



FOX – Innovative down-scaled food processing in a box

European Stakeholder Workshop Political Exchange: proceedings and recommendations

D8.4

KU Leuven



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Authors	Tessa Avermaete, Peter Holl, Camila Massri, David Broz
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Contents

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Executive Summary

D8.4 is the report of the Workshop 3: FOX European Stakeholder Workshop Political Exchange: proceedings and recommendations, which is 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.

The other 2 workshops have been:

- Workshop 1 dealing with expectations and needs of regions and peer-to-peer learning to transform regional food systems beyond technical innovations (finalized and reported as D8.2)
- 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 (finalized and reported as D8.3).

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

Introduction

At April 2022, internal discussion among task 8.2 partners started, preparing the organisation and subtasks for the third workshop. We wanted to make use of both the experience and outcomes of the two previous workshops and take into account the insights of the FOX research. In that context, we first developed an online questionnaire for both the consortium partners and for the participants of the previous FOX workshops. The outcomes of this survey helped to frame the workshop, set the agenda and defined an appropriate setting and approach the right experts to invite for the workshop.

Given the Covid-measures at the moment of planning the workshop, we decide to aim for a face-to-face workshop and take into account the option of a plan B, in case measures are strengthened.

The Main aim of the workshop could be defined as follows:

- Get better insight in current policies practices (EU level and national level) dealing with innovative technologies and market opportunities for small vegetable and fruit processing groups
- Insights on policies that strengthen the diversity in the food market and decentralise food production in Europe through innovative technologies and market opportunities
- Facilitate peer-to-peer learning
- Identify bottlenecks in current policies practices
- Communication and outreach, so participants are also FOX ambassadors

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.



Participants have been grouped for interactive sessions of reflection and discussion according to their relevant background (government, cooperatives, food supply chains, farmers).

Key outcomes:

- to make FOX technologies viable and usable, cooperation between institutions, industry, and farmers is crucial. No single value meaning can meet the needs and worries of all actors
- legislation and public financial support are increasingly decisive to facilitate the adoption and development of new, more sustainable, value chains and technologies
- actors are increasingly interested in discovering new products that can help them become more resilient and gain competitive advantages over global markets
- the FOX approach can benefit the efficiency of the supply chain
- concerns whether such small-scale technologies can be scaled up to face the enormous amount of surplus and waste produced each year
- opportunity to create more resilient markets that are less reliable on global, and more uncertain dynamics

As a consortium, we are grateful for having such experts on board to critically reflect with us on our ambitions.



Final agenda

Wednesday 14 December 2022 – Irish College – Leuven

Location: Irish College, Jansenusstraat 1, 3000 Leuven

Parking Bethlehem – Redingenstraat 21, 3000 Leuven – code 6278#

Agenda

- 9.00 Coffee and Registration
- 9.15 Welcome by the organizing team : setting the scene – scope of the workshop
Tessa Avermaete (KU Leuven), Peter Holl (DIL)
- 9.30 Round Table
- 9.45 FOX in a nutshell – with visualization of container and focus on the business component Kerstin Pasch (project coordinator FOX, DIL)

Reflections from governments

- 10.00 Reflection 1: Legislation and facilitation of processing as means to enhance the position of the farmer / farmer cooperatives
Bianca Drepper - Flemish Government
- 10.15 Reflection 2: Research policies for agri related food research lines: voice of Europe
Patricia Lopez, DG AGRI
- 10.30 Q&A
- 10.50 Coffee break

Reflections on uptake of food processing innovations by cooperatives

- 11.10 Mobile food valorisation as a service
Bart Van Droogenbroeck (ZEROW project / ILVO)
- 11.25 Reflections from cooperatives – with key questions: why would farmers' cooperatives invest in processing? What are current bottlenecks and opportunities?
 - REO – Dominiek Keersebilck
 - BelOrta – Wim Hubrechts
 - VBT – Luc Vanoirbeek
- 11.45 Discussion

12.30 Lunch Break



Reflections on short food supply chains

13.45 Reflection 1: Short Food Supply Chains – opportunities and challenges

Nancy Meijers, Dutch Government

14:00 Reflection 2: Sustainability Agreements in the agrifood supply chain – new Common Agricultural Policy (CAP) for the period 2023-2027

Jan Willem Van der Schans

Uptake of food processing innovations by individual farmers

14.15 Reflections on uptake of food processing innovations by individual farmers

- Antoon Vanderstraeten (Farmers of Europe)
- Melanie Van Raaij (Boerenbond)
- Bledar Meta (COCOREADO ambassador)

14.45 Driving strategies and opportunities for FoodBanks to engage in food processing initiatives Jozef Mottar – Voedselbanken

15.00 Challenges & opportunities for the food processing industry (SME companies) if it comes to use sidestreams and/or more local products

Anne Terhorst – FoodBrainPort

15.15 Coffee Break

15.35 Policy recommendations for EU, national and local level - Guided discussion

16.35 Next steps FOX project – Kerstin Pasch (DIL)

16.45 Closing of the meeting - Tessa Avermaete and Peter Holl

Evening Program

A Belgian drink on the old market

Followed by dinner in the heart of Leuven (18u00) [TAFELROND](#) – Grote Markt 5 - Leuven

Joining for dinner: Peter Holl, Tessa Avermaete (V), Lorenzo Giacomella (V), Kerstin Pasch, Bianca Drepper (V), Nancy Meijers, Luc Vanoirbeek, Bart Van Droogenbroeck, Lisa Van den Bossche, Jan Willem Van der Schans, Antoon Vanderstraeten, Anne Terhorst, Bledar Meta



Report and key outcomes

European stakeholder workshop on food waste management and sustainable business opportunities.

KU Leuven, and partners for the FOX project bundled forces to organize a workshop on business opportunities and sustainable solutions to reduce and valorize food waste. The aim of the workshop was to discuss how policy can strengthen the diversity in the food market, and decentralise food production in Europe, through innovative technologies and market opportunities. The workshop took place on the 14th of December, at the Irish College in Leuven. 21 experts discussed the challenges and opportunities of flexible and mobile solutions to valorize food waste and give farmers and other actors a new perspective to gain value from fruits and vegetable surplus or waste. Tessa Avermaete (KU Leuven) and Peter Holl (DIL) hosted the workshop.

Background: According to recent estimates, almost one-third of the food that is produced globally ends up as waste. In Europe, almost 20% of the production does not reach the final consumer. This, other than exacerbating ecological degradation and resource depletion, produces economic costs for all actors involved in the sector and society. However, stepping away from negativism, food waste and surplus turns into an opportunity for rethinking, in a more resilient and sustainable mean, the way we produce, process and distribute food. Ergo, positive reinforcing solutions require multiple actors to join forces to release the inefficiencies of present food value chains and support those who are affected.

The European stakeholder workshop on food waste and valorization brought together diverse actors in the food system. At the Irish College in Leuven representatives of the academia, private companies, policymakers, non-governmental organizations, farmer representatives and The Food Bank were called to discuss about innovative solutions in the fields, as well as potential bottlenecks, uncertainties, and positive experiences. Such a dialogue served to shed light on the prospective pathways towards food systems that waste less and equally share the value that is generated through economic activities.

Several members of the FOX consortium attended the meeting. Furthermore, we welcomed representatives from producer organizations in Flanders, COPA-COGECA, Food Banks, DG AGRI, Task Force Korte Keten, as well as the Flemish government. Also, partners of related European projects [RUSTICA](#), [ZEROW](#) and [COCOREADO](#) attended the meeting.

The event opened with the presentation of the FOX project. FOX is a unique collaboration between universities, research institutions, industry and associations in 8 countries which aims to stimulate food waste recovery and short supply chain configurations for fruits and vegetables. The uniqueness of the project lies in the development of small-scale and mobile processing units applying innovative mild processing technologies. These units give farmers and other actors within the supply chain the chance to explore new sustainable business models at a regional level. To date, the technologies that are explored within FOX are suitable to produce innovative fruits and vegetable juices, dried products, and mixed fruit snacks, as well as identify optimal valorization routes for food surplus or waste.

However, to make these technologies viable and usable, cooperation between institutions, industry, and farmers is crucial. What emerges from the event, is that no single value meaning can meet the needs and worries of all actors. Valorization cannot have a single, all-inclusive, solution, but it rather needs to adapt to the specificities of the involved actors.



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Furthermore, legislation and public financial support are increasingly decisive to facilitate the adoption and development of new, more sustainable, value chains and technologies like the one studied in FOX. This is also the road traced by both national and European bodies that want to promote sustainable farming, as well as innovative and technological practices amongst other things.

Not only farmers but cooperatives and auctions might benefit from local and innovative solutions that deal with food surpluses. These actors are increasingly interested in discovering new products that can help them become more resilient and gain competitive advantages over global markets. However, this cannot be at the expense of social, and ecological dimensions. Again, the FOX approach does not only give the possibility to develop such new products, but it can also benefit the efficiency of the supply chain (e.g., processing locally and transporting high-value products instead of waste or surplus), creating new social value and reducing the environmental burdens of logistics.

Amongst the concerns raised during the discussion, is whether such small-scale technologies can be scaled up to face the enormous amount of surplus and waste produced each year. In Belgium alone, about 20 000 tons of apples are processed into juice from surplus from auctions. This makes it even more important to re-think the use of such small-scale technologies, which would struggle to fit into the traditional mechanisms of the agri-food chain. At the same time, they could be used to find great opportunities in the creation of new markets, such as with local or monovarietal products.

Furthermore, some doubts have been raised about the suitability and readiness of conventional distribution channels to sell high-value, niche food products in an efficient way. Therefore, the development of a concise marketing campaign and communication strategy on the main selling points of these products will be imperative for a successful product launch.

