



**FOX – Innovative down-scaled food processing in a box**

## **European Stakeholder Workshop Region proceedings and recommendations**

**D8.2**

SMA CZ



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817683. [www.fox-foodprocessinginabox.eu](http://www.fox-foodprocessinginabox.eu) | #FOXfoodinabox

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## Executive Summary

D8.2 is the report of the Workshop 1: European Stakeholder Workshop Region: proceedings and recommendations, which is specified as dealing with exchange on best practice in FOX regions (M 18, organized by SMA CZ); dealing with expectations and needs of regions and peer-to-peer learning to transform regional food systems beyond technical innovations

The other 2 workshops are:

- Workshop 2 dealing with how to speed-up small-scale food processing innovations in Europe (M 25, organized by SMA CZ); discussion with European young farmers and food **producers, stakeholders** from EIP Agri and its national service points, respective partners of EIP Operations Groups, members of the National Food Platforms and others.
- Workshop 3 dealing with policy exchange on how to strengthen the diversity in the food market and decentralise food production in Europe through innovative technologies and market opportunities (M 38, organized by AGRO CR as member of COPA-COGECA),

Workshops are planned for 1 day for maximum 40 participants per event to engage stakeholder efficiently and ensure a good exchange on topics.

## Introduction

The FOX project aims to stimulate short food supply chains for fruit and vegetables by applying small innovative mild processing technologies. The consortium recognizes that there are already many practices dealing with processing of fruit and vegetables, both good practices and experiences that turned out to be unsuccessful. The consortium organized this workshop at 2 days, end of November 2020, to hear the voices of farmers and stakeholders.

We formulated some key questions for the workshops. How important is the geographical location in a context of on-farm processing? What drives farmers to start processing, and what hinders farmers from on-farm processing of fruit and vegetables? How difficult is it for farmers to identify the market potential of processed products? What is the benefit of cooperation in on-farm processing?

The participants of the workshop were carefully selected, with a good geographical mix, but also a variety of backgrounds to enrich the dialogue. Each participant is not just 'a stakeholder' but everyone brings his own story, with failures and successes. As a consortium, we are grateful for having such experts on board to critically reflect with us on our ambitions.



## Preparatory work

Due to the pandemic, the workshop had to be organized as an online workshop. At that phase of the crises, key stakeholders for our workshop were overloaded with online meetings. Only by making the workshop a real added value for all participants, we could assure a successful and interactive online event. In that context, we developed an agenda where interaction was at the core, as well as a time slot of formal learning. Moreover, we chose to have two workshops with smaller groups rather than one large workshop.

We made the invitation publicly available. However, we only selected applicants that could really add value to the workshop and had time for a preparatory call. Many people stayed out of the workshop because it was already full booked.

In order to focus on interaction, we scheduled a call with each participant beforehand and gather information about them using an interview guide (See annex 1). Although this resulted to be time consuming, this preparation had considerable benefits:

- There was no need to 'waste' time on explaining the project during the workshop
- Only participants that were willing to share experiences join
- Key points for discussion could be identified in advance
- Participants received information on who will participate in the online activity before the workshop (See annex 2)

We asked participants if they could share a video, e.g. of their farm. These videos were sent by mail 2 days before the workshop and shown beforehand, from 8-9 am. Unexpectedly, many participants logged in to see the videos, which also allowed a chat before the meeting started. It was almost like the welcome coffee before a real meeting.

The full list of biographies of the participants is added as annex 2 to the report.

We invited the team of NUTRIS to explain about the nutritional value of processed fruit and vegetables. It tackled on some very relevant issues of e.g. food labeling. This was a moment of formal learning, with room for questions afterwards. It gave us, as a consortium, the opportunity to share our knowledge, and the information provided was highly appreciated by the participants.

We made a FOOD Box of food and send this by post to the participants beforehand. Costs are limited and it was very much appreciated. Among others, it included a product from one of the involved farmers and this stimulated the discussion.

### Detailed Agenda FOX European Stakeholder Workshop Region – Best Practices for Innovation 24th and 27th of November

08:00 – 8:45 Presentation of “best practices” in the region. We will share them already on the 20<sup>th</sup> of November, so people can also choose to watch them beforehand. It is a selection of 2-4 case studies. We have the following cases approved

- 1) [Rob Le Rut – Cider maker in The Netherlands](#)



- 2) [David Broz – Farmer in Czech Republic](#)
- 3) [Doris Letina – Apple farmer in Slovenia](#)
- 4) [Daniel Cromphout – Co-founder Kopje Zwam in Belgium](#)

08:50 – 9:00 Everyone present and log-in to the online meeting,. This should allow us to start at 9 am sharp.

09:00 – 09:20 Welcome and scope of the workshop - FOX representative (Peter Holl)

- although everyone has received the fiches of participants beforehand, we do a short round table (just name and organization)
- warming up - mentimeter
- What is FOX about – could be kept rather short, as we had a call with everyone beforehand
- What will we do today?
- What's next? What's in for you.

09:20 – 09:40 Presentation of the main results of the interviews (Possible themes: Stakeholders, Regions, business models, products, consumers, success factors, barriers, problems, enablers) (Tessa Avermaete)

We will need some slides here. What kind of tendencies do we observe? What are the main strengths and opportunities for shared material used for on-farm processing. What can we learn from other subsectors in farming (such as wine making), or other industries where materials are already shared?

09:40 – 11:10 Open guided discussion (Peter Holl, Tessa Avermaete) – some key guiding questions if needed

- Do you recognize the situation that is outlined in our presentation?
- How region specific is this topic?
- Does it make more sense to focus on a specific product (for example drying fruit and vegetables)?
- How easy would it be to find other farmers to work with?

11:10 – 11:25 Coffee break – get your coffee and unwrapping moment.

What could be in the package? We could go for 3-4 products, that don't experience any harm from being transported.. and products from different parts of Europe. Dried apples / dried pumpkins / vacuum packed vegetables / sweeteners.

11:25 – 12:00 Nutritional value of processed fruit (Nutris)

What happens when you process fruit and vegetables when you process them? How much is the nutritional value 'harmed' by processing? What can you measure yourself? What is worth having measured by external experts?

Can you use 'health' as an argument selling processed fruit and vegetables?

Is it – in terms of health – worse to cut and use vacuum packaging than to dry products?



- 12:00 – 12:20    Wrap up (Peter and Tessa)
- Are there other best practices? What can we learn from these practices? What about replicability
- How can they remain involved in FOX
- Information on the next steps in the project
- 12:20 – 13:00    Feedback / comments to summary
- Thank you + closure of workshop - FOX representative

## Final agenda

### Agenda of the FOX online workshop 24<sup>th</sup> and 27<sup>th</sup> of November 2020

- 08:00              Presentation of “best practices” in the region – videos of 4 case studies
- 09:00              Welcome and scope of the workshop - FOX representative
- 09:20              Presentation of the main results of the interviews
- 09:40              Open guided discussion
- 11:10              Coffee break
- 11:25              Nutritional value of processed fruit and vegetables
- 12:00              Wrap up
- 12:20              Feedback and closure of workshop - FOX representative



## Report and key outcomes

In the workshop at first day, fruit farmers from all over Europe reflected on on-farm processing and the position of the farmer in the food chain. Some experts argue that adding value to your product is a precondition for a financially healthy business plan. Other farmers emphasized the potential for sharing insights and equipment among farmers, within the region. There is for sure no 'one-size-fits-all' solution for strengthening the position of the farmer, but there is consensus that farmers need entrepreneurial skills to remain competitive.

We also heard the voice from a Colombian researchers, worried about the yearly waste of over 4000 tons of pineapples in his region and seeking opportunities to valorize this waste stream. The relevance of on-farm processing and short food supply chains reaches far beyond Europe.

In the second workshop, we continued the dialogue with farmers' representatives, NGO's, policy makers and researchers. Europe is diverse, and so are the opportunities of farmers across regions. One of the key outcomes concerned the strategic choices of farmers and the implications that go along with their choices. Every farmer, or let's call it an agricultural entrepreneur, should carefully develop a business plan, including an analysis of pros and contras, the risks and the opportunities.

Also, we noticed a warm dialogue between the different regions of Europe. The debate on pros and contras of producer organization is different in Western and Northern Europe as compared to Central and Eastern Europe. As a consortium, and as for to describe the state of the art for agricultural entrepreneurs in the EU, we should be aware of the historical context of agriculture in Europe. Entrepreneurship is not just about innovation or technical skills, but also about trust and beliefs. Furthermore, consumers across Europe have various priorities when it comes to food. The willingness to pay for apple chips, for example, differs between Riga and Leuven. Yet, farmers as well as their 'entourage' can learn a lot by sharing know-how and experiences across borders.

What's next? The FOX consortium is developing technologies, mobile units for on-farm processing of fruits and vegetables. Demos will be provided from 2022 onwards. Simultaneously, the consortium will develop business models, that facilitate farmers to evaluate potential strategic choices. In the Summer 2021, new FOX workshops are scheduled. And finally, we will develop a Massive Open Online Course (MOOC) on business models for farmers.

### Key outcomes in a nutshell

- Issue of farmers' position is relevant all across Europe – not region specific
  - It has to do with your location, e.g. being located close to city or more remote on the countryside
  - Don't underestimate regional differences. What works in Riga, may not work Ljubljana or Brussels.
- Farmers who start to process, seldom start with a full business plan
  - but certain elements are essential: entrepreneurial skills, marketing capabilities, finances,, technical innovation (you need all that inhouse or out-sourced)
  - there is need for more information on how to develop business plans





- Diverse opinions on the role of cooperations and producer organisations – which is also region specific (different starting point between Eastern Europe and West Europe)
- Potential of / interest in processing seems to grow, as it is considered as a way to get strengthen the position of the farmer in the chain



## Annex 1: Preparatory work – Interviews

May be 1 or 2 sentences to explain the why and what of the interviews

Questionnaire “Best practice on transforming regional food systems beyond technical innovations”

In your case, your business partners along the value chain are

- Primary producers
- (end)-consumers
- Partners in a cooperative
- Retailers
- others

In your perspective,

- How do you grade a (consumer or stakeholder) demand for “less processed” food?
- A demand for healthier food choices and diets?
- A demand for more regional food?
- An acceptance of high-tech solutions, e.g. for “less processed” food?
- A demand for smarter backpacking?
- A consumer demand for more transparent food value chain?

In your perspective,

- Are you aware of a new business model (your own, or in your region) within the last 2 years for primary production, regional processing or regional retailing? If so, details?
- What has been the motivation to pursue this new business model?
- Which problems have been tackled with this new business model?
- Are you aware of (local) service provider(s) to aid you for innovation in your regional food value chain? If so,
  - o What kind of service does it provide?
  - o What is the outcome?
  - o What may be additionally helpful?
- What have been barriers to innovate?
- What kind of stake holders would you like to be involved additionally?

Reflecting on the outcome of the phone interview on your experience,

- How would you describe the “best practice” in your case?
- Would you be willing to share your experience with other stake holders in a work shop?
- Would you be interested to work on a set of principles for an “ideal practice” to perform innovation in your food sector, in a work shop?



## Annex 2: Biographies of participants





# FOX

## BEST PRACTICES FOR INNOVATION WORKSHOP WITH EUROPEAN FARMERS



### **Workshop #1:**

24th of November 2020 8:00 - 12.30

### **Workshop #2:**

27th of November 2020 8:00 - 12.30



# **FOX**

## **BEST PRACTICES FOR INNOVATION WORKSHOP WITH EUROPEAN FARMERS**



## **Getting to know the participants from Workshop #1**

Little bios from each of the participants

24th of November 2020 8:00 - 12.30

### **Contact:**

**Tessa Avermaete**

**Peter Holl**

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[p.holl@dil-ev.de](mailto:p.holl@dil-ev.de)

### **Technical support:**

**Camila Massri**

[camila.massri@eufic.org](mailto:camila.massri@eufic.org)

# ARIANE VOGLHUBER-SLAVINSKY

RESEARCHER AT FRAUNHOFER  
AND DOCTORAL CANDIDATE  
GERMANY



*"Participatory approaches are in the heart of foresight and therefore, we highly appreciate strong stakeholder involvement."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

### Getting to know the participants



## ABOUT ARIANE

Researcher at the Fraunhofer Institute for Systems and Innovation Research

Doctoral candidate on the topic of "Valorization of biodiversity measures/ecosystem services in regional food value chains"

## HER RESEARCH

Ariane studied renewable resources and bioenergy, as well as agribusiness at the University of Hohenheim in Stuttgart, specialising in conversion technologies in the Bachelor's programme and environmental and sustainability management in the Master's programme. Prior to this, she completed a diploma in health management in tourism at the FH Joanneum (Austria). Since April 2018 she works as a researcher at the Competence Center Foresight at Fraunhofer ISI. Her main areas of work include trend and scenario analyses to support strategy processes, qualitative surveys and strategy processes for regional development. Her current tasks also include the implementation of future dialogues involving stakeholders as well as citizens and trend analysis. She is involved in numerous projects for the European Commission, industrial clients, associations and federal ministries.

