



# FOOD stars







# **TOWARDS A SUSTAINABLE FUTURE AND CHANGING MARKETPLACE**

**... AND THE STARS  
WITHIN OUR REACH**

**U SUSRET  
ODRŽIVOJ BUDUĆNOSTI  
I NOVIM TRŽIŠTIMA**

**... ZVEZDANI PUT  
NAUČNOG INSTITUTA  
ZA PREHRAMBENE TEHNOLOGIJE  
U NOVOM SADU**

## **Innovative food product development cycle: Frame for stepping up research excellence of FINS**

New product development is a key activity of the global food industry and includes the entire process of bringing a new product to the market. If this activity is implemented by integrating various skills and expertise and by exploiting ideas and resources from different actors, commercial entities and research institutions – as OPEN INNOVATION seeks to do – then the rate of innovation will potentially increase and the competitiveness of the food and drink sector will keep growing and changing the marketplace.



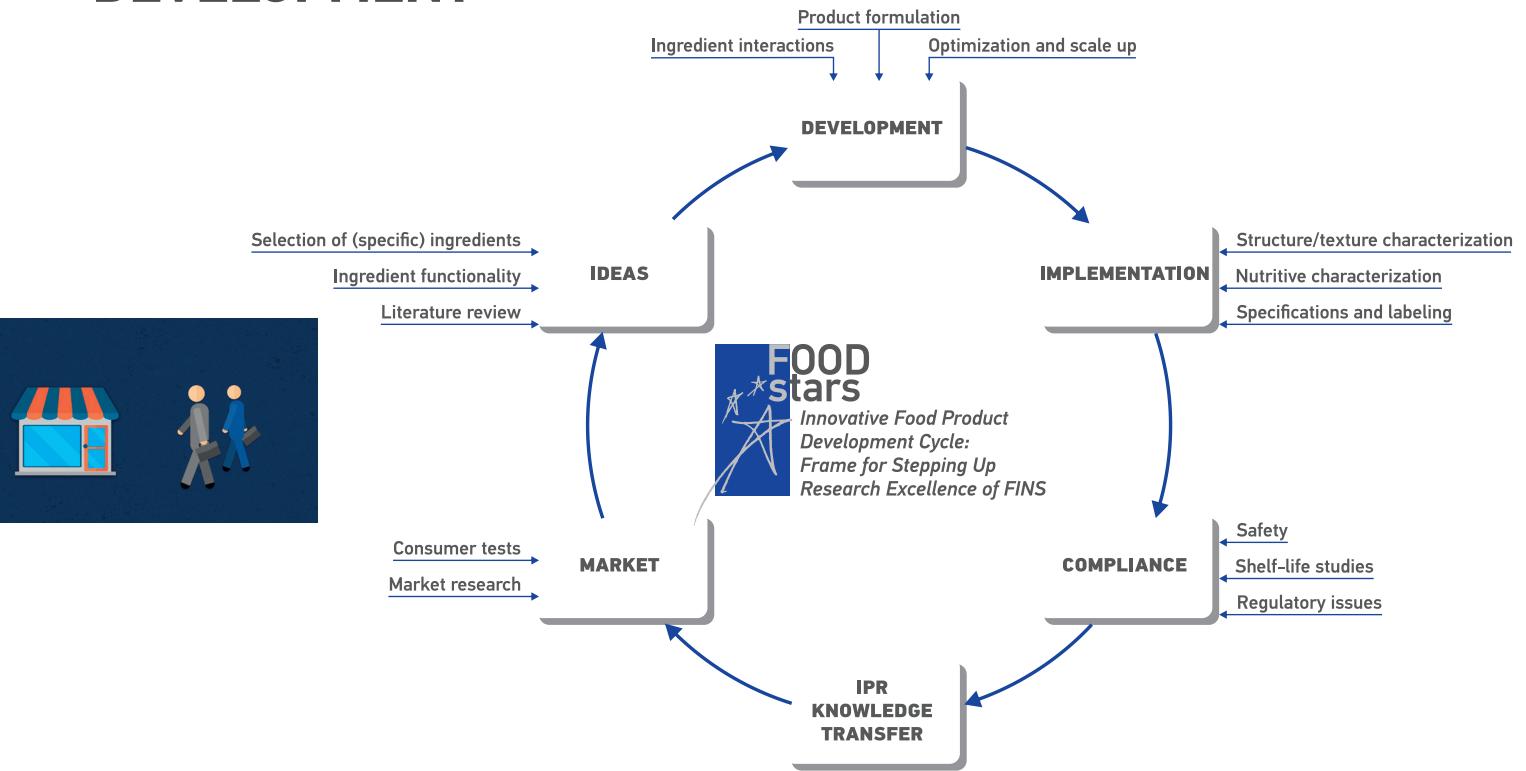
## **Inovativni ciklus razvoja prehrambenih proizvoda: Okvir za unapređenje naučne izvrsnosti FINS-a**