The event concluded with some reflections from the multi-layer profiles of experts about the opportunities and suggestions for further technological development and policy action. What is clear is the potential of the FOX approach to generate new value for farmers, as well as for all other players in the agri-food supply network. We face the possibility to create more resilient markets that are less reliable on global, and more uncertain dynamics. At the same time, healthier and more sustainable products could be offered to consumers.

To exploit these opportunities, however, the experts agreed on the need for simplification to access economic funds, homogenization of rules within countries and throughout Europe and more efficient distribution of resources that currently risk to over-emphasize earlier technological development, while restraining middle-phase investigations, follow-up research, and market implementation.

The event was a key moment for multi-stakeholder dialogue to promote knowledge sharing and constructive criticism at the multinational level.

KU Leuven and all the FOX partners express their gratitude to all the experts participating at this European stakeholder workshop.



Annex 1: Invitation

INVITATION WORKSHOP - 14 December – Leuven

We kindly invite you to participate in the European workshop on how policy can strengthen the diversity in the food market, and decentralise food production in Europe, through innovative technologies and market opportunities. The workshop is organized in the framework of the [FOX](#) project, which is a European project that FOX is about on-farm processing and sales of fruit and vegetables. A [short video](#) summarizes the objectives of the project. We already organized two online FOX workshops in the past, whereby a first workshop focused on the exchange of best practices and peer-to-peer learning and a second one focused on how to speed-up small-scale food processing innovations in Europe. **For this third workshop, the focus is on policies that hinder and enable innovations.** The workshop will take place on **Wednesday 14/12, at the Irish College in Leuven**. It will be a full day workshop. If there is interest among the participants, we will organize a field visit on Thursday.

Before the workshop, we will schedule a bilateral call with all participants, to assure that expectations are clear and to optimally prepare the workshop. After the calls with the participants, we will prepare a detailed agenda and provide you with the bios of all participants. This should all contribute to a dynamic and interesting dialogue during the workshop. You find a first draft overview for the agenda below this email.

We aim for a small group of participants with representation of national policy makers, small scale processing farmers, food industry and research.

Don't hesitate to contact us if you have any further questions on the invitation,

Looking forward to hearing from you,

Tessa



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Annex 2: Participants

1. Peter Holl – Deutsches Institut für Lebensmitteltechnik e.V. (DIL)
2. Tessa Avermaete – KU Leuven
3. Lorenzo Giacomella – KU Leuven
4. Kerstin Pasch – Deutsches Institut für Lebensmitteltechnik e.V. (DIL)
5. Bianca Drepper – Flemish Government
6. Nancy Meijers - Dutch government
7. Luc Vanoirbeek – VBT / COPA COGECA
8. Melanie Van Raaij - Boerenbond / ZEROW
9. Bart Van Droogenbroeck - ILVO / ZEROW
10. Lisa Van den Bossche – ILVO / ZEROW
11. Jan Willem Van der Schans – Taskforce Korte Keten
12. Dominiek Keersebilck - REO Veiling
13. Patricia Lopez-Blanco – DG AGRI
14. Wim Hubrechts – BelOrta
15. Antoon Vanderstraeten – journalist Farmers of Europe
16. Liesbet Vranken – KU Leuven
17. Anne Terhorst – FoodTechBrainport
18. Bledar Meta – COCOREADO ambassador
19. Tim Rowe – KU Leuven



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FOX

BEST PRACTICES FOR INNOVATION WORKSHOP WITH EUROPEAN FARMERS



FOX Workshop #3

Getting to know the participants

Irish College - Leuven (Belgium), 14th of December 2022

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PETER HOLL

DEUTSCHES INSTITUT FÜR
LEBENSMITTELTECHNIK E.V. (DIL)
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

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.

TESSA AVERMAETE

KU LEUVEN
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT TESSA

- Project manager at the division of bio-economics at KU 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.

PROJECTS

COCOREADO – www.cocoreado.eu

RUSTICA - <https://rusticaproject.eu>

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

LORENZO GIACOMELLA

KU LEUVEN
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT LORENZO

- Ph.D. student at the Division of Bioeconomics at KU Leuven
- Member of the Society-Environment Interactions (SEI) research group

HIS WORK

Lorenzo Giacomella is a Ph.D. student at the Division of Bioeconomics at KU Leuven and a member of the Society-Environment Interactions (SEI) research group. He holds an MSc in Green Economy and Sustainability at the University of Ferrara and a BA in Economics, International Trade, and Financial Markets at the University of Trieste. He started his career as a researcher at Tecnalia Research and Innovation Center in Derio (Spain), investigating economic life cycle thinking methodologies (TEA and LCC).

In his current research, he is looking at the environmental, social, and economic impacts of innovative food and food waste processing techniques relying on life-cycle perspectives and methods.

PROJECTS

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

KERSTIN PASCH

DEUTSCHES INSTITUT FÜR
LEBENSMITTELTECHNIK E.V. (DIL)
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT KERSTIN

Since 2009 Kerstin Pasch is heading the DIL Office Brussels and leading the DIL Platform Networks. In both position she is responsible for European and international fundraising (Horizon Europe, Horizon 2020, FP7, ERA-Nets, others), project management and (legal and financial) administration of public funded European projects as well as European and international network building towards research partners and political decision makers. Furthermore, Kerstin Pasch and her team sets up and runs the DIL Innovation Hub in Quakenbrück and coordinates DIL activities as partner in the EIT Food. Kerstin Pasch is member of the European FOODforce research network.

Kerstin Pasch studied agricultural biology at the University of Hohenheim and subsequently completed her doctorate in the field of plant protection at the University of Bonn, both in Germany. From 2006-2009 she headed the EU liaison office in Brussels of two research associations (GFP / German plant breeders, FEI / German food industry).

PROJECTS

H2020 – FOX: Innovative down-scaled food processing in a box (coordination)

Horizon Europe – FOSTER: Fostering food system transformation by knowledge and innovation for the European Research Area (coordination)

H2020 - Green Deal "E" - "ZERO-W"; Systemic Innovations Towards a Zero Food Waste Supply Chain

H2020 – COMFOCUS: Starting Community to give trans-national access to consumer science data for research purpose

Other initiatives and projects of interest from DIL

- LI Food (by regional funding authority): Food initiative in Lower Saxony; support of SMEs in innovation processes and transfer of knowledge and technology to them.
- DIL Innovation Hub running various activities to support food tech start-ups (dil-innovationhub.de)
- H2020 – RADIANT: From agrobiodiversity to dynamic value chains
- ERA-Net – UpWaste: Transformation of waste to food and non-food products (microalgae, insects)
- H2020 – TRANSIT: Development of a small scale Ultrasound unit followed by identification of strategies to increase pathogen inactivation - Transit Marie Curie Actions

MILENA ZDRAVKOVIC

DEUTSCHES INSTITUT FÜR
LEBENSMITTELTECHNIK E.V. (DIL)
GERMANY



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT MILENA

- Former research associate at Agricultural Faculty, University of Belgrade
- Research associate at DIL e.V. in the Advanced Technologies Department.

HER WORK

Since 2019 Milena Zdravkovic is employed as research associate at DIL e.V. in the Advanced Technologies Department. Within FOX project, she was managing design, building and testing of the mobile fruit and vegetable processing unit (FOX-unit). In this department she also had opportunity to work on other scientific and commercial projects, dealing with application of novel food processing technologies such as PEF, HPP, UHPH etc.

From 2017-2019 she was working as research associate at Agricultural Faculty, University of Belgrade in the department for Food Fermentation and Preservation, where she obtained her Bachelor's degree. Milena Zdravkovic finalised her Masters studies at KU Leuven, under BIFTEC study program. She also worked as R&D technologist at truffle start-up firm and craft brewery Dogma in Serbia.

BIANCA DREPPER

FLEMISH GOVERNMENT
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT BIANCA

- Sectoral advisor for fruit production at the Flemish Department of Agriculture and Fisheries, Division Policy Co-ordination and Environment.
- Coordinator of Erasmus+ Project on Networking and Education around Food waste reduction at household and community levels.

HER WORK

Dr. ir. Bianca Drepper is the sectoral advisor for fruit production at the Flemish Department of Agriculture and Fisheries, Division Policy Co-ordination and Environment. Her role is to follow up on research and development in the Flemish Fruit sector, as well as market situations and the European legislation regarding fruits and vegetables. This includes possible support instruments for the use and purchase of mobile transformation units.

Prior to this position she conducted a doctoral research at the KU Leuven on the effects of climate change on the apple and pear production in Belgium. Therein the focus was on temporal shifts of flowering dates of apple and pear trees and the evolution of spring frost risks, as well as frost damage mitigation.

Besides this role she also coordinates the Belgian part of an Erasmus+ Project on Networking and Education around Food waste reduction at household and community levels.

NANCY MEIJERS

DUCTH GOVERNMENT
NETHERLANDS



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT NANCY

- Coordinating policy advisor at the ministry of LNV - agriculture, nature and fisheries - of the Dutch government
- Involved in the development of the City Deal Healthy and Sustainable food environments, signed in 2020 by 8 cities, three ministries and several institutes

HER WORK

her email

website

LUC VANOIRBEEK

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



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants



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 WORK

Luc Vanoirbeek is COPA-COGECA Chairman of the Working Party on Fruit and Vegetables. Luc is also Secretary General Verbond Belgische Tuinbouwcoöperaties (Belgian cooperative fruit and vegetable). VBT represents and defends, both nationally and internationally, the interests of Belgian producer cooperatives in the fruit and vegetable sector. Where necessary VBT works in conjunction with other organisations, federations or relevant stakeholders. VBT also offers its members a platform for consultation and exchange of views. Further, VBT provides sector-relevant information to its members and may, in specific domains, act as service provider.

