

# SMARTCHAIN

## Towards Innovation - driven and smart solutions in short food supply chains

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Germany

**AKIS Meeting**  
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Horizon 2020  
European Union Funding  
for Research & Innovation

The SMARTCHAIN project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 773785

**SMARTCHAIN** aims to foster and accelerate the shift towards **collaborative SFSCs** and, through specific actions and recommendations, to introduce **new robust business models and innovative practical solutions** that enhance the competitiveness and sustainability of the European agri-food system.

**Type:** RIA, multi-actor approach

**Period:** September 2018 – August 2021

**Coordinator:** University of Hohenheim,  
Germany



# The Consortium

**43 partners: 9 EU and 2 associated countries**

## 10 Research Institutes



## 18 Short Food Supply Chains



## 6 Technology Transfer Centres



## 9 Non-profit Organisations

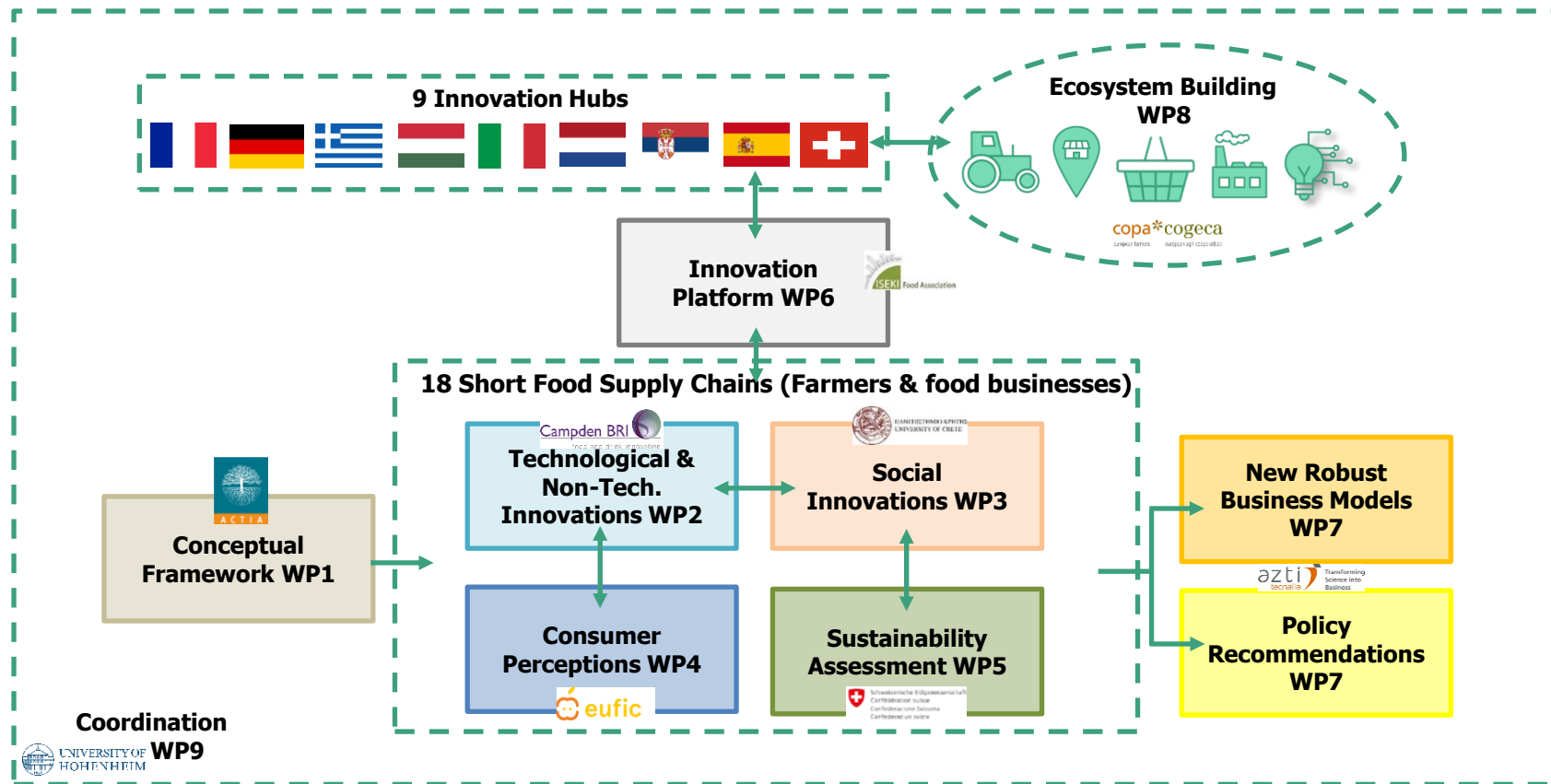


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## SMARTCHAIN SFSC (inclusive) working definition

