



BAND 4

Wirtschafts- und sozialwissenschaftliche Praxisstudien

**RETHINKING FOOD ECONOMICS: UNIVERSITY AS A DRIVER
FOR SOCIAL INNOVATION IN THE FOOD SECTOR
A PRACTICE-ORIENTED GUIDE TO THE SCIENTIFIC REFLECTION OF SOCIALLY
INNOVATIVE ORGANISATIONS USING THE EXAMPLE OF COOPFOODLAB**

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on sustainable agriculture and food economy

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Rethinking food economics: The university as a driver for social innovation in the food sector

**A practice-oriented guide to scientific thinking
on socially innovative organisations
using the example of CoopFoodLab**



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Table of contents

Social innovation for the transformation of food systems

1. Social innovation at the heart of social transformation	9
1.1. Social innovation as a driving force for social transformation and government strategy	9
1.2. Social innovation as the key to transforming the global food system	13
1.3. Social innovation in the food sector and the role of the university - a Franco-German perspective	17

Application example

2. CoopFoodLab seminar at the Justus Liebig University Giessen, Germany	25
2.1 Objectives and procedure of the teaching project	25
2.2. Methods for promoting social innovation	31
2.3. Findings and results	35
2.3.1 Dimensions of social innovation in the food sector	35
2.3.2. Skills development for social innovation as a task of higher education	42
2.3.3 Social innovations need food ecosystems	45

Conclusions and recommendations

3. How can universities contribute to the promotion of social innovation in the food system?	49
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<i>Bibliography</i>	57
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Actors involved in CoopFoodLab

Franco-German CoopFoodLab research team	71
Students	72
Organisations	75

**Social innovation for the transformation
of food systems**

1 Social innovation at the heart of social transformation

1.1 Social innovation as a driving force for social transformation and government strategy

The topic of social innovation has gained increasing attention in Western societies since the early 2000s. Social innovation offers improvements or new solutions to social problems and creates added social value. It represents modified or reconfigured approaches to solving current or future problems.

While the concept of innovation was long limited to technological innovation, there is now a greater focus on social innovation (Howaldt & Schwarz 2014; Merenheimo 2023). Technical innovation was considered more important because it has a direct and measurable impact on the economy, leads to new products and create economic value. In addition, it has been assumed that technical innovation influence is a stronger accelerator for change in economy than social changes are, changes in family systems. In recent years, it has been increasingly recognised that social innovation plays an important role in overcoming social challenges and that is is often closely interlinked with technical innovation. Innovation processes should therefore be viewed as socio-technical processes (Zweck & Cebulla 2022).

In the agricultural and food sector, there is an increasing number of examples of the combination of technological and social innovation. Information and communication technologies play a major role in the transformation of sustainable food systems. Marketing via apps for selling whole animals (e.g. "crowdbutching") or apps such as "Too Good To Go" help to reduce food waste and use resources more efficiently. Community supported agriculture (CSA), in which producers organise the supply of food together with consumers, can be supported by digital platforms, e.g. in bidding rounds for fair and solidarity-based financing of a CSA farm. Other digital platforms, such as "nearbuy", facilitate cooperation between businesses along the value chain in the agricultural and food economy and serve as catalysts for the dissemination of business models with a focus on codetermination, cooperation and collaboration.

The importance currently assigned to social innovation is reflected not least in the Departmental Concept for Social Innovation, in which nine federal ministries in Germany formulated their understanding, objectives, instruments and central fields of action for the promotion of social innovation in 2021 (BMBF et al. 2021). The joint concept is based on a broad understanding of social innovation. It emphasises that the complex challenges facing our society can only be solved if we think and act systemically and exploit the potential of new technological, economic, cultural, ecological and social developments in equal measure.

There is a long list of examples of social innovation in different areas and sectors. Figure 1.1 shows some notable examples.

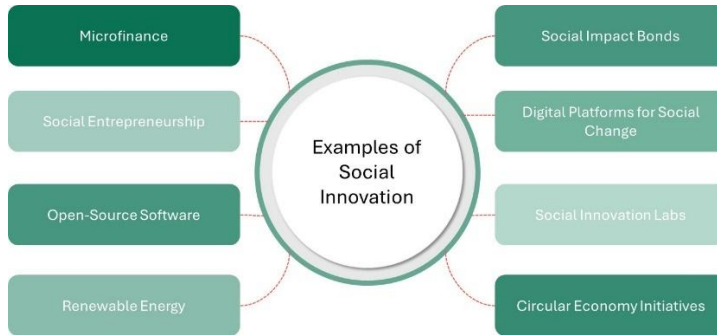


Figure 1.1: Examples of social innovation (based on IcJain 2023)

Gillwald (2000) sees social innovation as being characterised by their focus on internal matters or on third parties, whereby the moment of being or becoming active is central. She also describes social innovation as acts of change or modernisation, as changes in behaviour and forms of social action insofar as they trigger broader participation.

Social innovation can be distinguished from pure behavioural changes and is characterised by:

- difference from previous practices (criterion of "relative novelty")
- dissemination and stabilisation
- durability beyond passing fashions
- social effects, combined with an influence on the further direction of social development (ibid.)

As Figure 1.2 shows, more recent definitions add further criteria for social innovation such as collaboration and co-creation, system-oriented thinking and innovative strategies, empathy and user-friendliness, scalability and replicability, measurable results, institutionalisation, expansion and much more (Jain 2023; Lender 2024).

For effective scaling and expansion, social innovation often requires different measures and instruments from conventional business ideas or companies.

A social innovation is a targeted change in social practice initiated by certain actors in order to solve a specific problem in a social field of action. It is a social innovation if it is socially accepted – whether market-mediated or 'non-profit' – and diffuses into society or parts of society (translated from German into English; Howaldt & Schwarz 2010: 9).

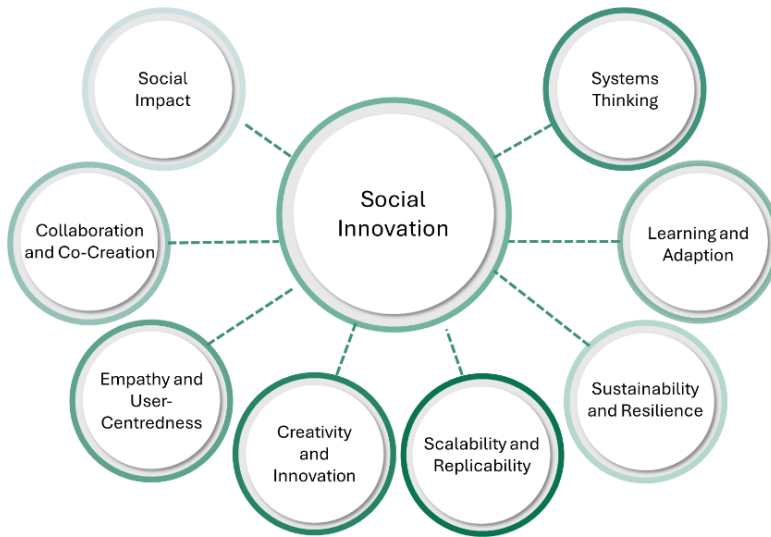


Figure 1.2: Characteristics of social innovation (Jain 2023)

Transformation towards sustainability

The concept of social innovation is also increasingly being discussed in the context of the debate on sustainable development (Howaldt 2019). In view of increasingly complex societal challenges and multiple crises, there is a growing realisation in civil society, business, politics and science that technological solutions alone are not sufficient to achieve sustainable development (Bauer et al. 2022), and that social innovations play an important role (Rückert-John et al. 2014). In the area of sustainable consumption, for example, the limitations of technological, efficiency-orientated or even purely knowledge-based solutions are clearly evident. In this context, social innovations in the form of do-it-together approaches, strategic consumption, consumer communities, do-it-yourself concepts and using sharing to increase the benefits of consumption are of great importance (ibid.).

Social innovations in sustainable consumption create alternatives to unsustainable practices of economic activity, production and consumption, and disseminate them in society, bringing with them new meanings of ownership, community and personal initiative (translated from German into English; Rückert-John et al. 2014: 8).

Given the increasing importance of these innovations for civil society, satisfying needs and economic action, Howaldt and Schwarz (2022) argue in favour of conceiving social innovation as an analytical category for researching change processes and actively using them for transformative social change.¹

¹ The connection between social innovations and social change processes has not yet been researched enough in detail. However, it is recognisable that cooperation and networks play an important role in the intended social change and the successful perpetuation of social innovations (Howaldt 2019).

The German government took an important step towards recognising and supporting social innovation by adopting the National Strategy for Social Innovations and Public Welfare-Oriented Enterprises (the so-called SIGU strategy) in September 2023 (BMWK & BMBF 2023). It aims to promote social innovations and companies that are oriented towards the common good in order to solve social challenges through entrepreneurial means. It combines the aspect of new social practices and organisational models with a focus on sustainability, participation and climate-friendliness. A catalogue of measures comprising more than 70 points is intended to promote easier access to financial support, investment in the expansion of the ecosystem and the improvement of the legal framework. At the same time, the aim is to strengthen the start-up landscape for social innovations and companies focussed on the common good.

Both the measures formulated in the SIGU strategy to strengthen social innovations and companies that focus on the common good and the academic debate on social innovation demonstrate the complexity and breadth of the term. On the one hand, it refers to social practices and organisational models for sustainable solutions. On the other hand, social innovation refers both to the process of strategically developing and implementing innovative ideas for transformative change and, at the same time, to the process of disseminating them in different areas of society. One of these areas is the global food system, the transformation of which represents an increasingly challenging ecological, social and economic task.

Social Innovations

primarily comprise **new social practices and organizational models that contribute to viable and sustainable solutions to the challenges facing our society**. Social innovations are expressed in numerous economic, social and cultural innovations, regardless of whether they are organized commercially or for the common good. In some cases, they solve social problems differently and possibly better than previous practices. They have an independent value and can emerge independently of technology or be favored and flanked by technological innovations.

BMWK & BMBF 2023: 4

Common good orientated companies/Social companies

Common good oriented companies in the sense of the National Strategy and in accordance with the definition of the European Commission are those companies,

- **for which the social or ecological, common good-oriented goal is the meaning and purpose of their business activity**, which often manifests itself in a high degree of social innovation,
- whose profits are largely reinvested to achieve this goal and
- whose organizational structure or ownership structure reflects this goal, as they are based on principles of co-determination or employee participation or are oriented towards social justice.

BMWK & BMBF 2023: 4

1.2 Social innovation as the key to transforming the global food system

Innovation defined more widely and with people at the centre is a significant enabling factor for food systems transformation.

Tjada McKenna, Chief Executive Officer, Mercy Corps, USA
(WEF & FAO 2022: 3)

The global food system is responsible for up to a third of global greenhouse gases and to a large extent for the loss of biodiversity. Without a far-reaching change in food systems, it is unlikely that climate targets will be achieved or species extinction halted (UBA 2024). Agriculture and food play a significant role in all of the risky areas where the planetary boundaries are already being exceeded (ibid.). They are also responsible for the fact that millions of people, including a disproportionately high number of women, live in poverty and suffer from hunger and malnutrition. The COVID-19 pandemic has already highlighted the urgent need for a food system that is inclusive and equitable, resilient to shocks, environmentally sustainable and provides healthy, nutritious food for all (Deutsche Welthungerhilfe e.V. & Terre des Hommes Deutschland e.V. 2021).

The term "food system" refers to the way in which food is produced, processed, traded and consumed, from the field to the plate. This is influenced by the political, economic, social, cultural and ecological framework conditions. In turn, our food system is linked to the climate, natural resources such as water and land, biodiversity and the living and working conditions of people in cities and rural areas, as well as their health. A systemic perspective looks at the resulting complex interrelationships, the actors involved and the power dynamics in and around the system. The focus can be on the global level or on one of the many local food systems, which are characterised by their respective ecological, political, economic and socio-cultural context, but are also influenced by dynamics at the global level (translated from German into English; ibid.: 22).

International organisations such as the World Economic Forum and the United Nations propose a holistic and inclusive approach to innovating the food system. This is based, among other things, on improving cooperation, involving vulnerable groups, creating partnerships and ecosystems, using data effectively and incorporating traditional knowledge and new technologies (WEF & FAO 2022). To this end, they have published a roadmap for countries to accelerate and scale inclusive, stakeholder-led innovation (ibid.). Social innovations play an important role here, for example by social enterprises developing innovative solutions – from meatless meat to the promotion of organic farming in Africa (BMBF & BMWK 2023; John & Rückert-John 2021).

There is currently no systematic research programme for social innovations in the food sector. According to the Federal Environment Agency, there are numerous niche innovations with high potential for the sustainable transformation of the food system (Engelhardt et al. 2020; NAHhaft e.V. 2024a). Figure 1.3 shows some examples of niche innovations along the food value chain (Engelhardt et al. 2020). These range from solidarity tables and open source seed banks to mobile slaughterhouses (ibid.).