MELANIE VAN RAAIJ

BOERENBOND / ZEROW
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT MELANIE

- Consultant Strategy, Sales and Organisation at Boerenbond since 2018.
- Participation in waste valorisation projects: Interreg NWE Food Heroes, Interreg Flanders-Netherlands Food from Food, H2020 ZeroW.
- Master in Business Economics, specialisation in SMEs and Entrepreneurship.
- Background as Category Manager Local Products at Delhaize and Product Developer at Greenyard Fresh.

PROJECTS

- NWE Food Heroes
- Flanders-Netherlands Food from Food
- ZEROW

BART VAN DROOGENBROECK

ILVO/ZEROW
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT BART

- Post-doc at the Flemish Institute of Biotechnology (VIB)
- Project manager Technology and Food Science at Flanders research Institute for Agriculture, Fisheries and FOOD (ILVO)
- Project manager ZEROW

HIS WORK

Bart Van Droogenbroeck graduated in 1999 as Bio-Engineer with great distinction at Ghent University and obtained his PhD in Applied Biological Sciences in 2004 from that same university. From 2004 'till 2007 he has worked as a post-doc at the Flemish Institute of Biotechnology (VIB). Since 2007 he joined the Technology & Food Science Unit at ILVO.

Here, he is involved in the conception and coordination of research projects at the regional, national and EU level in the field of sustainable agri-food production, bio-economy, circular economy and plant biotechnology, with a special attention towards the optimal use of plant biomass, and a focus on nutritive, healthy (and bioactive) food components.

LISA VAN DEN BOSSCHE

SCIENTIFIC RESEARCHER AT ILVO
ILVO / ZEROW
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT LISA

Lisa has a master in experimental psychology and General Business Management. She worked in the fast moving consumer goods industry for 10 years in sales and supply chain functions. Triggered by the huge ecological challenges we face she decided to redirect her career to contribute to the solution. She worked as a freelance consultant for sustainable food related start-ups for four years when the opportunity came to go back to her first love, research. At ILVO she now works on two European projects. ZEROW focuses on reducing foodwaste via 9 innovative living labs that target different parts of the supply chain. ILVO supports these living labs in terms of systemic thinking and efficient upscaling strategies and capacity building for different regions. COCOREADO aims to reconnect consumers and farmers while improving the position of the farmer in the value chain. ILVO ensures that the project partners share the same language by developing shared frameworks and that the solutions are developed in a co-creative manner.

PROJECTS

- ZEROW
- COREADO – www.cocoreado.eu

JAN WILLEM VAN DER SCHANS

STASKFORCE KORTE KETEN
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT JAN WILLEM

- Member of board of several urban agriculture start-ups
- Co-founder of the Rotterdam Food Council,
- Developer of a farm accelerator programme

HIS WORK

Jan Willem van der Schans has a background in business studies from Erasmus University Rotterdam. He graduated on the regulation of international commodity supply chains (coffee) and did his PhD research on user self-management of common property resources (catch fishing, salmon farming). In recent years he focussed on innovative food supply chains, farming systems, city region food systems, and new business models for (peri)urban farmers. One objective is to identify, quantify and validate viable business models for short food supply chains. Another objective is to identify, quantify and validate the ecological and social impact of short food supply chains and urban food production.

Jan Willem has been active in the board of several urban agriculture start-ups such as GROWx, a vertical farm in Amsterdam, HotspotHutspot, a popup social restaurant in Rotterdam, and Rotterdamse Munt, a community garden in Rotterdam supplying organically grown herbal tea mixes. He was co-founder of the Rotterdam Food Council, a network to promote urban food policies for the Rotterdam city region. Jan Willem developed and operates a farm accelerator programme to support urban and peri urban farmers, small scale food processors and distributors in developing new business propositions.

Janwillemvanderschans@outlook.com

DOMINIEK KEERSEBILCK

REO VEILING
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT DOMINIEK

- Commercial manager at REO Veiling

HIS WORK

Dominiek Keersebilck is commercial manager at REO Veiling since 2007. The REO Veiling is an active member of the cooperative joint ventures VBT (Federation of Belgian Horticulture Cooperatives) and LAVA (Logistics and Administrative Auction Association).

Working together within cooperatives is an important factor in making Belgium a committed partner in the international market for fresh produce. The REO Veiling also works together with various approved research centres and like-minded organisations.

These types of joint venture extend beyond national borders. For example, the REO Veiling works together with the French cooperative UGPBAN. France is an important sales market for the REO Veiling, and the joint venture is opening up new prospects for more sales opportunities for our products in France.

PATRICIA LOPEZ-BLANCO

EUROPEAN COMMISSION - DG AGRI
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT PATRICIA

- Research Programme Officer at the European Commission Directorate General for Agriculture (DG AGRI).

HER WORK

MSc LOPEZ BLANCO Ana Patricia is a Research Programme Officer at the European Commission Directorate General for Agriculture (DG AGRI).

She contributes to the development and implementation of DG AGRI's research and innovation strategy within the framework of Horizon Europe, in particular on food and food systems.

In recent years she has developed relevant scientific coordination work on sustainability at her previous occupation in the the European Federation of Food and Drink Producers.

WIM HUBRECHTS

BELORTA
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT WIM

- Coordinator sustainability at BelOrta

HIS WORK

Wim Hubrechts is coordinator sustainability at the cooperative BelOrta since 2020. BelOrta is the largest cooperative auction in Europe. It is a hive of activity, handling up to 4,000 tons of vegetables on an auction day. The more than 950 manufacturers in the cooperative provide an extensive selection of fruit and vegetables, locally grown and so deliciously fresh, that ranges from the traditional favourites to the most innovative cultivars and varieties.

Wim started at BelOrta in 2015. Since then and until today, he is also responsible for the certifications of the producers.

Realised a sustainable report for 2021 with targets according to the GRI-standard. Before 2015, he was site manager of the agriculture research centre Praktijkpunt Landbouw Vlaams-Brabant.

ANTOON VANDERSTRAETEN

AGRICULTURAL JOURNALIST AND CONTENT
CREATOR - FARMERS OF EUROPE
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT ANTOON

Antoon Vanderstraeten (43) is an agricultural journalist and content creator. He works as editor in chief for Hectares (digital magazine for young Belgian farmers), editor for Women in Ag (digital international magazine for women in the agricultural sector) and is active with Farmers of Europe, a digital project for young European farmers. Next to editorial work and content creation he is also a small scale farmer, growing vegetables and flowers for direct marketing through regenerative practices.

Antoon is active as an ambassador for the EU funded project Cocoreado. Cocoreado is a project designed to rebalance the position of the farmer as an individual actor, as a key player in innovative food supply chains, and as a supplier for public procurement. He is also an external expert for the Rustica project. He runs a communication agency which specializes in bridging the communication gap between the academic world and the farmers field with his partner.

PROJECTS

- Farmers of Europe
- OCOREADO – www.cocoreado.eu
- RUSTICA - <https://rusticaproject.eu>

a.vanderstraeten@gmail.com

LIESBET VRANKEN

KU LEUVEN
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT LIESBET

Liesbet Vranken is Associate Professor in Society-Environment Interactions. Her main research interest lies in analysing how one can realise behavioural adjustments of natural resource users so that one can develop strategies and policies to simultaneously increase social welfare and the sustainable use of natural resources. She has a general interest in all bio-based economic sectors, but mainly focuses on food consumers and (agricultural) land users. She is WP leader in EU H2020 projects LIFT and FOX. She is project coordinator of the RUSTICA project.

HER PROJECTS

Liesbet leads The Society-Environment Interactions Research Group, a team that deals with the scarcity of land as a resource for meeting the increasing demand for land-based functions, goods and services. We believe it is vital to combine insights on the provision as well as the consumption of these goods and services. We therefore aim to improve land use (configurations) so that an optimal bundle of services is provided, to guide consumers of food and land towards more sustainable behaviours. We thereby give special attention to the decision making processes of land managers like farmers and foresters, as well as end users like recreationists and food consumers. This requires an understanding of their knowledge, preferences and attitudes as well as testing the potential impact of public and private instruments that can catalyse a behavioural shift. The team – composed of researchers from diverse backgrounds such as economics, environmental sciences, bioscience engineering and ecology – believes that an interdisciplinary approach is more than ever needed to decrease pressure on resources while simultaneously meeting societal needs. Therefore, it integrates different quantitative methods from various disciplines such as agricultural and environmental economics, experimental economics, econometrics, geography, life cycle analysis, spatial analysis.

ANNE TERHORST

FOODTECHBRAINPORT
NETHERLANDS



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT ANNE

- Business developer at FOODTECHBRAINPORT
- Member of a youth agri-food leadership network

HER WORK

As business developer at Food Tech Brainport I am responsible for projects within the themes: '100 % valorisation' and 'longer fresh food'. We support start-ups and SME companies with scaling up their innovations. We do that by offering an unique food processing facility with innovative, mild processing technologies (pulsed electric field, high pressure pasteurisation, membrane filtration, agitated thin film drying, fermentation, radio magnetic freezing, juice production etc). And we connect the food processing industry to innovative technologies, talent, research and funding. Together we work on 'without waste, healthy food for everyone'.

With my background in nutrition and healthy food innovation, I look at valuable compounds and see many possibilities for the valorisation of side streams. I am of the view that collaboration and making crossovers with other industries (such as biobased) is important to create a more sustainable food system.