SFSC are **co-operative systems** that include **very few intermediaries**, increasing **sustainability**, **transparency**, **social relations** and **fairer prices for farmers and consumers**. Such supply chains usually involve **local producers working together** to promote **local food** which, in many cases, only travels a **short distance**, so **farmers and consumers can communicate with each other**.





## Recommendations for innovation

## step-by-step path to innovation



- Following the SMARTCHAIN step-by-step path will not assure that the innovation will be 100% successful, but it will **increase the probability of fruitful innovation**, assuring that it is aligned with the problems, necessities, markets, regional/local environment, and business model of each SFSC practitioner.
- Each step normally groups a **set of questions** (>300 in total) and **recommendations** (>60 in total) to take each step in the best way as possible.
- **As much information, the better.**
- **The more people involved in the process, the better.**





## Recommendations for improving business performance

# Examples of recommendations and tips for each business model archetype



**Hosting social activities** within a community supported agriculture becomes a way to create a community. It gives subscribers the opportunity to meet with each other and with farmers. One way to create networks more easily is also to connect subscribers with their nearest neighbours.



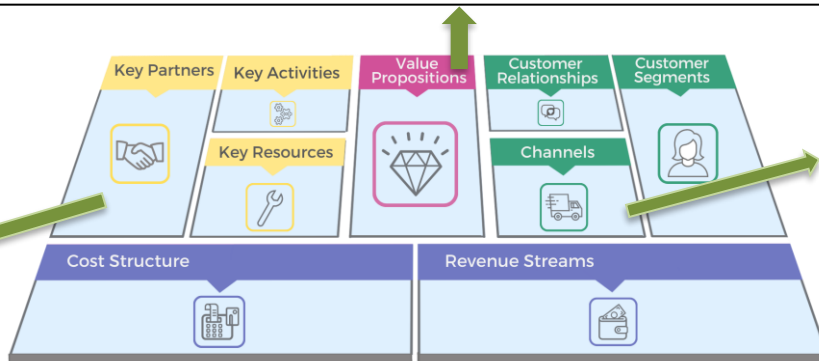
Implementing social innovation tools like **co-creation** and **co-operation** might not only reduces costs, but also add additional value and will result in more commitment: involving customers as **online and offline** ambassadors of SFSC and providing them knowledge as well.



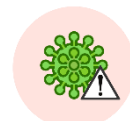
If you are an **individual producer**, you can think of **cooperating with other producers or entities** in order to break down costs, improve quality and face some of the challenges you might be experiencing.



If you are a **cooperative of producers**, you can deepen your understanding of cooperation of sharing, by using this opportunity to **cooperate also in areas you had never thought of**.



Based on Osterwalder & Pigneur (2010)



Due to coronavirus pandemic situation, **online shopping has strongly increased in the last year**. It is therefore very important to have **online sales channels**, not only for large producers and retailers, but also for small local producers. Choose and define the model of the proper **marketplace**, make sure to organize the best home-delivery (planning of deliveries, safety, tools for choosing...)