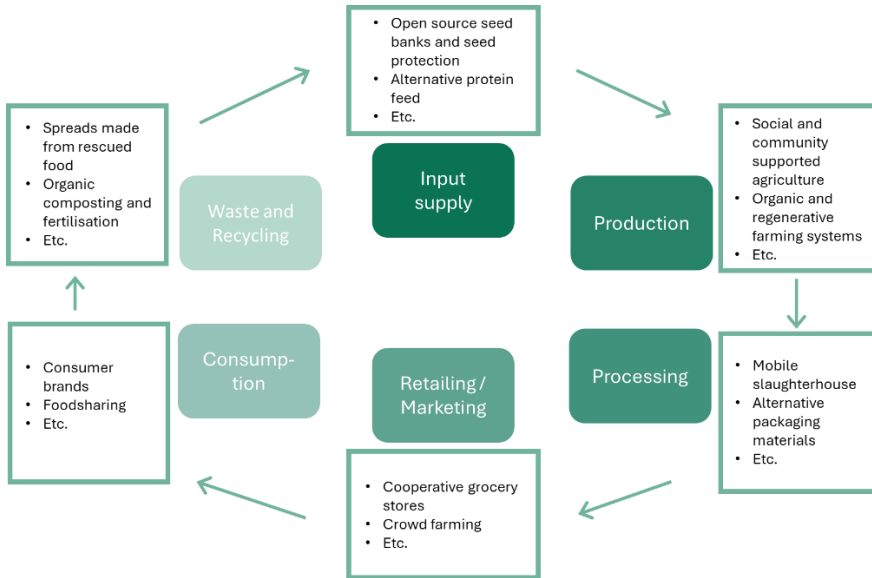


Figure 1.3: Niche innovations along the value chain
(based on Engelhardt et al. 2020: 19)

In line with the SIGU strategy (BMWK & BMBF 2023), CoopFoodLab focuses specifically on the area of social innovations that are linked to cooperative organisational structures. According to the BMBF's understanding of the research programme "WIR! – Change through innovation in the region" (BMBF 2024), "technological innovations have almost always emerged in competitive situations, in the competition of ideas and processes, in overcoming routine" (ibid.). Social innovations, on the other hand, require "cooperation, the interaction of ideas and the balancing of interests" (ibid.). The BMBF comes to the conclusion that "combining both dimensions can represent an important innovation in the 21st century" (all quotes translated from English into German).

CoopFoodLab builds on this assessment by assuming and referring to concrete and international experiences in which cooperative structures already offer a potential framework in which social innovations can be implemented. They enable collaboration, free exchange of ideas, creativity and trust between different actors and institutions (Schröder 2023). On this basis, the dissemination of innovations can be supported by existing networks and communities (Leppert & Posor 2021). They also offer governance structures that help to promote participation and commitment and share responsibility for the implementation of innovations (Aderhold et al. 2014).

Numerous innovative approaches – from regenerative agriculture and social and community supported agriculture to food sharing, food councils, urban gardening and edible cities – show how food systems can be transformed at different levels through innovations that are predominantly supported by civil society actors and can develop in a more sustainable, fairer and more resilient way (Meunier 2024; Bahrs et al. 2022).

- Community supported agriculture ensures farmers receive a fair wage for sustainable food. It promotes a direct relationship between producers and consumers and

enables consumers to know the origin of their food and support local agriculture (Boddenberg et al. 2017a & 2017b; Thoma et al. 2023; Fabricius 2018);

- Food councils are platforms that bring together various stakeholders from the food system, including civil society in particular, to jointly develop strategies for more sustainable and fairer nutrition (Schulz 2023);
- Citizen shareholder companies in the food sector are a new type of citizen financing model. They pool the capital of citizens and invest in various companies in the organic food economy (Hiß 2021; Hennchen & Schäfer 2023b);²
- Edible cities promote local food production in urban areas to improve food security and reduce the environmental impact of food production (Exner et al. 2022; Spash et al. 2022);
- Social farming refers to farms that provide social services in addition to food production, e.g. care for people with disabilities (European CAP Network 2023). A particularly innovative concept here is green care, which combines agricultural activities with special health services and programmes, e.g. for people with dementia (García-Llorente et al. 2018);
- Social innovations also play a role in tackling problems in agriculture, such as low incomes. In the EU-funded Farmwell project in Italy, for example, Humus Job – a social innovation for the legal recruitment of labour – reduced labour costs and improved psychological and social well-being (European Commission 2024).

Cooperative economic forms

Cooperative economic forms in which social innovations are developed or disseminated are of particular importance in this context (Loske 2014). Examples include cooperatives (Elsen 2012), companies oriented towards the common good (Degens & Lapschies 2021), forms of collaborative economy (Brazda & Schediw 2021), approaches to community-based economic activity (Rommel & Koch 2021) and purpose-driven companies (Krügel 2022). These different forms are also referred to as the civil society economy (Degens & Lapschies 2021). According to Blome-Drees et al. (2021), companies that operate in civil society are characterised by the following features: responsibility for the public, orientation towards the common good, collaborative economic cooperation, community self-determination and emancipation, democratic participation, communally shared property, economy of needs, economic viability, experimental transformation and civic action. On a practical level, there is, for example, the concept of Economic Development 4.0, which includes systematic municipal support concepts for cooperative forms of business and the methodical strengthening of the regional economy according to the guiding principle of sustainability (Kopatz 2020).

² The first Regionalwert AG was founded in 2006 near Freiburg by Demeter master gardener Christian Hiß together with businesses from the regional value chain, customers and citizens of the region. For his achievements, he was honoured with the special "Social Entrepreneur of Sustainability" award from the German Sustainability Award, the Schwab Foundation's "Social Entrepreneur of the Year" award German Chancellor Angela Merkel and the *Zeit Wissen* "Courage for Sustainability" award in the "Action" category.

The cooperative economy as the basis for social innovation in food systems in France

In France, the aspect of food security is currently taking centre stage in the context of social innovation. A quarter of the French population is forced to limit the amount of food they eat due to financial restrictions. 40% limit themselves in terms of quality. At the same time, 10 million tonnes of food go to waste in France every year (Le Labo d'ESS 2024). In 2016, 3.9 million French citizens received food aid, which corresponds to almost 30% of farmers earning less than €350 per month (Alphandéry et al. 2020). Improving the purchasing power of families in need, fair pay for food producers and reducing the burden on the environment are important goals that require innovation in agriculture. This is because nutrition not only affects human health, but also the dimensions of culture, identity, tradition and education. It therefore represents an effective lever for the social cohesion of a society.³

In various recent studies, the French think tank for social and solidarity economy, Le Labo de l'ESS, has outlined approaches that can be used to ensure access to high-quality and sustainable food for all (Alphandéry et al. 2020; Vie publique 2022). This involves developing systemic and territorial responses to the problem of inequality in access to high-quality food.⁴

Specifically, it refers to involvement in agricultural cooperatives, of which 75% of farmers are already members and which generate 40% of the turnover of the French agri-food industry (Le Labo de l'ESS 2024). On the basis of cooperative forms of business, access to high-quality food products can be secured regionally in many places. Successful projects can in turn exert influence on local government institutions and form the basis for multi-level governance.

An internationally recognised example of successful regional and territorial development is Ardelaine, a SCOP in the Ardèche region⁵. Here, in a small valley in the south of France, the entire value chain of local wool processing has been successfully restored over four decades. Today, a network of 300 shepherds sells around 40 tonnes of wool from 50,000 sheep per year. Together with the municipalities and local networks, the cooperative founded a shop, a café, a bookshop, a cultural product distributor, a museum, a catering service and a facility for processing and developing local and organic food products, which together provide around 50 jobs (Delabre et al. 2021).

Ardelaine is also active in numerous national and international collaborative teaching and learning networks in which companies, start-ups, students, government officials, researchers, universities and institutes promote social change, e.g. the Network for Exchange and Alternative and Solidarity Practices (REPAS). These structures have also given rise to the teaching and learning methodology of Pédagogie Apprenante (Giordan 2003), which is used in France in the field of cooperative nutrition education (see section 1.3.1.).

³ The French government has launched a €500 million programme to make the agricultural and food sector more digital and sustainable (Foodaktuell AG 2023).

⁴ Territorial development for rural regions refers to strategies and measures aimed at improving the socio-economic conditions in rural areas and promoting their sustainable development (GIZ GmbH 2012).

⁵ SCOP defines a cooperative and participatory society ((<https://www.ardelaine.fr/l-aventure-ardelaine/vive-le-collectif>)).

1.3 Social innovation in the food sector and the role of the university – a Franco-German perspective

As recent studies by the Centre for Higher Education (CHE) on social innovation stemming from universities show, little is known about the role higher education plays in these processes in Germany (Brinkmann et al. 2021; Hachmeister & Roessler 2020). Universities are only involved in 15% of all social innovations (ibid.). The main reasons for this are seen as a lack of organisational framework conditions and a lack of awareness of their own role in the social innovation system (Brinkmann 2020).

There are numerous international examples of how social innovations geared towards the common good can be specifically promoted through research and teaching programmes at universities. Universities offer not only education and training but also platforms for the development and implementation of innovative solutions.

Canada is considered exemplary with the Centre de recherche sur les innovations sociales (CRISES) in Quebec, where a network of researchers has been working together with practitioners for around 30 years to create and disseminate knowledge about social innovation and transformation (ibid.). For example, the University of Waterloo has launched the "Social Innovation Generation" programme, which focuses on promoting social innovation through education, capacity building and the development of a supportive ecosystem (CHE 2020). In Latin America, there is a long tradition of supporting social innovation through universities, incubators, and cooperation with local communities, civil society initiatives and local governments (Gierhake 2021). In Austria, the Social Entrepreneurship Centre at the Vienna University of Economics and Business highlights the social impact of research projects and presents the Social Impact Award (Brinkmann 2020).

In France, an innovative approach to the management of ecosystems has been developed since 1975 by the international research centre ISEOR (Institut de socio-economie des entreprises et des organisations - <https://recherche.iseor.com/default4.asp>). In the past 50 years, this centre has been created by Henri Savall in the wake of heterodox economists like Francois Perroux and Germán Bernácer in order to experiment an innovative approach to sustainability and overall performance. To make it happen, the ISEOR centre has developed an approach to improve the performance of organizations and ecosystems, including in the case of the agri-food sector. Through in depth and up close intervention researches carried out with all the stakeholders in over 2,000 organizations and companies in 47 countries, it demonstrates the need of a humanistic approach to overall and sustainable performance. It is also referred to as "Anthrope Ecology" (Savall et al. 2022), meaning that humans are part of the nature, resulting in the need to take care of humans and their working and life conditions so that they can innovate and take care of the nature. In other words, social innovation and ecological innovation need to draw on Human Potential and not only on laws and regulations nor technologies.

The socio-economic experiments and their evidenced based outcomes have been documented in over 100 books and 250 doctoral dissertations. It has resulted in a body of information that goes by the name of the Social Economic Theory (Savall & Zardet 2023), along with a method to implement it in practice called "Socio Economic Approach to Management". As differentiated from social and ecological innovations consisting of juxtaposing social, economic and environmental criteria, like the case of double materiality such as the Corporate Sustainability Reporting Directive (CSRD) European Directive, the socio

economic methodology consists in integrating them into a coherent whole. To do so, it draws on a qualimetric epistemology which involves all the actors to measure qualitative, quantitative and financial visible and hidden performance. It enables broadening the scope of economic performance through the evaluation of hidden costs and performances both in terms of immediate results and creation of potential, and not only the visible costs and performances assessed by accountants and economists. Hidden costs represent more a large part of the value and they are detrimental to sustainable development. Hidden costs can be converted into overall performance through innovative management tools and methods. It should also be noted that poor evaluation of hidden economic performance is detrimental to the dissemination, sustainability and social innovation. Qualimetric intervention research protocols help actors to build social economic innovations that overcome the apparent contradictions of the objective constraints of each stakeholder within organizations and ecosystems. For example, in the agri-food sector, Brioché Pasquier, which operates in France, Italy, Spain and United States, uses the socio-economic model, enabling overall and sustainable performance and contributing to the Common Good (Worley et al. 2015).

Example Ardelaine: Social innovation for the transformation of the food system

When it was founded in 1982, the Ardelaine cooperative set itself the goal of creating jobs in a depopulated rural area. This was to be achieved by revitalising a local resource, sheep's wool, which is produced in the region's main sheep breeding area. Over the years, a complete reorganisation of the sector was achieved, from sheep shearing to the marketing of the finished products. The founders placed particular emphasis on processing the wool without the use of chemicals and adhering to fair trade practices. In addition, the cooperative has developed various activities that can be divided into areas such as processing, direct marketing, tourism and culture, research and publishing, hosting students and building networks in France and the European Union. After 40 years of collaboration, around 50 jobs have been created and Ardelaine now holds the title of "Living Heritage Company". What is also interesting about this initiative is that the revitalisation of a structurally weak rural area has been linked to building bridges to 'precarious' urban areas, namely the satellite settlements of Valence, where Ardelaine runs tailoring workshops and works with local associations. In fact, Ardelaine has been concerned with building a comprehensive solidarity chain (Tewfiq 2015).

SCOP Ardelaine is a participant in the CoopRoute project (CECOP 2013), an innovative cultural and industrial tourism route organised by regional cooperatives, mainly those run by young people. Their economic activities help to preserve traditional local skills and products and develop a tangible and intangible cultural heritage that is attractive from a tourism perspective. Every year, between 15 and 18 people from France take part in the five-day trip, during which various socially innovative companies are visited. The experience with CoopRoute has confirmed the interest in cooperative learning experiences in the form of "learning journeys" that stimulate reflection, train participants and become sources of inspiration for further innovation (Sanchez-Bajo 2009; Barras & Draperi 2014). The basic idea is to pass on the values of cooperative business to the younger generation (CECOP 2013).

Learning to research social innovations in the food sector

The previous explanations have clarified how broadly and sometimes unspecifically the term “social innovation” is used. At the same time, very little research has been done into it in the food sector.

