



Expression of interest

of National Research & Development Institute for Food Bioresources (IBA) to join a Consortium on HORIZON EUROPE calls

HORIZON-CL6-2024-FARM2FORK-01-8

Preventing and reducing food waste to reduce environmental impacts and to help reach 2030 climate targets

Organization details:

Country: ROMANIA

Name of the organization: National R&D Institute for Food Bioresources – IBA Bucharest

Contact person short description and contact details: Gabriel MUSTATEA is a first-grade scientific researcher, PhD in Chemical Engineering, and Head of the Food Packaging Laboratory within the National Institute for Research and Development for Food Bioresources - IBA Bucharest. He has over 14 years of experience in food safety (particularly in testing food packaging and materials intended for contact with food, as well as contaminants such as heavy metals in food products and food packaging). He conducts extensive research activities within the institute, being involved in both coordinating research projects and their implementation. Email address: gabi.mustatea@bioresurse.ro

Short description of the organization

IBA Bucharest is a non-academic public-owned self-financing research organization, in coordination of the Ministry of Research, Innovation and Digitization. IBA conducts food and nutritional research, product and technology development, lifelong learning programs, and small-scale production of special foods. IBA holds ISO17025 accreditation for assessing the quality and safety of foodstuffs. As one of the most prominent RTD entities within the country, IBA plays an important role in developing national food policies. IBA provides expert advice to authorities such as the Ministry of Agriculture and Rural Development and the National Sanitary Veterinary and Food Safety Authority. IBA develops and produces foods for people with special nutritional needs in its several micro-production plants. So far, IBA's researchers have covered the following topics: food safety and food quality, including quality policies and structure of food using lactic acid bacteria, yeast extracts, enzymes; nutritional improvements in food, such as fermentation, mycoproteins, and others; sensorial properties; organic food; bioavailability of nutrients through fermentation (Ca, Fe); increasing food shelf-life (bioactive package, lactic acid bacteria, enzymes, etc.); bioactive compounds in food; traditional food; prevention by healthy food; circular economy; food waste, among others. In the last 3 years, IBA has been involved in over 20 national projects. At the European level, IBA was or is involved in H2020 (e.g., PRO-METROFOOD, MYKOKEY, METROFOOD-PP, FOODSAFETY4EU), HE (AGROSERV) and Erasmus Plus (SEEDS) projects. IBA has 9 research laboratories: Human Nutrition, Chromatography, Food Chemistry, Food Packaging, Microbiology, Molecular Biology, Consumers Science and Sensory Analysis, NMR and Reference Materials. Additionally, it has 3 pilot plants for Cereals Processing, Meat Processing, and Fruits and Vegetables Processing. These facilities have suitable infrastructures and appropriate conditions for carrying out high-level research activities, technological research experiments, and technology transfer activities.

Possible main contributions of organization to the project proposal

IBA can contribute in a project both as Work Package leader or Task leader, by acting as: Research performer, Technology developer, Testing/validation of approaches and ideas, Technology developer, Communication, dissemination and engagement, Project management and Other.

Specific expertise relevant to the call topic

IBA was successfully implemented 2 national research projects related to food waste.

Project ADER 15.1.1 (2015 – 2018) - The socio-economic impact of food waste at the national level in the current context of crises related to food security and climate change. The project aimed to measure, throughout the food chain, the phenomenon of food waste in Romania, in order to develop an integrated package of technological, educational and regulatory proposals, able to limit the socioeconomic impact of this phenomenon, in the context of crises related to food security and climate change. Among the results obtained we mention: Documentation of European good practices; Guide to packaging techniques; Guide to good managerial practices; Research methodology based on interviews with a group of 61 students in the agri-food field, regarding food waste at the level of the Romanian consumer; A representative statistical market research for household consumers in the urban environment, regarding the dimensions and causes of food waste in Romanian households. The study represents a national first and can be constituted as a reference document, including at the EU level; An international and national research on good practices in the field of household waste recovery; Guide to good practices in reducing food waste in households.

Project ADER 18.1.2 (2019-2022) - Methods for reducing food waste on the agri-food chain, at national level, in order to prevent and reduce the socio-economic impact, until 2030. The project assumed an impact analysis process on the various stages of the food chain, both in terms of waste generation in both primary production and industrial processing, but also in the public food or household consumption system. It had the role of creating a diachronic picture of the food waste phenomenon in Romania, also monitoring the impact of some of the administrative measures taken in the last 4 years. At the same time, the project proposed a number of technical-economic scenarios for reducing food waste throughout the food chain, making an ex-ante evaluation of these scenarios as an estimate of the costs associated with implementing some of the successful scenarios. The results of the impact research were processed with high-performance systems for data management and interpretation (SPSS), generating predictable models including the trend, under the conditions of maintaining this behavior. Another direction was the development of a complex package of information and awareness of all relevant actors of the food chain on the trends of food waste in the current context, as well as on the possible scenarios to reduce it in the perspective of 2030. This involved relevant stakeholders in the field of primary production, industrial food processing, but also in the HORECA field as well as consumer groups. Together with them were defined the areas of market research, the most appropriate tools for each target group, as well as the way of dissemination of results.

Relevant publications:

Dumitru O.M., Iorga S., Mustatea G., Food Waste along the Food Chain in Romania: An Impact Analysis, *Foods*, **2021**, Vol. 10(10), 2280, DOI10.3390/foods10102280.

Vlasceanu G.A., Apostol L., From waste to functional ingredient: a modern approach of circular economy concept, *Journal of Environmental protection and ecology*, **2019**, Vol. 20(4), Page 1944-1950.

Belc N., Mustatea G., Apostol L., Iorga S., Vladut V.N., Mosoiu C., Cereal supply chain waste in the context of circular economy, 8th International Conference on thermal equipment, renewable energy and rural development (TE-RE-RD 2019), *Book Series E3S Web of Conferences*, **2019**, Vol. 112, 03031, DOI10.1051/e3sconf/201911203031.

Dumitru O.M., Iorga S., Sanmartin A.M., Food waste impact on Romanian households, *Romanian Biotechnological letters*, **2021**, Vol. 26(1), Page 2207-2213, DOI10.25083/rbl/26.1/2207.2213

Dumitru O.M., Iorga S., Vladut N.V., Bracacescu C., Food losses in primary cereal production. A review, *INMATEH-Agricultural engineering*, **2020**, Vol. 62(3), Page 133-146, DOI10.35633/inmateh-62-14