Developing policy recommendations for Short Food Supply Chains in Europe

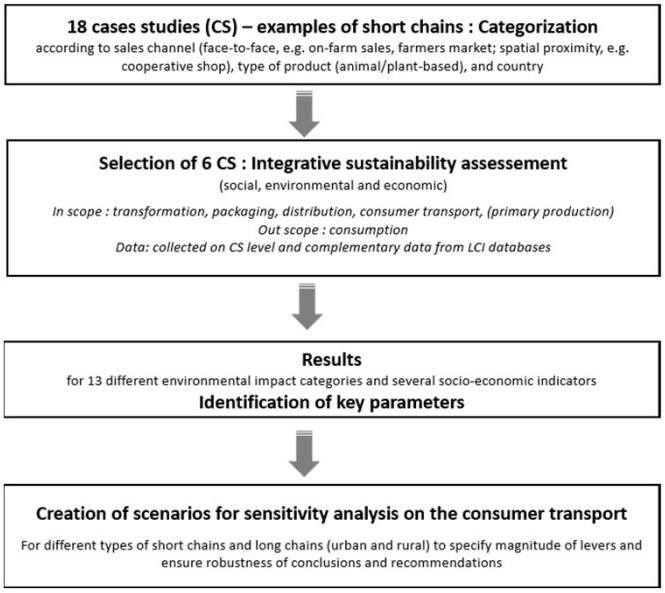
Jens Lansche[1], Laura Iten[1], Pauline Audoye[2], Laura Farrant, Mélanie Douziech[1]
[1] Agroscope, LCA research group, 8046 Zürich, Switzerland; [2] CTCPA, Industrial Technical Center, 32 000 Auch, France

Introduction

Centralized production, processing and storage as well as long transport distances are common characteristics of conventional food supply chains in Europe. As a result, food production in many areas is distant from consumers, both spatially and socially, and value creation is concentrated in a few actors with high market power. Moreover, food supply contributes significantly to climate change and other negative environmental impacts such as eutrophication and acidification. Short food supply chains (SFSCs) can potentially contribute to solving these problems and are therefore an element of the EU's rural development strategy in the context of the Common Agricultural Policy [1]. This raises the question of what characteristics SFSCs need to have in order to promote better sustainability. Further questions:

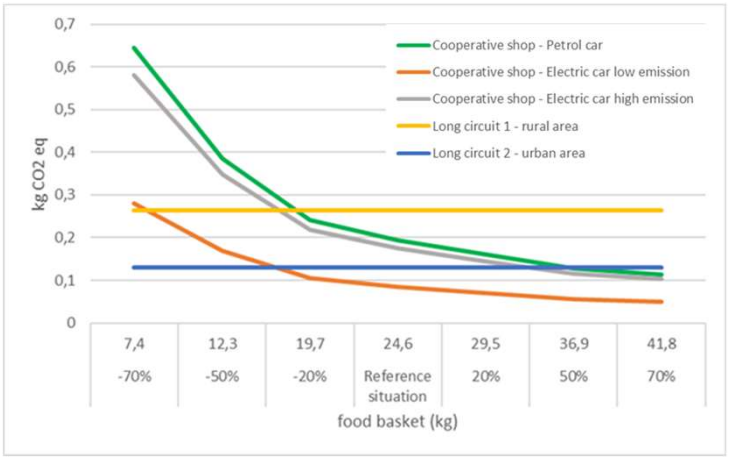
- Can case study data on specific cases of SFSCs be used to develop generalized recommendations on the European level?
- What recommendations can be made for each of the supply chain actors (producer, consumer, policy-maker)?

Materials and Methods



Results and Discussion

The figure exemplary displays the carbon footprint of different sizes of food baskets distributed via SFSCS of the type cooperative shop in comparison to the references. The results show that in a rural area, the environmental impact of shopping in the short supply chain is lower at a basket size of at least 8 kg than in a conventional supply chain if the shopping is done with an electric vehicle charged with low-emission electricity. With a purchase quantity of at least 16 kg, this type of shopping is also advantageous from an environmental point of view in an urban area. If the shopping is done with a petrol-driven vehicle or an electric vehicle charged with high-emission electricity, the shopping basket must be increased to 18 and 36 kg in order to achieve environmental benefits with a short value chain in rural and urban environments, respectively.



Global Warming Potential in kg CO2-eq. for a fixed consumer transport of 14.6km (7.3km one-way respectively) as a function of the food basket size (in kg) for 5 different transport scenarios [2]

Based on this example and the assessments of other supply chain scenarios and sensitivity studies, consumer transport and food basket size are identified as the hotspots of SFSCs; therefore, transport distance, type of vehicle and completeness of product range are the key levers to reduce environmental impact.

Main policy recommendations:

- Foster the development and continuation of traditional farmers' markets and cooperative shops, where primary producers can sell their goods in area that is an easily accessible with public transport – ideally with complimentary shops nearby.
- Provide platforms for primary producers to connect and build networks of primary producers that complement each others offer.

Conclusion

We developed and successfully applied an approach for development of policy recommendations based on case study data.
In this context, it is essential

- to use the case studies to construct generalized scenarios
- to examine these scenarios with a sensitivity analysis on the relevant parameters

The recommendations can be derived for each actor of the value chain.

References
[1] EUROPEAN COMMISSION. Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005. *OJ L (Official J. European Union L 347/487)*, 2013, 347. Jg., S. 487-548.
[2] J. Lansche, L. Iten, P. Audoye, L. Farrant, L. Méhauden, S. Ramos, M. Cidad, A. Ugena, M. Bystricky, J. Lazaro-Mojica. 2021. SMARTCHAIN - D 5.7 Recommendations. Agroscope, Zurich, Switzerland and Universität Hohenheim, Stuttgart, Germany.

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