Reflection in the CoopFoodLab project is based on the understanding of social innovation that underlies the federal government's SIGU strategy (BMWK/BMBF 2023) and refers to the four dimensions:

- New social practice to solve a social problem
- Development of a new or better solution than in previous approaches
- Profitability: non-profit or commercial activity
- Relationship between social and technological innovation.

CoopFoodLab combines these dimensions of social innovation with the cooperative economy perspective. The focus is on the question of what contribution social innovations make to the change and transformation processes for a sustainable food sector, how the numerous innovative approaches that develop from civil society, companies or political initiatives lead to broad social change in this area (Howaldt et al. 2022), and how higher education can contribute to this.

The understanding of social innovation is based on the phase model of social innovation developed by CHE (Figure 1.4).

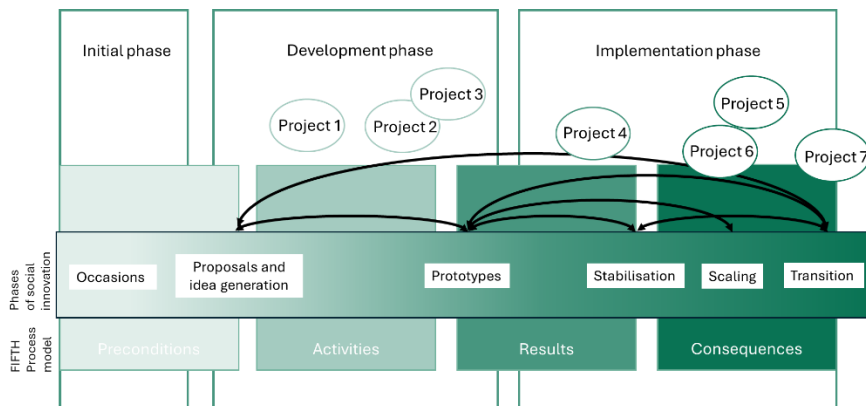


Figure 1.4: Process/innovation model for social innovations
(based on Hachmeister & Roessler 2020: 4)

The CHE model describes the processes and phases that a social innovation goes through at a university until it is established (Hachmeister & Roessler 2021). It takes into account both the preconditions and activities that lead to the emergence of a social innovation and the results and consequences that result from this innovation. According to the theory, social innovations go through six phases, at the end of which there is a change in society as a whole. These phases begin with the analysis of a problem for which there is no satisfactory solution to date and end with the implementation or at least trial of possible solutions.

The examples analysed by CHE offer insights into the development process and the framework conditions of social innovations (Brinkmann & Roessler 2020). The model was

developed to promote the previously subordinate role of universities in the development process of social innovations. An indicator model tailored to social innovations was developed to provide concrete support for universities along the way (CHE 2024).

Development of competences for social innovation

Appropriate educational and teaching concepts play an important role in promoting the development of social innovations from within universities.

Development of competences for social innovation supports the skills and knowledge required to develop, implement and promote social innovation. It therefore goes beyond the mere transfer of knowledge or further training. Competences are understood here as the cognitive abilities and skills available to individuals or that can be learnt by them in order to solve certain problems, as well as the associated motivational, volitional and social willingness and abilities to be able to use the solutions to problems successfully and responsibly in various situations (Rudeloff 2019; Müller 2021).

A comparable concept for the development of competences for social innovation can be found in Education for Sustainable Development (ESD) (Leibniz School of Education 2024). ESD aims to empower people to contribute to and actively participate in sustainable transformation.

The model of shaping competence according to De Haan (2008) is often used as a basis. Shaping competence refers to the ability to apply knowledge about sustainable development and to recognise problems of unsustainable development. It includes the ability to draw conclusions about ecological, economic and social developments in their interdependence from analyses of the present and studies of the future. In addition, the ability to make and understand decisions and to implement them individually, collectively and politically in order to realise sustainable development processes. It can be broken down into twelve sub-competences.

Codesigning, initiating and supporting processes of social innovation on the basis of ESD can be seen as an active contribution to transformation. At the same time, the necessary skills are developed through codesign and participation in social innovation processes (Bohunovsky & Penicka-Arndt 2024: 20). In this way, a collaborative teaching-learning circle is created, which can serve as a basis for the development of competences for both learners and teachers.

Given the scope and complexity of learning processes for social innovation, Bohunovsky & Penicka-Arndt (2024) point out that not every person needs to have all of the skills mentioned, but that a division among different actors is possible. At this point, it is important to develop interpersonal and integrative problem-solving skills that enable constructive cooperation both internally and in interaction with external stakeholders such as the administration, companies, neighbours and others.

CoopFoodLab is also based on this assumption. Based on various forms of self-reflection, such as learning diary entries and team discussions, as well as through dialogue with stakeholders and international experts, CoopFoodLab explores the question of which skills are beneficial and necessary for the development and implementation of social innovation. In a second step, the extent to which higher education can contribute to teaching students the relevant skills is analysed.

In order to determine the competences required in socially innovative companies, the project reflects on the practice of these organisations based on the above-mentioned dimensions of social innovation. The methods used are experiential learning, regular exchange of experience in online and face-to-face meetings and teamwork by the students.

Innovation ecosystem as a framework for social innovation in the food sector

In order to be able to describe and analyse innovation processes, a cross-organisational perspective is also necessary (Egelhaaf 2023). This perspective is also referred to as an "ecosystem". An ecosystem for social innovation refers to the network of actors – individuals, organisations, companies, administration and government agencies – that work together to promote and enable social innovation (Bauer et al. 2022). In this ecosystem, the different actors interact with each other and share resources, knowledge and skills to develop and implement innovative solutions to social challenges. This can be done through collaboration, partnerships, networking and the exchange of best practices.

Such an ecosystem consists of epistemic communities at different levels, from local communities to national or global networks. It can also encompass different sectors, such as the social economy, the private sector, public administration and civil society. Building an ecosystem in turn requires framework conditions such as policy support, funding opportunities, access to relevant knowledge and skills, and a culture of collaboration and shared learning (ibid.).

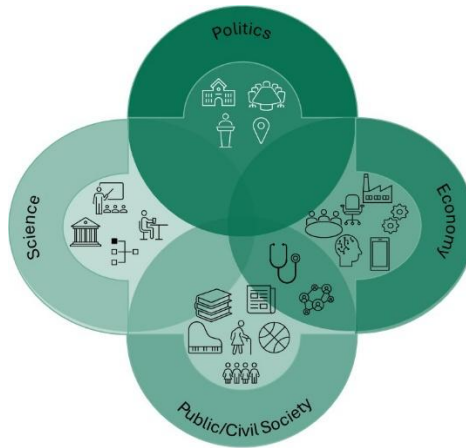


Figure 1.5 Innovation ecosystem (based on Brinkmann & Roessler 2021: 5)

The ecosystem for social innovation refers to an enabling environment (Bauer et al. 2022). In practice, stakeholder mapping can serve to improve understanding of social innovation practice in the context of innovation ecosystems.

Practical example

2 CoopFoodLab seminar at the Justus Liebig University Giessen, Germany

2.1 Objectives and procedure of the teaching project

The CoopFoodLab teaching module was offered as part of a project funded by the German Federal Ministry of Education and Research (BMBF). It was a curricular interdisciplinary learning offer in which students were given the opportunity to participate in the transformation of the food system. To this end, spaces for experience and action were created in active dialogue with socially engaged stakeholders, in which social innovations could be tested and developed. In direct cooperation with regional stakeholders from the food business sector, students addressed socially relevant and concrete questions posed by regional social enterprises in the food sector.

Guided by an international teaching team, they not only reflected on the purpose of the company and the importance and implementation of values that promote the common good in business practice (solidarity, human dignity, transparency, democratic decision-making), but also participated in the development of concrete solutions for a sustainable food system, e.g. by carrying out small projects of their own in their organisations, such as a member survey, the creation of a website, the planning of raised beds in public spaces, or the establishment of a neighbourhood network.

In so doing, they learned in a competence-oriented manner how socially innovative enterprises, which take a hybrid form in terms of their economic and socio-ecological objectives (Blome-Drees et al. 2021), can both "function", i.e. be managed successfully and organised predominantly collectively, and retain an impact orientation.

The overarching aim of CoopFoodLab was to explore and support opportunities to promote social innovation in the food system from within the university. This was done on the one hand using research-based learning methods (see section 2.2.), and on the other hand through exchange with a partially already existing network of socially innovative companies in the food sector (for ecosystem, see section 1.3.). Through joint reflection on practical experience, the aim was to determine the competences required for innovation-orientated management of social enterprises in the food sector. Subsequently, the participants in the teaching project reflected on how higher education institutions can contribute to imparting these competences.

Socially innovative enterprises are usually organised for the common good (Felber 2013), and are collective (Loske 2014), cooperative (Blome-Drees 2018; Elsen 2012) or community-based (Degens & Lapschies 2023), i.e. they follow a business logic that is needs-oriented and not profit-oriented, and they focus on specific needs as well as on the personal responsibility and creativity of those involved. The enterprises are often related to their immediate surroundings and actively contribute to sustainable regional development. Social entrepreneurial approaches are perceived in a broader context as places of innovation. In fact, they are usually already acting as problem solvers for food and energy security, two fundamental areas of services of general interest.

Due to the small number of studies on social innovation in the food system to date, it is important to explore the dimensions of social innovation in this sector in more detail. In CoopFoodLab, this was done exploratively through collaboration (internship), writing and accompanied scientific reflection in the group of students, teachers and practitioners.

The prototype developed can be used in agricultural and food management degree programmes to promote the development of competences for social innovation in higher education. The content of the programme was developed together with the Franco-German research group, and experiences and role models from France were integrated into the concept (see also: <https://www.instagram.com/p/C6d5n51Na2A/>). p

The CoopFoodLab course was aimed at degree programmes related to the food system, e.g. agricultural and nutritional sciences, renewable resources and bio-resources, environment and global change, sustainable transition and sustainable food economics. It offered Bachelor's and Master's students a space for experience in which they could come into contact with local, socially innovative start-ups and entrepreneurship. The mix of Bachelor's and Master's study programmes has already proven to be promising in service learning seminars on business oriented towards the common good (Stöhr & Herzig 2021). The broad approach to study programmes enabled an interdisciplinary teaching approach, as social and economic science as well as technical, natural, nutritional and life science perspectives could be combined and used for joint exploration and learning. This created a framework in which students could get involved in socially innovative and socially relevant issues during their internship (<https://www.instagram.com/p/CxPf4Voti9u>).

The understanding of knowledge transfer at Justus Liebig University Giessen (JLU) is based on dialogue-oriented formats with business, society and politics in order to jointly meet social challenges and enable social and technical innovations. Special attention is paid to the further development of the didactic methods spectrum in university teaching, the integration of aspects of sustainability in teaching, and cooperation with non-university stakeholders in the city and region. Innovative event formats, platforms and exchange forums provide the impetus for social developments, debates and interaction and contribute to innovative solutions for sustainable political, economic and ecological action.

The Food Entrepreneurship & Start-Ups (FESU) unit was set up at the Institute of Business Administration for the Agricultural and Food Sector (IBAE) to strengthen the existing teaching and research programme at Faculty 09 Agricultural Sciences, Nutritional Sciences and Environmental Management. In close cooperation with JLU's Entrepreneurship Cluster Mittelhessen (ECM) start-up centre, it supports the development of business models and start-up concepts for innovative companies at all levels of the food chain, but also across all stages, in order to establish regional food hubs and food systems. Also based at the IBAE is the research network for cooperatives and cooperative economics in the agricultural and food sector at JLU Giessen, which aims to investigate and promote concepts based on the principle of collaborative business.

At university level, JLU's Center for Sustainable Food Systems (ZNE) pools its competence and expertise for the transformation and development of sustainable food systems in the key areas of research, teaching and knowledge transfer. The FESU Coordinator is a member of the ZNE and supports the development of spin-offs and innovative business models for sustainable development in the agricultural and food sector.

Overall, the food sector in the state of Hesse offers a promising and exciting environment for socially innovative companies. Business development and start-up counselling for social entrepreneurship have been regarded by the state of Hesse as an innovative driving force for the economy and society for a number of years and supported accordingly. Start-ups in Hesse in the field of social entrepreneurship are supported, for example, by StartHub Hessen, the Foundershub of Regional Management Mittelhessen and the

funding programme Sozialinnovator Hessen. The Hessian Social Innovator programme is one of the first social entrepreneurship funding programmes to be initiated and funded by a federal state in Germany. The first such state-wide support programme for social entrepreneurs was launched by the Hessian Ministry for Economic Affairs, Energy, Transport and Housing together with the Social Entrepreneurship Network Germany (SEND) e.V. and project partners from Darmstadt, Frankfurt, Giessen, Kassel, Marburg and Wiesbaden. The Giessen Technology and Innovation Centre (TIG) has also been involved since the beginning. It is a network partner of JLU Giessen's ECM Start-up Centre that provides support in areas such as regional scouting and the provision of co-working spaces in the Makerspace Giessen. The success of this initiative is not only reflected in the fact that it was recognised by the EU in 2023 as a German Top 10 project in the category "Responsible and integration friendly entrepreneurship" and that similar initiatives have also been launched in other German states. The decision to continue the Social Innovator Programme throughout Hesse in 2024 under the management of TIG in Giessen is also an important signal for the recognition of the contributions social entrepreneurship can make to solving social and ecological problems in Hesse.

