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The French national research institute for agriculture, food and environment INRAE, the French environmental agency ADEME, and the French networks for agricultural and food technology institutes ACTA and ACTIA launched a Scientific Interest Group (GIS) in September 2021, called REVALIM ("Réseau d'EValuation environnementale des produits agricoles et ALIMentaires", for agricultural and food products environmental assessment network). It follows an informal partnership on the AGRIBALYSE program that pre-existed since 2009. The four members integrate de facto 11 technical institutes specialized in agricultural or food sectors. REVALIM's main objective is to develop new methodologies for the environmental assessment of agricultural and food products and to expand the AGRIBALYSE reference database on the environmental impacts of these products. Today, AGRIBALYSE faces major challenges related to the sharp increase of expert and non-expert users, the updating and development of transparent and high-quality data over time. This issue is particularly important as recent legislation prepares an environmental labelling scheme for food products consumed in France and given the development of the Product Environmental Footprint (PEF) framework at European level. The government, society stakeholders and the scientific community therefore want to quantify the environmental impacts of agri-food products using science-based environmental assessment methods. We present the REVALIM 2022-2025 roadmap. We discuss in more detail the work planned to expand and improve the AGRIBALYSE database and environmental assessment methods, in particular Life Cycle Assessment (LCA).

REVALIM members have drawn a roadmap defining actions to address issues and limitations identified in the current AGRIBALYSE database and in the impact assessment methods used for food and agricultural products. REVALIM identified one-time actions, background actions and methodological projects.
Regarding one-time actions, a major task is the updating of the agricultural production life cycle inventories (LCIs), which are based on data for the 2005-2009 reference period. Agricultural production systems have evolved in terms of farmer practices, pesticides used, yields, etc. Another key action is to develop the database by introducing LCIs for new food products or new production modes (organic, certified …) AGRIBALYSE now integrates all stages of the food chain: REVALIM plans to improve the accuracy of the post-farm stages, particularly with regard to industrial transformation processes, the use phase and packaging.

Background actions will take place over several years. As an example, data quality procedures will be set up to ensure and maintain the quality of the AGRIBALYSE LCI database. Other background actions as the integration of the most consensual agricultural emission models, the articulation with international databases to ensure the harmonization of the work or the continuous updating of LCIs are also essential for the quality of the database.
In addition to these actions, REVALIM focuses on data and methodological issues concerning biodiversity, pesticides and soil carbon sequestration in LCA. On these issues, dedicated work sessions have been conducted to share knowledge between members, to discuss scientific questions and to prioritize the tasks at hand.
As some methodological tasks require fast action, REVALIM proposes a two-stage approach: the first interim level provides a basic but rapid solution, the second level provides a more detailed and scientifically robust solution.
Regarding pesticides in LCA, REVALIM has identified several tasks regarding the LCIs, such as updating pesticide use, correcting negative metal emissions, and considering the evolution of ionic forms of metals. On the impact assessment step, REVALIM will propose an "adapted Environmental Footprint" method to correct some characterization factors, to allow the assessment of metals with a 100-year horizon, and potentially the assessment of impacts of pesticide residues in food products. In a more distant future, REVALIM will analyze and test the methods recommended by the Global Guidance on Environmental Life Cycle Impact Assessment Indicators (GLAM) initiative regarding pollinator impact assessment and terrestrial and marine ecotoxicity for integration in AGRIBALYSE.
Regarding soil carbon sequestration, REVALIM will address three key questions linked to land use and land use change. As a first level, REVALIM will use literature values to take into account the trend in soil carbon sequestration linked to the type of land use (arable versus permanent grassland). The second level will replace this interim approach by using a tool developed to assess direct land use change. This tool combined with an appropriate land use dataset with sufficient spatial accuracy will address soil carbon dynamics due to Land Use Change. Finally, the carbon sequestration linked to specific practices (e.g. introduction of cover crops) will be integrated on the basis of literature values or using more accurate models.
Regarding biodiversity in LCA, REVALIM aims to consider "local" biodiversity linked to farming practices. REVALIM will focus on the first driver of biodiversity loss, which is land use. After a quick review of the available methods based on international state-of-art, REVALIM will select the most promising methods. In order to identify whether a method can meet the expectations and needs for the biodiversity impact assessment, REVALIM will test and compare them regarding scientific robustness and their compatibility with data available in the AGRIBALYSE LCIs. The results may allow AGRIBALYSE to integrate a biodiversity assessment method that can better distinguish agricultural intensities and practices.
This roadmap affirms the will and ambition of REVALIM to improve and enhance the AGRIBALYSE database, but also to better assess the diversity of today's farming practices by relying on robust and consensual scientific results. This roadmap is a strategic steering tool that will be updated regularly.