Beside my work at Food Tech Brainport, I am also involved in a youth agri-food leadership network in which we work towards a more regenerative food system. Therefore I can also bring in the perspective of young farmers, food professional and young policymakers

BLEDAR META

COCOREADO AMBASSADOR
ALBANIA



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT BLEDAR

- Farmer with arab crops and tourism
- Owner of Fruit Layer

HIS WORK

Bledar Meta holds a Master of Science degree in “Rural Development and Agribusiness” from Szent István University in Budapest, Hungary, also a professional master’s degree in “EU Business Law” from the University of Tirana, Faculty of Law. He has completed several trainings in areas such as Entrepreneurship Management, Leadership, and Renewable Energy, in Germany, Austria and Hungary.

He has around 10 years of work experience, in the private sector in Finance-Accounting, Business Management, Customer Service and Marketing, Business Consulting, Business Development Projects, Training and Business Plans, Consulting and Mentoring of new Businesses (Start-ups).

Mr. Meta is also a Business Trainer and Coach licensed by CEFE International, to conduct training and coaching through CEFE methodology, (The Competency based Economies through Formation of Entrepreneurs). He is the co-author of a scientific paper published in DETUROPE on the topic: “The potentials of rural tourism in developing rural areas in Albania”.

During the last three years he has been working in several projects of development of “Start-ups” in different areas in Albania, supported by GIZ, World Vision, Terre des hommes, UNICEF, etc.

Currently he leads an NGO focusing on rural development and agriculture with participation and empowerment of youth.



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT JEF

- Former General Director of INZA
- Former member of the board of Milcobel
- Delegated manager of Belgische Federatie van Voedselbanken, Food Banks Belgium.

HIS WORK

Jef Mottar obtained a degree in bio-engineer chemistry and applied biological sciences, at the University of Ghent. From 1960-2016 he was general director of INZA and member of the board of Milcobel. Milcobel specialises in research & development, production, sales & marketing and customer support of dairy ingredients for the global food industry.

Milcobel is an important Belgian dairy cooperative that collects milk from our dairy farms and processes it into quality dairy products such as consumer cheese, ingredient cheese, milk powder, ice cream, butter, cream and whey. Since 2016, Jef is delegated manager of Belgische Federatie van Voedselbanken, Food Banks Belgium.

TIM ROWE

KU LEUVEN
BELGIUM



FOX BEST PRACTICES FOR INNOVATION WORKSHOP



Leuven (Belgium) - 14th December 2022

Getting to know the participants

ABOUT TIM

- PhD student at the division of bio-economics, KU Leuven
-
- Master's degree in Environmental Technology

HIS WORK

FOX

BEST PRACTICES FOR INNOVATION EUROPEAN WORKSHOPS



Workshop #1:

24th of November 2020 8:00 - 12.30 (online)

Workshop #2:

27th of November 2020 8:00 - 12.30 (online)

Workshop #3:

14th of December 2022 9:00 - 18:00 (Leuven)



Annex 3: Presentations



Research policies for agri related food research lines

Patricia LOPEZ

DG AGRI Unit F2: Research & Innovation

14 December 2022

What has been achieved so far?



- ✓ **315 projects** – 1,9 billion € under Horizon 2020
- ✓ **190 H2020 multi-actor projects** (€1 billion), including **29** thematic networks; **50%** newcomers
- ✓ **27 Member States** implementing the EIP; over **2500** out of 3200 **OGs** already running
- ✓ A growing and thriving **network** and increasing volume of **practice-oriented knowledge and innovations**

Fairer and more sustainable food chains

Some Horizon project examples:



Innovation in agriculture under Horizon 2020 and Horizon Europe promotes holistic and **environmentally sustainable food production systems** that aim to **rebalance power** of farmers in the value chain to minimise food waste and increase sustainability

What is the current plan for the future?



Around 9 billion € food, bioeconomy, natural resources, agriculture and environment

Cluster 6 cross-cutting expected impacts

Destination 1



Destination 5



Destination 2



Destination 3

Destination 4



Destination 6



Destination 7



Environmental
Observation

Biodiversity
and Natural Resources

Agriculture, Forestry
and Rural Areas

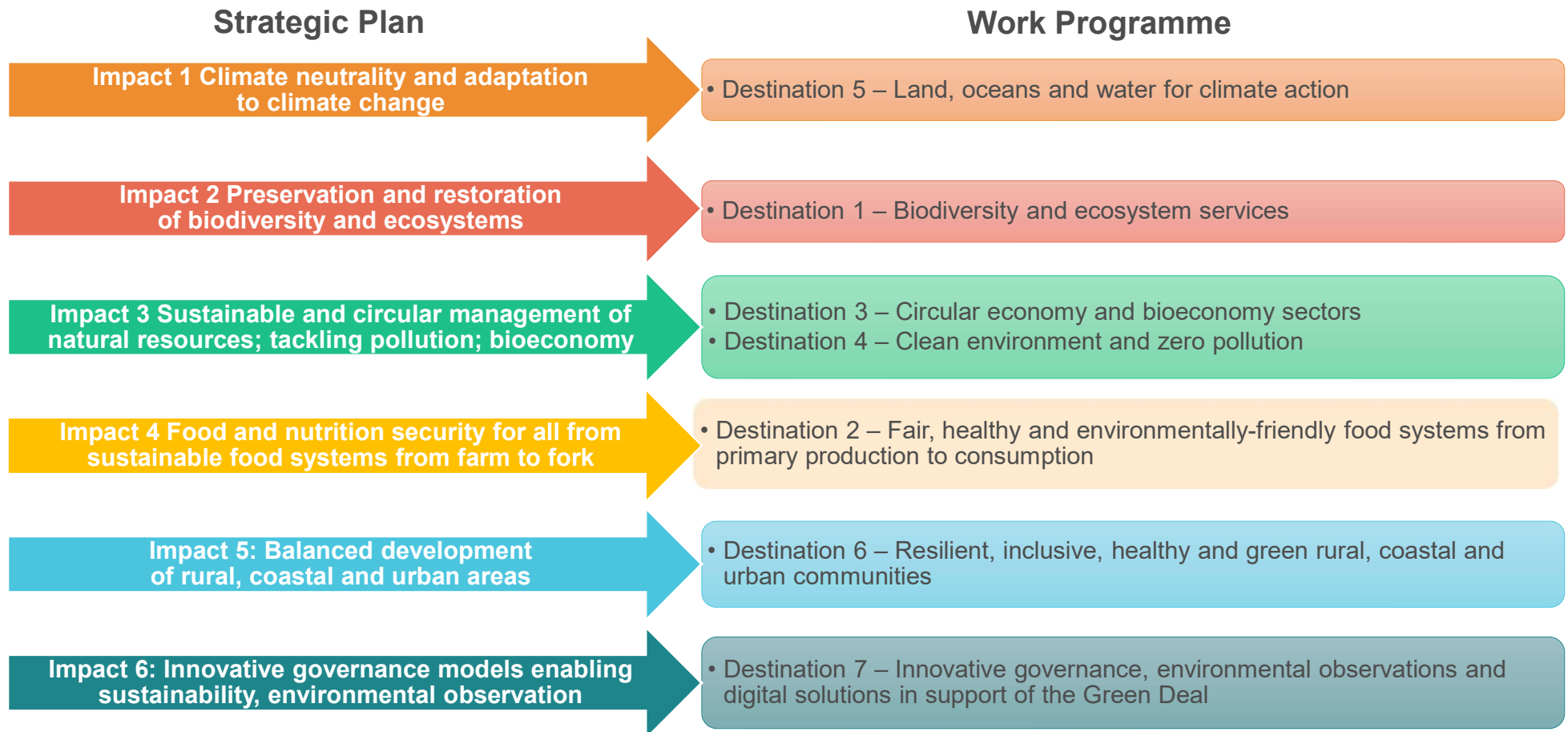
Seas, Oceans
and Inland Waters

Food Systems

Bio-based innovation
systems in the EU
Bioeconomy

Circular Systems

Expected impacts → destinations





Long-term strategic approach to EU agricultural R&I...



**FROM FARM
TO FORK**



**Agriculture, Forestry
and Rural Areas**

Key R&I priorities

Managing land, **soil**,
water and nutrients
in sustainable ways

Achieving **climate**
neutrality and adapting
to climate change
(Destination 5)

Maximising the use of the wide
range of **ecosystem services** and
reversing biodiversity loss
(Destination 1)

Unlocking the potential
of **agroecology** and
fostering **organic**
farming



Key R&I priorities

Reducing their dependency on **pesticides, antimicrobials** and excess **fertilization**

Improving **plant and animal health and welfare**

Increasing **EU-grown plant proteins**

Boosting **digital and data technologies** will be also key enablers



Key R&I priorities

Supporting development of enabling policy, business models and market conditions

Fostering **Agriculture Knowledge and Innovation Systems (AKIS)** (Destination 7)



Work Programme 2023-2024

WP drafts were published on 28/11

https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/horizon-europe-work-programmes_en

Expected adoption by 6 December



Encouraging synergies through partnerships – Work Programme 2023-2024



Accelerating farming systems transitions:
agroecology living labs and research infrastructures