At university level in Hesse, there are a variety of institutional developments and an increasing number of curricular and extracurricular teaching and qualification programmes offered in the field of entrepreneurship and start-ups. Aligned with the Hessian Innovation Strategy 2021-2027: Sustainable – Digital – Interconnected (Hessian Ministry for Economic Affairs, Energy, Transport and Housing 2021), there are numerous funding projects and awarding schemes, some of which are financed by the European Regional Development Fund (ERDF) and the Federal Ministry for Economic Affairs and Climate Action (BMWK), which promote the expansion of the entrepreneurship and start-up ecosystem in the regions and around universities.

At the same time, initiatives are being established by both businesses and universities to establish Hesse as an innovation hub for sustainability. For Hesse, the Sustainable Development Goals (SDGs) represent a central compass for setting its political course. In addition to the Charter for Sustainable Business of the Hessian Alliance for Sustainability's economic initiative founded in 2019, the goal of sustainability, which has now been included in the Hessian constitution as a state goal, has been pursued for over 15 years with the help of the Hessian Sustainability Strategy and has been based on the SDGs since 2018. There are references here to topics such as organic farming, animal welfare, healthy eating with environmentally friendly, seasonal and regionally produced products and fairly produced or traded food.

Political action in this area is complemented by Hesse's separate nutrition strategy, which addresses issues relating to nutrition and the production and supply of food. It also aims to further increase the self-supply level of organic products in Hesse and to strengthen the sales and marketing of food (Hessisches Ministerium für Landwirtschaft und Umwelt, Weinbau, Forsten, Jagd und Heimat 2024). The number of organic farming businesses in Hesse has been rising noticeably and almost steadily for decades (Landesbetrieb Landwirtschaft Hessen 2022). At the end of 2020, there were 3,364 companies in the areas of production, processing, trade, import and animal feed. With just under 30 per cent of farms and over 40 per cent of the land area, the Lahn-Dill district in Central Hesse has the highest percentage of organic farms and land area (Hessisches Statistisches Landesamt 2021). Furthermore, as part of its development plan for rural

areas (EPLR), the federal state of Hesse aims to improve market structures and, in particular, promote the processing and marketing of agricultural products. One aim is to establish and expand regional value chains.

The environmental and sustainability programmes in the policy field of "sustainable nutrition" make it clear that the focus must be on healthy diets with environmentally friendly and seasonally produced food, while at the same time being accessible to all people (social justice). This is where socially innovative ventures and concepts can come into play in order to create forms of food production that are more orientated towards the common good and to successfully help shape the necessary transformation of the food system in Hesse.

The CoopFoodLab pilot project at JLU is embedded in this overall context and aims to provide competence-orientated recommendations for higher education as well as the development and implementation of social innovations for the sustainable transformation of the agricultural and food sector.

The students' experiences were analysed in CoopFoodLab to determine the transformative effects of the social innovations in the food systems that they experienced and (co-)designed. To this end, a participative evaluation with the participants was undertaken to find out which methodological approaches and teaching concepts were particularly helpful for application-oriented knowledge acquisition and reflection, both while they were active and in the follow-up phase (reflection). Using qualitative and engagement-orientated research methods (see section 2.2.), the students researched various dimensions of social innovation during the project period.

Together with a Franco-German research group, the project focussed on the experiences of socially innovative companies in the food sector in France. One aim was to analyse the framework conditions under which social enterprises promote sustainable innovative processes in their local regions. The Ardèche region served as a reference region. Here, the Ardelaine spinning cooperative has contributed in an exemplary manner to the transformation of an entire food region since the 1980s (Sanchez-Bajo 2009). (Southern) France also offers generally informative experience with the Community Supported Agriculture (CSA) approach (Schlicht et al. n.d.).

Twelve students from various degree programmes of the "Agricultural Sciences, Nutritional Sciences, and Environmental Management" Faculty at JLU spent a semester working in various local, socially innovative ventures in the food sector. The practical work comprised 300 hours, i.e. approx. two days per week. In addition, there was continuous reflection on the experience in the form of learning diaries and weekly online meetings involving around 60 hours of preparation and follow-up.

In the kick-off workshop, a research framework was developed together with the French experts, which included the approach to the field of socially innovative entrepreneurship and the definition of interdisciplinary and transdisciplinary teaching and learning methods.

This was discussed with the students in an introductory kick-off meeting (in person). Part of the concept was weekly entries in the collaborative digital learning diary by the students, which were jointly reflected on in the weekly online meetings. The seminar was reflected upon and analysed in a three-day evaluation workshop together with the Franco-German research group, the students and teachers as well as the practice partners.

CoopFoodLab

Erforschung des Innovationspotenzials kooperativer Ernährungsunternehmen für die Hochschulbildung

Dr. Kristina Bayer, Prof. Dr. Christian Herzog, Paulina Kossmann



JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN
NEUE WEGE SEIT 1607

Welche neuen soziale Praktiken gibt es in der Agrar- und Ernährungsbranche?

Die teilnehmenden Unternehmen weisen eine Vielzahl an kommerziellen und gemeinwohlorientierten Tätigkeiten auf. Neben Vertrieb und Dienstleistungen zeigen sich vor allem gemeinnützige Aktivitäten wie Netzwerk- und Gemeinschaftsbildung oder Beiträge zu einer nachhaltigen Entwicklung zu leisten.

Sozial-Innovative Unternehmen aus dem Ernährungssektor

Angesichts der fortschreitenden ökologischen Krisen und des technologischen und gesellschaftlichen Wandels entstehen zunehmend soziale Innovationen in Form von z.B. solidarischen Landwirtschaftsbetrieben, Urban-Gardening-Initiativen, Bürgeraktiengesellschaften und regionalen Wertschöpfungsketten, die in ihren regionalen Kontexten wichtige Beiträge zur Transformation leisten.

Im Bereich der Hochschulbildung und Beratung in Deutschland sind Transferstrukturen für (Gründungs-) Wissen aus diesen sozial-innovativen Unternehmen noch wenig ausgeprägt.

Soziale Innovationen umfassen "neue soziale Praktiken und Organisationsmodelle, die zu tragfähigen und nachhaltigen Lösungen für die Herausforderungen" im Agrar- und Ernährungssektor beitragen.¹

Welche Probleme versuchen sie zu lösen und wie?

Ein Ziel sozialer Innovation ist, gesellschaftliche Probleme auf andere Arten zu lösen als stark ökonomisch bzw. marktorientierte Organisationen. In der Ernährungsbranche geht es dabei häufig um ...

Studierende, Hochschule und Forschungsteam

- Praktische Unterstützung sozial-innovativer Unternehmen
- Untersuchung von Forschungsfragen zu sozial-innovativer Praxis
- Ermittlung von Weiterbildungsbedarfen
- Reflektion der eigenen Kompetenzen

Methoden:

- ❖ Teilnehmende Beobachtung
- ❖ Lerntagebuch
- ❖ Stakeholder Mapping
- ❖ Kompetenzrahmenanalyse

SEPT 2023
Aufklat Workshop

NOV 23 - FEB 24
Begleitetes Praktikum

MÄRZ 2023
Evaluations-Workshop

Öffentlichkeit

- Informiert sich aktiv über soziale Innovationen im Ernährungssektor
- Nimmt Teil an sozialer Innovation durch Projekte (z.B. Gemeinschaftsgärten)

Wer sind die Beteiligten an sozialer Innovation? Welche Interessen werden vertreten?

Mithilfe von Stakeholder Mappings werden die beteiligten Akteure sozialer Innovation festgehalten.



Gemeinsames Wirken (Collective Impact)

- Leitfaden für Studierende und Praxispartner
- Unterstützung des unternehmerischen Kompetenzerwerb in der Hochschullehre



Analyse und Ergebnisse: Die Lerntagebücher werden mittels qualitativer Inhaltsanalyse² ausgewertet.

Gemeinnützige Tätigkeiten	Beispielhafte Zitate
Lokale Netzwerkbildung	"Verknüpfungspunkt zwischen Bürger/innen, der lokalen Ernährungslandschaft und der Politik"
Soz. Gemeinschaftsbildung	"Eines der Hauptziele dieses Projekts [...] besteht darin, auch ein Gemeinschaftsgefühl innerhalb der Nachbarschaft zu schaffen"
Niedrigschwelliger Zugang zu Wissen	"Initially the idea is to present the initiatives and projects in and around Gießen in order to create visibility and awareness"
Modellcharakter	"Die Idee ist, dass es später möglicherweise auch in anderen Nachbarschaften umgesetzt wird und einen breiteren Einfluss auf verschiedene Gemeinschaften hat"
Beitrag zu einer nachhaltigen Entwicklung	"[Ein Ziel ist, die] Reduktion des ökologischen Fußabdrucks von der Gesellschaft auf ein global nachhaltiges Niveau zu erreichen"
Ernährungssouveränität	"[Die Initiative] möchte dadurch erreichen, dass "die Beteiligten Selbstwirksamkeit und eine lebendige Kultur der Nachhaltigkeit erfahren" und dabei helfen, den Alltag von Menschen nachhaltiger zu gestalten."

Welche Fähigkeiten und Kompetenzen benötigen sozial-innovative Akteure?

Wissen	Fachkompetenzen	Methodenkompetenzen	Digitale Kompetenz
Empathie	Sozialkompetenzen	Persönlichkeitskompetenzen	Selbstorganisation
Kooperationsfähigkeit	...	Ausdauer	Nachhaltigkeitsbewusstsein

Ausblick

- ❖ Orientierungsrahmen für Bildungsangebote zu sozialinnovativen Unternehmen in der Agrar- und Ernährungswirtschaft
- ❖ Integration der Ergebnisse in bestehende Hochschulstruktur
- ❖ Transfermöglichkeiten internationaler Erfahrungen (Schwerpunkt Frankreich) von Qualifizierung für soziale Innovationen in der Hochschullehre prüfen

Figure 2.1: Poster presentation by CoopFoodLab at the Annual Scientific Conference on Organic Agriculture (WITA) 2024 (in German)

2.2 Methods for promoting social innovation

The lab format was chosen for CoopFoodLab in the spirit of research-based learning, transformative learning and expeditionary learning. The methods of a digital, collaborative learning diary and stakeholder mapping were primarily used to impart competences and reflection.

Research-based learning

The inquiry-based learning approach can be seen both as a cognitive strategy for learners and as a didactic approach for teachers. It is characterised by a pronounced self-determination in the initiation, implementation and reflection of the learning process (Raschke et al. 2023). Research-based learning refers to learning through guided personal research within a self-selected framework or within the research projects of others. The various phases of research-based learning largely correspond to the typical steps of a research process.

Research-based learning is distinguished from other forms of learning by the fact that learners (co-)design, experience and reflect on the process of a research project, which is aimed at gaining knowledge that is also of interest to third parties, in its essential phases – from the development of questions and hypotheses, to the selection and implementation of methods, to the examination and presentation of results in independent work or in active collaboration in an overarching project (translated from German into English; Huber 2012: 11; Schmohr & Weckop 2022: 3).

In CoopFoodLab, the research-based learning approach was implemented through the structure of the kick-off and evaluation workshops and the writing of learning diary entries with the corresponding feedback. The students were able to undertake their own assignments as well as determine their own areas of responsibility.

Transformative learning and social innovation

The "*transformational learning*" approach has recently arrived in Europe from the USA. The term may be in danger of becoming a mere buzzword. Nevertheless, from CoopFoodLab's point of view, central basic assumptions formulated under this term are essential for developing concepts for higher education that serve to develop competences for social innovation.

The pedagogical approach of *transformative learning* developed by Jack Mezirow (1992) is based on the assumption that learning is to be understood as the reflective, critical processing of problematic experiences in discourse. This results in a modification of habits of mind and an integration of the new experience (Fuhr 2018). The prerequisite for transformative learning is a reflective and critical examination of experiences. The aim is to change habits of mind and integrate new experiences. Learning is understood as adaptation to the world, whereby adaptation is not understood as the antithesis of maturity and emancipation, but rather as a self-critical transformation of habits of thought that no longer stand the test of time.

When UNESCO called for "transformative education" in 2017 (UNESCO 2017), it was referring to the demand to connect factual knowledge with the concrete learning environment and to question and break with routines and interpretive grids in the learning process.

In order to become innovative, it is indeed a prerequisite to be able to think "out of the box" and to become critically aware of (old) patterns of interpretation in order to ultimately develop new perspectives and practices. According to Mezirow (1992), transformational learning has its place exclusively in adult education.

With regard to the "transformational" character of learning, Mezirow essentially takes up ideas from John Dewey (1938), who clearly formulated the specifically emancipatory quality of this form of learning. While Mezirow, a key figure in the debates on transformational learning, remains strongly individualistic in his considerations (Nicolaidis et al. 2022), more recent proposals such as those by Formenti and Hoggan-Kloubert (2023) reformulate transformational learning as more cooperative, collective, open-ended, reflexive and action-oriented processes of social learning and apply it to issues and problems of sustainability and ecology.

