Preparatory Phase METROFOOD-PP towards construction of METROFOOD-RI – Infrastructure for Promoting Metrology in Food and Nutrition

METROFOOD-PP project represents the "Preparatory Phase" of METROFOOD-RI - Infrastructure for Promoting Metrology in Food and Nutrition that has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 871073. The METROFOOD-PP project started in December 2019 and will end in May 2022, aimed to organise the Infrastructure as a ready-to-implementation and ready-to-operation service oriented organisation, reaching all the agreements necessary for obtaining a legal status as an ERIC (European Research Infrastructure Consortium) and ensuring the long-term sustainability.

Infrastructure description

METROFOOD-RI – Infrastructure for Promoting Metrology in Food and Nutrition is a pan-European Research Infrastructure (RI) aimed to promote scientific excellence in the field of food quality and safety. It provides high-quality metrology services in food and nutrition, comprising an important cross-section of highly interdisciplinary and interconnected fields throughout the food value chain, including agrifood, sustainable development, food safety, quality, traceability and authenticity, environmental safety, and human health. The Infrastructure is included in the ESFRI Roadmap 2018, as the evaluation panels (ESFRI Strategy Working Group and Implementation Group) stated that it clearly fills a gap in the Health & Food domain.

METROFOOD-RI will be built on a Hub and Node model constituted by a Central Hub in Italy and a network of 18 National Nodes, one for each Country (Austria, Belgium, Czech Republic, France, Finland, Germany, Greece, Hungary, Italy, Moldavia, The Netherlands, Portugal, Republic of North Macedonia, Romania, Republic of Slovenia, Spain, Switzerland, Turkey and Norway). Two Institutions in North Macedonia recognised as institutions dealing with food quality and safety are involved in METROFOOD-RI: the Institute of Public Health and the Faculty of Agricultural Sciences and Food.

The infrastructure includes both the physical (*P*-RI) and electronic infrastructure (*e*-RI). Concerning the *P*-RI, the facilities that will be networked include plants and laboratories for Reference Material (RMs), analytical laboratories, experimental Fields/Farms for food production, facilities for food processing, storage and preparation. The following activities will be performed: the development and characterization of new RMs, the organization and management of interlaboratory tests; the development and validation of new analytical methods and devices. Activities related to the agrifood sector will be: the identification of chemical and biological markers of origin, quality, safety, the collection of data for food composition databases, the conduction of experimental studies for evaluating nutritional value and contaminant contents of foods produced in different geographic regions and with different technologies. The evaluation of exposure through diet and risks related to the application of new technologies in food production and packaging giving emphasis to nanotechnologies will be taken into consideration as well. Within the infrastructure, the existing capacities of the Institute of Public Health and the Faculty of Agricultural Sciences and Food will be particularly exploited in terms of characterization of RMs and performing analysis of food quality and safety.

The *e*-RI will provide a new useful, free access web platform to share and integrate information and data on availability of metrological tools for food analysis. It will deal with integration of existing databases on food, focusing on emerging needs and collection of data on food composition, nutritional contents and levels of contaminants in foods produced in different geographic regions by applying different technologies. The *e*-RI will give possibility for sharing and integration data and information on metrological tools (RMs; official and reference methods; reference laboratories; vocabularies, guidelines and procedures; proficiency testing providers), food contaminants and composition in relation to production conditions and technologies. Through this platform it will be possible to find out in a single web-site starting from the analyte (measurand) and the matrix all the available information for standardizing and harmonizing food analyses (reference materials; official methods; reference values; reference laboratories; proficiency testing providers; quality assurance strategies), to disseminate information and training on terminology, metrological tools, principles and procedure, to collect information about the needs in the different countries about metrology for food and nutrition, to collect data on food composition, nutritional contents and levels of contaminants and emerging concerns in foods produced in different geographic areas.

METROFOOD-RI is intended to provide metrological traceability in the field of nutrition, which will upgrade the existing infrastructure in partner states.

METROFOOD's users

What is our product? The primary product of METROFOOD-RI will be an array of food metrology services. Four user categories has been identified and they are:

1. Researchers
2. Policy makers, food inspection and control experts and organizations
3. Food business operators
4. Citizens

For the research activity METROFOOD-RI will be of great scientific importance. The use of top equipment will enable better working conditions. An important aspect is the enhancement of the interdisciplinary research due to the integration of disciplines (chemistry, biology, microbiology, agriculture and the economy) and promotion of science by dissemination activities, and integration with the international professional public and leading institutions in Europe. For the industry, METROFOOD-RI will supplement the research and development capabilities of industrial partners e.g. cheaper production of plant and animal raw materials in the manufacture of new products. Domestic producers will be able to check origin and quality of produce and food products. It will enhance scientific excellence in the field of food quality and safety, thus enabling an increase in opportunities for market analyses to be carried out by laboratories. The development of new methodology of food analysis will reduce the costs of monitoring and thereby increase the possibilities for the control of food quality. The enforcement of the Metrological Infrastructure and the improvement of quality of chemical measurements will significantly benefit the Society in the whole, and the economy, in particular. For the Citizens the systems for tracking the food from producer to consumer, monitoring of environmental conditions, and the system for determining the geographical origin of food will provide a comprehensive system that will fulfil buyer's wishes and needs.

For more information on the following links:

www.metrofood.eu
www.metrofood.mk

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