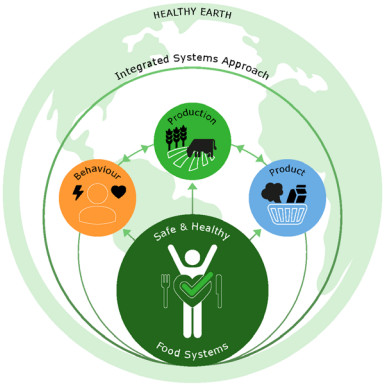
Healthy and Safe Food Systems event

26 September 2022



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During a well visited Healthy and Safe Food Systems event research for innovation was the central theme. All keynote speakers brought inspiration and experience from their organisations working towards a healthier, safer, and also more sustainable future for our food systems. 'Food connects us all', says Gulden Yilmaz programme lead of WUR's Healthy and Safe Food Systems research progamme at the opening of the event, which centres on a sustainable vision of future Healthy & Safe Food Systems. 'And all participants play are role in working on the connected building blocks for healthy people on a healthy planet'.

'Working on the connected building blocks for healthy people on a healthy planet.', Gulden Yılmaz, programme lead Healthy and Safe Food Systems

Keynote speeches

Bert Tournois, CEO of Box shared his lessons learned about bringing innovations to the market: 'What start-ups need is experience, building a balanced team, and machines more than they need money'. He found that was difficult being the first, such as with a plant-based alternative product replacing chicken pieces the company developed, and adding a disruptive technology slows the process to market down.

Marc Laus, from Avebe took us on a history tour of potato (starch) and the valorisation of byproducts into plant based proteins, which are used in sweets such as marshmallows. 'When using more parts of the potato it is even possible to build a plant based burger, except for the fat of course'.

EIT-FOOD's strategic relations lead Barbaros Çörekoğlu: 'Precompetitive innovative research is an important means towards a healthy and sustainable food system' In EIT-FOOD partners and community are working together in the largest innovation food ecosystem in the world. Working on better health, reducing the environmental impact, on a circular and sustainable system, and increasing the trust in the food system.

Ard van de Kreeke is an organic farmer and founder and manager of the Growy company. Growy is growing crops on cellulose in a clean and controlled environment, and in a circular fashion and cost effective way. 'The plants get what they need, in nutrients and light. It is all automated from seed to packaging, for which Growy is using existing technology.'

Healthy and Safe Food Systems research programme

Society faces several issues that are related to the production and consumption of food. On the one hand overweight and obesity related diseases result in an enormous burden on the health and economic system. On the other hand, hunger, and malnutrition result in deprived personal development of people and societies. Our food system is optimized for high volumes and cheap calories insufficiently diversified and our production methods and consumption patterns are neither sustainable nor resilient, damages the environment and causes pollution in natural ecosystems. Moreover, the food system is influenced by a range of factors because of climate change, biodiversity decline or mechanisms in trade and resourcing resulting in new risks and vulnerabilities. These are significant issues with high complexity and urgency that require multidisciplinary approaches to create solutions and collective action. Join us to learn more about research advances, to get inspired and get involved in the discussions to find answers together.

Do you want to know more about the programme www.wur.eu/healthy-safe-food-systems

Please don't hesitate to get in touch!

Gulden Yılmaz, programme lead
Healthy and Safe Food Systems

WUR research: updates from the strategic research projects in the Healthy and Safe Food Systems programme

Healthy and safe production on basis of Reverse Design

Together, Hasmik Haryapetyan from WUR and research specialist from Vivera, Marijn van den Dikkenberg, talked about reverse engineering as a method to comply with market demands in the food industry. In the project Vivera's plant burger was used as a real case study in the Multi-Criteria Assessment Platform, with a focus at looking for ingredients in meat replacements. Marijn van de Dikkenberg: 'Vivera is very interested in an indication of the performance of ingredients in the early design stage, as it saves time, money and resources'. Hasmik Hayrapetyan: 'Besides dissemination of the results and opportunities a MCAP offers, it contributed to education at WUR, and generated new ideas and will lead to future projects focusing as well on the other aspects, such as environmental impact, microbial safety, chemical safety, nutrition, economics, and consumers preferences, as well as strengthening and extending the platform'.