Transformative learning can play a significant role in the context of social innovation. It can serve as a catalyst for environmental education and education for sustainable development. It is frequently used in this context, for example in cooperation between educational institutions and civil society sustainability initiatives. As part of this, learning is linked with social engagement in places of social innovation (Bormann & Singer-Brodowski 2022)

The practical challenge of anchoring transformational learning at the university lies in the fact that there are no concrete methods that guarantee transformational learning. Nevertheless, there are empirically supported indications of the conditions under which these transformational learning processes can be stimulated (!) (Taylor 2012). For example, Nohl (2015) suggests that students should learn in a previously unfamiliar field of practice and not only observe and record this in the classic, conventional role of a researcher, but also gain their own cognitive, sensory and affective experiences by "participating" in this field. By working as interns in organisations identified as agents of social innovation in the food sector, the Giessen students followed this recommendation as well as the call by Blake et al (2013) to locate transformational learning outside educational institutions directly in the respective social field. Inspiring examples can also be found in the projects of the Wuppertal Institute for Climate, Environment and Energy or the Leipzig-based Konzeptwerk Neue Ökonomie (2024).¹

¹ The terms "transformative learning" and "transformational education" are often used interchangeably, but there are subtle differences between the two. Transformative learning refers to a learning process that brings about a fundamental qualitative change in self-perceptions and worldviews (Schmidt 2018). It is not just about expanding knowledge or skills, but about a profound change in the way learners see the world and themselves (von Felden 2014). Transformational education, on the other hand, as advocated by Hans-Christoph Koller and others, refers to educational processes that are understood as transformations of the relationship to the self and the world (Koller 2022). This theory assumes that such transformations can always take place when people are confronted with experiences for which the established forms of their relationship to the world and self are not sufficient.

Expeditionary learning – examples from France

Pédagogie Apprenante or learning pedagogy was originally developed by the Nice-born Giordan, who became known for his article *Les conceptions de l'apprenant, un tremplin pour l'apprentissage* ("The conceptions of the learner, a springboard for learning") (Giordan 1995). Giordan was director of the Laboratoire de Didactique et Epistémologie des Sciences at the University of Geneva when he started thinking about *entreprises apprenantes* or learning enterprises in the midst of complexity (Giordan 2003). In these companies, collaboration is the key. For him, new knowledge does not destroy the existing, but often forces it to adapt and integrate the new. To achieve this, Giordan proposes a didactic environment in which learners can learn independently, even if they cannot do so alone. The learning environment is crucial. Teachers must ensure that situations are created that encourage interaction. On this pedagogical basis, the University of Lyon organised three groups of visits to social innovation companies in France and abroad, e.g. in Morocco, with prior preparation and careful guidance, as well as a final report and presentation to the learning group. The Ardelaine cooperative was one of the companies that received students from the university in France. In addition, the cooperative has developed various learning expedition formats together with the Chair of Solidarity Economy at the University of Haute-Alsace. Following theoretical preparation, students spend a week at the cooperative and work there in various areas. The module concludes with an evaluation of their experiences (Stoessel-Ritz & Blanc 2020; Blanc & Stoessel-Ritz 2021).

Lab format

The lab format is the method of choice when social, economic or technical practices are tested directly in the field by users with scientific support and research-based learning is to be translated into a specific process. The starting point and *conditio sine qua non* is a clear definition of the goal of the jointly conducted process of observation and experimentation, which must otherwise be kept open to practical experience. In Germany, the Wuppertal Institute for Climate, Energy and Environment in particular has extensive experience in the use of the Real World Lab method, on which it presented a manual in 2020 that guided the present project (Wanner et al. 2020).

Collaborative learning diary

By keeping a learning diary, students can acquire learning strategies and meta-cognitive knowledge. They can achieve a deeper understanding of the learning material covered and reflect on what they have learnt and their learning progress (Rambow & Nückles 2002).

A learning diary thus promotes self-directed and intentional learning. Regular and individualised records are used to actively engage with content and to document and reflect on learning processes in a structured way (AG eLEARNiNG University of Potsdam n.d.; Mayweg & Ruwe 2022). The diary becomes a platform for learners to record and reflect on their personal thoughts about their learning process (ibid.). It thus promotes an understanding of their own learning and working behaviour and the derivation of individual learning and working strategies. In addition, a learning diary also has a feedback function for the module leader (Rambow & Nückles 2002).

The contributions to the collaborative digital learning diary in CoopFoodLab were written in a semi-structured process. In a total of two rounds of questions on the four dimensions of social innovations, the students wrote contributions on the following questions at weekly intervals:

- What new social practice is your project implementing to solve a social problem?
- How is the economic viability of the project organised? Which activities are non-profit, which are commercial?
- Where are the solutions offered by your project different from previous approaches, and where are they better?
- What is the relationship between social and technological innovations in your project?

The learning diary was organised on ILIAS, JLU's digital learning platform, in such a way that all contributions could be viewed by everyone (collaborative dimension). In the weekly online sessions, participants provided regular feedback to each other. In the reflection discussions, the progress made with regard to the aforementioned dimensions of social innovations was jointly documented. At the end of the seminar, the contributions were analysed using MaxQDA software (Mayring & Fenzl 2022). The entries were coded and interpreted.

Stakeholder mapping

Companies in the agricultural and food economy can be seen as part of a "food ecosystem" that is made up of a large number of stakeholders, i.e. interest groups and individuals. These stakeholders in the corporate environment can directly or indirectly influence the actions of companies (Freeman 2010) or companies have relationships with them through various contractual constellations (social, economic, etc.). When analysing one's own role in the food ecosystem and the opportunities for a sustainable food system that a socially innovative company can perceive and help shape, it therefore makes sense to carry out a stakeholder mapping of the network of relationships and the environment.

In mapping, stakeholders can be characterised according to self-defined criteria (e.g. Mitchell et al. 1997). For example, the degree of influence on the company, the willingness to participate in a socially innovative project and a transformation of the food system or the abilities and expectations of stakeholders can be taken into account. Strategies for dealing with them can then be derived from this (Figure 2.2).

Manage closely: Much power and high conflict potential	• Find the source of the conflict and understand the stakeholder's perspectives • Communicate personally and regularly • Build trust • Listen to opinions, collect them and incorporate them into the project if necessary • Inspire enthusiasm for the project and demonstrate benefits
Keep satisfied: Much power, but low conflict potential	• Regular, open and honest communication • Use the power of the stakeholder to influence other project participants • Involve them in project marketing • Listen to opinions, collect them and incorporate them into the project if necessary
Keep informed: Little power, but high conflict potential	• Tailor information to stakeholders • Apply communication methods from conflict management • If necessary, limit influence on the project through power promoters
Monitor: Little power and low conflict potential	• Monitor influence and potential for conflict • Provide little and selected information

Figure 2.2: Stakeholder strategies (based on Windolph & Blumenau 2024)

A stakeholder analysis goes through certain steps (Windolph & Blumenau 2024):

1. Identify stakeholders
2. Evaluate stakeholders
3. Analyse stakeholders
4. Derive strategy

After carrying out a stakeholder mapping and analysing the profiles of the interest groups, it is possible to identify who plays a special role in relation to the purpose and objectives of a socially innovative company. Based on this, cooperation methods and procedures can be determined that meet the needs and expectations of the stakeholders and have a promising effect. Further information on a stakeholder mapping process and forms of cooperation can be found, for example, in the AccountAbility AA1000 guidelines (AA1000 Stakeholder Engagement Standard 2015).

2.3 Findings and results

2.3.1 Dimensions of social innovation in the food sector

Research into social innovations as part of CoopFoodLab should help to provide a deeper understanding of the specific challenges and opportunities and to analyse in more detail how social change is actually taking place in the food sector. This understanding can in turn form the basis for further research or the development of new application practices or business models (John & Rückert-John 2021). The results relate to the nine-month duration of the project and reflect the students' entries in the digital learning diary, their stakeholder mappings as well as the associated reflection discussions and the results and audio recordings of the evaluation workshop.

Solving social problems

As a result, numerous innovative practices and methods were identified that are used in the organisations to solve social problems:

The **seasonal gardens of the Ernährungsrat Gießen** (ERGi) (Giessen Food Council), for example, offer flexible gardens that can be leased for a season without having to book in advance, providing low-threshold access to self-supply in organically grown vegetables without having to bring a lot of knowledge, money, materials or experience with you.

When **Knärzje** brews beer, a quarter of the malt is replaced by surplus organic bread, realising a concrete alternative to food waste. The company is not registering its unique brewing process as a patent, but wants to encourage imitation in the spirit of an open source approach. As an impact brand, it often offers discounted prices or free tastings.

The **Ökokiste Boßhammersch Hof** (Bosshammersch Farm Organic Box) is an innovative model for organic food products delivered to your door. It provides farmers with a guaranteed sale at above-average prices, and consumers with locally produced organic food. The delivery model creates marketing advantages for farmers by adapting to fluctuating harvest volumes. At the same time, products with visual defects are also sold and an alternative, functioning marketing system for organic products is operated.

The long-established organic shop **Klatschmohn** in Giessen is breaking new ground in marketing, as it has identified communication deficits. It is also looking at socially innovative solutions for the succession planning of the shop.

In the "Gießen Gärtnern Gemeinsam" (GGG) (Giessen gardens collectively) project, the **Haus der Nachhaltigkeit** (HdN) (House of Sustainability) and the **Initiative für Nachhaltigen Gartenbau und Ernährungssouveränität INGE e.V.** (Initiative for Sustainable Gardening and Food Sovereignty) teach a neighbourhood community how to build sustainable raised beds in public spaces.

As an independent research and advisory institute, the **Forschungsinstitut für pflanzenbasierte Ernährung (IFPE) e.V.** (Research Institute for Plant-based Nutrition) is committed to scientifically based concepts for a healthy and sustainable diet and its dissemination in society. It provides information about this form of nutrition in a variety of ways, thereby helping to reduce uncertainty in the public debate.

All participating organisations focus very strongly on targeted public relations activities. On the one hand, this can be done with the intention of enabling participation and promoting ideas together with interested parties ("They try things out, analyse what needs to be done, how it should be done and then discuss it." student at the HdN),² and on the other hand, supporting conscious purchasing decisions in the sense of a marketing approach (Klatschmohn). The aim can be to pilot a new social practice and then introduce it into the common discourse (ERGi, seasonal gardens) or to educate and provide well-founded scientific information, e.g. on food waste, plant-based nourishment, individual products, traditional recipes or sustainability issues such as the circular economy or up-cycling.

² This quote and most of the following quotes by students and other participants of the project have been translated from German into English.

The background to this green marketing strategy (Lauterbach 2024) can certainly be seen in the fact that organic food and organic farms still have to contend with strong reservations. Prejudices such as the assumption that pesticide-free cultivation could be a marketing lie, that organic is just a passing trend and that organic food seems overpriced overall require a detailed communication strategy and a targeted approach to the target groups (ibid.).

In its social media campaign on the topics "Why is organic more expensive?", "Why is organic better?" and "What do we do differently to conventional supermarkets?", the Ökokiste Boßhammersch Hof provides targeted information on undesirable developments in the food systems and highlights specific alternatives.

Communication and marketing take place using a wide range of social media tools such as podcasts, newsletters, YouTube videos, Instagram live videos, reels and posts, through which the sometimes complex topics can be presented in a more lively and attractive way overall (ibid.) than in analogue formats. Communication is thus moving more clearly towards emotionalisation and personalisation (Belz & Bilharz 2005).

In addition to content marketing, offers are being developed that serve to build personal relationships, such as visits to farms and suppliers of the Ökokiste for interested customers. Great importance is also attached to communication and maintaining relationships with suppliers and retailers. This can take the form of joint activities, mutual assistance or events (HdN). In addition, dialogue with the public is sought (HdN).

It is also important for the social entrepreneurs and founders to be present at public events such as trade fairs and conferences, and to make personal appearances as speakers and experts, where they can also take a stand on more general issues (freedom of opinion, gender equality, etc.). An important challenge is to provide many people with well-founded and low-threshold information about scientific findings at the same time, preferably in easy language (science communication).

Common to all organisations is the constant effort to communicate sustainability consciously ("which can give me a different perspective on how to approach the topic of sustainability", HdN), which can be used to reach interested parties even better.

Differentiation from previous solutions

Innovation has been part of the DNA of the organic farming and food sector from the very beginning. For decades, the aim of this sector has been to align agriculture, food production and nutrition with the planetary boundaries and to establish a sustainable cycle for finite resources (BÖLW 2024). According to its own self-image, the sector acts with courage, vision, specialised expertise and great perseverance. The goals of the organisations active in CoopFoodLab are therefore not new in this sense. They are concerned with regional and reliable supply, resource conservation with short supply chains and packaging reduction (Ökokiste, Klatschmohn), healthy and nutritious food that is as climate-positive as possible for everyone, combatting food waste (Knärzje, FoodSharing, Ökokiste), low-threshold offers for a concrete introduction to self-sufficiency/supply (seasonal gardens, raised beds) or plant-based nutrition (IFPE e.V.) and sustainable consumption decisions (Klatschmohn).

More than in earlier phases, however, the focus currently seems to be on "creating an environment conducive to dialogue and a positively perceptible culture of sustainability"

that "attracts attention, increases openness to learning processes and makes the necessary change attractive" (HdN), according to the analysis of the students who were active in the House of Sustainability.

On the one hand, the organisational structure and culture play an important role here, in which ideally equal opportunities for participation and decision-making are established, conflicts between full-time and voluntary staff are avoided and a high level of transparency prevails overall. On the other hand, maintaining relationships with all stakeholder groups involved is an increasingly important task, especially at the local level, because this increases the awareness, visibility and appreciation of regionality and seasonality ("create visibility and awareness", HdN).