**Carefully choose your packaging:** in home-delivery it is an important form of communication and customer care.



# Business recommendations and tips for social aspects

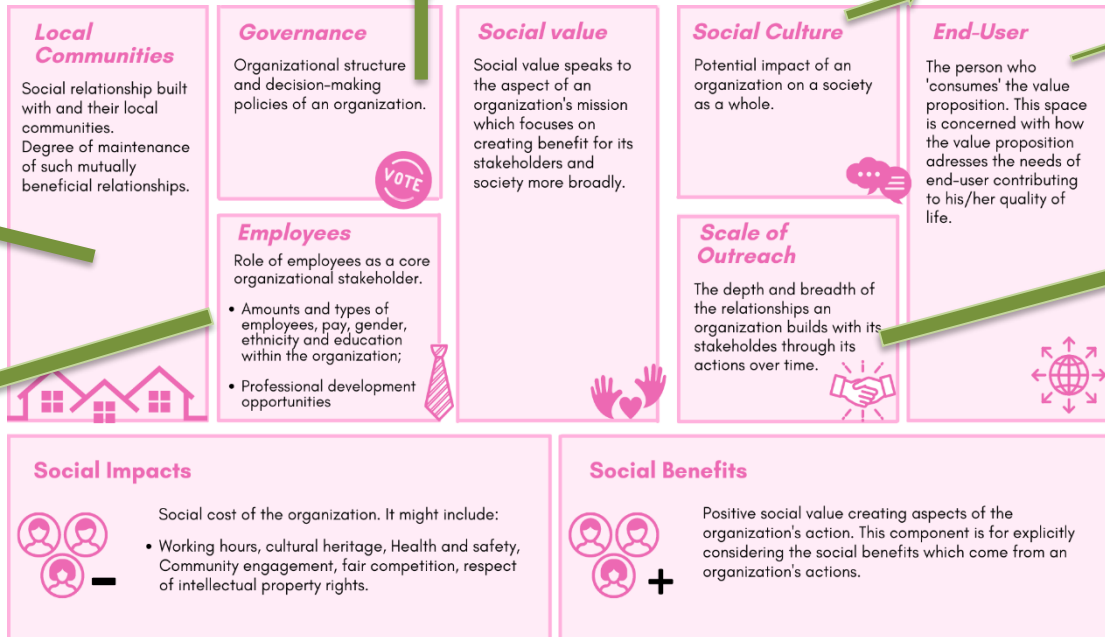
- Strengthen cooperation and **networks among diverse actors within the community** in order to establish new services at the community level.

- Foster the creation of **mutually beneficial relationships** with local administration and institutions
- Involve the whole community in asking about their needs and ideas** on food and SFSC transparency (labs, focus group, activity co-design, short courses, peer to peer educational experiences...).

- Strengthen consumer's engagement in the governance** of the SFSC initiative and create practices of co-creation and co-responsibility.
- SFSC members and customers can co-finance specific activities or products they consider to be in line with their needs and requests.
- An effective and constant participation of the community in the **co-creation of processes and activities** in production can let the group of consumers grow and grow, and it can also be attractive for new SFSC members.

**Partner with the tourism sectors** in order to foster the organisation of cultural events and foster the link between traditions, food and heritage.

- Communicate to customers that **by buying locally produced products they are supporting local farmers, economies, and communities.**
- Keep the information about SFSCs **very simple** in order to engage the end users as much as possible.



Based on Joyce A., Paquin R.L.:(2016)

- Organise promotional and tasting initiatives for products and promote products in restaurants, hotels and cafes in the local area .
- Involve families with younger children** to foster overall family awareness on the importance of good nutrition.

## Business recommendations and tips for enviromental aspects

- **Use packaging only for products that need it**
- **Invest in new packaging methods** (such as biodegradable packaging with smart technologies) which make longer shelf life possible and less waste
- Ensure that packaging includes accurate and **informative labelling and nutritional information**

### Supplies and Out-sourcing

Supplies and out-sourcing represent all the other various material and production activities that are necessary for the functional value but non considered 'core' to the organization.



### Production

Actions that the organization undertakes to create value. They are at the core of the organization and have an environmental impact.



### Materials

Bio-physical stoks used to render the functional value. Organization's key materials and their environmental impact.



### Functional value

Focal outputs of a service (or product) by the organization under examination.



### End-of-Life

Issues of material reuse of product. This component supports the organization exploring ways to extend its responsibility beyond the initially conceived value of its products.



### Distribution

Physical means to ensure access to its functional value. In the environmental layer, it is the combination of the transportation modes, the distances travelled and the weights of what is shipped.



### Use Phase

Impact of the client's partaking in the organization's functional value, or core service and/or product. This includes maintenance and repair of products when relevant; and should include some consideration of the client's material resource and energy requirements through use.