Razvoj novog proizvoda je ključna aktivnost koja pokreće globalnu prehrambenu industriju i obuhvata kompletan proces od rađanja ideje do plasiranja novog proizvoda na tržište. Ako se ova aktivnost sprovodi angažovanjem različitih veština i ekspertiza i korišćenjem ideja i resursa različitih aktera - kao što prepostavlja koncept OTVORENIH INOVACIJA - potencijal za povećanje inovativnosti i konkurentnosti prehrambenog sektora je značajan i u mogućnosti da izazove promene na tržištu.



To make progress towards a sustainable future and towards new food products on the market that meet needs and fulfil consumer expectations, FOODstars has been:

## BOOSTING INDUSTRIAL AND ECONOMIC DEVELOPMENT

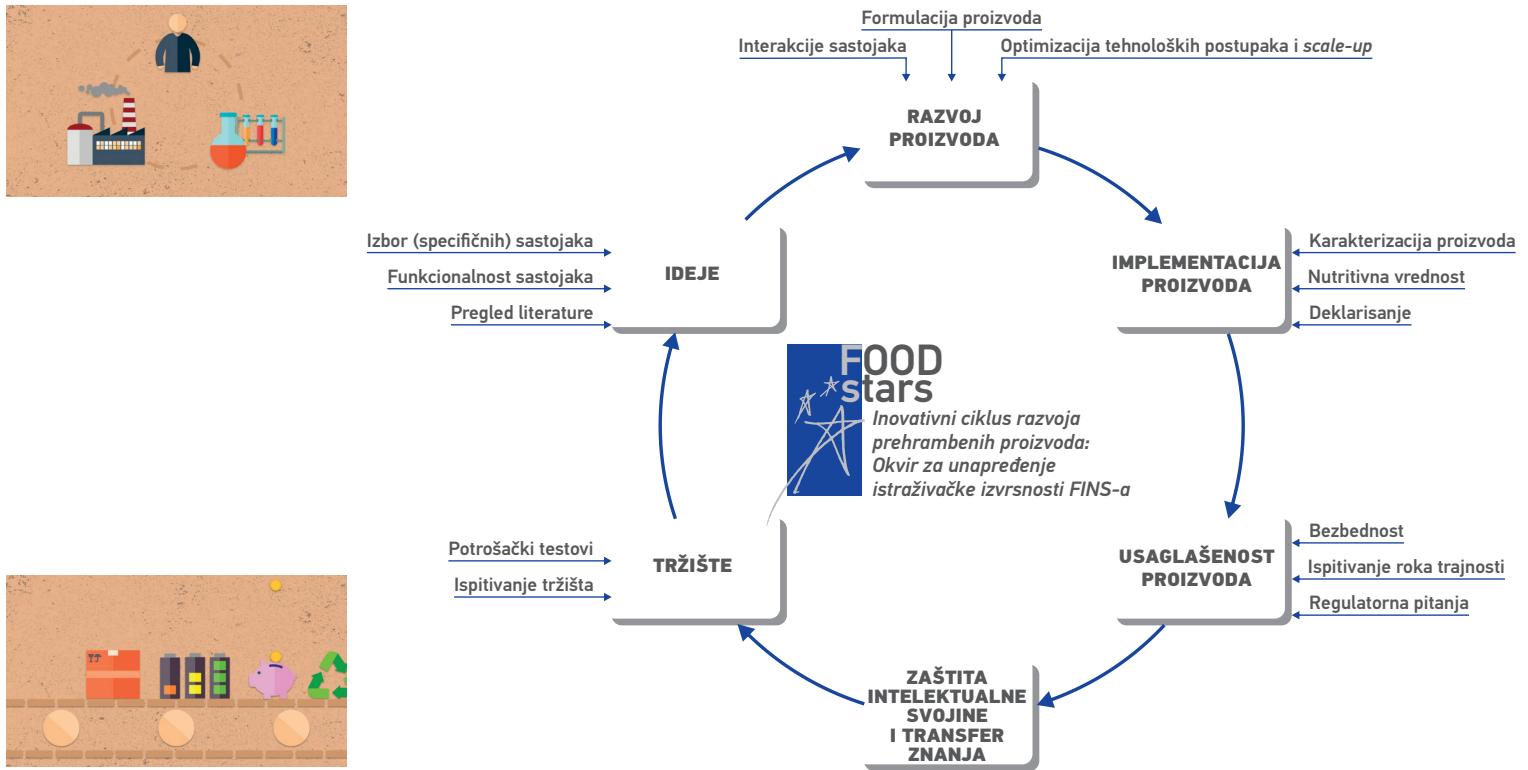


FOODstars has been an initiator of social changes aimed at strengthening the ability to adapt to new technologies and encouraging continued innovation. In strongly promoting innovation, new skills and technological advances, FOODstars has been acting as a driver of industry revitalisation and economic development, especially by encouraging the food and drink sector to apply innovative solutions, bioeconomical principles and new technological approaches.

*Using nature's resources in a responsible, fully transparent and sustainable manner will develop consumer trust and acceptance*

Da bi se ostvario napredak ka održivoj budućnosti i tržištu inovativnih prehrambenih proizvoda koji zadovoljavaju potrebe i ispunjavaju očekivanja potrošača FOODstars:

## UBRZAVA INDUSTRIJSKI I EKONOMSKI RAZVOJ



FOODstars je inicijator društvenih promena koje jačaju sposobnost prilagođavanja novim tehnologijama i kontinuiranim inovacijama. Pošto u velikoj meri promoviše inovacije, nove veštine i tehnološki napredak, FOODstars deluje kao pokretač revitalizacije industrije i celokupnog ekonomskog razvoja, naročito podsticanjem prehrambenog sektora da primenjuje inovativna rešenja, principe bioekonomije i nove tehnološke pristupe.

*Korišćenje prirodnih resursa na odgovoran, transparentan i održiv način osigurava poverenje potrošača i prihvatanje inovativnih proizvoda*