The entire community is included in the goal of self-efficacy, whereby "ALL means not only the citizens and producers, but also the environment, landscape, soil, animals, water etc. in the natural environment of Giessen" (ERGI). In a deeper sense, it is about enabling and empowering a larger community for socially innovative and sustainable action in the sense of a perspective of food sovereignty. "It encourages collaboration with the local communities to discuss and work on sustainability issues" (students, HdN).

All organisations create social impact with their specific actions. This is increasingly also related to their networks and their food ecosystem. This creates numerous points of connection between citizens, the local food economy and politics, and extends cooperation to other sustainability initiatives (e.g. cargo bikes or swap shops) in order to support local development. As one student put it: "It brings together a variety of stakeholder groups, including the public, local governments, businesses, non-profit organisations, cultural institutions, and universities".

As the students' entries show, this is about facilitating community for mutual strengthening and support (gardening and raised beds against social loneliness, Klatschmohn, HdN), but also about a "process of collective creation" that includes the entire population. They endeavour to create communities in which cooperation is encouraged, ideas are constantly exchanged, new projects are developed and solutions for different areas of life can be tried out.

With regard to the points identified by the students in which the social innovations go beyond previous solutions, it can be noted (here using the example of the Nutrition Council):

- The holistic nutrition strategy developed by ERGI takes into account the aspects of health, regionality and sustainability. This approach represents a departure from previous strategies that focussed on isolated aspects. It recognises the interlinked challenges in the food system;
- In contrast to previous approaches, different perspectives are emphasised to ensure that different interest groups make a contribution;
- The use of academic resources is a key focus of ERGI, with a particular emphasis on education and access to knowledge. The aim is to raise awareness of environmental impacts and ensure a well-informed public, which may not have been the case with previous solutions;
- Agroecological principles: ERGI is committed to environmentally conscious living resources practices, with a focus on circular economy and animal welfare. This goes

beyond traditional methods and recognises the need for sustainability and fair working conditions;

- **Structural solutions:** ERGI is actively involved in negotiating legal principles and promotes innovative corporate cultures that strive for long-term systemic change. This distinguishes it from solutions that are limited to immediate problems;
- **Transparent governance:** The two-stage development of ERGI and the emphasis on public meetings ensure transparent governance. This is in contrast to potentially non-transparent or hierarchic structures in previous solutions;
- **Adaptability and learning:** ERGI recognises the need for a learning process and pursues a vision of fairness towards soils, plants, animals and people. This adaptive and visionary approach distinguishes ERGI from rigid or short-sighted solutions;
- **As part of new partnerships,** different points of view are explored and solutions to problems in a range of everyday areas (food, mobility, clothing, housing, leisure, employment, etc.) are trialled.

Corporate goals and profitability

The economic viability of social innovations is a key factor in their successful establishment. A European research study on public and private initiatives in social innovation concludes that only those social innovations "where the ideal combination of expertise, technology, funding and commitment is achieved are developed further" (Blessing et al. 2018: 59). "Many good ideas are lost along the way, as this ideal combination cannot always be achieved", the researchers conclude (ibid.).

The social ventures involved in CoopFoodLab varied in terms of organisational/legal form and level of establishment: from established companies (Biomarkt Klatschmohn, Ökokiste Boßhammersch Hof) and start-ups (Knärzje) to non-profit associations (Ernährungsrat Gießen e.V., Haus der Nachhaltigkeit e.V.) and a non-profit limited liability company (IFPE gGmbH). Choosing the right legal form is an important step in establishing a socially innovative organisation and has a significant impact on its ability to achieve its goals and make an impact on society. It has an impact on the mission and operation in the sense that non-profit organisations are inherently focused on promoting the common good and therefore benefit from tax advantages. The legal form also regulates the organisational structure and ownership, which in turn has an impact on decision-making structures and transparency.

The students' observations on profitability and economic issues are characterised by the fact that the description of their non-profit orientation is clearly in the foreground for all organisations:

- "This work ethic shows that the company is not geared towards maximising profit, but towards saving bread." (Knärzje)
- "However, the focus of the Ökokiste was never on growth or profit, but on sustainable business and thus also on social and common good issues." (Ökokiste Boßhammersch Hof)
- "The company's goal is to replace these with a sustainable and transparent supply chain to ensure the future for next generations on this planet." (Ökokiste)

- "The company makes a contribution to securing sustainable agriculture and thus to the continued independence of farmers, as they are not dependent on large companies." (Klatschmohn)

The social enterprises are concerned with environmental protection, empowerment, free access to knowledge (knowledge platform, open source), knowledge transfer, the preservation of typical regional food cultures, access to organic products for all, strengthening regional economic cycles and guidance on food sovereignty.

- "Coordinating the creation of a society-based sustainability plan and different viewpoints will be explored and solutions to issues in a range of daily domains (food, mobility, clothes, housing, leisure, employment, etc.) will be put to the test within the framework of new partnerships" (HdN)

They therefore belong to the category of social entrepreneurship regardless of their legal form. The main objective of social entrepreneurs is to tackle social or ecological problems and to develop sustainable solutions for the economy and society. The focus is on a holistic approach that takes into account the well-being of all stakeholders (Sesli 2024). The fundamental principles of social entrepreneurship are sustainability, social impact, innovation and scalability to increase their impact.

The primary goal of social entrepreneurship is to solve social challenges. This is achieved by continuously using entrepreneurial means and results in new and innovative solutions. Steering and monitoring mechanisms ensure that the social goals are realised both internally and externally (SEND e.V. 2024a).

Questions about the profitability or business model of the organisations were described quite vaguely overall. It is clear that the students find it difficult to distinguish between commercial and non-profit activities in their organisation. However, socially innovative enterprises and social entrepreneurship are characterised precisely by the simultaneity of commercial and non-profit activities. A great deal of uncertainty was also evident with regard to background knowledge on corporate financing. Students had difficulties describing the business models of their organisation in detail. This corresponds to the continuing lack of clarity in the financing models for social entrepreneurship despite a certain dynamism (Scheck n.d.).

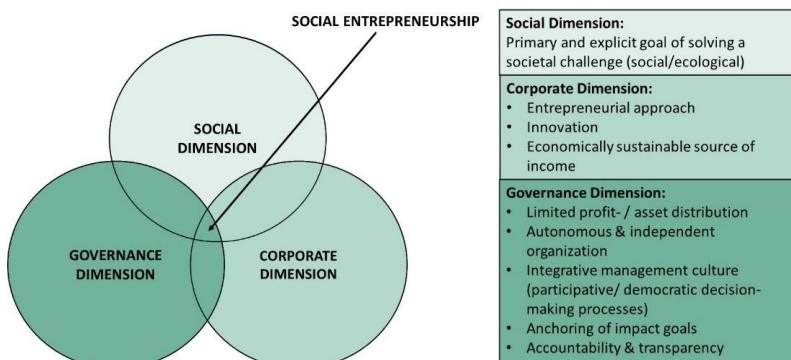


Figure 2.3: Social entrepreneurship (based on SEND e.V. 2024)

To summarise, it can be said that the companies active in CoopFoodLab appear to be economically stable according to their degree of maturity, but at the same time are looking for new options to generate income. This indicates that the business models need to be constantly updated and adapted to market, legal and social developments. For example, the more sales-orientated companies are tied to market conditions such as the increase in price sensitivity for food. The models that are more dependent on public funding or private commitment must also adjust to an increasing scarcity of funds and growing competition. In individual cases, community supported business models therefore play a role in the considerations for securing economic viability (Rommel & Koch 2021), specifically in the case of the organic shop Klatschmohn, which is actively considering a successor concept, e.g. as a cooperative (Steines 2022).

Interaction of technological and social innovations

In a similar way to that already outlined above (section 1.1), CoopFoodLab makes it clear that technical and social innovations are very much intertwined. This is illustrated by a particularly vivid example: Ökokiste Boßhammersch Hof is planning a technological innovation which will make it possible to order products in the online shop as usual. The difference, however, is that the regional vegetables will be matched directly to recipes and the number of people. On the one hand, this digital tool makes it possible to avoid wasting food by buying too much or having insufficient knowledge of how to prepare it. On the other hand, it is also an instrument that can potentially increase overall sales, as more people may buy goods tailored to their shopping requirements in this form. At the same time, the company itself wants to sell the underlying digital application to other providers. This example very clearly shows the intermeshing of a digital tool with the social impact of the company on the one hand (avoidance of food waste, low threshold supply of organic food) and the development of new sales-orientated business areas on the other.

Social adaption

Finally, we will take a look at the topic of social adaptation. The social adaptation of the diverse innovations in the food system, some of which were analysed in more detail in the CoopFoodLab, requires a cultural change, educational measures and the willingness of consumers to pay higher prices for sustainable and innovative products. The adoption of innovations in the food system by consumers can help to reduce social injustice, promote sustainable and fair food systems and make access to high quality food more socially just. In a participative process involving and taking into account the suggestions of over 100 pioneers of social-ecological innovations from all over Europe, a paper was produced with eight demands for policy-makers to promote such innovations (NAHhaft e.V. 2024b).

In the case of Knärzje, this problem of a lack of adaptation was raised time and again. Many people are enthusiastic about the product and the approach, but too many people would still buy a cheaper, non-sustainable beer. In economic terms, the start-up therefore often faces challenges. People's willingness to change their habits, particularly in the area of nutrition, is still too low overall to bring about a truly broad social change.

The Berlin research project *Social cohesion, food and health. Inclusive food system transitions* (Feindt 2019) conceptually and empirically investigates the relationship between social cohesion, nutrition and health. In addition to changes in food prices, the

researchers expect a change in eating habits and associated issues of justice, both on a regional and global level, by 2040 (Feindt et al. 2022).

2.3.2 Development of competences for social innovation as a task of higher education

When asked about their expectations of the internship, students mainly commented on expanding their competences in the following areas:

Table 2.1: Expectations of students with regard to their competence development at the beginning of the internship

Personal/self-competences	Expertise	Social competences
Independent working	Project management of a social innovation	Communication skills
Own project	New perspectives on everyday nutrition through contacts in the local food system	Sustainability communication
Taking responsibility	Challenges of a start-up or impact business	Learning from other students and their organisations
Realise your own ideas	Event planning	Exchange with other students, stakeholders and with lecturers
	Learning through feedback	Expand soft skills
	Get an overview of company structures	
	Marketing	
	Financing structure and Understanding the business model	
	Get to know and understand the local food system	
	Communication and decision-making structures	

Over the course of the internship, the topic of competence development was discussed several times. One of the tasks set for the students was to observe their colleagues to see which competences they needed to cope with everyday life in their socially innovative organisation. They were then asked to observe themselves in this regard. In their reflections, the students discussed which competences they already had from their studies and

could use constructively in practice, and which they still needed to acquire to feel equipped to manage such an organisation.

The discussions revealed an enormous variety of skills that people in socially innovative companies possess.

In their self-reflection, the students expressed a great interest in learning more about topics such as financing / profitability / business models and legal forms, as these topics had not previously been a focus of their studies.

At the same time, they often felt overwhelmed by the demands on their own ability to organise themselves that they encountered in practice. At university, they had not been used to unclear structures and decision-making processes, i.e. structures that had to be organised, to this extent. Thus, a certain contradiction was evident here between the desire for self-organisation and the lack of organisational and cooperation skills to manage coordination processes with other actors.

They felt that they were well prepared in terms of their analytical skills. In their role as outsiders, they were sometimes able to identify internal difficulties very quickly (e.g. conflicts about a lack of transparency, internal democracy, etc.) and develop solutions. However, little use was (yet) made of this by the partner organisations during the short internship period.

Table 2.2: Analysis of the learning diaries on the topic of competence development

Code	Subcode	Example
Professional competences	Knowledge	Understanding of complex social structures, dynamics and their effects on different groups in society
	Analytical skills	The ability to analyse complex social problems, identify causes and develop suitable interventions
	Digital expertise	Use of digital tools and technologies to promote and support social innovation
Methodological competences	Willingness to take risks	At the same time, risks must also be taken in order to make progress, but these can be limited by overarching planning and specialised market knowledge
	Decision-making capability	The ability to make smart and well-considered decisions to bring about positive change in society
Social competences	Management expertise	The manager must also have good leadership skills in order to share and delegate tasks

	Exercise and acceptance of criticism	After the initial purchase, it is important to maintain relationships with customers, but also to accept criticism and improvement suggestions from them
	Empathy	As an organisation, ERGi is able to put itself in its users' shoes and understand gardeners' needs and concerns
	Communication ability	Effective communication is key to sharing ideas, mobilising people and gaining support for social innovation
	Ability to cooperate	Teamwork and cohesion within the team are also important to implement social innovation; collaboration with different stakeholders, including communities, organisations and authorities, to jointly develop sustainable solutions
Self-competences	Self-organisation	Every employee in the company has a high level of responsibility, as many tasks are delegated to ensure that the company is well organised in all areas; some employees can organise their own working hours and tasks. This requires a high level of self-organisation and time management
	Self-reflection	The ability to reflect on one's own actions and the impact on the community in order to improve the effectiveness of social innovations
	Sustainability awareness	All endeavours and work at ERGi are always guided by the principle of sustainability
	Creativity	Creativity also plays an important role, particularly with regard to attracting and retaining customers
	Endurance	The ability to be persistent and committed to social innovations and to overcome obstacles
	Optimism	But also an optimistic mindset

2.3.3 Social innovations need food ecosystems

In order to work together with other stakeholder groups or individuals on socially innovative projects and establish collaborations, a clear understanding of who the relevant stakeholders are and how and why they want to engage with the organisation or enter into collaborations is required.