In current projects she is working on trends influencing Europe's food sector, transformation scenarios for the bioeconomy as well as on an knowledge and information system supporting automated, small scale agriculture.

In the project FOX the Fraunhofer Institute for Systems and Innovation Research (ISI) developed scenarios for the food sector in 2035. They further use this elaborated framework scenarios as a starting point for the development of more specific scenarios taking the particularities of the different technologies for mild (pre)processing, the plant-based food side streams and the FOX regions into consideration. In addition the scenarios will be applied to analyse today's business models in alternative futures.

# CAMILA MASSRI

CONSUMER RESEARCHER AT THE  
EUROPEAN FOOD INFORMATION  
COUNCIL (EUFIC)  
BELGIUM



*"We have to find ways  
to put research into  
practice and thus  
available and useful  
for everybody."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

### Getting to know the participants



#### ABOUT CAMILA

Consumer Science manager at the European Food Information Council (EUFIC)

Researcher and project manager in a number of EU projects in the area of consumer research and food related topics

#### HER WORK

Camila has had the opportunity to do consumer research in a number of EU projects linked to food. She has gained knowledge about consumers in topics related to short food supply chains, processed foods, novel packaging technologies, personalised nutrition via apps, food waste and new trends like vertical farms.

As part of the FOX project she guided the development of an app to be used as a communication tool between food technologists, farmers and consumers.

She is currently working on planning consumer engagement activities with regional project partners and farmers in Germany, Poland, Czech Republic, France, Spain and the Netherlands.

If you are interested in participating, please contact the regional partner (information will be shared during the workshop).



# DANIEL CROMPHOUT

CO-FOUNDER OF KOPJEZWAM  
AND MANAGER  
AT BERKUUS  
BELGIUM



*"Remaining local  
is an explicit  
choice, just as well  
as the choice for  
processing."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

### Getting to know the participants



### ABOUT DANIEL

Co-founder of Kopjezwam

.

Over 25 years experience in the bank sector as advisor for farmers

.

Manager at Berkuus, consultancy

### THE FARM

There are some structural problems with current farming practices. Overall, there is an emphasis on quantity, so exploiting the economies of scales. That is normal, if you only sell products with a low added value in the food chain. In this context, one can also understand the supply of lower quality products, for which processing – on-farm or at industrial level – is the best option.

Kopjezwam is a concept whereby sustainability, locality and circular economy are at the core of the business.

Among other, we grow mushrooms on coffee grounds. Part of the mushrooms are sold fresh, another part is sold as mushroom burger.

Remaining local also has consequences. We can set-up similar businesses in other larger cities, but starting this concept in rural areas is not the ambition.

# DAVID BROZ

PRESIDENT OF SMAC-R AND  
FARMER  
CZECH REPUBLIC



*"There is a lot of opportunity in processing pumpkins, you just need to find the right connections to get it started on your farm."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

Getting to know the participants



### ABOUT DAVID

President of SMAC-R

.

Czech Farmer

.

Partner in the Horizon 2020 project "Innovative down-scaled FOOd processing in a boX" (FOX)

### THE FARM

David is co-owner of a mixed family farm. They have about 700 hectares, with mainly arable crops, and about 300 dairy cows. There are 11 people working on the farm.

Two years ago, they started to grow vegetables. As the farm is located at 500 meter above sea-level, the choice is limited. Growing pumpkins was in this sense an opportunity for diversification. However, there were a lot of uncertainties.

Would people come to the farm to buy pumpkins? The first year was a success and they increased the surface from 2.5 ha to 5 ha.

Preparing pumpkins takes time and there is demand for cleaned and cut pumpkin. This is a time consuming process, though it would allow to sell more and create value.

There are opportunities, e.g. a friend-farmer who grows cabbage and has a machine for cutting. They could work together.

Furthermore, you could freeze pumpkin and make chips. Making chips is a real added value, because people can't do that at home.

# DORIS LETINA

VICE-PRESIDENT CEJA,  
PRESIDENT OF ZVEZA  
SLOVENSKE PODEŽELSKE  
MLADINE, AND FRUIT FARMER  
SLOVENIA



*"Cooperatives are not that much developed in Slovenia, which has historical reasons. However, maybe the time is now there to rethink this."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### Getting to know the participants



### ABOUT DORIS

Vice-president of European council of young farmers (CEJA)

.

President of Zveza slovenske podeželske mladine

.

Fruit farmer

### THE FARM

In Slovenia, processing of fruit is very common but not that much professionalized.

Farmers do the processing small-scaled and for the local market.

My mother started a farm 28 years ago. Now, both my brother and I run the farm which has about 6 ha of apples, 3 ha of walnuts, some arable land, 2 pigs, forest and some hens.

Furthermore, we recently also started with grapes fruit, for eating not for wine.

Hence, we can go to the market with a variety of products.

We invested in an irrigation system, for which we received subsidies from the investment fund.

Indeed, processing could be an option, though the regulation is very strict.

It would be another big investment. Maybe it is something for the longer term.

For now, we just also sell low quality apples and they are processed by others



# JUAN FERNANDO MURCIA PALACIOS

PHD STUDENT AT THE  
UNIVERSITY OF ANTIOQUIA  
COLOMBIA



*"There is an enormous potential for processing pineapples, and it would help farmers to strengthen their position in the food chain."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### Getting to know the participants



### ABOUT JUAN FERNANDO

Chemical engineer

Ph.D. student at the University of Antioquia in Colombia

### HIS RESEARCH

Juan is a Ph.D. student in the region of Choco, Colombia. He works on pineapple waste streams. Pineapple surplus in the region of Choco, the selection process that involves its commercialization and being a rapidly perishable fruit, causes serious losses for farmers. Due to the high content of sugars, it is anticipated that discarded fruit juice can be used as a substrate for the development of bioprocesses to obtain value-added products on an industrial scale.

About 4 thousand tons of pineapple are wasted every year in the Choco region.

Thanks to government programs that have encouraged the cultivation of this fruit, in recent years the production of pineapple in the region went from 2737 tons in 2000 to more than 8000 tons in 2015. This increase in pineapple production leads to a simultaneous increase in waste generation due to the selection and elimination of components during processing. Only the first quality fruit is selected for distribution to the markets.

# PETER HOLL

SENIOR MANAGER EU PROGRAMMES,  
DEPUTY HEAD OF BRUSSELS OFFICE AT  
DIL GERMAN INSTITUTE OF FOOD  
TECHNOLOGIES  
BELGIUM



*"I work to make the  
food system more  
sustainable."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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Getting to know the participants



### ABOUT PETER

Senior manager eu programmes at DIL German Institute of Food Technologies

Deputy head of Brussels office at DIL

### HIS WORK

Peter has been involved for more than a decade in pan-European Clinical Research for pharmaceuticals and medical devices, followed by some work in the REACH-program of the EU for chemicals.

Now located in Brussels, he does take care to form European consortia to take part in European research and innovation calls and working on convincing action plans and strategies.

He is also involved in EIT Food, Europe's leading food innovation initiative, working to make the food system more sustainable, healthy and trusted. Peter does co-head FOODforce, a round table of ca universities and Research Organisations in 16 EU active in the areas of food, nutrition and health.

In FOX, he fills in the role or the Work Package leader for Dissemination and Exploitation.

# PHILIPP SEIBERT

SMALL-SCALE FARMER AND  
TEACHER AT UNIVERSITY  
OF APPLIED SCIENCE IN  
FULDA  
GERMANY



*"There is a big need for knowledge spillovers from the food industry to farmers."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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Getting to know the participants



### ABOUT PHILIPP

Small-scale farmer

Teacher at University of Applied Sciences in Fulda for Innovation and Product management in food

Initiative taker in a local project on cherry wine production

### THE UNIVERSITY AND THE FARM

The FOX project offers interesting perspectives for the Bachelor study program "Engineering and Management: Food Innovation". Our students have to write an exposé on a business idea in the food sector, which can be both focused on technical and business innovations.

Furthermore, Philipp is involved in a community initiative with as main driver the ambition to create a learning environment for the younger generations. In the neighborhood, an older woman has a cherry tree with a very good production.

Recently, they started to produce cherry wine from this tree.

At first, the people in the neighborhood were reluctant. However, the wine turned out to be really good, not too sweet and with 13% alcohol.

This is not just a matter of adding value. It is about locality, farm education and community building.

# ROB LE RUTTE

SMALL-SCALE CRAFT CIDER  
MAKER  
THE NETHERLANDS



*"It is our explicit choice to remain local – both in production (fruit and cider) and in consumption."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### Getting to know the participants



#### ABOUT ROB

Small-scale cider maker (IESSEL Cider)

Initiator of the Wageningen University project 'cidergeschiktheid van oude Nederlandse appelrassen' (cider capability of old Dutch apple varieties)

Secretary at Stichting IJsselboomgaarden and at Stichting Land & Keuken

Retired lecturer, researcher, knowledge manager (cidermaking is 'last job')

#### THE FARM

Rob has been involved in restoration and management of traditional orchards for many years. In the region where he lives (the banks on both sides the river IJssel), there was until 1960 fruit production in traditional orchards. After that 90 % of these orchards was cleared in this period but in 1995 a restore project was started to replant traditional orchards by private owners living in rural settings. These fruit trees produce nowadays tons of fruit but there is no commercial market for this fruit from old varieties. In most orchards each tree is a different old variety. Now there are 3 mobile fruit pressing units (small enterprises) in the region pressing 5-6 ton fruit/ day packed in 3 or 5 liter bag in box as juice for private use. But there is a lot more fruit available. As the yield exceeds the capacity for juice and fresh direct consumption in the region, the idea of making cider was explored (2012 – 2015).

This was a cooperation with Wageningen University. This cooperation helped to develop a qualitative marketable product.

Our business concept is based on exchange. People donate apples, pears and quinces and get back bottles of cider a half year later (10 -25 kg/ 1 bottle). Production 2020: 8000 liters.

Rob is searching for new opportunities and economic values by introducing new cider varieties like ice cider, plum cider, brandy (pommeau). He is initiator of the Dutch cider network for starting cidermakers on Facebook (NL Cider).

There is still room for improvement: safe fruit picking in standard tree orchards, higher efficiency of the pressing process, valorization of waste streams, slow fermenting, exploration of using other fruits to make cider.



# TESSA AVERMAETE

PROJECT MANAGER AT THE  
DIVISION OF BIO-ECONOMICS  
AT KU LEUVEN  
BELGIUM



*"I believe that farmers  
across Europe  
need to bundle their  
forces and think out of  
the box."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

Getting to know the participants



### ABOUT TESSA

Project manager at the division of bio-economics at Katholieke Universiteit Leuven

Chair of the food and farming advisory board for Leuven City

Member of the advisory board of young farmers in Flanders

### HER WORK

Our research team is involved in several European, national and local projects on sustainable food systems. My focus is especially on the position of the farmer and the development of sustainable business models. Farmers are most often price takers in our food system. They are confronted heavily with global challenges including climate change, demographic changes, the growing power of multinationals, ... If we want young farmers to be attracted to agriculture, we need to create an environment in which innovative ideas can flourish.

In the search for economic viable business models, on-farm processing of fruit and vegetables offers an opportunity to create an added value and strengthen the farmer's position in the chain.

Finally, Europe is characterized by a rich food culture. Building on tradition and know-how, the road is open for innovation and entrepreneurship of farmers. This will not only be a benefit for the farmer, but also help to revitalize rural areas.



# ŽIVA LAVRIŠA

ENGINEER OF FOOD SCIENCE  
AND TECHNOLOGY AND PHD  
IN NUTRITION  
SLOVENIA



*"I am focused on  
nutritional composition  
of foods, food labelling  
and human nutrition  
related to public  
health."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

Getting to know the participants



### ABOUT ZIVA

Engineer of Food Science and Technology

.

PhD in Nutrition

.

Nutrition and Public Health researcher

### HER WORK

Živa Lavriša, PhD, is an engineer of Food science and technology with a PhD in nutrition. As a nutrition and public health researcher, she is focused on nutritional composition of foods, food labelling and human nutrition related to public health. She participates in various national and European research projects. One of her research interests are also nutrient profiling models which are being increasingly used as a tool for recognising more healthy food choices. Experienced in food labelling, she cooperates in different activities in this area.

She is also active on food marketing research, focusing on food marketing to children. Živa is the author of papers, published in renown scientific journals, such as Nutrients, International Journal of Public Health, Appetite, Trends in food science & technology.

# **FOX**

## **BEST PRACTICES FOR INNOVATION WORKSHOP WITH EUROPEAN FARMERS**



## **Getting to know the participants from Workshop #2**

Little bios from each of the participants

27th of November 2020 8:00 - 12.30

### **Contact:**

**Tessa Avermaete**

**Peter Holl**

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### **Technical support:**

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# ANNE ODILE PESCHEL

SENIOR RESEARCHER AT THE MAPP CENTRE  
AT AARHUS UNIVERSITY  
DENMARK



*"Consumers decide whether a product is worth buying, whether it is offered at the right place at the right time and communicated effectively."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### Getting to know the participants



## ABOUT ANNE

Senior Researcher at the MAPP Centre for Research on Value Creation in the Food Sector for Consumers, Industry and Society at Aarhus University

· Main research focus is on consumer information processing and decision-making

· Studies consumer engagement as part of the FOX project

## HER WORK

The research team at the MAPP Centre studies consumer behaviour in a food context – from production over purchase to consumption and disposition. I have a broad background in nutrition as well as food and resource economics, because I love food in all forms (well, mostly dessert...), but in my opinion the key factor in the whole system is the consumer. Consumers decide whether a product is worth buying, whether it is offered at the right place at the right time and communicated effectively.