Novel technologies to enable personalized nutrition

'Optimizing personalized dietary advice to consumers, in order to facilitate healthy and sustainable food choices, is what this project is working on. From non and minimal invasive biomarkers, food nutrition apps, modeling and communication of the advice', says Sandra van der Haar, researcher at WUR.
Non and minimal invasive methods to obtain biomarkers, e.g., from a finger prick or chewing rate duration, are used for input on consumer's health status. Several food nutrition apps have been assessed for the option to obtain data on consumer's food intake. Via the app consumer's intentions on healthy eating were studied. The importance of context and moment was studied to be able to give better advice; such as the eating moment, the place and if the person was eating alone of with more people. These results give insight into when personalised dietary advice has a higher chance of success, and it is best reduced or replacing unhealthier products or to increase healthier products. Besides, food informatics can support in communicating and format (e.g., app components) the advice, such as computing overall health scores, generating a meal plan, and generating a shortlist of alternative foods.

Organoids as an animal free testing methodology

'This project is looking at animal free testing methodology through developing expertise to create, maintain and stimulate gut-derived organoids and 2D screening models', says Shanna Bastiaan-Net.
The goal is to reduce the use of animals trials and to create *in vivo*-like prediction models. These models are investigated for transport of chemicals in de body, such as PFAS, for effects of foods, nutrition in the human gut, feed intake for individual pigs to indicate the health of the individual animal, and measurement of hormones and cytokines. 'Future innovations are in the field of complexifing 2D intestinal organoid models; by looking at immune cell and microbiome interaction, gut - nerve/blood vessel connections, and to include in organ-on-chip models'.

Discussions on future research topics

Empowering health through nutrition: Health and sustainability inspired nutrition.

Jurriaan Mes: 'In this group we talked about the aspects of health, nutrition and empowerment for the next KB37 project (which will be running in 2023-2024), which focusses on lower SES-groups. One of the key aspects is to link to personal goals and situations, connecting to place, affordability, (mental) health, and self-esteem. And to involve stakeholders and influencers.'

Topic of session two was on food safety and traceability.

Peter Bonants: 'We talked about the risks in the circular agriculture system, which are still not very well known. Multidisciplinary research is vital in getting the answers, as is education and a changed mindset, and we need clear policy to support circularity. So that there are healthy and safe foods for everyone'.

Prepared for emerging risks in food systems in transition.

Wim van der Poel: 'Risks don't stop at country borders, so look beyond the borders to be prepared for emerging risks. Focus should be on true costs of products, showing that there is a safe food system and consumer acceptance'.


Healthy people, Healthy planet
Delivering the building blocks to enable sustainable nutrition
Providing the world with healthy and safe food, helping to build healthy diets while respecting the boundaries of our planet
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Dissemination highlights
MCAP® platform for "reverse engineering" and design of plant-based meat replacers
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Our main findings
Self-regulation is higher...
Open for eating healthily...
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Human
Tissue-derived stem cells
Human
Biopsy-derived
Meike van der Zande
WP 5, WP1 leader
Shanna Bastaan-Net
WP2 leader
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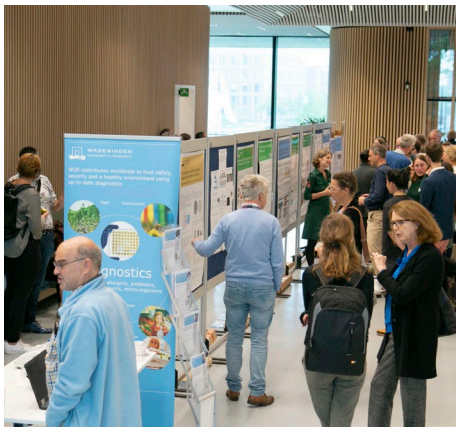


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