Safe and sustainable food systems
for people, planet and climate



Agriculture of data



Animals and health

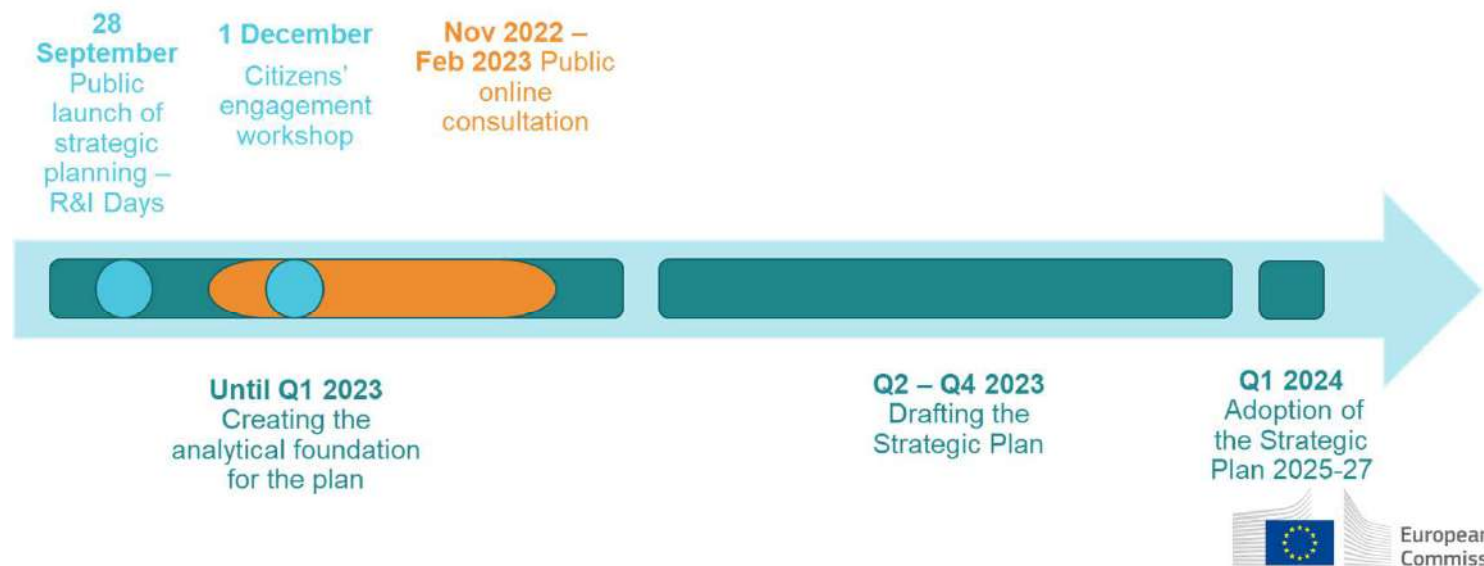
Agri food topics under new Work Programme

- Sustainable organic food innovation labs: reinforcing the entire value chain
- Advancing analytical capacity and tools to support EU agri-food policies post 2027
- Fostering resilient European food systems in a changing world

Towards 25-27 Strategic Plan

- The **SP** sets out the **policy priorities** for Horizon Europe, as well as **expected impacts**. It is the basis for the Work Programmes covering Pillar II of Horizon Europe, **including Cluster 6**.
- It aims to promote **consistency** between the WPs, EU and national priorities and to achieve **continuity** and **coherence** of funding measures **beyond the duration of WPs**.

The [Horizon Europe Strategic Plan 2021-2024](#) was adopted in March 2021



Thank you



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Slide xx: **element concerned**, source: **e.g. Fotolia.com**; Slide xx: **element concerned**, source: **e.g. iStock.com**





FOX in a nutshell – with visualization of container and focus on the business component –

Kerstin Pasch / Milena Zdravkovic (DIL)

FOX European Workshop

14 December 2022, Leuven



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



Agenda

- FOX intro
- FOX container Food Circle 1
 - Technical features
 - some business components





EU Project FOX



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



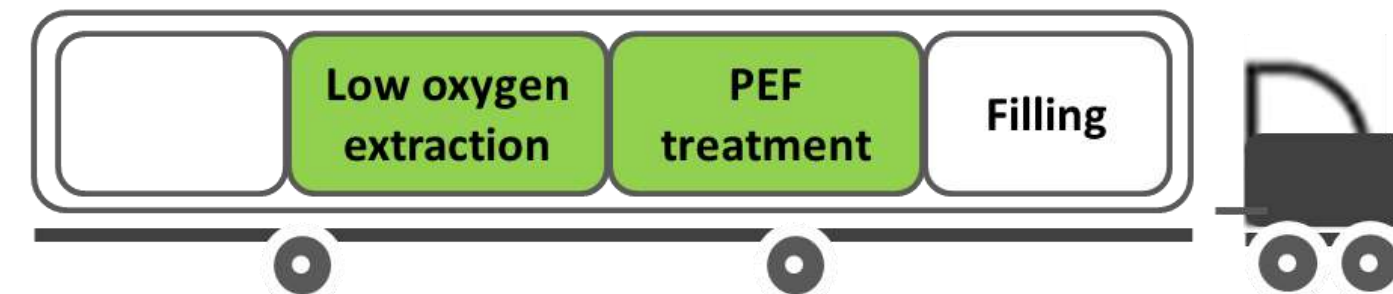
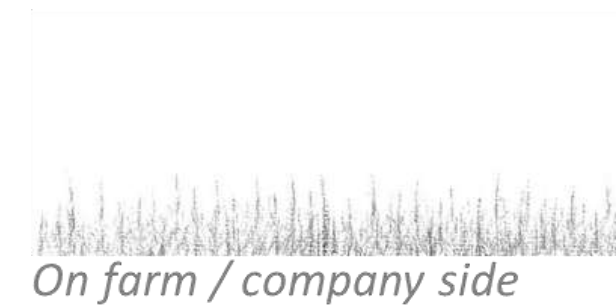
Mobile and modular solutions

What is „in the box“....?

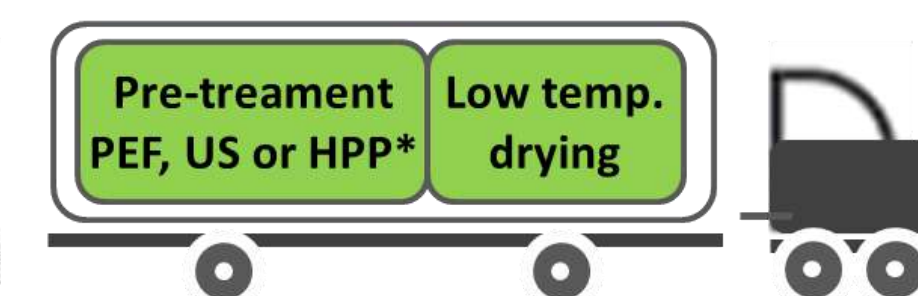
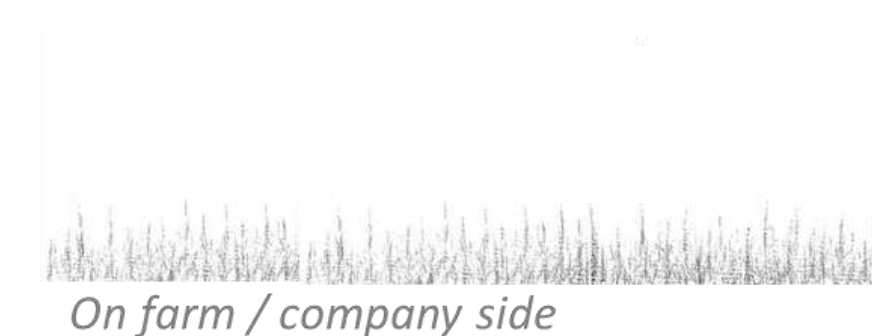
Processing steps

harvesting Sorting/ selecting Washing/ dipping Pre-treatment Preserving step Packaging

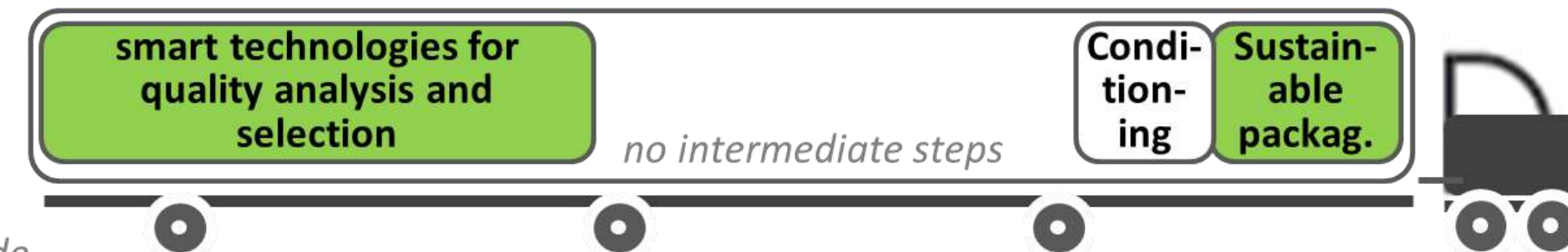
1. Mild processing



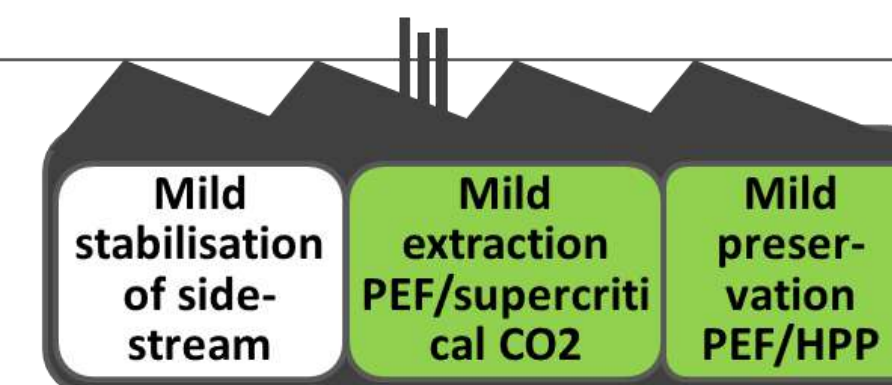
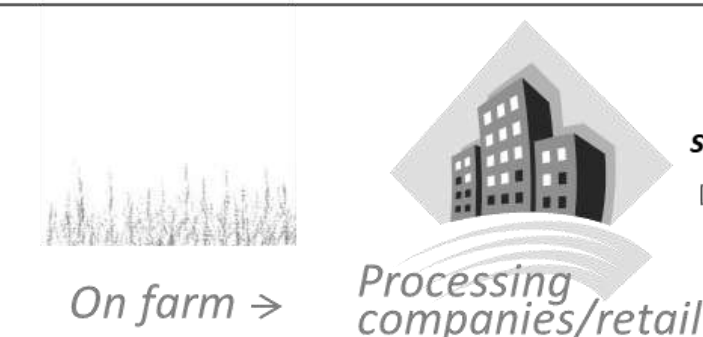
2. Mild drying