- Try to improve your performance in SFSCs by **extending the shelf life and expiry date of the products;**
- **Implement community composting activities**

Communicate to customers not only the nutritional impact of what they are buying but also its environmental one, in different ways such as: **easy-to-read information** on CO2 emission, water waste, etc, on **social media channels** or on the **packaging of the products**.

- **Clearly express how SFSC products are contributing to environmental sustainability** and how this may affect the environment.
- Clearly provide information about how SFSC products bring a positive environmental impact (refer to CO2 emission, water consumption, human health).

### Environmental Impacts



Ecological costs of the organization's actions:

- bio-physical measures such as CO2e emissions, human health, ecosystem impact, natural resource depletion, water consumption.

### Environmental Benefits



Ecological value the organization creates through environmental impact reductions and even regenerative positive ecological value.

Based on Joyce A., Paquin R.L.;(2016)

## Policy Recommendations

- Creation of a punctual and specific **definition** of Short Food Supply Chain
- Better articulation of the **role and definition of the intermediaries** to ensure the sustainable and transparent food chains
- Supporting the **cooperation** and the **aggregation** among small producers to extend opportunities and overcome bottlenecks and obstacles
- Reducing the environmental impact of SFSCs by the **concentration of the supply**
- Achieving compliance to the legal requirements on **food hygiene and food safety**
- Overcome **lack of knowledge** of SFSCs by gathering education and training



## 18 Multi-Actor Workshops



Each of the 9 Hub managers carried out 2 multi-actor workshops at national level to present the main findings and results of the project to farmers, food producers, SFSCs practitioners and other stakeholders.

**First round (2020):** 6 online & 3 physical (RS, HU & NL)

**Second round (2021):** 8 online & 1 physical (HU)

**Participants:** more than 450 participants




Join the SMARTCHAIN multi-actor workshops across Europe. These workshops are open to all actors and stakeholders interested in exchanging knowledge on short food supply chains and learning about best practices from across Europe.

Date	Time	Mode	Location
28th May	14:00 - 17:00	Online	Switzerland
27th May	14:00 - 17:00	Online	Serbia
31st May	9:00 - 13:00	Online	Italy
2nd June	13:00 - 19:00	Online	Greece
4th June	9:00 - 13:00	Online	Spain
9th June	15:00 - 16:00	Online	Germany
23rd June	8:45 - 9:45	TBC	France
25th June	10:00 - 17:00	Physical	Hungary

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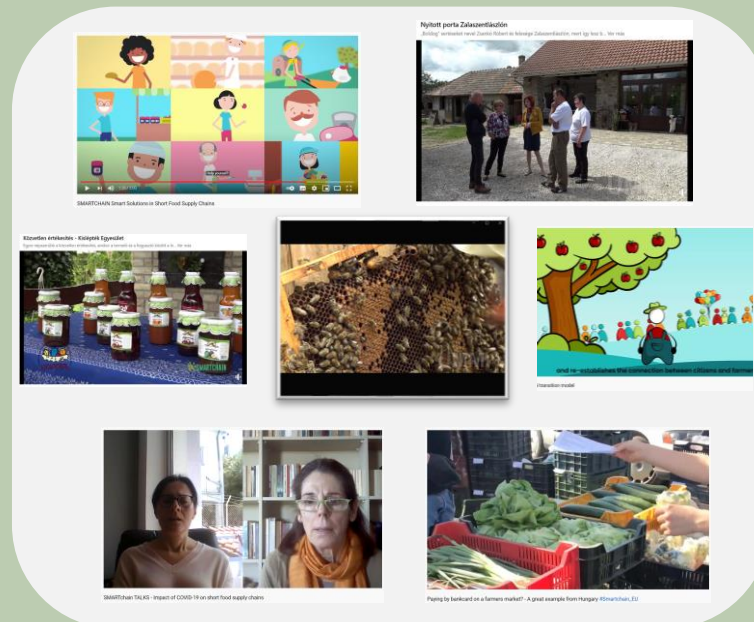
[www.smartchain-2020.eu](https://www.smartchain-2020.eu)  
[@smartchain\\_eu](https://twitter.com/smartchain_eu)  
[www.facebook.com/smartchain.eu](https://www.facebook.com/smartchain.eu)



## OnePagers, infographics, flyers



## Videos (YouTube Channel: Smartchain EU Project)



<https://www.youtube.com/channel/UCrj7LQSaDADOPThvOeohaYQ>



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## Practice Abstracts

The **innovative knowledge** (outcomes and recommendations) gathered during the lifetime of the project will be **disseminated for practitioners following the EIP common format ("practice abstracts")**, feeding into the EIP-AGRI website.