The forms of cooperation were therefore reflected on and discussed with the students. A presentation was given for each company, which initially described the food ecosystem and showed the company's environment. When characterising the stakeholders and their possible influence and relevance for the socially innovative project, the students selected

different criteria and discussed differences and similarities. Figure 2.4 shows an example of stakeholder mapping by a student who worked at IFBE. The conclusions regarding the forms of collaboration used and those that appeared suitable were also discussed in order to critically analyse and reflect on options for action. Overall, the stakeholder mapping proved to be very useful both at the beginning of the teaching project and during the ongoing reflection during the internship for categorising the company in the food ecosystem and locating the actors cooperating or related to it.

IFPE

Who is interested in the project?

- Vegan people
- Specialist nutrition societies
- Environmentally conscious people
- Animal rights activists

Who will work effectively on my project?

- Cooperation with other scientists
- The state representatives

Who is financially involved?

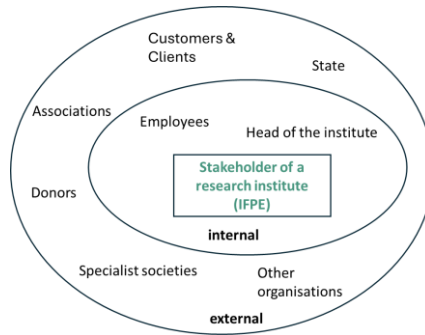
- Funding organisations / donors
- Customers

Who could interfere with the project?

- Meat and dairy industry
- People who suddenly stop participating in a study

Who benefits from the project?

- Specialist societies
- The healthcare system
- Health policy
- Society
- University
- Education and vocational training



Power/Influence

- Employees +++
- Society +
- Science +
- Study participants ++

Conflict potential

- Customers (clients)

Figure 2.4: Example of stakeholder mapping in CoopFoodLab (representation by a student)

Conclusions and recommendations

3 How can universities contribute to the promotion of social innovation in the food system?

CoopFoodLab is an innovative prototype of a curricular internship that analyses and develops social innovation in the food sector. The project is based on the previous experience of the participating scientists in research on common good-orientated and cooperative economic models. The focus on the food system and the anchoring at JLU's Faculty 09 – Agricultural Sciences, Nutritional Sciences and Environmental Management – enabled students from a eight degree programmes to get to know social innovations in concrete terms, to reflect on them scientifically and at the same time to participate in them.

On the one hand, they were faced with numerous challenges. For example, it became clear that the requirements for self-organised processes went beyond the experience gained during their studies. On the other hand, they were able to experience that they could make positive contributions with their existing knowledge, for example through the creation of social media content, online surveys, moderation, research and much more.

However, the analysis also showed that students' prior knowledge of social innovations is more of a coincidence. It is usually not acquired as part of their degree programme but is based primarily on their personal interests. For example, one student was looking for her own garden in Giessen some time ago and thus learnt about ERGi. Others shop at the Klatschmohn organic food shop, are involved in a CSA or subscribe to an organic food box. A connection with their own studies is often not consciously established, especially in the case of NPO-orientated initiatives. The idea that higher education should or can qualify students for socially innovative action and specifically prepare them to solve social problems and the associated impact-orientated career design proves to be rather uncommon. Only in the final workshop did some participants say that an internship such as CoopFoodLab should actually be a mandatory part of each of the participating degree programmes so that it becomes clear "what the goal is".

As Hachmeister & Roessler (2020) showed in their study on social innovation in the higher education context, higher education projects have the potential to implement social innovations and drive social change in their field. However, the realisation or implementation phase is often not or not directly realisable in projects (see Figure 3.1). This is mainly due to structural reasons that have to do with the conditions of third-party funded research on the one hand and the organisational form of the university on the other.

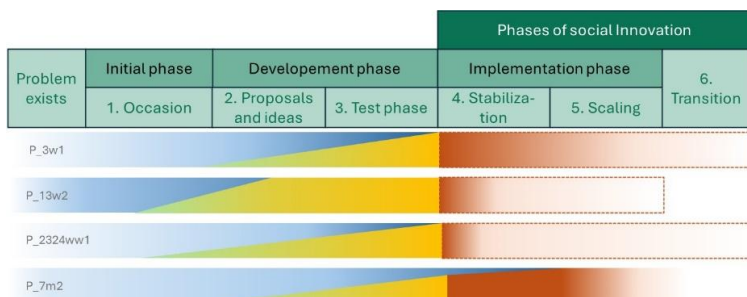


Figure 3.1: Phases of social innovation with project examples (Hachmeister & Roessler 2020: 27)

CoopFoodLab also had to deal with corresponding restrictions with regard to the development of concrete effectiveness in the sense of phase 4 in Figure 3.2, from which the social innovation actually occurs. Although the project could be offered as a curricular internship, there was a great need for detailed clarification, e.g. with regard to student liability insurance, the issuing of work certificates and the recognition of credits in the different participating study programmes. Reaching, attracting and inspiring interested participants from different disciplines also proved to be challenging and took time. A digital platform to which all project partners should have equal access was not easy to establish with the university's digital tools (e.g. restricted authorisations for external parties). More open access tools for equal and collaborative cooperation could be helpful here. A continuation of the project with a corresponding deepening, especially with regard to international exchange, is also desirable, but can only take place if the participants endeavour to find another funding instrument. A continuation of CoopFoodLab in the sense of an introduction into the curricula of the participating degree programmes was considered positive by the participating students, but requires concrete steps on the part of the university, such as more resources for the organisation and supervision of the internships.

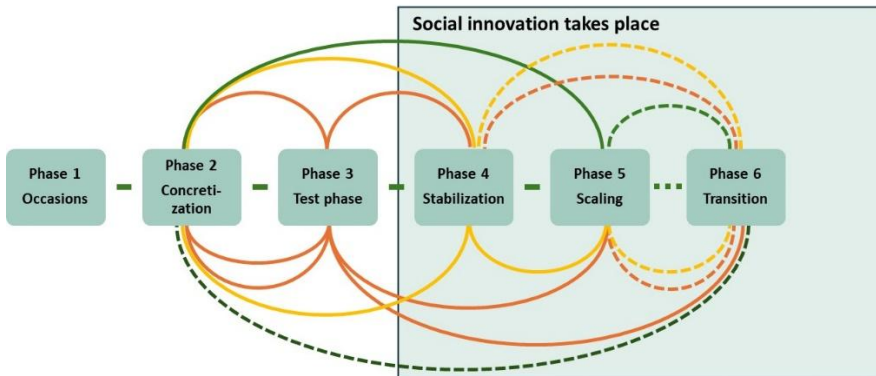


Figure 3.2: Pathways to social innovation
(based on Hachmeister & Roessler 2020: 31)

In order to be able to use the project experience in the medium and long term for the systematic development of skills for social innovation at universities, CoopFoodLab leads to the following conclusions:

Exploring the dimensions of social innovation

CoopFoodLab has shown that the range of social innovations in practice is very broad and that it is worth analysing them on a sector-specific basis. A more detailed knowledge of the individual organisations with regard to business models, social forms and technical backgrounds forms the basis for systematic further development as well as perpetuation through financing models or support from the respective ecosystem. The latter needs to

be analysed systematically and continuously. In this respect, it makes sense and is necessary to initiate further research into social innovation in the food system.

This requires structures at universities that enable long-term and interdisciplinary learning in cooperation with practitioners. There is often a lack of institutional resources for close and lasting cooperation between universities, civil society and economic actors that functions independently of third-party funding, which is usually limited in time.

Developing competences for social innovation at universities

CoopFoodLab identifies deficits in university teaching with regard to the systematic development of competences for social innovations. This applies both to personal and social competences as well as competences specific to social innovation. In order to change this in the long term, innovative teaching formats such as real-world laboratories, living labs, practical experiments and service learning should be used systematically. The local level is particularly suitable for the training and development of competences in terms of sustainable transformation, as this is where decisions are made on a day-to-day basis, where people join forces and projects are implemented (UNESCO 2021). Cities and neighbourhoods can be transformed into real-world laboratories in which innovation is jointly promoted and non-formal sustainability skills are (further) developed (Bohunovsky & Penicka-Arndt 2024). Innovative methods of organisational development can also be used to support socially innovative companies.

One such approach is *ikigai*. According to Japanese tradition, *ikigai* is the secret of happiness and longevity – a method that maintains the joy of life (Ahrendt et al. 2023). The term can be translated as "reason for being" or "reason for living". It is also an approach to personal development. Four circles converge so that the person can define what they love, what they are good at, what the world needs and what the person is paid for. In other words, it is the connection between passion, mission, vocation and profession. The pursuit of balance is *joie de vivre* and energy that has a positive impact on people, the economy and the environment. *Ikigai* could therefore be a tool in the service of social innovation, with the aim of harmonising meaning and action inside and outside the company. The approach can help to define the purpose of an organisation based on the purpose of the management team and employees. In this way, the company embodies its *raison d'être* in its management, organisation and structure with a big *why* (Sinek 2009). This contributes to alignment between purpose and action and promotes the economic, social and environmental performance of the organisation and its surrounding ecosystem.

Cooperation with intermediaries and institutions

Cooperation with intermediaries and other institutions must be considered in formulating a strategy of continuation and the associated challenges. At this point, reference can be made to the Social Economy Berlin project (SEND e.V. 2026b). Since 2022, social entrepreneurs, politicians and administrators, labour market stakeholders, academics, consultants and intermediaries such as economic development agencies have been working together systematically in a project funded by the Berlin Senate Department for Economic Affairs, Energy and Enterprises. Its aim is to establish a joint ecosystem for social entrepreneurship and the social solidarity economy in Berlin.

As a result, start-up consultations are promoted by experts, public events, conferences, trade fairs etc. where application-oriented research is promoted among other activities. This systematic cooperation makes it possible to visualise and experience the social and economic significance of the social economy in a local context. In Berlin, around €7 billion is generated annually by social economy companies (ibid.).

Support innovation ecosystems in the food sector

Innovation in food systems takes different forms and can come from grassroots movements or start-ups. As explained above, these are complex processes in which each individual innovation is dependent on the support of its ecosystem in order to achieve its goal of bringing about social change. Innovations remain niche innovations if they lack supporting cooperation structures and thus financing, implementation and adaptation models.

Universities as key partners in the ecosystem

The CHE studies clearly show that universities are currently only involved in a fraction of social innovations. Furthermore, there are many indications that they are not fully aware of their key role in researching and providing application-oriented knowledge on social innovations. In contrast, CoopFoodLab's experience shows that the ecosystem's expectations of universities in terms of support services, knowledge generation, dialogue, etc. are very high.

Transforming food systems requires a holistic approach involving all stakeholders and a wide range of measures, including supportive policies, increased investment, infrastructure development, capacity building of farmers and consumers, changing consumer behaviour and improving resource management. To create capacity and investment for innovation in the agri-food sector, to share knowledge and address local challenges with scalable impact, innovation ecosystems involving the widest possible range of actors are seen as crucial.

Contribution of science and research

Academic science can contribute to innovation, both policy and institutional innovation (including social and economic innovation) and technology-based innovation that generates, supports and accelerates food systems change.

It also shows that there are numerous opportunities for integrative research in food systems, for example by involving local communities in research and development of innovations, provided that science is open to collaboration in this area. Science can also contribute to the transformation of food systems by reviewing targets and measures to achieve them through various methods, including qualitative and quantitative analysis and modelling.

Policy innovation, institutional innovation and technological innovation are closely linked and must be pursued as parts of an integrated approach. Academic knowledge alone is not a panacea, but without it, complex innovation cannot take place. Universities can partner with other local actors to create food innovation centres that are pre-competitive, collaborative, multi-stakeholder and neutral. Finally, systemic innovation is needed, not just innovation on individual topics. To this end, scientific communities should

strengthen collaboration between all relevant scientific disciplines, including recognising and working with traditional, indigenous and local knowledge systems.

These needs were also expressed by the participants in the project, especially the local socially innovative companies. These statements are not unique. For example, participants in the summit dialogue at the UN Food Summit (von Braun et al. 2021: 23) emphasised that understanding and changing food systems requires active engagement with science and scientists. It is particularly important to make scientific knowledge accessible to farmers and producers and to use this as a basis for government policy. Ideas ranged from ensuring that the work of scientists is translated into lay language to ensuring that science is used as a basis for policy and agricultural decisions.

The term "ecosystem" has several meanings. The concept of an ecosystem-based approach recognises that human, cultural and scientific knowledge is an integral part of any strategy to promote the integrated management of land, water and living resources. According to the United Nations IPBES Glossary, an ecosystem-based approach is a "strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable manner". An ecosystem approach is based on the application of appropriate scientific methods that focus on the levels of biological organisation that comprise the essential structures, processes, functions and interactions between organisms and their environment. It recognises that humans, with their cultural diversity, are an integral part of many ecosystems (IPBES 2022).

More closely related to the local social and economic actors and the purpose of this project, a local innovation ecosystem can be defined as the local group of actors and institutions with their practices, products and dynamics that are crucial for change along the way and where innovation leads to both social and technological change and new institutional and organisational arrangements.

Expansion of the epistemic community

Epistemic communities have a new role to play in international dialogue, as they broaden the dialogue by collaborating with knowledge communities of traditional knowledge.