# **STIMULATING INNOVATIVENESS IN THE FOOD INDUSTRY**

# **INNOVATION**

FOODstars has been matching skills, competences and experiences from different fields of science, engineering and marketing to improve the innovation process in the industry and enable better technological and/or product solutions. In doing so the necessary confidence and trust between research and industry, and a long-term science-industry partnership in the innovation process, has been established, and research and innovation topics of common interest identified.

*Underpinning innovation power will bring new food formulations and technology solutions*

# **PODSTIČE INOVATIVNOST U PREHRAMBENOJ INDUSTRIJI**



FOODstars je združio veštine, znanja i iskustva iz različitih oblasti nauke, inženjerstva i marketinga u cilju poboljšanja inovativnih procesa u industriji i omogućio bolja tehnološka i/ili proizvodna rešenja. Insistira se na stvaranju poverenja između nauke i industrije koje treba da rezultira trajnom saradnjom u procesu inovacija i rešavanju izazova sa kojima se prehrambeni sektor suočava.

*Podsticanje inovacija vodi ka stvaranju novih proizvoda i tehnoloških rešenja*

# CREATING THE PRECONDITIONS FOR INNOVATION

FOODstars has been involving researchers from diverse fields of food technology and from different research institutions, and promoting a multidisciplinary approach to research in the process of *new food product development* by increasing contacts, broadening networks, facilitating discussion between partners and developing durable partnerships.

*Stimulation of excellent multidisciplinary science will create an innovative community capable of addressing diverse social challenges*



## STVARA PREDUSLOVE ZA INOVACIJE

FOODstars povezuje istraživače iz različitih oblasti i različitih naučno-istraživačkih institucija, promovišući multidisciplinarni pristup istraživanju u procesu razvoja novih prehrambenih proizvoda kroz umrežavanje, širenje poslovnih veza i diskusiju između partnera.

*Podsticanje multidisciplinarnog pristupa stvara kreativnu zajednicu sposobnu da inovira*

# INVOLVING CONSUMERS IN THE INNOVATION PROCESS



FOODstars has been striving to strengthen links with consumers as the most readily available innovation partners and actively involving them in the food innovation process. By interacting with informed consumers, the food industry will be able to better respond to specific consumer needs and facilitate the development and delivery of *new food products* designed to address malnutrition and prevent non-communicable diseases.