3. Analysis, conditioning and packaging



4. Upcycling plant side-streams



Markets, retail and e-commerce



Modul in unit

Innovative module in unit

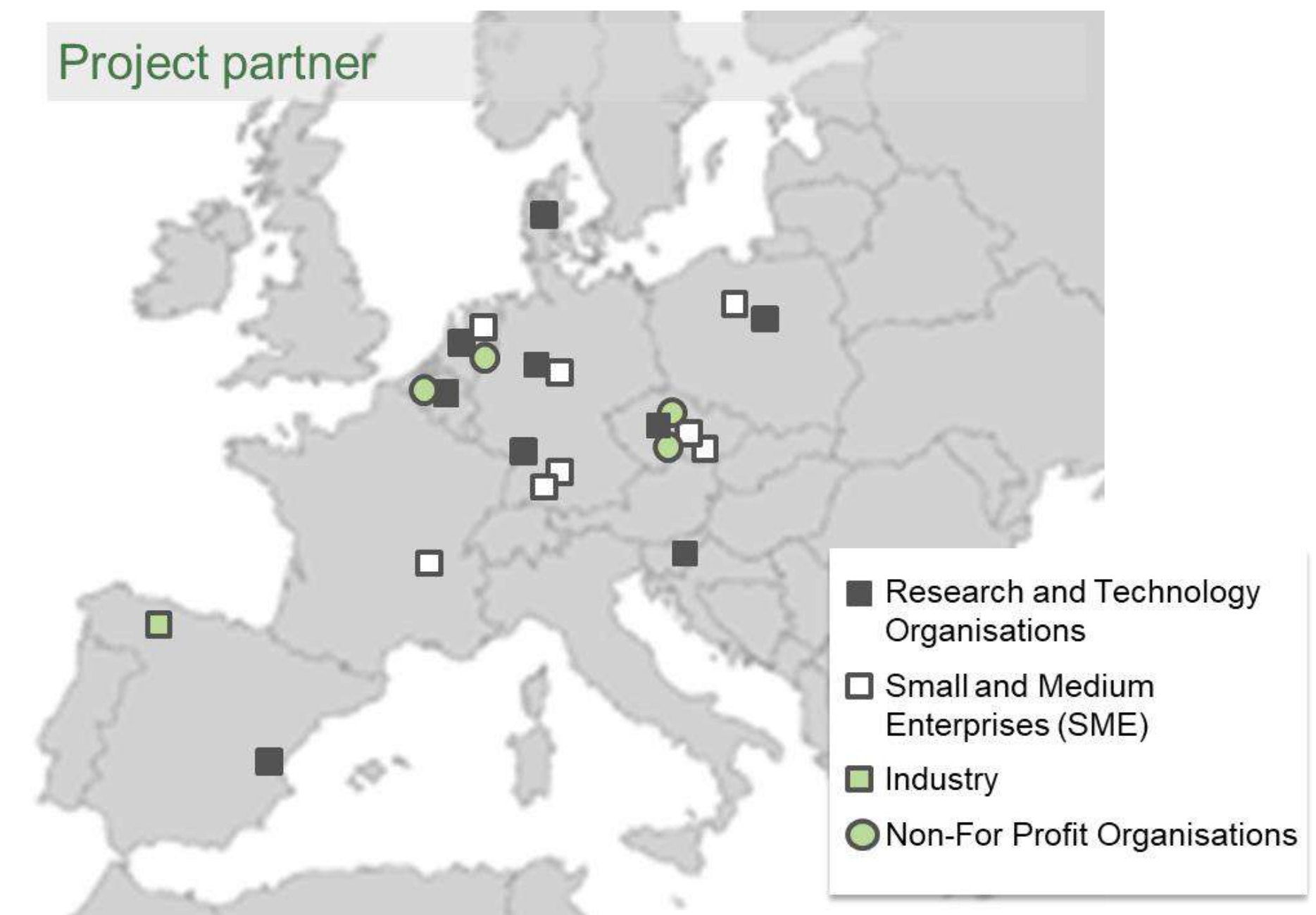
* In case of HPP: not part of mobile unit but in toll centers



Project details



- EC Horizon 2020
- 25 partners, 8 countries
- Multi-actor approach
- 06/2019 – 11/2023
- 7 mio. EUR funding



Efforts (personnel expenditure)

Technology research and development	57%
Research and assessment of impact and effects	23%
Demonstration, dissemination & communication	14%
Project management	5%





FOX

Innovative down-scaled food processing in a box

Objectives...

- Develop and test the application of **small-scaled and mobile / flexible processing units for fresh fruits and vegetables**
- Research innovative and mild processing technologies
- Validate **potential for new business opportunities** for regional producer
- **Engage consumer** and investigate **consumer values and attitudes** relevant for food choices
- **Stimulate short supply chains**





H2020 – FOX project

Approach: food circles & model regions

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)



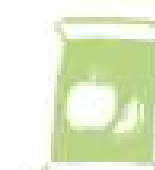
Food Circle 2
Low temperature drying
Kuyavian-Pomeranian
Volvodship, PL & Central
Bohemian CZ



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



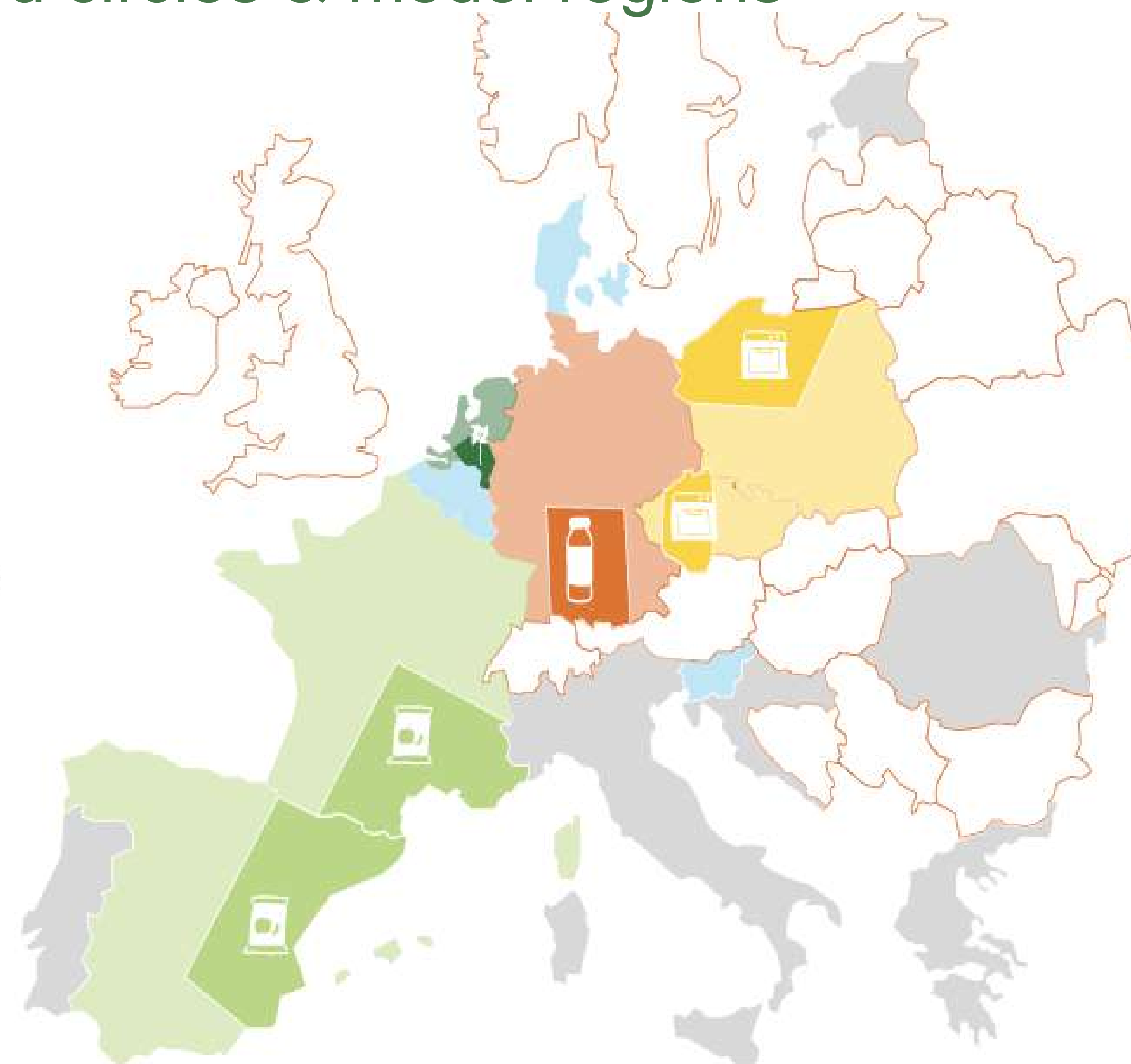
Food Circle 4
Upscaling plant side streams Noord-Brabant, NL



