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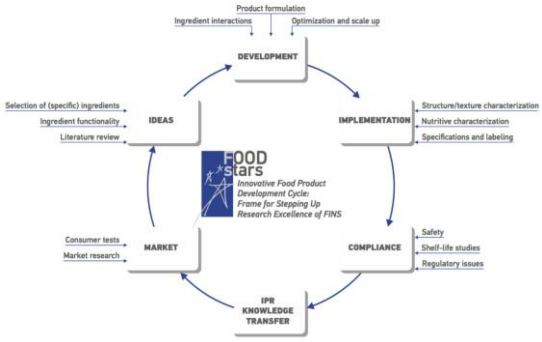
Innovative Food Product Development Cycle: Frame for Stepping Up Research Excellence of FINS



Key external stakeholders:

Professionals, Food Trainers, Policy makers

Practical implications for stakeholders:

The specific challenge for strengthening of the research capacities of research institute and transfer of knowledge can be achieved through short-term trainings, schools, thematic workshops, study visits, joint publications and various outreach activities. Consequently institutes can carry out efficient and high quality research that can be transferable to industry. S&T capacity of the linked institutions can be enhanced, new ideas and scientific challenges offered and further activities and joint applications for internationally funded projects enabled. The project highlights the need for cooperation and reciprocal knowledge of respective expertise. The creation of preconditions for the implementation of innovative food solutions in industrial scales and the commercialization of research results were performed. Dissemination and networking activities and exploitation of results in order to establish a communication bridges between research community and industry and strategic and durable cooperation with partner institutions. This project offers the idea of generating new knowledge and turning it into new products and services as a direct response to wider economic and social challenges.

Main results:

- Implement fundamental and applied knowledge across various disciplines of food technology from identification and optimisation of novel food ingredients to respond to consumer demands for healthier food; develop new food concepts, processing technologies and food products; and improve the existing ones.
- Enhance international cooperation with internationally recognized institutions in EU Member States, Candidate Countries and Western Balkan States; train and encourage young researchers to develop their career in research (to diminish the “brain drain”); and promote opportunities for further career development.
- Engage with policymakers and consumers to ensure that knowledge and awareness about food is increased, that FINS is recognized as a centre for provision on reliable information on food-related issues, and that national food and diet-related strategies are based on outcomes of “reliable science”.
- Cooperate with R&D laboratories in related food industries to facilitate new product development and food product quality control.
- Increase the capacity of Serbia and Western Balkans to participate in international research, training and education activities; to be a wanted partner in HORIZON 2020 projects, and to spread information about the peoples and cultures of the country and the region.

Opportunity / Benefit:

Project work made it possible to identify the deficiencies in FINS’s research curriculum. This will help with strategic planning as well as grow the institute. Additionally, development of the internal framework document Policy and Procedures on Intellectual Property Management as well as the establishment of an institutional repository of scientific publications are examples of best practice that has been transferred from project partners to FINS. This will help optimise the scientific process within the institute. FINS will also impose itself as an inevitable partner in the programmes of academia-industry collaboration.

Collaborating Institutions: Institute for Food Technology

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1. Project background

Scientists from different disciplines of food technology - chemists, technologists, microbiologists, engineers of agriculture, working at the Institute for Food Technology (FINS), University of Novi Sad, have identified a common need to strengthen their research potential and innovation capacity in close collaboration with internationally-leading research institutions which consequently allowed to carry out efficient and high quality research was transferable to industry so as to gain maximum benefit from activities within Serbia, the Western Balkans and the European Research Area. By significantly strengthening research capacities of FINS, which has already been recognized as one of leading institutes in Western Balkan region for gaining and transferring fundamental and applied knowledge into food technology, a direct response to economic and social development was offered. The specific challenge of to overcome networking gaps and deficiencies between the research institutions of the low performing Member States and regions and their EU counterparts will be addressed through the cooperation with two internationally-leading institutions - partners on the project: Teagasc - Agriculture and Food Development Authority, Ireland (TEAGASC) and University of Bologna, Italy (UNIBO). The partners on the project are chosen on the basis of previous cooperation between the institutions and reciprocal knowledge of respective expertise to strengthen the expertise of FINS within the area of food technology summarized as “The Innovative Food Product Development Cycle”.

2. Questions addressed by the project:

An EU-funded project has worked to strengthen the research capacities of the Institute of Food Technology in Novi Sad (FINS) in Serbia to provide fundamental and applied knowledge to food technology.

3. The experimental studies:

- Establish cooperation with leading food research institutions within the EU throughout networking activities
- Gain direct experience of participation in trans-national research activities and disseminate this within FINS and across Serbia and the Western Balkans, Work with policymakers to develop and promote food-diet-health related national strategies, throughout participation of FINS scientists at different boards of the Ministry of Education, Science and Technological Development, Ministry of Agriculture, Provincial Secretary of Agriculture, Provincial Secretary of Science and Technological Development
- Create an awareness of the importance of innovation and knowledge transfer to industry and promote an entrepreneurial culture amongst its staff, especially amongst the next generation of food scientists and technologists.

4. Main results:

- FINS human resources have been strengthened: their international mobility has been increased together with significant improvement of their set of skills, not only research-, but also consumer- and industry-related. Hence, their higher R&I output has already been observed which leads to innovative ideas and knowledge transferable to new products being of great importance for knowledge-based economy and society. Eight one-month long trainings were conducted in the project partner institutions, involving 22 researchers from FINS. Two trainings were completed at UNIBO, Italy and six at TEAGASC, Ireland. Moreover, 22 FINS researchers attended the school organized within the project which allows FINS researchers better research planning and design of experiments. Knowledge is gained in specific food research areas such as novel food technologies, food structure, food components analysis, aroma profiling, sensory and consumer science. During the training in the project partner institutions certain research results have been gathered publishable in the top 10% impact ranked scientific journals, as well as presentable at the international food conferences.

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- Four workshops and one school held at FINS were attended by PhD student, researchers and university professors beyond the host institution thus enabling better communication and the exchange of ideas and creating new partnerships and interdisciplinary teams nationally and internationally. The performance of each event was assessed by a survey and rated very high by participants.

5. Opportunity/Benefit:

Promote innovation, new skills and technological advances, Teagasc food research programme acts as a driver of industry revitalization and economic development, especially due to the fact that it targets schoolchildren and students presenting them with the effective training and career development activities in the food science and technology. FOODstars brings together various skills and experiences from different fields of science, engineering and marketing which improve the innovation process in the industry and enable better technology and/or product solutions. It aims at ensuring the necessary confidence and trust between research and industry and creating long-lasting science–industry cooperation at any step in the innovation process. The involvement of researchers from various fields of food technology synergistically acts to promote the multidisciplinary research and enable better integration of different research, industry and consumer teams in the process of food product development. The constellation of FOODstars increases contacts, broadens networks, facilitates the discussion between partners and develops durable partnerships.

6. Dissemination:

Main publications:

Milica Pojić, Aleksandra Mišan, Brijesh Tiwari (2018). Eco-innovative technologies for extraction of proteins for human consumption from renewable protein sources of plant origin, Trends in Food Science & Technology, 75, 93-104.

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