In my research, I mainly use quantitative methods, experiments or purchase data, because I prefer numbers to words. For the workshop however, I am looking forward to an interesting dialogue!

# ARIANE VOGLHUBER-SLAVINSKY

RESEARCHER AT FRAUNHOFER  
AND DOCTORAL CANDIDATE  
GERMANY



*"Participatory approaches are in the heart of foresight and therefore, we highly appreciate strong stakeholder involvement."*

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## ABOUT ARIANE

Researcher at the Fraunhofer Institute for Systems and Innovation Research

Doctoral candidate on the topic of "Valorization of biodiversity measures/ecosystem services in regional food value chains"

## HER RESEARCH

Ariane studied renewable resources and bioenergy, as well as agribusiness at the University of Hohenheim in Stuttgart, specialising in conversion technologies in the Bachelor's programme and environmental and sustainability management in the Master's programme. Prior to this, she completed a diploma in health management in tourism at the FH Joanneum (Austria). Since April 2018 she works as a researcher at the Competence Center Foresight at Fraunhofer ISI. Her main areas of work include trend and scenario analyses to support strategy processes, qualitative surveys and strategy processes for regional development. Her current tasks also include the implementation of future dialogues involving stakeholders as well as citizens and trend analysis. She is involved in numerous projects for the European Commission, industrial clients, associations and federal ministries.

In current projects she is working on trends influencing Europe's food sector, transformation scenarios for the bioeconomy as well as on an knowledge and information system supporting automated, small scale agriculture.

In the project FOX the Fraunhofer Institute for Systems and Innovation Research (ISI) developed scenarios for the food sector in 2035. They further use this elaborated framework scenarios as a starting point for the development of more specific scenarios taking the particularities of the different technologies for mild (pre)processing, the plant-based food side streams and the FOX regions into consideration. In addition the scenarios will be applied to analyse today's business models in alternative futures.

# CAMILA MASSRI

CONSUMER RESEARCHER AT THE  
EUROPEAN FOOD INFORMATION  
COUNCIL (EUFIC)  
BELGIUM



*"We have to find ways  
to put research into  
practice and thus  
available and useful  
for everybody."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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#### ABOUT CAMILA

Consumer Science manager at the European Food Information Council (EUFIC)

Researcher and project manager in a number of EU projects in the area of consumer research and food related topics

#### HER WORK

Camila has had the opportunity to do consumer research in a number of EU projects linked to food. She has gained knowledge about consumers in topics related to short food supply chains, processed foods, novel packaging technologies, personalised nutrition via apps, food waste and new trends like vertical farms.

As part of the FOX project she guided the development of an app to be used as a communication tool between food technologists, farmers and consumers.

She is currently working on planning consumer engagement activities with project partners and farmers in Germany, Poland, Czech Republic, France, Spain and the Netherlands.

If you are interested in participating, please contact the regional partner (information will be shared during the workshop).

# GEOFFROY ANCIAUX

FOOD TECHNOLOGY ADVISOR  
AT DIVERSIFERM  
BELGIUM



*"The big challenge is on the economies of scale. If you can't exploit the economies of scale, it is not possible to make profit."*

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### ABOUT GEOFFROY

Food technology advisor at DiversiFerm

ULiège – Gembloux Agro-Bio Tech – Laboratoire - Qualité et Sécurité des Produits Agroalimentaires

### DIVERSIFERM

DiversiFerm is a program co-financed by the Walloon government to help farmers developing new products. DiversiFerm provides consultancy to the farmers. This is done at different levels, including advice on the technical aspects of processing as well as on the economic and business related issues. DiversiFerm doesn't have own processing material. If they organize training for farmers, they rent out facilities.

In terms of sharing equipment, there are already projects for the meat sector. However, there is also a demand in the fruit and vegetable sector, e.g. on sterilization. However, if you would invest in such shared equipment, you also need to provide training on how to use the material.

# GERT ENGELLEN

PROJECT DIRECTOR RIKOLTO  
BELGIUM



*"Processing is important for farmers, as it adds value to their products, and this added value is – in turn – necessary to strengthen his position."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT GERT

Project director Rikolto

### HIS WORK

Rikolto is a ngo and its name derives from the Esperanto 'yield'. The aim of Rikolto is to contribute to more sustainable food systems. Achieving this aim, they cooperate with farmers, companies, scientists and policy makers.

Gert contributed to diverse initiatives in Belgium, both at the national level and at the local level. He has been working with mainstream partners – such as the key supermarkets – as well as with the actors in local food supply chains. He was also co-author of the Leuven food strategy. Furthermore, Rikolto recently set up a system to develop the local food distribution in Leuven, called 'KortOM'.

Rikolto can build on our expertise working with both farmers in the Global South and in the North. We also have been working with producer organizations, and providing support to set up producer organizations.

What we notice is that knowing the market is a key for success. Vice-versa, we notice that initiatives often fail because they don't take the market demand into account.

We see a lot of room for improvement for producer organizations, including opportunities for processing. Yet, we recognize the need for farmers to bundle forces, and increase their position in the chain. In this context, short supply chains are valuable, but you should not underestimate the importance of (mainstream) retail.

In the South, we have some good experiences e.g. with cacao and coffee processed on the farm.



# LUC VANOIRBEEK

COPA-COGECA CHAIRMAN OF  
THE WORKING PARTY ON  
FRUIT AND VEGETABLES  
BELGIUM



*"Farmers should  
bundle their forces  
to strengthen  
their position in  
the food chain."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT LUC

COPA-COGECA Chairman of the Working Party on Fruit and Vegetables

Secretary General Verbond Belgische Tuinbouwcoöperaties (Belgian cooperative fruit and vegetable)

Former spokesman, Boerenbond (Farmers' Union)

Former advisor fruit and vegetables Boerenbond (Farmers' Union)

### HIS VISION

European fruit and vegetable farmers are confronted with diverse challenges including the impact of climate change, unsure trading conditions and unfair trading practices, sociodemographic issues related to the greying of the European farming sector and the increased demand for high quality products.

Most recently, the European fruit and vegetable sector is expressing strong concerns about its future with the combined effects of the COVID-19 crisis and the announcements made in the Farm-to-Fork Strategy.

While the sector is recording ever-increasing production costs and losses for certain products such as tomatoes, vegetables and stone fruits, professionals in the sector are questioning their capacity to thrive with the targets announced by the European Commission.

Innovation in the sector is crucial for its competitiveness. Diversification, such as on-farm processing and short supply chains, can certainly be a good solution for a specific group of fruit and vegetable farmers.



# MERTIJN MOEYERSONS

PHD CANDIDATE AT THE DIVISION  
OF BIOECONOMICS, KU LEUVEN  
BELGIUM



*"Not much is known  
about the supportive  
environment and how  
exactly it stimulates  
farmers."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT MERTIJN

PhD candidate at the division of bioeconomics at KU Leuven

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MSc in Bioscience engineering

### HIS RESEARCH

Mertijn started his PhD at the division of bioeconomics at the KU Leuven at the start of 2020 after graduating with his Msc degree in bioscience engineering. As a project assistant Mertijn is heavily involved in the currently running projects Newbie (on new entrants) and Generation Food (on food entrepreneurship). His research will focus on how the supportive environment shapes farmer's strategic decision making and innovation.

There are many barriers to innovation and generational renewal and while policies can be utilized to tackle those directly, often policies are implemented to support innovation indirectly through the supportive environment. However, not much is known about this environment and how exactly it stimulates farmers.

# MIKELIS GRIVINS

RESEARCHER AT BALTIC  
STUDY CENTER - RIGA  
LATVIA



*"Digitization opens a lot of opportunities for farmers to get data and use this data for developing better business models."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### Getting to know the participants



### ABOUT MIKELIS

Researcher at Baltic Study Center – Riga

Social scientist

### HIS WORK AND VIEWS

Mikelis is involved in several European projects that deal with the development of rural areas and strengthening the position of the farmer. One of these projects is DESIRA, which aims to improve the capacity of society to respond to the challenges and opportunities of digitalization in rural areas. Data is really a way to increase competitiveness. While the large players in the food sector have their own data on consumers' needs and behavior, this information is not accessible for small farmers. Bundling forces among farmers is a way to overcome this obstacle.

In Latvia, on-farm processing is not very common. In fact, the majority of the local Latvia processed foods, are processed by large industrial companies. Sharing equipment could be an option making processing more accessible to farmers. However, farmers probably all need the equipment at the same time of the year.

Finally, Latvian consumers do some processing at home, such as drying carrots or peaches. Dried fruit and vegetables are considered as healthy.

# NATALIA BRZEZINA

POLICY OFFICER IN THE DIRECTORATE  
GENERAL FOR AGRICULTURE AND  
RURAL DEVELOPMENT  
BELGIUM



*"Because of my family  
I have developed a  
passion for all  
matters related  
to farming."*

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### ABOUT NATALIA

Policy officer in the Directorate General for Agriculture and Rural Development

·  
MSc in Agriculture and Commodity Sciences from Warsaw University of Life Sciences (Poland)

·  
MSc in Food Chain Systems from Cranfield University (UK)

### HER WORK

Before joining the European Commission in 2018, Natalia was a researcher at the KU Leuven within the EU-funded project TRANSMANGO. In the framework of her research, she developed innovative systems thinking tools to better understand the dynamic complexity of the European food systems, and thereby support design and implementation of effective EU policies.

In addition to her academic background, Natalia grew up in a family rooted in the livestock agribusiness and developed a passion for all matters related to farming. She gathered also professional experience in the agro-food industry, in particular in plant breeding and beverage companies.

[Natalia.BRZEZINA@ec.europa.eu](mailto:Natalia.BRZEZINA@ec.europa.eu)

# PETER COUCKE

OWNER OF FRUIT LAYER  
BELGIUM



*"It has been a process of trial and error, but now we have a high quality product."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT PETER

Farmer with arable crops and tourism

Owner of Fruit Layer

### THE FARM

Peter owns a family farm with arable crops and tourism facilities. About 3 years ago, he founded Fruit Layer, together with another entrepreneur who was active in the egg sector, a sector that went from one crisis into another.

The idea of Fruit layer was to diversify and produce innovative fruit structures. For both farmers, the bakery sector was already a client. They noticed that there was an opportunity in this sector for delivering processed fruit, the fruit you find in cakes, pies, [...]. Together with a research institute (ILVO), they invested in the technology and machinery for drying fruit.

The initial idea was to develop a product for the food industry. However, they did not succeed in developing the product they initially had in mind. Alternatively, Fruit Layer produces high quality apple chips.

There are still a lot of options to innovate in the future, both in terms of the products that we produce and in the business organization. We have a patent on the equipment, and there are several pathways to have the equipment used in other European regions.

# REMIE DEWITTE

MARKETING MANAGER  
BENELUX AT THE REO  
AUCTION  
BELGIUM



*"It is not so hard  
to get a good  
product on the  
market."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT REMIE

Marketing Manager Benelux at the REO auction

.

Member daily management team

.

Worked before at Groene Kring (young farmers Flanders)

### THE AUCTION

European fruit and vegetable farmers are confronted with diverse challenges including the impact of climate change, unsure trading conditions and unfair trading practices, sociodemographic issues related to the greying of the European farming sector and the increased demand for high quality products.

The auction is a producer organization. Almost 90% of all fruits and vegetables in Flanders are sold through the auction. There is no other region in Europe where the auction is that important for the fruit and vegetable sector.

Our clients at the auction deliver fresh product. As an auction, we are not dealing with processed fruit or vegetables. Sure, the food industry is an important client for us.

Our farmers are allowed to process part of their production on farm and sell it themselves. That can be an interesting idea for products with lower quality. The margins on these products can be rather large if you do the processing on the farm, way larger than selling your low quality products. In this context, on-farm processing can be part of a sustainable business plan for our farmers.

# ROMAN CHALOUPKA

SECRETARY OF CZECH FRUIT  
GROWERS UNION  
CZECH REPUBLIC



"Fruit processing gives good opportunity mainly to small and medium-size farmers to add value to their own production."

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT ROMAN

Secretary of Czech Fruit Growers Union

Former state fruit-tree nursery and orchard inspector

### HIS WORK AND VIEWS

In 2009 I left inspectorate and became secretary of the Union of Fruit Growers in the Czech Republic (NGO representing fruit growers, fruit-tree nurserymen and in certain extend also fruit post-harvest technologies, incl. processing).

My work involves every day contact amongst production site, state administration, research and advisory site, technology site, similar associations ect. We organizes meetings, trainings, workshops and seminars for growers and try to collect informations for them. I am also a regular attendee of F and V section of Copa-Cogeca. Ocassionally I take part in developing projects in other counties.