Green peas and
carrot pomace



Mild processing
technologies: high
pressure, PEF,
supercritical CO₂, mild
thermal technologies



Partner regions Associated partner regions

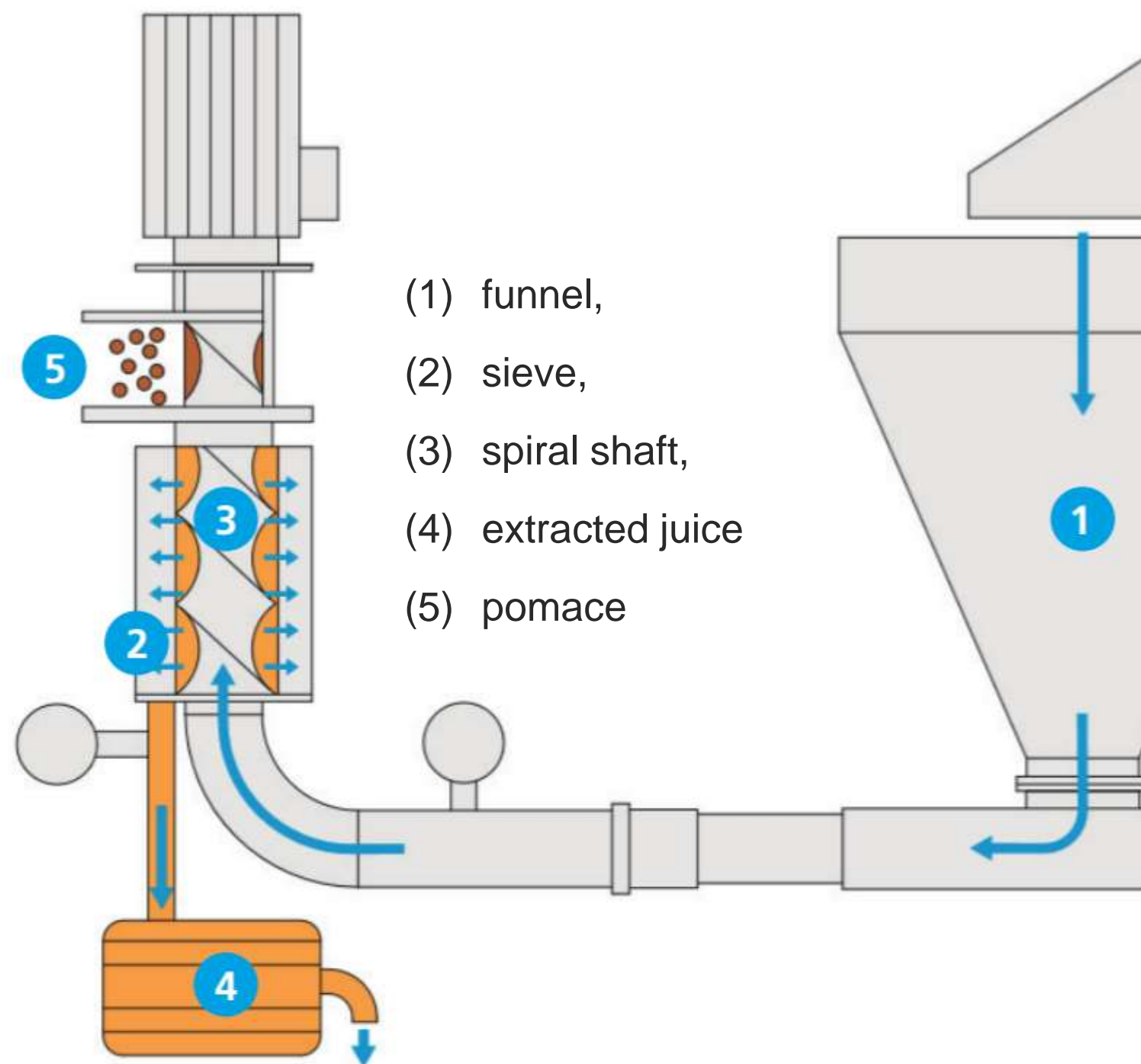


Mild processing Mobile juice processing unit



Innovative Technologies

Vacuum Spiral Filter Press



Low oxygen juice production!!



Vaculiq unit



Multicrush unit



Multicrush unit
Fruit grinding under N₂-atmosphere

Vacuum-Spiral Filter Presse
Gentle juice extraction under vacuum conditions

Sieve size - products from juice to puree

Low oxygen conditions → avoided extensive oxidation → better colour, texture and nutritional quality

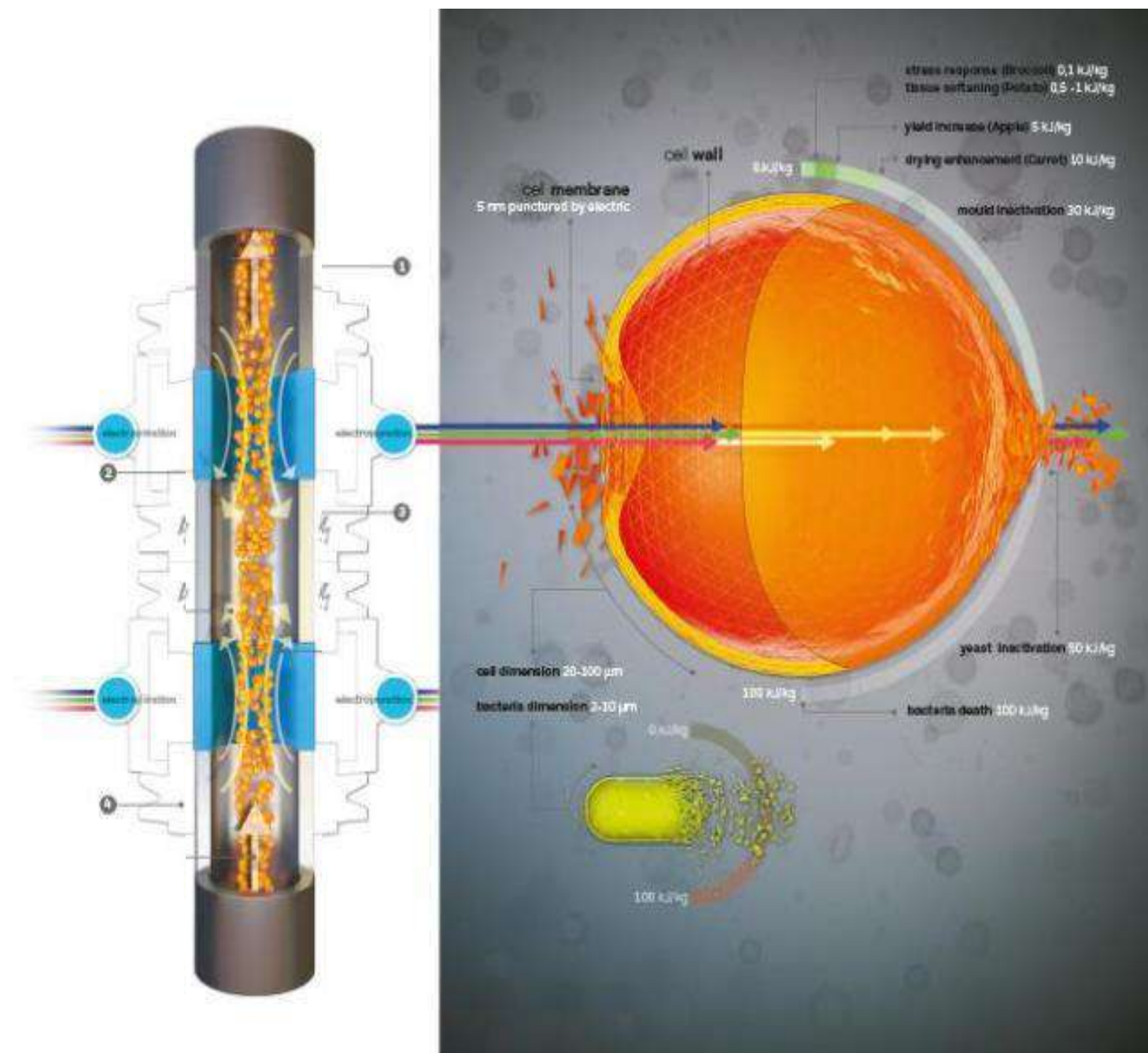




FOX – Mobile juice processing unit

Innovative Technologies

Pulsed Electric Field (PEF)



Mild-temperature juice preservation!!