The United Nations IPBES Glossary (IPBES 2022) and the 2019 IPBES Global Assessment (Brondizio et al. 2019) use the concept of epistemic community. It is defined as "a professional network with recognised expertise and competence and a claim to policy-relevant knowledge in a particular field" (translated from German into English; Haas 1992). Epistemic communities influence decisions in the face of uncertainty about social and physical processes by developing knowledge or solutions. Different epistemic communities work together to expand the existing knowledge base to assess the state of the art and future options for nature and society. Tengö et al. (2017) argue that different epistemic communities can enrich each other through interactions in the field (Brondizio et al. 2019).

In the case of ecosystems for nutritional innovations, external validity tests and cooperation with other epistemic communities, such as those of traditional knowledge, are required. In times of social transformation, universities as places of scientific research should open themselves up to field-specific practical knowledge and make this available in the form of labs for the knowledge base of the epistemic community, whose social innovation potential is thus expanded.

Consolidation within university teaching

In view of the significantly improved framework conditions for social innovation that have been created by the federal government with the SIGU strategy, it is urgently necessary for universities to position themselves in this regard. In terms of CoopFoodLab, this means more application-orientated, sector-specific research with clear anchoring in study curricula and general, interdisciplinary university teaching (e.g. for key qualifications).

The prototype developed, tested and reflected upon in CoopFoodLab for the area of social entrepreneurship and social innovation in the food system can form a starting point for long-term and strategic integration into the institutional teaching concept and, for example, be integrated into future-oriented degree programmes such as the Master of Science in Sustainable Food Economics at the University of Giessen or other degree programmes. To this end, university-wide continuity must be considered in the future and presented to the degree programmes involved. Practical possibilities exist in the continuation and expansion of the innovation platform (expansion of the digital learning diary, e.g. to include collaborative wikis or similar) and as part of the training for entrepreneurship in the agricultural and food sector (Food Entrepreneurship & Start-Ups coordination centre) at the institute leading CoopFoodLab. In addition, the university-wide Center for Sustainable Food Systems (ZNE) at the University of Giessen is working on the further development of knowledge transfer and transformative teaching.

Respect for the needs of the territory and nature

Finally, incorporating the needs of nature and territory is also a key factor for social innovation in food systems. They can best be understood as nature-positive solutions, as discussed, for example, in the 2021 UN summit dialogues under the guiding theme 12 Supporting nature-positive solutions (Food Systems Dialogue 2021).

Positive for nature means that the damage to food ecosystems is not only reduced, but that the ecosystems instead thrive and are resilient. A wide variety of approaches to sustainable agricultural production and consumption pursue this goal: agroecology, regenerative agriculture, organic farming, community-supported agriculture, etc. Nature-compatible solutions can thus emerge from a bundle of different sustainable approaches in the agricultural and food sector on the producer and consumer side. In view of the immense challenges facing food systems worldwide, social innovations will become increasingly important.

A transformation of the food economy requires knowledge and education about food systems in order to change perspectives and ways of thinking. At the same time, innovations must integrate what is already functioning, develop environmentally friendly solutions based on systems thinking and the recognition of complexity, and adapt these to local contexts in dialogue with those affected. In this sense, the right to food (ibid.) includes not only ending hunger and ensuring food security, but also the right to sustainably produced and healthy food for all.

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Actors involved in CoopFoodLab

Franco-German CoopFoodLab research team



Céline Gueunet Mandaron, Paulina Koßmann, Claudia Sanchez-Bajo, Kristina Bayer, Sabine Russ-Sattar, Christian Herzig (from left to right)

The practice-oriented CoopFoodLab seminar programme took place from October 2023 to March 2024 (winter semester) at the Faculty of Agricultural Sciences, Nutritional Sciences and Environmental Management at Justus Liebig University (JLU) Giessen, Germany. It was convened by the expert for sustainable social enterprises Dr. Kristina Bayer and Prof. Dr. Christian Herzig both in presence and online, and supported by the student tutor Paulina Koßmann. The research framework with specific observation tools was created by a Franco-German research group consisting of Prof. Dr. Christian Herzig and Dr. Kristina Bayer (Institute of Business Administration for the Agricultural and Food Sector, JLU Giessen), Prof. Dr. Sabine Ruß-Sattar (University of Kassel), cooperative expert Dr. Claudia Sanchez-Bajo and innovation trainer Celine Gueunet (La Plume and University of Lyon).

Students

Alexa Anders



During her CoopFoodLab internship Alexa was in her final semester of the BSc Nutritional Science and completed her thesis on the topic of reducing meat consumption. She is very interested in alternative food systems that promote more sustainable consumption and an appreciative approach to food. For her, this includes the seasonal gardens organised by the Giessen Food Council, which she had already got to know "from the outside" as a user. As part of the internship, she wanted to experience the working methods, opportunities and hurdles of such social innovations in the food sector from the inside.

Jessica Ehrstein



Jessica was a student of the Bachelor's degree in Ecotrophology at JLU Giessen when she completed her internship at the Food Council in Giessen. She spent her childhood in her grandparents' garden, where her enthusiasm for agriculture was born. She then seized the opportunity to take a look behind the scenes of projects such as the seasonal garden at the Food Council.

Laia Fabres



During her CoopFoodLab internship at the House of Sustainability (HdN), Laia was a 7th semester student on the Ecotrophology programme. She was particularly interested in how the HdN helps people to understand new topics and use sustainable ideas in everyday life by creating a link between research and society and putting knowledge into practice.

Bruna Fariña

Bruna was in her third semester of her master's degree when she took part in CoopFoodLab. Nutrition has always been an important topic for her. Understanding the role of nutrition in the development and treatment of diseases was a particular reason for her studies. She did a 6-month internship at the Research Institute for Plant-based Nutrition (IFPE). In her opinion, IFPE contributes to providing solutions to societal challenges by communicating the state of research in layman's terms through its Instagram channel, YouTube channel and newsletter, and by promoting a sustainable and plant-based diet.

Laura Köhler

The CoopFoodLab project required extensive initiative and flexibility in the development and creation of a marketing concept for the Giessen-based organic food shop Klatschmohn in order to significantly increase its visibility on social networks. Through CoopFoodLab, she was able to gain valuable experience and knowledge about socially innovative ventures in the final semester of her Bachelor's degree programme in Ecotrophology.

Paulina Koßmann

Paulina Koßmann studied Food Economics for her Master's degree out of an interest in more sustainable and fairer food systems. In addition to writing her Master's thesis on a cooperative and participatory supermarket in Paris, Paulina supported the CoopFoodLab project as a student assistant and helped with communication with the students, the implementation of workshops and the evaluation of the findings.

Scholar Muhia



Scholar Muhia was studying for a Master of Science in Transition Management at JLU Giessen when she participated in CoopFoodLab. Having grown up on a farm, her desire for fresh and healthy food has always been central to her life up until this point. This desire motivated her to set up a sustainability department in her previous job before starting her Master's degree, also focussing on sustainability. She completed her internship at the House of Sustainability (HdN) in Giessen, where she was involved in the Raised Beds project, which promotes healthy food in society.

Carolina Strack



Carolina Strack was a student of the Master's degree in Sustainable Food Economics at JLU during her internship at Knärzje. At the beer start-up, she was able to gain many insights into sustainable corporate management and everyday working life in a start-up. In particular, the importance of the circular economy and transparent corporate management and communication became increasingly clear to her during her internship.

Daniel Wenzig



Daniel Wenzig undertook his internship at the House of Sustainability (HdN) in Giessen. Together with his fellow students, he was responsible for the construction of several raised beds, which were built as a neighbourhood project in central Giessen. The project fascinated him because of its social and nutritional aspects, which can promote an open neighbourhood and regional nutrition. He studied Sustainable Food Economics at JLU Giessen when CoopFoodLab was carried out.

Although there are no photographs of or text about them, Esther Bopp, Mohit Kumar and Nandivardhan Jain took part as students with just as much commitment.

Organisations

Bioladen Klatschmohn – Klatschmohn organic food shop

Topics: Transformation of the organic grocer's into a community-based citizens' initiative or organisational form / marketing campaign

Contact: Georg Rieck

<https://www.klatschmohn.bio>

ERGi – Ernährungsrat Gießen / Ernährungswende Gießener Land e.V. (Giessen Food Council)

Topics: Concept development for the founding of a youth food council in Giessen / member survey on seasonal gardens and self-harvest areas

Contact: Birgit Kundermann, Angelika Körner

<https://ernaehrungsrat-giessen.de>

House of Food in Haus der Nachhaltigkeit (HdN, House of Sustainability)

Topics: Concept for raised bed construction, Gießen Gärtner*in*en Gemeinsam / website creation / funding research

Contact: York Kautt

<https://hdn-giessen.de>

Inge e.V. – Initiative für nachhaltigen Gartenbau und Ernährungssouveränität (Initiative for sustainable horticulture and food sovereignty)

Topics: Support for Gießen Gärtner*in*en Gemeinsam (Giessen gardens collectively) project

Contact: Laura Gottschalk

<https://inge-garten-giessen.de>

Ökokiste Bosshammersch Hof (Bosshammersch Farm Organic Box)

Topics: Innovative marketing of bioregional food / social media management

Contact: Karl-Heinz Firsching

<https://www.bosshammersch-hof.de>

Forschungsinstitut für pflanzenbasierte Ernährung (IFPE gGmbH) (Research Institute for Plant-Based Nutrition)

Topics: Scientific research and information processing on plant-based nutrition

Contact: Markus Keller

<https://ifpe-giessen.de>

Knärzje GmbH (Organic brewery)

Topics: Social media marketing

Contact: Daniel Anthes

<https://www.instagram.com/knaerzje>

Book series *Economic and social science studies on sustainable agriculture and food economy*

The series presents practice-relevant and innovative work on sustainable agriculture and food economy. The economic and social science studies published in this series are often exploratory in nature and based on university research work, project studies or qualifying theses by researchers, lecturers and graduates from the Institute of Business Administration for the Agricultural and Food Sector at Justus Liebig University Giessen. The series is edited by Prof. Dr Christian Herzig, listed in the JLU repository and published as an open access publication under the Creative Commons licence (CC BY-SA 4.0). Volumes focusing on specific topics are published at irregular intervals and are aimed at practitioners from the agricultural and food sector (companies, associations, institutions, initiatives, etc.) as well as researchers and lecturers with a particular interest in topics relating to a responsible and sustainable agricultural and food economy.

Volume 4:

Bayer, K., Herzig, C., Gueunet Mandaron, C., Russ-Sattar, S., Sanchez-Bajo, C., 2026, **Rethinking food economics: The university as a driver for social innovation in the food sector. A practice-oriented guide to scientific thinking on socially innovative organisations using the example of CoopFoodLab**, Giessen, 76 pages. DOI: <https://doi.org/10.22029/jlupub-21352>.

The 'CoopFoodLab' project has created spaces for experience and action for social innovations in the food economy through a practice-oriented teaching module. The methodology follows an interdisciplinary and international approach, drawing on collaborative methods and an innovation platform enabling exchange with regional actors. The findings presented in this volume serve as a guide for the scientifically reflected practice of social enterprises in the food sector. This is the English version of Volume 3.

Volume 3:

Bayer, K., Herzig, C., Gueunet Mandaron, C., Russ-Sattar, S., Sanchez-Bajo, C., 2024, **Ernährungswirtschaft neu gedacht: Hochschule als Treiber für soziale Innovationen im Ernährungssektor**, Giessen, 80 pages. DOI: <https://doi.org/10.22029/jlupub-18669> (in German).

The CoopFoodLab project has created spaces for experience and action for social innovations in the food economy through a practice-orientated teaching module. The methodology is based on an interdisciplinary and international approach based on collaborative methods and an innovation platform for dialogue with regional stakeholders. The findings presented serve as a guideline for scientific reflection on the practice of social enterprises in the food sector.

Volumes 1 and 2 were previously published by Kassel University Press (KUP) and are also available here as open access publications:
<https://jlupub.ub.uni-giessen.de/handle/jlupub/19308>

Volume 2:

Herzig, C., Wangrimen, G. H., Cußmann, V., Anoi, P. T. (2021). **The pandemic's impact on food business education and food value chains: global reflections**, Kassel University Press, 105 pages.

The COVID-19 pandemic is one of the biggest crises the world has experienced in recent decades. This volume is a collection of short-listed and award-winning essays that deal with the impact of the pandemic on food value chains and university teaching in the food economy. The essays were written by students and graduates of the Master's programme 'International Food Business and Consumer Studies' at the University of Kassel. Each essay contains individual reflections on how students and professionals from the food sector have been affected by the pandemic in terms of their education, their business or workplace and their personal lives.

Volume 1:

Herzig, C., van Elsen, T., Krikser, T., Mühlrath, D. (2020). **Landwirtschaft und Mensch: Herausforderungen und Gestaltungsmöglichkeiten im Miteinander (Agriculture and people: Challenges and opportunities for cooperation)**, Kassel University Press, 107 pages (in German).

Volume 1 presents five contributions that deal with social issues in agriculture. In detail, they look at internal communication in farming communities, vocational training conditions in agriculture, burnout in agriculture, cooperation between farms and workshops for people with disabilities, and integrative learning processes in social farming.

NACHH ALTIGE

The ‚CoopFoodLab‘ project has created spaces for experience and action for social innovations in the food economy through a practice-oriented teaching module. The methodology follows an interdisciplinary and international approach, drawing on collaborative methods and an innovation platform enabling exchange with regional actors. The findings presented in this volume serve as a guide for the scientifically reflected practice of social enterprises in the food sector.

LAND- & ERNÄH RUNG WIRTS CHAFT

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