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Fruit growing business has become more and more difficult in recent years for many reasons in our country. Present situation leads to slow but permanent decrease of fruit orchards acreage.

There are only several players in our fruit-growing sector to be able to meet all global retailers expectations and also earn sufficient amount of money for necessary company development. Many others have to find another marketing ways allow them to survive.

Fruit processing gives good opportunity mainly to small and medium-size farmers to add value to their own production and decrease their dependency on global market.

It is also significant benefit for consumers to have opportunity to discover for themselves wide range of craft products linked specifically to the region and individual producers' work.

Many growers are not able to invest into their orchards sufficient amount of money to be able to succeed on global market. Than their old orchards produce a lot of second class fruit, what now do not have place on the market as a fresh product any more.

# SARA UHAN

APPLE FARMER &  
RESEARCHER AT LJUBLJANA  
UNIVERSITY  
SLOVENIA



*"In Slovenia, there is a long tradition and growing demand for dried fruits."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



24th and 27th of November 2020

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#### ABOUT SARA

PhD student at the Department of Geography, University of Ljubljana

·  
Researcher in the H2020 project NEWBIE, on new business models for new entrants in Europe

·  
Researcher in a bilateral research project between KU Leuven and Ljubljana University on Agricultural Knowledge and Innovation Systems.

#### THE FARM

In the past, it was small livestock farm. Because there was not enough land available for competitive livestock farming, they decided to reorient it from livestock to fruit growing step by step. They started with 1 ha of orchards, now they have 10 ha of different fruits. Because you cannot sell all fruit fresh, they started with processing into juice, vinegar, marmalades and dry fruits as well. In order to adapt to climate change and market they try with new fruits every year.

Aljaž, my brother, works together with his parents on the fruit farm. On 10 ha of land, they grow diverse fruits, selling it to the final consumer on their own. Fruit, not suitable to sell fresh, they process into juice, vinegar, marmalades and dry it.

They also keep bees and pasture-raised laying hens. There is a video available of the farm. You can find it here. Processing apples into apple chips allows to create value from fruit that cannot be sold fresh. Both overripe and fruit of poorer quality can be used for processing. In Slovenia, there is a long tradition and growing demand for dried fruits - it is gaining popularity again since it is known as a healthy snack. Pears should be dried as fast as possible, hence September – October. Apples can be dried all year through. They also dry some vegetables for self-supply. The farm also supplies some schools, kindergartens with dried apples. Dried fruits are very popular in winter time.

[Sara.Uhan@ff.uni-lj.si](mailto:Sara.Uhan@ff.uni-lj.si)



# TESSA AVERMAETE

PROJECT MANAGER AT THE  
DIVISION OF BIO-ECONOMICS  
AT KU LEUVEN  
BELGIUM



*"I believe that farmers across Europe need to bundle their forces and think out of the box."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT TESSA

Project manager at the division of bio-economics at Katholieke Universiteit Leuven

Chair of the food and farming advisory board for Leuven City

Member of the advisory board of young farmers in Flanders

### HER WORK

Our research team is involved in several European, national and local projects on sustainable food systems. My focus is especially on the position of the farmer and the development of sustainable business models. Farmers are most often price takers in our food system. They are confronted heavily with global challenges including climate change, demographic changes, the growing power of multinationals, ... If we want young farmers to be attracted to agriculture, we need to create an environment in which innovative ideas can flourish.

In the search for economic viable business models, on-farm processing of fruit and vegetables offers an opportunity to create an added value and strengthen the farmer's position in the chain.

Finally, Europe is characterized by a rich food culture. Building on tradition and know-how, the road is open for innovation and entrepreneurship of farmers. This will not only be a benefit for the farmer, but also help to revitalize rural areas.



# ŽIVA LAVRIŠA

ENGINEER OF FOOD SCIENCE  
AND TECHNOLOGY AND PHD  
IN NUTRITION  
SLOVENIA



*"I am focused on  
nutritional composition  
of foods, food labelling  
and human nutrition  
related to public  
health."*

## FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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### ABOUT ŽIVA

Engineer of Food Science and Technology

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PhD in Nutrition

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Nutrition and Public Health researcher

### HER WORK

Živa Lavriša, PhD, is an engineer of Food science and technology with a PhD in nutrition. As a nutrition and public health researcher, she is focused on nutritional composition of foods, food labelling and human nutrition related to public health. She participates in various national and European research projects. One of her research interests are also nutrient profiling models which are being increasingly used as a tool for recognising more healthy food choices. Experienced in food labelling, she cooperates in different activities in this area.

She is also active on food marketing research, focusing on food marketing to children. Živa is the author of papers, published in renowned scientific journals, such as Nutrients, International Journal of Public Health, Appetite, Trends in food science & technology.

## **Annex 3: Presentation**



# ***FOX Workshop***

27th of November 2020

Tessa Avermaete and Peter Holl



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817683.



## Agenda

- 08:00 **Presentation of “best practices” in the region**
- 09:00 Welcome and scope of the workshop
- 09:20 Presentation of the main results of the interviews
- 09:40 Open guided discussion
- 11:10 Coffee break
- 11:25 Nutritional value of processed fruit and vegetables
- 12:00 Wrap up
- 12:20 Feedback and closure of workshop - FOX representative



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817683.



## Presentation of *best practices*

- 1) [Rob Le Rut – Cider maker in The Netherlands](#)
- 2) [David Broz – Farmer in Czech Republic](#)
- 3) [Doris Letina – Apple farmer in Slovenia](#)
- 4) [Daniel Cromphout – Co-founder Kopje Zwam in Belgium](#)
- 5) [Sara Uhan – Apple farmer in Slovenia](#)



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## Technical instructions

**Technical support:**

Camila Massri (camila.massri@eufic.org)



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# ***FOX Workshop***

27th of November 2020

Tessa Avermaete and Peter Holl



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## TESSA AVERMAETE

PROJECT MANAGER AT THE DIVISION OF BIO-ECONOMICS AT KU LEUVEN BELGIUM



"The barrier that farmers across Europe need to double their yields and move out of the box."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## ŽIVA LAVRIŠA

ENGINEER IN FOOD SCIENCE AND TECHNOLOGY AND PhD IN NUTRITION SLOVENIA



"High focused on nutritional composition of foods, food labeling and human nutrition, wrapped in public health."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## CAMILA MASSRI

CONSUMER SCIENCE MANAGER AT THE EUROPEAN FOOD INFORMATION COUNCIL (EFIC) BELGIUM



"The issue is that when to put research into practice and what available and useful for everybody."



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## ANNE ODILE PESCHEL

SENIOR RESEARCHER AT THE MAFF CENTRE AT AARHUS UNIVERSITY DENMARK



"Consumers decide whether a product is worth buying whether it is efficient at the right price at the right time and communicates effectively."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## GEOFFROY ANCIAUX

FOOD TECHNOLOGY ADVISOR AT GORENDELM BELGIUM



"The big challenge is on the economics of food. If you can't exploit the economies of scale, it is not possible to make profits."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## GERT ENGELEN

PROJECT DIRECTOR BUNDO BELGIUM



"Processing is important for farmers, as it adds value to their products and this added value is, in turn, necessary to strengthen its position."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## LUC VANOIRBEEK

DEIRA-LODACA CHAIRMAN OF THE WORKING PARTY ON FRUIT AND VEGETABLES BELGIUM



"Farmers should bundle their forces to strengthen their position in the food chain."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## MERTIJN MOEYERSONS

R&D COORDINATOR AT THE DIVISION OF BIO-ECONOMICS, KU LEUVEN BELGIUM



"Not much is known about the support environment and how exactly it stimulates farmers."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## MIKELIS GRIVINS

RESEARCHER AT BALTIC STUDY CENTRE - RIGA LATVIA



"Digitization opens a lot of opportunities for farmers to get data and use this data for developing better business models."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## NATALIA BRZEZINA

POLICY OFFICER IN THE DIRECTION GENERAL FOR AGRICULTURE AND RURAL DEVELOPMENT BELGIUM



"Because of my family I have developed a passion for all matters related to farming."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP

## REMIE DEWITTE

MARKETING MANAGER GENERAL AT THE NED ARCHUR BELGIUM



"It is not so hard to get a good product on the market."



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## ROMAN CHALOUPKA

SECRETARY OF CZECH FRUIT GROWERS UNION CZECH REPUBLIC



"Fruit processing gives great opportunity mainly to small and medium-size farmers to add value to their own production."



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## SARA UHAN

GRADUATE PH.D. & RESEARCHER AT LJUBLJANA UNIVERSITY SLOVENIA



"In Slovenia, there is a long tradition and growing demand for dried fruits."



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## ARIANE VOGLHUBER-SLAVINSKY

RESEARCHER AT FRUHLINGFELD AND DOCTORAL CANDIDATE GERMANY



"Participatory approaches are in the heart of thought and therefore, we highly appreciate strong stakeholder involvement."



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



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## What happened with your FOX BOX?

My BOX did not arrive

The BOX arrived and a  
curious housemate opened it

The BOX arrived and I  
opened it

The BOX arrived and it is still  
closed



## Welcome and scope of the workshop

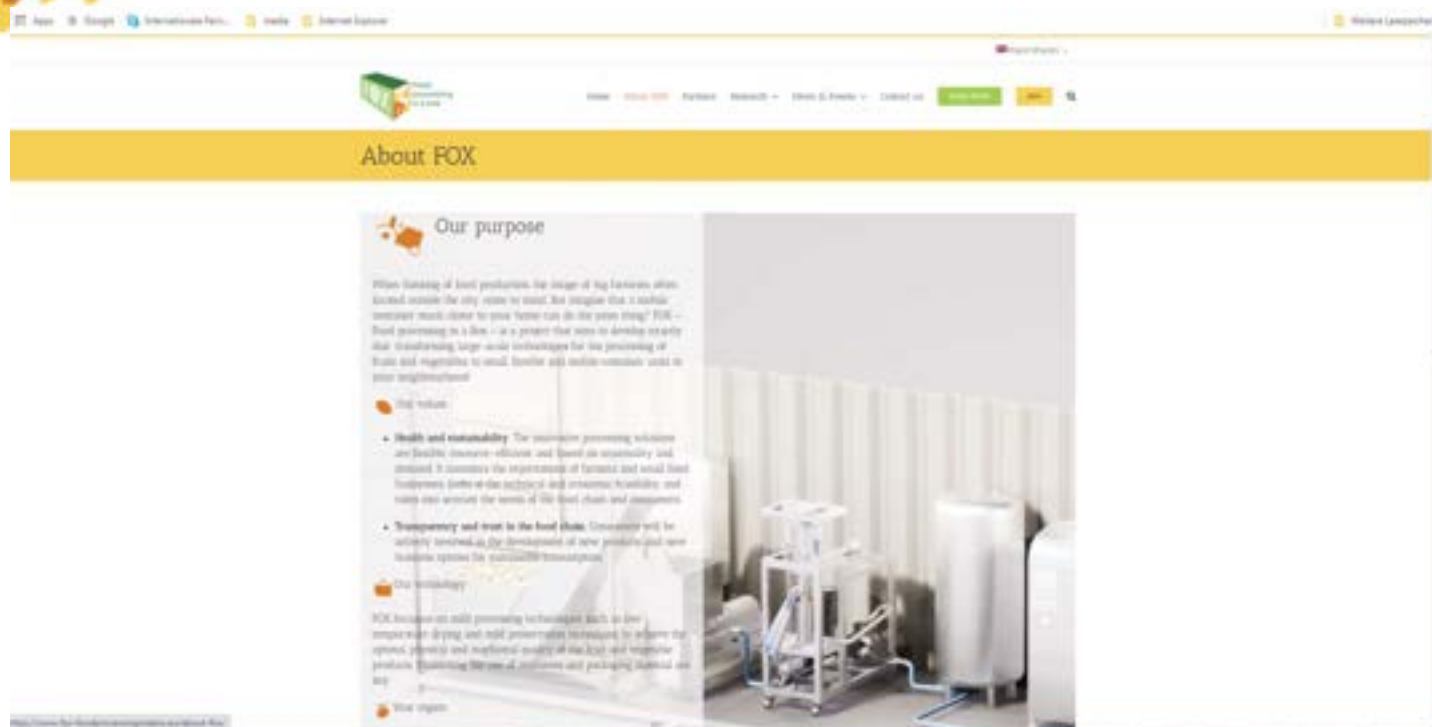
<https://www.fox-foodprocessinginabox.eu/>



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# Welcome and scope of the workshop



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## Welcome and scope of the workshop

### About FOX

#### Our purpose

When thinking of food production, the image of big factories, often located outside the city, comes to mind. But imagine that a mobile container much closer to your home can do the same thing? FOX – Food processing in a Box – is a project that aims to develop exactly that: transforming large-scale technologies for the processing of fruits and vegetables to small, flexible and mobile container units in your neighbourhood!