Low temperature preservation technology

Extending the shelf life of fresh fruit and vegetable juices without compromising product freshness or overall quality

better color, taste and nutritional quality



Fresh Green Juice



Thermally Treated



PEF-treated with Elea CoolJuice™





FOX juice box - building progress



FROM
June 2019



TILL
March 2022





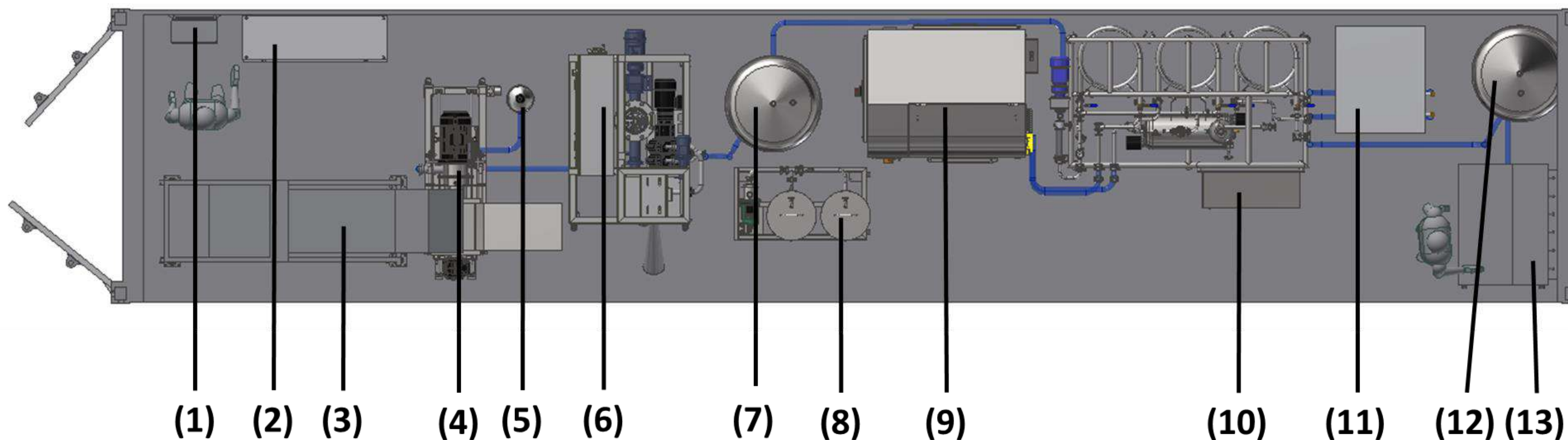
FOX – Mobile juice processing unit

F LKENSTEIN
PROJEKTMANAGEMENT GMBH

Process of production



- (1) Control Panel
- (2) Electric Cabinet,
- (3) Elevator,
- (4) Multi-crush unit,**
- (5) Nitrogen bottle,
- (6) Vacuum Spiral Filter Press,**
- (7) Juice buffer tank,
- (8) Mobile CIP-unit,
- (9) Pulsed electric field (PEF) unit,**
- (10) Liquid Handling System (LHS) (Pipe in pipe heat exchanger),
- (11) Cooling unit,
- (12) Juice storage tank and
- (13) Filling unit (Glass bottles/BAGinBOX).





FOX – Mobile juice processing unit

Processing line characteristics:

- The maximum capacity of the production line 250 L/h (depends on electrical conductivity of the product)
- An extension to 500 L/h is possible
- The line is automated
- Fruits that can be processed Berries and stone fruits such as apples, pears, quinces...
- The unit is flexible, anything from cloudy juice to sauces (puree) can be made
- Yield depends on the consistency, with almost clear apple juice ~ 80%



Tested 😊 😊



High quality juice

Juice Produced - 100%
Fruit/Vegetable

Fresh appearance, taste and
aroma

Full nutritional value



Location requirements

Container size - **40 feet high cube container** (L 12m; W 2.4m; H 2.7m)

FOX unit weights approx. **15 tons**

Location area

- Appropriate **grounding place**:
 - ✓ 16m x 6m
 - ✓ A compacted grounding with 15 t load capacity is necessary
 - ✓ Subsoil must either consist of compacted gravel, be covered by paving stones or an asphalt
 - ✓ The grounding place for the container must be horizontal and even
- **Access for delivery** and collection must be provided accordingly
 - ✓ The access road must be suitable for heavy transport vehicles of 40 t
 - ✓ Appropriate loading area for a mobile crane
- **Power supply** needed: Power connection 125 ampere, 400 V
- **Water supply** needed: 1" domestic water connection (ideally 2 water supplies or one divided)
- **Sewerage system** must be in place

Transport

- Professional packaging of all machines
- Truck and crane needed





FOX – Mobile juice processing unit

Operating options:

Cooperative
Local hub
Farmers (rented)

Possible advantages:

Flexibility in business
High quality product(s)
Less food waste





Cost for transport

Experience from FOX project	
Preparing ground for container (plane gravel area)	4.2k EUR
Shipping container on the road	3.2k EUR (ca. 750km)
Crane, lift container on truck	520 EUR per location
Packaging material	3k EUR, material can be used multiple times
Service: packaging machines in container	1.3k EUR per event
Supply of water and energy	





Novel food issue

The local food authority (Landkreis Ravensburg, Veterinär- und Verbraucherschutzamt) assessed in March 2022 the treatment of apple juice with pulsed-electric fields (PEF) as novel food according to Article 3, 2.(a) (vii):

“... novel food means any... food resulting from a production process not used for food production within the Union before 15 May 1997, which gives rise to significant changes in the composition or structure of a food, affecting its nutritional value, metabolism or level of undesirable substances;...”

By this assessment the local authority prohibited public tastings or distribution of juices produced by the FOX container of Food Circle 1. ...”





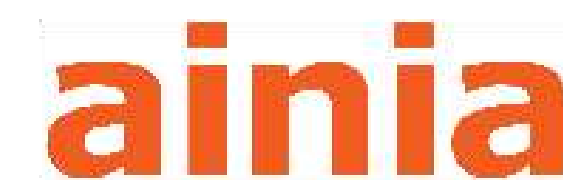
Novel food issue

- ✓ Direct contact with local food authority: opinion and assessment of PEF technology on behalf of DIL
- ✓ Publication planned in LMuR Lebensmittel & Recht in German (title: The food law evaluation of process novel foods using the example of Pulsed Electric Fields technology), expected in 12/2022 or 02/2023

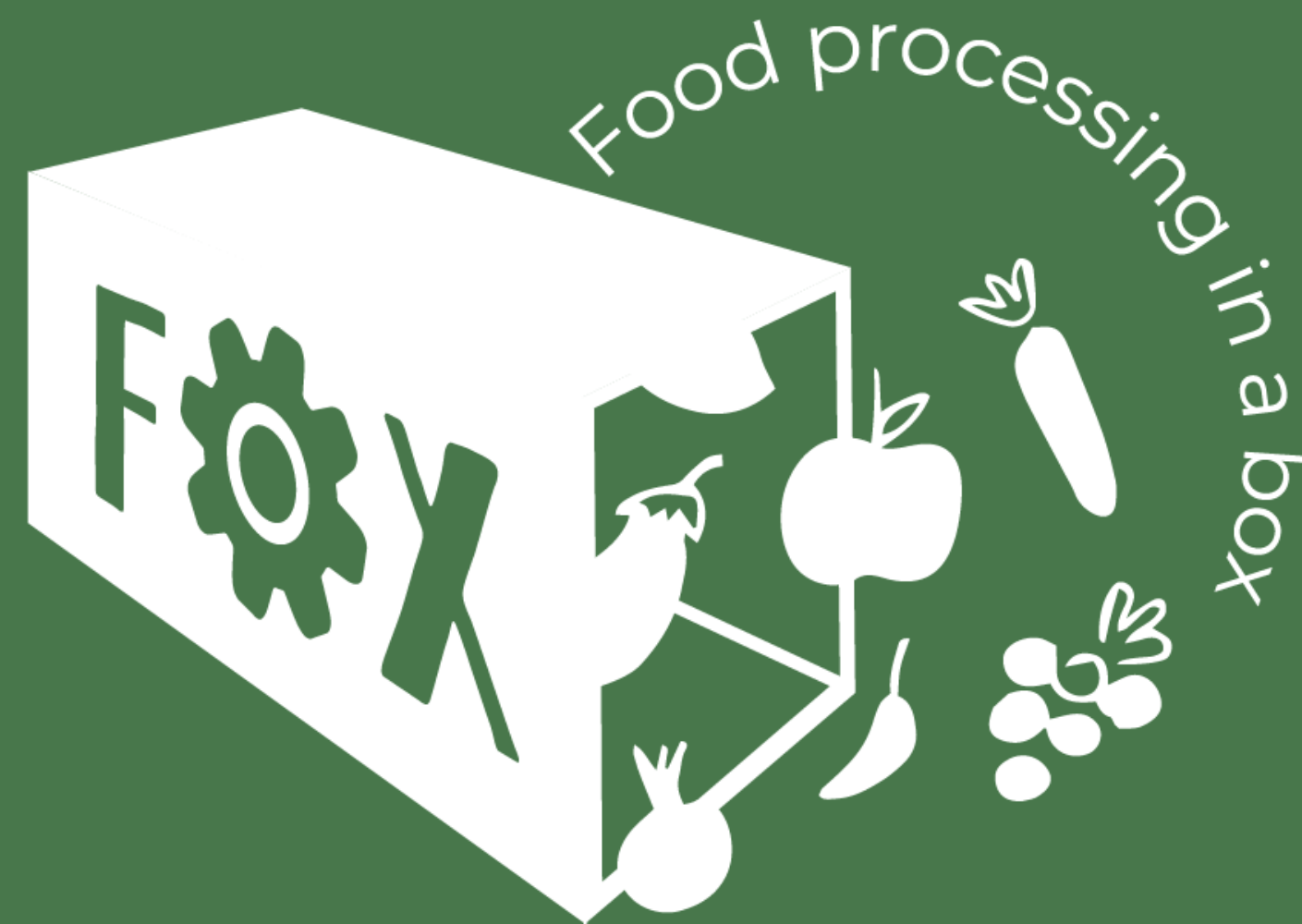
Reference to Commission delegated regulation from 27/10/2021 (EU 2022/68):

(15) Resolution OIV-OENO 634-2020 established a new oenological practice, namely the treatment of grapes by pulsed electric fields to facilitate and increase the extraction of valuable substances.





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



Innovative local processing
for a sustainable future

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