A total of **31 SMARTCHAIN practice abstracts** has been prepared and are already available at the **EIP-AGRI project database**.

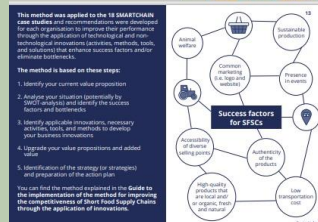
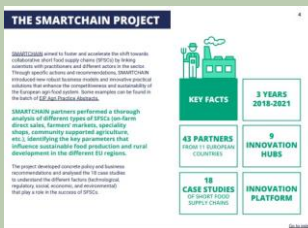


<https://ec.europa.eu/eip/agriculture/en/find-connect/projects/smartchain-towards-innovation-driven-and-smart>


# Booklet "Insights & recommendations to support collaborative Short Food Supply Chains"

This digital document presents a summary of the **main applicable results and recommendations for farmers and other SFSCs practitioners.**

The booklet is available on the SMARTCHAIN website, Innovation Platform and social media in **9 languages.**



# LinkedIn (Short Food Chain EU Community)



**Short Food Chain EU Community**  
Listed group

Start a conversation in this group

Photo Video Poll

All Recommended

**Mark Frederiks** • 1st  
Amsted, LocalFood, Smartchain, Stichting Taskforce Korte keten  
1d

**European Food Information Council (EUFIC)**  
5,537 followers  
1d

After five years of research, innovation and demonstration activities from leading organisations at pan-European level, the EU-funded project #Strength2Food came to its end. ...see more

**Final conference**

Strength2Food Final Conference launches 'Sustainable Food Choices' open online course as it unveils 5-year research and innovation project results  
eufic.org • 3 min read

313 members  
Including Mark Frederiks and 87 other connections

Invite connections

See all

About this group

The Short Food Chain EU Community has set the goal of removing the main obstacles for short food supply chains in the coming years. With this connection of initiatives, organizations, knowledge institutions and entrepreneurs, the SFCC generates ...

See all

Admins

**Bob Massar** • 1st • Owner  
Medior Project manager at Amsted

**Barbara Tocco** • 1st • Manager  
Senior Research Associate at Newcastle University, Centre Manager for National Innovation Centre for Rural Enterprise (NICRE), Project Manager for H2020 Strength2Food

**Carlos Abundancia Betancor** • 1st • Manager  
Senior Manager - Social Media and Communications at European Food Information Council (EUFIC)

Show more

**Katalin Kujari** • 1st  
Project Manager at Short Food Chain Expert  
4d

A best practice from Hungary for cooperation in short food supply chains. We introduce how a small Margitka producer can live in the rural area with support of Zala Thermal Valley cooperation. ...see more



Nyitott porta Zalaegerszegben  
facebook.com

**Casper Winkelmeijer** • 1st  
Project Manager at University of Hohenheim  
1d

The demands on a successful farm shop are rising along with growing expectations of customers. For many consumers, a farm shop is no longer just a place to buy high quality products directly from the producer. The fun ...see more



Kulgebir Zuwendet: 10 Tipps zum erfolgreichen Hofladen  
amsterdam.nl • 1 min read

**Mark Frederiks** • 1st  
Amsted, LocalFood, Smartchain, Stichting Taskforce Korte keten  
1d

**Marjolijntje Marlen** • 2nd  
Amsterdam, Amsted, LocalFood, Smartchain, Stichting Taskforce Korte keten  
1d

I'm so glad I have contributed with a co-authored paper to the Special Issue of Sustainability on "Geographical Indications, Public Goods, and Sustainable Development", coordinated by a great team of guest editors Andre ...see more

Protecting Food Cultural Biodiversity: From Theory to Practice. Challenging the Geographical...  
mdpi.com • 2 min read