#### Our values

- **Health and sustainability.** The innovative processing solutions are flexible, resource-efficient, and based on seasonality and demand. It considers the expectations of farmers and small food businesses, looks at the technical and economic feasibility, and takes into account the needs of the food chain and consumers.
- **Transparency and trust in the food chain.** Consumers will be actively involved in the development of new products and new business options for sustainable consumption.



This project has received funding from the European Union





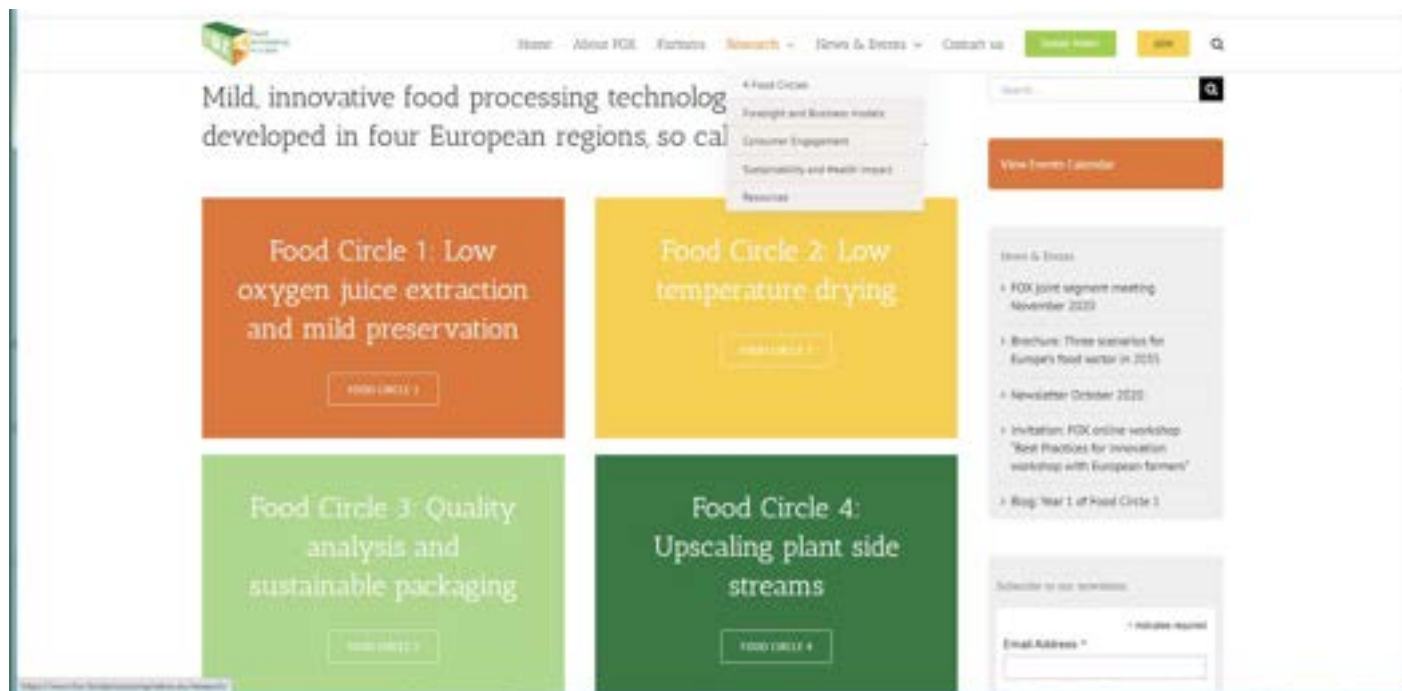
# Welcome and scope of the workshop



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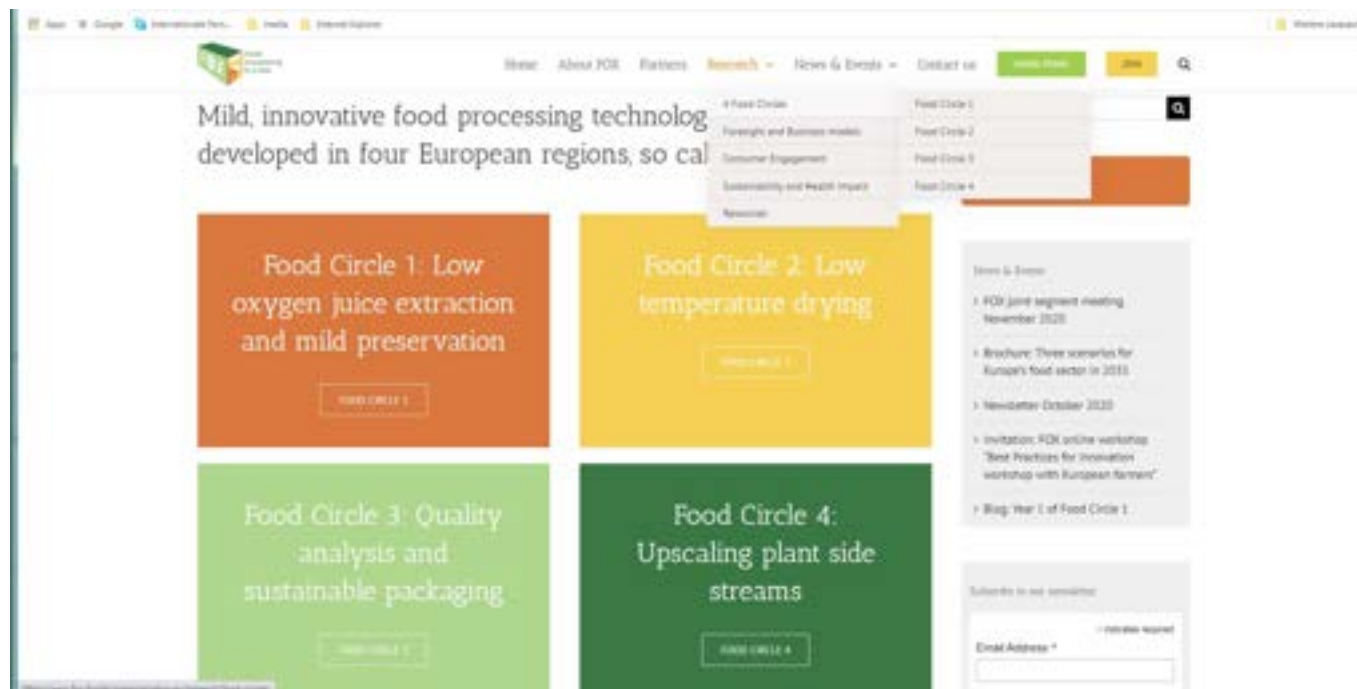
## Welcome and scope of the workshop



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## Welcome and scope of the workshop



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## Welcome and scope of the workshop

Map-FINAL-Update-01

### The 4 European regions (Food Circles)



**Food Circle 1**  
Low oxygen juice extraction  
and mild preservation  
Bodensee, DE



Apples



Spiral filter press and  
pulsed electric field (PEF)



**Food Circle 2**  
Low temperature drying  
Kuyavian-Pomeranian  
Voivodeship, PL & Central  
Bohemian CZ



Apples, strawberries,  
carrots, mushrooms



Non-thermal  
pre-treatment methods  
(PEF, US, and HHP)



**Food Circle 3**  
Quality analysis and  
sustainable packaging  
Valencia, SP & Provence  
Alpes Côte d'Azur, FR



Cucumber, apricots,  
(water)melons, nuts



Compostable bags and  
thermoformed trays



**Food Circle 4**  
Upscaling plant side  
streams Noord-Brabant, NL



Green peas and  
carrot pomace



Mild processing  
technologies: high  
pressure, PEF,  
supercritical CO<sub>2</sub>, mild  
thermal technologies



Partner regions Associated partner regions



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817683.



## Welcome and scope of the workshop

### Why this workshop?

- Get insight on best practices in the domain of on-farm fruit and vegetable processing
- Facilitate learning peer-to-peer
- Build common trust, for longer-term cooperation
- For longer-term mutual communication, build a community:

European Interest Group of Small Scale food processors

### What do we discuss about?

- What kind of innovations in terms of on-farm fruit and vegetable processing/or packaging are already implemented across Europe?
- What are the main motivations and struggles of farmers implementing these innovations?
- What kind of collaborations have been established
- How about the consumers and clients?



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## What is a Business Model ?

<b>Key Partners</b>  The strategic relationships your business creates with other companies or people.	<b>Key Activities</b>  Onfarm / small scaled processing of F & V	<b>Value Proposition</b>  Why do consumers buy the products ? The fundamental need that your company is trying to fulfill for its customers. Why your company exists.	<b>Customer Relationships</b>  The type of interactions your company has with its customers and the level of support it gives.	<b>Customer Segments</b>  The different groups of customers that your company interacts with
	<b>Key Resources</b>  Assets that are required to operate and deliver your company's value proposition.		<b>Channels</b>  Different methods that your company uses to deliver its products and value proposition to customers.	
<b>Cost structure</b>  How a company spends money on operations. The key costs and level of cost-focus for your company.			<b>Revenu Streams</b>  Your company's sources of cash flows.	





## Interviews – shedding various lights on the topic



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## Some findings

- Issue of farmers' position is relevant all across Europe – not region specific
- Farmers who start to process, seldom start with a full business plan
- Often trial and error or driven by waste streams , need for additional revenue streams
- Diverse opinions on the role of cooperations and producer organisations – which is also region specific (contrast between Eastern Europe and West Europe)
- Lack of understanding of the consumer market
- Marketing is rarely mentioned during the calls
- Potential of / interest in processing seems to grow





## Open guided discussion

Help us develop a business model – or several business models – that are most useful for farmers –  
producer organisations – farm advisors ...

Keep in mind the key focus

**ON FARM PROCESSING**

**FRUIT AND VEGETABLES**

**LOCAL FOOD SUPPLY CHAINS**

**STRENGTHENING THE POSITION OF THE FARMER**



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## Discussion item: Regional differences

1. How relevant is it for FOX to work in specific regions?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Fruit and vegetable farmers face similar challenges all across Europe, so starting from a common business model is fine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Situation across regions is so different, you need to work region specific	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is not about regional differences, it is about the size and market orientation of the farmer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Discussion item: Relevance of on-farm processing

## 1. Relevance of on-farm processing

	Unrelevant	Slightly relevant	Moderately relevant	Relevant	Very relevant
Processing at farm level will always be a marginal activity for fruit and vegetable farmers in Europe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Processing helps to differentiate, spread risks at the farm level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If farmers want to remain competitive, adding value is key. Processing is a good way to add value to your product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





## What is a Business Model ?

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# What is a Business Model ?

<https://padlet.com/camilamassri/FOXworkshop2>

Camila Massri - EUFIC • 1m

## What is a Business Model?

FOX Workshop with European farmers



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## Coffe break

- 08:00 Presentation of “best practices” in the region
- 09:00 Welcome and scope of the workshop - FOX representative
- 09:20 Presentation of the main results of the interviews
- 09:40 Open guided discussion
- 11:10 **Coffee break**
- 11:25 Nutritional value of processed fruit and vegetables
- 12:00 Wrap up
- 12:20 Feedback and closure of workshop - FOX representative



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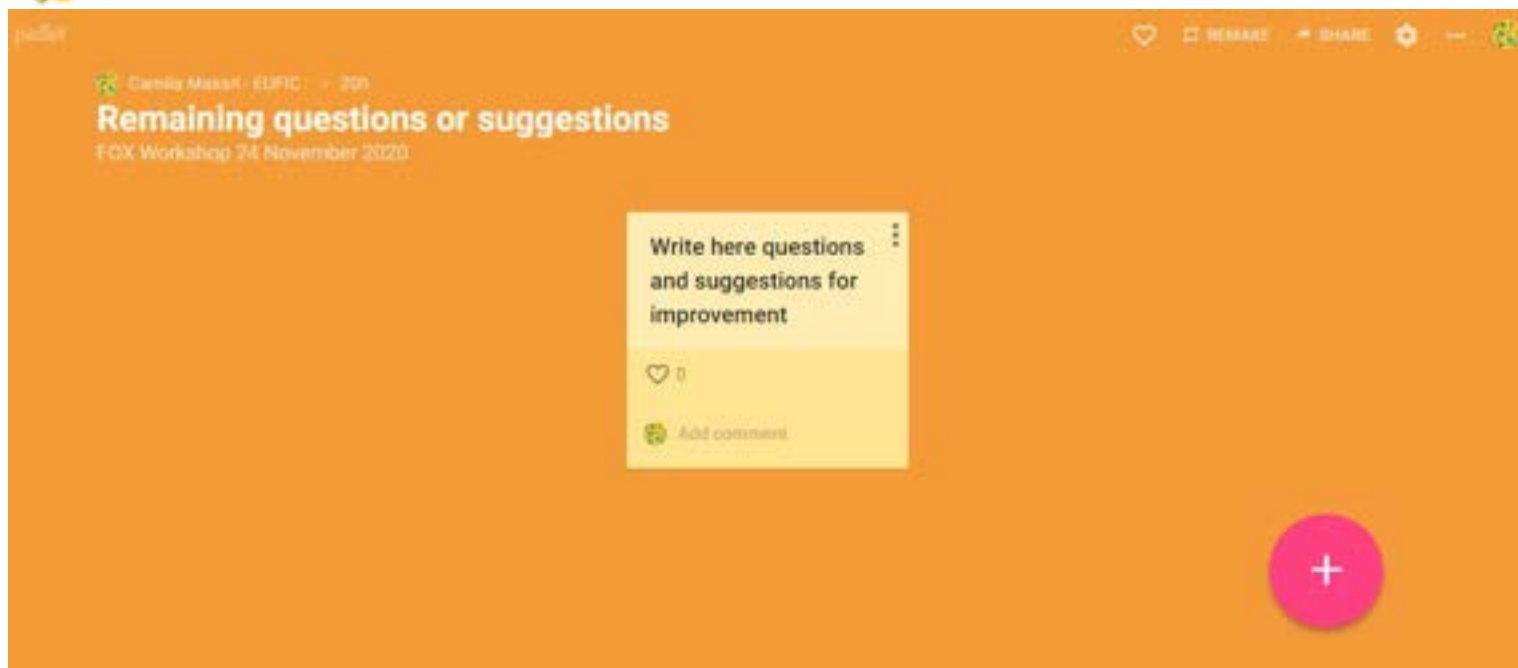
# Towards an accessible tool