*An informed consumer makes good choices and buys innovative, nutritious, high quality, eco-friendly products*

# UKLJUČUJE POTROŠAČE U INOVATIVNE PROCESE

FOODstars intenzivno jača veze sa potrošačima, kao najpristupačnijim partnerima, i aktivno ih uključuje u inovativne procese u prehrambenom sektoru. U interakciji sa informisanim potrošačima, prehrambenoj industriji je olakšan razvoj i isporuka novih prehrambenih proizvoda formulisanih tako da pomažu u rešavanju problema savremene ishrane i prevenciji hroničnih nezaraznih bolesti.



*Informisani potrošač pravi dobar izbor i kupuje inovativne, nutritivno vredne, kvalitetne i ekološki prihvatljive proizvode*



# CHALLENGING POLICYMAKERS AND THE CIVIL SECTOR

# ANGAŽUJE ZAKONODAVSTVO I CIVILNI SEKTOR



FOODstars has been taking stakeholder engagement a step further than consultation in order to develop trust-enhancing mechanisms within the innovative food product development cycle and beyond.

*Shaping policy-making will encourage the development of innovative and bioeconomy-based companies to benefit a sustainable society*

Uključivanjem zakonodavca i civilnog sektora u "inovativni ciklus razvoja prehrambenih proizvoda" FOODstars insistira na razvoju mehanizama za sticanje poverenja i bolju saradnju ključnih aktera.

*Politika koja podstiče razvoj inovativnih kompanija i kompanija zasnovanih na bioekonomiji podstiče razvoj održivog društva*

To reach these goals, the Institute of Food Technology, through the framework of FOODstars, has been:

## **Stepping up scientific excellence among research staff through training events, schools and workshops**



Kako bi ispunio postavljene ciljeve FOODstars je Naučnom institutu za prehrambene tehnologije u Novom Sadu omogućio

## **Unapređenje naučne izvrsnosti kroz obuke, škole i radionice**

Training events in seven topics were organized for FINS researchers

- Novel methods of isolation and determination of plant bioactives
- Antimicrobial activity of natural molecules and functionalised polymers
- Innovative technologies for advanced food processing
- Encapsulation of food ingredients
- Consumer testing methods
- Application of imaging techniques in the study of food structure
- Application of gas chromatography-olfactometry in food flavour analysis



Schools in four topics were organised

- Evaluation of the antioxidant and cytoprotective effect of bioactive components
- Probiotics for food industry applications
- Methods of optimisation for advanced food processing
- Food authenticity and detecting and quantifying food adulteration

- Workshops on five topics were organised for academia, the food industry and policy-makers
- New value from food processing waste streams and by-products
  - Protective/preventive role of bioactive food components in human health
  - Green extraction techniques in food science
  - Recent developments in microencapsulation of food ingredients
  - Creating a successful business plan

Organizovano je sedam obuka iz različitih oblasti nauke o hrani za istraživače FINS-a:

- Nove metode za izolovanje i određivanje bioaktivnih komponenti biljnog porekla
- Antimikrobnja aktivnost prirodnih molekula i funkcionalnih polimera
- Inovativne tehnologije u savremenoj prehrambenoj industriji
- Inkapsulacija komponenata hrane
- Metodologija potrošačkih testova
- Primena tehnika slikevognog snimanja u proučavanju strukture hrane
- Primena gasne hromatografije-olfaktometrije u analizi arome hrane



Organizovano je pet radionica koje su okupile veliki broj istraživača, razvojnih inženjera iz industrije i zakonodavaca

- Nove mogućnosti iskorišćenja otpadnih i nusproizvoda iz prehrambene industrije
- Zaštitna/preventivna uloga bioaktivnih komponenti hrane u zdravlju ljudi
- Ekološki podobne tehnike ekstrakcije u nauci o hrani
- Novi pristupi mikroinkapsulaciji sastojaka hrane
- Kreiranje uspešnog poslovnog plana

Organizovano je četiri škole iz oblasti

- Antioksidativnog i citoprotективnog efekta bioaktivnih komponenti
- Probiotika za primenu u prehrambenoj industriji
- Metoda optimizacije u savremenoj proizvodnji hrane
- Autentičnosti i otkrivanja falsifikata hrane



# **Enhancing cooperation with internationally recognised research institutions in Europe**

The involvement of Teagasc – the Agriculture and Food Development Authority, Ireland, and the University of Bologna Department of Agricultural Sciences and Department for Life Quality as the main project partners under this proposal, as well as Leiden University Natural Products Laboratory and the Institute of Biology, the Netherlands, has provided for the development of strategic and stable partnership in conducting further training activities and collaborative research within the framework of EU research projects.



**ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA**

**[www.unibo.it](http://www.unibo.it)**



**[www.fins.uns.ac.rs](http://www.fins.uns.ac.rs)**



**[www.teagasc.ie](http://www.teagasc.ie)**

# **Unapređenje saradnje sa eminentnim međunarodno priznatim istraživačkim institucijama**

Učešće Teagasca – Irskog razvojnog instituta u oblasti hrane i poljoprivrede (Teagasc – Agriculture and Food Development Authority of Ireland) i Univerziteta u Bolonji - Departmana za poljoprivredne nauke i Departmana za kvalitet života, kao projektnih partnera, kao i Laboratorije za prirodne proizvode Instituta za biologiju Univerziteta u Lajdenu iz Holandije, obezbedio je razvoj strateške i trajne saradnje usmerene ka budućim aktivnostima i zajedničkoj saradnji u okviru istraživačkih projekata EU.





## Collaborating with the food industry to facilitate innovative product development

Two round-table discussions were organised:

- Food safety in Serbia – scientific knowledge and future challenges
- Innovations in food sectors and the possibility of their commercialisation: Models of financial support for food SMEs

One open-day – *Inside FINS* – was organised for industry partners in order to gain an insight into the broad range of methods used for the sensory evaluation of food products.



## Saradnju sa prehrambenom industrijom na razvoju inovativnih proizvoda

Organizovane su dve panel diskusije:

- Bezbednost hrane u Srbiji – naučna saznanja i budući izazovi
- Inovacije u prehrambenom sektoru i mogućnost njihove komercijalizacije: Modeli finansijske podrške za mala i srednja preduzeća

Organizovan je dan otvorenih vrata *Unutar FINS-a* za industrijske partnere u cilju prezentacije širokog spektra metoda koje se koriste u senzorskoj oceni prehrambenih proizvoda.

# **Raising awareness of innovation and knowledge transfer to industry and promotion of an entrepreneurial culture among food scientists and technologists**



**Promovisanje preduzetničog duha  
i podizanje svesti o značaju inovacija  
i transfera znanja**



Two workshops were organised

- Intellectual property rights in food science
- Knowledge transfer to food SMEs

Organizovane su dve radionice:

- Intelektualna svojina u nauci o hrani
- Transfer znanja u mala i srednja preduzeća u prehrambenom sektoru



Two study visits were organised

- Study visit to the Knowledge Transfer Office of the University of Bologna
- Study visit to the Technology Transfer Office of Teagasc

Organizovane su dve studijske posete

- Studijska poseta Kancelariji za transfer znanja na Univerzitetu u Bolonji
- Studijska poseta Kancelariji za transfer tehnologija u Teagascu

# **Engaging with policymakers and consumers to ensure that knowledge and awareness about food is increased**



Three information evenings titled *Everything you wanted to know about food quality but had no one to ask* were organised for interested consumers on topics which were known to be of the greatest importance to them:

- food additives
- fat in food
- salt in food

# **Saradnju sa zakonodavcima i potrošačima u cilju povećanja informisanosti i prenosa znanja**



Tri informativne večeri Sve što želite da znate o kvalitetu hrane, a niste imali koga da pitate organizovane su za zainteresovane potrošače o temama koje su sami potrošači ocenili kao najznačajnije:

- Aditivi u hrani
- Masti u hrani
- So u hrani



Promoting  
food science  
and technology  
and providing  
a tangible insight  
into food research  
to youngsters



Promociju nauke  
i prehrambene  
tehnologije  
među mladima

Two open days titled *Inside FINS* were organised for schoolchildren to interactively provide insights into food, food quality and the research behind it.

Organizovana su dva dana *Otvorenih vrata FINS-a* za učenike srednjih škola i studente osnovnih studija tokom kojih im je na interaktivn način približen kvalitet hrane i vrste istraživanja u nauci o hrani.



FOODstars organised demonstration workshops during :

- the International Festival of Science and Education
- European Researchers' Night.



FOODstars je organizirao demonstrativne radionice tokom

- Internacionalnog festivala nauke i obrazovanja
- Evropske noći istraživača

# People who have paved the way for (FOOD)stars



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- INNOVATIVE
- NUTRITIOUS
- ECO-FRIENDLY
- HIGH-VALUE



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