**Elisabeth** • 1st  
Project Manager at Short Food Chain Expert  
1d

Something is being prepared ...see more

If we talk about SFCC in Hungary then we must mention NYITORT P...see more



**Katherine Mary Flynn** • 1st  
Project Manager at Short Food Chain Expert  
1d

You are invited to register for the 5 week course "Best Practices in Short Food Supply Chain Innovations". The course will open on Monday 24 May, though you may begin week 1 at any time during that week. If you complete the c...see more

**SMARTCHAIN**  
Register for the e-learning course  
"Best Practices in Short Food Supply Chain Innovations"



**Sarah G.** • 1st  
Community Manager at grapevine (vzw) BioBelle  
1d

DES PRODUCTEURS AVANT TOUT  
Actif depuis 2005, nous mettons en marché les fruits et légumes de nos producteurs associés. Pour la plupart pionniers du BIO, amoureux de l...see more

See translation



**Barbara Tocco** • 1st  
Senior Research Associate at Newcastle University, Centre Manager for Nat...  
1d

#Strength2Food action research to stimulate #shortfoodchains in North East England. ...see more

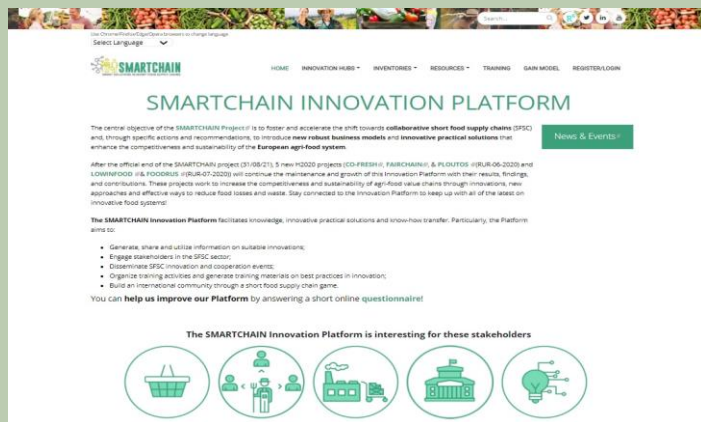




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**Project website:**  
**[www.smartchain-h2020.eu](http://www.smartchain-h2020.eu)**



**Innovation platform:**  
**[www.smartchain-platform.eu](http://www.smartchain-platform.eu)**



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## Innovation inventory

### High-pressure processing (HPP) technology for food production

#### Summary

- The novelty proposed is the non-thermal food processing technologies as alternative to conventionally heat treatments in high quality foods with fresh-like sensory and additive-free characteristics. As the most successfully commercialized non-thermal processing technology, HPP eliminates food pathogens at room temperature and extends the shelf life. HPP is officially approved as a non-thermal pasteurization technology that can replace traditional pasteurization in the food industry (US Food and Drug Administration).

Pasteurization effects of HPP is not affected by the packaging form and volume of the food, and thus foods of different volumes can be processed in the same batch. HPP is performed at room temperature, reducing energy consumption associated with heating and subsequent cooling. In addition, the food is in packaged form and does not directly contact the processing devices, preventing the secondary contamination of food after pasteurization. Additionally, the pressure transfer medium can be recycled after processing. With the advantages of low energy consumption and low contamination risk, HPP technology is an environmentally friendly processing technology. Therefore, HPP technology is recognized as a minimal processing technology that ensures both food safety and quality

Type	End users	Countries
Technological innovation	Food manufacturers deal with fruits, vegetables, meat and dairy products, sea food, juices and beverages, salads and dips, ready to eat meals	Worldwide

#### External links

<https://www.avure-hpp-foods.com/>

<https://www.hiperbaric.com/>



### Transformational activities



The non-profit co-operative "Allotropen" is premised on and supports the concepts of solidarity economy and community develop...

[more >](#)

### High-pressure processing



The novelty proposed is the non-thermal food processing technologies as alternative to conventionally heat treatments in high qu...

[more >](#)

### Disinfections systems



These systems can be used for the disinfection of indoor air, surfaces and water – for the industrial use in the FOOD sector.

[more >](#)

### Vending machines



Landwirtschaftskammer Niedersachsen (Chamber of Agriculture Lower-Saxony, Germany) is implementing vending machines for agricult...

[more >](#)

### Fruit press



In a competitive environment, offering final products to the consumers that are regular in shape, color, taste and size is essen...