## 1. Towards an accessible tool

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
It is valuable to have the business model developed as a wiki (online tool)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It would be good to organize a course on this topic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharing best practices on an open platform is useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## Remaining questions or suggestions



[https://padlet.com/camilamassri/FOXworkshop\\_suggestions](https://padlet.com/camilamassri/FOXworkshop_suggestions)



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## ***Nutritional value of processed foods and food labelling***

**FOX Workshop** 24th of November 2020

dr. Živa Lavriša  
asist. prof. dr. Anita Kušar  
prof. dr. Igor Pravst

**NUTRITION  
INSTITUTE**



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## Content

- About food processing
- Nutritional content of processed foods
- Food labelling



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# Food processing

- any method used to turn fresh foods into food products
  - washing, chopping, pasteurising, freezing, fermenting, packaging and many more
- includes adding components to food, for example to extend shelf life, or adding vitamins and minerals to improve the nutritional quality of the food (fortification)



Traditional processing	More modern processes (circa 1900 onwards)	Most modern techniques (post 1960)
Canning	Extrusion cooking	Freeze <u>drying</u>
<u>Fermentation</u>	Freezing and chilling	Infrared processing
Freezing	Pasteurisation	<u>Irradiation</u>
Oven drying	<u>Sterilisation</u>	Magnetic fields
Pickling	Ultra-High Temperature (UHT)	Microwave processing
Salting		<u>Modified atmosphere packaging</u>
Smoking		Ohmic heating
Sun drying		Pulsed electric fields
		Spray drying
		Ultra-sonification





**Which of the listed constituents is the most often deficient in our nutrition?**

Carbohydrates

Protein

Fibre

Fat



## Impact of food processing

- Food processing can affect the nutritional quality of foods:

- **enhance it:**

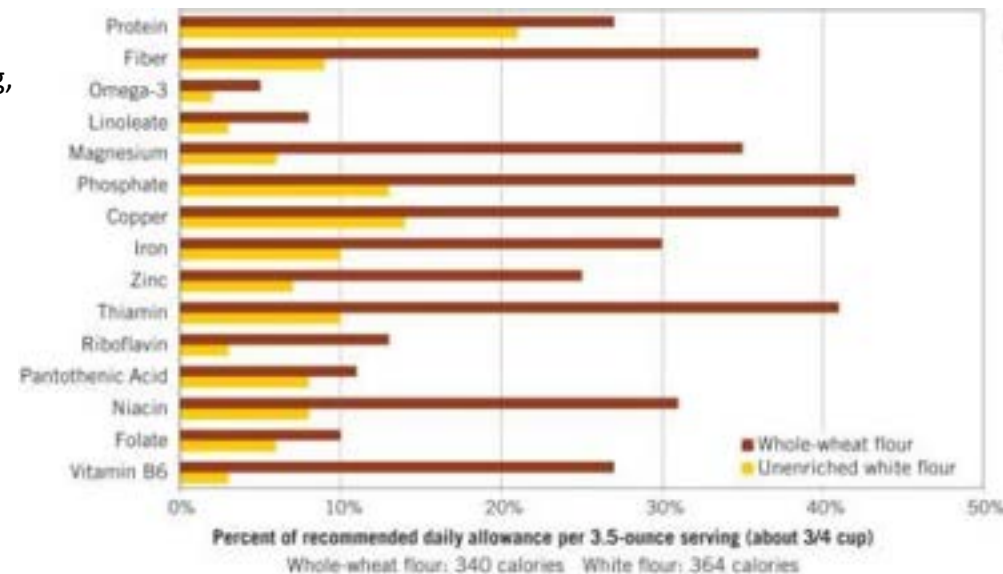
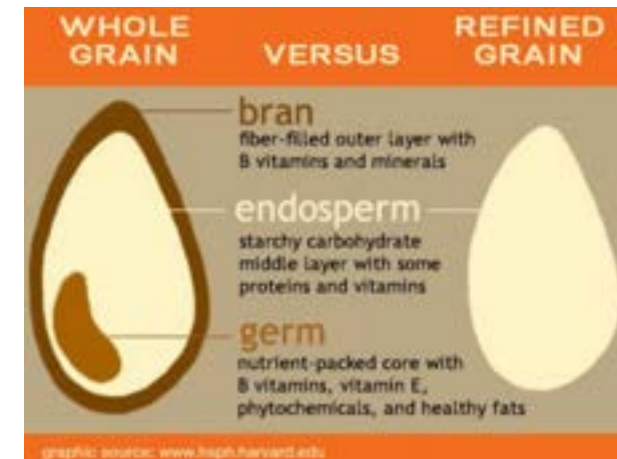
- fortification
- lowering fat, salt or sugar

- **cause loss of certain nutrients:**

- some fibre and vitamins and minerals to be lost (excessive refining, heating or freezing)

- Minimally processed foods (e.g. frozen fruits and vegetables): valuable sources of nutrition, with greater convenience and lower price
  - Chopped, frozen, and canned foods in natural juices or water - good alternatives to fresh produce

- Ultra processed foods: can contain less fibre, more (saturated) fat, added sugar and salt:
  - Processed meat, snacks, ready meals, etc.

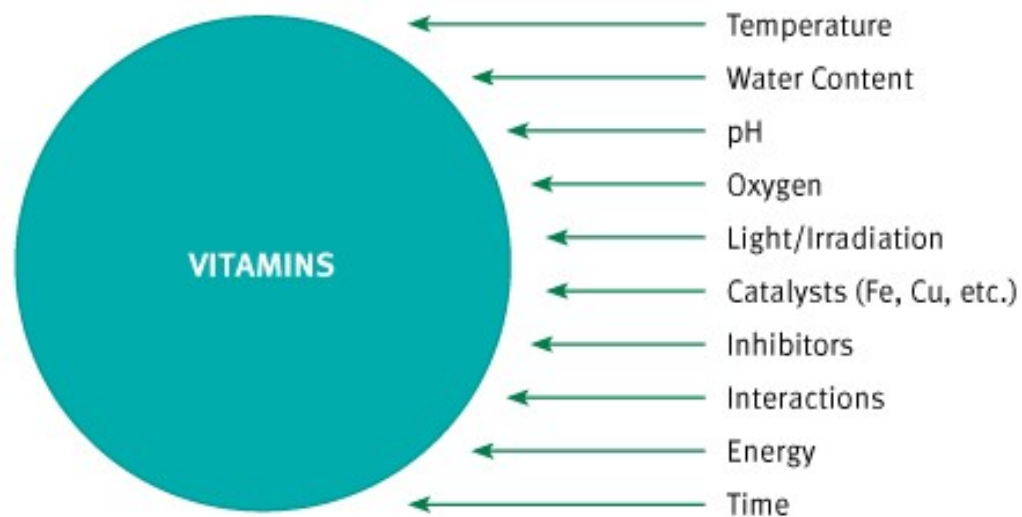




## Micronutrient content and processing



Factors affecting micronutrient stability and content



	Amount in 100 g	% nutrient reference value
Energy	65 kcal	3 %
Fat	0 g	0 %
Carbohydrates	16 g	6 %
-of which sugar	10 g	11 %
Protein	0,3 g	1 %
Dietary fibre	3 g	11 %
Folic acid	14 mcg	7 %
Chromium	27 mcg	68 %
Vitamin K	5 mcg	7 %



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**Is nutritional composition of organic foods always superior to conventional?**

Yes

No



## Micronutrient content and processing

- Processing affects different vitamins in different ways

### Vitamins

- Water soluble** (C, some B group vitamins)
  - Especially sensitive to heat treatment – the more heat, the greater the destruction of vitamins
  - ‘non-thermal’ processes help to retain vitamin content
  - Some vitamins are lost during storage of fresh products - frozen vegetables picked and frozen within hours retain more vitamin C than their fresh counterparts
  - More vitamins are lost during chilling than freezing!
- Fat soluble** (A, D, E, and K)
  - Especially sensitive to light, oxygen

### Minerals

- Minerals are generally unaffected during storage

### Sensitivity of Vitamins

	Light	Oxidizing agents	Reducing agents	Heat	Humidity	Acids	Alkalis
Vitamin A	+++	+++	+	++	+	++	+
Vitamin D	+++	+++	+	++	+	++	++
Vitamin E	++	++	+	++	+	+	++
Vitamin K	+++	++	+	+	+	+	+++
Vitamin C	+	+++	+	++	++	++	+++
Thiamin	++	+	+	+++	++	+	+++
Riboflavin	+++	+	++	+	+	+	+++
Niacin	+	+	++	+	+	+	+
Vitamin B6	++	+	+	+	+	++	++
Vitamin B12	++	+	+++	+	++	+++	+++
Pantothenic Acid	+	+	+	++	++	+++	+++
Folic Acid	++	+++	+++	+	+	++	++
Biotin	+	+	+	+	+	++	++

+ Hardly or not sensitive    ++ Sensitive    +++ Highly sensitive

Source: F. Hoffmann - La Roche, Basel.



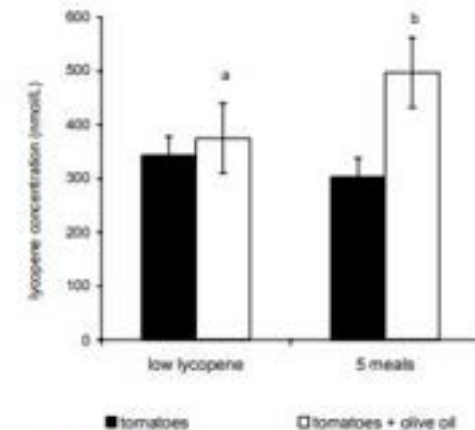


## Antioxidants

- *Some vitamins and minerals, plant pigments (carotenoids, phenols)*
  - Protect cells from oxidative stress (e.g. Copper contributes to the protection of cells from oxidative stress)
- **Antioxidant content**
  - content of certain carotenoids and phenolics can increase during suitable conditions of fresh storage
  - Canning may improve the extraction of carotenoids from their cellular matrix -> higher levels in thermally processed products
  - excess heat may also lead to degradation
- Bioavailability can be affected food matrix and processing\*\*
  - **lycopene** (tomatoes): greater in heat processed tomato products, addition of fat!
  - **carotenoids** (carrots): better when consumed with fat, lower in presence of fibre

Percent change (dry weight) in total  $\beta$ -carotene and total provitamin A carotenoids due to canning\*

Commodity	$\beta$ -Carotene	$\alpha$ -Carotene	$\beta$ -Cry- ptoxanthin	Total provitamin A
Carrots	+7	+33	-	+16
Collard greens	+50	-	-	+50
Peaches	-50	-	-40	-49
Spinach	+19	-	-	+19
Sweet potato	+22	-	-	+22



**Figure 1.** Total plasma lycopene concentrations before and after consuming tomato meals prepared with and without olive oil for five days. <sup>ab</sup>  $P = 0.008$ , ANOVA (repeated measures)

\*Rickman, J. C., Bruhn, C. M., & Barrett, D. M. (2007). Nutritional comparison of fresh, frozen, and canned fruits and vegetables II. Vitamin A and carotenoids, vitamin E, minerals and fiber. *Journal of the Science of Food and Agriculture*, 87(7), 1185–1196

\*\*Fernández-García, Elisabet, et al. *Carotenoids bioavailability from foods: From plant pigments to efficient biological activities*. *Food Research International* 46.2 (2012): 438–450.





