each other:

- the most usual approach is the use of cost functions for benefit/risk analysis, but they need a non-realistic level of detail and are unable to express the complexity described above;
- some attempts exist for more appropriated qualitative methods, however they only deal with very restricted parts of agri-food chains at the national level at best (e.g. traditional cheese making and durum wheat-to-couscous transformation process [Buche et al. 2013, Thomopoulos et al. 2009, Buche et al. 2014], breadmaking [Bourguet et al. 2013, Thomopoulos et al. 2014]);
- global studies of agri-food chains, for instance from a socio-economical point of view, provide a consistent material but are not connected with qualitative methods that allow knowledge engineering (e.g. [Bourassin et Triboulet 2014, Rastoin et al. 2014]).

through, in particular, a long-term mission from August 2015 to July 2016 by Rallou Thomopoulos in Canada.

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Project type : PC

Research units in the network :

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Flagship project : no

Project leader : Rallou Thomopoulos

Project leader's institution : INRA-INRAE

Project leader's RU : IATE

Budget allocated : 15000 €

Total budget allocated (including co-financing) : 15000 €

Funding : Labex

GOAL

The objective of this project is to build a network between three countries (France, Canada and Morocco) at two levels:

- a cooperation between research teams specialized in knowledge representation and reasoning

methods, which aim at joining their skills to design a generic agri-food chain modeling approach;
- a joint study of the durum wheat agri-food chain, in each of those countries and interactions between them.

ACTION

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