[more >](#)

### La Charrette



1. "Scenario 1: A producer (called "producer A") needs to deliver his products and has some space in his car/truck...

### Freeze-drying solutions



In temporary and perishable products such as fungus/mushrooms and some kind of fruits and vegetables is essential to maintain th...

[more >](#)

### Foodhub.hu



Foodhub.hu reconnects small-scale farmers directly with businesses looking for local, high-quality fresh ingredients, be they re...

[more >](#)

### Hermeneus marketplace



Hermeneus is a free and responsible consumption community, in which sellers and buyers contact directly to buy and sell products.

[more >](#)

### New cheese products



Diversification of products is a strategy for small firms and producers in order to satisfy consumers' needs that are increas...

[more >](#)

### Educational seeds



"Gaia" is a retail co-operative founded in Chania, Crete, back in the summer of 1996. The founding members consisted of a small...

[more >](#)

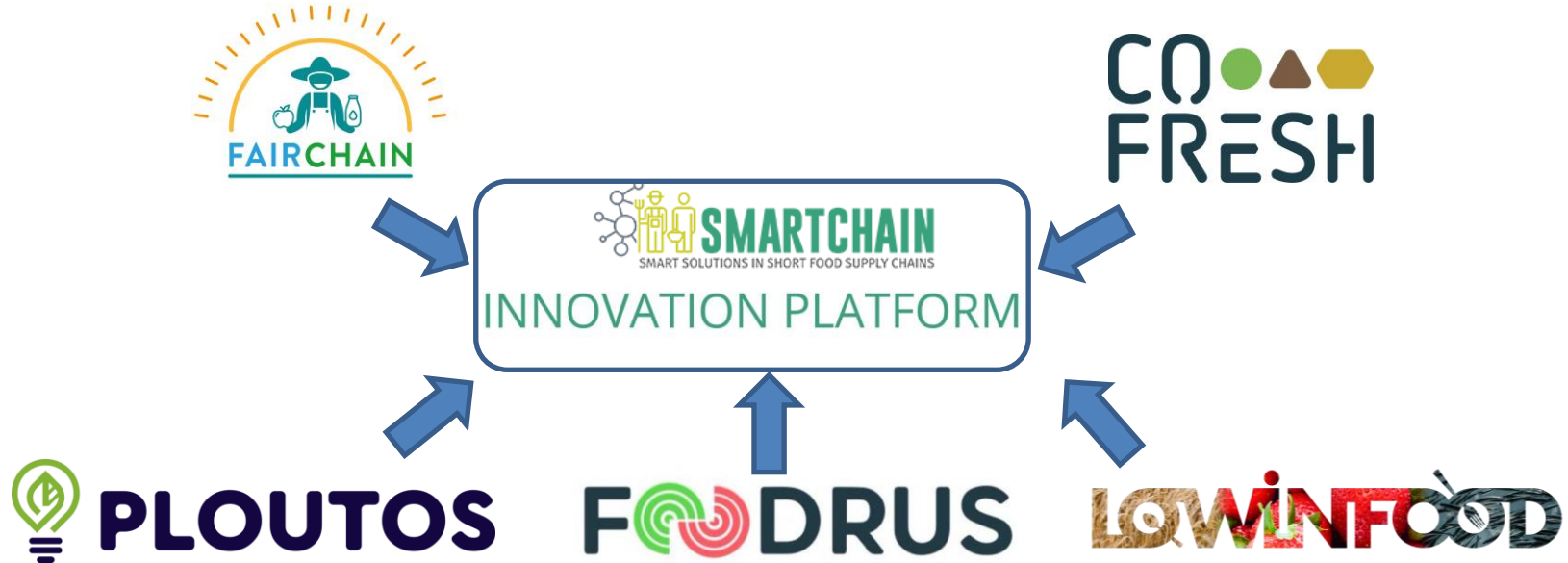
### Mobile poultry coops



Landwirtschaftskammer Niedersachsen (Chamber of Agriculture Lower-Saxony) supports the mobile poultry farming (organic and conve...



## SMARTCHAIN Sustainability



# Thank you very much for your attention!

**Susanne Braun**

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**UNIVERSITY OF  
HOHENHEIM**



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