## Drying



Per 100 g	Fresh apples*	% nutrient reference value	Dried apples**	% nutrient reference value
Water	86 g		32 g	
Energy	52 kcal		243 kcal	
Protein	0,3 g		0,9 g	
Carbohydrates	13,8 g		65,9 g	
Sugars	10,4 g		57,2 g	
Dietary fibre	2,4 g		8,7 g	
Vitamin C	4,6 mg	6 %	3,9 mg	5 %
Vitamin E	0,2 mg	2 %	0,5 mg	4 %
Potassium	107 mg	5 %	450 mg	23 %

\* USDA database, <https://fdc.nal.usda.gov/fdc-app.html#/food-details/1102644/nutrients>, 20.11.2020

\*\* USDA database, <https://fdc.nal.usda.gov/fdc-app.html#/food-details/171691/nutrients>, 20.11.2020



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## Apple chips vs. potato chips

- Healthy snack: **apple chips**: dried apples – no added ingredients
- Less healthy snack: **potato chips**: fried potatoes with salt – added salt and oil



GEMIDDELDE VOEDINGSWAARDEN VALEUR NUTRITIONELLE MOYENNE AVERAGE NUTRITIONAL VALUE:	Per Par 100g	Per Par 25g
Energie / énergie / energy .....	1250kJ / 297 kcal	312kJ / 74 kcal
Vetten / matières grasses / fat .....	1	0,25
waarvan / dont / of which: verzadigde vetzuren / acides gras saturés / saturates .....	0,11	0,03
Koolhydraten / glucides / carbohydrates .....	70	17,5
waarvan / dont / of which suiker / sucre / sugar .....	62,3	15,5
Vezels / fibres / fibre .....	18,6	4,6
Eiwitten / protéines / protein .....	1,5	0,4
Zout / sel / salt .....	0,02	0,005

Durchschnittliche Nährwertangaben / Average nutrition Information / Povprečne hranilne vrednosti	100 g
Energie / energy / energijska vrednost	2160 kJ / 518 kcal
Fett / fat / maščoba davon gesättigte Fettsäuren / of which saturates / od tega nasičene maščobne kisline	32 g 23 g
Kohlenhydrate / carbohydrate / ogljikovi hidrati davon Zucker / of which sugars / od tega sladkorji	50 g <0,5 g
Ballaststoffe / fibre / prehranske vlaknine	43 g
Eiweiß / protein / beljakovine	54 g
Salz / salt / sol	1,5 g





# Freezing



- The best method of preservation for vegetables
- frozen usually within a few hours of harvesting, keeping the goodness of their original 'fresh' state *locked in*
- Blanching before freezing destroys *enzymes* which can cause loss of color, flavor changes and nutrient loss
- For non blanched products (fruit), ascorbic acid can be added
- Freezing causes small decreases the vitamin C content of most vegetables
- a loss from 5% for asparagus to 39% for spinach and peas
- After a year, most vitamins start to decrease in content at -23°C.

Vitamin C levels and losses of frozen vegetables due to the processing applications\*

Processes	Vitamin C (mg per 100 g)	Loss (%)
<i>Peas</i>		
Initial	28.63 ± 2.806 <sup>a</sup>	00.0
Blanching	22.68 ± 3.035 <sup>b</sup>	20.8
Cooling	20.80 ± 2.606 <sup>b,c</sup>	27.3
Freezing	20.31 ± 2.738 <sup>c,d</sup>	29.1
3 months storage	18.90 ± 2.489 <sup>d,e</sup>	34.0
6 months storage	17.41 ± 2.008 <sup>e</sup>	39.2

\*Tosun, B. N., & Yücecan, S. (2007). *Influence of commercial freezing and storage on vitamin C content of some vegetables. International Journal of Food Science & Technology*, 43(2), 316–321.



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## Blanching and thermal processing



- **Optimal blanching conditions:**

- *high temperature–short time* water blanch - better vitamin retention!
- low temperature–long time blanch – more vitamins are lost
- steam blanching superior to water blanching
- addition of sulphite to the blanching water – can affect vitamin content in fruits and vegetables (e.g. thiamin)

- **Micronutrient losses in blanching:**

- water-soluble vitamins (thiamin, vit. C), antioxidants
- Higher retention of fat-soluble vitamins A and E
- further processing of blanched vegetables -> *additional losses of micronutrients*

Example: The dehydration of blanched cabbage (unsulphited) gave an additional 30% reduction in vitamin C content, 5 to 15% in the niacin content and about 15% of the thiamin

Treatment	Conditions	Food	Retention (%)	Losses (%)
Steaming	3.5 min	Broccoli	99.7	0.3
Boiling	3.0–5.5 min	Various vegetables	34–56	
		Spinach	33.9	
		Green beans	63.7	
Boiling in water to cover		Spinach	49.1	
Conventional cooking	Starting with boiled water	Cauliflower, white cabbage, Brussels sprout, French bean, Potatoes		37.8
	Starting with cold water			53.3
Cooking	5 min	Broccoli	72.8	18.9(+ 8.3 cw*)
		Potatoes		20–40
Cooking + keeping hot	55–60 °C, 1 h	Potatoes		30 + 10
Pressure-cooking		Cauliflower, white cabbage, Brussels sprout,		32.8

Lešková, E., Kubíková, J., Kováčiková, E., Košická, M., Porubská, J., & Holčíková, K. (2006). *Vitamin losses: Retention during heat treatment and continual changes expressed by mathematical models. Journal of Food Composition and Analysis, 19(4), 252–276*



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## Canning



- The longest shelf life of all preservation methods
- *most destructive* processing method - long period of heating
- **Losses up to 90%** of the vitamin content – depending on the vitamin and fruit/veg
- Minerals:
  - foods canned in tin-plated steel cans:
    - Increase iron, decrease copper - reaction with tin
    - Sodium, potassium, and calcium - not expected to change significantly during storage

Product	% of loss	nutrient
spinach, carrots, beets	70-75%	Vitamin C
tomato	0%	Niacin
beets	75%	Niacin
carrots	9%	Vitamin A
green beans	52%	Vitamin A
apples processed to apple sauce	78%	Vitamin C
peaches	40-70%	B vitamins, vit. A&C

Lamb FC, Farrow RP and Elkins ER, Effect of processing on nutritive value of food: canning, in Handbook of Nutritive Value of Processed Food, ed. by Rechcigl M. CRC Press, Boca Raton, FL, pp. 11–30 (1982)



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## Juicing



Apple juice\*



Apple\*\*

### Juice

- ✓ Higher availability of nutrients including e.g. phenols, antioxidants
- ✗ More available sugars than whole fruit

### Whole fruit

- ✓ More fibre
- ✓ Less sugar consumed at one time

### Processing

- pasteurising of juice  
orange juice – cca. 20% loss in thiamin, riboflavin, niacin and vitamin C when processed compared to raw fresh juice
- less changes in lime and grapefruit juice

Energy	48	kcal
Protein	0	g
Total lipid (fat)	0	g
Carbohydrate, by difference	11.6	g
Fiber, total dietary	0.2	g
Sugars, total including NLEA	10	g
Vitamin C, total ascorbic acid	1	mg

Energy	52	kcal
Protein	0.26	g
Total lipid (fat)	0.17	g
Carbohydrate, by difference	13.81	g
Fiber, total dietary	2.4	g
Sugars, total including NLEA	10.39	g
Vitamin C, total ascorbic acid	4.6	mg



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\* USDA database, <https://fdc.nal.usda.gov/fdc-app.html#/food-details/481222/nutrients>, 20.11.2020  
 \*\* USDA database, <https://fdc.nal.usda.gov/fdc-app.html#/food-details/1102644/nutrients>, 20.11.2020



## Food labelling

Key regulation for general food labelling  
in EU:

*Regulation 1169/2011 on the provision of  
food information to consumers*

*Mandatory information:*

- Name of the food
- Quantitative ingredients declaration (QUID) (where needed)
- List of ingredients (including allergens)
- Weight or volume of the food (net quantity)
- The 'best before' or 'use by' date
- Name and address of the food business operator (FBO) responsible for the food information (Producer, Packer or Seller)
- The alcoholic strength by volume (as a percentage) on drinks containing over 1.2% alcohol by volume

## Yoghurt drink (1,5% milk fat) with raspberries

**INGREDIENTS:** Yogurt (skimmed milk, skimmed milk concentrate/powder, yogurt cultures), Water, Skimmed milk, Raspberry (1.7%), Fibre (oligofructose), Dextrose, Stabilisers (modified tapioca starch, pectin), Cranberry juice from concentrate, Milk mineral concentrate, Natural flavourings, Acidity regulator (sodium citrate), Sweeteners (aspartame, acesulfame K), Lactobacillus casei (L.casei Danone®)

Typical values	per 100 g
Energy	417kJ 98kcal
Fat	0.2g
of which saturates	0.0g
Carbohydrate	24g
of which sugars	23g
Protein	0.9g
Salt	0.20g

Best before:  
30.12.2020



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# Nutrition claims

*Regulation 1924/2006 on nutrition and health claims made on foods*

•‘**nutrition claim**’ - any claim which states, suggests or implies that a food has particular beneficial nutritional properties due to the energy, its nutrients or other constituents

*High in fibre, source of calcium, full of protein, ...*

Example: *nutrition claim on fibre content*

## SOURCE OF FIBRE

A claim that a food is a source of fibre, and any claim likely to have the same meaning for the consumer, may only be made where the product contains at least 3 g of fibre per 100 g or at least 1,5 g of fibre per 100 kcal.

## HIGH FIBRE

A claim that a food is high in fibre, and any claim likely to have the same meaning for the consumer, may only be made where the product contains at least 6 g of fibre per 100 g or at least 3 g of fibre per 100 kcal.

Example: *nutrition claim on protein content*

## SOURCE OF PROTEIN

A claim that a food is a source of protein, and any claim likely to have the same meaning for the consumer, may only be made where at least 12 % of the energy value of the food is provided by protein.

## HIGH PROTEIN

A claim that a food is high in protein, and any claim likely to have the same meaning for the consumer, may only be made where at least 20 % of the energy value of the food is provided by protein.







## Health claims

- ‘**health claim**’ means any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health
  - *Good for your bones, heart healthy, supports immune system, ...*
- ‘reduction of disease risk claim’ means any health claim that states, suggests or implies that the consumption of a food category, a food or one of its constituents significantly reduces a risk factor in the development of a human disease.
  - *Oat beta-glucan has been shown to lower/reduce blood cholesterol. High cholesterol is a risk factor in the development of coronary heart disease, ...*



**"This product contains calcium which is good for your bones."**

Nutrition  
claim

Health  
claim

Both














## List of health claims

EU register of health claims, available online:  
[ec.europa.eu/food/safety/labelling\\_nutrition/claims/register/](http://ec.europa.eu/food/safety/labelling_nutrition/claims/register/)



Claim type 	Nutrient, substance, food or food category 	Claim 	Conditions of use of the claim / Restrictions of use / Reasons for non-authorisation 	Health relationship 	EFSA opinion reference / Journal reference 	Commission Regulation 	Status 	Entry ID 
<a href="#">Art.13(1)</a>	Beta-glucans	Beta-glucans contribute to the maintenance of normal blood cholesterol levels	The claim may be used only for food which contains at least 1 g of beta-glucans from oats, oat bran, barley, barley bran, or from mixtures of these sources per quantified portion. In order to bear the claim information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 3 g of beta-glucans from oats, oat bran, barley, barley bran, or from mixtures of these beta-glucans.	maintenance of normal blood cholesterol concentrations	<a href="#">2009.7(9).1254</a> <a href="#">2011.9(6).2207</a>	<a href="#">Commission Regulation (EU) 432/2012 of 16/05/2012</a>	Authorised	754, 755, 757, 801, 1236, 1299, 1465, 2934



100 g enthalten durchschnittlich / Prosječna hranjiva vrijednost u 100 g / Povprečna hranilna vrednost na 100 g:	
Energie / Energija / Energijska vrednost	227 kJ/54 kcal
Fett / Masti / Maščobe	0,9 g
- davon gesättigte Fettsäuren / od kojih zasićene masne kiseline / od tega nasićene maščobe	0,5 g
Kohlenhydrate / Ugljikohidrati / Ogljikovi hidrati	7,6 g
- davon Zucker / od kojih šećeri / od tega sladkorji	7,4 g
Ballaststoffe / Vlakna / Prehranske vlaknine	1,0 g
Eiweiß / Bjelančevine / Beljakovine	2,8 g
Salz / Sol / Sol	0,10 g
Vitamin D / Vitamin D / vitamin D	1,5 µg / 30 %*
Vitamin E / Vitamin E / vitamin E	4,8 mg / 40 %*
Vitamin C / Vitamin C / vitamin C	32 mg / 40 %*
Vitamin B6 / Vitamin B6 / vitamin B6	0,7 mg / 50 %*

\* % der Nährstoffbezugswerte / \* PU % - Preporučeni unos za prosječnu odraslu osobu (8400 kJ/2000 kcal) / PDV - priporočen dnevni vnos za odrasle



Calcium is needed for the maintenance of normal bones



This project has received funding from the European Union's Horizon 2020 research and innovation program

Calcium.....400 mg (50% RDI)



# Thank you for your attention!

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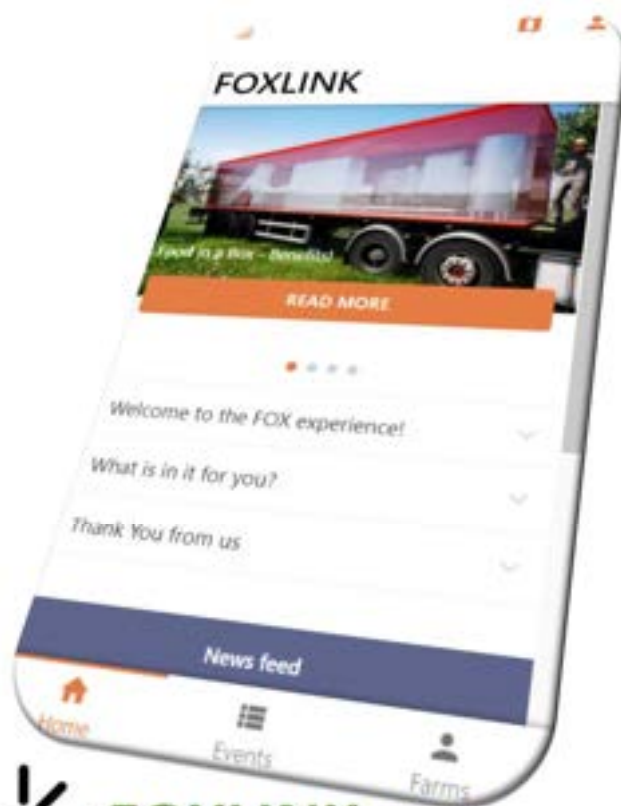


## FOXLINK APP



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817683.





**FOXLINK app**



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## Why this FOXLINK App?

- The FOXLINK App is a consumer engagement tool
- Engagement = all consumer interactions, except purchase (search, reviews, communication, ...)
- Build strong relations (loyalty) and shape product to consumer needs

### How it works

- Interested farmers collaborate with regional partners to provide content, organize visits, product sampling, etc.
- Regional partners upload and monitor content
- Consumers recruited approximately June 2021

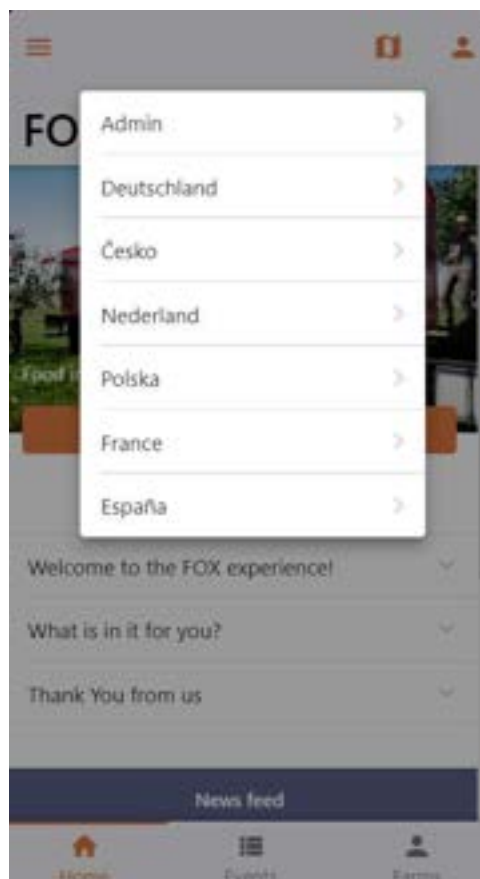
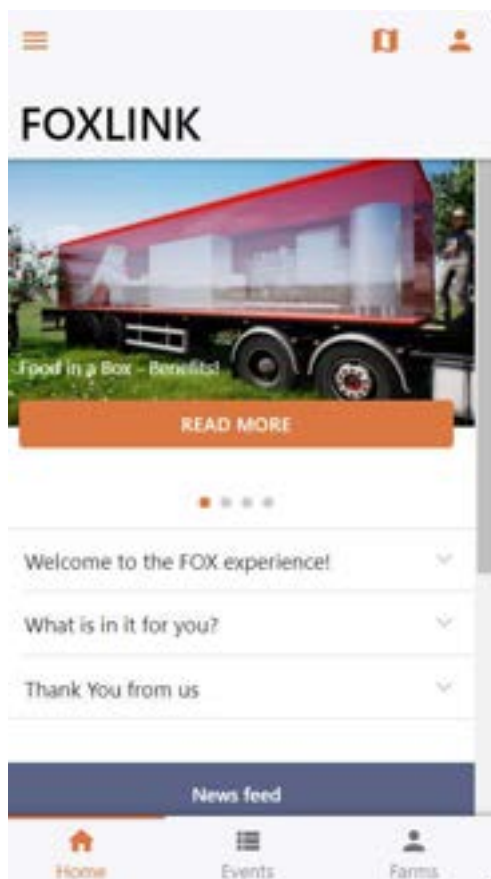
=> Farmers can improve customer relations with minor effort 😊



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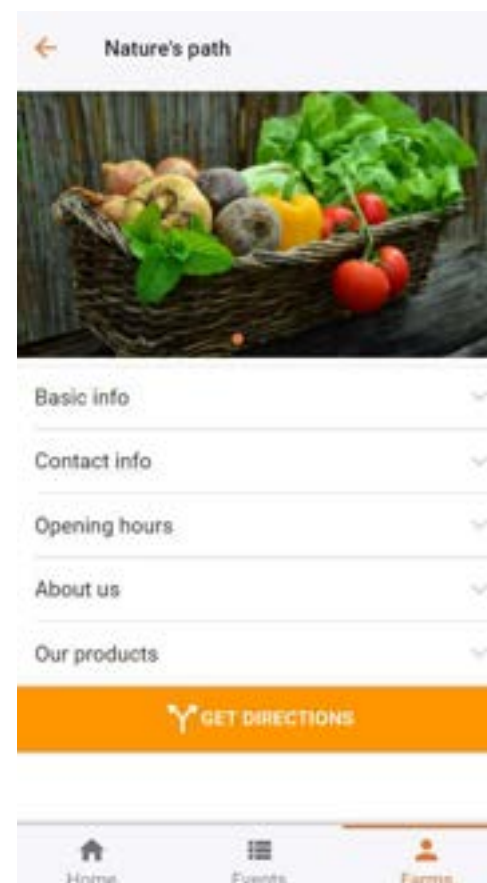
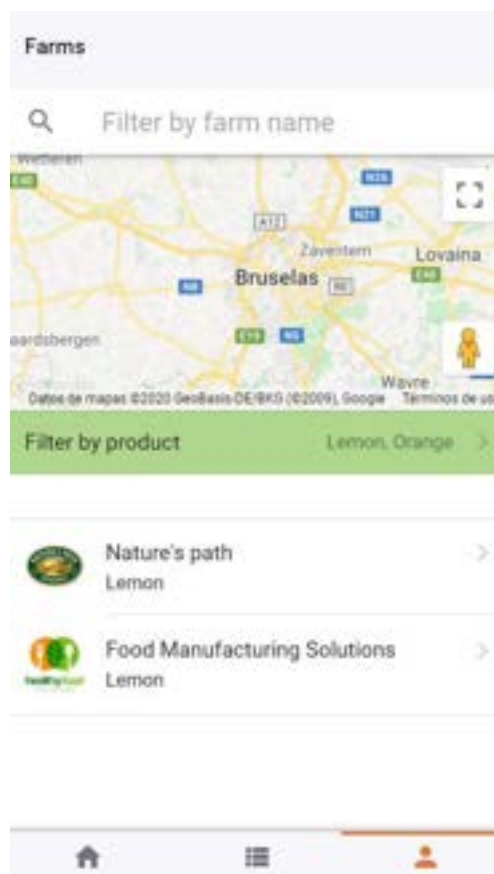
## FOXLINK app



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## FOXLINK app

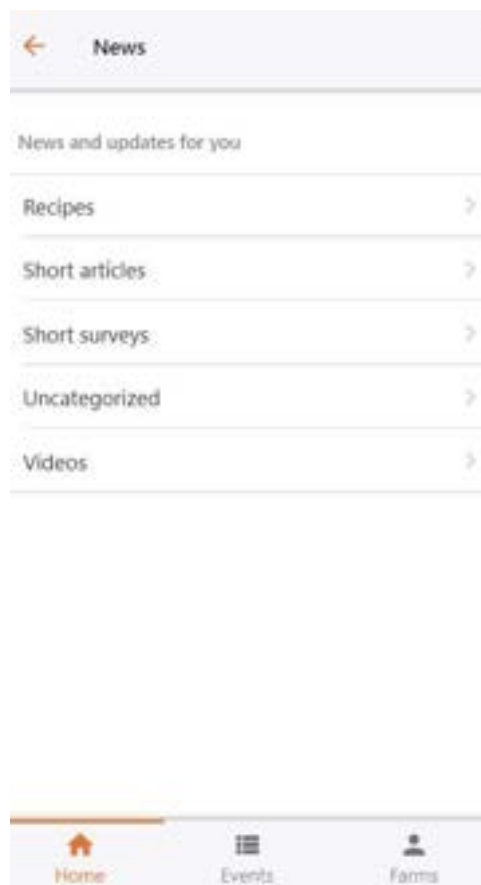
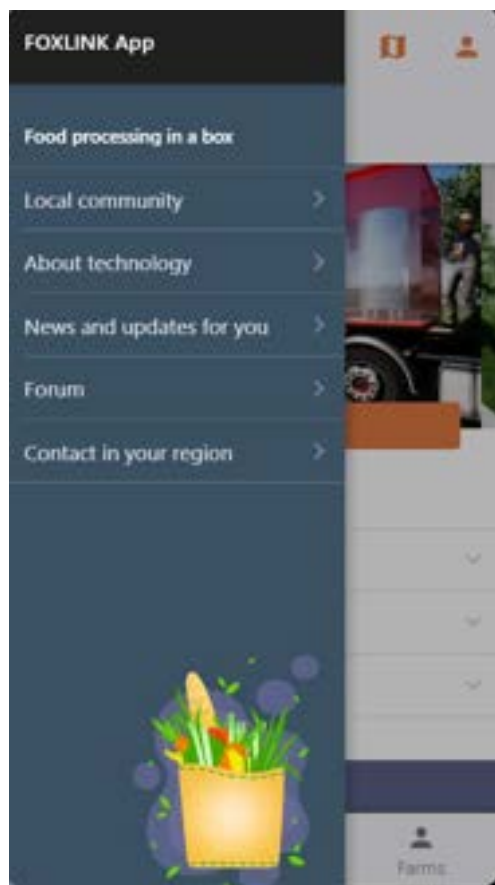


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## FOXLINK app



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## For more information

Food Circle	Technology	Country	Partner	Contact person	Email address
1	Low oxygen juice extraction and mils preservation	Lake Constance Region, <b>Germany</b>	<b>KOB</b>	Dr. Haibo XUAN (Project leader)	<a href="mailto:Haibo@kob-bavendorf.de">Haibo@kob-bavendorf.de</a>
2	Sustainable, low temperature drying technologies	Kuyaviab-Pomeranian Volvodeship, <b>Poland</b>	<b>WULS - SGGW</b>	Dr. Artur Wiktor	<a href="mailto:artur_wiktor@sggw.pl">artur_wiktor@sggw.pl</a>
		Central Bohemian, <b>Czech Republic</b>	<b>AGRO CR</b>	Katarzyna Samborska	<a href="mailto:katarzyna_samborska@sggw.pl">katarzyna_samborska@sggw.pl</a>
3	Innovative quality analyses and packaging for fresh fruit and vegetables mixes	Valencia region, <b>Spain</b>	<b>AINIA</b>	Leonor Pascual	<a href="mailto:lpascual@ainia.es">lpascual@ainia.es</a>
		Province Alpes Cote d'Azur, <b>France</b>	<b>CTCPA</b>	Manuel García	<a href="mailto:manuel.garcia@ainia.es">manuel.garcia@ainia.es</a>
4	Upcycling of plant-based food side streams by using mild processing	North-Brabant region, <b>The Netherlands</b>	<b>FOODTECH</b>	Stéphane George	<a href="mailto:sgeorge@ctcpa.org">sgeorge@ctcpa.org</a>
				Dr. Toine Hultermans	<a href="mailto:Toine@foodtechbrainport.com">Toine@foodtechbrainport.com</a>
				Dominique Aarts	<a href="mailto:Dominique@foodtechbrainport.com">Dominique@foodtechbrainport.com</a>



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## Wrap up

*So what?*



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# Feedback and closure of workshop



## What's next?

- Report of the results
- Development of business models
- Exploration of other pathways – such as operational groups
- European Interest Group of Small Scale Food Processors
- FOX Demonstration days



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<https://www.fox-foodprocessinginabox.eu/>



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# ***Many thanks for your attention!***

*Je vous remercie pour votre attention!*

*Bedankt voor uw aandacht!*

*Dziękujemy za udział!*

*¡Muchas gracias por vuestra atención!*

*Děkuji za pozornost!*

*Vielen Dank für Ihre Aufmerksamkeit!*



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# Questions?







Innovative local processing  
for a sustainable future

[fox-foodprocessinginabox.eu](http://fox-foodprocessinginabox.eu)  
[#FOXfoodinabox](https://twitter.com/FOXfoodinabox)